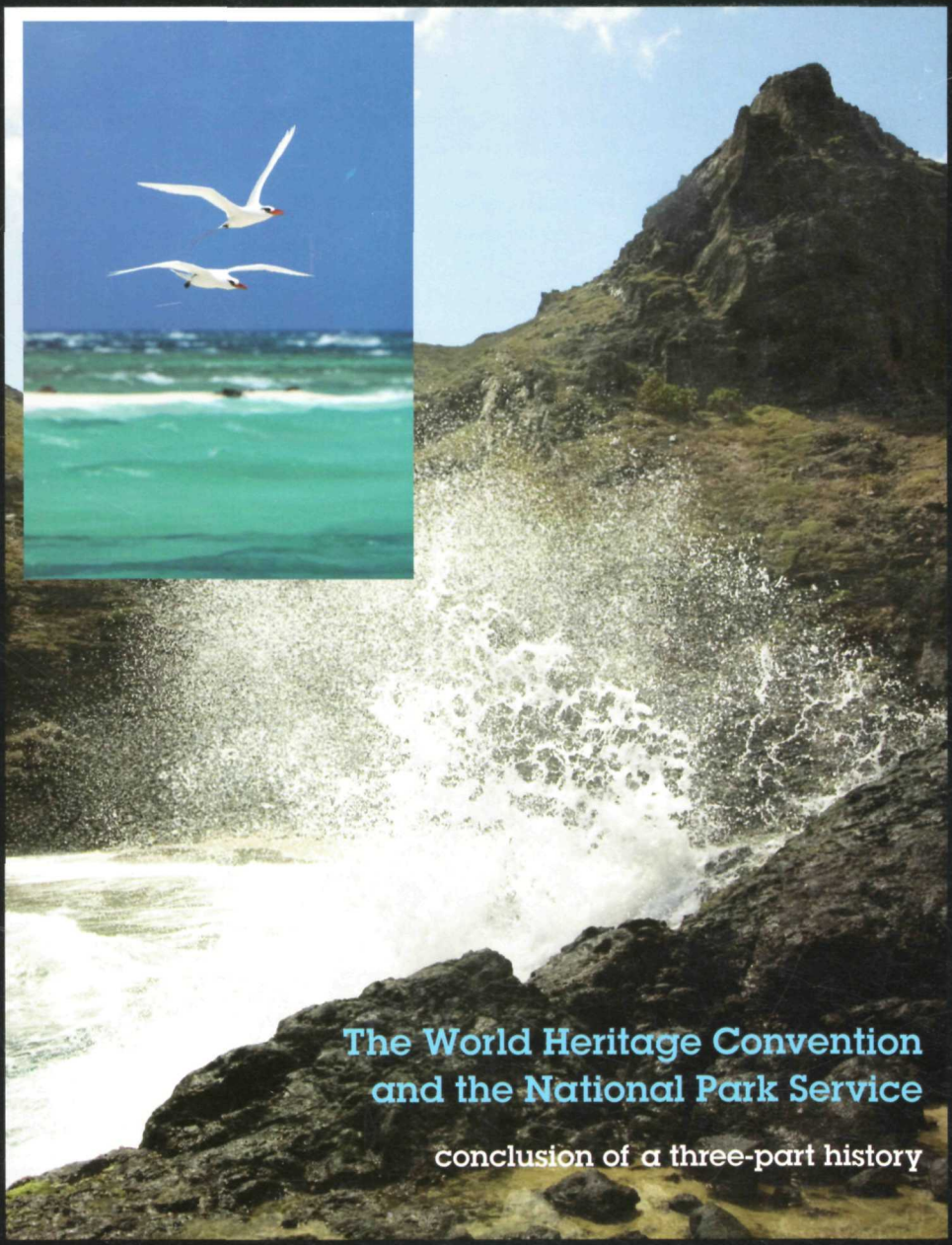

The World Heritage Convention and the National Park Service

conclusion of a three-part history

The George Wright Forum

The GWS Journal of Parks, Protected Areas & Cultural Sites
volume 30 number 1 • 2013

Origins

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

Mission

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

Our Goal

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

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ISSN 0732-4715. Editorial and manuscript submission guidelines may be found at www.georgewright.org/forum. Text paper is made of 50% recycled fibers. Printed by Book Concern Printers, Hancock, Michigan.

The George Wright Society is a member of US/ICOMOS (International Council on Monuments and Sites—U.S. Committee) and IUCN, the International Union for the Conservation of Nature.

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On the cover: Nihoa, the largest of the ten islands and atolls that make up the archipelago of Papahanaumokuakea Marine National Monument, Hawaii, inscribed on the World Heritage List in 2010. Inset: Red-tailed tropicbirds at French Frigate Shoals, part of the national monument. Photos by Wayne Levin and Andy Collins, respectively, NOAA National Marine Sanctuaries.

SOCIETY NEWS, NOTES & MAIL

Despite unprecedented planning challenges, the GWS2013 show goes on

The recently concluded 2013 GWS Conference on Parks, Protected Areas, and Cultural Sites continued a record of success that stretches back to the first GWS-sponsored conference in 1982. Once again, we convened a gathering of committed, energetic people for a week of spirited discussion about a wide range of critical issues facing parks. We are still going through conference evaluations, but the vast majority of early returns found the meeting very worthwhile. The GWS2013 vibe was unmistakably positive—and this despite the unprecedented difficulties we faced planning the meeting.

We were presented with two challenges: (1) a new, cumbersome, and ultimately unworkable conference approval process for Department of the Interior employees who wished to attend, and (2) the automatic US federal budget cuts known as "sequestration." In the end, the combination of the two forced the withdrawal of virtually every US federal employee who had planned to attend. As a result, attendance at GWS2013 was almost 70% lower than in 2011, going from 1,140 to 360.

In terms of program quality we overcame the hurdles and delivered a valuable, high-quality conference. However, the financial implications of the drastically reduced attendance at GWS2013 are quite serious. Revenue from the biennial conferences is by far the largest source of our operating income. Because of the sequester, money we were counting on to carry us through until the next conference in 2015 is not going to be there.

What will we do? Over the years we've planned for a rainy day like this and so have a modest reserve fund we can draw upon to keep operating in the short term. Still, this fund is very limited and we will need to quickly develop additional sources of revenue to ensure the continued operations of the Society. Our Board is working overtime to strategize on this, and of course we would very much welcome any and all ideas that you, as members, might have to diversify our income stream. Also—if you haven't already—please renew your membership for 2013 and consider responding to our email appeal for additional donations. For more information, go to www.georgewright.org/renew.

US federal employees ruled eligible to serve on boards of professional societies

In early March, the US Office of Government Ethics (OGE) announced a major change in the implementation of a federal criminal statute that had been interpreted by some agencies as prohibiting federal employees from serving on the boards of outside organizations. Inconsistent interpretations of that statute resulted in a tangle of confusion at various federal agencies: some allowed employees to freely serve, while others prohibited their employees from serving at all. In 2010, the GWS was caught up in the confusion when the Department of the Interior determined that no National Park Service employees could serve on our Board, causing the forced resignations of five directors in September of that year.

The new ruling sets all this to rest. OGE determined that the potential for a financial conflict of interest between the board member's agency employer and the professional soci-

ety—which was the crux of the matter—is too remote or inconsequential to affect the integrity of employees' services. Agencies will still be able to restrict the extent of an employee's participation on outside boards, but can no longer cite the potential for a financial conflict of interest as a reason. Over the next few months, the current GWS Board will be examining the implications of the new ruling and will consult with the relevant federal agencies on their plans for implementing it.

2013 GWS Board of Directors election: Call for nominations

This year, two seats on the Board of Directors are up for election. Both are held by incumbents who will be seeking re-election to a second three-year term: Barrett Kennedy and David Parsons. We are now accepting nominations of GWS members who would like to be candidates in this year's election. The term of office runs from January 1, 2014, through December 31, 2016. Nominations are open through July 1, 2013.

The nomination procedure is as follows: members nominate candidates for possible inclusion on the ballot by sending the candidate's name to the Board's nominating committee. The committee then, in its discretion, determines the composition of the ballot from the field of potential candidates. Among the criteria the nominating committee considers when determining which potential candidates to include on the ballot are his/her skills and experience (and how those might complement the skills and experience of current Board members), the goal of adding and/or maintaining diverse viewpoints on the Board, and the goal of maintaining a balance between various resource perspectives on the Board. (It also is possible for members to place candidates directly on the ballot through petition; for details, contact the GWS office.)

To be eligible, both the nominator and the potential candidate must be GWS members in good standing (it is permissible to nominate one's self). Potential candidates must be willing to travel to in-person Board meetings, which usually occur once a year; take part in Board conference calls, which occur several times per year; help prepare for and carry out the biennial conferences; and serve on Board committees and do other work associated with the Society. Travel costs and per diem to the annual Board meeting are paid for by the Society; otherwise there is no remuneration. Federal government employees who wish to serve on the Board must be prepared to comply with all applicable ethics requirements and laws; this may include, for example, obtaining permission from one's supervisor, receiving ethics-related training, and/or obtaining a conflict of interest waiver.

To propose someone for possible candidacy, send his or her name and complete contact details to: Nominating Committee, George Wright Society, P.O. Box 65, Hancock, MI 49930-0065 USA, or via email to info@georgewright.org. All potential candidates will be contacted by the nominating committee to get background information before the final ballot is determined. Again, the deadline for nominations is July 1, 2013.

Copies of rare early editions of Forum sought for GWS archives

Do you go back to the very beginnings of the GWS? If you are a charter member of the Society, and have faithfully kept copies of *The George Wright Forum* all the way back, perhaps you'll be willing to help us. We are looking to put together a second complete archival set of issues

in addition to the one we maintain here at the GWS office. To complete a second set, we are looking for originals of the following two issues:

- Volume 2, number 3 (marked "Summer 1982" with no volume or issue number)
- Volume 3, number 4 (1983)

If you are willing to donate your copy of one or both of these editions, please send it to us at George Wright Society, P.O. Box 65, Hancock, MI 49930-0065 USA. We'll be glad to reimburse you for postage.

Errata

The article by Peter Stott in volume 29, number 1, "The World Heritage Convention and the National Park Service: The First Two Decades, 1972–1992," had several minor wording errors that have now been corrected in the PDF version of the article, found at http://www.georgewright.org/291stott.pdf. The same is true for an article by Christopher Johnson in volume 29, number 3, "Getting There: Yosemite and the Politics of Transportation Planning in the National Parks." That corrected PDF can be downloaded at http://www.georgewright.org/293johnson.pdf.

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NPS Design Tradition in the 21st Century

Ethan Carr

Centennial celebrations, like most historical commemorations, express apprehension for the future as much as pride in the past. While retrospection on an important anniversary can forge renewed identity or purpose, the need for such definition seems most pressing when new realities call old certainties into question. The National Park Service (NPS) has important reasons to celebrate its centennial, in this sense. It comes at a time when social, technological, and environmental changes have already altered basic assumptions about national parks and their management.

This is not the first time NPS has made such use of the anniversary of its 1916 Organic Act. In 1955, Director Conrad L. Wirth anticipated the agency's fiftieth anniversary as the deadline for a ten-year expansion and modernization of the national park system, and of NPS itself. Then as now, demographic and technological changes were shifting how, where, and when people visited parks, and the kinds of experiences they had when they did. Wirth and his cadre of park planners and designers were prepared to rethink fundamental aspects of how park visits should be facilitated. He named the effort "Mission 66," and the program is best known today for the many construction projects—visitor centers, park housing, utilities, road widenings—completed through increased annual appropriations during the decade leading up to 1966. Many of the developed areas of the national park system still rely on the automobile-oriented infrastructure of the Mission 66 era. But Mission 66 also provided for an increase in the size and professional training of NPS staff, and it permanently raised expectations for overall levels of annual funding per unit of the system. Initiatives in the

The George Wright Forum, vol. 30, no. 1, pp. 5–11 (2013).

ISSN 0732-4715. Please direct all permissions requests to info@georgewright.org.

identification and restoration of historic sites prefigured the preservation legislation of the 1960s. The planning and development of national recreation areas and national seashores stimulated further recreational planning on the federal scale. Critics have condemned Mission 66 for relying too heavily on park development to meet the challenges of post-World War II war levels of use. But as a ten-year long, billion-dollar fiftieth birthday party, it will be a hard act to follow.

Of course the "mission" in the 21st century is very different than that of the mid-20th. The baby boom may be over, but demographically we are a more diverse nation and that trend will intensify. While the construction of the interstate highway system made parks more accessible to the public than ever before, today new sources of information and experience available through the Internet make it possible to "visit" places without actually traveling at all. As the seemingly endless rise in visitor numbers slows or even reverses, fears that parks are being "loved to death" are accompanied by another apprehension: that parks are being ignored, and are becoming irrelevant to the younger generations who must become their stewards. And if it once seemed to be possible to protect a park's integrity with physical redevelopment plans meant to minimize visitor impacts, new threats such as climate change, sprawling urbanization, and habitat loss make it clear that ecological threats are global in scale and are neither contained, nor entirely mitigated, within park boundaries. The 21st century already mandates a new "mission."

To the degree that NPS officials have articulated goals for marking their agency's centennial, it is fair to say they have not yet done so with the emphatic clarity that Wirth gave to Mission 66. Neither has Congress indicated it might initiate a new era of capital investment in the national park system. NPS today is in a completely different position politically, legislatively, and administratively than it was in the middle of the last century. Federal environmental legislation and agency policies, for example, long ago determined that another Mission 66 could not, as well as should not, be attempted. Wirth's NPS was still a park development agency, as it had been since its creation in 1916. It relied on landscape architects and engineers to design plans for "harmonious" park improvements that would enable growing numbers of visitors arriving in automobiles to "enjoy" scenic and historic places without "impairing" them. By legal definition, the purpose of the national parks was to preserve them unimpaired for the benefits they offered the visiting public.

This definition has often been described as oxymoronic, or at least as a dual mandate. But Frederick Law Olmsted, Jr., (who wrote the key portion of the 1916 act expressing this purpose) believed that the design and construction of public park facilities—roads, trails, campgrounds, and other public and maintenance areas—made it possible to achieve both enjoyment and preservation, at least if such development were done well. His father was the source of this belief. Frederick Law Olmsted, Sr., in his 1865 recommendations for the management of Yosemite Valley, unequivocally prioritized the first goal of that new park: landscape preservation. The second and also vital mandate was to establish easier public access to the park, and to develop drives, paths, and minimal facilities within the park to allow visitors to experience it without damaging the fragile landscape. Olmsted asserted that appreciation of landscape beauty—whether in the middle of Manhattan or in the remote Sierra Nevada—was necessary to the physical and emotional well being of individuals, and

therefore to the future public health of the republic. The creation of public parks, in this light and along these lines, was nothing less than a required duty of government.

Olmsted's 1865 Yosemite report was ignored in the coming decades, but his son read it and was inspired by it during the years he was drafting the legislation to create NPS. This was the origin of the NPS design tradition. This tradition found expression in a group of principles for how national park development should be designed. The 1918 "Lane Letter," drafted by Steven T. Mather and Horace M. Albright for the signature of Secretary of the Interior Franklin K. Lane, specified that "every activity of the Service is subordinate to the duties imposed upon it to faithfully preserve the parks for posterity." Their letter indicated how preservation could be achieved while facilitating public access:

> In the construction of roads, trails, buildings, and other improvements, particular attention must be devoted always to the harmonizing of these improvements with the landscape. This is a most important item in our program of development and requires the employment of trained engineers who either possess a knowledge of landscape architecture or have a proper appreciation of the esthetic value of park lands. All improvements will be carried out in accordance with a preconceived plan developed with special reference to the preservation of the landscape, and comprehensive plans for future development of the national parks on an adequate scale will be prepared as funds are available for this purpose.

In the 1920s and 1930s, in-house professionals followed these design principles in the creation of "rustic" architecture and "park villages," and in the "landscape engineering" of park roads that minimized damage to their surroundings. After the war, Mission 66 planners addressed an ever-growing number of cars and people with a revised set of planning principles and modernist design idioms. But Wirth and his cadre of NPS designers—many of whom were the same individuals who had been responsible for rustic development earlier—held fast to the underlying tradition that guided these updated principles. "Enjoyment without impairment" remained their mantra, and they made frequent reference to earlier NPS policy and practices as they faced postwar levels of use with boldness and creativity. The tradition of NPS design was never a matter of style, but of the ultimate purposes for park development. Mission 66 planners intended to revive that tradition with new approaches to planning and design that would achieve the same goals, under vastly altered circumstances.

By the 1970s, however, neither Congress nor the public seemed to desire further accommodation of automotive tourism in the park system, which at least in some cases had grown to unacceptable dimensions. For many, this meant that the NPS design tradition had run its course. Changes at the agency rightly prioritized natural and cultural resource stewardship over park development, and the roles of scientists and other trained resource managers increased in relevance. This corrective was needed, overdue, and remains fundamental to NPS priorities and mandates today. But it never changed the necessity of park design to help achieve the same purposes of stewardship. For many parks today—from large natural parks to historic sites and battlefields—real improvements in ecological health, resource stewardship, and public experience will not occur without significant change. That change must be planned both to protect park landscapes and to enhance the public's

experience. But the social and environmental contexts of the park system have shifted, once again, and the principles guiding such change require fresh expression. The continuing relevance of the NPS design tradition, in other words, has nothing to do with a return to rustic style, or to Mission 66 modernism. The tradition defines a set of broad purposes, not a preferred style. Reducing park design to stylistic choices evades the challenges at hand and often perpetuates or worsens the status quo.

In considering the new mission associated with the NPS centennial, officials and their design consultants need to consider how the NPS design tradition can be expressed in new design principles that can guide built form and management policy that address current conditions. Such a revision is very much part of the tradition, and the call for the agency to engage in such an effort is not new. In 1991, NPS engaged in a system-wide review of its policies in recognition of the agency's seventy-fifth anniversary. Following a conference involving hundreds of participants, six "strategic objectives" were agreed upon and published as the *National Parks for the 21st Century: The Vail Agenda*. The first two objectives effectively restated the general priorities of Olmsted's 1865 Yosemite report and the 1916 Organic Act: "Resource Stewardship and Protection," followed by "Access and Enjoyment." The document also featured specific recommendations in different categories. Regarding "public use and enjoyment," the authors proposed that NPS "embark on an innovative program of facility planning, design, and maintenance" to develop "a new generation of state-of-the-art designs of needed facilities," while making sure to minimize development within park boundaries and to offer assistance to planning efforts in gateway communities outside park boundaries.

The recommendations of the *Vail Agenda* remain relevant, and over the last twenty years a number of influences have begun shaping a new iteration of the NPS design tradition. One important direction is indicated by the NPS commitment to the sustainability of its facilities and operations. Sustainable construction materials and technology, for both sites and buildings, represent an important step forward for park projects, as they do for any form of development. But even if a new building is "carbon neutral," and its parking lot recharges its stormwater runoff into the ground on site, these laudable aspects of its design have little to say about whether the building should be there at all, what its program should be, or how its appearance and visual impact will affect its setting.

Such planning for each unit of the park system is required, and all national parks produce general management plans (GMPs) that guide official decisions and prioritize actions. The process is structured around the environmental impact statement required by the 1969 National Environmental Policy Act. Typically, several alternative futures for a park, each involving somewhat different management directions, are described. Park planners assess the environmental impacts of each, and eventually a preferred alternative is selected. The law mandates a public process, and certainly this is an improvement over how park planning proceeded (almost secretly by today's standard) under Mission 66. The emphasis on assessing the environmental impacts of policy alternatives, however, make it difficult to use the GMP process to investigate dramatic change, because such actions are likely to have significant impacts on both cultural and natural resources. Anything but the most incremental change is likely to violate NPS environmental or historic preservation policies, if not both. Most GMPs

today do not actually describe specific designs for development, or re-development, but are templates for very general resource stewardship goals. Lawsuits from friend and foe alike, in addition to this inherently conservative and limiting planning process, have made it difficult in many cases for individual parks to plan, much less implement, reconfiguration, removal, or relocation of developed areas, or other significant changes in park landscape management policies and practices.

Ambitious (Mission 66-scale) ideas for the redevelopment and reconceptualization of how the public arrives at, moves through, and otherwise experiences its parks, however, are required to address changed contexts and new challenges. The planners and landscape architects attempting to implement alternative transportation systems in national parks have been saying as much for decades. Where they have been successful, such as Zion National Park, we have at least a partial idea of what real change can mean for both park resources and visitor experience. But the difficulties of implementing alternative transportation schemes are as instructive as the few successful examples. Transportation in a park setting is not just a means of getting someplace. As NPS historian Tim Davis notes, moving through landscapes on well-designed roads, whether in a carriage or a motor vehicle, has been a primary mode of experiencing and appreciating park landscapes, and an integral part of park design, since at least the 18th century. The design of various modes of public circulation was particularly significant in 19th-century municipal park design, as at Central Park. If the national park public still clings to the autonomy and experience provided by automobiles, it may not just be out of laziness. Alternative transportation, in many cases, actually implies an alternative national park experience. That alternative experience must be more, not less, inspiring to succeed.

NPS has also recently sponsored the Designing the Parks initiative, which has produced another source of new visions of park design that attempt to address the changes in ecological and cultural conditions we are now experiencing. Through conferences, a student design competition, and its website (designingtheparks.org), the NPS organizers have identified a set of park design principles, and tested them through theoretical projects in seven national parks. Created by groups of students and faculty from a diverse selection of graduate design schools, these projects illustrate how much has changed, at least for this generation of landscape architects, planners, preservationists, and architects. Designing the Parks has been an impressive effort, and one made particularly timely by the fact that in recent years NPS has steadily divested itself of in-house design professionals. Earlier eras of NPS design were planned and executed mainly by NPS personnel. Collaboration with other agencies, such as the Bureau of Public Roads, and the services of design consultants, especially architects, has always been significant. But only in recent years has NPS looked to design consultants without its own strong group of in-house professionals to articulate a program of design principles, schematic designs, and specific requirements. Consultants may be very good at providing certain services, but they cannot provide an agency with the reasons, purposes, and guidelines for those services. The Designing the Parks initiative is a very good first step at exploring new ways for NPS to engage these questions in an era of limited in-house expertise, in which partnerships with universities and nonprofit organizations will become even more essential than they already are.

How far can new ideas, such as those students put forward in their Designing the Parks projects, be allowed to go? Put another way, when will NPS planning and design policies and practices catch up with the existing demographic and environmental trends that have altered the situation of every unit of the national park system? In 1916, the National Park Service itself was created to answer these kinds of questions and to enforce standards and policies across the system from a new and centralized administration. A relatively small group of Mission 66 planners also applied system-wide policies and design standards, continuing to assure a minimum level of service and a consistently identifiable look to all national park developed areas. Today, it is apparent that the new iteration of the NPS design tradition taking shape will not be the work of an in-house cadre of designers and officials in Washington; it is evolving through the many partnerships of almost every description that have been forged, especially over the last twenty years, throughout the national park system. With private nonprofit groups, land trusts, and land management agencies at various levels of government, national park managers have already largely re-invented NPS as a decentralized, partnership-driven organization, facilitating new models of conservation and public engagement. Individually and in groups, the managers of dozens of national parks, historic sites, and recreation areas are actively engaged in devising new, diverse visions for ways in which the public can become more engaged and have more profound experiences of scenic and cultural landscapes.

This is an exciting time, despite (in part because of) reduced federal budgets. But can we say what the new, decentralized iteration of NPS design tradition is, or will be, over the next hundred years? Will there be a systematic consistency of design principles, even within an official culture of decentralized, flexible partnerships that respond to local constituencies, exploit new sources of funding, and benefit from their own political coalitions? This has been and will remain a principal challenge for NPS as it approaches its centennial. These are vital questions if we believe significant redevelopment—including the removal of facilities in some cases—will be necessary in coming decades for parks and historic sites of all types to continue to fulfill the traditional promise of preservation combined with public enjoyment. Whether the necessity of change is accepted or not, it is going on anyway in many units of the park system. Partnerships and entrance fees, as well as regular appropriations, are driving a new era of park development. The dangers of ad hoc and inappropriate development are as real as they were in 1916.

Will the NPS design tradition be successfully redefined as the means of assuring unified policies and the identity of the system? The eventual alternative is, arguably, the effective disbandment of NPS as a national organization, and the undoing of the 1916 legislation even as it is being celebrated. The NPS design tradition remains relevant, but it demands periodic, creative, and system-wide reformulation. Park superintendents and their partners, in the best cases (which are too numerous to cite fairly here), are showing the way. But the agency as a whole needs to do more. Whatever one thinks of Mission 66, it left a legacy not only of buildings and developed areas, but of a greatly expanded and diversified park system, an enlarged and professionalized agency staff, and a congressional commitment to the values of national parks. What will the centennial legacy be, after a period of self-examination and celebration? Using this anniversary as the catalyst for renewing its bureaucratic identity

and purpose, NPS should re-examine and reconceive its design tradition as the means of perpetuating the vital public purposes of the national park system.

Acknowledgments
The author would like to thank Rolf Diamant for his comments and advice on this essay.

Ethan Carr is associate professor of landscape architecture at the University of Massachusetts, Amherst.

Letter from Woodstock

Rolf Diamant

Stewards of Our Heritage

This fourth Letter from Woodstock is actually being written in Denver, Colorado, where I am attending this year's George Wright Conference. I have been attending these gatherings for almost 20 years and have seen how the conferences grow and evolve in breadth and sophistication. The participants in this conference are younger, more diverse, and more international. There are also more professional presentations from Parks Canada, as they have sent their largest team to date to a GWS meeting. The Canadians are led by CEO Alan Latourelle and Mike Wong, who is also serving as regional vice chair of IUCN's World Commission on Parks and Protected Areas for North America. On a personal note, it was particularly satisfying to see two long-time friends and mentors—Deny Galvin and Hugh Miller—recognized with GWS awards for their remarkable National Park Service (NPS) careers and continuing good work and intellectual leadership in the stewardship of parks and protected areas.

Absent, of course, are our US government friends and colleagues. In the end, they were forced to withdraw because of the automatic, across-the-board budget cuts known as "sequestration." The dramatic gesture by the Department of Interior blocking the attendance of *all* agency participants is troubling enough, but the department's earlier decision, preceding the budget sequestration, to place an arbitrary cap on professional conference participation, is more disturbing and potentially more harmful in the long run. The effects of the cap are compounded by a cumbersome and unworkable conference approval process that makes it impossible for GWS and other conference organizers to plan national-level meetings. Together, the cap and the approval process constitute a major retreat from the Interior De-

The George Wright Forum, vol. 30, no. 1, pp. 12–13 (2013).

ISSN 0732-4715. Please direct all permissions requests to info@georgewright.org.

partment's very public commitment to "ensure and maintain the integrity of scientific and scholarly activities of its professional employees." This is really a missed opportunity for low-cost, high-value professional development for so many field-level, up-and-coming staff of the National Park Service, but ultimately it will be the American people and the nation's natural and cultural heritage that will shoulder the downstream consequences of such a retreat. Let us hope the long-standing and productive partnership between federal agencies and the George Wright Society is resilient enough to be sustained in difficult times, and that the Society's goal of advancing knowledge, encouraging communication, and promoting stewardship on behalf of people, parks and protected areas, never falters or fails.

This year's GWS conference also included a preview of the next IUCN World Parks Congress that will take place in 2014 in Sydney, Australia. I hope that the organizers devote some part of the Congress program to specifically address the growing challenge to the governance of parks and protected areas posed by an era of deepening austerity and government retrenchment. Coupled with the concurrent demographic shifts and a narrowing of traditional park constituencies, these forces have the potential to marginalize the importance of parks and protected areas and erode their perceived value and usefulness to society.

The US National Park Service as it prepares for its centennial in 2016 is faced with a similar challenge. Recently, perhaps with this in mind, the National Park Foundation, the congressionally chartered non-profit park philanthropy, retained the services of a well-known advertising agency in advance of the centennial. The intention of the foundation is to launch a national marketing campaign "to preserve and support our nation's best idea—the national parks." However, I suggest this theme might be reconsidered—broadening the emphasis beyond the parks themselves—to also highlight the many ways national parks and programs "preserve and support" the well-being and aspirations of communities and people who use them. Former NPS Director Roger Kennedy often talked about the "usefulness" of the National Park Service as exemplified by the agency's emergency conservation programs for the unemployed during the Great Depression. Perhaps now more than ever, parks and park programs can help people gain a better understanding of a constantly changing and increasingly complex world. Parks can also be the venue for hands-on projects and activities that build self-confidence and proficiency in meaningful civic engagement and sustainable practices.

A writer in my home state of Vermont, John Elder, once wrote, "We must pursue stewardship not simply as the maintenance of valuable resources, but also as a way of fostering a broader experience of democracy and community." Or as Deny Galvin put it: "We need to be recognized as the stewards of our heritage rather than managers of parks."

The Heart of the Matter

New essential reading on parks, protected areas, and cultural sites

Museums, Monuments, and National Parks: Toward a New Genealogy of Public History, by Denise D. Meringolo. Amherst and Boston: University of Massachusetts Press, 2012.

Reviewed by John H. Sprinkle, Jr.

On April 20, 1970, the former National Park Service historian Charles Porter reminisced with Charles Hosmer about the operation of the agency's history office during the 1930s and 1940s. Porter recalled Verne Chatelain, who in 1931 had been hired as the agency's first historian, as "a constructive thinker" who was "way ahead of his time" and as "someone who had a real vision of what the historical work of the Federal Government ought to be like."[1] In many ways Chatelain, as one of the first federally sponsored public historians, is the hero of Denise Meringolo's recent work, *Museums, Monuments and National Parks.* In designing the National Park Service's history program, Chatelain successfully crafted a bureaucratic system that reinvigorated the American narrative for those to whom it had become "a dull recital of meaningless facts" and recreated "something of the color, the pageantry, and the dignity of our national past" (p. 106). Meringolo places the establishment of the park history program within a long context of changing attitudes regarding conservation and the appropriate management of federal lands. Anyone interested in the history of conservation, the national park system, or the public history movement should read *Museums, Monuments and National Parks*.

Based on her 2005 dissertation from The George Washington University, the book is divided into three parts bound together by a prologue and a conclusion. In it Meringolo "seeks to challenge received wisdom regarding the professionalization of public history and argues that the effort to define public history will be improved by examining its emergence as a multidisciplinary government job" (p. xxvi). She documents that deliberations between the Smithsonian Institution and the National Park Service were vital in giving "form to the foundations of public history" and forecasted "current debates about the role of historical interpretation in public service" (p. xxvii).

Focusing on how the federal government created methods for describing and categorizing the vast western portions of the contiguous United States, Meringolo first reviews developments during the period from the mid-19th century through the establishment of the National Park Service in 1916. While leaders such as John Quincy Adams thought the national government should engage in scientific investigations to gather information

The George Wright Forum, vol. 30, no. 1, pp. 14–17 (2013).

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in support of agriculture, commerce, arts, and industry, others in the Congress were less sanguine, arguing during debates over the establishment of the Smithsonian Institution that research and education were not federal prerogatives and that such studies might compromise states' rights.

"Between 1870 and 1916 the human past became visible as a national resource worthy of protection in an era of relentless change" and it was becoming apparent that it was the federal government's job to manage these resources (p. 42). Federally owned landscapes were enormous, poorly understood, and more than simply beautiful—they held the promise of recreation and enjoyment that might balance the impact of modernization. Interestingly, the most picturesque landscapes—some of which would be set aside for conservation—were considered from an economic point of view as being "useless, too wild and inaccessible to be valuable to industry or agriculture" (p. 41). Yet places like Yellowstone were recognized as being "unmatched anywhere in the world and stood as a testament to American exceptionalism" (p. 41).

Addressing the diversity of federal designations during the second half of the 19th century, the Antiquities Act of 1906 standardized the recognition of federally protected areas and 20 national monuments were established in its first decade of operation. "As the number of federally protected sites expanded, so did debate about the standards guiding site selection and concerns about the inefficient federal approach to park management" (p. 48). The inherent conflict between providing public accessibility and resource protection illustrated two distinct management philosophies: one pragmatic, the other romantic. Under Director Horace Albright the Park Service developed educational programs and on-site museums as "a safety valve, providing visitors with the appearance of intimacy while establishing clear boundaries between them and the park landscape" (p. 55).

From the establishment of the Smithsonian Institution in 1846 to the creation of the National Park Service in 1916, the American landscape was transformed. Federal lands were first seen as source of raw materials for economic development and military defense and their management reflected national attitudes towards "nature, federal authority, intellectual expertise, and entrepreneurial innovation." Viewing the continent as a "resource worthy of protection and needing careful management," the federal government developed policies that mediated "the difference between usefulness and uselessness, experts and amateurs, legitimate research and treasure hunting, education and recreation" (p. 55).

The second part of Meringolo's book documents how during the first 20 years of its operation the National Park Service turned "nature into history" and laid the foundation for the public history movement. Throughout the early 20th century, the Park Service and the Smithsonian Institution competed over the meaning and usefulness of artifacts yielded from federal properties. As the Park Service's collection of historic sites grew, the agency also expanded its museum program as part of a comprehensive interpretive plan that engaged visitors and protected unique and irreplaceable resources. By sponsoring on-site museums at park units, NPS archaeologist Jess Nusbaum and others challenged the Smithsonian's role as the only official federal repository for archaeological materials. During the 1920s, "the specific introduction of archaeology as an intellectual framework for understanding artifacts in parks challenged Smithsonian curators' assumptions about the meaning of artifacts

and created a framework for thinking beyond science, to consider the influence of history and culture on the landscape" (p. 73). For the Park Service, the best use of artifacts was in interpretive and entertaining exhibits housed at museums seated within the landscape in which the remains were excavated.

To traditional Park Service supporters, any expansion of the agency's mission to include the stewardship of historical units was controversial and "exposed knotty philosophical differences" about the future of the system (p. 85). While areas east of the Mississippi River did not have the same natural and scenic qualities as those found in the West, they did contain important historical landscapes representing the American Revolution and the Civil War. "It was clear that the Park Service needed a new set of experts to help justify the creation of eastern parks" (p. 86) and through this process, Meringolo argues, the Park Service established the foundations of public history today. As early as 1917, Albright began to argue for the transfer of the military parks from the War Department. His campaign concluded successfully in July 1933—just before his retirement from the agency—with Executive Orders 6166 and 6228, after which two-thirds of the system's units were historical in nature.

This explosion of historic parks paralleled the NPS leadership's emphasis on the educational promise of these resources. Beyond an appreciation for nature, the parks, argued anthropologist Clark Wissler from the American Museum of Natural History, presented a great opportunity to "teach the greater lessons of human history" (p. 92). Supported by the conclusions of a variety of committees—filled with outside experts such as Wissler—the Park Service established its Branch of Research and Education in July 1930, followed closely the next year with the hiring of the agency's first chief historian, Verne Chatelain. Arriving from the Minnesota Historical Society, Chatelain's mission was to transform "a rather disconnected group of regionally significant places into a truly national collection" (p. 99). According to Meringolo, Chatelain's approach was both pragmatic and ideological. While he believed that "historians could play a powerful public role, transforming individual sites into a map of national identity that visitors might use to locate themselves inside the American past" (p. 108), he also realized that the resources available to the Park Service were extremely limited and that, by necessity, political and economic forces would govern the development of existing sites and the selection of new sites.

Years later Chatelain said that "the New Deal was just made to order for us." As federal programs designed to counter the worst effects of the Great Depression came online, the Park Service's budget nearly tripled, with 40% of its funding coming from what was known as "emergency work." Due to the worsening economy, the agency was flooded with requests from local preservationists seeking federal stewardship for a wide range of historic sites. These appeals allowed Chatelain and his staff to come forward with a servicewide plan to coordinate and rationalize the agency's historic preservation policies.

Described by Meringolo as an "antidote to the consumerism, industrialism, and urbanism that had come to dominate, and ultimately endanger American life" (p. 118) in the 1930s, the "documentary impulse" (illustrated by the creation of the Historic American Buildings Survey [HABS] in December 1933) was expanded by the creation of the Historic Sites Survey as part of the implementation of the Historic Sites Act in 1935. Working with the newly constituted National Park System Advisory Board, Chatelain created a thematic

approach to the study of new park units that could illustrate a comprehensive view of American history and that incorporated regional perspectives as well as concepts of historical, aesthetic, and scientific values. In 1936 Verne Chatelain's career with the National Park Service was cut short, apparently over issues arising from the inauthentic reconstruction of Wakefield, George Washington's birthplace on Virginia's Northern Neck. Ironically, the controversy caused by "Fakefield," as it was sometimes called, solidified, for more than two decades, the significant role of the history office he created in the overall management of the National Park Service.[2]

In part three of this book Meringolo summarizes her story and expands the "genealogy" of the public history movement, tracing how, from 1916 to 1936, the National Park Service established history as an accepted function of government service and crafted a new profession. History became a management tool for the expansion of the park system and the further development of existing parks through interpretation and museum programs.

This work is significant because it correctly argues that the "decisions made by Park Service historians during the 1930s had a long and profound influence on the nation's historical landscape" (p. xxxi). Not surprisingly, given the book's subtitle, it also correctly focuses on the role that individuals like Verne Chatelain and others played in shaping the system. As was her goal, Meringolo has successfully shifted the public history debate "away from matters of definition and toward questions regarding the larger value of history practiced as public service" (p. xxxii). In addition, she has added an important layer of context to previous studies of the development of the National Park Service.[3] For that we are in her debt.

The views and conclusions in this essay are those of the author and should not be interpreted as representing the opinions or policies of the National Park Service or the United States government.

Endnotes

1. Interview with Charles Porter, April 20, 1970. Papers of Charles B. Hosmer, Archives of American Art, Smithsonian Institution, p. 11.
2. Ibid., p. 7.
3. For example, see Edwin C. Bearss, "The National Park Service and its History Program: 1964–1986—An Overview," *The Public Historian*, vol. 9, no. 2 (Spring 1987), pp. 10–18; Harlan D. Unrau and G. Frank Williss, "To Preserve the Nation's Past: The Growth of Historic Preservation in the National Park Service during the 1930s." *The Public Historian*, vol. 9, no. 2, (Spring 1987), pp. 19–49; and Charles B. Hosmer, Jr., "Verne E. Chatelain and the Development of the Branch of History of the National Park Service," *The Public Historian*, vol. 16, no. 1 (Winter 1994), pp. 24–38.

The World Heritage Convention and the National Park Service, 1993–2009

Peter Stott

Introduction

This essay is the last in a series of three on the role of the National Park Service (NPS) in the World Heritage Convention.[1] As recounted in the two preceding essays, the Convention Concerning the Protection of the World Cultural and Natural Heritage (the "World Heritage Convention"), was adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1972. The United States, and the National Park Service in particular, had important roles in its development and in negotiations leading to its adoption. The Office of International Affairs (OIA), which celebrated its 50th anniversary in 2011, participated in all phases of that development. This essay recounts the US role between the 1992 twentieth anniversary session in Santa Fe, New Mexico, and the end of its fourth mandate on the 21-member World Heritage Committee in 2009. The essay also pays tribute to the late Robert C. Milne (1939–2012), the long-time chief of OIA, 1975–1995, whose efforts provided the foundation for much of OIA's work in the first decades of the convention. (Milne's death on 23 September 2012 followed less than a week after that of his long-time friend Russell Train, who is known as the "father of World Heritage.") As this essay opens, Milne was the chairman of the World Heritage Committee, as well as being the head of the US delegation to the committee in 1993 and 1994.

Overview

There is a certain symmetry in the two terms of the United States on the World Heritage Committee that are covered by this essay, 1993–1999 and 2005–2009. Between 1993 and 1999, despite the continued absence of the US from UNESCO, the US continued its strong role in committee activities, reinforcing the committee's role as a technical body responsible for the conservation of sites. Initially as chair of the committee, and subsequently as a committee member, the US actively supported the UNESCO World Heritage Centre as an autonomous unit that could support the committee as a professional and independent

The George Wright Forum, vol. 30, no. 1, pp. 18–44 (2013).

ISSN 0732-4715. Please direct all permissions requests to info@georgewright.org.

institution. Both US inscriptions on the List of World Heritage in Danger—of Everglades in 1993 and of Yellowstone in 1995—had domestic and international purposes: to raise public and congressional awareness on the critical needs of these two sites, and to demonstrate to the world the positive results that could flow from inscription on the List in Danger. At the same time, the US delegation played key diplomatic roles in resolving sensitive issues, such as the nomination of Hiroshima (Japan) in 1996; or of the proposal in 1999 to include Kakadu National Park (Australia) on the List of World Heritage in Danger.

The US left the committee at the end of 1999, and for several years played only a minimal role as an observer delegation. In 2003, the administration of George W. Bush returned the United States to membership in UNESCO after an 18-year absence from the organization. But the US return (and its election to the World Heritage Committee two years later) came without the strong NPS leadership that had characterized the earlier term when the US had been outside the organization. The frequent absence of strong leadership from the committee chair or articulate, conservation-minded committee members has often left it buffeted by the political demands of individual states parties or by the policy imperatives of UNESCO, increasingly ignoring the technical recommendations given by the committee's advisory bodies.

The initial appearance of the Department of the Interior's deputy assistant secretary at the head of the observer delegation at the committee's 2003 Extraordinary Session was to oppose the committee's right to place sites on the Danger List without the agreement of the state party, reversing the position the US had taken throughout previous administrations. Nevertheless, the department's support for World Heritage saw the publication of a new edition of the US Tentative List in 2008 and the successful use of the convention to oppose mining threats to the binational US–Canadian site, Waterton–Glacier International Peace Park, an intervention now widely recognized as one of the success stories of the convention.

Everglades National Park and the List in Danger

The World Heritage Committee held its 17th session in Cartagena, Colombia, in early December 1993. For the US, the most significant event was the inscription of Everglades National Park on the List of World Heritage in Danger. "There were a lot of people," former OIA World Heritage specialist Richard Cook recalled, who felt that Everglades should have been listed as endangered at the time it was inscribed.… [Its problems] go back to when the park was established in '47, and the first levies and canals were put in in '48. It was almost given a death wish at the beginning!"[2] The immediate event that triggered the listing was the devastation caused by Hurricane Andrew in August 1992. Dick Ring, who had arrived as superintendent at the park only a month before the hurricane struck, provided the committee with an update on the condition of the Everglades.

In the discussion leading to the Danger Listing, the United States pointedly refrained from intervening, in order to demonstrate support and reinforce the newly revised *Operational Guidelines*, which did not require participation in the decision by the country concerned. Following the Committee decision to inscribe the site on the Danger List, Robert Milne, the chief US delegate, noted that, as in other sites on the Danger List, the function of the list was to aid in a site's recovery, giving it added attention and the consequent political momentum

for improvement that was so often necessary. Recognizing the long-term nature of both the threats and the solutions, NPS authorities expected the site to remain on the List in Danger for a decade or more. (The site was removed from the List in Danger at the request of the Bush administration in 2007 [see below], but was reinstated three years later.)

The downsizing of OIA

In the meantime, a government-wide downsizing had a major impact on NPS programs and on OIA in particular. Bill Clinton had come into office on a pledge to reduce the size of government. In February 1993 he announced plans to reduce civilian federal employment by 100,000 by the end of 1995, to be spread evenly across all departments. The new Park Service Director, Roger Kennedy, refused to allow the Office of Management and Budget to determine NPS priorities and instead announced that the agency would direct its own reorganization to meet the government's reduction goals. Vacancies in the parks were filled by staff in Washington, draining much of the professional staff out of headquarters positions. "We ended up with something like four secretaries and three or four professionals," former OIA Chief Sharon Cleary recalled. "It was like a … 50% cut in staff in International Affairs. And it was called 'Operation Opportunity.'"[3]

"Op-Op," as it was nicknamed, moved Rick Cook, OIA's longest continuously serving Park Service staff with the World Heritage program, to Everglades National Park in 1994. But the decade had already seen other losses to the program. The International Short Course in the Administration of National Parks and Equivalent Reserves, the pioneering NPS program to share Park Service expertise with park agencies around the world, had come to an end in 1991; by the end of the decade, the links between the Peace Corps and OIA would also cease, and in 2001 the interagency agreement that had supported the Peace Corps program since 1972 was allowed to expire.

Cleary became the new chief of International Affairs in 1994, replacing the retiring Rob Milne.[4] Cleary had been an officer in the State Department's Bureau of Oceans and International Environmental and Scientific Affairs focused on US Agency for International Development (USAID) projects. Her success there had impressed Milne and former NPS Director Bill Mott enough so that they recruited her to run USAID projects for OIA, at that time often mired in bureaucracy. Once in OIA, Milne recalled, Cleary "proceeded to get for us unprecedented USAID funds and resolve many intellectual property rights issues that were holding up bi-national and multilateral agreements for us."[5]

Internally, with Director Kennedy's support, Cleary began to reorient the office. Whereas previous directors, like Mott, had enthusiastically endorsed the international role that the Park Service could play in bilateral programs with sister agencies, Kennedy thought the Park Service had no role in international conservation activities, which he thought were more properly the province of his former institution, the Smithsonian.

The last US nominations

The last nominations to be presented to the committee before the United States decided to take a "pause" were three widely differing proposals brought to the committee's 1995 session

in Berlin. Of the three, only Carlsbad Caverns National Park in New Mexico was inscribed without debate.

Historic District of Savannah. The proposal to list the Historic District of Savannah, Georgia, was less successful. Although Savannah's Historic District had been included on the US Tentative List when it was first published in 1982, OIA was unable to identify how it could be proposed without obtaining the agreement of all property owners in the district, a US requirement for any nominations to the World Heritage List. As a result, a nomination was prepared for the historic plan itself—the network of streets and squares that had been laid out by James Oglethorpe—but without including any of the privately owned buildings. The city was insistent that it be proposed, and OIA forwarded the nomination to the World Heritage Centre in October 1994.

Predictably, both the International Council on Monuments and Sites (ICOMOS, responsible for evaluating cultural properties for the committee) and the committee thought that the exclusion of the entire historic urban fabric was "not in the spirit of the World Heritage Convention," and deferred the nomination until the entire townscape could be nominated, a condition that the US delegation acknowledged could not be met.[6]

Waterton–Glacier International Peace Park (with Canada). The nomination of Glacier National Park (Figure 1), ultimately inscribed in 1995 with its adjacent Canadian

Figure 1. Glacier National Park (Going to the Sun Road), August 2007. National Park Service photo by Jonathan Putnam, NPS Office of International Affairs.

counterpart, Waterton Lakes National Park, had the longest road to inscription of any of the US nominations. When the site was first submitted in 1984, IUCN (then the International Union for the Conservation of Nature and Natural Resources, responsible for evaluating natural properties for the Committee), concluded that its significance was less for its glaciers and plant biomes than as an international peace park. (With Waterton Lakes in Alberta, the parks had been designated the world's first international peace park in 1932.) With the agreement of Canada, a joint nomination was prepared for submission in December 1985. However, at the last minute, the provincial government of British Columbia (which borders on the park to the west) halted the process, considering that the nomination would jeopardize possible mining activities and "ongoing studies of the proposed Cabin Creek coal mine by the International Joint Commission [for the US–Canada Boundary Waters Treaty]."[7]

The Cabin Creek Coal mine on a tributary to the upper reaches of the Flathead River in British Columbia had been a source of concern between Montana and British Columbia since it was proposed in 1975. The river flows into the US along the western border of Glacier National Park, and environmental groups had quickly mobilized in opposition. In 1976, the US portion of the Flathead River was designated a Wild and Scenic River. Ten years later, just as the joint Glacier–Waterton Lakes nomination was being prepared, the US and Canada brought the dispute to the International Joint Commission (IJC), which in 1988 determined that pollution from the coal mine six miles north of Glacier National Park would violate the 1909 Boundary Waters Treaty between the United States and Canada. (Almost a quarter-century after the Cabin Creek decision, mining in the Flathead basin would be the source of another dispute, resolved in large part because of the Waterton–Glacier World Heritage designation. See below.)

In 1993, Dave Mihalic, newly appointed superintendent at Glacier National Park, decided to revive the nomination. With OIA, Mihalic set about assembling a new nomination, submitted in 1993 as the "Glacier and Waterton Lakes National Parks." IUCN, however, was still not enthusiastic. The IUCN evaluator thought that the site was not a strong candidate, considering the presence nearby of the Canadian Rocky Mountains Parks World Heritage Site. However, in extensive debate, often heated argument, and a culminating IUCN site visit in October 1995, OIA and the park made the case that the "tri-ocean hydrographical divide" (separating the Pacific, Atlantic and Arctic oceans) and the physiographic interface of mountain and prairie ecosystems combine to make the area an "outstanding example of ongoing ecological and biological processes." IUCN's eventual positive recommendation cleared the way for its inscription at the December 1995 meeting,

Yellowstone National Park and the List of World Heritage in Danger

At the same 1995 committee session, Yellowstone National Park, the oldest US national park and among the first group of 12 sites to be inscribed on the World Heritage List in 1978, was inscribed on the List of World Heritage in Danger (Figure 2). Like the inscription of Everglades two years before, on the surface it must have seemed to the committee another instance in which the United States recognized that it could win public support to counter threats to one of its iconic World Heritage sites. The proposed operation of the New World Mine, just outside park boundaries, was widely believed to pose a serious threat to the Yellowstone's

Figure 2. Grand Canyon of the Yellowstone River, Yellowstone National Park. National Park Service photo by Jonathan Putnam, NPS Office of International Affairs.

water, recreational assets and wildlife habitats in the event of an accident. The director of the World Heritage Centre related the findings of the assessment mission that had taken place in September, and then informed the committee of the 37 North American leaders who joined the call for a Danger listing, including former President Jimmy Carter, Russell Train, former Secretary of the Interior Stewart Udall, several Hollywood actors, and past and present members of Congress.

The US pointedly did not take part in the debate over listing, considering, as it had in the case of Everglades two years before, that the decision was the committee's to make. When asked by the committee to comment, the US delegate said only, "The US is very much in favor of any action the Committee may wish to take at this time." Following the committee's decision, the delegation head, NPS Deputy Director John Reynolds, took the floor, recalling that his father had been a park ranger at Yellowstone when he was born, and Yellowstone was where he had spent the first eight years of his life. He told the committee "how much this hurt the United States to have this happen, [but] how it was absolutely the correct thing to do because of the conditions in Yellowstone."[8]

But although the inscription of Yellowstone on the Danger List went smoothly through the committee, it would have a significantly more lasting impact on the US World Heritage program. The issue had been first brought to the attention of the committee in letters to the World Heritage Centre the preceding February by environmental organizations. In

June, Assistant Secretary of the Interior for Fish and Wildlife and Parks George Frampton expressed the concerns of the department over the threats and invited the committee and IUCN to undertake an assessment mission.

At the invitation of the National Park Service, the mission arrived in early September for a three-day fact-finding mission. The initial concern of the team, as reported in the local press, was that the entire "Yellowstone ecosystem" should be protected. According to the *Billings Gazette*, the World Heritage Committee chairman recommended that the US "expand Yellowstone Park to encompass millions of acres of national forest that surround it" since the forest belonged to the same ecosystem. The *Casper Star Tribune* reported that, according to the World Heritage Centre's director, with the 1978 nomination the US effectively "pledged to manage the surrounding lands in a way that would protect the park."[9]

The outcry that followed was immediate, but although members of the mission subsequently retracted their statements over the protection that should be afforded areas outside of the park, the damage had been done. The concern was raised that federal land-use decisions, dictated by World Heritage designations, "could undermine local land-use decisions … perhaps without the advice or knowledge of local authorities or property owners." The following June, Congressman Don Young of Alaska, chairman of the House Resources Committee, began hearings on an "American Land Sovereignty Protection Act" to amend the National Historic Preservation Act by requiring Congress to approve any nomination of sites to the World Heritage List. Although the House of Representatives passed various versions of the act in successive Congresses, the related bills never passed the Senate.[10]

The contrast between public opinion over the inclusion of Everglades National Park on the List in Danger and that of Yellowstone two years later is stark: in retrospect, it seems clear that the damage was done not so much by the act of inscription as by the publicity surrounding the initial mission. (No comparable mission had taken place before the Everglades inscription, and Dick Ring had carefully prepared all levels of government in advance.) For the department and park staff, however, the visibility of the mission was part of the message. They had not anticipated the reaction, and the controversy would have lasting repercussions.

In the view of William W. McIlhenny, chief of the US Observer Mission in Paris between 1995 and 1999, the greatest impact of the controversy was in scaring the NPS international office and the political leadership there, dependent as they were on Congress for appropriations for all of their activities. "I think they came to see participation as a vulnerability, as something that really didn't gain us anything and entailed a net risk for them. So that it dampened down OIA's enthusiasm for participation for a while."[11]

At the same time McIlhenny acknowledged the concern already raised by the committee that states parties already well-represented on the World Heritage List should refrain from new nominations. It was a point taken up by the new OIA chief, Sharon Cleary: "When is enough enough?"

> I know at one point while I was heading up OIA, I looked at [the World Heritage List], and I said, 'We're going to take a pause, because we've got 20 sites on this List,

> and you know what? There are countries that still haven't signed on.... Someone has to set the example.'[12]

After the inscription of Carlsbad Caverns National Park and the joint nomination with Canada of Waterton–Glacier International Peace Park, the US would make no further nominations to the World Heritage List for another fifteen years. It would not be until 2010 that another US site would be inscribed, the northwest Hawaiian island chain, Papahanaumokuakea Marine National Monument, following the successful revision of the US Tentative List in 2008.

Japanese nomination of Hiroshima

For the US as a committee member at its 1996 session in Merida, Mexico, the primary issue was the Japanese nomination of Hiroshima's Genbaku Dome (the only structure left standing in the area where the first atomic bomb exploded on 6 August 1945), which was presented to mark the 50th anniversary of the dropping of the bomb. What made it especially difficult—in a US presidential election year—was the very heated political atmosphere that then existed over the Smithsonian Institution's controversial exhibit of the *Enola Gay*, in which conservative historians questioned the exhibit's interpretation of events surrounding the dropping of the bomb.

For the State Department's Bill McIlhenny, it was a classic example of a case where a decision needed to be taken by diplomats, rather than technical experts:

> I think politically we were sort of afraid this could stir up even more anti-World Heritage sentiment that had been building ... after Yellowstone was inscribed on the List of World Heritage in Danger.... So, it was one of these things where we took soundings and talked to other delegations and ultimately I remember getting clear instructions from Washington that we were to work for the smooth adoption of that. (This was at the eleventh hour.)[13]

At the committee session in Mexico in December, there was much debate about the nomination, especially the fact that it was proposed under criterion (vi) only—the associative category that the committee usually avoided using by itself. And although the US delegation was supportive of the nomination and worked with other delegations in the corridors to promote it, in the end the Clinton Administration, through the State Department, insisted that the US "disassociate itself" from the vote on the nomination. Reflecting the very public debate over the Smithsonian's exhibit, the delegation's official statement, published as part of the committee's report, regretted the absence of historical perspective in the nomination. "The events antecedent to the United States' use of atomic weapons to end World War II are key to understanding the tragedy of Hiroshima. Any examination of the period leading up to 1945 should be placed in the appropriate historical context."[14]

But in the end, Reynolds recalled, "the only news coverage that I know of actually was right after the vote.... I was met coming out of the Committee room by a gaggle of Japanese TV reporters. But that went fine. And I think it's because of that strategy we worked out—the

strategy basically was: we did not vote for it, but we worked quietly behind the scenes to make sure that it passed."[15]

The session was Deputy Director John Reynolds' second as head of the US delegation, but he gave the delegation a stature that most, increasingly staffed by UNESCO ambassadors, lacked. A landscape architect by training, Reynolds had grown up in the Park Service. "He gave us particular credibility," McIlhenny remembered,

> and in that strange situation where we were not a member of UNESCO, and yet we were participating very wholesomely and funding generously this UNESCO program, there was some political resentment against us. Had we tried to have a political head of delegation, I think we would actually have had more drag on what we were trying to do. The fact that we had someone like John Reynolds, whose integrity was so respected, who was understood to be such a committed conservationist and a no-bullshit guy, and someone who knew what he was talking about—to have someone of his technical caliber gave us an influence and credibility in our participation at the Committee meetings that it would have been impossible to have if, for example, I had been the nominal head of delegation, or a political appointee from Washington.[16]

"You know, I stop and think," former OIA Chief Rob Milne reflected,

> if things had been a little different.... To have the U.S. delegation headed by John Reynolds for more than just a few years would have made an immense difference. He had both the weight, and the experience and the vision to be very good ... very good for the *Committee*. He was a very understanding guy; he empathized with issues and situations; and [he could] be creative ... and deal with the politics with grace and success.[17]

'W' National Park, Niger, and the authority of the committee

A foretaste of the politicization that would come to dog the committee a decade later can be seen in the contentious debate at the 1996 session over the inscription of 'W' National Park in Niger, a portion of a larger tri-national park on the Niger River shared between Niger, Burkina Faso, and Benin. The heavy lobbying by Niger (whose head of delegation was also the committee's rapporteur) distressed many observers, but despite clear and cogent arguments by IUCN, the US and German delegations, and others, the site was inscribed by a vote of 12 to 4 with 3 abstentions. In a strongly worded rebuke, John Reynolds, speaking for the US delegation, criticized the committee for allowing itself to be manipulated. His statement, which he asked be annexed to the report, and which also has application to more recent actions of the committee, reads in part:

> Divergence from the *Operational Guidelines* now and then, especially when not related directly to the main purpose of this body is certainly tolerable, so long as all delegations, large and small are treated fairly.... The criteria are tough and comprehensive because of the need to protect the integrity of this body so that we are seen as the highest [forum] of conservation and preservation decision

> making....We made a sham of our integrity this week.... Why is that important? It is important, because conservation and preservation of the best of this world is a constant battle, and an uphill battle at that. 'The force' is not always, perhaps not even usually, with us. Our most important weapon is our integrity.... We tarnished our integrity by not following our own procedures. The result is that we may not be as well respected when we leave as we were when we got here.[18]

Despite the minority position the US took over the nomination of 'W' National Park, the US expectations for the committee as a strong and independent technical body were widely shared among other members. At its session in Naples a year later, the chairman was the Italian international jurist and legal advisor to the Italian Ministry of Cultural Affairs, Francesco Francioni. In a strongly worded debate with the UNESCO comptroller, recorded in the committee's report of the meeting, the chairman

> challenged the suggestion that the Committee was in any way subordinate to UNESCO. He characterized the Committee and UNESCO as institutions of equal standing that ought to operate in a cooperative manner and described as "wrong" the "idea that the World Heritage Committee is not in a position to give opinions on activities, initiatives or programmes that affect the very object and purpose of the World Heritage Convention.[19]

"It should be clear," Francioni stated, "that the World Heritage Committee is an intergovernmental body elected by the States Parties to the World Heritage Convention, made up of sovereign states accountable to the General Assembly of States Parties."[20]

In the absence of a strong chairman, the authority of the committee has often been manipulated to benefit the political aims of individual states parties or, for that matter, the promotional policies of UNESCO. Indeed, in the view of much of the public and the media, the role and responsibilities of the World Heritage Committee have been often confused by UNESCO activities undertaken on behalf of the convention and the committee. In particular, "ownership" of, and responsibility for, the World Heritage List is often mistakenly assigned to UNESCO, instead of to the independent and intergovernmental World Heritage Committee.

Kakadu National Park, Australia. The last major issue the US delegation dealt with before stepping off the committee, and one of the most significant for the committee in the 1990s, was the debate over the mining activities in an enclave within Kakadu National Park in Australia. It was a triumph of the delegation led by Karen Kovacs (later Karen Trevino) that, while it preserved the committee's right to inscribe a site on the List in Danger over the objections of Australia, it was able nevertheless to craft a diplomatic solution calling for corrective measures without inscription on the List in Danger.

Kovacs, who led the delegation in its last two years on the committee (1998–1999), was the assistant secretary of the interior's senior legal counselor. She brought to the delegation a close study of the legal aspects of the convention, which had been part of her law school thesis. This "intimacy" with the convention, she said, "fueled the conviction that Danger Listing was pretty much the only teeth the Convention has. I really did not want to be part of watering it down, or making it irrelevant."[21]

Kakadu's traditional owners, the Mirrar Aboriginal people, and many environmentalists, had argued that the proposed mine and related mining activities would endanger the Park's World Heritage values, a view vigorously contested by the Australian government. A fact-finding mission to Kakadu in November 1998, led by the committee chair, Francesco Francioni, concluded that the World Heritage values were threatened, and when the committee met in Kyoto a few weeks later, a number of committee members asked for immediate inscription on the List in Danger. The US was instrumental in developing a compromise position, and substantive consideration was delayed to permit additional review. A special meeting (the committee's "Third Extraordinary Session") was called for July 1999.

NPS Deputy Director John Reynolds described the unusual difficulties of the meeting:

> First, the primary issue, listing Kakadu was highly controversial because of the political situation in Australia. To make matters more difficult, the issues were ones of unusual technical difficulty because of the uranium mine and also the aboriginals. Second, the Australian Government was taking the issue directly to the Governments of the countries on the Committee at the highest possible level. Third, Australia is historically a highly respected and dependable ally of the United States, and, just to top it all off, Congressman Don Young, Chairman of the House Resources Committee, dispatched two members of his investigative staff to observe the entire meeting, with Congresswoman Helen Chenoweth arriving on the final day.[22]

Ultimately, it was Kovacs' recognition that a finding of potential dangers did not *automatically* require the committee to list a site on the Danger List that provided the solution to the ultimate consensus statement. In the end, the committee bypassed the question of Danger listing and developed a "programme of corrective measures" that were acceptable to Australia.

Disengagement, 1999–2002

The US did not run again for the committee at the General Assembly in October 1999. Except for four years in the mid-1980s, the US had served on the committee continuously from its first meeting in 1977 until 1999. The decision not to seek a third consecutive term was motivated at least in part by previously expressed US support for rotation of terms on the committee. In addition, both the State Department and the National Park Service undoubtedly hoped to keep a low profile, while debate over the role of the United States in international organizations was focused in Congress.

So, too, the lower priority for the Park Service's engagement in international activities, promoted under NPS Director Kennedy, also played out in NPS attendance at committee sessions. In the view of OIA Chief Sharon Cleary, there didn't seem to be any need to attend the committee session if the US was not on it.[23] As a result, no Interior Department representatives attended either of the committee sessions in 1999 or 2000, and only Cleary represented the department at the 2001 and 2002 meetings.

Reform

However, just as the US was disengaging from active participation in the convention, the

committee itself was embarking on a series of radical "reforms" that would significantly affect its own conduct over the next decade.

Three separate dynamics played out in the period 1999–2003. On the one hand, the committee's workload, under the pressure of a growing number of nominations, was becoming unmanageable.

At the same time, there were growing political demands by states to place their own sites on the World Heritage List, increasingly seen as a "right," rather than an obligation or a conservation responsibility. The "Global Strategy," defined in 1994 as a tool to achieving the 'democratization' of the World Heritage List, was designed to give a balanced distribution of World Heritage sites to all regions and all cultures. Now many states saw democratization of the committee as a means to achieving the goal of the Global Strategy. How could a committee of 21 members (as required by the convention) fairly represent (what was then) 160 states parties of the convention? they asked. A third dynamic, less visible than the other two, but which would also have long-term consequences, was the struggle for authority between the committee and the its seven-member executive bureau. With the increasing importance of nominations to many committee members, the bureau's prior review left them without an opportunity to defend their own nominations.

These dynamics all came to a head at the committee session in December 2000 in Cairns, Australia, with the reports from four separate working groups. Among other "reforms," the committee decided to recommend that candidates for the committee voluntarily reduce their terms of office from six to four years (simultaneously, they discouraged states from two or more consecutive mandates); they rejected proposals for subcommittees that had been designed to free up committee time (small delegations, which did not have enough members to participate, didn't wish to be 'left out'); they decided to set an annual limit to the number of nominations the committee would review (with exceptions), set to 30 for the next full cycle, and one per state party, although this would be subject to future review; they abolished "extraordinary" committee and bureau sessions; and they revised the committee's calendar so that in the future it, rather than the bureau, would meet in June, prior to the biennial General Assembly (Figure 3). (The bureau's original calendar slot in June gave it an agenda-setting role for the General Assembly.) The separate bureau session was relegated to a slot in March/April, but increasingly seen as redundant and irrelevant, bureau sessions held independently of committee meetings would be finally abolished in 2003. The result was to

Figure 3. Twenty-eighth Session of the World Heritage Committee in Suzhou, China, June 2004. Author's photo.

place an even greater workload on the annual committee session. (In two instances, in 2002 and 2004, unable to complete its regular agenda, the committee had to schedule a second "extraordinary" session to complete its work; and in 2012, the committee scheduled a 12-day working session.)

The "Cairns Decision" (later the "Cairns Suzhou Decision") has come to mean the limit on nominations, but in reality, the suite of "Cairns Decisions" as a whole had a greater impact on the future of the convention. In effect, it was at Cairns that the committee took a significant step from being an international tool for conservation to becoming a "geopolitical" instrument.

In a sense, the United States disengaged from World Heritage activities at just the wrong moment, and there is little evidence that it saw more than the symptoms of the struggle that was going on as the committee tried to grapple with its own reform.

Re-engagement

The US return to UNESCO in 2003 brought a reawakened interest by the Department of the Interior in the work of the Committee. Paul Hoffman, the former Director of the Chamber of Commerce in Cody, Wyoming, had been named the new Deputy Assistant Secretary for Fish and Wildlife and Parks in 2002. From Cody, one of Yellowstone's "gateway communities," Hoffman had a close-up view of the controversies which buffeted the park, including the New World Mine proposal. While he took no stock in UN conspiracy theories which often seemed to fill the mountain west news, he did think that communication—both by the mine proponents and by the NPS—had been poorly handled. An adversarial confrontation did not assist conservation, he believed. As a consequence, he shared the view of several like-minded states parties to the convention that the List in Danger designation would not accomplish the task the convention intended it to do if the state party was opposed to the designation.[24]

The first meeting Hoffman attended was the Sixth Extraordinary Session in March 2003. The most significant of the agenda items was the adoption of the revised *Operational Guidelines*, and in particular, the debate over state party consent to List in Danger inscription. A complete overhaul of the *Guidelines* had been one of the 'reform' tasks set by the committee in 1999, but despite two subsequent sessions and two special drafting sessions, it had been unable to agree on a new text. The chief obstacle had been over state party consent to inscription on the List of World Heritage in Danger. The March 2003 meeting, it was hoped, would finally bring closure to the issue.

In the debate on the issue, Hoffman recalled, most of the committee members speaking had favored a more explicit revised text in which inscription on the Danger List did not require state party consent. About two hours into the debate, the chair gave the floor to comments by the observer delegations. Hoffman read a prepared statement in which he reminded the committee that the United States was "the only developed nation with sites on the List of World Heritage in Danger." Its position was that inscription on the List in Danger "cannot and must not occur without the consent of the State Party on whose territory the property is situated."[25] Following Hoffman's lead, other observers, led by the Australian delegation, supported the US view, and a vigorous debate followed for several days, not resolved by the

establishment of a working group to reach consensus. In the end, the committee, unable to agree on a revised text, agreed that the existing *Guidelines* text concerning inscription on the List in Danger was adequate, and no change would be made.

Yellowstone comes off the List in Danger. When the Committee met three months later for its regular 2003 session, Hoffman, with his trademark cowboy hat, was already a familiar figure as a new controversy erupted over the proposal to remove Yellowstone from the List of World Heritage in Danger. The US had already submitted a report on the site, noting that the principal threat, from the proposed mine, had been resolved, and other, lesser threats, such as those to the bison and cutthroat trout populations, were also being addressed. IUCN had agreed with the assessment, and the draft decision prepared in advance of the committee session called for removing the site from the List in Danger.[26] However, two environmental groups opposed to the removal of Yellowstone from the Danger List, the Greater Yellowstone Coalition and the Natural Resources Defense Council, had rallied their members and inundated UNESCO with thousands of e-mail messages condemning the proposal. "And to a certain degree," Hoffman admitted, "I guess it achieved its desired purpose because it stimulated many members of the Committee to question whether the site should be delisted." The result, Hoffman said, was a long three-hour debate, only concluded with the concession by the US that it would continue to provide reports to the committee on progress in resolving the remaining issues facing the park.[27]

The new US Tentative List. The US Tentative List, with minor modifications, had existed almost unchanged since 1982. The April 2005 Expert Meeting in Kazan, Russia, to review how the concept of outstanding universal value could be applied consistently to sites being proposed for inscription, was. for Hoffman, the moment of inspiration: if Tentative Lists are "the test against which you measure outstanding universal value," then a revision to the old list was essential before the US could even consider nominating additional sites to the World Heritage List.[28]

On Hoffman's initiative, OIA re-engaged Jim Charleton, who had created the first Tentative List nearly a quarter of a century earlier. However, instead of a "top-down" approach, OIA solicited proposals from interested organizations who believed their properties met the criteria for inscription. Charleton designed an application form based largely on the existing World Heritage nomination form. OIA received 35 Tentative List proposals. After review by both internal and external reviewers, the final Tentative List, submitted to the World Heritage Centre in early 2008, consisted of fourteen properties, including nine cultural properties, four natural properties, and one "mixed" (natural and cultural) property. (As noted above, the mixed property, Papahanaumokuakea Marine National Monument, Hawaii, was inscribed on the World Heritage List in 2010, the first US site to be inscribed since 1995.) An additional eleven properties were identified for future consideration. The US delegation used a Fourth of July reception at the committee's 2008 session in Québec City, Canada, to present the publication of the US's new Tentative List, in a glossy 48-page publication.[29]

Periodic reporting. After many years of discussion, the committee in 1998 had finally adopted a program, known as "Periodic Reporting," to regularly examine the state of conservation of all World Heritage sites, similar to one that had been proposed by the United

States in 1982 (see the preceding essay of this series). The committee established a six-year cycle of submissions, beginning with the Arab States region in 2000, and concluding with the Europe/North American region in 2005 and 2006.

The United States and Canada had decided from the start that its periodic reporting submission would be a joint exercise. Stephen Morris, newly recruited to organize the US side of the exercise, recalled the start of the process in a big orientation meeting in Los Angeles in January 2003, attended by all of the US and Canadian site managers, as well as both the Park Service directors for cultural and for natural resources, Katherine Stevenson and Mike Soukup. The two-year collaboration included two joint site managers' meetings, a stakeholder consultation process, and collaboration in preparation of a joint regional report.[30]

At the 2005 committee session in Durban, South Africa, the US and Canada presented the results of their collaboration. Among the recommendations were that the World Heritage Committee should undertake research on how to recognize the importance of local populations residing within and/or adjacent to natural World Heritage sites, clarify requirements for management plans, and develop guidelines for evaluating visual impacts on World Heritage properties.[31]

The process was a major effort, and the Canadian delegate, Christina Cameron, commented afterwards that the in-depth overviews of the status of sites were far more useful than the individual State of Conservation reports that the committee examined at every session, which she considered "brush fires."[32] Morris, who succeeded Cleary as OIA chief in 2004, agreed: "We did a tremendous amount of work, but who was actually going to be processing the information and putting it to use? … [If the reports were better utilized] … a lot less State of Conservation reporting would need to take place." Using the example of the continued requests for reports on Yellowstone, he suggested that better use of periodic reports to provide this baseline data might improve the way the committee reviews the state of conservation at individual sites.[33]

One positive outcome of the Periodic Reporting process was the establishment of "Statements of Significance" for each North American site. As a pilot project for other regions, Statements of Significance for North American sites were approved by the committee at its 2006 session. Following an expert meeting in April 2007, Statements of Significance were expanded as "Statements of Outstanding Universal Value" (OUV). Participants at the meeting agreed that statements of OUV in effect amounted to a 'contract' between the state party and the committee, as to the specific values that state parties would maintain at each site. The statements of OUV "were really the *linchpin* … to remind the Committee that these are the values we care about." The US position was that clearly defined statements of OUV should also deter the Committee from a tendency of "*mission creep*—looking at issues outside of the agreed-upon OUV as areas of concern."[34]

The US returns to the committee (2005–2009)

At the General Assembly that fall (October 2005), the United States was elected to the committee. Like most of the 28 candidates for the twelve seats, following the Cairns reforms in 2000 the US pledged to limit its mandate to four years, rather than the six years to which

it was entitled under terms of the convention. As a further statement of their impartiality in evaluations, both the US and the Netherlands also pledged that they would not put forward any new nominations during their term in office.

Vilnius, Lithuania (2006), and the secret ballot. The committee's session in Vilnius in early July 2006 was the first regular session for the US as a committee member since 1998, and the first since 1982 in which the US had been a member state of UNESCO. Paul Hoffman and Ambassador Louise Oliver, the US Permanent Representative to UNESCO, led the delegation. During the US term on the committee, Ambassador Oliver took a keen interest in the committee's attempts at structural reform; she insisted, one committee member recalled, that the committee's budget decisions be consistent with its previous decisions; and she worked to improve the financial situation of the World Heritage Centre. At the 2006 session, with the full backing of the committee, she had called for a management audit to identify the organizational strengths and weaknesses of the centre. In 2007, following the absorption of the centre into UNESCO's Culture Sector the year before, she led the committee's call to reinstitute full "operational autonomy," recognizing that the new responsibilities that came with the Culture Sector were interfering with the centre's work for the committee and its "timely responses" to site emergencies.[35]

The session in Vilnius was notable for the introduction by the US of the first use of the secret ballot, a long unused provision of the committee's *Rules of Procedure*; like most UN bodies, the committee was more accustomed to take its decisions by consensus, and few even remembered the rule existed.

Among the new nominations being reviewed by the committee, one site, a cultural landscape in south-central France, the Causses and the Cévennes, proved particularly contentious. In its evaluation, ICOMOS reported that it had difficulty identifying the site's outstanding universal value and recommended that the nomination should be deferred for further development. While France's allies on the committee, Spain and Tunisia, immediately rushed to its defense, Norway noted that if none of the criteria were met, then the site should not be inscribed. The debate continued over several hours, with breaks while a small working group tried unsuccessfully to reach a compromise. But as a new committee member, Hoffman had been reading the *Rules of Procedure* and thought he saw a solution. To the surprise of most committee members, the US delegation called for a secret ballot. The proposal was immediately seconded by Norway; Hoffman was appointed one of the tellers, and, he recalled, he used his cowboy hat to collect the paper ballots. Two separate votes were needed: the results of the first vote defeated an amendment to inscribe the site; the second accepted an amendment to "refer" the site back to the state party for additional work, rather than to "defer" the nomination for more extensive development of the nomination, as had been recommended by ICOMOS.[36]

Since 2006, the secret ballot has been used more often: in the period 2006–2010, according to a recent study, the secret ballot has been used twelve times in connection with 227 decisions concerning nominations. Five instances were in 2010 alone.[37] In the opinion of the US delegation, the use of the secret ballot should become routine. "Any time that it seemed to be that the Committee was going away from an Advisory Body recommendation, there should be a vote."[38]

Notably, at the 2006 session, the Committee also approved the US proposal for "benchmarks" for the eventual removal of the Everglades National Park from the List of World Heritage in Danger. The benchmarks had been developed by the US and IUCN during and after a mission to the Park undertaken by the Advisory Body the preceding April. The Committee's considered approval, however, would stand in marked contrast with its decision a year later.

The following April (2007), at an expert meeting on benchmarks, Robert Johnson, director of the South Florida Natural Resources Center, and chief of natural resources for Everglades National Park presented the park's benchmarks as a case study, "Lessons Learned from Everglades National Park, U.S.A." The presentation laid out the history of the problem and the restoration initiatives that were being undertaken and the ecological benefits that would result.[39]

Christchurch, New Zealand (2007), and the delisting of Everglades National Park. Three months after Johnson's presentation, Everglades National Park was abruptly removed from the List in Danger. Todd Willens had recently been named as the new deputy assistant secretary of the interior for fish and wildlife and parks, replacing Hoffman. Willens and Ambassador Oliver headed the delegation at the meeting in Christchurch, New Zealand. The committee's annual state of conservation report, prepared by IUCN and the World Heritage Centre, had made no change to the recommendation for Everglades, but a number of committee members, who didn't share IUCN's view of thresholds and the role of the Danger List, persuaded Oliver and Willens that inscription on list had done the work it was expected to do—and now the site could be removed from it. The decision was probably helped by the printed IUCN recommendation, which appeared immediately below that pertaining to Everglades, to remove another site (Río Plátano Biosphere Reserve in Honduras) from the Danger List after much less effort by the state party. The decision to request that Everglades be removed from the List in Danger was the work of a moment, without consultation with Washington or with officials in the park. After thanking IUCN for its kind words about improving conditions at the park, "in light of the very significant progress made, [the delegation] requested that the Committee remove the property from the List of World Heritage in Danger on the understanding that it had no intention to change its plans for the continuing restoration of the property."[40] Immediately after its request, delegations from India, Canada, Madagascar, Chile, and Benin all supported the request and praised the United States for its efforts. IUCN demurred and suggested a monitoring mission. Kenya and Spain supported the US, and then India, noting that other sites had been removed from the Danger List without a monitoring mission, said there was no need for one. Seeing an apparent consensus of committee members, despite the objections of IUCN, the chair declared the decision adopted as amended.

The sense of accomplishment at the committee session was not shared by most of the US environmental community, park staff, or US Senator Bill Nelson of Florida. The Bush Administration was accused of "bending science to suit its politics." Senator Nelson, a member of the Senate Foreign Relations Committee, which oversees State Department appropriations, was furious that this had been allowed to happen. "And basically he asked the State Department," OIA Chief Stephen Morris recalled, "'Don't you require your ambassador to check back in with you before taking an action like this?'"[41] Nelson argued

that the Everglades restoration project was still less than half finished and still threatened by Florida developers.

Bob Johnson, the Everglades scientist responsible for the benchmarks, was more sanguine: "There's always been a kind of pressure from the Washington level to say, 'Okay, we've got a plan, now take us off the list.…' I think for the Bush administration, it was seen as a black eye to be on that list."[42]

Two years later, newly appointed Secretary of the Interior Ken Salazar announced that the Obama administration was taking steps to restore the Everglades National Park to the Danger List. "The Everglades," he said, had been "hastily removed from the list in 2007 at the request of the previous Administration without adequate consultations with the National Park Service, the state of Florida and other stakeholders."[43] At its meeting in Brazil in 2010 (Figure 4), the World Heritage Committee re-inscribed the park on the Danger List. At the time, the US delegation reiterated its view of the Danger List as a positive tool "to draw international intention to threats facing sites of global significance and to galvanise worldwide support for the protection of these sites for their importance to humanity."[44]

Québec and the Temple of Preah Vihear (2008). The full story of the 2008 committee session in Québec City (Canada) remains to be written. Heavy lobbying by some senior UNESCO and French officials for the inscription of the Cambodian Temple of Preah Vihear at both the 2007 and 2008 sessions, despite the site's location in a sensitive border region along the Thai border, dominated the meeting. US Ambassador Oliver, working in both sessions with both the Thai and Cambodian delegations, helped to draft the final 2008

Figure 4. U.S. Observer Delegation at the 34th session of the World Heritage Committee, Brasilia, Brazil, July 2010. National Park Service photo by Jonathan Putnam, NPS Office of International Affairs.

decision that inscribed the site. Nevertheless, it was clear that the Thais were not happy with the inscription.

While the outstanding universal value of Preah Vihear was never questioned, the issue was about sufficient boundaries to protect the site. The nomination was exacerbated by the unstable state of Thai politics, and the inscription ultimately resulted in artillery bombardment, injuries, and deaths on both sides. According to a former World Heritage Centre official, the nomination should never have been allowed to come up. UNESCO, the official said, is "NOT a battle ground for border issues. We have enough problems without getting into issues that the UN itself hasn't been able to resolve, especially for a site whose state of conservation had not been under particular threat, and [and whose] inscription led to exposing the site to armed conflict."

At the same meeting, State Department officials used a review of a draft decision concerning the World Heritage site "Medieval Monuments in Kosovo (Serbia)" to push the US government's case for the independence of Kosovo from Serbia, arguing at length that the name "Serbia" should be dropped from the title of the decision. (The United States had formally recognized the independence of Kosovo earlier that year.) The UNESCO legal advisor reminded the committee that it was bound to follow UN practice. As the UN as a whole had not recognized Kosovo's independence, Security Council Resolution 1244 (1999) continued to apply. Despite multiple interventions by the US representatives, ultimately the committee chair ruled against accepting the US amendment.

Waterton–Glacier returns, 2009–2010. The committee's 2009 session, and the US delegation's last as a committee member, was held in Seville, Spain. For the delegation, the notable event was the committee's consideration of threats to the joint US–Canadian site, Waterton–Glacier International Peace Park, inscribed in 1995 during the US's previous term on the committee.

As in the 1980s, mining again was being proposed for an area of the upper Flathead River Basin in British Columbia. As early as 2008, US and Canadian nongovernmental organizations (NGOs) had begun a campaign to have the site placed on the List of World Heritage in Danger, a move also supported by Montana Senators Max Baucus and Jon Tester.

The US officially responded to the concerns raised by the NGOs in a letter to the World Heritage Centre in April 2009. The risks to the outstanding universal value of the site would "continue to exist indefinitely," the US wrote, "unless these lands are protected from resource development." Earlier findings had indicated that extraction operations in the upper Flathead Basin "could not be fully mitigated and would result in some level of impairment or degradation" of the property. The US letter also drew attention to the analysis by the IJC, which had examined the previous mining proposal in the Flathead basin in 1988. "The IJC was particularly cognizant of the potential risk of unusual events such as the failure of waste dumps and settling ponds and considered that these represented 'an unacceptable risk' to the river basin."[45]

At the Seville meeting, the US and Canadian delegations requested that the World Heritage Centre and IUCN organize an evaluation mission to the property. In its decision, the committee recalled that the original nomination itself had noted that

> the integrity of the property [was] inextricably linked with the quality of stewardship of the adjacent areas within the international Crown of the Continent ecosystem and that therefore the protection of the property's Outstanding Universal Value require that it be managed within the context of this greater ecosystem.[46]

The joint World Heritage Centre/IUCN monitoring mission took place the following September. "From our perspective," OIA Chief Stephen Morris and World Heritage specialist Jonathan Putnam recalled recently, the mission "was very effective.... [Participants from the World Heritage Centre and IUCN] came out, and they got a very good overview. We spent a few days in Glacier, and they talked to all the Fish & Wildlife Service, and USGS and State of Montana officials." But the single most effective tool, Putnam remembered, was "the airplane overflight. There is no better way to see how a place is connected than to physically fly over it and see—yes, there may be an international boundary here, or a park boundary, but they flew over the entire [region]. They also went north to Crowsnest Pass, where there are some gigantic mountaintop removal-type mines, and they saw that this was what was in store for the Flathead Valley." The early appearance of the damning conclusions of the mission's report in the British Columbia press in the approach to the Winter Olympics in Vancouver the following February was very effective, Putnam and Morris believed, in getting an agreement signed between the governor of Montana and the premier of British Columbia to ban any kind of mining or energy development on both sides of the border. The accord established new frameworks for transboundary assessments of forestry operations, wildlife connectivity, ecological health, and landscape change. In its report to the committee in 2010, the World Heritage Centre and IUCN called the signing of the agreement "historic" and "an extremely positive response to the needs for transboundary cooperation on the management, endorsed at the highest political level."[47]

Future of the World Heritage Convention

With the approach of the 40th anniversary of the convention, the committee at its 2008 session in Quebec asked that states parties reflect on the future direction of the World Heritage Convention and submit proposals to be discussed at a forthcoming workshop. The US was among 44 states parties to respond, and in its submission of September 2008 highlighted seven issue areas:

- The emphasis on inscription over conservation;
- The failure to use the Danger List as it was intended;
- Devaluation of the World Heritage "brand" with sites that often seemed of less than global significance;
- Under-resourced World Heritage Centre and advisory bodies;
- Inconsistent and often inadequate comparative analyses for nominated cultural properties by ICOMOS;
- An overstretched World Heritage Committee, often addressing over 250 decisions, led to weak and poorly thought-out deliberations; and

- Increased politicization of the decision-making process with open lobbying by states parties for their own sites.

The US submission recommended four measures:

- Alternate committee sessions, separating consideration of new nominations from the state of conservation of inscribed sites;
- Limit inscriptions from well-represented regions;
- Increase resources for the World Heritage Centre and advisory bodies; and
- Institute secret ballots as a routine measure.[48]

The submissions were considered at a chaotic overflow workshop at UNESCO headquarters at the end of February 2009. While many states and experts recognized that the increasing size of the list was a serious issue, other states, notably from Latin America and Africa, vigorously objected, saying that more sites needed to be added. Even a senior World Heritage Centre official claimed that new inscriptions were "the life-blood of the Convention." Both the United Kingdom and Barbados strongly supported the US proposal for increased use of the secret ballot, allowing states parties to follow their conscience rather than acquiescing to the political demands of other states.[49]

In the months following the workshop, some states parties were disappointed by the failure of both the workshop and the committee to address the issues that had been raised. When the General Assembly met later that fall, for the first time it took significant steps that had *not* been orchestrated in advance by the committee. It called for an independent evaluation by UNESCO's external auditor on the implementation of the Global Strategy and the PACT initiative (a partnership program with the private sector begun in 2002), while at the same time accepting an offer from Australia and Bahrain to host an expert meeting in Bahrain in late 2010 on the decision-making procedures of the committee and the convention's other statutory organs.[50]

Report of the Bahrain expert group. The expert group made a number of recommendations that the workshop had been unable to tackle, addressing both the workload issue and ways of de-politicizing committee decisions. Among the recommendations were that there be three committee sessions every two years, with the third session devoted to policy matters held concurrently with the General Assembly; that committee members not bring forward new nominations during their term, and that there be greater transparency in the committee's work, with meetings live-streamed over the Web.[51]

At its session in Paris in 2011, the committee made an attempt to address the recommendations, and made the decision to hold three sessions every two years and to live-stream its sessions. (The committee's 2012 session from St. Petersburg was Webcast in real time.) Other recommendations, however, including the prohibition on new nominations by committee members, were rephrased as suggestions.

Report of the external auditor to the General Assembly. The UNESCO external auditor made the presentation of its findings to the General Assembly in November 2011. The audit found that the "Global Strategy" was "an apparent consensus that masks divergent

interpretations in the absence of defined notions in the *Operational Guidelines*." "Balance" and "representativity" for many states parties were interpreted according to purely geographic and political criteria, "forgetting that Outstanding Universal Value is the key condition for nomination to the List." Therefore its first recommendation was for the Committee to define the "Global Strategy" and ensure that it was not in conflict either explicitly or implicitly with the convention. It found that many entries on states parties' Tentative Lists did not fulfill the criteria for nomination and were a waste of preparatory assistance funds, and that despite regional meetings organized for the purpose, little progress had been made toward harmonizing these lists. The committee also came in for severe criticism due to the absence of technical specialists from delegations, as required by the convention. If specialists were not to be given a "central role," then the convention should be reclassified as a "geopolitical" instrument, rather than an international instrument dedicated to the conservation of heritage. Like the Bahrain expert group, it recognized the self-interest of committee members reviewing nominations from their own countries and recommended that the practice be prohibited.[52]

In the discussion that followed the auditor's presentation to the General Assembly, thirty-three countries took the floor to support the report. The US delegation expressed its "shock" at the breadth of problems, and called the report "an alarm bell to signal that the World Heritage Convention is seriously off track." If the recommendations are not addressed, the delegation noted, "the consequences could be very detrimental to the Convention." The delegation noted that it had "long called for the restoration of conservation as the main issue." Now was the time to act.[53]

Epilogue: Into the next half-century

As the last of this series of essays comes to an end, it seems fitting to restate the original intention of the United States in proposing the convention. Conservation was the original goal, as first articulated by the convention's US proponents; identification of sites with outstanding universal value was the means to that end, not the goal. The emphasis on conservation must remain the convention's true aim and the US implementation of it. Based on the foregoing review of the Park Service's role in the convention, the writer offers some thoughts on the US role in the convention in the next half century.

The 2011 admission of Palestine as a member state of UNESCO (and a state party to the convention) has triggered two US laws from the 1990s prohibiting the US payment of dues to UNESCO or to the World Heritage Fund. While the non-payment of dues may not affect the ability of the US to vote in the General Assembly, it would limit the effectiveness of any moral leadership the US might try to exercise. The international suggestions below assume that this state of affairs is of no long duration.

Concerning the World Heritage Committee. Since its most recent service on the committee ended in 2009, the US has remained an active participant in World Heritage meetings. A fully engaged US delegation can continue to help guide the convention's development, whether as observer or as a member of the committee. In the absence of a strong chair, or articulate members, it takes very little to prevent the committee from taking a "course of least resistance" in making its decisions, often adopting politically motivated decisions in opposition to advisory body recommendations, its *Operational Guidelines*, or even its

own *Rules of Procedure*. But as this history has shown, any display of intellectual rigor or institutional memory by a committee member (or in some cases by an observer delegation) is often picked up by other members and can change the direction of discussion. The US and other delegations that care about the conservation goals and the integrity of the convention must be vigilant.

The biennial election of committee members at the General Assembly could be more effectively used to ensure that candidates are focused on conservation rather than on the national self-interest. While the US never announces in advance its voting decisions, it can, with like-minded states, announce that it will only vote for those candidates that publicly pledge to put forward no nominations of sites in their own territories during their mandates (the US itself made this pledge when it ran for election to the committee in 2005). The US could also make it clear that states which pledge to give a role to heritage experts (as required by the convention) would be favored. Both expectations were recommendations of the 2011 audit discussed above.[54]

World Heritage expert meetings in the United States. Over the years, many countries have sponsored expert meetings to foster exchanges on specific technical subjects. An occasional expert meeting hosted at a relevant US World Heritage site would not only be a significant contribution to the World Heritage community, it could also give US site managers and their staffs a role in, and the experience of, international meetings. Possible topics might include those the US and Canada have already expressed an interest in, at the time of the 2005 Periodic Report: how to recognize the importance of local populations residing within and/or adjacent to natural World Heritage sites; or a discussion of guidelines for evaluating visual impacts on World Heritage properties.

Concerning bilateral partnerships. In creating the Office of International Affairs in 1961, Interior Secretary Stewart Udall explicitly recognized the role that the National Park Service should play in sharing its expertise with other countries. "We must," he said, invoking the European phrase of the moment, "establish a Common Market of conservation knowledge and endeavor."[55] Nearly a half century later, this commitment was reiterated in the final report of the National Parks Second Century Commission, the blue-ribbon panel commissioned for the upcoming National Park Service centennial in 2016.[56] As the National Park Service embarks on its second half-century in international cooperation, it must continue to renew its bilateral relationships, which are mutually beneficial both to NPS and to its resource management partners in other countries.

One of the founding programs in bilateral relations was the International Short Course in the Administration of National Parks and Equivalent Reserves. "That was one tangible element of leadership," former Assistant NPS Director for Natural Resources Mike Soukup recalled, "that was unmistakably successful. Throughout my career whenever I met with foreign Park people, they would say to me, 'You need to put that back together. That was so important to my career … to my country … to the world, that you had that course available and funded'.… That's the one thing we could do internationally," Soukup said, "that would restore a healthy leadership position for the Park Service and for the nation, in the eyes of a tremendous amount of people around the world."[57]

The second program that should be restarted is the cooperative program with the Peace Corps. For over a quarter of a century, between 1972 and 2000, the National Park Service had an active partnership with the Peace Corps to assist other nations in developing national parks, providing training to Peace Corps volunteers in park planning, management, and interpretation. In an era of disengagement, the program was allowed to expire in 2001. With the support of USAID, it should be renewed.

Concerning US World Heritage sites. The network of World Heritage sites in the US needs to be reinforced. Site managers attending the 1992 Santa Fe meeting have repeatedly stressed how important the meeting was to them, and how beneficial the subsequent meetings. Both Dick Ring, former superintendent of Everglades, and Dave Mihalic, former superintendent of Glacier, recalled the loss of institutional knowledge that was inherent in the movement of site managers around the park system. "The best thing about [the Santa Fe] meeting," Mihalic said, "was the fact that all the mangers were able to get in one place, including the non-Park Service sites—the Cahokia Mounds, Monticello managers—and not just to understand things all at the same time. But it was a great way to start thinking in a bigger picture, more strategic manner."[58] "It would be enormously valuable," Ring said, "to see some resources set aside to support the convening of the US World Heritage site managers." These network activities, Ring added, could also reinforce the international goals of the Park Service: "It would be very easy to make sure that whenever there is a convening of US managers, that there is an invitation extended to the hemisphere or thematically to similar sites around the world to make a focus, and to invite those folks in, and help support bringing them there."[59]

Concerning nomination of future World Heritage sites in the United States. Recalling the original goals of the convention, and its emphasis on outstanding universal value and conservation, the US must decide its own course, regardless of the decisions taken by other countries, concerning the composition of the List of World Heritage sites in the United States. The US should seriously consider what a potentially finite number of World Heritage sites in the US would look like. The list of natural World Heritage sites in the US seems well on its way toward fully representing natural biogeographic provinces, but what cultural heritage sites uniquely represent US history and pre-history? (If natural sites represent important biogeographic provinces, what analogous cultural themes should be represented by cultural properties?) Will it simply be a more rarified list of thousands of national historic landmarks? Or does "outstanding universal value" have a more substantive meaning? This is not a process that lends itself to volunteer, grassroots proposals. A rigorous discussion and analysis should identify defining historical themes, and only then examine how those themes might be best represented. The US already has management and legal provisions that set the country apart from the way all others manage World Heritage nominations; policies that adhere to a unified and substantive interpretation of outstanding universal value is a logical extension of those management requirements. But there is no inherent urgency to the inscription of World Heritage sites: a good candidate will always be eligible, whether its nomination comes one year, twenty years, or fifty years from now.

Endnotes

1. The earlier essays were published in successive issues of *The George Wright Forum* 28:3 (2011), pp. 279–290; and 29:1 (2012), pp. 148–175. The essay is principally informed by the substantial archive of position papers, reports, and copies of State Department cables retained by the Office of International Affairs, 1201 Eye Street, NW, Washington, DC 20005; by the official reports and documents of the World Heritage Committee on the World Heritage Centre's web site; and by interviews with Sharon Cleary, Blaine Cliver, Richard Cook, Paul Hoffman, Melinda Kimble, William W. McIlhenny, Dave Mihalic, Robert C. Milne, John Reynolds, Dick Ring, Mike Soukup, Karen Trevino, and Ray Wanner. OIA Chief Stephen Morris, and OIA staff members Jonathan Putnam and Phyllis Ellin have also provided advice and comment, as has former World Heritage Committee Chair, Christina Cameron, now Canada Research Chair on Built Heritage, Université de Montréal.
2. Richard J. Cook interview, 25 February 2010.
3. Sharon Cleary interview, 21 April 2010.
4. Milne became "Special Advisor, International Affairs" before being seconded in retirement to the World Heritage Centre for two years to replace the Canadian, Hal Eidsvik.
5. Milne, personal communication, 11 February 2011.
6. Report of the Bureau of the World Heritage Committee, 19th session, 3–8 July 1995, UNESCO Doc. WHC-95/CONF.201/12, p. 48.
7. Memo, Mott to Regional Director, Rocky Mountain Region [no date; probably Jan. 1986], Federal Interagency Panel meeting, Box 5, Connally Papers, Library of the National Trust for Historic Preservation, University of Maryland.
8. Reynolds interview; Peter Stott, "Berlin '95," [E-mail] Newsletter #2, p. 2 (author's collection).
9. *Casper Star Tribune* and *Billings Gazette*, cited in Tom McDonnell, "Case Study of Ecosystem Management, the Biosphere Reserve Program, the World Heritage Program & the Wildlands Project in the Greater Yellowstone Ecosystem" (June 1996), http://sovereignty.net/p/land/wildlandtom.htm; accessed 12 August 2011.
10. Luisa Blanchfield, *The UNESCO World Heritage Convention: Congressional Issues,* July 20, 2011. CRS-Report R40164. Washington, DC: Congressional Research Service, pp. 8-9; p. 11, footnote 48. Online at www.fas.org/sgp/crs/row/R40164.pdf; accessed 8 August 2012.
11. William W. McIlhenny interview, 19 February 2010.
12. Cleary interview.
13. McIlhenny interview.
14. "Statements by China and the United States of America during the Inscription of the Hiroshima Peace Memorial (Genbaku Dome)," Annex 5, Report of the Twentieth session of the World Heritage Committee, Merida, Mexico, 2–7 December 1996. UNESCO Doc. WHC-96/CONF.201/21.
15. Reynolds interview.
16. McIlhenny interview.
17. Robert C. Milne interview, 6–7 June 2009.

18. Report of the World Heritage Committee, 1996," Annex 6. UNESCO Doc. WHC-96/CONF.201/21. (The bracketed word "forum" represents a correction to a typing error in the secretariat's original transcript.)
19. Summary Report [of the US Delegation], 21st World Heritage Bureau and Committee Meetings, Naples, Italy, November 28–December 6, 1997, p. 8, OIA Archives. See also Report of the World Heritage Committee, 1997, para. XI.10-11. UNESCO Doc. WHC-97/CONF.208/17.
20. Report of the World Heritage Committee, 1997, para. XI.11. UNESCO Doc. WHC-97/CONF.208/17.
21. Karen Trevino interview, 16 April 2010.
22. Statement by John Reynolds, enclosed in letter to Karen Trevino, Trevino interview.
23. Cleary interview.
24. Paul Hoffman interview, 28 August 2012.
25. Summary Record of the Sixth Extraordinary Session of the World Heritage Committee, 17–22 March 2003. UNESCO Doc. WHC-03/6 EXT.COM/INF.8, para. 4.34.
26. "Reports on the State of Conservation of Properties Inscribed on the List of World Heritage in Danger," UNESCO Doc, WHC-03/27.COM/7A, pp. 15–16.
27. Hoffman interview.
28. Hoffman interview.
29. See www.nps.gov/oia/topics/worldheritage/tentativelist.htm.
30. Stephen Morris/Jonathan Putnam interview.
31. Summary Record of the 29th Session of the World Heritage Committee (Durban, South Africa, 2005), WHC-05/29.COM/INF.22, p. 171.
32. [OIA Trip Report], "Report on the 15th General Assembly of States Parties to the World Heritage Convention, Paris, France." *Inside NPS: Information Gateway for NPS Employees*, courtesy of OIA.
33. Morris/Putnam interview.
34. Morris/Putnam interview; Expert Meeting on Benchmarks and Chapter IV of the Operational Guidelines, Paris, 2–3 April 2007 (see http://whc.unesco.org/en/events/396).
35. [OIA Trip Report] "U.S. Report on 31st Session of the World Heritage Committee, Christchurch, New Zealand, June 22–July 2, 2007," *Inside NPS: Information Gateway for NPS Employees*, courtesy of OIA.
36. Hoffman interview; Summary Record of the 30th Session of the World Heritage Committee (Vilnius, Lithuania, 2006) WHC-06/30.COM/INF.19, p. 205. The site known as "The Causses and the Cévennes, Mediterranean agro-pastoral Cultural Landscape" ultimately was inscribed five years later.
37. Final Report of the Audit of the Global Strategy and the PACT Initiative, UNESCO Doc. WHC-11/35.COM/INF.8, para. 173.
38. Morris/Putnam interview.
39. Morris/Putnam interview; "Expert Meeting on Benchmarks and Chapter IV of the *Operational Guidelines*," Paris, 2–3 April 2007. See http://whc.unesco.org/en/events/396.
40. Summary Record of the 31st Session of the World Heritage Committee (Christchurch, New Zealand, 2007), WHC-07/31.COM/INF.24, para. 175, p. 21.

41. Morris/Putnam interview.
42. "Nelson wants official fired for Glades move," *St. Petersburg* [Florida] *Times,* 3 August 2007, cited in http://billnelson.senate.gov/news/details.cfm?id=280474&; accessed 10 August 2011.
43. Cited in Blanchfield, p. 4.
44. Summary Records of the 34th session of the World Heritage Committee (Brasilia, Brazil, 2010) WHC-10/34.COM/INF.20, p. 409.
45. Daniel N. Wenk, acting director, NPS, to Francesco Bandarin, director, World Heritage Centre, 9 April 2009, courtesy of OIA; quoted in "State of conservation of World Heritage Properties Inscribed on the World Heritage List," UNESCO Doc. WHC-09/33. COM/7B.
46. Decision: 33 COM 7B.22, Decision Record of the Thirty-third Session of the World Heritage Committee (Seville, Spain, 22–30 June 2009), UNESCO Doc. WHC-09/33. COM/20, p. 71.
47. Morris/Putnam interview; "State of Conservation of World Heritage Properties Inscribed on the World Heritage List," UNESCO Doc. WHC-10/34.COM/7B.Add, pp. 29–33.
48. Workshop on the Future of the World Heritage Convention, submission by the United States of America, September 2008. OIA Archives.
49. Stephen Morris and Jonathan Putnam, "Trip Report: UNESCO Workshop on the Future of the World Heritage Convention, February 24–27, 2009," *Inside NPS: Information Gateway for NPS Employees*, courtesy of OIA.
50. Summary Record, 17th Session of the General Assembly (Paris, 2009), UNESCO Doc. WHC-09/17.GA/INF.10.
51. Report of the Expert Meeting on Decision-making Procedures of the Statutory Organs of the World Heritage Convention (Manama, Bahrain, 15–17 December 2010), UNESCO Doc. WHC-11/35.COM/12B.
52. Final Report of the Audit of the Global Strategy and the PACT Initiative (2011), UNESCO Doc. WHC-11/18.GA/INF.8.
53. Summary Record, 35th Session (Paris, 2011), UNESCO Doc. WHC-11/35.COM. INF.20, p. 22.
54. Recommendations 11 and 12, "Final Report of the Audit of the Global Strategy and the PACT Initiative," (2011), UNESCO Working Document WHC-11/18.GA/INF.8.
55. Stewart L. Udall, "Nature Islands for the World," keynote address to the First World Conference on National Parks, in *First World Conference on National Parks,* Alexander B. Adams, ed. (Washington, D.C.: National Park Service, 1962), pp. 1–10.
56. National Parks Second Century Commission. *Advancing the National Park Idea: National Parks Second Century Commission Report* (Washington, DC: National Parks Conservation Association, 2009), p. 24.
57. Mike Soukup interview, 27 July 2009.
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Climate Adaptation Strategies are Limited by Outdated Legal Interpretations

Julie Lurman Joly

A cogent criticism of current US federal public lands law, particularly with regard to the most preservation-oriented protected areas, is its emphasis on maintaining, restoring, or reproducing historical conditions (Camacho 2010, 2011; Craig 2010; Doremus 2010). As climate change continues to accelerate, the effects are being seen on our nation's public lands. As a result, there have been several calls for major statutory revisions (Camacho 2010, 2011; Doremus 2010) to give agencies the legal tools necessary to manage resources while being realistic about what is and is not possible in a world affected by climate change. This important call to action has not received the attention it deserves; however, major legislative change is realistically a long-term goal, and waiting for its enactment is not a useful strategy for managing climate impacts in the near term. "Environmental protection laws are invariably redistributive; they impose substantial costs on some and confer benefits on others. For that reason, the institutional barriers to the enactment of such laws are particularly high…" (Lazarus 2003). Already enacted law is equally difficult to amend for the same reasons (Doremus 2010).

Unfortunately, federal natural resource managers need to immediately start making decisions and taking actions that will have long-term consequences. Agencies cannot wait for Congress to become interested in this issue and then debate and pass legislation before taking the effects of climate change into account in major management decisions, such as whether or not to support actions such as assisted migration, reintroductions, wildlife feeding programs, major irrigation projects, or other actions that would help ecosystems adapt to or avoid the effects of climate change. What can agency personnel, who are entrusted with safeguarding the nation's resources and recreational opportunities, and with upholding their legislatively decreed obligations, do immediately?

The solution I propose is major regulatory reinterpretation at the agency level. While any tinkering with federal land laws and their interpretation is always controversial, it is important to remember that without any change some managers may find themselves forced to "actively manage biological communities and landscapes to preserve them as they were

The George Wright Forum, vol. 30, no. 1, pp. 45–49 (2013).

ISSN 0732-4715. Please direct all permissions requests to info@georgewright.org.

before the onset of anthropogenic climate change. Such strategies would include activities like preventing invasions, engaging in irrigation activities, and regulating biotic interactions over time" (Camacho 2010). For instance, should managers prevent tree line from moving northward? Should they institute major wildlife feeding programs if suitable habitat/food sources become scarce in historic locations? Should they wrap glaciers in plastic (as the Swiss have done)? Broad use of such expensive management techniques would be wasteful and possibly counterproductive, not to mention intrusive, on landscapes noted for their solitude, naturalness, and/or wilderness qualities.

In 2011, the Council on Environmental Quality (CEQ) instructed all federal agencies to develop a climate change adaptation policy statement by the end of the year, complete a climate change vulnerability analysis by March 2012, and implement a climate adaptation plan in 2013 (CEQ 2011). This process provides an excellent opportunity for agencies to examine how existing statutory interpretations may exacerbate climate change effects or interfere with the agency's ability to effectively and rationally manage them. It appears unlikely, however, that agencies will take this opportunity to so completely and thoroughly review statutory interpretations in light of climate change. Further, CEQ's instructions on developing agency adaptation policy do not explicitly require agencies to do so (CEQ 2011). Craig (2010) similarly suggests regulatory reinterpretation as a component of a reimagined federal environmental law. While agencies will need to continue to operate within the existing legal framework, much could be accomplished through regulatory reform. This is a near-term climate change adaptation strategy that all federal land management agencies could adopt immediately. Below I provide two illustrative examples.

Wilderness areas

Federal wilderness areas are managed under the auspices of the Wilderness Act, which requires that lands be managed to preserve their "wilderness character" (Wilderness Act 1964). Wilderness is defined by the statute in part as "an area where the earth and its community of life are *untrammeled* by man…" (Wilderness Act 1964). The preservation mandate established by this language has been singled out as impractical or impossible under climate change scenarios because of its implied preference for historically accurate conditions (Camacho 2010, 2011; Craig 2010). However, this objection is based on a very narrow interpretation of what "untrammeled" might reasonably mean. "Untrammeled" could be understood as "natural" (i.e., historical) conditions, but it could just as easily mean "unbound," "unhampered," or "unchecked," which is the meaning Howard Zahniser, the author of the statute, had in mind when he incorporated the word into the statute in the first place (Harvey 2005). Doremus (2010) acknowledges this possible understanding of "untrammeled" and suggests "leaving room for nature" as a possible strategy; however, she fails to recognize that this may be exactly what several statutes already require, and she assumes that such a strategy would still aim to "maintain certain species or assemblages," which need not be the case. The Wilderness Act could be understood as expressly protecting "wildness." Roger Kaye, wilderness specialist for the US Fish and Wildlife Service, has defined this as "the state wherein those processes of an area's genesis, free from human purpose, utility, or design, are allowed to shape its future" (Kaye 2012).

National Park Service lands

The principal pieces of legislation guiding the National Park Service (NPS) today are the National Park Service Act of 1916 (the Organic Act) and the General Authorities Act of 1970 and its amendments. These statutes also require a preservation approach to management. The central precept of the Organic Act instructs the agency to "conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired fore the enjoyment of future generations"(National Park Service Act 1916). There has been a longstanding debate regarding whether or not this command is internally inconsistent (Rasband et al. 2004), but federal courts have determined that the agency has broad discretion to determine the proper balance between preservation and enjoyment (*National Wildlife Federation v. NPS* 1987; *Sierra Club v. Babbitt* 1999). The 1978 Redwood Amendments to the General Authorities Act reaffirm and strengthen the agency's conservation objective, over those of use and enjoyment, by emphasizing that agency authority must not be "exercised in derogation of the values and purposes for which these various areas had been established" (General Authorities Act 1978). The NPS's *Management Policies* tells managers that "unimpaired" and "in derogation" are to be understood together as creating a single management standard (NPS 2006). This management standard has been defined as the need to maintain the "integrity of park resources or values," and further defines park resources and values in part as "natural visibility; natural landscapes; natural soundscapes and smells…" (NPS 2006). Like interpretations of the Wilderness Act, this clearly is an effort to tie non-impairment to some static historical ideal, but that is not a necessary interpretation of the statutory language.

There are many other ways to interpret the "unimpaired"/"in derogation" language that would more realistically take climate change (and its likely affects on ecosystem assemblages) into account. Such interpretation changes are entirely within the agency's ability to make (Keiter 2011). "Although the National Park Service has been recognized for decades as a preserver of some of the nation's most precious places, the methods it uses to implement its basic mission are continually being refined in response to changing needs and increasing scientific awareness" (Mantell and Metzger 1990). Perhaps "unimpaired" means historically accurate, as many people have postulated. I posit however, that "unimpaired," like "untrammeled," could be interpreted to mean unbounded, free of most direct human manipulation, thereby leaving the system's own adaptive mechanisms unimpaired (or unfettered) to respond naturally to disturbance. The latter interpretation would counsel us away from large projects and intensive management techniques intended to maintain the historical conditions of an area regardless of the costs, and instead instructs us to keep ecological systems as healthy as possible (i.e., free of contaminants and other interferences or disruptors, where agencies have actual control over such things) and leave room for these systems to compensate unencumbered for the changes agencies cannot control. "[W]e are better off treating climate change impacts as a long-term natural disaster rather than as anthropogenic disturbances" (Craig 2010). I suggest that agencies accomplish this, wherever possible, through regulatory interpretation.

I am not suggesting that any agency ought to relax its vigilant preservation orientation to management; however, that approach may need to be informed by the realities of climate

science, rather than assuming that pre-European contact conservation goals are desirable or even possible. The critique that the pervasiveness of human-caused climate change effects negates the possibility of untrammeled or unimpaired lands is inapposite. There is no landscape that has not been affected by human action (even when discounting climate change), and yet many landscapes have been managed under the auspices of preservation-themed statutes. If former clearcuts and agricultural fields can become parks and wilderness areas, why should it be legally impossible for climate change-affected lands to be similarly managed? "[W]ildness 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" (Kaye 2012). I believe that intensive intervention may make more sense in the many non-wild conservation units that already exist.

Developing new laws or amendments to older ones that rely on resilience theory, adaptive management, and managing uncertainty is an important, though perhaps long-range, goal. But, change is happening on the ground in our public lands today and managers need rules and standards to apply that are relevant, sensible, cognizant of today's realities, and *already extant*. This can be accomplished in many cases by reexamining and reinterpreting existing law. In many cases, adhering to existing regulatory interpretations unnecessarily circumscribes agencies' range of management options in the face of rapid ecological change. Regulatory reinterpretation is certainly not a wholesale or permanent solution, but it is a necessary beginning.

Craig (2010) and Doremus (2010) have each provided useful principles intended to guide future legislation, many of which could be put to use at the agency level in determining how best to reinterpret statutes to meet the realities of climate change as well as legal obligations. Where reinterpretation is not possible—for instance where legislated national wildlife refuge purposes are extremely specific (often requiring the maintenance of specific species)—then change will have to wait for a legislated solution. But such situations do not characterize all federal lands laws that limit management choices in the face of climate change. It is essential that the highest officials of each land management agency do the work of analyzing and determining what their agency's interpretation of relevant statutes will be in light of climate change. A piecemeal, unit-by-unit, or even issue-by-issue approach would lead to ad hoc decision-making that fails to take an entire conservation system's units into account. The federal land management agencies need to initiate a concerted program aimed at studying and answering these questions formally so that when disputes arise, as they certainly will, there is law to apply on the subject that takes climate change into account, rather than turning a blind eye to it. This will certainly require tradeoffs, and agencies, biologists, and the public need to collectively decide whether to attempt to preserve historical accuracy at the expense of wildness or vice versa.

Acknowledgments

My thanks to Kyle Joly and Martin Robards for suggestions and comments that substantially improved this manuscript.

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Resilience in a Protected Area: Prospects for Fathom Five National Marine Park, Lake Huron, Canada

S.R. Parker and S.D. Murphy

Introduction

Building or maintaining resilience within a protected area is increasingly cited as a means to achieve long-term conservation goals in the face of climate change and other human impacts (e.g., Mumby et al. 2006; Cole et al. 2008; Pittock et al. 2008; Baron et al. 2009; Lemieux et al. 2011; National Park System Advisory Board Science Committee 2012). Although there is an established body of ecological and social–ecological knowledge related to resilience concepts, in application it is still conceptually and methodologically early in its development. Within this paper, we explore the applicability of a resilience-based approach to planning and management by using Fathom Five National Marine Park as a study area.

Resilience is a system property that describes the capacity to cope with disturbance and remain within the same regime, essentially retaining defining structures, functions, and feedbacks (Walker and Salt 2012). Furthermore, to support resilience in a protected area context, learning, cross-scale linkages, and adaptability are needed (Berkes et al. 2003; Fazey et al. 2007; Francis 2008). Resilient systems are more diverse, flexible, and prepared for change and uncertainty (Hughes et al. 2005). Resilience is founded on non-equilibrium dynamics, where systems can transition to alternate states and where system behavior and progression is described within an adaptive cycle involving phases of collapse, renewal, growth, and conservation (Holling and Gunderson 2002). Whereas a traditional management approach may focus on maintaining historic conditions (e.g., composition and abundance of native species) or promoting system efficiency (e.g., maximum sustainable yield, single stable state), a resilience-based approach focuses more on the desired system regime and maintaining functional and response diversity (Table 1 and Text Box 1) (Folke et al. 2004; Chapin et al. 2010). Resilience itself is neither inherently good nor bad. As noted by those studying degraded systems, being locked in an undesirable state due to high resilience would be perceived as bad (Carpenter et al. 2001). Thus, in managing for resilience there rests a

The George Wright Forum, vol. 30, no. 1, pp. 50–66 (2013).

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Characteristic	Traditional	Resilience-based
Reference	Historic condition	Trajectory of change
Role of manager	Decision maker who establishes sustainable course; fixed targets/performance measures; disseminates information; maintains institutional structure; and, may respond to changing human values	Facilitator who engages stakeholders and shapes social-ecological resilience; adaptive/flexible targets; integrates across institutions and scales with some devolved/shared decision-making; and, responds to and shapes human values
Research	Reduces uncertainty before taking action	Increases flexibility for an uncertain future
Role of science	Species inventory, model predictable change, and maintain ecosystem composition	Complex social-ecological systems, adaptive cycle and panarchy, and maintains functional and response diversity
Community perspective	Waivers, dependent on individual disposition; and, people use and are part of protected area context	Improves through social learning and acceptance of complexity; and, people have responsibility to sustain protected area
Disturbance	May prevent or accept natural disturbances within historical range	Fosters disturbances that sustain function and structure
Establishment	For scenic value, representative features, scientific, economic or cultural reasons	To support ecosystem services, adaptation or mitigation to change, or build regional resilience

Table 1. Attributes of both a traditional and a resilience-based approach to protected area management (adapted from Chapin et al. 2009).

caveat that the intent is to maintain a resilient desired state and, where necessary, leverage out of a less desired one.

C.S. Holling's (1973) seminal work on resilience characterized several events of ecosystem change (e.g., lake eutrophication, fishery collapse) in the Laurentian Great Lakes. As described, when ecological resilience decreased the lakes became more vulnerable to disturbance and a sudden regime shift. Today, the lakes continue to be affected in complex and novel ways, and the drivers of change include: invasive species—as extreme as the introduction of a new species every 28 weeks (Ricciardi 2006); climate change (Cruce and Yurkovich 2011); governance effectiveness (McLaughlin and Krantzberg 2011); and contaminants (SOLEC 2009). It is a context that is particularly problematic for a protected area whose goals may be based on preserving historical conditions or where management practices are simply pushed beyond their adaptive capacity (Hobbs et al. 2010).

Fathom Five National Marine Park is a 114-km^2 freshwater protected area located on Lake Huron, Canada (Figure 1). It was first established as a provincial park in 1972 and in 1987 became the first site to be managed under the stewardship of Parks Canada's national marine conservation area (NMCA) program (Wilkes 2001). It provided us with a good study area to explore resilience because the site faces considerable management challenges from both the local (e.g., fisheries management, policy needs) (Parks Canada 2011) and Lake Huron scales (e.g., food web and nutrient cycling changes) (SOLEC 2009). To advance conservation efforts, we incorporated resilience-based concepts within a management cycle of assess, plan, and implement.

Assessing resilience

A protected area is composed of diverse and interacting biophysical elements and associated

actors and institutions. To assess resilience, there is an initial need to scope, describe, and bind these into relevant issues, components, and scales. For our assessment of Fathom Five we completed the Resilience Alliance practitioners' workbook *Assessing Resilience in Social–Ecological Systems* (Resilience Alliance 2010). It acted as a guide to determine resilience *of* what, *to* what, and *for* whom (Carpenter et al. 2001; Lebel et al. 2006). A review of relevant literature and discussions with park staff and other experts was required. The assessment highlighted important aspects of resilience, including:

- Identification of the key structures, functions, and feedbacks that define the desired state;
- An understanding of the current state and trajectory of the park's ecosystems;
- Recognition of elements that guide system recovery, including connectivity, sources of replicates, and functional diversities;
- Disturbances, disturbance regimes, and cross-scale influences;
- Governance structures, ownership, and potential constraints; and,
- Patterns of visitor use.

Box 1. Resilience, ecological integrity, and the NMCA Act

From the guiding legislation for Fathom Five: "Marine conservation areas shall be managed and used in a sustainable manner that meets the needs of present and future generations without compromising the structure and function of the ecosystems…" (Canada 2002: Section 4(3)). This is a shift from the more familiar "ecological integrity" endpoint, as is found in national and provincial parks in the region (see Government of Canada 2000; Government of Ontario 2006). As defined in the Canada National Parks Act, ecological integrity is "a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes" (Canada 2000: Section 2 (1)).

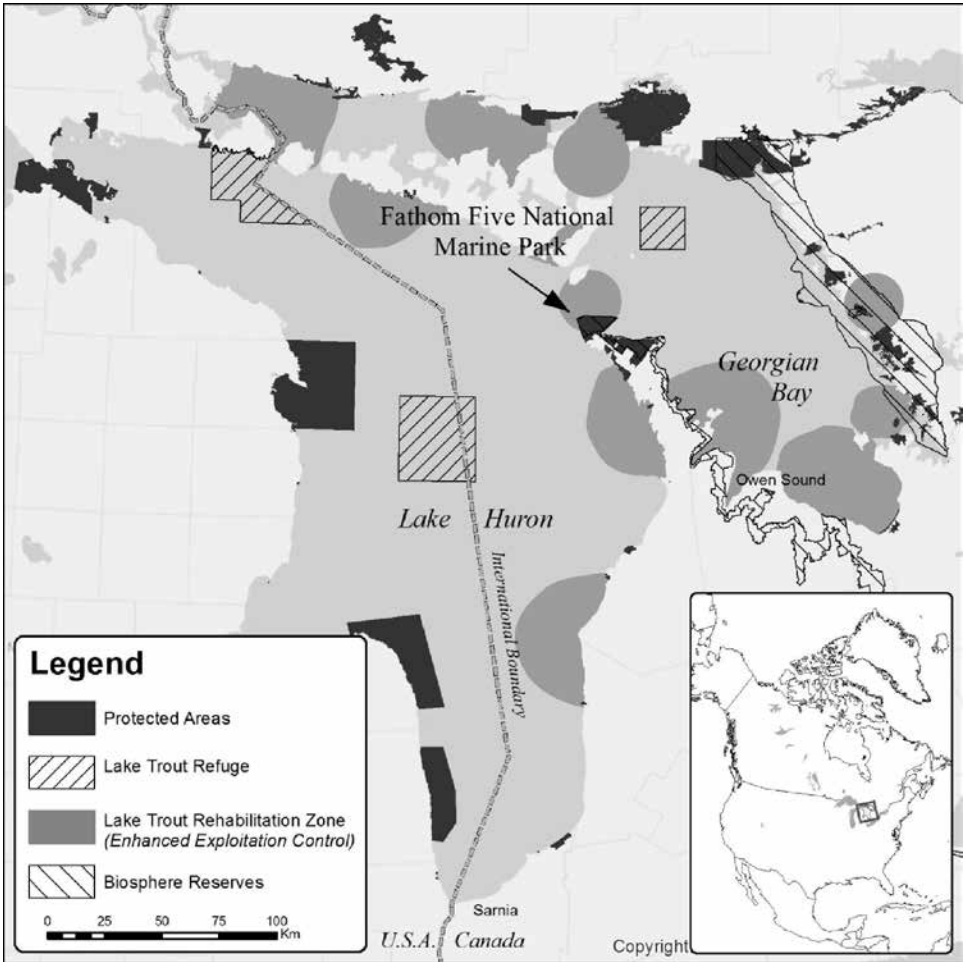
Resilience, especially its concept of persistence, may sound complementary to achieving ecological integrity, and it can with some qualification. Since many ecosystems face escalating uncertainty and novelty, efforts defined by maintaining the "composition and abundance of native species" may confront significant challenges, both socially and ecologically (Fluker 2010). In contrast, resilience is less focused on the persistence of a single species, and more reflective of an insurance metaphor by maintaining functional diversity, response diversity, and natural processes (Folke et al. 2004). Therefore, resilience appears to reinforce the expectations of the National Marine Conservation Area (NMCA) Act, including sustainability and the maintenance of structure and function (not specifically composition), and with qualification can also augment ecological integrity goals.

Structure, function, and composition can be characterized at all scales, from genetic to landscape. Structure includes biomass, density, diversity, spatial patterns, trophic groups, and ecosystem configuration (Minns et al. 1996). Function includes physiology, behavior, competition, energy flow, nutrient flux, and disturbance regimes (Minns et al. 1996). Composition refers to the species within the ecosystem.

Here follows a brief description of the current state and drivers for the interconnected offshore, coastal, and governance systems as discovered through the assessment (Table 2). This provided the context for resilience thinking.

Offshore assessment. Much of the recent change in the offshore ecosystem is coincident with invasive dreissenid mussel (*Dreissena rostriformis* and *D. polymorpha*) colonization (Nalepa et al. 2009; Barbiero et al. 2011). Although recent declines in the invasive sea lamprey (*Petromyzon marinus*) and alewife (*Alosa pseudoharengus*) fish population have created favorable conditions for native lake trout (*Salvelinus namaycush*) and cisco (*Coregonus* spp.) recovery, abundance across all trophic levels is generally low or declining (Dobiesz et al. 2005; OMNR 2010). For instance, four of the six deepwater cisco species are extinct or extirpated (Roseman et al. 2009), and, by feeding on benthic invertebrates, these fishes played an important function in energy and nutrient transfer to the pelagic environment

Figure 1. Lake Huron's protected area and enhanced fisheries management context.



Desired State	← Drivers →	Less Desired State
	Offshore	
native benthic diversity and lake trout-cisco community	nutrient and energy pathways colonization / extinction phase cycle of ecosystem temperature	dreissenid dominance and alewife-salmonie community
	Coastal	
low turbidity and sub/emergent vegetation	nutrient and energy pathways coastal development phase cycle of ecosystem colonization / extinction lake level fluctuations	high turbidity and algal biomass
	Governance	
legitimate, accountable, adaptive, and regionally integrated	politics and policy cultural beliefs and values population and demographics socio-economics problem-solving ability	lacks authority, limited mandate support, and little regional integration

Table 2. Alternate states and system drivers in Fathom Five. A decrease in resilience can make a system more vulnerable to disturbances. This can result in a regime shift when a threshold to a new basin is crossed. For example thresholds, see the Resilience Alliance threshold database (www.resalliance.org) and the Stockholm Resilience Centre regime shift database (www.regimeshifts.org). Currently, within Fathom Five the offshore is transitioning to a less-desired state, coastal is in a desired state, and governance is in a less-desired state.

(Eshenroder and Burnham-Curtis 1999). The dramatic decline of the benthic crustacean *Diporeia* spp. has also contributed to this break in traditional energy and nutrient cycles (Nalepa et al. 2009; Barbiero et al. 2011). It appears the offshore ecosystem of Fathom Five is transitioning to a resilient and less-desired state.

Coastal assessment. There is growing concern with sustained low lake levels, which is now approaching twelve years as compared with a maximum period of five years during the past century (e.g., Sellinger et al. 2008; IJC 2009; Millerd 2011; Midwood and Chow-Fraser 2012). Non-native species, including round goby (*Neogobius melanostomus*), common carp (*Cyprinus carpio*), and Eurasian watermilfoil (*Myriophyllum spicatum*) are present and have the potential to impact some coastal areas (e.g., GLANSIS 2012). The cumulative or direct impact of adjacent coastal development and domestic nutrient inputs remains unknown. In spite of this, the coastal ecosystem of Fathom Five appears to be in a resilient and desired state (Parks Canada 2011).

Governance assessment. Issues of legitimacy and effectiveness are the foremost challenges to governance in Fathom Five. Fisheries and water quality are managed without park involvement (e.g., see Table 10 in Parks Canada 2011). The transfer of ownership of the water column and lakebed to Parks Canada as per the establishment agreement (Canada and Ontario 1987) has yet to occur, and as a result the site is not scheduled under the NMCA Act. A park advisory committee representing a cross-section of public interest groups

exists; however, this committee has no decision-making authority or role in goal setting, implementation, or evaluation (Werhum 1994). Fathom Five is within the traditional territory of the Saugeen Ojibway Nations, and consultation and management processes are currently being negotiated. The archipelago is recognized as a lake trout rehabilitation zone (Figure 1); however, there are no additional measures such as fish sanctuaries or gear restrictions in place (OMNR 2010). The park boundary is considered inadequate in terms of representing either the Georgian Bay or Lake Huron marine regions (Beak Consultants Ltd. 1994). There is little demonstrated engagement in lake-wide initiatives, such as those stemming from the Great Lakes Water Quality Agreement (IJC 2012a). In practice, management concerns and actions are clearly focused on a park scale (Parks Canada 2011). Governance in Fathom Five appears to be in a resilient and less desired state.

Planning for resilience

Planning involves identifying a desired state and developing strategies to reduce vulnerabilities, increase adaptive capacity, and monitor system feedbacks. Table 2 summarizes our perspective of the desired state for the three systems and Table 3 provides our recommended planning strategies and actions for each.

Desired state. A degree of uncertainty and a plurality of perspectives on the desired state are to be expected. It is an open and ongoing discussion, influenced by changing social values, system novelty, management institutions, and other factors (Olsson et al. 2006; Hobbs et al. 2009). To illustrate the challenge, Sloan (2004) presents an interesting dilemma involving a choice between the recovery of sea otter (*Enhydra lutris*) or northern abalone (*Haliotis kamtschatkana*) in Gwaii Haanas NMCA and Haida Heritage Site. These species represent

Table 3. Recommendations to strengthen resilience by reducing vulnerability, increasing adaptability, and navigating change in Fathom Five.

System	Scale Below (specific sites)	Focal Scale (Park)	Scale Above (Lake Huron)
Offshore	• Establish lake trout and whitefish spawning refuges. • Restore and protect lake trout and cisco populations (e.g., stocking).	• Research and monitor disturbances, functional, and response diversity. • Restore and protect lake trout-cisco community. • Develop a sustainable fishery in collaboration with First Nations and other government departments. • Re-assess boundary adequacy.	• Meaningfully engage on lake-wide coordinating policies and programs. • Conduct a regional representativeness and network analysis of offshore ecosystems. • Express conservation and resilience concerns. • Integrate with "State of the Lake" monitoring.
Coastal	• Engage landowners in learning, monitoring, and area planning opportunities for place-based conservation. • Restore sites degraded by development. • Protect coastal wetlands from development.	• Research and monitor disturbances, functional, and response diversity. • Manage coastal connectivity (e.g., reduce stranding barriers, prevent phragmites colonization). • Assess boundary adequacy. • Assess cumulative impacts from coastal development.	• Meaningfully engage on lake-wide coordinating policies and programs. • Conduct a regional representativeness and network analysis of coastal ecosystems. • Support stewardship activities, including restoration and conservation incentives. • Integrate with "State of the Lake" monitoring.
Governance	• Conduct scenario and desired state exercises, with resilience as a goal, for areas of local interest. • Develop mechanisms for ecosystem stewardship at specific sites, including social learning and involvement of adjacent landowners and commercial operators. • Promote sense of place.	• Evaluate governance, including vulnerabilities related to legitimacy, adaptability, capacity, and participation. • Develop a communication and learning strategy related to NMCAs and resilience. • Demonstrate place-based conservation. • Assign adaptive management targets. • Recalibrate management objectives in terms of resiliency and ecosystem change. • Report on ecological services and promote the site as a source of knowledge and well-being.	• Establish regional partnerships with initiatives focussed on broader social-ecological stewardship issues. • Examine regional social networks, strategic policies, and opportunities for involvement. • Coordinate access to information and knowledge. • Participate in regional land-use and lake-wide planning. • Support NMCA policy development and include resiliency concepts.

potentially mutually exclusive desired states with different social and ecological values. It is a choice between otters and kelp forests or abalone and "urchin barrens," with the former better representing historic conditions and the latter specific fishery values. Similar debates exist within Fathom Five; for example, stocking non-native pacific salmon versus a full focus on native species recovery (Crawford 2001), or debating on the need to regulate lake levels or not (IJC 2011, 2012b).

To move forward, planners need to be aware of biases and assumptions and be open and prepared for such questions as: "who decides"; "why is one state better than all the others"; and, "what if there is disagreement" (Nadasdy 2007). Much is hindered by uncertainty, but this can be reduced by incorporating active learning and adaptability within a resilience framework (Fazey et al. 2007).

Opportunities to explore diverse perspectives and alternative desired states could be facilitated through visioning (Olsson 2007) or future scenario exercises (Peterson et al. 2003). An active research and learning program that incorporates social and ecological sciences and adequately educates and informs decision-making is essential. However, this may be challenging to implement, as is evident at Fathom Five. For instance, most social indicators in the recent State of the Park report (SOPR) are not reported due to a lack of knowledge (Parks Canada 2011) and the ecological indicators provide limited insight when compared with other government initiatives, such as the State of the Lake report (SOLEC 2009) or the Binational Partnership (EPA and EC 2008). Since the SOPR is developed as the key document for informing the planning process, its content matters (for details see, Parks Canada 2008). Knowledge of emerging issues or trends is also central to the identification of desired state. For instance, at Fathom Five knowledge of visitor carrying capacity (*sensu* Manning 2007) or valuation of ecosystem services (*sensu* MEA 2005) would be informative and guiding.

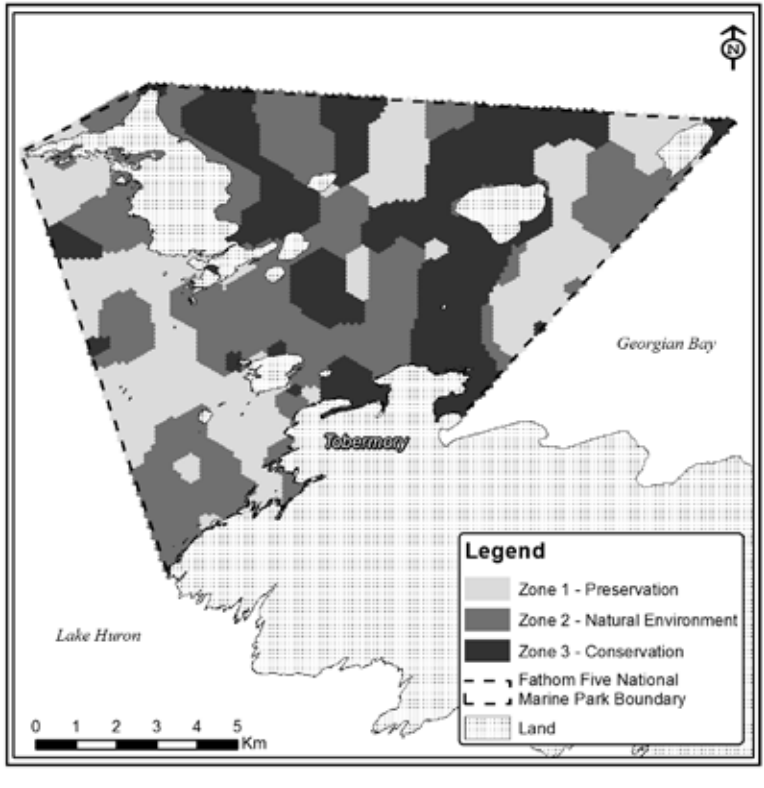
Based on our assessment of the offshore, the dominance of invasive dreissenid mussels has virtually eliminated any prospect of restoring this ecosystem to a historical composition. Although a degree of reconciliation and acceptance of system novelty is required, we feel there still exists an opportunity to actively navigate the transition and maintain structural and functional elements for energy and nutrient transfer from the benthic to pelagic realm. To this end, the desired state focuses on maintaining lake trout–cisco communities. Of note, other areas on Lake Huron that have established fish sanctuaries have witnessed native fish recovery and progress towards a more desired and resilient state (Reid et al. 2001; Madenjian et al. 2004).

For the coast, planning efforts are directed towards monitoring and maintaining structure and function, reinforcing the need to identify sources of biodiversity and maintaining connectivity to different lake level scenarios. Much of the coast is already in a desired state, as characterized by low turbidity, submergent and emergent vegetation, and little development.

The focus for governance is on leveraging out of a less-desired state, mostly through partnership and networking initiatives (e.g., IUCN WCPA 2008). Desired state for governance was based on the expressed elements of leadership and regional cooperation in the Fathom Five management plan (Parks Canada 1998) and on general attributes of good governance (Gunderson et al. 1995; Francis 2008).

Park zoning. Zoning is a spatial planning process often undertaken to support conservation goals and reduce user conflicts within a protected area. The current zoning plan for Fathom Five (Parks Canada 1998) does not have any zones that fully protect aquatic ecosystems in the park. We explored a zoning concept that explicitly attempts to strengthen resilience by spatially prioritizing protection needs (Figure 2). The decision-support tool Marxan with Zones (Watts et al. 2009) provided a platform by which to define and service zoning in a complementarity-based approach. Resilience-based features were selected for the analysis, including ecosystem structure (e.g., benthic complexity and composition, deepwater, ice coverage, currents, coastal wetlands, shoreline complexity and exposure), ecosystem function (e.g., spawning and breeding areas, areas of high nutrient and energy

Figure 2. An example of a "best solution" generated by Marxan with Zones. Using resilience-based representativeness, replication, and connectivity targets for key structures and functions. This is only a proof of concept and does not represent a final or approved plan. The results highlight the importance of protecting lake trout–cisco habitat and coastal wetlands within a Zone 1 Preservation area. The Zone 2 Natural Environment and Zone 3 Conservation areas provide for ecological sustainable uses, recognizing the social benefits and values of facilitating meaningful experiences (for zone descriptions see Parks Canada 1994).



flow), and social structure (e.g., visitor use nodes). Conservation target values were assigned in terms of resilience-based needs for representativeness, replication, and connectivity. Cost layers included coastal development, commercial shipping, and fishing areas. The Marxan approach provides a potential link to an adaptive management design (*sensu* Holling 1978). The conservation targets form a prediction of change and benefit, thus providing a quantitative measure of management effectiveness, to be monitored, evaluated, and adjusted in an iterative manner.

As a "proof of concept," the method was successful. However, to receive a high degree of legitimacy and acceptance in its implementation, future iterations will need to be reinforced through a public and partner planning process. The Great Barrier Reef Marine Park Authority credits their communication strategy and level of public engagement as key to their success in increasing the area of no-take protection zones from 4.5% to 33% of the park (Kenchington and Day 2011).

Regional scale

Resilience, in part, is predicated on an understanding of cross-scale linkages (Resilience Alliance 2010), and therefore, planning efforts need to consider larger, regional-scale influences. Although Fathom Five remains somewhat isolated from regional initiatives (e.g., EPA and EC 2010), Figure 1 illustrates the existence of other protected areas and the potential for a more systematic approach to networking and partnership. The Georgian Bay Littoral Biosphere Reserve (www.gbbr.ca), 80 km to the east, presents an example of an integrated regional vision which maintains an aquatic ecosystem focus. An alternate concept to biosphere reserves is a network of protected areas that function collectively with corridors or stepping-stones to facilitate species or process movement (e.g., Wildlands Network; www.twp.org), IUCN WCPA 2008). This could be particularly relevant for coastal wetland or spawning shoal connectivity. Future Marxan zoning exercises could be undertaken at a larger scale to help promote a resilient network concept (e.g., IUCN WCPA 2008, Green et al. 2009), as well as address boundary adequacy and representativeness issues (Beak Consultants Ltd. 1994). Networks also have the benefit of facilitating informed contributions to planning, building knowledge bases for research and monitoring, and engaging curiosity or stewardship interests in a learned fashion. UNESCO's knowledge societies (2005) concept may be guiding in this regard.

Monitoring

Recent research has revealed that there are leading indicators within ecological time-series data of abrupt and surprising changes due to a loss of resilience, including an increase in variance, change in skewness, rise in autocorrelation, and decrease in return rates (e.g., Carpenter and Brock 2006; Guttal and Jayaprakash 2009; Scheffer et al. 2009; Dakos et al. 2011). While many studies have been able to show retrospectively that such a transition occurred, methods to predict change, allowing for actions to either prevent or actively navigate a transition, have been more difficult to develop (Andersen et al. 2009; Biggs et al. 2009).

The current monitoring program for Fathom Five (Parks Canada 2011) does not explicitly address resiliency or leading indicators of regime shifts. We did, however, explore increasing

variability further by completing a control chart analysis (Anderson and Thompson 2004; Morrison 2008) of the parks coastal fish community. Our data were limited to the past eight years (2005–2012) and was only beginning to generate tighter confidence limits for expected stability in variability. An exceedance in variability would be viewed as a potential leading indicator of a regime shift. The changes may be due to increased lake levels, colonization/loss of macrophyte-dependent species, or invasive species. Further monitoring and analysis is required, but the method showed promise for interpreting multivariate environmental data and informing managers of potential concerns. In reality, it may takes decades of research and monitoring, as it did with lake (Scheffer and Carpenter 2003) and coral reef systems (Hughes et al. 2010), before sufficient understanding of system indicators and thresholds is available to help manage for resilient desired states.

We also encourage expanding the monitoring measures and discourse beyond visitor metrics to those that link social–ecological values and benefits, such as "healthy parks, healthy people" (Maller et al. 2008) and "quality of life" (Costanza et al. 2007). As with ecosystem services (MEA 2005), this may help to deepen the appreciation and importance of Fathom Five and identify grounds for networking and support for resilience.

Implementing a resilience-based approach

Implementation includes organizing and managing for resilience (Table 3). Institutional rigidity, struggles translating plans into actions, and weak or insular management structures are general concerns with any organization (Gunderson et al. 1995). Given the complexity, uncertainty, and origin of some of the park issues, an adaptive management approach to promote learning and experimentation with new policies, partnerships, and institutions may be beneficial (e.g., fisheries management, *sensu* Holling 1978). As a model, the Great Barrier Reef embraced the need for transformation and overcame similar barriers. Through leadership and innovation, they were able to coordinate the scientific community, increase public awareness, broaden stakeholder engagement, and navigate the political system for support at critical times (Olsson et al. 2008). They essentially developed a resilience-based approach to cope with uncertainty, risk, and change. The IUCN has also addressed some of these issues by developing best practices for management planning (Thomas and Middleton 2003), guidelines for legislation (Lausche 2011), methods for establishing networks (IUCN WCPA 2008), and approaches to assess management effectiveness (Pomeroy et al. 2004; Hockings et al. 2006).

Conclusion

A resilience-based approach provides perspective on system disturbances, drivers, alternate regimes, and cross-scale interactions (Resilience Alliance 2010). With this understanding, we feel there is an opportunity to better manage towards a more resilient and desired state. The desired state is variable and adaptive, and defined by key structures, functions, and feedbacks.

Management efforts aim to prevent undesired regime shifts and support post-disturbance recovery with functional and response diversity (Folke et al. 2004; Chapin et al. 2010). To fully embrace resilience requires a management structure that supports social learning,

experimentation, trust-building, and a mandate to take action (Prato 2006). Managers of protected areas should feel confident that those willing to look through its lens can make the concepts and methods of a resilience-based approach operational.

It is an opportune time for Fathom Five to consider incorporating resilience within its planning and management processes. The NMCA program is in a period of growth, there is growing interest in Great Lakes protected areas (e.g., Hedges et al. 2011; IJC 2012a), and the Fathom Five management plan is about to be opened for review. The concepts and methods we explored here appear to be promising and we are hopeful that even though the Great Lakes continue to face escalating uncertainties and change, Fathom Five can effectively achieve its long-term conservation goals by maintaining and building resilience.

Acknowledgments

Thank you to Parks Canada for the opportunity to explore this concept in Fathom Five. The work benefited considerably from the support and insights of Parks Canada colleagues, including Jeff Truscott, Cavan Harpur, Norm Sloan, John Haselmayer, and Michael Patrikeev. We are also grateful for the discussions with George Francis, Roland Hall, and Gordon Nelson at the University of Waterloo. Any views or opinions presented in this paper are solely those of the authors and do not necessarily represent those of the Parks Canada Agency or the University of Waterloo.

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The Requirement to Leave Park Resources and Values "Unimpaired"

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[Ed. note: This article originated as an essay commissioned by the Science Committee of the National Park System Advisory Board as part of its work to produce the report Revisiting Leopold: Resource Stewardship in the National Parks*, which was published in August 2012. The author wishes to acknowledge the support she received from the National Park Foundation in the preparation of the paper.]*

How should the Science Committee of the National Park Service Advisory Board interpret the key statutory directive "to leave [park resources and values] unimpaired for the enjoyment of future generations"? How does this part of the "fundamental purpose" of the national park system, included in the National Park Service (NPS) Organic Act and reinforced by the NPS General Authorities Act, guide or constrain the work of the Science Committee in revisiting the Leopold Report? In this era when the sources of impairment are overwhelmingly external and often pervasive, what direction does the statutory lodestar provide this committee? And what is "impairment" of park resources and values?

To begin to answer these questions, this essay will review how the "statement of fundamental purpose," and particularly its impairment prohibition, has been interpreted over the years. It will use the lawyer's approach of looking at the law's plain language, legislative history, and administrative interpretation, peppered with selected case law and commentary. It will show that the intent from the beginning and reinforced through the years is that the resources and values in the national park system are to be held as a public trust for future generations. And this essay will reveal how increasing knowledge and changing circumstances have provided the basis for evolving interpretations of the law. This observation will then let the Science Committee work through the difficult questions of how best, in challenging times, to preserve park resources and values to perpetuate their worth for future generations.

The George Wright Forum, vol. 30, no. 1, pp. 67–84 (2013).

ISSN 0732-4715. Please direct all permissions requests to info@georgewright.org.

The plain language of the foundational statutes: Creating a public trust

The "foundational statutes" for the National Park Service are the 1916 Organic Act and the 1970 General Authorities Act, including its significant 1978 "Redwoods Amendment" (16 USC §§ 1, 1a-1; Appendix 1). Parse the "plain language" of the statutes, beginning with the 1916 Organic act, to determine meaning and identify ambiguities:

> The service … shall promote and regulate the use of the … areas ... by such means and measures as conform to the fundamental purpose ... to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

Note the key words and phrases in the 1916 act. For example, the new service is both to "promote" and "regulate" the "use of park areas. The legislators and activists who created the National Park Service believed that promotion of the parks, through the media and tourism, was critical to garnering support for their establishment and funding. But they also wanted the secretary of the interior to have broad discretion to "make and publish such rules and regulations as he may deem necessary or proper for the use and management" of park areas. And governing all is the "fundamental purpose" of parks established by the 1916 act: "to conserve" and "provide for the enjoyment of" the identified resources so as to "leave them unimpaired for the enjoyment of future generations." While the thrust of this language is clearly preservationist and trust-like, the meaning of the words "conserve," "enjoyment," and "unimpaired" is not entirely plain, and the words' essential ambiguities provide fertile ground for evolution of meaning with increasing knowledge and changing circumstances.

As for the resources that should be left unimpaired, the terms are broad so as similarly to invite new meaning over time. "Scenery," possibly the pre-eminent asset to the publicists, landscape architects, civic leaders, politicians and other non-scientists who worked to create the National Park Service, connoted the grand, majestic, undisturbed (and therefore, in those men's minds, unimpaired) views.[1] The phrase "natural and historic objects" resembled the phrase used in the 1906 Antiquities Act with respect to the national monuments that the Park Service's creators coveted for the new bureau; moreover, the phrase cast a wide net beyond antiquities, as exemplified by such "objects" as the "greatest eroded canyon" and the Olympic elk in early presidential proclamations (Grand Canyon National Monument, 1908; Mount Olympus National Monument, 1909). Finally, "wild life"—two words—encompassed both flora and fauna. The comprehensive character of all these identified resources, and the redundancies among them even in the lexicon of 1916, have justified the evolution of their meaning to extend today to concepts such as ecosystem management and landscape conservation.

The plain meaning of the General Authorities Act of 1970 is that all areas administered by the National Park Service—natural, historical, and recreational, as grouped by NPS at that time—are part of "one national park system preserved and managed for the benefit and inspiration of the people of the United States," and all are subject to the same high standards (e.g., non-impairment) except as Congress has specifically provided otherwise. Note that the word "preserved" has supplanted the 1916 word "conserve," consistent with the long-

standing connotation of "conserve" with respect to national park areas. Note, too, that the phrase "benefit and inspiration" has perhaps trumped, or at least embellished, the 1916 word "enjoyment."

The 1978 amendment to the General Authorities Act, often called the "Redwoods Amendment" because it was enacted as part of the legislation expanding Redwoods National Park and responding to litigation concerning that park, reiterates the high standard for the national park system and reinforces the notion that parks are public trusts:

> Congress further reaffirms, declares, and directs that the promotion and regulation of the various areas of the National Park System … shall be consistent with and founded in the purpose established by [the 1916 act], to the common benefit of all the people of the United States. The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.

A basic canon of statutory construction is that no words are "mere surplusage," and here Congress employs three verbs of past, present, and future intent—"reaffirms, declares, and directs"—to stress the continued importance of the fundamental purpose of parks "to the common benefit" of all. Note, too, that the fundamental "purpose" remains singular as in the 1916 legislation: it is not dual—conservation *and* use—but rather, it is a singular purpose including conservation and enjoyment and, most importantly, subject to the impairment prohibition. And like the 1916 act, the 1978 legislation speaks of "promotion and regulation," but now of park areas and not, as in 1916, of their "use." Proclaiming the "high public value and integrity of the National Park System," Congress now states explicitly that park areas are to be "protected" as well as managed and administered, and all related activities "shall not be exercised in derogation of … [park] values and purposes…." This is the language of a public trust, with implied fiduciary responsibilities, as created and defined by statute.[2] Of course, the passive tense of the verbs (e.g., "[t]he authorization of activities shall be construed") obscures who, exactly, bears a fiduciary obligation for preserving park resources and values—certainly the NPS, but the secretary of the interior? the executive branch? everyone?—and this question is still asked today.[3] The last clause of the 1978 Redwoods Amendment is the "exception clause," stating that park resources and values may be impaired or derogated only when Congress "directly and specifically provide[s]." While the language may leave some ambiguity as to what Congress must say, the emphatic reiteration of the adverbs ("directly" *and* "specifically") suggests that a high degree of clarity is necessary to authorize derogation.

The legislative history: Preserve them intact, safeguard them

In addition to the statutory language, the legislative history can provide insight into the congressional intent behind the "fundamental purpose" of the national park system.[4] Regrettably, the Congressional reports, hearings, and remarks reveal little about the meaning of "unimpaired" in the 1916 Organic Act, other than a reference to "the preservation of nature

as it exists" that recalls the requirement in the 1872 Yellowstone National Park enabling act

> for the preservation, from injury or spoliation, of all timber, mineral deposits, natural curiosities, or wonders ... and their retention in their natural condition.

Transcending the congressional documents, however, to include the historian's investigation into the key players and events provides a fuller appreciation of the NPS creators' intent.[5] For example, in his memoirs, Horace Albright—who represented the Department of the Interior (DOI) in the legislative process and later wrote the first administrative interpretation of the enacted legislation—gave several reasons for the Organic Act's "somewhat vague" language, including the increased likelihood of achieving legislative agreement before the end of the 64th Congress, the confidence of park proponents in the ability of first NPS Director Mather and Assistant Director Albright to implement understood philosophies after enactment, and—significantly for the work of the Science Committee—the need for management flexibility in order for parks to adjust to changing future conditions. Despite the breadth of the statutory language, Albright's memoirs focus clearly on the core ideal and principle of parks: "to retain them totally intact for the future," "to preserve, intact, the heritage we were bequeathed."

The legislative history of the 1978 Redwoods Amendment, like its plain language, reinforces what the House Report unreservedly refers to as "trust responsibilities" regarding park resources and values, as demonstrated by these uncontroverted highlights:

> The protection of the units of the system is to be carried out in accordance with the maintenance of the integrity of this system, and management of these areas shall not compromise these resource values except as Congress may have specifically provided. Thus, the Secretary is to afford the highest standard of protection and care [to park lands]. [H.R. Rep. No. 95-581, p. 21 (1978)]

> The Secretary has an absolute duty, which is not to be compromised, to fulfill the mandate of the 1916 Act to take whatever action and seek whatever relief as will safeguard the units of the National Park System. [S. Rep. No. 95-528, p. 9]

> The committee fully expects and intends that the executive branch will utilize every authority to protect and safeguard the property of the United States from adverse activities outside the park boundaries. [S. Rep. No. 95-528, p. 13]

Again, going beyond the congressional documents provides greater insight into legislative intent. According to DOI lawyer Jim Webb, who drafted the legislation, the Carter administration sought with this language to reinforce the public trust nature of the national park system's fundamental purpose, as requested by the legislation's chief sponsor, Chairman Phil Burton of the House Subcommittee on National Parks and Insular Affairs.[6]

Administrative interpretation: The paramount duty

The plain language and legislative history of the NPS foundational statutes reveal a resolute congressional intent to preserve park resources and values for present and future generations. Neither of these sources, however, provides much specific direction on how to manage and

protect these assets. The sparse statutory and legislative text has meant that, in the words of author Paul Schullery, "We've been creating the National Park Service idea ever since."[7] Indeed, in some ways the administrative interpretation of the foundational statutes, including the impairment prohibition, encompasses much of the history of the National Park Service. This essay can only hope to focus on highlights that might prove particularly relevant to the Science Committee; and, by virtue of its author's area of expertise, this essay tends to focus on the legally relevant interpretations.[8]

From a legal perspective, it is the interpretation of the statutes by the agency charged with their administration (i.e., DOI, NPS), through regulations, policies, solicitor's opinions, and other actions, that puts flesh on the statutory bones. The most influential agency interpretations are often those that are relatively contemporaneous with the congressional enactment, those that stand the test of time, and those that Congress appears to have affirmed by some action or even inaction.[9] Furthermore, the law recognizes that, with justification, agency interpretations may change over time as long as the new interpretation fits reasonably within the statutory language and intent.

The first NPS management policies, drafted by Horace M. Albright and published as a letter dated May 13, 1918, from Secretary Franklin K. Lane to Director Stephen T. Mather, constitute the contemporaneous interpretation of the 1916 statute. Albright seized this opportunity to "clarify and elaborate the ideas and goals set for the National Park Service in the brief organic act…."[10] The "Lane letter," as it is known, lays the foundation for park management:

> For the information of the public, an outline of the administrative policy to which the new Service will adhere may be announced. This policy is based on three broad principles: First that the national parks must be maintained in absolutely unimpaired form for the use of future generations as well as those of our own time; second, that they are set apart for the use, observation, health, and pleasure of the people; and third, that the national interest must dictate all decisions affecting public or private enterprise in the parks.
>
> *Every activity of the Service is subordinate to the duties imposed upon it to faithfully preserve the parks for posterity in essentially their natural state* (emphasis added).

Thus, the Lane letter makes clear that the first and paramount principle of park management is non-impairment, and especially preservation of the natural conditions of parks.[11]

In the updated administrative policies of 1925 from Secretary Hubert Work, ghost-writer Albright again seized the opportunity to restate but also to strengthen the 1918 policies for park resource protection, as in the following revision of the Lane letter's first administrative principle:

> [T]he national parks and national monuments must be maintained untouched by the inroad of modern civilization in order that unspoiled bits of native America may be preserved by future generations as well as our own.

The Work letter further declared that the "national parks … remain under Nature's own chosen conditions." Like Secretary Work, later secretaries of the interior, including those as ideologically diverse as Stewart Udall, Walter Hickel, and James Watt, wholeheartedly reaffirmed the Lane letter principles in their own letters to the NPS director. And later volumes of NPS management policies, including the current 2006 version, explicitly built upon these principles.

Of the many other issues covered in NPS management policies, two that may be of particular interest to the Science Committee—the educational/scientific role of parks and their role as wildlife sanctuaries—deserve more than the following brief mention:

> First, NPS management policies have always envisioned an educational and scientific role for parks. Both the Lane and Work letters directed the Park Service to encourage educational use "in every practical way," and specifically identified two of those ways: using parks as science classrooms for university and high school students and establishing park museums for natural resource collections. The 1932 edition of NPS management policies stated, "Education is a major phase of the enjoyment and benefit to be derived by the people from these parks…. Containing the supreme in objects of scenic, historical, or scientific interest, the educational opportunities are preeminent…."[12] Later management policies have expanded these concepts significantly (see, e.g., Chapters 7, 4, and 5 of *NPS Management Policies 2006*).
>
> Second, the Park Service has interpreted its preservation mandate to mean no hunting in parks unless Congress expressly provides otherwise.[13] The creators of the National Park Service in 1916 were aware that Congress made Yellowstone a game sanctuary by outlawing hunting in 1894, through a statutory provision that would be incorporated in many other parks' enabling acts. The Lane and Work letters include an express prohibition on hunting, even though the 1916 Act did not.

While the non-impairment principle has been unassailable in NPS policy, history shows that the Park Service's interpretation of what activities are compatible with, or essential to, its implementation has been debatable. Issues such as development of park roads and buildings, authorization of motorized uses, and imposition of carrying capacity limits have often sparked controversy, both within NPS and between it and outside groups. The most serious controversies in recent decades, such as the battle over revising *NPS Management Policies 2001*, have involved political appointees attempting to impose their views on an uncooperative Park Service dug in to defend the NPS core principles.

In this recent battle, as in certain previous controversies when forces perceived as anti-preservation have tried to change park policies, the Park Service prevailed with the help of the press, the public, and key congressional officials.[14] Thus, *NPS Management Policies 2006* differs little from the 2001 version; and, in fact, the core principles have changed little since 1918. The 2001 and 2006 versions, however, do parse the language of the foundational statutes in more detail than previous versions, primarily because litigation in the late 1990s

(*Southern Utah Wilderness Alliance ("SUWA") v. Dabney*) was threatening to establish a problematic interpretation if the Park Service did not provide its own detailed interpretation. Ultimately, the court determined in a 2005 opinion that the plain statutory language, the legislative and administrative history, and the majority of relevant court opinions supported the Park Service's "well-reasoned, thorough, and persuasive" 2001 interpretation of its foundational statutes. This interpretation, now embodied in Section 1.4 of *NPS Management Policies 2006*, merits a full and close reading (see Appendix 2).

Despite principled policies, park management over the years has not been perfect. Congress, the courts, and the scientific community, among others, have had occasion to point out the shortcomings. For example, only a few years after NPS decided to group its increasing diversity of areas into three categories—natural, historical, and recreational—and to develop different policies and regulations for each category, Congress impliedly rebuffed the categorization scheme in the 1970 General Authorities Act and again in the 1978 Redwoods Amendment. The national park system, Congress said, is a "single national heritage" greater than the sum of its parts, and all areas are subject to the general systemwide authorities except as Congress specifically provides otherwise. As a consequence, the Park Service revised its general regulations, and several courts upheld the changes.[15]

The courts, too, have sometimes found fault. For example, in the Redwoods National Park litigation of the 1970s, the court compelled the secretary of the interior, based on his "paramount legal duty," "to take reasonable steps within a reasonable time to afford as full protection as possible" to protect the eponymous trees from the logging operations *outside* the park boundaries. As another example, in the 1990s litigation referenced above (*SUWA v. Dabney*), the court initially determined that the Park Service's authorization of motorized use in a certain streambed in Canyonlands National Park violated the impairment prohibition, leading NPS to reassess the authorization and, in the end, prohibit all motorized use in that streambed. As a final example, in the litigation concerning winter use at Yellowstone National Park, one of the involved courts vacated the 2007 plan for snowmobiles and snowcoaches based on the plan's adverse impacts on the park's soundscape, air quality, and wildlife, concluding that the "[p]lan clearly elevates use over conservation of park resources and values and fails to articulate why … [these adverse impacts] are "necessary and appropriate to fulfill the purposes of the park." The Park Service is still working on a final plan that can, among other things, survive judicial review. Despite these examples of courts finding fault, the general rule for park litigation is that, if NPS acts to protect park resources and values, the courts are likely to uphold the action unless Congress has specifically directed otherwise.

In addition to Congress and the courts, at several points in NPS history scientists have pushed park management in new directions. While others will provide the Science Committee more background on the evolution of scientific management in the Park Service, this essay will mention the evolution (if not "revolution"[16]) precipitated by George Melendez Wright, including his 1932 report *Fauna of the National Parks*, and 31 years later by the Leopold report ("Wildlife Management in the National Parks") and the Robbins report ("A Report by the Advisory Committee to the National Park Service on Research"). Although the recommendations of the Leopold and Robbins reports may still lack full implementation,[17] NPS policy and viewpoint started to change immediately after their publication, as evidenced

by Secretary Udall's 1964 directive that park natural areas be managed "toward maintaining, and where necessary reestablishing, indigenous plant and animal life, in keeping with the March 4, 1963, recommendations of the … [Leopold Report]." Thus, bringing science to bear has led—and should continue to lead—to critically important changes in NPS management direction.

But what is impairment?

National park resources and values are a public trust created by compelling statutory language and intent. The core administrative principles provide that the Park Service must manage park resources and values so as to prevent or, if necessary, remedy impairment. Section 1.4 of *NPS Management Policies 2006* sets forth the authoritative agency interpretation of this duty. As a guide (but not substitute) for reading Section 1.4, consider the following highlights:

- Section 1.4.2 concludes that both the term "unimpaired" in the 1916 Organic Act and the term "derogation" in the 1978 Redwoods Amendment are used to describe a "single standard" of "what the National Park Service must avoid" in managing park resources and values.
- Section 1.4.3 explains how the Park Service should both conserve resources and values and provide for their enjoyment, but also declares that "when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant."
- Section 1.4.4 identifies the impairment prohibition—separate from the above conservation mandate—as the "cornerstone of the Organic Act."
- Section 1.4.6 defines "what constitutes park resources and values" with a comprehensive list, including tangible resources of every kind from individual to landscape in scope; "the ecological, biological, and physical processes that created the park and continue to act upon it"; sensory experiences like visibility, natural soundscapes, and smells, with both tangible and intangible aspects; "appropriate opportunities to experience enjoyment" of all the listed resources, but "without impairing them"; the park's contribution to the values of the National Park System; and any additional specific attributes of the particular park.

But what is "impairment" of park resources and values? The most recent NPS management policies (2001, 2006) wrestled mightily with the concept before settling on the following Section 1.4.5:

> The impairment that is prohibited by the [foundational park statutes] is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.

> An impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is
>
> - necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
> - key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
> - identified in the park's general management plan or other relevant NPS planning documents as being of significance.
>
> An impact would be less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated.

The Park Service has continued to wrestle with this definition. Both natural and cultural resource professionals have attempted to provide more detailed guidance documents on impairment to aid "the responsible NPS manager" in exercising "professional judgment." To date, however, the Park Service has relied more heavily on case-by-case determinations, taking into account available information and compiling an administrative record that can withstand scientific and judicial review.[18]

Conclusion

The 1963 Leopold Report began with reference to the "fundamental purpose" set forth in National Park Service Organic Act of 1916. It proceeded to recount how the National Park Service had interpreted this fundamental purpose through the years with respect to wildlife management, revealing an evolution in philosophy and practice with changing circumstances and increasing knowledge and understanding. Then, of course, the Leopold Report itself made a substantial contribution to this management evolution.

So, too, this Science Committee can begin with an understanding of the park foundational statutes and proceed to advise the National Park Service what must be done now, based on the best scientific knowledge available, to protect and preserve park resources and values for present and future generations. The committee now knows that the words of the park statutes are broad, the intent to create a public trust is clear, and the core administrative principles have remained constant through the years. The committee also should feel free to consider a broad range of preservation options consistent with the words and intent of the foundational statutes, as made clear by the first court to interpret park law after passage of the Redwoods Amendment:

> Certainly the Secretary is not restricted in the protection and administration of Park resources to any single means.... [The Secretary and the Park Service] have broad discretion in determining what actions are *best calculated to protect Park resources*... (emphasis added).[19]

Indeed, in this age of climate change and more, what actions are best calculated to protect and preserve park resources and values for the present and future generations?

Appendix 1: 16 US Code Sections 1 and 1a-1 — The Statutory Foundation

§ 1. Service created; director; other employees

There is created in the Department of the Interior a service to be called the National Park Service, which shall be under the charge of a director who shall be appointed by the President, by and with the advice and consent of the Senate. The Director shall have substantial experience and demonstrated competence in land management and natural or cultural resource conservation. The Director shall select two Deputy Directors. The first Deputy Director shall have responsibility for National Park Service operations, and the second Deputy Director shall have responsibility for other programs assigned to the National Park Service. There shall also be in said service such subordinate officers, clerks, and employees as may be appropriated for by Congress. The service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified, except such as are under the jurisdiction of the Secretary of the Army, as provided by law, by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

§ 1a-1. National Park System: Administration; declaration of findings and purpose

Congress declares that the national park system, which began with establishment of Yellowstone National Park in 1872, has since grown to include superlative natural, historic, and recreation areas in every major region of the United States, its territories and island possessions; that these areas, though distinct in character, are united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage; that, individually and collectively, these areas derive increased national dignity and recognition of their superb environmental quality through their inclusion jointly with each other in one national park system preserved and managed for the benefit and inspiration of all the people of the United States; and that it is the purpose of this Act to include all such areas in the System and to clarify the authorities applicable to the system. Congress further reaffirms, declares, and directs that the promotion and regulation of the various areas of the National Park System, as defined in section 2 of this Act [*16 USCS § 1c*], shall be consistent with and founded in the purpose established by the first section of the Act of August 25, 1916 [*16 USCS § 1*], to the common benefit of all the people of the United States. The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.

Appendix 2: Excerpts from *National Park Service Management Policies 2006*, Section 1.4 , "Park Management"

1.4.1 The Laws Generally Governing Park Management

The most important statutory directive for the National Park Service is provided by interrelated provisions of the NPS Organic Act of 1916 and the NPS General Authorities Act of 1970, including amendments to the latter law enacted in 1978.

The key management-related provision of the Organic Act is as follows:

> [The National Park Service] shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified ... by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations. (16 USC 1) Congress supplemented and clarified these provisions through enactment of the General Authorities Act in 1970, and again through enactment of a 1978 amendment to that act (the "Redwood Amendment," contained in a bill expanding Redwood National Park), which added the last two sentences in the following provision.

The key part of that act, as amended, is as follows:

> Congress declares that the national park system, which began with establishment of Yellowstone National Park in 1872, has since grown to include superlative natural, historic, and recreation areas in every major region of the United States, its territories and island possessions; that these areas, though distinct in character, are united through their inter-related purposes and resources into one national park system as cumulative expressions of a single national heritage; that, individually and collectively, these areas derive increased national dignity and recognition of their superlative environmental quality through their inclusion jointly with each other in one national park system preserved and managed for the benefit and inspiration of all the people of the United States; and that it is the purpose of this Act to include all such areas in the System and to clarify the authorities applicable to the system. Congress further reaffirms, declares, and directs that the promotion and regulation of the various areas of the National Park System, as defined in section 1c of this title, shall be consistent with and founded in the purpose established by section 1 of this title [the Organic Act provision quoted above], to the common benefit of all the people of the United States. The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas

have been established, except as may have been or shall be directly and specifically provided by Congress (16 USC 1a-1).

This section of *Management Policies* represents the agency's interpretation of these key statutory provisions.

1.4.2 "Impairment" and "Derogation": One standard

Congress intended the language of the Redwood amendment to the General Authorities Act to reiterate the provisions of the Organic Act, not create a substantively different management standard. The House committee report described the Redwood amendment as a "declaration by Congress" that the promotion and regulation of the national park system is to be consistent with the Organic Act. The Senate committee report stated that under the Redwood amendment, "The Secretary has an absolute duty, which is not to be compromised, to fulfill the mandate of the 1916 Act to take whatever actions and seek whatever relief as will safeguard the units of the national park system." So, although the Organic Act and the General Authorities Act, as amended by the Redwood amendment, use different wording ("unimpaired" and "derogation") to describe what the National Park Service must avoid, they define a single standard for the management of the national park system—not two different standards. For simplicity, *Management Policies* uses "impairment" (or a variation thereof), not both statutory phrases, to refer to that single standard.

1.4.3 The NPS Obligation to Conserve and Provide for Enjoyment of Park Resources and Values

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. This mandate is independent of the separate prohibition on impairment and applies all the time with respect to all park resources and values, even when there is no risk that any park resources or values may be impaired. NPS managers must always seek ways to avoid, or to minimize to the greatest extent practicable, adverse impacts on park resources and values.

However, the laws do give the Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impact does not constitute impairment of the affected resources and values.

The fundamental purpose of all parks also includes providing for the enjoyment of park resources and values by the people of the United States. The enjoyment that is contemplated by the statute is broad; it is the enjoyment of all the people of the United States and includes enjoyment both by people who visit parks and by those who appreciate them from afar. It also includes deriving benefit (including scientific knowledge) and inspiration from parks, as well as other forms of enjoyment and inspiration. Congress, recognizing that the enjoyment by future generations of the national parks can be ensured only if the superb quality of park resources and values is left unimpaired, has provided that when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant. This is how courts have consistently interpreted the Organic Act.

1.4.3.1 Park Purposes and Legislatively Authorized Uses

Park purposes are found in the general laws pertaining to the national park system, as well as the enabling legislation or proclamation establishing each unit. In addition to park purposes, in many cases the enabling legislation or proclamation for a park unit may also identify uses that are either mandated or authorized. In the administration of mandated uses, park managers must allow the use; however, they do have the authority to and must manage and regulate the use to ensure, to the extent possible, that impacts on park resources from that use are acceptable. In the administration of authorized uses, park managers have the discretionary authority to allow and manage the use, provided that the use will not cause impairment or unacceptable impacts. In determining whether or how to allow the use, park managers must consider the congressional or presidential interest, as expressed in the enabling legislation or proclamation, that the use or uses continue. Where there is strong public interest in a particular use, opportunities for civic engagement and cooperative conservation should be factored into the decision-making process.

1.4.4 The Prohibition on Impairment of Park Resources and Values

While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

The impairment of park resources and values may not be allowed by the Service unless directly and specifically provided for by legislation or by the proclamation establishing the park. The relevant legislation or proclamation must provide explicitly (not by implication or inference) for the activity, in terms that keep the Service from having the authority to manage the activity so as to avoid the impairment.

1.4.5 What Constitutes Impairment of Park Resources and Values

The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.

An impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or

- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated.

An impact that may, but would not necessarily, lead to impairment may result from visitor activities; NPS administrative activities; or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park. This will be addressed consistent with sections 1.6 and 1.7 on Cooperative Conservation and Civic Engagement.

1.4.6 What Constitutes Park Resources and Values

The "park resources and values" that are subject to the no-impairment standard include

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

1.4.7 Decision-making Requirements to Identify and Avoid Impairments

Before approving a proposed action that could lead to an impairment of park resources and values, an NPS decision-maker must consider the impacts of the proposed action and determine, in writing, that the activity will not lead to an impairment of park resources and values. If there would be an impairment, the action must not be approved.

In making a determination of whether there would be an impairment, an NPS decision-maker must use his or her professional judgment. This means that the decision-maker must consider any environmental assessments or environmental impact statements required by the National Environmental Policy Act of 1969 (NEPA); consultations required under section 106 of the National Historic Preservation Act (NHPA), relevant scientific and scholarly

studies; advice or insights offered by subject matter experts and others who have relevant knowledge or experience; and the results of civic engagement and public involvement activities relating to the decision. The same application of professional judgment applies when reaching conclusions about "unacceptable impacts."

When an NPS decision-maker becomes aware that an ongoing activity might have led or might be leading to an impairment of park resources or values, he or she must investigate and determine if there is or will be an impairment. This investigation and determination may be made independent of, or as part of, a park planning process undertaken for other purposes. If it is determined that there is, or will be, an impairment, the decision-maker must take appropriate action, to the extent possible within the Service's authorities and available resources, to eliminate the impairment. The action must eliminate the impairment as soon as reasonably possible, taking into consideration the nature, duration, magnitude, and other characteristics of the impacts on park resources and values, as well as the requirements of the National Environmental Policy Act, National Historic Preservation Act, the Administrative Procedure Act, and other applicable laws.

1.4.7.1 Unacceptable Impacts

The impact threshold at which impairment occurs is not always readily apparent. Therefore, the Service will apply a standard that offers greater assurance that impairment will not occur. The Service will do this by avoiding impacts that it determines to be unacceptable. These are impacts that fall short of impairment, but are still not acceptable within a particular park's environment. Park managers must not allow uses that would cause unacceptable impacts; they must evaluate existing or proposed uses and determine whether the associated impacts on park resources and values are acceptable.

Virtually every form of human activity that takes place within a park has some degree of effect on park resources or values, but that does not mean the impact is unacceptable or that a particular use must be disallowed. Therefore, for the purposes of these policies, unacceptable impacts are impacts that, individually or cumulatively, would

- be inconsistent with a park's purposes or values, or
- impede the attainment of a park's desired future conditions for natural and cultural resources as identify ed through the park's planning process, or
- create an unsafe or unhealthful environment for visitors or employees, or
- diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values, or
- unreasonably interfere with
    - park programs or activities, or
    - an appropriate use, or
    - the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park.
    - NPS concessioner or contractor operations or services.

Figure 1 illustrates the relationship between appropriate use, unacceptable impacts, and impairment.

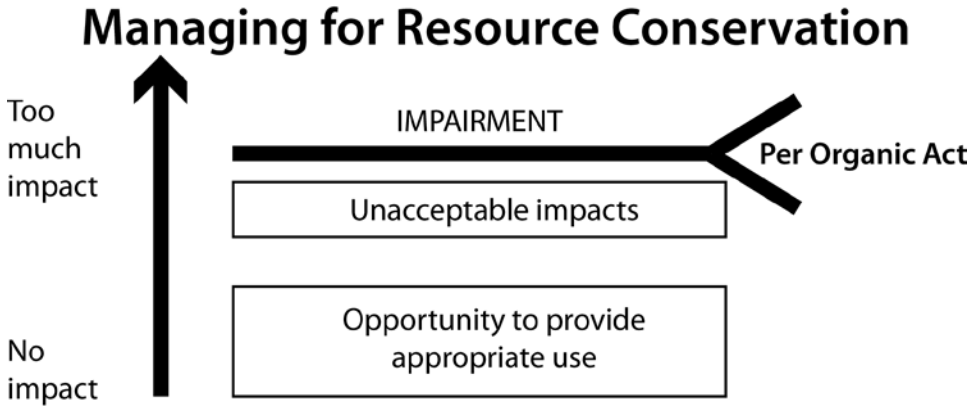

Figure 1. The relationship between appropriate use, unacceptable impacts, and impairment.

1.4.7.2 Improving Resource Conditions within the Parks

The Service will also strive to ensure that park resources and values are passed on to future generations in a condition that is as good as, or better than, the conditions that exist today. In particular, the Service will strive to restore the integrity of park resources that have been damaged or compromised in the past. Restoration activities will be guided by the natural and cultural resource-specific policies identified in chapters 4 and 5 of these *Management Policies*.

Endnotes

1. In his article entitled "The National Park Service Act of 1916: A 'Contradictory Mandate'?," (*Denver University Law Review* 74(3), 575–623 [1994]) Robin W. Winks suggests that we consider carefully the meaning and implications of "scenery," thereby realizing the term's potential for evolution in meaning. The historian Richard West Sellars has also explored the importance and role of scenery in the creation and management of national parks, especially at times when science had little influence.
2. Congress, a federal court, and others have noted that since the 1978 Redwoods Amendment, it is the park statutes, and not federal common law, that impose trust-like duties to protect park resources and values.
3. There have been answers that suggest the responsibility is broad. For example, the relevant legislative history states that the 1978 Redwoods Amendment "is intended to serve as the basis for any judicial resolution of competing private and public values and interests in … areas of the National Park System." Furthermore, in the so-called "Doe Run opinion," the solicitor of the Department of the Interior (DOI) concluded that the secretary of the interior bears responsibility both for determining whether the activities of other DOI bureaus threaten park resources and values and—as implied in the solicitor's description of the secretary's options—for protecting them, as long as the statutes governing those non-NPS activities provide the secretary sufficient discretion. Solicitor's Opinion M-36993 (1998).

4. Courts routinely state that, if the statutory language is clear, it is not necessary to consider extraneous sources of legislative intent. Many courts nevertheless find some reason to examine legislative history. Of course, in the case of the foundational NPS statutes, the statutory language provides sufficient ambiguity to invite further inquiry.
5. Especially helpful are the remarkably detailed recollections of Horace M. Albright set forth in two memoirs and other publications, the aforementioned article by Robin W. Winks, and Dayton Duncan's research in *The National Parks: America's Best Idea* (New York: Alfred A. Knopf, 2009), which he co-authored with Ken Burns.
6. In a 1986 letter written to document this legislative intent, former DOI Associate Solicitor Webb wrote, "I got out [Joe] Sax's [1970 seminal law review] article, went to his description of the elements of a public trust, and wrote each of them into a provision that became [the Redwoods Amendment]. . . . I returned promptly to the White House with the draft, it was explained to Burton, approved all around and, eventually, enacted." As a strictly legal matter, Webb's 1986 letter would likely carry little weight with a court, but it appears to reflect accurately the intent of key players and is therefore of significant value. The 1970 article referred to is Joseph L. Sax, "The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention," *Michigan Law Review* 68(3): 471–566.
7. Schullery's quoted comment was about the Yellowstone National Park enabling act, but applies equally to the foundational statutes. See the interview with him in Duncan and Burns' *The National Parks: America's Best Idea*, pp. 252–255.
8. In 1994, Lary M. Dilsaver published *America's National Park System: The Critical Documents* (Lanham, MD: Rowman & Littlefield), which includes influential policy documents through 1992 (see www.nps.gov/history/history/online_books/anps/).
9. Under administrative law principles developed in recent decades, courts also pay more deference to agency interpretations that have taken into consideration public comments as part of a formalized process, thus according codified regulations the most deference.
10. As noted earlier, the 1916 Organic Act authorized the secretary of the interior to promulgate rules and regulations for park management. Before the advent of the *Federal Register* (1936) and Code of Federal Regulations (1938), the administrative policies set forth in the Lane letter partially filled this function.
11. Many park documents, especially those prior to the 1930s, focus on park natural resources even to the exclusion of historic resources despite the mention of "historic objects" in the Organic Act and the existence of national parks and monuments based on such objects. It was not until the 1930s, however, that NPS acquired substantial responsibility for historic properties by virtue of a 1933 FDR executive order transferring many historic properties to its administration. With this increased responsibility over historic resources as well as the subsequent enactment of detailed historic preservation laws (e.g., the Historic Sites Act of 1935, the National Historic Preservation Act of 1966), the Park Service policies began to pay greater attention to historic resources.
12. Interestingly, the author of this edition of management policies was Louis C. Cramton, then a special attorney to the secretary of the interior but formerly a congressman who sat on the House Committee on Public Lands in 1916 during the consideration of the NPS Organic Act.

13. See, e.g., *National Rifle Ass'n. v. Potter*, 628 F. Supp. 903 (D.D.C. 1986), discussing the roots of the NPS hunting prohibition and upholding the 1983 regulatory revision to retract a presumptive allowance of hunting in the "recreational areas" of the 1960s and 1970s.
14. In the article referenced above (footnote 1), Robin W. Winks wrote, "The National Park System of the United States … has the warm support of the American people…. [T]he public brooks little compromise with what it understands to be the System's mission."
15. See, e.g., *National Rifle Ass'n. v. Potter* (footnote 13, above), upholding change in regulations with respect to hunting in former "recreational areas," and *Bicycle Trails Council of Marin v. Babbitt*, 82 F.3d 1445 (9th Cir. 1996), upholding change in regulations with respect to bicycle use in these areas.
16. Paul Schullery characterized Wright's impact this way: "The effect of George Wright and his colleagues—this group of ecological thinkers and students—was, in an institution that's always evolving anyway, like a perpetual revolution. The things they were suggesting were such a reversal of the way society saw nature that I don't think it's an overstatement to call it a revolution." Duncan and Burns, *The National Parks: America's Best Idea*, p. 253.
17. See the National Research Council's 1992 report on *Science and the National Parks* (Washington, DC: National Academy Press).
18. Legislation enacted in 1998 requires the secretary of the interior to "take such measures as are necessary to assure the full and proper utilization of the results of scientific study for park management decisions. In each case in which an action undertaken by the National Park Service may cause a significant adverse effect on a park resource, the administrative record shall reflect the manner in which unit resource studies have been considered…."
19. *Sierra Club v. Andrus*, 487 F. Supp. 443, 448 (D.D.C. 1980).

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Reflections on the Beginning of the George Wright Society and Why It Was Created

Vernon C. (Tom) Gilbert

[Ed. note: After retiring from a distinguished career that included positions with the US National Park Service and UNESCO's Man and the Biosphere Program, Tom Gilbert served as the first president of the George Wright Society, holding that office from 1980 through 1982.]

A few months ago Dave Harmon, executive director of the George Wright Society (GWS), and I were talking about including a session on the UNESCO Man and the Biosphere (MAB) Program at the next George Wright Society (GWS) Conference in Denver, March 2013. This was a suggestion by Larry Hamilton, senior advisor to the World Commission of Protected Areas; by the time you read this, the conference and the session will have taken place.

During my talk with Dave, I mentioned that Donald King, the first chairman of the US MAB program, had been a keynote speaker at one of our first GWS organizational meetings and had done an excellent job promoting the Society and its mission. This led Dave to ask if I would write something about the beginning of the Society and the events of that time. I said I would, but I knew it would be difficult and probably controversial because the late 1970s to early 1980s was a period when, in my opinion, we went from great progress to dismal lows in environmental science programs in the federal government, particularly in the National Park Service (NPS). The following account of NPS science and technology during the time when the GWS was planned and chartered is based on my experience and interpretations of the events of that time. Admittedly it is biased. I am writing this because I believe there are lessons that could be useful today. As Michael Soukup suggested in his thoughtful article about integrating science and management in *The George Wright Forum* in 2007, there are good reasons for "becoming who we thought we were" (Soukup 2007).

The following account describes some of the specific vacillations and changes in government that led us to create the George Wright Society. In recalling these, I often thought about Stanley Cain's admonition during the Biosphere Conference in 1968. He was a pioneering ecologist, conservationist and friend who, while serving as assistant secretary of

The George Wright Forum, vol. 30, no. 1, pp. 85–95 (2013).

ISSN 0732-4715. Please direct all permissions requests to info@georgewright.org.

the interior for fish, wildlife and parks, played a leading role in shaping the MAB program. At the Biosphere Conference he described the need for a multidisciplinary, multiagency, public–private approach to natural resources planning and management (Cain 1970). This was my inspiration as I worked with MAB, but Cain also warned, "Although the vision may have been glimpsed, it is not a promised land somewhere awaiting human enjoyment, a Utopia or Garden of Eden that can be moved into. It must be created by human effort from the rubble and confusion and inefficiencies that have accumulated from past actions, use and abuses of the environment, uses and abuses of human power."

Background

In 1973, I was assigned to work with UNESCO in Paris to develop plans for MAB Project no. 8, "Conservation of Natural Areas and of the Genetic Materials They Contain," which later became known as the biosphere reserve project. At the 1972 Second World Congress on National Parks, Michel Batisse, director of the Natural Resources Research Division of UNESCO, had asked NPS Director George Hartzog if NPS would provide someone to assist in developing the project. I was fortunate to have been selected.

Before leaving for Paris I worked for a brief time on the US/Soviet bilateral project on environmental protection with Curtis "Buff" Bohlen, deputy assistant secretary for fish, wildlife and parks. So, in early 1974, when I learned that President Nixon was planning a summit conference with the Soviets, I suggested to Christian Herter, Jr., assistant secretary of state for environmental affairs, that this could be an opportunity for the US and USSR to pledge support for MAB and the biosphere reserve concept. I described the biosphere reserve concept by using the example of Great Smoky Mountains National Park cooperating with neighboring communities and agencies to create a coordinated regional approach to conservation. It provided the multi-agency, public–private partnership that Stan Cain had advocated. (Cain was once a plant ecologist at the University of Tennessee who had pioneered studies of the heath balds in the Great Smoky Mountains.) Secretary Herter liked the idea. To mostly everyone's surprise, he arranged to have support for MAB included in the US–USSR Summit Agreement. A joint communiqué was signed on July 3, 1974, stating that our two countries would contribute to the implementation of MAB, and would designate biosphere reserves to conduct scientific research needed for more effective actions concerned with global environmental protection (Treaty Office, US Department of State, 1974).

UNESCO Director General René Maheu commended this action and wrote to US Secretary of State Henry Kissinger and Soviet Foreign Minister Andrei Gromyko that he "was sure that the endorsement by the United States and the U.S.S.R. of the project for the establishment of biosphere reserves would give a new impetus to this important Program, which with its objective of helping man to understand and live in harmony with nature and improve the quality of life, has much to offer to the cause of peace and human progress" (UNESCO news release, July 1974).

The network of biosphere reserves took a major step closer to reality in September 1974 when 38 countries endorsed the idea at the International Coordinating Council of MAB held in Washington, D.C. The United States was the first to announce that 20 areas (including 10 national parks) would be designated as biosphere reserves. The USSR delegate, Professor

Vladimir Sokolov, followed by giving examples of areas they would designate, including forest–steppe areas in Ukraine, desert areas in Turkmenia, and mountain areas in the Caucasus. I said that biosphere reserves would add a new dimension to conservation and mentioned that UNESCO had worked with the International Union for the Conservation of Nature and Natural Resources (IUCN) to define priorities for conservation of natural areas. In *Biotic Provinces of the World* (published in 1974 as IUCN Occasional Paper no. 9), 198 provinces were identified, 53 of which had no national parks or equivalent reserves; 29 had only one. This showed the need to focus international conservation efforts on regions where little had been done.

Upon returning to the US in 1975, I was pleased to be assigned to the new position of associate director for natural area preservation to work with NPS Chief Scientist Theodore "Ted" Sudia on formulating policies and developing programs in natural areas preservation, and coordinating US MAB activities with Donald King, chief of the division of environment and health in the US Department of State. The assignment had the approval and support of NPS Director Gary Everhardt.

Working with Ted and his colleagues, Robert "Bob" Linn and Albert "Al" Greene, was a pleasure. Ted was a visionary who believed that the development of national parks and ecological knowledge could do much to promote domestic tranquility in the world. He had participated on the Expert Panel on MAB Project no. 8, and the US Interagency Committee that selected the first US areas to be nominated as biosphere reserves. Bob, a close friend, was an experienced naturalist and ecologist and had the personality and persistence to make these programs work. Al excelled in science administration and organization. These three were the principal architects of the new NPS science and technology mission.

Working with Don King in the State Department was also an exceptional experience. Don was an outstanding science bureaucrat who had persuaded many distinguished individuals from government agencies, universities, and private institutions to become involved in MAB. He sought extraordinary ways to "put MAB on the map," as he liked to say. For example, early in April 1977 he asked me what I thought about trying to get President Carter to request a study of environmental trends to the year 2000. I thought it was a great idea. We called upon Lee Talbot, senior scientist of the president's Council for Environmental Quality, who had previously served on the biosphere reserve directorate, to ask if he would include such a request in President Carter's environmental message to Congress. Lee did. On May 23, 1977, in his environmental message to Congress, President Carter directed the Council on Environmental Quality and the Department of State to "work with other federal agencies to study the probable changes in the world's population, natural resources, and environment through the end of the century" (Carter 1977). The *Global 2000 Report*, which was released in 1980, was the first of its kind. Translated into eight languages, it influenced other countries to take more comprehensive, longer-range looks at their environmental problems and the interrelated global challenges of natural resources, environment, and human population (Barney 1993).

President Carter's strong interest in science and technology and building international cooperation helped us in many ways. His offices of Science and Technology (OSTP) and Management and Budget (OMB) issued a joint memorandum on March 9, 1979, requesting

federal agencies to participate in MAB. Signed by OSTP Director Frank Press and OMB Director J.T. McIntyre, Jr., the memorandum stated that the MAB program provided an excellent opportunity for international cooperation and a focus for the coordination of related domestic programs aimed at improving the management of natural resources and the environment. The Department of State was given responsibility for developing US international activities under MAB, and the Departments of Interior and Agriculture were assigned joint responsibility for developing and coordinating the domestic MAB program. All major natural resource and environmental management agencies were directed to work with the Departments of State, Interior, and Agriculture and the MAB National Committee to develop a national plan for participating in US MAB.

Congress also amended the Foreign Assistance Act in 1979 to authorize the president to furnish assistance to less-developed countries (LDCs) to protect and manage their natural resources and environment. This was a new direction for the US Agency for International Development (AID), which had lacked skilled personnel and technical resources to carry out these directives. Therefore, arrangements were made for US MAB to provide, through its member agencies, expertise to assist AID in carrying out its mandate. I led the negotiations to achieve the following initiatives:

- An AID/NPS Environment and Natural Resources Expanded Information Base to produce review papers, case studies, and design aids, thus enabling AID missions and host country personnel to integrate natural resources concerns with social, economic, and institutional factors in relation to development strategies and project planning, design, and assessment.
- Development of AID host country profiles to assess national environmental issues and institutional capabilities, which provided good starting points for more detailed assessments and dialogues about ways for other nations to deal with their environmental problems.

In support of these efforts, the MAB biosphere reserve directorate prepared a report on international activities of federal agencies, especially in relation to conservation of natural areas and scientific research that directly contributed to the goal. The intent was to provide a better basis for planning US assistance in accord with assessments of the status of conservation of natural areas worldwide. Robert Milne, chief of NPS international park affairs, said this request prompted his division to start a new system for recording and describing NPS international activities, their costs, and status.

Under Ted Sudia's leadership, a project was initiated with The Nature Conservancy to prepare reports describing the myriad ways in which the United States manages and protects areas of ecological value. The following reports were done to enhance international exchange: *Preserving Our Natural Heritage: Volume 1—Federal Activities*, 1976; *Volume 2, State Activities*, 1977; *Volume 3—Private, Academic and Local Government Activities*, 1982. Our intent was to continually update these reports as working documents.

All seemed to be going well. Assistant Secretary Robert Herbst pushed for an expanded science and technology program and for NPS to lead the nation in developing MAB. During

an NPS reorganization meeting on August 21, 1978, NPS Director William Whalen said that he and Secretary of Interior Cecil Andrus, felt the need to change the Washington office's organization and to approve a new science and technology mission. The reorganization left several key positions vacant. I was made chief of the natural history division, responsible for policy, standards, and procedures for natural history and natural area programs, including scientific collections, ecological baseline research, and ecosystem monitoring. I was also in charge of developing and implementing cooperative international programs related to park science and technology, particularly the MAB program.

In accord with these responsibilities, at the request of Phillip A. Smith, associate director of OSTP, I arranged a meeting with Assistant Secretary of the Interior Herbst. Smith felt there was enormous potential for expanding research in the national parks; and both he and Secretary Herbst supported MAB because of its success in bringing federal agencies and private institutions together to help solve environmental problems that transcend sectoral boundaries and jurisdictions.

The prospects for NPS science and technology seemed very good. However, Director Whalen prevented us from filling most of the vacant positions. On April 19, 1979, I told him I could not carry out my division's responsibilities under these circumstances. He said that he was not satisfied with our performance, and he asked me to explain what we were doing, "from A to Z." Ever since being appointed associate director for natural area preservation I had submitted regular reports and memoranda on subjects of concern to NPS. One was about the need for NPS to join other agencies in a national program to monitor air pollution and climate change. Another was focused on a decision by the Peace Corps (PC) and the director of the Action Program to reduce PC activities in conservation and phase out PC work related to national parks and reserves. They had decided that such activities did not contribute to President Carter's policy of providing aid to meet "basic human needs." I emphasized that their decision could destroy the best program that the US had to assist developing countries in conserving their natural areas and the plant and animal resources these areas contained. Hundreds of PC volunteers were doing outstanding work in this field, aided in part by assistance from NPS. When George Hartzog was NPS director, I had negotiated a cooperative agreement with PC, so I suggested to Director Whalen that he should inform the PC director that NPS would cooperate in training and assisting PC volunteers in the area of natural area planning, management, and protection. I asked him to encourage the PC director to expand their activities in this field. Director Whalen never responded to my memo, but, ironically, the PC director did. A copy of the memo had been shared with the US Forest Service (USFS) representative in the PC office. After the PC director contacted Whalen, several meetings were held, and NPS Deputy Director Ira Hutchinson agreed to my proposal to assign someone to work with the Peace Corps. George Mahaffey, from the NPS Resource Management Division, was selected. For more than a decade he provided outstanding assistance to PC in expanding its conservation programs. This resulted in a multiplier effect for conservation of natural areas that we could never have achieved through the smaller NPS international programs.

On April 20, 1979, I gave Director Whalen a Memorandum describing our activities from "A to Z." Highlights included:

- Arranging for NPS and USFS to cooperatively lead the biosphere reserve directorate and program. I asked Deputy Director Bill Briggle to represent the NPS side. He agreed and helped initiate a series of regional workshops that resulted in pilot inventory, research, and monitoring projects within several national parks. (Ted Sudia described this as the best working interagency relationship that NPS and USFS ever had!)
- Developing a system to assess the status of flora and fauna studies, inventories, and collections in the national parks.
- Administering the "Flora National Parks" report, part of the Flora North America Project, and giving information to NPS regions on distribution of plants, including rare and endangered species.
- Arranging for the US Geological Survey to compile a portfolio of its LANDSAT satellite imagery and high-altitude aerial photographs of the 12 national parks that had been designated biosphere reserves to form a basis for comparisons over time.
- Arranging an international workshop with UNESCO, the UN Environment Program (UNEP), and the Environmental Protection Agency (EPA) and its Las Vegas laboratory on "Long-term Ecological Monitoring in Biosphere Reserves." With EPA's assistance, this led to monitoring activities on air pollution and climate change in several national park areas. UNEP also agreed to fund pilot projects in several less-developed countries as part of the Global Environmental Monitoring System (GEMS).
- Assisting USFS in preparing a book titled *U.S. Policy, Strategy and Programs on Tropical Forest Management*. (The problem of deforestation in the tropics impacted the entire world from an economic and natural resource standpoint, making effective strategies for conservation of natural areas an imperative.)
- Leading (with support by the Organization of American States) a PC and Honduran team to plan a biosphere reserve in the Río Plátano region of Honduras, which was one of the best examples of tropical forest remaining in Central America.
- Arranging for a study and report on the economic values of *in situ* plant and animal genetic resource conservation. This study, which was conducted by Margery Oldfield and based on her master's thesis, was produced by the Texas System of Natural Laboratories. She described the value of conserving genetic resources from the standpoint of their importance for food production, medicine, and pharmaceuticals, and for providing raw materials for industry. Many of these important species or their close relatives are located in national parks and natural areas around the world. The role of protected areas in conserving these genetic resources was described.
- With the NPS Division of Museum Services, organizing a workshop of experts to improve the curation of park natural history collections, and with the Smithsonian Institution, a short course in curating natural history specimens was conducted for NPS personnel.
- Cooperating with the NPS Division of Museum Services to provide assistance to parks concerning problems of curating natural history specimens. Christine M. Schonewald-Cox was outstanding in working with Art Allen in Museum Services. Later she edited the book *Genetics and Conservation: A Reference to Managing Wild Animal Populations* (Benjamin Cummings Publishing, 1983).

- Providing a directory of outside experts willing to volunteer their time and facilities to aid in analyzing, curating, and restoring natural history specimens. One expert trained museum services technicians in his field of expertise.

I urged Director Whalen to approve the filling of key positions. He did not reply, but my memo was returned to me marked "Thanks" by Deputy Director Ira Hutchinson.

Things improved for a while, but then there were delays and moves made to dismantle the science organization. These moves accelerated with the appointment of Richard Briceland as associate director for science and technology and the removal of Ted Sudia from his acting position as associate director. Still, a rosy scenario was presented by Director Whalen at the Second Scientific Conference on Scientific Research in the National Parks in San Francisco (1979), when he declared in his keynote speech to 750 participants that he was working to expand the budget of the NPS science and technology program and was determined that the NPS "Man and the Biosphere" program would be unequalled by any other resource management agency" (NPS *Courier,* 1980).

The reality was that Dick Briceland had already informed me that the MAB and AID activities would not be a priority under his administration. Director Whalen also appointed George Gardner to the MAB coordinator position for which William "Bill" Gregg had been selected and notified of his selection. Previously, George told me that he had no interest in MAB because he did not see it as a step toward his becoming director of the NPS. I wanted Gardner removed from the MAB position, but the NPS chief of personnel told me that he "would not touch it with a ten-foot pole." I then asked Secretary Herbst to intervene. He said he would have Gardner transferred to another position after three months. Bill Gregg received a letter of non-acceptance and was told that he would have to reapply if the position became vacant.

Briceland also refused to have Margery Oldfield's completed book published, so I had to get outside experts to attest to the value of her work. Afterwards, and with help from Secretary Herbst, I got permission to go ahead with the publication. Her book, *The Value of Conserving Genetic Resources*, was finally published by NPS in 1984. It is now considered a classic in the field of conservation biology.

During these battles, I succeeded in getting reassigned to work exclusively on the $2.2 million NPS/AID Expanded Information Base Project, in which NPS was responsible for preparing case studies, design aids, and publications to help enable AID's mission and to assist host-country officials to integrate natural resource and social and economic issues in development. Briceland and Associate Director for Administration Nancy Garrett delayed the project at every turn. They argued that that the work was not the responsibility of NPS. I reminded them that a participating agency service agreement between NPS and AID had been signed in July 1979 with the approval and support of Assistant Secretary Herbst. They ignored this, and the delays damaged the NPS relationship with AID to the point that AID threatened to withdraw the funding. Under these circumstances I chose to retire from NPS in March 1980 to work with the International Science and Technology Institute (ISTI) to complete the national plan for MAB. Fortunately, before I retired Assistant Secretary Herbst

helped us get the project transferred to International Park Affairs. Over the next few years it succeeded in producing useful information for AID missions (NPS/AID Expanded Information Project, 1981–1987).

By November 1980, the plan for the United States participation in the MAB program was completed and we transmitted it to the directors of OMB and OSTP. The transmittal memorandum, which was signed by the assistant secretaries of state, interior, and agriculture and the chairman of the US MAB National Committee, stated that MAB had developed a range of science programs and with an expenditure of approximately $1.3 million in fiscal year 1980, had generated cooperative programs involving more than $10 million.

Unfortunately, this did not fit the priorities of the new Reagan Administration. Both the MAB national plan and the *Global 2000 Report* were rejected. A nearly finished booklet, "An Earth in Need: The U.S. Man and the Biosphere Program" was not published. Gregory Newell was appointed assistant secretary of state; subsequently he led a movement to get the United States out of UNESCO in spite of recommendations by the US National Commission for UNESCO and most of our embassies that we should remain. This was the forerunner of a well-organized, sensationalized campaign to reduce our participation in the United Nations. Newell also tried to fire Don King, but fortunately, Don succeeded in getting assigned to a position in the Environment Department of the World Bank.

President Reagan also appointed James Watt as secretary of the interior, which even prominent Republicans Russell Train and Nathaniel Reed thought was a disaster. Reed said he thought Watt was attempting to turn the clock back to the pre-(Teddy) Roosevelt era, when everyone supposed natural resources were inexhaustible. He said he could not "sit idly by and watch this lame-brained, outmoded philosophy take hold and stain his party's reputation" (Cope 1981).

Such were the vicissitudes of federal government politics at the time the idea for the George Wright Society was born.

Creating a nongovernmental organization to respond to perceived needs

The GWS was incorporated in August 1980 by Bob Linn, the former NPS chief scientist. Bob and Ted Sudia, the NPS chief scientist at that time, were the chief architects of the Society. Bob had retired earlier in 1980, and would devote most of the rest of his life to making the GWS a success. Ted was an ecological science visionary who was good at creating new organizations. Al Greene, who excelled in science administration, worked closely with Ted and Bob. They were a good team and others, such as the following persons, willingly joined to get the GWS established:

- Pamela Wright Lloyd, George Melendez Wright's daughter, a distinguished conservationist in her own right, fully endorsed the Society, and participated in its organization.
- Harry Pfanz, a distinguished NPS historian, helped shape the cultural resource stewardship mission.
- Jean Matthews, an outstanding NPS writer, became the first editor of *The George Wright Forum*. She wrote fine editorials about the GWS mission and later organized and edited an excellent journal, *Park Science*.

- Daniel B. Beard was a pioneer advocate of multi-disciplinary research in the national parks. He and Gordon Fredine, former chief of international park affairs at NPS, arranged for the Renewable Natural Resources Foundation in Maryland to host an organizational meeting of the GWS.
- Durward L. Allen, distinguished professor of wildlife ecology, helped plan the GWS and served actively on the original GWS Board.

The needs for the Society had been determined in several conferences, especially in the two meetings on Scientific Research in the National Parks (1976 in New Orleans and 1979 in San Francisco). In addition, the Second World Conference on National Parks in Grand Teton and Yellowstone National Parks (1972), called for expanding research on the manifest contributions of national parks to the well-being of the community, and for an exchange of information among nations on all matters affecting the planning and management of national parks.

The needs for the GWS were described in the first issue of *The George Wright Forum* (Summer 1981). Jean Matthews wrote, "Today the threats to protected areas and their values are mounted on too swift a juggernaut for hit-or-miss countermeasures.... We need to know when we act in managing these resources that what we do is right and sufficient. This requires basic, organized, retrievable information, available in a timely manner to those who must make policy and manage natural and cultural areas and reserves" (Matthews 1981).

Roland "Ro" Wauer, chief of the NPS Division of Resource Management, wrote that very few parks had sufficient natural and cultural resource information to permit identification of incremental changes that may cause threats. He also noted that priorities for resource management baselines had been very low compared with those for construction and maintenance. Ro added, "Very simply stated, preservation of the resource has been unsuccessful in competing for the appropriation dollar" (Wauer 1981).

I wrote that the genetic resources of plants and animals on which humans depend were dwindling rapidly with the destruction of natural areas throughout the world, that an important means of correcting this situation would be to increase the numbers of national parks, reserves, and protected areas and to improve the management of biological resources in these areas. I called attention to two forthcoming conferences on developing US strategies for conserving biodiversity, which my former Division of Natural History had helped to plan (Gilbert 1981).

Bob Linn was more specific about the need for the GWS. He wrote that there was a need for "an instrument of continuing duration, dedicated to the exchange of information within the community of researchers, managers and other professionals, to give continuity to the broad range of topics having to do with cultural and natural park and reserve management. Such a need is from time to time underlined by vacillations and changes in government policies concerning parks and reserves, by budget restrictions and by other vicissitudes that make for broken chains of information" (Linn 1981).[1]

After I retired from NPS in 1980, I was able to go on to manage many other programs, including an environmental training and management project in Africa and a project on "Institutional Strengthening for Biodiversity Conservation" in Indonesia. However, I wish

that the NPS science and technology program could have continued as we had planned. Some important programs were continued. As an example, Bill Gregg was finally appointed as coordinator of the MAB program with the Department of the Interior. He did a fine job developing the program.

As Stanley Cain had predicted, the mission hasn't been utopic. Today the prospects for environmental sustainability are discouraging, but I like to recall what ecologist Raymond Dasmann wrote just as the MAB program was beginning: "In 1971, it is difficult to be hopeful about the prospects for man and the biosphere he now controls. There is always danger that the nations of the world, like the infamous Kilkenny cats of Ireland, will keep clawing, scratching and biting each other until there is nothing left of them but their tails."[2] Then Ray added that ecologist Sir Frank Fraser Darling had summed up the situation as well as anyone could when he addressed the Biosphere Conference: "Ecologists can scarcely afford to be optimists. But an absolute pessimist is a defeatist and that is no good either. We see there need not be complete disaster and if our eyes were open wide enough, world wide, we could do much toward rehabilitation" (Dasmann 1972). However, he added that time was not on our side, and that was forty-five years ago!

I am not as optimistic now, but I think that much toward rehabilitation can be accomplished by helping the GWS achieve its goals of connecting people, places, knowledge, and ideas, and to foster excellence in natural and cultural resource management, research, protection, and interpretation in parks and equivalent reserves. As Ted Sudia believed and advocated, this would help promote domestic tranquility throughout the world.

Endnotes

1. In a fitting tribute to Bob after his death in October 2004, Dave Harmon wrote that Bob had sustained the fledgling GWS in its early years and continued to work daily for it until August 2004, dedicating 24 years of full-time labor to the Society entirely on a volunteer basis.
2. Ray was referring to this limerick:

> There once were two cats of Kilkenny
> Each thought there was one cat too many
> So they fought and they fit
> And they scratched and they bit
> 'Til (excepting their nails and the tips of their tails)
> Instead of two cats there weren't any!

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Are Isle Royale Wolves Too Big to Fail? A Response to Vucetich et al.

Ted Gostomski

Vucetich et al. (2012) have proposed reintroducing wolves to Isle Royale National Park (Lake Superior, Michigan, USA), arguing that unnatural causes (humans) have brought the island wolf population to the brink of extinction. They argue that protecting Isle Royale's ecological integrity—a fundamental tenet of National Park Service (NPS) policy—refutes almost any argument to be made against reintroduction. However, in making their case, Vucetich and his colleagues left out some important facts about the history of wolves on Isle Royale, and I believe they exaggerate the wolf's role in the significance of the island as a national park and as a federally designated wilderness area. Also, they feel that the "question at stake" in considering reintroduction is whether or not to allow a long-term research project to end (p. 134). That is a far different line of reasoning than the welfare of wolves and moose, ecological integrity, wilderness values, or how visitors form connections with the island. That line of reasoning raises a question about Isle Royale wolves similar to one asked about banks in the United States during the economic recession: "Are they too big to fail?"

Vucetich and his co-authors invite broader discussion on the topic of reintroduction, and I hope others will take up that offer, but I think the discussion should be based on all the available information. I present here some of what I think was left out of Vucetich et al.'s article, but which I feel is very relevant to any consideration of wolf reintroduction on Isle Royale.

A historical perspective

The discussion in the 1931 *Congressional Record* accompanying the legislation that created Isle Royale National Park includes a letter by NPS Director Horace Albright that speaks of the island's "exquisite, rugged beauty," the 2,000 moose and 400 woodland caribou that "in itself will present an unusually fine wild-life spectacle," and the wealth of flora. He speculates that the good fishing will be a popular attraction for visitors, and he comments

The George Wright Forum, vol. 30, no. 1, pp. 96–100 (2013).

ISSN 0732-4715. Please direct all permissions requests to info@georgewright.org.

on the interesting archaeological features to be found on the island. He concludes by saying it is "evident that from a scenic, recreational, scientific, and educational standpoint, here is presented one of the outstanding opportunities for establishment of a great island national park, unique of its kind in the system, and measuring up to the high standards that have been prescribed for such establishment" (NPS 1998: Appendix E).

The reader will note that Albright never mentions wolves. He does not mention wolves because they did not exist on Isle Royale when Congress authorized it as a national park in 1931. They were not there when the National Park Service took over management of the island in 1936. They were not there on dedication day in 1940. Wolf tracks were first reported on the island in 1948, but their presence was not confirmed until 1951 (Peterson 1995). It is true, as Vucetich et al. point out, that one of the park's current significance statements (those which "capture the essence of the park's importance to the nation's natural and cultural heritage") acknowledges that Isle Royale is world renowned for the long-term wolf–moose predator–prey study (NPS 1998). But neither the park's emphasis statements (which "flow out of the park significance statements") nor its purpose statements (which are "based on park legislation and legislative history, other special designations, and NPS policies") mention wolves (NPS 1998). Wolves and moose are important parts of Isle Royale to today's visitor, but they are not the reason people advocated for the creation of the park, and they are not the only reason people come to visit the island today.

Wilderness values

Vucetich et al. contend that wolves (along with moose) are *the* icons of wilderness culture on Isle Royale and to lose them would "significantly wound Isle Royale's wilderness character and important points of connection between people and Isle Royale" (p. 132). There are two problems with this statement. First, it suggests that Isle Royale is a wilderness because wolves and moose reside there. Wilderness is a subjective character made manifest in different ways to different people. Baldwin (2011) points out that when the idea of creating a national park on Isle Royale was first catching on in the 1920s (about 20 years before wolves first arrived on the island), "wilderness was a much less exact word—a word ripe for interpretation, a word that, through the efforts of many individuals, became synonymous with Isle Royale." In other words, it was the *place itself* that defined wilderness. Given that these discussions occurred at least 40 years before the passing of the Wilderness Act (1964), it is fair to say (and it has been said) that Isle Royale helped to define what wilderness is, and it did so before wolves arrived. Wolves are part of Isle Royale's wilderness character *now*, but they are relative newcomers.

The second problem with this statement is that it suggests wolves and moose are the only points of connection for people to make with the island. Any park interpreter will tell you that people make connections with a place by identifying with the intangible values (solitude, isolation) as well as the tangible resources (wolves, moose). People see in Isle Royale and in wilderness something beyond themselves and even beyond time. That is to say, Isle Royale and its wilderness character transcend the presence of wolves and moose. True, they are prominent members of the island community, but in their absence, will not people still see in the island experience opportunities for challenge and adventure, for connection with higher ideals and with those things closest to their hearts? Will people not still revel in the sound of

loon calls at night or the sight of the northern lights, or the sense of distance and isolation? People connect with Isle Royale for many reasons. Wolves and moose are not the entirety of the island's worth.

The authors anticipate criticism of their using the term "ecosystem health" to justify reintroducing wolves because they feel it could be seen as a veiled attempt to preserve "vignettes of a primitive America" or as a contradiction to NPS management policies, which allow for "natural processes" to be a guiding principle in resource management. In their attempt to preemptively refute this argument, they affirm their belief that primitive America is gone and "natural process" is an outdated concept. "The weakness of the detractor's position," they write, "arises from the concept of *natural* being fraught with debilitating dilemmas that have remained intractable despite being considered for more than two millennia. The concept of 'natural' is increasingly difficult to make sense of because of human impact on the planet" (p. 133). It is true that it is difficult to adequately define "natural," but if that word is difficult, "wilderness" is significantly more so. It too has been extensively debated and with far more polarizing results (Cole and Yung 2010; Baldwin 2011). Wilderness is a human construct that, unlike "natural," has not changed because of human impact on the planet; rather it was *created* by human impact on the planet. This makes the idea of wolves and moose being the epitome of Isle Royale's wilderness soul all the more tenuous. If wolves and moose "make" a place wilderness, do we give such a title to all of northern Minnesota, Wisconsin, and upper Michigan, where wolves are thriving and moose, though less common, are also found? No, in part because there is a significant human presence in those areas that refutes the assignment of that word. So if wolves in northern Minnesota, Wisconsin, and Michigan do not make those places wilderness, what elevates Isle Royale to the status of a wilderness? I submit that Isle Royale's isolation and the lack of a permanent human presence are perhaps the two leading factors, but that there are a host of other tangible and intangible values that contribute to the island's unique status.

Island ecology

Isle Royale, like any place, is a dynamic system, maybe more so because it is an island. Populations of any plant or animal on an island lead a precarious existence because of the isolation that comes with distance from a fresh gene pool. To say that the extinction of wolves on the island will "significantly diminish its ecosystem health" (because of the cascading effects of increasing moose severely impacting the vegetation) is only partly true. Just as our changing climate makes it a near certainty that wolves will never again be able to cross an ice bridge and recolonize the island on their own, it is also unlikely new moose will make the crossing. This is not because they physically cannot make the trip—if they originally arrived by swimming (Peterson 1995), then they can probably do so again—but the arrival of new individuals is further hampered by a declining source population in Minnesota and Canada (Dybas 2009; Lenarz et al. 2010; Lenarz 2012), so who will be left to cross over? And what will they find when they come? Hotter summers and milder winters will challenge the tolerance thresholds of moose, while a predicted shift in the forest types of the north may make it difficult to find appropriate food. Will a future Isle Royale be able to sustain a moose population? If not, what happens then? Do we continue to bring wolves, then moose, then wolves again over to

Isle Royale in order to sustain a research program or a particular vision of what the island is supposed to be?

Beyond naturalness

Vucetich et al. note that "ecosystem health may well be superseding non-intervention as a central value of wilderness" (p. 135). This is true. Cole and Yung (2010) advocate for more hands-on management of parks and wilderness areas in the face of a changing climate, but they provide evidence for choosing interventions that will transform ecosystems into conditions more resilient to future climates. Does wolf reintroduction create such conditions? More to the point, as moose—a species far more vulnerable than wolves to the changing climate—continue to decline in Minnesota and Ontario and the southern limit of their range shifts north, it seems likely they will similarly decline on Isle Royale. If there comes a time when moose are gone, will there be a discussion about reintroducing them because wolves need a more reliable food source than beaver or snowshoe hare? This may be a question for a much later time, but we are starting down that path now as we discuss the future of wolves. With wolves thriving in the Great Lakes states, it makes sense that they would continue to exist on Isle Royale if winter ice conditions facilitated their ability to cross over the lake. But as moose struggle at the southern edge of their range, it appears they will not be a common presence in the area that would likely be the source population for immigration to the island (i.e., northern Minnesota and northwestern Ontario). So any future discussion of moose reintroduction hinges very heavily on managing for resilient ecosystems.

NPS management policy, too, is moving toward considerations of adaptation and ecosystem resilience. Two of the goals in the NPS Climate Change Response Strategy (NPS 2010) are to "incorporate climate change considerations and responses in all levels of NPS planning" (Goal 5), and "implement adaptation strategies that promote ecosystem resilience and enhance restoration, conservation, and preservation of park resources" (Goal 6). Part of adaptation is "to reduce the risk of adverse outcomes by increasing the resilience of systems and supporting the ability of natural systems and species to adapt to change." If there comes a time when a decision will have to be made on the reintroduction of moose, consideration will have to be given to the potential for an adverse outcome.

Looking ahead

Isle Royale wolves are not too big to fail. But then we are not talking about failure; we are talking about change. This change may be human-caused, but we cannot disregard the fact that humans have been coming to Isle Royale for thousands of years. Humans are a part of Isle Royale's history. However one might feel about the cause of the wolf's decline and extirpation from Isle Royale, there are hard truths to consider about their future viability on the island and that of moose as well. Pragmatic management in the face of a changing planet requires us to "articulate goals and objectives for parks and wilderness that are founded in a perspective that views humans as part of, rather than apart from, nature" (Cole and Yung 2010).

Wolves are an important part of the Isle Royale ecosystem, but they are only one of the most recent parts. Before wolves and moose, there were coyotes and caribou, and that

relationship lasted for thousands of years before the arrival of human hunters put them on the path to their demise and ushered in the modern era of predator and prey (Cochrane 1996). Now we are faced with the imminent departure of wolves from the island scene, and it seems likely they will be followed by moose because many of the same factors influencing wolves are also at work on moose—climate change and its effects on habitat being the most prominent—and those factors are sure to be enhanced by the loss of a top predator.

I agree that wolves play a critical role in balancing today's island ecosystem, but ecosystems are dynamic, and change is a natural part of that dynamism. I think we need to look at the question of reintroduction through a broader lens. We should acknowledge the iconic stature of the island's wolves and moose and public interest in their welfare, but we should also be mindful of the island's longer history, and we should critically and objectively analyze the uncertainty of its climatic future. The island's wilderness character will survive as will the things that make it a national park—scenic, recreational, scientific, and educational values; solitude; and the relatively unbiased operation of ecological cycles on the landscape.

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Response to Gostomski

John Vucetich, Rolf O. Peterson, and Michael P. Nelson

Vucetich et al. (2012) assesses some of the key values at stake in deciding whether to conserve wolves in Isle Royale National Park. Many points made in Gostomski (this issue) misrepresent what we wrote. Some examples include: We did not, as Gostomski states, "affirm [our] belief that primitive America is gone and 'natural process' is an outdated concept." Rather, we highlighted the relevance of a substantial body of scholarship that explains the conceptual difficulties associated with the concept 'natural' and how and why wilderness is an evolving concept. Nowhere do we suggest that wolves equal wilderness or vice versa, as Gostomski suggests. We did not assert or imply that the wolves of Isle Royale or the wolf–moose project are "too big to fail" or that wolves and moose are "the entirety of the island's worth." Rather, we provided clear, objective evidence for the scientific and educational value of the Isle Royale wolf–moose project. We also provided clear, objective evidence that wolves are important to the cultural and wilderness values of Isle Royale. Conversations about the relationship between humans and nature are challenging. It is unlikely that such conversations are advanced by hyperbole or misrepresentation.

Gostomski suggests that perhaps wolves should not be reintroduced because climate change will make moose vulnerable to extinction, and cites the declining moose populations in Minnesota and Ontario as evidence for the concern. Moose population dynamics are certainly influenced by climate and climate change. But Gostomski's explanation is undermined by the complexity of those effects. For example, the most important reason for moose decline in Ontario and Minnesota is likely an interaction between climate and parasites (especially brain worm) that moose acquire when they live in the presence of white-tailed deer. Because Isle Royale is deer-free, Isle Royale may be among the last places at the southern limit of moose distribution where they survive. The complex influence of climate is also indicated by the fact that, after 50 years of observation and analysis conducted by several groups of scholars, the influence of climate warming on the population dynamics of Isle Royale moose is equivocal at best (e.g., Vucetich and Peterson 2004; Wilmers et al. 2006). Soon we will publish an analysis suggesting advances in the timing of spring green-up (an expected consequence of climate warming) favors population growth of Isle Royale moose. Also, since 2010 the moose population in northeastern Minnesota has declined by 52% (Minnesota DNR 2013),

The George Wright Forum, vol. 30, no. 1, pp. 101–102 (2013).

ISSN 0732-4715. Please direct all permissions requests to info@georgewright.org.

while during the same period of time the Isle Royale moose population has increased by approximately 70%. During winter 2013, the Isle Royale moose population exhibited both the highest occurrence of twins and second highest rate of recruitment ever observed in the population's history.

Gostomski also writes, "To say that the extinction of wolves on the island will 'significantly diminish its ecosystem health' (because of the cascading effects of increasing moose severely impacting the vegetation) is only partly true." We did not conjure that idea ourselves. The loss of top carnivores is considered by the community of conservation scholars one of the greatest causes of diminished ecosystem health (e.g., Estes et al. 2011). It would be a bold, precedent-setting perspective, with far-reaching implications, to suggest that a top predator should not be conserved because climate change might threaten the viability of their prey at some indefinite time in the future. The consequences of climate change will be profound, but we will be poor at predicting many of its important consequences (e.g., Broecker 2010; Francis and Vavrus 2010; Taleb 2010).

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