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On the cover: Trail users at Mission Peak Regional Preserve with the city of Fremont, California, in the background (Bharat Singh). Mission Peak is part of the East Bay Regional Park District in the San Francisco Bay Area. See the set of articles beginning on p. 278.

SOCIETY NEWS, NOTES & MAIL

Results of 2016 GWS Board election: Reynolds, Thomsen gain seats

David Reynolds and Jennifer Thomsen are the newest members of the Board of Directors. Reynolds is senior advisor to the IUCN Global Protected Areas Program, having retired from a career in the National Park Service that included a variety of assignments culminating in the position of NPS Northeast Region chief of natural resources and science. Thomsen is assistant professor of parks, recreation, and tourism management at the University of Montana. She has been involved in GWS conferences and helped organize the first GWS Student Summit this past summer, and is involved in the Biosphere Associates chapter of the Society. They bested a third candidate, Charles Fryling, an associate professor of landscape architecture at Louisiana State University, in balloting that took place from September through the end of October.

In other governance news, Nathalie Gagnon has been re-elected by the Board to the office of president for 2017. Likewise, Jerry Mitchell will continue to serve as vice president and Ryan Sharp as treasurer. Armando Quintero takes over from retiring Board member David Parsons as secretary.

Winners named for 2017 round of GWS awards

A mix of accomplishments in policy and practice will be recognized in the 2017 round of Imagine Excellence, the George Wright Society awards program. Our organization's highest award, the George Melendez Wright Award for Excellence, will go to **Loran Fraser**, who is retiring at the end of 2016 from his position as senior advisor to the director of the National Park Service. Fraser is recognized for his work in building a progressive agenda for the US national park system by helping transform the National Park System Advisory Board into an expert working group, conceiving of and directing the National Park Service Second Century Commission, and then taking charge of a new Advisory Board constituted with many Second Century Commissioners, to carry forward the recommendations of the commission, among other achievements. The other awards and their winners are:

- The GWS Cultural Resources Achievement Award is given in recognition of excellence in research, management, or education related to the cultural resources of parks, cultural and historic sites, reserves, and other protected areas. The 2017 winner is **Eddie Cazayoux**, a principal at the firm EnvironMental Design and professor emeritus of the School of Architecture & Design at Louisiana State University–Lafayette. As an early proponent of environmental design, a lifelong admirer of vernacular architecture and history, and a natural teacher, Cazayoux has had a wide impact on students and on preservation of cultural resources across the Gulf Coast region.
- The GWS Natural Resources Achievement Award is given in recognition of excellence in research, management, or education related to the natural resources of parks, reserves, and other protected areas. This year's winner is **John Dennis**, deputy chief scientist of the National Park Service. Dennis has shepherded the evolution of NPS natural resource

policies through decades of rapidly expanding ecological understanding of natural systems, acting as a synthesizer and interpreter of the science behind the policy that guides park managers.

- The GWS Social Science Achievement Award is given in recognition of excellence in social science research, management, or education related to parks, reserves, and other protected areas. This award goes to **Kerri Cahill**, branch chief in the planning division of the National Park Service. Cahill has championed planning and research related to visitor use in parks and protected areas, and was a major driver behind bringing six disparate federal land management agencies together to form the Interagency Visitor Use Management Council.
- The GWS Communication Award is given in recognition of excellence in communication, interpretation, or related areas pertaining to the purposes of the Society. The 2017 winner is **Rolf Diamant**, adjunct associate professor at the University of Vermont. Diamant is recognized for consistently using writing, speaking, and civic engagement to advance national park and protected area conservation, and for providing historical contexts for analyzing current challenges, ideas, and innovations in his writing for *The George Wright Forum* and elsewhere.

Final Centennial Thoughts

Dwight T. Pitcaithley and Rolf Diamant

[*Ed. note: In this issue of* The George Wright Forum, *Dwight T. Pitcaithley, who kicked off the National Park Service Centennial Essay Series in 2007, and Rolf Diamant, our regular "Letter from Woodstock" columnist and essay series contributor, provide a retrospective highlighting some of the key ideas presented in this decade-long project, along with their thoughts on how those ideas might change NPS in the years to come. Diamant and Pitcaithley were also contributors to* A Thinking Person's Guide to America's National Parks *(2016).*]

When the GWS Board of Directors came up with the idea of launching a Centennial Essay Series on the future of the US national park system in the spring of 2007, the centennial honestly seemed rather far off. For the present capstone essay, we were charged with saying something meaningful about the National Park Service centennial as viewed through the filter of the 27 essays published in this journal over the past decade. Nearly ten years have passed, along with two presidential administrations and a much-anticipated year of centennial commemorative events marking the 1916 founding of our National Park Service. Twenty-seven well-known writers—all with a demonstrated interest in national parks—answered the call and contributed essays for the series. However, writing this final essay of the series turned out to be quite daunting. In some respects, the essays offer a tutorial of sorts on what the National Park Service has become over the past one hundred years. Viewed from another

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angle, they reveal a Pandora's box full of important problems and issues unimagined by Stephen T. Mather and Horace Albright but which, nevertheless, demand the attention of the agency as it prepares itself for the next century.

In writing this last capstone essay we have tried to capture some of the essayists' most salient points and also offer some perspective on the National Park Service's centennial itself. The former task was in many ways easier; the essays could be all read and discussed between the two of us, and a small sampling of their insights presented. The latter task proved much more challenging, as we admittedly lack the essential perspective of time to interpret the longer-term efficacy of the centennial project jointly managed by the National Park Service's Centennial Office and the National Park Foundation.

Centennial observations

That said, we might begin this summation by offering several somewhat random observations on the NPS centennial commemoration without the benefit of a more comprehensive analysis that will only emerge with time. We are sharing these impressions while they are fresh in our minds as a foundation of ideas others will undoubtedly build upon.

The Obama effect. Trying to capture the attention of the American people is a huge challenge under the best of circumstances. The "Find Your Park" campaign would have had an uphill battle, given all the background noise and competing demands for people's limited time and attention, even without competition from the most contentious and divisive national election in recent memory. That said, President Obama's frequent and often controversial use of the 1906 Antiquities Act may have at times over-shadowed centennial-related activities. In a way, however, it did get people talking about the national park system.

The fact is that Obama took the slogan "Find Your Park" to heart during his eight years in office. He actually "found" approximately two dozen new national monuments (as of the time this essay is being written), easily breaking Bill Clinton's old record of 19 monument proclamations. During the first ten months of the centennial year, Obama signed no fewer than eight monument proclamations. So perhaps the most impactful legacy of the centennial year will turn out to be the lands and stories preserved for posterity by President Obama's Antiquities Act pen. His new additions to the national park system include César Chávez, Harriet Tubman Underground Railroad, Charles Young Buffalo Soldiers, Honouliuli, Pullman, Belmont–Paul Women's Equality, and Stonewall national monuments. Significantly, the monuments, together with a handful of new parks authorized by Congress in 2014, will help make the national park system more representative of the nation as whole by broadening the system's national narrative.

Curious branding. Under the assumption that every campaign deserves both a tagline and an iconic image, the centennial folks provided problematic versions of both. "Find Your Park" encouraged people to self-identify with a park but there was always a measure of ambiguity in the message. What do you do next? And what about the rest of the National Park Service—the wide portfolio of preservation and community assistance programs—that are not physical parks? Despite good intentions, this under-recognized but essential component of the system was largely lost in the centennial branding campaign.

There was also confusion around the adoption of an empty silhouette of the traditional agency symbol to brand the centennial. NPS apparently decided against using the iconic arrowhead (so ubiquitous in units of the national park system) during its centennial campaign due of fears that doing so would lead to over-commercialization of the symbol, which has trademark status. The fact that NPS exerts total control over the symbol seems not to have played into the decision. One wonders, however, why the ghost arrowhead was then also used on internal government-produced products such as the *National Parks Index for 2016*? We heard a number of reasons for using this image, including that as a new brand it could be utilized by nongovernmental partners in their own centennial promotional materials. However, having NPS use this suggested arrowhead in lieu of the traditional arrowhead with the tree, mountain, and bison—one of the most recognizable and respected brands in the country—still leaves us scratching our heads.

Absence of history. The "Find Your Park" campaign primarily focused on connecting to the millennial generation with extensive use of video and social media. We wholeheartedly agree with the imperative of engaging younger, more diverse communities of park users. We are still puzzled, however, by the relative absence of history in the centennial program. The centennial, for example, coincided with the fifty-year anniversary of the National Historic Preservation Act, legislation that placed the Park Service at the center of this nation's historic preservation effort. Programs such as the National Register of Historic Places, Technical Preservation Services, Grants-in-Aid to States and Territories, and Heritage Documentation all nurture preservation activities in communities throughout the nation. These important NPS programs, three dozen in total, were all but ignored during the centennial year.[1] It should not be overlooked, as well, that this centennial year began with the armed occupation of the Malheur National Wildlife Refuge and anti-government rhetoric echoing back to the Civil War. This is only one reason for paying more attention to history during the 2016 centennial. History reminds us never to become too complacent. What has been authorized can also be de-authorized. On the other hand, we were encouraged by the progress of the LGBTQ National Landmark theme study and the Civil War to Civil Rights initiative. The latter has transitioned into a program now called "The Arc to Equality," which recognizes the continuing struggle for civil and human rights from Reconstruction through to today.

The centennial essays

Now to our centennial essays. In his introduction to the series in the April 2007 issue of *The George Wright Forum*, Dave Harmon wrote, "As it approaches its hundredth year, the National Park Service must commit itself to a 'creed of discovery,' to the willingness to question all assumptions, right down to the very mission of the agency itself. What needs to be at the heart of the NPS centennial is not celebration, but cerebration: a rigorous and deeply penetrating process of reflection on every aspect of the national park idea."[2] And that's what we got—27 essays that questioned a wide range of assumptions about the past, present, and future of national parks in American society.

Most of the essays tended to fall under three overarching themes. First and foremost, there were a great many dealing with the nature of climate resilience, impairment, and manag-

ing park resources in an unstable, anthropogenic environment of continuous change. A number of essays also addressed the criticality of education to the future purpose and meaning of national parks. And a last group probed the changing public perception and understanding of the national park system. These essays challenged the agency to re-align its programs, services, and even nomenclature if the system is to be perceived as relevant, fully representative, and meaningful to all segments of the American public in the 21st century.

Climate change. One of the most addressed topics was the subject of climate change, how it was affecting parks, and what the Park Service's response should be. Some advocated changes to the 1916 Organic Act while others thought that with or without altering that century-old expression of the agency's mission, the National Park Service should be acknowledging the issue more overtly than it was. Indeed, Brent Mitchell suggested that "climate change may eclipse biodiversity conservation as the main threat around which programs and funding are organized."[3] It should be noted that Director Jon Jarvis is keenly aware of the role climate change is playing and will play in the future of the national park system. NPS has developed, in our estimation, a thoughtful and detailed series of informational web pages (https://www.nps.gov/subjects/climatechange/index.htm). But while the agency may be building a strong internal response to the new normal in managing natural and cultural resources with regard to the changing climate, that response is not readily apparent to the average taxpayer. While we are painfully aware of the political minefield "climate change" has become, we also understand that the current changes the environment is undergoing can be plainly presented to the visiting public based on solid scientific findings, as directed by the Park Service's 2006 *Management Policies*.

Education. A second topic mentioned in numerous essays was that of education. This is not surprising as the blue-ribbon reports *National Parks for the 21st Century: The Vail Agenda* (1992), *Rethinking the National Parks for the 21st Century* (2001), and *Advancing the National Park Idea: National Parks Second Century Commission Report* (2009) all stressed the concept of education as a major focus of NPS work. The idea of parks as classrooms and the National Park Service as an educational institution with connections to colleges and universities and a robust research program was, of course, a primary mission of the Park Service from the beginning. Franklin K. Lane, Stephen T. Mather, Horace Albright, and Robert Sterling Yard shared the belief that the new Park Service had to develop a strong capability to "supplement the work of schools by opening the doors of Nature's laboratory." In his 1918 instructions to the nascent organization, Secretary of the Interior Lane charged that the "educational … use of the national parks should be encouraged in every practicable way."[4]

The National Park Service has traditionally maintained an uncertain or uneven policy toward interpreting the parks. From its early commitment to the "educational value of our wonderful playgrounds," NPS pulled back from a broad environmental message in the late 1960s and early 1970s only to embrace "environmental education" later in the 1970s and 1980s. Offering any scholarly explanation about the causes of the Civil War was suppressed until the 1990s when battlefield superintendents insisted that the reasons for secession be presented to the visiting public. Director Roger Kennedy was a consistent advocate of a vigorous place-based educational program, believing that "resource protection only has staying

power if it is also education.… Resource protection has to walk out of the park in the heart of the visitor."[5] As contributor Rolf Diamant observed, some recent NPS exhibitions represent intentional efforts to "help people find broader context and meaning in the world around them."[6] One very successful approach to engaging the public with stories from the darker side of the nation's narrative was articulated by Edward Linenthal. Chronicling his participation in the "Civic Engagement" initiative promoted by then-Regional Director Marie Rust, Linenthal conducted a series of seminars with park interpreters that were designed to assist them in presenting to the visiting public the "more problematic aspects of our national stories, ones that offer opportunities for somber reflection and as antidote against coarse triumphalism and preening ethnocentrism."[7] Denis Galvin captured this more expansive purpose for National Park Service interpretive/educational programs when he quoted from the *Rethinking the National Parks for the 21st Centur*y report. "By caring for the parks and conveying the park ethic," Galvin reminded us, "we care for ourselves and act on behalf of the future. The larger purpose of this mission is to build a citizenry that is committed to conserving its heritage and its home on earth."[8]

While there are many interpretive/educational programs throughout the national park system that are striving to engage the public in a conversation that informs and enlightens, there remain many that provide only basic, mostly descriptive content. Some national parks still base their core interpretive message on decades-old scholarship. In that regard, it is disappointing that, in its centennial year, the National Park Service was unable to obtain the funds necessary to upgrade the films, exhibits, brochures, and pamphlets that convey messages no longer accepted by scholars. Current scholarly messages, from across the humanities and the natural and social sciences, must be embraced if the National Park Service is to be perceived by the taxpaying public as a leader in life-long learning.

The Second Century Commission's acknowledgement that "national parks play an important role in building civil society" echoed the 2001 National Park System Advisory Board's challenge that national parks "should be not just recreational destinations, but springboards for personal journeys of intellectual and cultural enrichment." Essay contributor Robert Keiter argued this point from a slightly different perspective. If the Park Service is to become a relevant player in the nation's educational system, it must be "engaging in public education to a much greater degree that is true presently. It is, after all, the only federal land management agency deeply engaged in public education, and thus uniquely positioned to impart environmental knowledge and related conservation values to the general public."[9]

As the world grapples with the implications of global warming, the National Park Service is well placed to engage the public in a conversation about the earth atmosphere's rising temperature and its effect on critical natural and cultural resources. As our environment becomes increasingly unstable, an inquisitive public will assuredly seek solace in places presumed to be durable and enduring. Rising sea levels and changing ecosystems thus will become rich topics that should be embraced by the Park Service. William Tweed captures this new reality in his comment: "In this dynamic and increasingly unstable world, the NPS must begin talking about change as an inescapable part of the park world."[10] Unless checked in some as-yet unforeseen way, rising oceans will soon force NPS to cancel all visitation to Fort

Jefferson (where Dr. Samuel Mudd was incarcerated for a time due to his treatment of John Wilkes Booth following the assassination of Abraham Lincoln) in Dry Tortugas National Park. As Michelle Berenfield cautions, "NPS should be thinking about those sites that could justifiably be the focus of massive public attention and expense should they be threatened by climate change…."[11] An excellent teaching opportunity exists in every park, not just coastal ones, to make climate change real. The ensuing conversation would amount to environmental education at its finest. If the National Park Service needed an icon and a slogan for that civic/environmental engagement, it might be advised to use, "Where will we move the Statue of Liberty?"

The centennial essay contributors who stressed the importance of education to the next century of the National Park Service did so, we believe, not to suggest that the agency's current educational program was deficient in some way, but rather to encourage NPS to allocate more funds in its direction. After all, uniformed interpreters, and the exhibits and programs they manage, constitute the public face of the National Park Service. If the agency is to maintain its relevance in its second century, the stories shared with the public must not only inform—they must challenge. They must encourage the visitor (in-person and virtual) to share in the wonder of this planet's natural systems and appreciate the very real threats that they presently face. At the same time, they must provoke (to use a Freeman Tilden term) the public into thinking more critically about this nation's human past and how it has shaped our present. In the words of Duncan Morrow, "Our parks are ideal classrooms and laboratories for teaching the glorious, untidy progress of our people, their management, and their values."[12]

Changing perceptions of the national park system. Embracing the centennial by invoking, yet again, the powerful and instructive words of the Organic Act does not ultimately get us where we need to go. Those words describe a path Congress designed for another time in another century. In his essay kicking off the series, Dwight Pitcaithley points out that "the National Park System today is vastly different from the one envisioned and managed by Stephen T. Mather and Horace M. Albright ninety years ago. The complexity of issues confronted by park and program managers today could not have been envisioned by the first generation of Park Service administrators."[13] Expanding on this observation, John Reynolds explains, "The United States is a dramatically different nation than we were in 1916." Reynolds goes on to say that "the assumptions the founders of NPS made back then—assumptions about who constituted 'the public' the parks were meant for, and about what expectations this particular subset of Americans had for 'their' parks—may not be valid in the future, or even now." Reynolds warns us that if our national parks truly want to be "relevant" in the next century, they and NPS's programs must be "aligned" with ever-changing social and demographic expectations and needs.[14] In her essay, Carolyn Finney points out that the founders of the National Park Service, and for that matter, the founders of our republic, very narrowly interpreted "we the people" and the publics they were serving. According to Finney, people of color "have gone unseen, uncounted, devalued, and dismissed in the larger process of creating an American environmental narrative."[15] A second century national park system has to be perceived as accessible and useful to all the people of America.

Several essayists turned their attention to the composition and public perception of the national park system as a whole. Dayton Duncan describes how George Melendez Wright, as far back as the 1930s, intrinsically understood how essential it was for the national park system never to become finite or static: "At a moment in history when some of the park idea's biggest supporters were opposing an expansion of the system, on the grounds that too many proposed additions were not up to 'national park standards,' Wright saw the danger of doing nothing. Adding a 'substandard area … would not be calamitous,' he warned. 'The failure to save Mount Olympus' forests, the Kings River Canyon … and a host of others just as valuable would be the real calamity.... The logical answer is more not less park area.'"[16]

We should remember that "parks" by title have always been in the minority of special places managed by the National Park Service. Upon the creation of the agency on August 25, 1916, 38 preserved entities formed the core of what was to become the national park system and fewer than half were labeled "national parks." While some of the giants of the system were included—Yellowstone, Yosemite, and Sequoia—most of the initial members were national monuments. On that inauguration day, the national park system began with 14 national parks, 22 national monuments, and two reservations: Hot Springs and Casa Grande Ruin.

Today, there are more than two dozen different park designations for the over 400 NPS-managed areas. Dave Harmon's essay appeals for a more cognitive presentation of the system to the public. Harmon describes a "bewildering variety" of park designations. "It stokes the confusion, already widespread, over what the purpose of the national park system is," observes Harmon, "and how its [at that time] nearly 400 … components relate to one another."[17] This artificial ecosystem subtly re-enforces a balkanization that detracts from one of the inherent strengths of a system: clear brand recognition.

As people use parks differently, Rolf Diamant suggests that their relationship to the system becomes more intimate and meaningful in the context of their daily lives. Diamant senses a profound shift: "People's connections with their national parks are changing in fundamental ways. Traditional patterns of use, from episodic school field trips to annual family vacations, are being augmented by a deeper level of sustained engagement."[18] Essayist Janet McDonnell proposes that our perceptions of what parks are for in their second century may therefore need to expand: "Any vision for the next century clearly must focus on more than preserving the individual visitor experience; it must be firmly linked to the common good. The NPS and its partners must continue to develop and embrace a broader view of what the national parks are for."[19]

In conclusion

The 27 centennial essays published in the *Forum* over the past nine years cast a broad net. They reflect the complex nature of the National Park Service at the end of its first century. The small agency began with a seemingly simple charge from Congress to preserve unimpaired the places placed in its care. In 1916, the National Park Service was completely focused on parks and monuments—all 38 of them. Almost all were natural areas located in the high-elevation American West. But within a span of 20 years, the thematic and geographic scope of the agency dramatically expanded with the 1933 NPS reorganization and the pas-

sage of the Historic Sites Act of 1935. The Historic Sites Act and, later, the National Historic Preservation Act of 1966 assigned to the National Park Service wide-reaching responsibilities for assisting in the preservation of historic properties outside of national parks and monuments. A decade later, Congress put the National Park Service in charge of a program that provides federal tax credits for private property owners engaged in rehabilitating historic buildings. Through this accretion of responsibilities, NPS was placed at the center of the nation's historic preservation program with only minimal overlap with its responsibilities to manage national parks.

Congress continued to expand the mission of the Park Service through the requirements of the Wilderness Act of 1964, Land and Water Conservation Act of 1965, Wild and Scenic Rivers Act of 1968, National Trails System Act of 1968, National Environmental Policy Act of 1969, Endangered Species Act of 1973, Archeological Resources Protection Act of 1979, Tax Reform Act of 1986, Native American Graves Protection and Repatriation Act of 1990, and many others. After 100 years, the initial charge of Congress "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," while still applicable, no longer adequately describes the "mission" of the National Park Service. As defined by Congress over the past century, the purpose of the agency is multifaceted and complex and has far-reaching responsibilities within and without the 400-plus units of the national park system. These responsibilities and their legislative authorities are captured in the 2006 edition of the *Management Policies* (https://www.nps.gov/policy/MP2006.pdf) and the 2013 edition of the *National Park Service Programs* (https://www.nps.gov/policy/NPSPrograms_September2013_small.pdf) guidance manuals.

In the next century, NPS will face significant challenges in managing the natural and cultural resources committed to its care, but also will need to confront the preservation and maintenance of park infrastructure—its water and sewage systems, its roads and trails, its contact stations and visitor centers. The current $12 billion maintenance backlog has doubled over just the past decade, and its growth shows no signs of diminishing. By several reckonings, the Park Service has not only arrived at its century mark—it has also arrived at a crossroads. It cannot continue to be a viable player in the fields of environmental conservation, historic preservation, and education unless it receives significantly more support from Congress. A failing water supply system at the Grand Canyon, a failing sewage system in the Yosemite Valley, and failing elevators at Carlsbad Caverns and the Washington Monument do not represent the national park system at its best.

These basic needs will only be met if enough voters and taxpayers feel a connection to the National Park Service and perceive it as useful and valuable. As John Reynolds, a former deputy director of the agency, points out in his centennial essay, "The Park Service's concept of relevancy, the definition of who the parks exist for, must adapt if the vitality and strength of the national park idea, and the parks themselves, are to survive as an iconic part of the American psyche." The 1916 Organic Act charges the agency with *promoting* the parks as well as conserving the "natural and historic objects and the wild life therein." Promoting the parks

was something Mather and Albright were particularly good at, Reynolds observes, and it should be something the Park Service "boldly" embraces again. To be clear, promoting is not the same thing as lobbying—an activity all federal agencies are prohibited from doing. Nor is it simply inviting the public to "find" their park. Promoting/advertising/marketing the parks, park values, and the benefits of preserving historic properties and open space, and expanding recreational opportunities throughout the country, should become, again, a major focus of the agency. The Park Service according to Reynolds needs to engage in a "concerted effort … to do the on-going civic engagement necessary to identify what it is and can be about parks that is relevant to Americans, the full variety of Americans, all Americans today." By committing to a thoughtful and consistent and enduring program of promoting the public benefits found in its multiple mandates from Congress, the Park Service will encourage Americans to understand that there is more to the agency "than just the places they visit, and that the value of the whole is greater than just the sum of the parks."[20]

As we write, the 2016 presidential election has just concluded, and the future direction of the National Park Service has never been more uncertain. A new secretary of the interior and a new NPS director will largely determine the immediate course of the agency. Will they consider the multiple opportunities available to strengthen the role of the Park Service in our troubled society and—in the words of essayist Mike Soukup, encourage the agency to "up its game"?[21] Or will they instead passively assume all is well and simply reason that attracting more visitors to the parks is sufficient to maintain the future of the agency? Or, even more troubling, will they pursue the kind of shortsighted and misguided privatization or franchising business ventures that centennial essayist Holly Fretwell advocates?[22] When Frederick Law Olmsted first articulated a philosophy of parks in his 1865 Yosemite Report, he argued that the establishment of "great public grounds for the free enjoyment of the people" was a primary "duty" of the government. To start selectively franchising parts of the system and breaking apart its cadre of professional employees takes us down a long dark road that will demoralize and cripple the National Park Service on the cusp of its second century.

All this, and much more, remains to be seen. Nearly 50 years ago Congress declared "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."[23] Our belief is that only by broadening the national park system's appeal, by overtly promoting the intrinsic value of the parks and the park values inherent in the Park Service's community assistance and preservation programs, and by expanding the agency's role in the nation's educational and environmental conservation systems, can our national park system attract the broad base of support it needs to do the work that Congress and the American people expect it to do.

Endnotes

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2. David Harmon, "The National Park Service Centennial Essay Series: An Introduction," *The George Wright Forum,* vol. 24, no. 1 (2007).
3. Brent A. Mitchell, "Projecting America's Best Ideals: International Engagement and the National Park Service," *The George Wright Forum,* vol. 28, no. 1 (2011).
4. See Dwight T. Pitcaithley, "National Parks and Education: The First 20 Years," http://npshistory.com/publications/education/index.htm (2002).
5. Rolf Diamant, "Diary for a Second Century: A Journey across America's National Park System in Search of its Future," *The George Wright Forum,* vol. 26, no. 2 (2009).
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7. Edward T. Linenthal, "The National Park Service and Civic Engagement," *The George Wright Forum*, vol. 25, no. 1 (2008).
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9. Robert B. Keiter, "Revisiting the Organic Act: Can it Meet the Next Century's Conservation Challenges?," *The George Wright Forum*, vol. 28, no. 3 (2011).
10. William C. Tweed, "An Idea in Trouble: Thoughts about the Future of Traditional National Parks in the United States," *The George Wright Forum*, vol. 27, no. 1 (2010).
11. Michelle L. Berenfield, "Planning for Permanent Emergency: 'Triage' as a Strategy for Managing Cultural Resources threatened by Climate Change," *The George Wright Forum*, vol. 32, no. 1 (2015).
12. Duncan Morrow, "Worth and Value in 21st-Century Parks: The Critical Role of Public Financing," *The George Wright Forum*, vol. 33, no. 1 (2016).
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14. John J. Reynolds, "Whose America? Whose Idea? Making 'America's Best Idea' Reflect New American Realities," *The George Wright Forum*, vol. 27, no. 2 (2010).
15. Carolyn Finney, "This Land is Your Land, This Land is My Land: People and Public Lands Redux," *The George Wright Forum*, vol. 27, no. 3 (2010).
16. Dayton Duncan, "George Melendez Wright and the National Park Idea," *The George Wright Forum*, vol. 26, no. 1 (2009).
17. David Harmon, "Beyond the 59th Park: Reforming the Nomenclature of the US National Park System," *The George Wright Forum*, vol. 29, no. 2 (2012).
18. Diamant, "Diary for a Second Century."
19. Janet A. McDonnell, "Reassessing the National Park Service and the National Park System," *The George Wright Forum*, vol. 25, no. 2 (2008).
20. Reynolds, "Whose America? Whose Idea?"
21. Michael Soukup, "Holding Course," *The George Wright Forum*, vol. 32, no. 3 (2015).
22. Holly Fretwell, "The NPS Franchise: A Better Way to Protect our Heritage," *The George Wright Forum*, vol. 32, no. 2 (2015).
23. An Act to Improve the Administration of the National Park System by the Secretary of the Interior, and to Clarify the Authorities Applicable to the System, and for Other Purposes (the "General Authorities Act" of 1970, 84 Stat. 825), summarized in Lary M.

Dilsaver (ed.), *America's National Park System: The Critical Documents*, 2nd ed. (Lanham, MD: Rowman & Littlefield, 2016), pp. 333–336.

Dwight T. Pitcaithley, Department of History, New Mexico State University, P.O. Box 30001, Las Cruces, NM 88003-0001; dwightp@nmsu.edu
Rolf Diamant, P.O. Box 787, Woodstock, VT 05091; rolf.diamant@gmail.com

The National Park Service Centennial Essay Series

December 2016
Final Centennial Thoughts
Dwight T. Pitcaithley and Rolf Diamant
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August 2016
Second Sentence for a Second Century: Integrating the Mission of the National Park Service
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Letter from Woodstock

Rolf Diamant

More Than Campfire Conversation

In 1903, Theodore Roosevelt insisted on camping alone with John Muir while the president was on a tour of Yosemite. This encounter no doubt encouraged Roosevelt to support the eventual inclusion of Yosemite Valley into the larger Yosemite National Park. With the 2016 National Park Service (NPS) commemorations winding down, I took another look at the agency's centennial webpage where there is a special feature with the biographies of "early national park visionary leaders" (https://www.nps.gov/bestideapeople/index.html) Muir and Roosevelt are there, reunited once again and given top billing as the lead visionaries of the national park movement, along with Stephen Mather, the politically adroit and charismatic first NPS director (Figure 1).

Figure 1. "The Early Leaders," from the National Park Service website.

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They are all credited with "groundbreaking ideas preserving America's treasures for future generations," with Muir praised as "the father of national parks."

Roosevelt was of course a great conservation-minded president and Muir was a brilliant publicist and a passionate and influential park and wilderness advocate. However, national parks had already been in existence for more than 30 years at the time of the camping trip, and the establishment of a National Park Service would not happen until 1916, 13 years later, when Roosevelt had long been out of office and John Muir was dead. What is most striking about this official web feature is not only who is being given all the credit but also who is being erased, in effect, from this high-profile NPS history lesson.

To begin with, there is no mention of Frederick Law Olmsted, Sr., and his landmark Yosemite Report, or of his son, Frederick Law Olmsted, Jr., who penned the compelling statement of purpose for the 1916 Organic Act. The elder Olmsted's 1865 park plan for Yosemite Valley presciently called for the "establishment by government of great public grounds for the free enjoyment of the people"—a prescription for a future system of national parks. There is no mention of Congressman John Lacey, principal sponsor of the 1906 Antiquities Act, which has been referred to by historians as the first national park service "organic act." And there is no mention of J. Horace McFarland, long-time leader of the American Civic Association, who was the driving force behind 16 bills introduced into Congress to establish a national park service. Neither is there any mention given to Mary Belle King Sherman, also known as "the national park lady," who mobilized 3,000 clubs and nearly one million members of the General Federation of Women's Clubs behind McFarland's campaign. Looking years into the future, Sherman envisioned the contributions national parks would make to American civic life and education, asserting that they provide "the better, greater things of life" possessing "some of the characteristics of the museum, the library, the fine arts hall, and the public school."

Part of this official adulation of John Muir, as "the father of national parks," is, I suspect, in part due to his larger-than-life popularity with contemporary environmentalists and wilderness enthusiasts. The fabled Roosevelt–Muir encounter was also a story made for television. In 2009, Ken Burns and Dayton Duncan obliged, devoting part of an episode of their documentary series on national parks to the Muir–Roosevelt camping trip in Yosemite—further canonizing the two, in the public's eye, as the main architects of "America's best idea." NPS has made little official effort in the centennial to present a more inclusive, scholarship-based narrative. This has been a recurring problem for the agency. For much of the 20th century NPS clung to a story, discredited by its own historians, that the national park idea was first suggested by explorer Cornelius Hedges seated around a campfire in the Yellowstone wilderness. A high-level NPS official once said, when scholars challenged the story, "If it didn't happen we would have been well advised to invent it."

In the case of the 2016 centennial web page, I am not questioning the very significant contributions Muir, Roosevelt, and Mather made to conservation and national parks, but the story being told is too neat and woefully incomplete. This was just what the Organization of American Historians' report *Imperiled Promise: The State of History in the National Park Service*, issued in 2011, five years before the centennial, cautioned NPS to avoid: interpre-

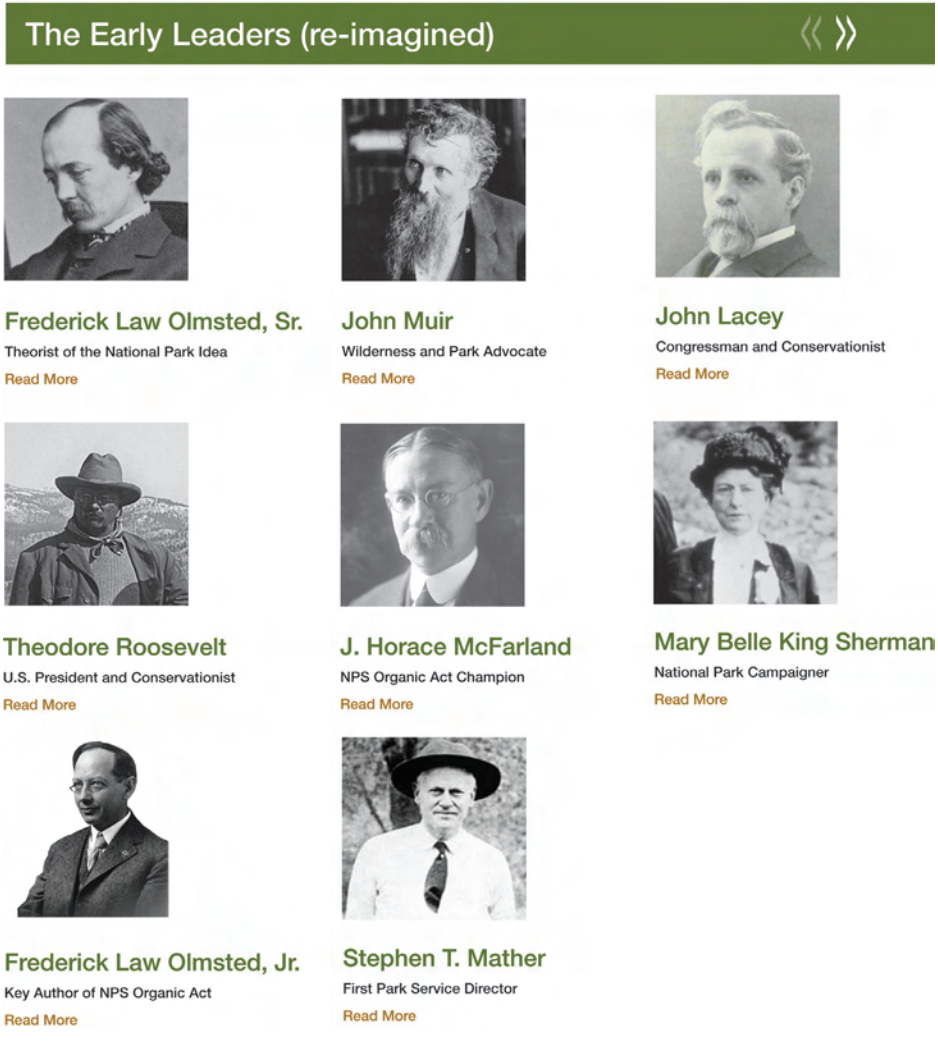

Figure 2. "The Early Leaders," re-imagined by *The George Wright Forum*.

tation that is "less the product of training and expertise and more the expression of conventional wisdom."

I think the inclusion of Olmsted (and, for that matter, his son, Frederick Law Olmsted, Jr.), Lacey, McFarland, and Sherman (Figure 2) could have in fact strengthened the overarching themes of the 2016 centennial campaign in a number of helpful ways:

- Frederick Law Olmsted, Sr.—forcefully argued that the concept of protecting special places for the benefit of all people, not only privileged groups, has always been an idea

worth fighting for. His example suggests that meaningful change arises from an engaged citizenry and the duty of government, based on principles of "equity and benevolence."

- Frederick Law Olmsted, Jr.—called for an agency with the highest ethical and professional standards and understood and consistently promoted the advantages of a strong and unified system of national parks.
- Congressman John Lacey—made profound contributions to American conservation and reminds us all that NPS cares for places with multiple values and layers of meaning. In our current era of scaled-up landscape conservation, there are lessons to be learned from the way Lacey brought natural, scientific, cultural, spiritual, recreational, and ethnographic interests together in a big conservation tent.
- J. Horace McFarland—repeatedly emphasized that public lands are the heritage of all Americans and are essential to the health and well-being of our democracy; or, as he said, "a plain necessity for good citizenship."
- Mary Belle King Sherman—clearly saw how central to continuous life-long learning national parks could be, and how education and civic engagement have always been a fundamental purpose of public land stewardship.

A 2016 election postscript

The results of the recent election mean there will likely be hard times ahead for America's national park system. Park supporters everywhere will have to resist the temptation to retreat into a defensive posture solely focused on protecting park resources and budgets while putting aside or perhaps abandoning our highest aspirations for the future of the national park system. Though many difficult and painful battles over resources and budgets may lie ahead, there are higher purposes for the system also at stake—a broad vision that had its roots with people like the Olmsteds, Lacey, McFarland, and Sherman. It is a vision that has been refined and expanded by several incarnations of the National Park System Advisory Board since the 2001 John Hope Franklin report, by the careful work of the 2009 National Park Second Century Commission, and by the 2016 NPS/National Park Foundation centennial campaign that is now concluding. This is a vision of a national park system that is inclusive and committed to engaging diverse constituencies in cooperative stewardship and life-long, real-world learning. It is a vision that always embraces the best current science and scholarship. It is a vision that values national parks and programs for their many contributions to climate resiliency, to ecosystem services, and to the public health and well-being of the nation.

It is a vision we have to hold on to.

The Heart of the Matter

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

***Climate Change in Wildlands: Pioneering Approaches to Science and Management,* edited by Andrew J. Hansen, William B. Monahan, David M. Theobold, and S. Thomas Olliff. Island Press, 2016. 391 pages.**

Reviewed by Stephen Woodley

"May you live in interesting times" is the apocryphal curse that came to mind as I read this new book from Island Press (that stalwart, non-profit environmental publisher). Hansen et al. have laid before us a rich and complicated journey into the complexities of thinking about climate change adaptation in wildland ecosystems.

The book is the end product of a five-year, NASA-funded project, the "Landscape Climate Change Vulnerability Project," which brought together some excellent minds to grapple with the challenge of managing for ecological integrity in an era of rapid human-induced climate change. The project focus was understandably on remote sensing and remotely sensed models, and that research is the heart of the book. However, that should not put off the less technically oriented. This book is a wonderful example of the increasing utility of remote sensing approaches to real management challenges. The book is logically organized around the well-known Climate Smart conservation framework and includes chapters on identifying needs, assessing vulnerability, and evaluating and then implementing management options.

Wildlands, in this book, are a descriptor covering parks and protected areas, and other wild lands. The purported target audience is federal land managers, but this book applies equally to any larger intact tracts of private or state lands. The detailed research in the book comes primarily from two very large Landscape Conservation Cooperatives: the Great Northern (the mountains from Wyoming, Idaho, and Oregon up through Montana and Washington to Alberta and British Columbia in Canada) and the Appalachian (Alabama, Tennessee, and Kentucky through to West Virginia and Pennsylvania to New York). These areas are deemed important to focus on because of their relative intactness, their susceptibility to climate change, and the presence of a recent rapid influx of humans.

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In addition to the hard details of predicted climate and ecosystem interactions, the book contains some nice surprises. I found Chapter 3 on "Challenges and Approaches for Integrating Climate Change into Federal Land Management" especially interesting. Here we have climate scientists straying off-road into an analysis of why the uptake of their science had been, well, less than ideal. They cover issues that include climate science being new to managers, the concepts being not well understood, and the difficulty of making decisions in high-uncertainty environments. Solutions go back to the use of the Climate Smart Framework, training, and a list of techniques for science–management collaboration. This is worth a read on its own.

The middle of the book, parts 2–3, is full of richly detailed studies from the Rockies and the Appalachians. These include projections of climate change, impacts on ecosystem processes, projected vegetation changes, and changes in fish communities. These are well documented, of a high scientific standard, and are well illustrated. I only wish the book was in color, as the detailed graphics would have really benefitted.

Part 2 of the book, on "Climate and Land Use," provides detailed analysis of both historical and projected climate to support climate adaptation in the Rockies and the Appalachians. Both temperature and participation trends have been increasing in recent decades and are projected to increase further to the year 2100. This provides ample evidence that significant change is upon us and will continue. It is a solid demonstration of how to cope with the magnitude and direction of climate changes to support wildland management.

Part 3 is on the "Ecological Consequences and Vulnerabilities" of observed and projected change. This is the hardest part of climate adaptation for practitioners. What will changing climate mean to the ecosystems we manage and how can we think about the complexity of the interactions? The book details potential tree, vegetation community, and fish responses at a range of spatial scales for both eastern and western species. The results are instructive and likely the best available, but still leave the reader with the realization that we are just beginning the process of accurately predicting ecosystem responses to changing climate.

After exploring climate predictions and vulnerabilities, Part 4 moves to taking this scientific understanding into management. There are sections on identifying adaptation options and how much recent progress has been made by federal agencies in this area. We then see detailed case studies from Rocky Mountain National Park, and the management of white bark pine in Yellowstone. These chapters serve to tie the book together as they have climate projections, vulnerability assessments, and management actions within a context of a real place. The next-to-last chapter brings the wealth of information on the ecological condition of Greater Yellowstone to bear on the climate question, taking a full ecosystem perspective. It takes the bold step of comparing ecological condition on private and public lands, using available data and a rating system. The authors conclude that climate change is already impacting higher elevations, snowpack and runoff are declining, and insects and disease are changing tree population dynamics.

So we indeed do live in interesting times. Climate change is upon us and we are forced to adapt the way we think about and manage our beloved wildlife ecosystems. The trail ahead is neither straightforward nor easy, but there is no likelihood of turning back. Hansen et al.

have done us a service by providing a richly detailed set of tools and approaches for moving forward. The US truly is a global leader is thinking about climate change adaptation, and the examples in this book are impressive. It should be read and used well beyond the target audience.

Connecting People to Nature: Today's Regional Park Systems

Lynn Wilson, guest editor

Connecting to Nature Where You Live: The Beauty of Regional Parks

Lynn Wilson

It is almost astonishing that in the larger world of parks and protected areas management regional park systems are not better recognized. This is perhaps due in part to a preoccupation in some protected area circles about the relevance and contribution of international-, national-, or territorial-level park systems in meeting ambitious commitments for protection of terrestrial and marine ecosystems, and in responding to climate change, biodiversity protection, landscape connectivity, invasive species, and historical/cultural recognition and inclusion. The voices engaged in these discussions are most often representatives of higher-level park systems, with the result that the contributions of lower-level park and protected area systems can be strikingly overlooked when it comes to accounting for the positive social, cultural, economic, and environmental outcomes that all levels of park systems provide.

A significant percentage of global parks and protected areas are embedded within local, community, and regional park systems. These systems provide immense value and benefits to people and the environment. Leaving them out of higher-level considerations translates into an undercount when calculating the positive global impact of parks and protected areas to a burgeoning human population and diminishing natural environment.

This special issue of *The George Wright Forum* focuses on regional park systems. This is a first for the journal, which historically has highlighted the contributions of national and international parks and protected areas. This is also important because it signals a growing

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Figure 1. Tilden Regional Park, East Bay Regional Park District, California (Kwong Yee Chang via Flickr).

recognition of the value of sub-national park systems as key partners in global efforts to protect adequate land to help offset growing social and environmental strains the world over. In the case of regional park systems, the focus is on providing adequate green space close to where most people live, which increasingly is in large urban areas.

Regional parks and park systems are a perfect response to the modern conundrum of creating dense urban fabrics where people can become increasingly isolated from nature. The scale of a regional park system means that it can encompass all or a large part of a metropolitan area, thereby enabling the selection of park lands that can transcend individual municipal boundaries and provide larger-scale *regional* benefits to urban dwellers. This is important because it means that regional-scale protected areas can encompass larger wild lands that are important for conservation purposes while still providing close-by public access opportunities.

As noted, regional parks are usually associated with urban areas. Thus, they are close to the people who use them. Unlike national or territorial parks, whose locations and governance systems can seem remote and disconnected from their constituents, regional park systems are right where people live, creating a direct connection between politicians, tax dollars, agencies, and the public. Regional parks are representative of, and accountable to, the people who use them most—the feedback loop among all parties is immediate and responsive. This creates a huge advantage to regional park systems because the people who directly fund the parks directly benefit from the parks, creating a sense of ownership and local pride in a well-developed and well-used park system.

That being said, regional park systems are not all the same. A wide variety of models have been used to create and administer regional park systems. The articles in this issue explore some of these forms, which include single systems, collaborative systems, and systems that defy any typical definition of a regional park system. This flexibility is perhaps a key ingredient of the success of regional park systems—for while they are united by a relative

geographic scale and focus, they are responsive and adaptive to local conditions and opportunities. There is no "one size fits all" when it comes to regional park systems.

Regional park systems are found around the world. Virtually every large metropolitan area has some form of regional park system. The rise of regional park systems goes hand in hand with the rise of cities and the growing concern over urban sustainability and quality of life. Urban sustainability and quality of life can be partially addressed by embedding green infrastructure throughout a metropolitan area. It can be arguably stated that there is no great city in the world without a correspondingly great green infrastructure network. This can be seen in cities such as Boulder, Chicago, Denver, Detroit, Los Angeles, Minneapolis–St. Paul, New York, Portland, San Francisco, and Seattle in the United States; Calgary, Ottawa, Toronto, Victoria, Vancouver, and Winnipeg in Canada; Berlin, London, and Oslo in Europe; Wellington and Auckland in New Zealand; and Hong Kong in China, among many other global cities. All these cities have in common a regional-scale approach to their parks and protected areas systems.

Regional parks provide many values that are particularly relevant to metropolitan areas, including sociocultural, economic, and environmental. Examples of social values include the benefits of close contact with nature to reduce stress, aid in healing, increase cognitive skills, and contribute to individual and community health and wellness. There is ample evidence to support the idea that people need close and regular contact with nature for emotional and psychological well-being. Perhaps best popularized by Harvard University professor E.O. Wilson in the *Biophilia Hypothesis* (Kellert 1993: 31), is the idea that humans are "hard wired" to need connection with nature and other forms of life. Cities and urban areas are well-positioned to provide this connection by thoroughly integrating nature into the metropolitan environment. Cultural values can be celebrated through regional parks, where parks protect and reflect important cultural identities that are place- and history-based. In this sense, regional parks can help to transcend socioeconomic and identity politics by providing meaningful and relevant public spaces where diverse members of society can feel at home. Well-maintained and -situated green spaces can increase community cohesiveness by promoting interaction among neighbors in safe and accessible public environments.

It has been repeatedly shown that parks and green spaces can raise surrounding property values, thereby contributing to urban economic prosperity. The existence value of green space next to residential, commercial, and institutional properties is viewed positively and dwellings adjacent to parks and green space command higher prices, which in turn increases property taxes which helps to offset the cost of maintaining parks. Examples of increased property values can be found adjacent to any of the world's great urban parks, such as Central Park in New York City or Golden Gate Park in San Francisco. Parks and green spaces contribute to spin off businesses, such as recreation and fitness providers, hotels, restaurants, and tourism. Signature parks, such as San Diego's Balboa Park and Portland's Forest Park, are good examples of metropolitan area parks that have become major tourist destinations.

Finally, regional parks contribute to environmental sustainability in large part through securing "natural capital" or "nature's services"—the suite of environmental benefits that nature provides for free. In urban areas, these benefits have tangible value. For instance, the es-

tablishment of greenbelts and protected forests, agricultural lands, wetlands, and other green spaces around cities such as Toronto and Ottawa has helped to protect such essential ecosystem services as water filtration and wildlife habitat (Wilson 2010: 9). In Vancouver, Canada, a natural capital valuation study determined that protection of forests, watersheds, wetlands, and grasslands provided a natural capital benefit of C$5.4 billion a year (Wilson 2010: 9).

These benefits can be secured by establishing robust regional park systems, where the benefits of nature protection can clearly outweigh the values that would be realized through conversion into other uses. Regional parks and protected areas facilitate connectivity conservation, where core "wild" areas are linked by urban green infrastructure to support maintenance of biological diversity and species migration, and which helps to decrease habitat fragmentation, degradation, and loss. In sum, regional park systems provide immeasurable tangible and intangible benefits to urban areas across all dimensions.

Talking about regional parks

Clearly regional parks are important contributors to human health and well-being, as well as to environmental and economic sustainability. The five contributing articles to this issue focus on different aspects of the values and benefits of regional park systems. They also illustrate a range of governance types and funding models that highlights just how flexible and adaptable this form of park system is. The unifying factor among them all is their geographic scope and urban focus.

The series of articles begins with a contribution from Robert Doyle, general manager of the East Bay Regional District. The Regional District is situated in the densely populated San

Figure 2. Dudar Regional Park, Auckland, New Zealand (Waldemar via Flickr).

Francisco Bay Area, home to more than 2.8 million people. Established in 1934, the Regional District is one of the oldest regional park districts in the United States. Its beginnings are closely intertwined with the National Park Service, part of whose mandate was to foster the development of state and local parks, and to the progressive thinking and intellectual rigor of graduates coming out of the University of California at Berkeley. For instance, in 1930 Frederick Law Olmsted, Jr., and Ansel Hall produced a seminal report which provided a blueprint for the early park system which is still relevant today.

Currently, the Regional District manages over 120,000 acres in 66 parks in Alameda and Contra Costa counties. With over 25 million visits each year, the Regional District receives more visitors than Yosemite, Monterey Peninsula, and Napa Valley combined. The Regional District faces significant challenges in uncertain times, including a growing population and changing demographics, planning for climate change, responding to user conflicts, and maintaining aging infrastructure. The Regional District responds to these challenges through a variety of means, including a focus on community engagement and youth outreach. The Regional District is also a major player in protecting wildlands and habitats for endangered species through land acquisition and partnering with state and federal wildlife agencies. The Regional District is heavily involved with preparing for climate change and sea level rise, helping to protect millions of people who are vulnerable to its effects. The Regional District is now a national role model; its success is based on over 80 years of working to protect regional landscapes and connecting people to those lands where they live.

Another very successful regionally based park system is explored in the article by Mike Houck, director of the Urban Greenspaces Institute and co-founder of the Intertwine Alliance. Houck's article traces the incremental evolution of greenspace, park, trail, and natural resources planning in the Portland, Oregon–Vancouver, Washington metropolitan region over the past 35 years. Houck states that in the early days he was told by local land use planners that there was "no place for nature in the city." However, thinking along this line has shifted to the point where now urban nature advocates have embraced a 21st-century corollary to Thoreau's aphorism: now, "in livable cities is preservation of the wild." This thinking has laid the groundwork for the development of a remarkable regionally based parks and protected areas system, which is another national role model for sustainable urban development. Houck points out that even though the state of Oregon requires an urban growth boundary for every city in the state (which has helped to reduce urban sprawl and protect the working landscape outside of urban growth areas), it has meant the loss of natural areas inside of the urban growth boundary.

Fortunately, many conservation and civic organizations have retooled their efforts to protect and restore nature in the Portland–Vancouver metropolitan area. This has resulted in over 17,000 acres protected regionally, and an increase in local parks. Houck provides a series of lessons learned during the development of the regional park system, including the importance of the power of picking a good role model (they picked the East Bay Regional Park District), building relationships, engaging the federal government, thinking big, listening to outside experts, and selecting an icon as conservation catalyst. Houck ends his article by discussing the development of the Intertwine Alliance as the next step in ensuring that

earlier successes are not ephemeral or "one-offs," but are coordinated around a common agenda. The Intertwine Alliance has been hugely successful in realizing its founders' vision of creating a world-class system of parks, trails, and natural areas for people to access nature where they live, work, and play.

A much different regionally based park system is discussed by Burkhard Mausberg, the chief executive officer of the Friends of the Greenbelt Foundation and the Greenbelt Fund in Toronto, Ontario, Canada. Mausberg talks about the success of Ontario's Greenbelt, a 2-million-acre swath of greenspace and farmland encircling the greater Toronto urban area. The Greenbelt will turn 12 years old in 2017 and is now, according to Mausberg, the world's largest peri-urban protected area. Mausberg writes that the creation of the Greenbelt was the result of growing frustration with land use planning in the Greater Toronto Area. The public recognized the negative impacts of poor development and the loss of greenspace and farmland, and in 2005 the provincial Greenbelt Act and Plan was passed with much fanfare. Today, the Greenbelt stands as an outstanding example of far-sighted regional planning and its power to shape the landscape for generations to come. Mausberg details the many benefits of the Greenbelt, including as an economic powerhouse for the region through the 161,000 jobs it has created or sustained in farming, tourism, and recreation.

While not a typical regional park system, the Greenbelt protects more than 70 species at risk, hundreds of rivers and streams, thousands of forested acres, and outstanding biological diversity just miles from Canada's most populated urban area. Some of the other benefits of the Greenbelt include its contribution to protecting ecological services, estimated to be worth a conservative C$3.2 billion a year, or C$1,600 per acre.

The Greenbelt also features the largest network of hiking trails in Canada, including the world-famous 725-kilometer-long Bruce Trail, which follows the Niagara Escarpment across cities, towns, farmland, and conservation areas. New plans for the Greenbelt include growing it by more than 1.5 million acres and protecting 21 major urban rivers. The Greenbelt stands alone as a shining example of the power of regional landscape protection that is flexible and responsive in providing value to people where they live.

The next article is by Harry Klinkhamer, a park interpreter and historian who has worked in the forest preserves of Chicago Wilderness for many years. Klinkhamer traces the evolution of park planning and development in the Chicago metropolitan area since the 1830s. His article provides an in-depth glimpse into the complexities and thinking behind the creation of one of the world's greatest regionally based parks and protected areas system. The genesis of Chicago Wilderness can be traced back to the city's founding in the 1830s, when the idea of a "city in a garden" was born. As Klinkhamer points out, Chicago has been home to "rather progressive and unconventional approaches to parks and wilderness for well over 100 years."

Today, the Chicago urban area does not have one overarching regional park system, but rather its park space is managed by hundreds of park districts, many county forest preserve districts, the state and federal governments, and Chicago Wilderness. Klinkhamer outlines a fascinating history of the development of this complex parks and protected areas network. More recently, in 1996, a group of individuals from 34 different agencies met to help define urban wilderness and develop a comprehensive plan to preserve, restore, and educate the

public about nature. A common theme was the realization that ecosystems know no political boundaries and it would take a committed coalition to improve biodiversity and the natural landscape of the Chicago region. Out of this conversation, Chicago Wilderness was formed, whose purpose was to "sustain, restore, and expand our remnant natural communities." Today, Chicago Wilderness is a model for other major urban areas to emulate. Its members include local, state, and federal agencies; business-sector partners; non-profit organizations; and research institutions. This unique partnership works because the community sees Chicago as essentially a nature reserve of over 370,000 acres intimately integrated into a large urban area home to millions of people.

The final article in the series is by Michael Walton, senior manager of regional parks in the Capital Regional District (CRD), Victoria, British Columbia, Canada. Walton writes about the importance of regional parks to urban populations due to their proximity and accessibility. Regional parks, according to Walton, provide important opportunities for urban dwellers to visit nearby wilderness areas, which are also home to a great diversity of plant and animal species. Walton describes the CRD Regional Parks system, noting that the 31 regional parks and three regional trails protect about 13,000 hectares of land that are home to three large carnivore species: black bear, wolf, and cougar. Including the region's protected watershed, the CRD owns and protects almost 14% of the regional land base. When all levels of protected areas in the region are included, almost 20% of the land base is protected. This is a significant achievement, and this percentage is expected to increase over the next number of years through CRD Regional Parks' land acquisition fund.

Walton notes that unlike the US and Canadian national park systems, the CRD Regional Parks system is experiencing sustained visitation growth. At least some of this increase in

Figure 3. Balboa Park, San Diego, California (Michael Watson via Flickr).

visitation can be attributed to increasingly urban, multicultural, and ethnically diverse populations. However, he notes that these populations may think differently about near-urban wilderness and its importance. Some may be hesitant to visit landscapes that are home to large carnivores, which puts a renewed emphasis on providing a broad range of experiences to attract non-traditional park visitors.

Walton also talks about the role of regional parks as a bridging organization between local and state/provincial/federal protected area systems. In this sense, park interpreters and social scientists can provide essential information-gathering and -dissemination services to better serve park visitors and park agencies. Walton discusses the important role of regional park systems in helping to achieve global commitments for the conservation of nature, and in linking together fragmented landscapes into interconnected matrixes. Finally, Walton posits that the location of regional parks as backyards to millions of city dwellers represent that nexus where people can reconcile their beliefs about wilderness to benefit non-human species for generations to come.

The beauty of regional parks

Recognition of the value and benefits of regionally based park systems is growing. The benefits span ecological, spiritual, emotional, physiological, psychological, economic, cultural,

Figure 4. Lynn Canyon Regional Park, Vancouver, British Columbia, Canada (Adrian Leon via Flickr).

and sociological realms. As more and more people crowd into urban areas, the need for regular contact with nature has never been greater. Increasingly, progressive land use planners, politicians, civic leaders, academics, ecologists, conservationists, urbanists, and others are working on ways to make cities sustainable and great places to live, work, and play. This assimilation of thought and practice has never been as necessary as when it comes to fully integrating the built and unbuilt environment within metropolitan areas.

Humans need regular, sustained, joyful, nourishing, daily contact with nature, and where better to provide that contact than where most people spend most their lives—in urban areas. Regional park systems can play a vital role in bringing nature to people by creating greenspaces where people can escape the daily urban grind, even if for only a few minutes or hours.

There are many outstanding examples of cities around the world that are taking up this challenge and creating more inviting, sustainable, humane spaces that benefit both people and the environment through the development of regional park systems. As the articles in this issue of *The George Wright Forum* highlight, the adaptability and responsiveness of regional park systems to local circumstances and constituents is a key to their success, and one reason why they are becoming increasingly important and relevant to city living. Perhaps the aim for all great cities should be to create "Urbs in Solitudinem" or "Cities in Wilderness," as the title of Harry Klinkhamer's article posits. Regional parks are certainly key to achieving this grand and beautiful vision.

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Lynn Wilson, CRD Regional Parks, 490 Atkins Avenue, Victoria, BC V9B 2Z8 Canada; lwilson@crd.bc.ca

An Urban Park District Looks to the Future

Robert E. Doyle

More than 80 years ago a small group of forward thinkers had the bright idea to create the East Bay Regional Park District with a grand vision, first put forth by Frederick Law Olmsted, Jr., and Ansel F. Hall, for "a park system for recreation in a natural setting." That vision has inspired and guided us for eight decades.

The movement to create the Park District grew out of a unique San Francisco Bay Area environment, which was a hotbed of progressive thinking, intellectual rigor with the University of California at Berkeley nearby, conservation, and outdoor recreation. The social and political forces that coalesced around the cause to preserve land in a quickly developing area, and create an East Bay park system, were similar to the origins of the US National Park Service (NPS).

Park District beginnings are closely intertwined with the National Park Service, part of whose mandate was to foster the development of state and city parks. The legendary Ansel F. Hall, an early Park Service ranger and naturalist who was a University of California graduate (as was the first NPS director, Stephen Mather), played a key role in establishing the vision and plan for the proposed regional park system. While working for the Park Service, Hall prepared a preliminary survey and report outlining the proposed parklands. Part of Hall's purpose was to provide access to urban residents who otherwise would not be able to visit the natural environment. His report became the basis for the Olmsted–Hall report of 1930, which not only lent credibility to the local preservation efforts, but also provided a blueprint for early park development.

As the Bay Area has continued to grow rapidly, so has the East Bay Regional Park District, pushing its East Bay boundaries to the four corners of two of the largest counties in California. At the Park District's beginnings in 1934 there were about 575,000 people in this region; today there are 2.8 million. We live in an area that has diverse landscapes and scenic

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beauty, now preserved in the Park District's 120,500+ acres and 66 parks. We celebrate both the abundant recreation and picturesque landscapes we have protected. We are fortunate to have a dedicated and well-trained staff and a public that continues to support their Park District.

Much like eight decades ago, the times are uncertain. Among the key challenges that are shaping the East Bay Regional Park District of the 21st century are:

- Population growth, changing demographics and accessibility to parklands.
- Connecting youth to nature and building future park advocates.
- Improved scientific knowledge in the areas of natural and cultural resource management.
- The impact of climate change and resiliency for rising sea levels.
- User conflicts and increased demands for public access.
- Aging infrastructure in older parks.

One of the most attractive aspects of the East Bay Regional Park District is that its parks and trails are easily accessible to every resident in the Bay Area. Because of this, most of our 25 million annual park visits come from residents who can find regional parks within 15 minutes of their homes. Each year, we see more visitors than Yosemite, Monterey Peninsula, and Napa Valley combined!

As one can imagine, this high usage is both a blessing and a curse to the agency and the public. Every day, our staff finds ways to resolve increasing user conflicts, including over parking, while keeping our parks wonderful places to visit for everyone.

Community engagement

Youth outreach. Each year, the Park District hires more than 400 young people with varied interests or career goals to work in parks, offices, and visitor centers. Our urban park system, which offers nature close to home, acts as a "portal" for learning about nature and the value of national, state, and local parks. Our youth engagement programs and visitor centers create positive outdoor experiences for city kids.

Our outreach programs include: Community Outreach Outdoor Program, Camps to Communities, Teen Eco Action, Adventure Crew, Leaders in Training, Youth Employment Program, youth internships, park job fairs, and Park District presence at externally hosted job fairs.

This high level of accessibility makes the Park District a leader in the Healthy Parks Healthy People movement, which encourages the use of the parks for healthful outdoor recreation.

Healthy Parks Healthy People. Encouraged by growing evidence that spending time in nature improves physical and mental health, the Park District has been spearheading an initiative to raise awareness about the synergy between a healthful community and well-managed local parks.

Ninety-nine percent of Park District visitors surveyed since 1988 have reported health and fitness as the most important reason they visit parks. Accessible parks near urban areas encourage residents to get outdoors and be active in ways that fit into their hectic schedules.

Figure 1. Healthy Parks Healthy People Wellness Walk attendees practicing yoga together in nature at Coyote Hills Regional Park (EBRPD).

"Communities, families, doctors, nurses, all of us know that our health is directly related to the amount of exercise we do each day," says Dr. Rich Godfrey, director of the UCSF [University of California at San Francisco] East Bay Surgical Residency Program at Highland General Hospital in Oakland. "The East Bay Regional Parks are an amazing gymnasium of hills, oxygen, and natural wonders that await us seven days a week," Godfrey adds. This is the Healthy Parks Healthy People connection.

The Park District has connected with health-care providers specifically in an effort to drive this message home to families with chronically ill children or patients in mental health clinics seeking relief from anxiety or depression. SHINE, or Stay Healthy in Nature Every Day, was created as a prescriptive to provide access to parks through transportation and programs to benefit these types of medical needs. From children's hospitals to county medical clinics, the Park District's SHINE program has received rave reviews from patients and health providers alike.

To reach multicultural members of the community, the Park District has implemented an outreach plan identifying trusted, ethnically diverse community leaders to encourage people to come out for "healthy nature walks" in regional parks. These activities bring together members of multi-ethnic communities for health and fellowship; it's kind of an old-fashioned way to meet and break bread together—all with a nature-centric, park backdrop. The healthy nature walks also include traditional and non-traditional forms of exercise, from stopping

along a trail and doing tai chi or dancing a Zumba routine along the shoreline to making music using only items found along the way.

Wildlands and habitats for endangered species. As our urban populations grow, so does the impact on natural habitat around San Francisco Bay and the open spaces of the East Bay. For that reason, the Park District has partnered with federal and state wildlife agencies to address endangered species management by being the lead agency to acquire and manage tens of thousands of acres of land for permanent preservation. Because the Park District has so many large parks, we have focused our efforts on expanding wildlife corridors—connecting 40 miles of San Francisco Bay shoreline, including major wetland restorations, and critical habit connections in the ridgeland parks.

Stewardship

The various natural and cultural resources of the East Bay Regional Park District—whether a rare plant or animal, a valley grassland or chaparral-covered slope, an ancient pictograph or bedrock mortar, a panoramic vista or a mountain peak—are all public treasures. The 120,500+ acres of mostly undeveloped, natural, open space parklands in Alameda and Contra Costa counties offer a variety of grassland, shrubland, woodland, forest, lake, shoreline, riparian, and wetland environments, which provide essential habitat for a diverse collection of wild plants and animals.

Figure 2. A view from Eagle's Crest Trail at Del Valle Regional Park—a great example of a wildlife corridor that connects four regional parks and 40,000 acres (Greg Brian).

US Secretary of the Interior Sally Jewell has said that because of the Park District's early efforts to acquire significant parkland we now have one of the most successful habitat conservation partnerships in the United States. One such partnership has resulted in the preservation of nearly 12,000 new acres of critical wildlife habitat in eastern Contra Costa County, with the goal of creating a 30,000-acre preserve over the next 20 years through a consolidation of previously fragmented and inefficient permit processes. Developers' project approval fees are used to purchase and preserve wildlife habitat to replace open space lost to development. The Park District has leveraged these fees, as well as its own park bonds and grants from federal and state sources, especially the US Fish and Wildlife Service. Since 2008, $48.5 million in park, regional, federal and state grants, and $13.3 million in fees, has been received for habitat conservation projects.

Older urban parks

Like national and state parks built by the Works Progress Administration during the Depression, many of our older parks currently face infrastructure maintenance needs that we are working hard to address. Maintaining our existing parks and infrastructure is a very high priority for the Park District. A 2012 District survey found 91% of respondents strongly

Figure 3. An EBRPD construction crew repairs a storm-damaged water line caused by a landslide at Del Valle Regional Park (EBRPD).

agreed that the regional park system is a valuable public resource and 95% agreed that proper maintenance of existing parklands, trails, and recreation facilities should continue to be a top priority.

The problem of unmet maintenance needs is not unique to the East Bay Parks. Our California State Parks system has unfortunately been unable to keep up with the backlog of demand and has deferred maintenance totaling just over $1.2 billion, with a maintenance shortfall of approximately $120 million each subsequent year. The Park District operates three state parks, Crown Beach, McLaughlin Eastshore State Park, and Del Valle Regional Recreation Area, at no cost to the state, which means we are working through an inherited a backlog of maintenance projects with no money from the state to pay for them.

Preparing for climate change

With 55 miles of urban shoreline parks and over 120,500 acres of wildlands, the Park District is on the front line of defense against climate change and sea level rise, protecting millions of people. In response, the Park District is developing leading-edge strategies which will help the East Bay prepare for climate change in terms of sea level rise and wildfire. The Park District has also implemented strategies to slow and stop pollution by promoting green

Figure 4. An aerial view of McLaughlin Eastshore State Park. Climate change sea rise models predict that, without enhanced shoreline protections, this park along with most of the San Francisco Bay shoreline will be subject to tidal inundation and eventual submersion over the coming decades (Michael Short).

transportation, clean energy, and carbon sequestration. Located in one of the most urbanized estuaries at the confluence of two nationally significant waterbodies, the San Francisco Bay and the Sacramento–San Joaquin River Delta, the Park District's parklands, and particularly the 55 miles of Bay–Delta shoreline managed by the Park District, buffer numerous at-risk communities. These are the same communities where residents live in close proximity to greenhouse gas emitters and energy infrastructure, such as refineries and energy plants.

The Park District can offset greenhouse gasses through sequestration by restoring and creating wetlands. The Park District recently updated an assessment which found the average amount of carbon sequestered by its wildlands is 300,000 tons of carbon dioxide equivalents (CO_2e)—comparable with removing 59,300 vehicles from the road each year. By preserving natural land in perpetuity, these wildlands represent an important permanent carbon stock of over 52 million tons of CO_2e. Moving forward, the Park District is developing a sustainability plan which will build on the work already done. It will provide guidance about how we can contribute more toward meeting the challenges presented by climate change. The Park District strives to be a leading climate change park agency by developing and implementing climate solutions.

As an example, this year the Park District broke ground on a 1.2-megawatt solar project which will provide shade for visitors and generate clean, renewable energy for facilities throughout the East Bay Regional Park District, enough to nearly "zero out" the Park District's entire electricity footprint.

Although great strides have been made in understanding the possible consequences of climate change on wildlife and their habitats, predicting the exact changes that will be wrought upon the planet over the next 50 or 100 years remains an inexact science. On the one hand, organizations such as Point Blue Conservation Science have developed a host of predictive tools for how certain species may react to changing climate (see http://www.pointblue.org/our-science-and-services/conservation-science/climate-change-solutions/climate-change-research/). For example, they modeled the specific responses of tidal marsh bird species to predicted sea level changes on San Francisco Bay and used the results to prioritize marsh restoration projects. One the other hand, it is still an open question as to how some ecosystems, such as grasslands, will ultimately react to climate change.[1] It seems clear that no one could have predicted the extreme, drought-related die-off of over 66 million trees (and counting) in the Sierra Nevada mountains of California between 2011 and 2015.[2] Recently, scientists have called for more integrated approaches to assessing the impacts of climate change on.[3]

The Park District has partnered with organizations such as Save the Bay and the California Coastal Conservancy to improve marsh habitat for the endangered Ridgeway's rail while at the same time controlling an introduced species of marsh cordgrass that has the potential to negatively impact bay mudflats. Island nesting habitat for endangered California least terns and the western snowy plover has been successfully created at Hayward Regional Shoreline with the help of hundreds of volunteers and thousands of volunteer hours. Not only has the colony of nesting California least terns increased from a few pairs to over 85 pairs in just 10 years, it has become one of the most successful breeding colonies for the species in California.

Finally, even green energy solutions that counteract climate change are presenting challenges for wildlife management and preservation. The Altamont Pass Wind Resource Area near Livermore is a major source of wind energy for California. Yet it annually kills thousands of birds, including hundreds of raptors, through wind turbine blade strikes. As the wind companies in the Altamont move forward with replacing numerous older wind turbines with fewer, larger and more efficient wind turbines, the Park District has been involved in numerous studies that seek to determine how raptors use the landscape of the Altamont. In particular, the Park District has been tracking golden eagles with GPS technology to develop risk maps that can be used to inform wind turbine placement to lessen the impacts of the new turbines on this iconic species.

Figure 5. EBRPD Wildlife Program Manager Doug Bell prepares to release a golden eagle outfitted with a lightweight radio transmitter (Joe DiDonato).

Conclusion

As we celebrate the 100th anniversary of our National Park Service, more than ever we need to make parks and natural areas relevant to urban populations so residents will continue to value natural lands. Urban park systems are an increasingly important way to connect nature to people. For a long time urban parks were not seen as contributing significantly to the preservation of natural areas and wildlife because of their more urban landscapes and high use. The value of urban wilderness is not only their essential role as wildlife corridors with connectivity to other public open spaces. Today, urban parks play an even more important role: they act as portals to learning about and experiencing wilderness within densely populated and very diverse urban areas. This "first touch" with nature, or a program given by a naturalist, are very similar experiences to those of previous generations who camped in our national or state parks. The difference being that urban parks are close by, right where people live. We can't sustain these parks and natural areas without a new generation of supporters; they will be with us as lifelong supporters if we reach out to them where they live.

Endnotes

1. See https://dge.stanford.edu/DGE/Dukes/DukesEtAl2005.pdf.
2. See http://www.pnas.org/content/113/2/E249.full.pdf?sid=c401605a-8ef0-4b30-8a20-476a1055738f.
3. See http://science.sciencemag.org/content/sci/353/6304/aad8466.full.pdf.

Robert E. Doyle, East Bay Regional Park District, 2950 Peralta Oaks Court, Oakland, CA 94605; bdoyle@ebparks.org

Regional Parks and Greenspaces Planning in Portland, Oregon: The Politics and Science of Providing for Nature in Cities

Mike Houck

> The belief that the city is an entity apart from nature and even antithetical to it has dominated the way in which the city is perceived and continues to affect how it is built. The city must be recognized as part of nature and designed accordingly.[1]
>
> — Anne Spirn, *The Granite Garden*

This essay traces the incremental evolution of greenspace, park, trail, and natural resource planning in the Portland–Vancouver metropolitan region over the past 35 years, including lessons learned along the way. When I first became involved with urban wildlife issues with a small grant from Oregon's Department of Fish and Wildlife, I was told by local land use planners that there was "no place for nature in the city." That attitude was not only prevalent within the planning profession but embraced by many conservation organizations.

Even today there are some in the planning profession and conservation organizations who argue that protection of urban nature is a waste of time, energy, and resources. More recently, however, local and regionally based park and greenspace advocacy groups have embraced a 21st-century corollary to Thoreau's aphorism: "In livable cities is preservation of the wild."

Protection, restoration, and active management of natural resources in the urban landscape is necessary if we are to protect farm, forest, and natural resource lands outside our cities. It is not enough, however, to simply build higher-density, compact cities. If we are to promote compact urban form, urban dwellers will also insist on access to nature where they live, work, and play—in our cities.

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The Urban Growth Boundary: Blessing and curse

> In putting the case for higher density ... putting more people on developed land, more land will be left undeveloped. We should apply an equally rigorous standard to open space. Vigorous open space programs will help to keep the balance.... [I]f we have to err in our acquisition programs let it be toward more open space.[2]
>
> — William H. Whyte, T*he Last Landscape*

Oregon, and particularly the Portland metropolitan region, has been celebrated for several decades as a pioneer in sustainable development. Writing in *Green Urbanism: Learning from European Cities*, Timothy Beatley cites Portland, Oregon, as one example of progressive regional, bioregional, and metropolitan-scale greenspace planning in the United States. Portland is also known for its land use planning and sustainable practices.[3]

The state is notable for requiring Urban Growth Boundaries for every city in the state. That legal requirement has been an unqualified success with regard to combating urban sprawl and protecting the working landscape outside urban growth areas. For example, between 1990 and 2000 the Portland region's population grew by 31% but consumed only 4% more land to accommodate that growth. By contrast, the Chicago region grew by 4% yet consumed 36% more land.[4]

However, for decades a perverse side effect has resulted in the loss of natural resource lands inside the Urban Growth Boundary. The argument was made that protecting fish and wildlife habitat and "too much open space" inside the Urban Growth Boundary was antithetical to good urban planning in that so-called "buildable land" would be taken out of production for urban development. As a result, the Portland metropolitan region has failed to adequately protect natural resources within the region's Urban Growth Boundary.[5]

Protecting the wild hinterlands requires a concomitant effort to protect and restore a vibrant urban green infrastructure of healthy watersheds, fish and wildlife habitat, parks, and recreational trails where the vast majority of our population lives—in cities. Fortunately, some conservation organizations have retooled their programs in recognition of the role urban nature protection plays in a broader conservation agenda and have begun to focus on the protection and restoration of nature in cities as well. In fact, numerous local conservation and civic organizations now focus exclusively on urban nature conservation in the Portland metropolitan region and others across the country.

Lesson learned: Build on legacies

> Marked economy may also be effected by laying out parks, while land is cheap, so as to embrace streams that carry at times more water than can be taken care of by drain pipes. Thus, brooks or little rivers which would otherwise be put in large underground conduits at enormous public expense, may be attractive parkways.[6]
>
> — John Charles Olmsted,1903

In the late 1980s, a lack of natural resource protection, park deficiencies, and a disconnected, underfunded trail system sparked a grassroots-led Metropolitan Greenspaces movement

in the Portland–Vancouver metropolitan region. That initiative built on earlier park, natural area, and regionalist visions, including those of John Charles Olmsted, Lewis Mumford, and the Columbia Region Association of Governments (CRAG), the predecessor to the nation's only directly elected regional government, known as Metro.

John Charles Olmsted—the adopted son of famed landscape architect Frederick Law Olmsted, Sr.—was brought to Portland by the citizen-led Park Board. He stated in his 1903 *Report of the Park Board, Portland, Oregon*, "While there are many things which contribute to the beauty of a great city, unquestionably one of the greatest is a comprehensive park [system]." He urged that the integration of natural areas into a comprehensive park system would "afford the quiet contemplation of natural scenery (with) rougher, wilder and less artificially improved [parks]."[7] His 1903 plan continues to inspire park, trail, and greenspace planning to this day.

Olmstedian views were echoed in the 1971 CRAG *Regional Open Space Plan*, which read, "For many persons in the city, the presence of nature is the harmonizing thread in an environment otherwise of man's own making. Comprehensive planning should identify floodplains, wetlands, scenic, wildlife and recreational [areas]. Development should be controlled." The report called for bi-state cooperation between Oregon and Washington, a concern earlier expressed by Lewis Mumford in a 1938 speech to the City Club of Portland. Most significantly, the CRAG report for the first time called for the integration of Olmsted's comprehensive and connected park system with Mumford's regional approach to establish a regional open space program.

Lesson learned: Think regionally

> From one point of view, the urban–rural linkage idea is downright revolutionary, for in the United States of America it has been our policy to try to separate the city from the country.... In contrast, the impulse behind the greenway networks is to integrate land uses rather than separate them—to join the urban and the rural into a kind of normative American countryside. The name of the enterprise we undertake to accomplish all these worthy goals is regional planning....[8]
>
> — Charles E. Little, *Greenways for America*

What sparked the first regionally based effort to create an interconnected park, trail, and natural areas system was the intersection of interests of park and natural area advocates, regional trail advocates, and concerns about deteriorating water quality and flooding. The seeds were sown in 1984 at a regional Columbia–Willamette Futures Forum that urged the regional government—Metro—to undertake a regional park inventory. The Audubon Society of Portland, which had proposed the establishment of a "Regional Metropolitan Wildlife System" with funding from a local foundation; the 40-Mile Loop Land Trust trail advocacy group; and other place-based park and greenspace advocacy groups successfully argued that the region needed to expand the park inventory to include a new natural resource-focused protection, restoration, and management program.

Metro, which has jurisdiction across 24 cities and three counties, was seen as the ideal

planner and implementer of such a program. Their role as a regional convener was essential to launching a truly regional natural area acquisition and protection program.

Lesson learned: Pick a good model

Critical to building political will was finding a good model that we might replicate. Without question the national model at the time was the East Bay Regional Park District, which serves Contra Costa and Alameda counties in the San Francisco Bay Area. In 1988, East Bay had passed a $225 million bond measure, which was perfect timing given that we were in the early stages of formulating our own acquisition bond measure through Metro. East Bay staff held two days of meetings and a full day of field tours for elected officials, park professionals, and park advocates from our region. We returned to Portland with a model we could emulate. As with East Bay's approach we decided our own bond measure would allocate 75% to Metro for acquisition of natural areas, with 25% going to local park providers. The local share brought local park providers to the table, who then assisted in passing the bond measure, having "skin in the game."

Lesson learned: The power of the outside expert

Public and political support was also generated at several *Country in the City* symposia held at Portland State University between 1988 and 1992. Experts in regional and greenspace planning, such as David Goode, who was then director of the London Ecology Unit and who would later become head of the environment for the City of London, and other experts, including Tony Hiss, contributor to *The New Yorker* magazine and author of *The Experience of Place,* and Charles E. Little, author of *Greenways for America,* spoke at the symposia.

Goode had a significant impact on opinion leaders when he addressed the city's leading civic organization, the City Club of Portland. Goode, an internationally recognized expert on urban nature schemes, shared the London Ecology Unit's nature conservation efforts in 12 boroughs of greater London. Goode and his team of urban ecologists had put forth a comprehensive rationale for integrating nature into the city and providing access to nature to achieve emotional, intellectual, social, and physical benefits.[9]

Goode also focused on restoration of a seemingly hopelessly degraded inner-city waste site, one which is now a wetland urban nature park: Camley Street Natural Park. The transformation of a seemingly irredeemably blighted urban site to a small green oasis in London's heart greatly accelerated the Portland region's commitment to addressing environmental and social equity and inner-city park and greenspace needs.

Lesson learned: Icons are powerful

Icons have proven to be powerful catalysts in the conservation arena, particularly in the urban context. Salmon, for example, are the quintessential representative of the natural world throughout the Pacific Northwest in both urban and rural areas. Salmon are especially central to the lifeways of indigenous peoples.

The great blue heron seemed to me to be the perfect icon for Portland, being one of our most charismatic megafauna. They're impossible to miss, standing over three feet tall, with a

wingspan of over six feet. In 1986, I button-holed the former Portland mayor, Bud Clark, an avid canoeist known for his love of herons, to suggest he proclaim the heron as the city's official bird. Two weeks later a city hall proclamation did just that. While it may sound frivolous, the process of establishing an official city bird when combined with an annual celebration and mayoral proclamation provides a yearly opportunity to encourage local elected officials to "re-up" their commitment to protecting the symbol of the city's environmental quality. I then asked the Oregon Poet Laureate, the late William Stafford, if he would write a poem commemorating the event. The result, "Spirit of Place," perfectly reflected our efforts to live with nature in the city:

> Out of their loneliness for each other
> two reeds, or maybe two shadows, lurch
> forward and become suddenly a life
> lifted from dawn or the rain. It is
> the wilderness come back again, a lagoon
> with our city reflected in its eye.
> We live by faith in such presences.
> It is a test for us, that thin
> but real, undulating figure that promises,
> "If you keep faith I will exist
> at the edge, where your vision joins
> the sunlight and the rain: heads in the light,
> feet that go down in the mud where the truth is."
>
> —William Stafford, 1986

Lesson learned: Have fun, it's all about relationships

Shortly thereafter, while sitting at the city's first microbrew pub, the brew master walked by and asked how our urban conservation efforts were going. I recounted the fact that we'd just adopted a city bird and he responded he'd just brewed a new ale which he had not yet named. Blue Heron Ale was launched that afternoon. Again, what may sound trivial turned out to be a significant instance of "oiling the gears" of urban conservation. Bridgeport Brewpub became the gathering place for elected officials, agency staff, and park advocates where relationships were spawned and strengthened. Most importantly, increased trust allowed for closer collaboration, particularly between nonprofit advocates and agencies. Many creative initiatives were launched over a few pitchers of Blue Heron Ale!

Lesson learned: Engage the feds

In 1990, I accompanied several US Fish and Wildlife Service (USFWS) biologists to visit with the regional director in Portland to ask that the service act as fiscal sponsor for our fledgling greenspaces initiative. He agreed. The concept we adopted was that the funds would be spent (with USFWS oversight) for ecologically focused efforts. Subsequently, with support from the late Senator Mark O. Hatfield, then chair of the US Senate Appropriations Commit-

tee, and Congressman Les Aucoin, Congress in 1991 appropriated $1.134 million for greenspace planning in our region. The funds were administered by the USFWS regional office and service field staff were assigned to work with Metro to ensure the nascent Greenspaces program remained true to its ecological focus. Other federal partners included the National Marine Fisheries Service and the US Environmental Protection Agency. Coincidentally, one of our national partners, Chicago Wilderness, was created with a portion of those federal dollars. More recently, Portland-area national wildlife refuges, with Tualatin River National Wildlife Refuge taking the lead, secured a $1 million annual allocation to support efforts to better engage the public in regional greenspace issues.

Lesson learned: Think big

> Make no little plans. They have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency. Remember that our sons and grandsons are going to do things that would stagger us. Think big.[10]
>
> — Daniel Burnham

All of these efforts led, in 1992, to Metro Council adoption of a bi-state *Metropolitan Greenspaces Master Plan* covering northwestern Oregon and southwestern Washington. The plan laid out the following goals:

1. Create a cooperative regional system of natural areas, open space, trails, and greenways for wildlife and people in the four-county metropolitan area;
2. Protect and manage significant natural areas through a partnership with governments, nonprofit organizations, land trusts, interested businesses and citizens, and Metro;
3. Preserve the diversity of plant and animal life in the urban environment using watersheds as the basis for ecological planning;
4. Establish a system of interconnected trails, greenways, and wildlife corridors; and
5. Restore green and open spaces in neighborhoods where natural areas are all but eliminated.[11]

With a plan in hand and having identified specific sites for acquisition, Metro succeeded in passing a 1995 regional greenspace initiative, patterned after East Bay's successful 1988 bond, that produced $135.6 million for acquisition of some of the region's most significant fish and wildlife habitat and natural areas, and the acceleration of the regional trail network.

By June 2002, Metro had over 8,200 acres of land that had been purchased, donated, or protected with conservation easements, well exceeding the original target of 6,000 acres. Metro natural area ownership went from zero to 8,200 acres in just fourteen years, and after a second $227.4 million measure passed in 2006, now totals more than 17,000 acres. Local park providers, too, added their own natural areas with their 25% share of the regional bond, and the City of Vancouver and Clark County in the state of Washington established acquisition programs based on statewide Conservation Futures and a real estate transfer tax.

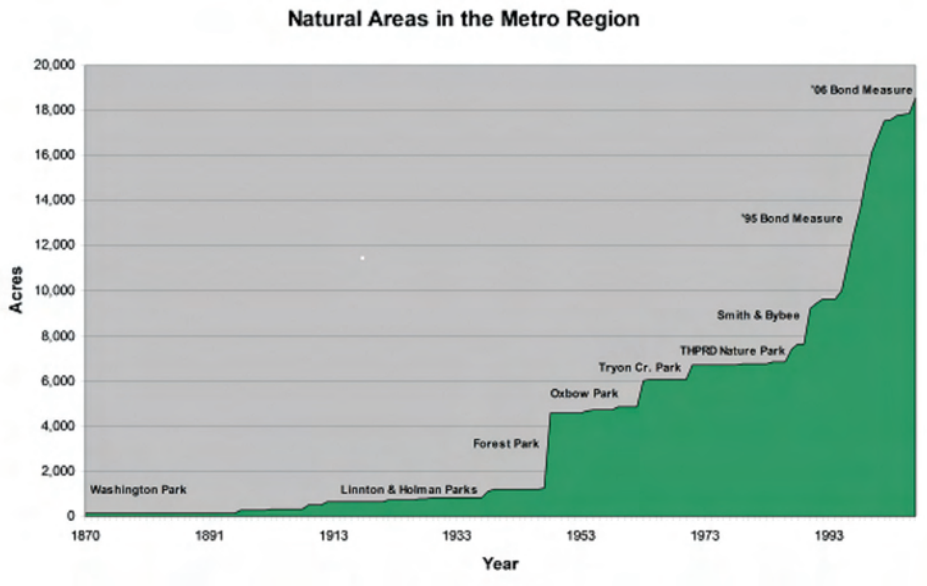

Figure 1. Regional park land additions, 1870 to 2003. Graphic courtesy of Jim Morgan, Metro.

Lesson Learned: Engage the Utilities

> Green infrastructure is a strategically planned and managed network of natural lands, working landscapes and other open spaces that conserve ecosystem values and functions and provide associated benefits to human populations. Green infrastructure networks work together as a whole to sustain ecological values and functions.[12]
>
> — Mark A. Benedict and Edward T. McMahon

In the early 1990s, I got a phone call from a public policy expert that reminded me of the famous line out of the movie "The Graduate"—only his admonition was not about plastics. He had three words for me—Clean Water Act—and took us to task for working exclusively with park and wildlife agencies and ignoring local utilities; more specifically, stormwater agencies. Once we realized that they managed virtually all the water that fell onto the urban landscape, we launched an effort to engage city and special district utilities to embrace the utilization of green infrastructure to more holistically address water quality and floodplain management across the region.

Beginning in the early 1990s, the concepts of green infrastructure and ecosystem services slowly began to "filter' into urban planning and local and regional watershed management policies. What had been purely "sewer agencies" dominated by gray infrastructure slowly morphed into watershed health-based utilities.

Grey to green

One example was Portland's Grey-to-Green Program. Initiated in 2008, the city committed $55 million over a five-year period to create green roofs, disconnect downspouts, make bioswales, and establish rain gardens. The program constructed 900 green street projects, planted over 80,000 trees (thereby expanding the urban forest canopy to 33% of the city), and acquiring more than 400 acres of the city's most sensitive fish and wildlife habitats.

These projects have been designed to complement, and in some cases, replace highly engineered, expensive grey infrastructure (pipes, concrete, streets) with cheaper, greener, smarter methods of managing urban stormwater. Prior to this initiative, stormwater had been seen as a nuisance to be gotten rid of as quickly as possible by putting into a maze of underground conduits. Today, stormwater is recognized in Portland's Watershed Management Plan as a precious natural resource to be managed on site if possible, and reintegrated into the city's expanding green fabric.

Chillers or trees?

To the west of Portland, the Tualatin Basin's Clean Water Services (formerly Unified Sewerage Agency) was faced with the possibility of spending as much as $80 million to build artificial chillers to cool effluent from their water treatment plants, and as much as another $50 million annually to run the chillers. Instead, they persuaded regulatory agencies to allow them to plant trees and shrubs along the Tualatin River and its tributaries.

That effort will cost $6 million, involve over 36 landowners, and eventually cover 35 stream miles. At project's end, they will have planted more than 453,000 native plants. Relying on refrigerators to chill the effluent is as high-tech a solution as one can imagine, and one that yields exactly one benefit: cooler water. Clean Water Services' green infrastructure approach yields many benefits, including creating local native green industries, absorbing over 100,000 metric tons of carbon, and improving fish and wildlife habitat—with a net ecosystem services benefit of $74 million in capital costs and $50,000 in annual operational costs.

Putting it all together: Collective impact

In 2007, David Bragdon, then president of the Metro Council, convened leaders from around the region and the country, including Chicago Mayor Richard Daley, for a "Connecting Green" symposium. Bragdon announced that his last two years at Metro would be dedicated to "the world's best park and natural area system" and challenged Daley and others to a contest of whose city would be the greenest. Subsequently, Bragdon went to New York City to run Mayor Michael Bloomberg's sustainability program. One of our highest priorities was to avoid continuing what had been a string of "one offs" that, while successful, were energy intensive and did not guarantee success into the future. We knew we needed to create a long-lasting alliance of partners that would (1) increase investment in our system of parks, trails, and natural areas; (2) institutionalize the effort into the future; and (3) better engage the general public.

Working with Bragdon and his staff, and with Metro acting as our "incubator," the Audubon Society of Portland, Urban Greenspaces Institute, and Trust for Public Land hosted

Figure 2. David Bragdon at the "Connecting Green" symposium (Mike Houck).

numerous focus groups and meetings to build consensus for a new organization to continue the work of creating a world-class system of parks, trails, and natural areas—and healthy watersheds: what was dubbed The Intertwine. The obvious next step was to launch a 501-c-3 nonprofit organization: The Intertwine Alliance. In July 2011 the alliance was formed, with 28 partners. There are now more than 150.

THE INTER TWINE

Figure 3. The Intertwine Alliance logo.

We structured the alliance on a "collective impact" model,[13] which we were convinced would take us beyond previous loose-knit coalitions that, while successful over the short term, were relatively ephemeral. The hallmarks of a collective impact approach are setting a common agenda; engaging in "mutually reinforcing" actions; setting up a common methodology for measuring success; intentional, continuous communication; and creating a stable "backbone" organization—The Intertwine Alliance.

Biodiversity planning: Finally getting it right in the Portland–Vancouver metro region

The alliance focuses on the nexus between human health and access to nature, creating an active transportation and regional trail network, equity and inclusion, urban forestry, green infrastructure, conservation education and public engagement, and conservation. The cre-

ation of a *Regional Conservation Strategy* and *Biodiversity Guide*,[14] and mapping of natural resources across the 3,000-square-mile geography of The Intertwine, was the first collective impact project the alliance took on.

That effort illustrates how effective a collective impact approach can be. The alliance launched the *Regional Conservation Strategy* project, which was coordinated by a nonprofit partner, the Columbia Land Trust. More than100 individuals and organizations collaborated on the *Regional Conservation Strategy* and *Biodiversity Guide,* creating a high-resolution habitat map, and a fish and wildlife habitat modeling tool.

To achieve both coarse- and fine-grained resolution, the alliance contracted with Portland State University's Institute for Natural Resources (INR) to produce a land cover maps of the greater Portland–Vancouver region at a resolution of 5 meters per pixel. The project mapped land cover, forest and tree patches, watersheds, and public land ownership. To develop a method for prioritizing acquisition and restoration across both the urban and rural landscape, the alliance developed a modeling effort that was coordinated by a GIS-savvy subcommittee representing federal, state, and local jurisdictions and nonprofit organizations. The INR assumed responsibility for data development and the modeling approach with input from the GIS Subcommittee.

The model allows us, for the first time in our region, to prioritize areas of high conservation value across the 3,000-square-mile urban–rural continuum, both within and outside the urban core, from the regional scale to individual neighborhoods and streetscapes.

Had this project been taken on by a single entity or by a government agency, which is less nimble and operates under different constraints than a nonprofit coalition, it would have taken far longer and cost significantly more than the nonprofit-led collective impact collaborative effort we adopted. Armed with the high-resolution mapping and modeling results, The

Figure 4. (Left) Cover of *Regional Conservation Strategy;* (right) cover of *Biodiversity Guide*.

Intertwine Alliance and its partners from nonprofit organizations and government agencies have, for the first time, the science-based tools with which we might manage both the urban and rural landscapes with an aim to protecting regional biodiversity, providing a framework for adapting to climate change, and realizing the long-held vision of creating a world-class system of parks, trails, and natural areas for the region's citizens to enjoy access to nature where they live, work, and play.

Further reading

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- Robert Michael Pyle, *The Thunder Tree: Lessons from an Urban Wildland* (Boston: Houghton Mifflin, 1993). Everyone should have a ditch, asserts Pyle, who poses the provocative question, "Why should a child care about the extinction of the Condor if they haven't seen a wren?" His chapter "The Extinction of Experience" makes the case for the current No Child Left Inside movement in the United States.
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- Anne Whiston Spirn, *The Granite Garden: Urban Nature and Human Design* (New

York: Basic Books, 1984). The first book to discuss the city as a unique ecosystem. Includes practical recommendations for stormwater management, energy reduction, and other progressive strategies that are as relevant today as when the book was published more than two decades ago.

- William H. Whyte, *The Last Landscape* (Philadelphia: University of Pennsylvania Press, 2002). The most influential book written about open space and landscape planning in America. Whyte's recipes for densifying our cities, along with regional planning and protection of open space and natural areas in the heart of the city, has inspired urban park and natural resource planning throughout the United States.

Endnotes

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Mike Houck, Urban Greenspaces Institute, P.O. Box 6903, Portland, OR 97228-6903; mikehouck@urbangreenspaces.org

Ontario's Greenbelt: Acres of Possibility

Burkhard Mausberg

Ontario's Greenbelt turns 12 years old in 2017. At two million acres, it's the world's largest peri-urban protected area. The Greenbelt Act and Plan were passed with much fanfare in 2005, and while there was some loud opposition from certain affected landowners and municipalities, the plan received significant backing from conservationists and planning experts. Since its inception, the Greenbelt has enjoyed huge public approval: it is consistently the provincial government's most popular environmental initiative, garnering more than 90% support.

The Greenbelt addressed a growing frustration with land use planning in the Greater Toronto Area: Ontarians asked for better regional planning. They recognized the negative impacts of poor development and the loss of greenspace and farmland.

But the Greenbelt's roots go back longer than the last dozen years—to the mid-1970s, in fact, when Premier Bill Davis protected the Niagara Escarpment. Aside from creating Niagara Falls, the escarpment is known for its rich biodiversity, centuries-old cedar trees, and unique cliff ecology. Declared a UNESCO biosphere reserve, the Niagara Escarpment includes Great Lakes coastlines, woodlands, limestone alvar, oak savannahs, conifer swamps, and other signature features. Together these diverse habitats contain a premier level of species variety among Canadian biosphere reserves, including more than 300 bird species, 55 mammals, 36 reptiles and amphibians, and 90 fish varieties.

In 2001, Ontario's Premier Mike Harris declared the Oak Ridges Moraine protected from development. The premier understood that the moraine is an ecologically important landform, created by receding glaciers during the last ice age. The Oak Ridges Moraine is one of the most significant landforms in southern Ontario, getting its name from the rolling hills and river valleys. The ecologically diverse moraine is the water source for many headwaters streams, and its varied natural resources include woodlands, wetlands, kettle lakes, and bogs. These provide habitats for significant flora and fauna communities to develop and thrive.

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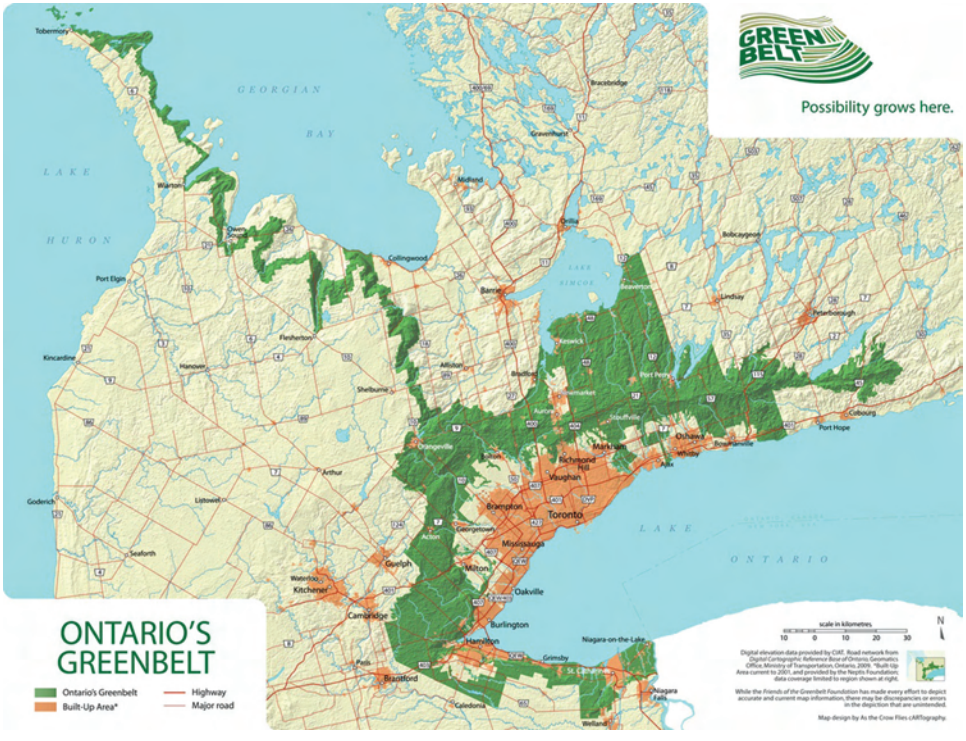


Figure 1. Ontario's Greenbelt–"Possibility Grows Here."

Different land use plans govern each of the three main Greenbelt areas, as they came about in stages over three decades. What makes the overall Greenbelt such a success is that it combines farmland preservation with nature conservation. With over one million acres of farmland, Greenbelt farmers grow and raise a huge variety of food and drink. The Greenbelt's food processing is part of the continent's second largest food hub, all the while also producing award-winning wines and beer.

At the same time, the Greenbelt's natural assets include being home to more than 70 species-at-risk, hundreds of rivers and streams, and thousands of forested acres. It boasts of some of the best ecological diversity just miles from Canada's most populated area. It is not surprising then, that the Greenbelt plans have won several international awards.

Almost a fifth of Canadians live an hour's drive away from the Greenbelt, and forecasts predict a few million more will settle in the Greater Toronto Area over the next decades. This growth pressure is a particularly strong argument for maintaining and even growing the Greenbelt.

Here is why.

Economic powerhouse

The Greenbelt provides significant economic activity. McMaster University Professor

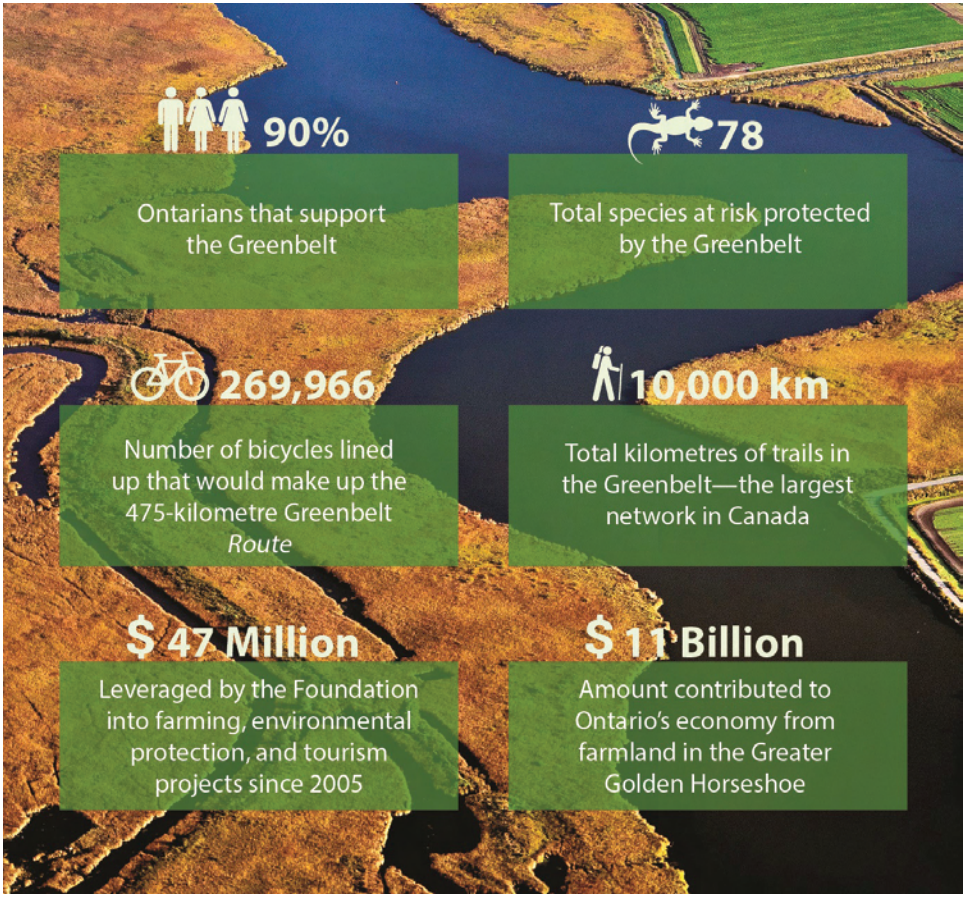
Emeritus Atif Kurbursi calculated that the area enjoys an economic impact of C$9.1 *billion* every year. This includes the output generated through land-based activities such as farming, tourism, fishing and hunting, and selective logging. With its 161,000 full-time jobs, the Greenbelt provides more employment than the *combined* fisheries, forestry, mining, quarrying, and oil and gas extraction sectors in Ontario.

All this adds up to a quality of life that is the envy of many. When asked, over 80% of Ontarians say that the Greenbelt is extremely important to them personally. They value the urban–rural link, a vital connection that bonds regardless of different life-styles with an emotional focus on the land. Canadians are invariably linked to the land and the Greenbelt reinforces that deep connection.

Environmental benefits

Due to its protection, Greenbelt lands continue to stay productive, natural, and green: it produces healthy food, cleans our air, and filters our water. It functions as a habitat for wildlife

Figure 2. The Greenbelt delivers significant environmental, economic, and social benefits.



and recharges its vast aquifers and Lake Ontario. And every year the forested areas of the Greenbelt alone have offset the emissions of 27 million cars.

Scientists and economists, in an unusual collaboration, conservatively calculate the ecological services provided by the Greenbelt to be worth C$3.2 billion every year. This average of C$1,600 per acre in irreplaceable natural capital is coming mostly from the water filtration services provided by Greenbelt land.

While it is impossible to determine exactly what would have happened without the Greenbelt plans, extrapolating from pre-Greenbelt business-as-usual data shows that the immediate area surrounding the Greater Toronto Area would have lost much of the productivity and ecological services to inefficient sprawl. Without the Greenbelt, the province would have been in a position to lose an estimated 264,000 acres to urban expansion by 2031 (an area twice the size of the City of Toronto).

This form of development would have added to the pressures of car dependency, such as increases in commute times, costs to the taxpayer to build and maintain roads, and traffic accidents, as well as a 41% increase in greenhouse gas emissions, worsening local air quality.

The need for establishing better planning regimes was, and continues to be, a constant concern for protecting and conserving water resources in Canada's fastest-growing region. This is reflected in people's understanding of the benefits of the Greenbelt. Consistently, in public opinion research, the majority of respondents highlighted water protection as the main benefit of the Greenbelt. People are making the link between land and water: protect the land and benefits to water quality will ensue.

Unfortunately, one loophole still exists in the Greenbelt plans: infrastructure projects such as highways and pipelines are permitted to be built in much of the protected area (albeit only after careful scrutiny by the government). While those decisions haven't happened to any meaningful degree, future energy or transportation planning may well drive infrastructure projects.

Recreational treasures

The Greenbelt features the largest network of hiking trails in Canada. That includes the world-famous Bruce Trail, which runs from Niagara Falls all the way to Tobermory, Ontario, where Lake Huron and Georgian Bay meet. At over 725 kilometers long, it follows the Niagara Escarpment, crossing cities, towns, farmland, and conservation areas. Other trails crossing the Greenbelt include the national Trans Canada Trail, the Oak Ridges Trail, and literally hundreds of trails in the dozens of conservation areas and parks.

Recently the Greenbelt *Route* was launched, a 475-kilometer signed cycling route through the countryside, highlighting bike-friendly destinations and thousands of points of interest. Riders can customize their experience to their taste, and nine local cycling loops include complete itineraries curated with the best cycling products from local partners in the various regions.

During winter months, the Greenbelt offers skiing—both down the hill and across the country. Well maintained, those snowy months allow Ontarians to experience the outdoors when the temperature goes below freezing.

Figure 3. A highway sign signals to travelers that they are entering the Greenbelt.

Those that enjoy their outdoors on or in motorized vehicles, while sometimes controversial, can enjoy motorcycle drives in canyons along the Credit River, car tours along the famous Niagara wine route, or snowmobile rides over frozen grounds.

Kite festivals, rib festivals, corn mazes, bird-watching, and many other activities round out the opportunities offered by the Greenbelt's outdoor treasures.

Local food catalyst

The Greenbelt has acted as a catalyst to change the food supply chain. There has been an explosion of interest in local food in southern Ontario. And that makes sense. If we are asking farmers to keep their land in production and not have it developed, shouldn't we eat what they grow and raise? That's exactly what has happened: restaurants and retailers offer more local food, the number of farmers' markets has doubled, public institutions like hospitals and universities are localizing their menus, and local wine sales have doubled in the last five years.

This change from farm to fork continues. Ontario passed a Local Food Act in 2013, municipalities are implementing local food procurement policies, food distributors are selling dedicated local food lines, and food service companies are serving more local. The world's largest food franchise, Subway Sandwiches, recently committed to buying only local tomatoes, cucumbers, peppers, and onions when in season from Ontario farmers. One wonders: would southern Ontario have been a world leader in the local food switch if it hadn't been for the Greenbelt?

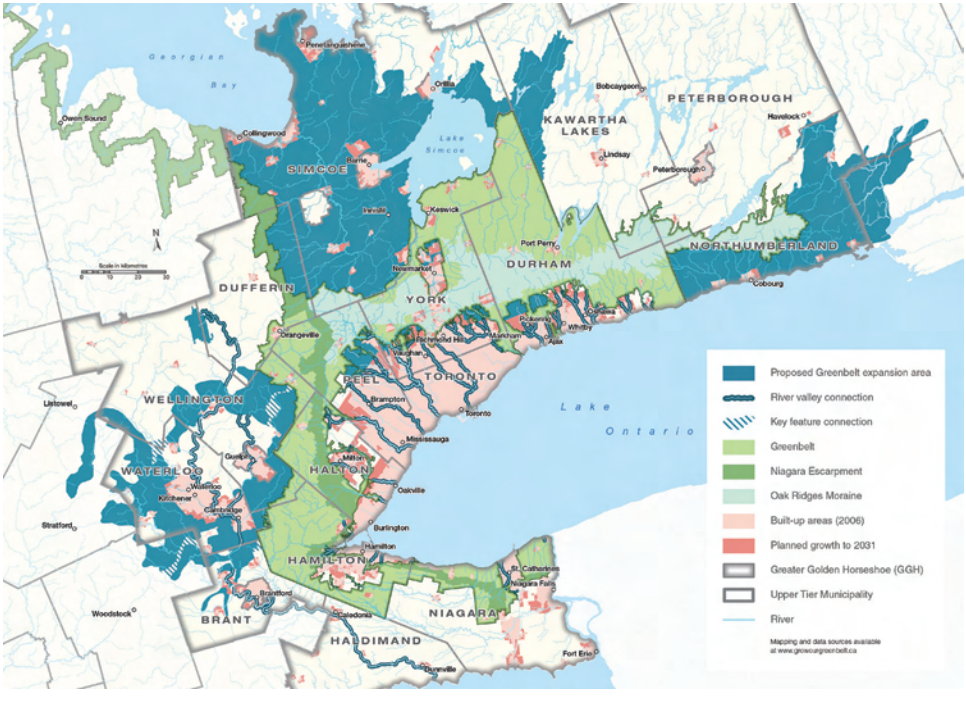


Figure 4. The proposed "Bluebelt" will add 1.5 million acres to the existing Greenbelt.

Future considerations

Last year, the Ontario government undertook the first major review of its regional land use plans. Led by former Toronto Mayor David Crombie, his expert panel recommended building on the success of the past: extending Greenbelt protection along 21 major urban rivers, increasing urban intensification rates, and raising the density requirements of any new greenfield developments. Most importantly, he resisted the pressure by certain developers and municipalities to take land out of the protected Greenbelt to be used for development. Crombie's work was well received and the government's proposed amendments are expected to take root in the new year.

In the meantime, environmental and conservation groups are lobbying for growing the Greenbelt by 1.5 million acres. They coined the term "Bluebelt" and developed scientifically rigorous maps outlining the expansion needs. The areas identified as the proposed Bluebelt include threatened headwaters, moraines, groundwater recharge and discharge areas, wetlands, rivers, and streams. The Bluebelt provides over one million people with a clean, safe source of drinking water, and unless we grow smartly and sustainably, the projected four million new residents by 2041 would otherwise place huge pressure on our water resources.

Summary

The Greenbelt has sparked changes in the food system, maintained ecological treasures, while

providing significant economic benefits, jobs and recreational opportunities. The public understands and supports permanently changing our historical development patterns. The Greenbelt is a historical shift. It has acted as an example and inspiration to other jurisdictions and remains a profound statement of hope now and for the future.

Burkhard Mausberg, Friends of the Greenbelt Foundation, 661 Yonge St., Toronto, ON M4Y 1Z9 Canada; bmausberg@greenbelt.ca

Urbs in Solitudinem[1]

Harry Klinkhamer

When the City of Chicago was founded in the 1830s, boosterism most likely overshadowed the irony of the city's motto in relation to the city's moniker.[2] Nevertheless, the "City in a Garden" has been home to rather progressive and unconventional approaches to parks and wilderness for well over 100 years. Challenges and opportunities for developing area parks arose out of several driving factors, including social welfare, political division, a critical mass of leading planners and architects, and eventually a growing conservation movement. These factors would help to establish a unique form of government entity for park space and a hybrid organization protecting wilderness that transcends political boundaries in favor of ecological ones. Later, the National Park Service entered the region with new types of parks that are still under development. This is why Chicago does not have one overarching regional park system. Instead, park space is managed by hundreds of park districts, many county forest preserve districts, several varieties of federal parks, and the regional alliance Chicago Wilderness.

The first resemblances of organized parks began as early as 1869, a little over thirty years after the city incorporated. The City of Chicago saw enormous growth in the mid-19th century as a business and trading hub thanks to the opening of the Illinois & Michigan Canal in 1848, the Chicago Board of Trade in 1850, and the growth of the railroads soon after. Industry and manufacturing brought jobs and therefore attracted migrants and immigrants. These people sought respite from cramped living spaces and unhealthy working conditions by retreating to the lakefront for cooler winds, open space, and relaxation. But soon, neighborhoods developed too far from Lake Michigan's shores for convenient leisure. With the need to organize more open space, the Illinois Legislature created three park districts for the city: South Parks District, West Parks District, and Lincoln Park District.[3]

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For many, even today, Chicago's lakefront is an iconic symbol of the city. It is considered the city's front yard and is a beautiful stretch of parks, recreational opportunities, and alternative transportation corridors. A part of it got its start as a cemetery, an alternative open space providing a respite for residents to flock to. But concerns about drinking water contamination lead to reinternment of the graves. And with that the space became the responsibility of the Lincoln Park District. Further south the rest of the lakefront was the responsibility of the South Parks District. This part of the city's open space has a long and well documented history, including many legal battles to protect the lakefront, major environmental changes as debris from the Chicago Fire and the digging of the Sanitary and Ship Canal filled in shoreline, and current struggles to continue keeping the lakefront "forever open, clear, and free."[4]

But the city also has an extensive backyard. It consists of a series of parks and preserves that ring the city and provide additional space for the people of the region to enjoy the outdoors. The rest of these areas for open space fell to the other two park districts. Downtown's Grant Park and the Jackson and Washington parks became the responsibility of the South Parks District (Jackson would eventually become the site of the 1893 World's Columbian Exposition and the future home for the Barack Obama Presidential Center). Lastly, the West Parks District was to provide the parks and boulevards to complete a ring of parks around the city and meet the needs of a city expanding out away from the lake. Designed by renowned landscape architect William Le Baron Jenney, Douglas, Garfield, and Humboldt parks became the foundation for that first ring of open space. Rapid growth in the region came on so intensely that development and improvements became the responsibility of one civic board after another. Some would eventually merge, but as we shall see, a greatly splintered collection of government entities made regional consolidation difficult.

Taxing districts were, and still are in Illinois, a means for generating revenue for specific needs, whether for parks, schools, or fire protection. In the case of parks for Chicago, these three districts were formed and governed by commissioners appointed by the state. Typically they were prominent men from the city who either wanted to perform their civic duty or who were cashing in political favors. In any event, the Great Fire of 1871 and the financial panic of 1873 delayed the development of any parks. But just like how the city quickly rebuilt, parks in the Chicago region began to take shape while new districts formed in communities annexed by the city. The growth of Chicago in the late 19th century was due to both a continuous influx of new residents and annexations of neighboring communities. In 1889, the city annexed 125 square miles through referendums.[5] Communities voted to join Chicago in order to take advantage of the economy of scale for services. And as this held true for services such as sewer and water, parks were still controlled by a collection of different districts.

In fact, by 1911 there were ten different park districts in the city. This led the Chicago Bureau of Public Efficiency to publish a report on park management, stating that "[f]rom the viewpoint of the community as a whole, however, there is not only much waste and inefficiency in connection with expenditures of park funds, but the needs of the people for park facilities are not properly met, nor can they be, so long as the present lack of unified management continues."[6] During this time, the need for recreational space and playgrounds for families and children grew as part of a larger Progressive movement supported by settlement

Figure 1. Chicago's lakefront has long been considered its front yard and is where many people go to play. The original shoreline is actually very near the line of buildings along Michigan Avenue (Flickr/Michael Muraz).

houses such as Hull House. The resources needed for these capital projects could only come from the big three park districts, which were able to petition for legislation to raise funds. These three—and in particular, the South Park District—accomplished this. And so Daniel Burnham, Frederick Law Olmsted, and Calvert Vaux were hired to create these new types of spaces.[7]

But the other districts would also start to clamor for the ability to raise funds through tax levies. Despite the recommendations of the Chicago Bureau for Public Efficiency, as the city grew so did the number of park districts. Voters, wanting resources in their neighborhoods, voted to give these districts the power to tax as well. Within 20 years the number of districts more than doubled. It would take the Depression for communities to finally heed the advice to unify management under one agency to save money. So in 1934 the Chicago Park District was formed.[8]

At the turn of the 20th century, the need for open space beyond the city's borders was of great concern to the city and the Progressive civic leaders interested in the importance of parks and nature for the health of the community. The famed photojournalist Jacob Riis and Chicago reformer Jane Addams met with the Municipal Science Club in 1898 to discuss the need for more open space for the cramped Chicagoans living farther and farther from the lake.[9] The result was the establishment of the Special Park Commission.

This commission was made up of elected city officials, architects, and representatives of the West, South, and Lincoln park districts. Influenced by the progressive ideas of healthy outdoor play to ease the hardships of the poor living in squalid conditions, the commission had a three-pronged approach to improving parks in Chicago. First, it supported the South, West, and Lincoln park districts by assisting with improvements and proposing legislation to fund all three. After that, its biggest charge was supporting the creation of smaller neighborhood parks and playgrounds as part of the Playground Movement. These parks were to fill in the gaps within the city between the major parks of the three main park districts. Lastly, the commission looked ahead to the future growth of the city and where more parkland should be preserved.

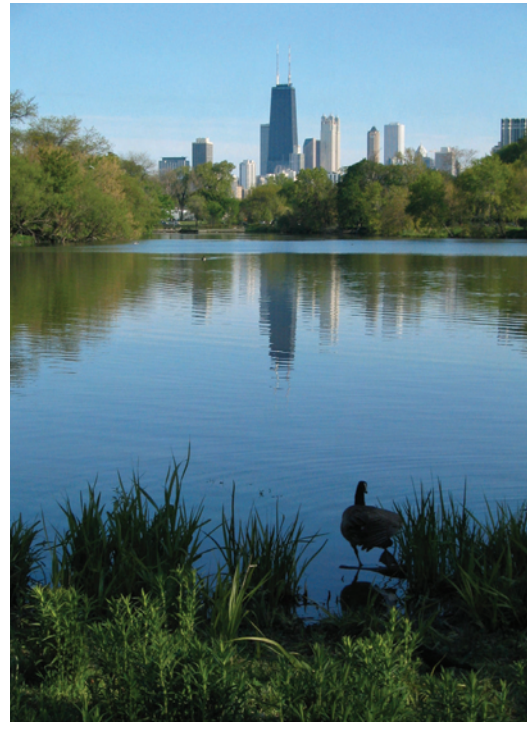

Figure 2. The North Pond in Lincoln Park demonstrates how park planning one hundred and fifty years ago provides opportunities for wilderness to continue in the city today (Flickr/Wildcat Dunny).

Five years after its formation, the Special Park Commission published the *Report of the Special Park Commission to the City Council of Chicago on the Subject of a Metropolitan Park System*. In it, the commission argued for extensive improvements to the city's park infrastructure. Citing reports such as *City Homes Association on Tenement Conditions,* they made the case that more open space could help lower mortality, juvenile delinquency, and the incidence of infectious diseases.[10] But the biggest recommendation was establishing another ring of parks around the city. Leading this charge were Dwight Heald Perkins and Jens Jensen. Perkins was an architect who started his own firm in Chicago in 1894 after working for the firm of Burnham and Root. He is better known for being the architect for the Chicago Public School System, nevertheless he was a strong proponent of the benefits of open space. Jensen moved to the United States from Denmark in 1884 and eventually found work with the West Park Commission. He experimented with using native flowers in his landscape designs and soon rose to become head of the commission. He is considered one of the fathers of American landscape architecture and along with his work to create forest preserves, he was an advocate for the establishment of the Indiana Dunes, just southeast of the city, as a national park.

Buoyed by Perkins and Jensen, the major portion of the report was based on the farsighted belief that Chicago's borders would continue to extend farther and farther from Lake Michigan. Using formulas based on population growth of cities, the commission estimated that Chicago would encompass all of Cook County by the middle of the century, with a population of 10 million people.[11] With the region separated into four zones by the authors, zone four reached the farthest out from the central business area. Based on these zones, Perkins and Jensen made the case for a series of parks, or preserves as they were calling them, in the natural beauty of places such as Skokie Marsh, the Des Plaines River Valley, and Palos Hills. Out there lands were not completely adulterated by the farm plow or urban development. The commission believed that acquiring this land now would be cheaper than trying to bid for it with developers later on.

For this next layer of parks arcing around the city, the commission recommended that "[t]he whole matter of a harmonious plan for an outer system, including details as to localities within and, if deemed advisable, outside of Cook County, is recommended for reference to the Outer Belt Park Commission."[12] The reason for referring to the Outer Belt Park Commission is because the Special Park Commission and the City of Chicago had no jurisdiction that far west, north, and south. The Special Park Commission believed that the city would eventually expand out that way and hoped that city and county government would merge. When Cook County established the Outer Belt Park Commission in 1903, its mission was to acquire preserves around the outside of Chicago. Perkins and Jensen thought this group would eventually become another city park commission once Chicago expanded out that far. It too had representatives from the city, including Mayor Carter Harrison, Burnham, and Perkins.

Nevertheless, Jensen's "Report of the Landscape Architect" portion took up nearly half of the report. He highlighted the flora, fauna, and topography of several significant areas he believed should be preserved, including Lake Calumet to the south, the Des Plaines River Valley to the west, and what would become the Skokie Lagoons to the north. Jensen started his section explicitly stating, "One of the purposes for which forest parks should be acquired

is to preserve for present and future generations lands of natural scenic beauty situated within easy reach of multitudes that have access to no other grounds for recreation or summer outings. A second purpose is to preserve spots having relation to the early settlements of Chicago and which are therefore of historical significance, and still another is to preserve the flora in its primeval state for the sake of the beauty of the forest and for the benefit of those desiring knowledge of plants indigenous there."[13]

The work of the Special Park Commission did not go unnoticed. Five years after their report on a metropolitan park system, Daniel Burnham and Edward Bennett created the *Plan of Chicago.* Published under the support of the Commercial Club of Chicago in 1909, it was a major, comprehensive proposal for the future development of not only the City of Chicago, but the surrounding region as well. With civic improvements and urban planning really growing in this timeframe, Burnham's idea of "making no little plans" became a model for future city plans. In the *Plan of Chicago* he incorporated much of the work of Perkins and Jensen into the park portions. Burnham, known for his work with the firm of Olmsted & Vaux for the South Parks Commission and even more so for planning and running the World's Columbian Exposition of 1893, brought a greater level of legitimacy to Jensen's recommendations.

This could not have come at a better time for Cook County and the Outer Belt Park Commission. The grand vision of a combined, county-wide park district was now fraught

Figure 3. Perkins and Jensen envisioned an abundance of open, natural space where residents could go to fish, camp, and row. Today, the Cook County Forest Preserves offer these opportunities in many locations. Busse Woods near Elk Grove Village borders an interstate highway and is less than five miles from O'Hare International Airport (Cook County Forest Preserve).

with obstacles. For starters, the City of Chicago's ability to expand geographically was losing momentum. Whereas in 1889 communities such as Hyde Park and Lake View voted to be annexed by the city, the turn of the 20th century saw referendums by communities such as Blue Island, Evanston, and Oak Park refuse to give up their sovereignty. One of the results of this rejection was that the Outer Belt Park Commission and the various park districts in the city would not be forming one county-wide park district. But this was not the end of the concept of a regional park system. The Outer Belt Park Commission and the Cook County Board still believed strongly in providing space for people and communities to flock to and temporarily escape from urban areas. Following the recommendations from Perkins, Jensen, and the Special Park Commission, they believed that natural parks, as opposed to designed and landscaped parks, would be a huge benefit to the region. So rather than following the model of the South Parks Commission, these commissioners wanted places for people to hike, fish, and camp, all in locations that were much easier to access for the masses than the growing roster of national parks and monuments in the American West.

Several attempts were made to establish legislation to create these "Outer Belt Parks," or "Forest Preserves," which they were starting to be called. The latter term became popular as people worried about yet another park district competing for land and tax dollars.[14] Legal and constitutional challenges thwarted the first two attempts, but in 1914 the Forest Preserve Act was passed, establishing the Forest Preserve District of Cook County, and a year later the Downstate Forest Preserve Act provided for additional districts in other parts of the state. Having passed the legal hurdles, in 1916 the district immediately put forth to voters a referendum to sell $1 million dollars' worth of bonds to acquire land based on the recommendations from Perkins and Jensen. The measure passed and before the year was out the district was acquiring land.[15] Civic leaders and residents in neighboring counties also became concerned about the loss of open space as development grew and authorized forest preserve districts in their counties as well: in DuPage County in 1915, Kane County in 1925, Will County in 1927, and Lake County in 1958.

With a growing understanding and respect for nature expanding beyond the

Figure 4. The Forest Preserve District of Cook County manages over sixty thousand acres of land where people can get into nature but still be in the city (Forest Preserves of Cook County).

vast open spaces of national parks or public lands out West, organizations and individuals looked to save and highlight urban pockets of nature. Following in the footsteps of boards and commissions of the early 20th century, civic-minded individuals and government agencies around Chicago wanted to preserve and educate the public about nature in the city and surrounding area. The growth of the environmental movement and a better understanding of the science of ecology encouraged more active preservation and restoration of natural lands. But modeling on those past commissions would not work. In the late 20th century there was little room and little stomach for yet more layers of taxing districts or appointed commissions.

Cook County alone has 102 park districts and one forest preserve district. Expanding to the collar counties of DuPage, Kane, Lake, McHenry, and Will adds an additional five county-wide districts and 79 park districts.[16] On top of that there is the National Park Service and United States Forest Service managing park lands in the region. This includes the National Park Service's Indiana Dunes National Lakeshore, the Illinois & Michigan Canal National Heritage Area (a first of its kind coalition overseen by the federal government), and the newly created Pullman National Monument. To the southwest of the city the Forest Service manages Midewin, a converted military arms plant that is being restored to 19,000 acres of tallgrass prairie. As can be imagined, consolidation was not a realistic solution to ensure regional harmony. Cooperation seemed a much more realistic goal.

In 1996, a group of individuals representing 34 different agencies met to help define urban wilderness and develop a comprehensive plan to preserve, restore, and educate about nature. It was still to be found in pockets great and small throughout the area. To save and improve upon these places of nature, scientists understood something important that politicians failed to realize: that ecosystems know no political boundaries. Hundreds of park districts could not individually make a big impact on improving the biodiversity and natural landscape of the Chicago region, but a coalition of them could. So a loose alliance called Chicago Wilderness was formed. Its purpose: "to sustain, restore, and expand our remnant natural communities."[17]

The foundation for Chicago Wilderness is the Chicago Region Biodiversity Council—the leadership of the major conservation groups in the area. They met to set the goals for Chicago Wilderness. The premiere issue of the organization's magazine was published a year later. It set out to define what Chicago Wilderness was, stating, "first and foremost, Chicago Wilderness is an archipelago of 200,000 acres of protected natural lands stretching from Chiwaukee Prairie in Wisconsin, through the six counties of northeastern Illinois and Goose Lake Prairie southwest of Joliet, to the dunes of northwestern Indiana."

In the introduction by the editor, one can already tell that this group transcended political boundaries in favor of ecological ones. The introductory piece went on to further describe Chicago Wilderness as "54 partners forming a collaboration of individuals and institutions committed to saving our rich natural heritage and helping to infuse knowledge of our native landscape into the cultural identity of the region."[18] In a span of one year, the number of members grew, and Chicago Wilderness quickly established areas of main focus.

In its early years, Chicago Wilderness received support from many federal agencies, including the US Fish and Wildlife Service. Funds helped the organization grow in member-

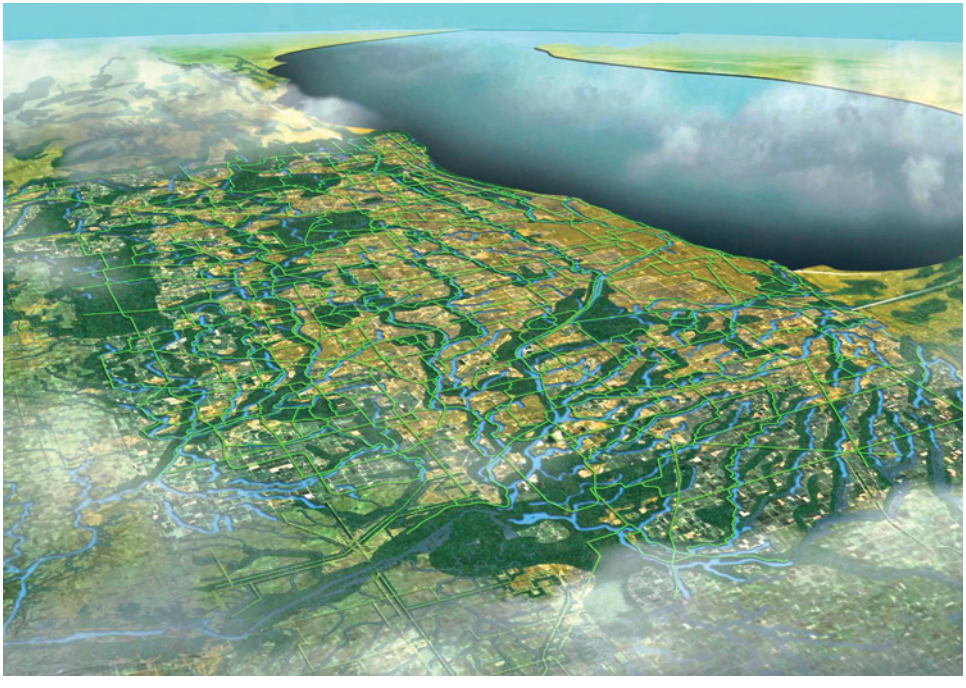

Figure 5. Chicago's GO TO 2040 Regional Plan proposes a green infrastructure network that follows waterway corridors, expands existing preserves, and creates new preserves in the region (Chicago Metropolitan Agency for Planning).

ship and staff and provided the seed money for some of its first projects, such as the magazine and the Biodiversity Recovery Plan. The plan was designed to complement other planning documents in the region while infusing the mission of Chicago Wilderness into those plans. It was also the blueprint for projects and goals for the coalition and still guides the group today through its several initiatives.

Along with restoration, the group promotes education and outreach through the Leave No Child Inside campaign that encourages getting kids out into nature. Outreach continues with its annual Wild Things Conference. This event brings together scientists, citizen scientists, and the general public interested in nature. Workshops and sessions cover a variety of topics of interest from major land restoration projects to nature activities for kids in your backyard. The events have proven successful with membership increasing from those original 34 members to over 250 today. Now it also focuses on climate change as well as biodiversity, education, and green infrastructure.

Moving forward, Chicago Wilderness is seen as a model for other major urban areas to study. Its members consist of a healthy mix of local, state, and federal agencies; business sector partners; and research institutions. So does this mean that Chicago has a regional

park system? How can it with all those park and forest preserve districts and federal agencies owning and managing their own lands? It works because the community as a whole sees Chicago as having a nature reserve of over 370,000 acres of land. From many agencies there is one wilderness.

Endnotes

1. A loose translation of this phrase is " city in wilderness."
2. Although up for some debate, there is a general consensus that the city's name is an Anglicized version of an Algonquin word meaning "stinky plant" or "wild onion"; the city's motto is *Urbs in Horto*, or City in a Garden.
3. *Chicago Park District: History, Background, Organization* (Chicago: Bureau of Parks, 1936), 1.
4. This quote is from the original designation of land use for the lakefront. For more on the battle to preserve Chicago's lakefront, see Lois Wille, *Forever Open, Clear and Free: The Struggle for Chicago's Lakefront* (Chicago: University of Chicago Press, 1991).
5. *Encyclopedia of Chicago,* "Annexation." Online at www.encyclopedia.chicagohistory.org/.
6. Chicago Bureau of Public Efficiency, *Park Government of Chicago* (Chicago: Bureau of Public Efficiency, 1911), 5.
7. *Encyclopedia of Chicago,* "Playground Movement." Online at www.encyclopedia.chicagohistory.org/.
8. "*Urbs in Horto,*" online at www.chicagoparkdistrict.com/about-us/history/.
9. Julia Sniderman Bachrach, *The City in a Garden: A Photographic History of Chicago's Parks* (Chicago: The Center for American Places and Chicago Park District, 2001), 11–12.
10. Special Park Commission, *Report of the Special Park Commission to the City Council of Chicago on the Subject of a Metropolitan Park System* (Chicago: Special Park Commission, 1904), 52–55.
11. *Ibid*., 58–59.
12. *Ibid.,* 1.
13. *Ibid*., 80.
14. Stephen F. Christy, Jr., "To Preserve and Protect: The Origins of the Forest Preserves," *Chicago Wilderness* 2:2 (Winter 1999), 6.
15. *Ibid.*, 8.
16. Illinois Commission on Intergovernmental Cooperation, *Legislator's Guide to Local Governments in Illinois: Special Districts* (Springfield: Illinois Commission on Intergovernmental Cooperation, 2003), 64.
17. Chicago Wilderness, *Biodiversity Recovery Plan* (Chicago: Chicago Wilderness, 1999), 6.
18. Debbie Shore, "What is Chicago Wilderness?" *Chicago Wilderness* 1:1 (Spring 1996), 3.

Harry Klinkhamer, 5106 Brighton Lane, Plainfield, IL 60586; harry.klinkhamer@att.net

Regional Parks and Near Wilderness: Connecting Local People with Nature, Serving Bigger-Picture Conservation Planning, and Addressing Changing Values of Wilderness

Michael Walton

In this special edition of The George Wright Forum, the George Wright Society (GWS) examines the significance of regional parks and near-urban park systems. In the context of this paper, the term "regional parks" means lands set aside for public use by local governments for park and protected area (PA) purposes. This special edition is, one would hope, an invitation for the GWS membership, supporters, and followers to turn their attention to the important role and rich experiences regional parks and local PA systems offer residents and society in general. For the most part, regional park systems reflect the familiar intent of delivering, in perpetuity, health, enjoyment, and recreational benefits to present and future generations, guided by the protection of plants, animals, biodiversity, and wilderness.

As a boy in the early 1970s, I explored off the paved paths of High Park in downtown Toronto. High Park remains today, a large green space and city park in the core of Canada's largest city. There, I looked for the paths un-trodden, meandered with the creeks, and imagined exploring and discovering lands unknown. In my early years, I was fortunate that the outdoors was somewhere you were sent to by harried parents. Wilderness, for me, was discovered in the city.

Following graduation from university, I was fortunate to have been hired by the Ontario Provincial Park system as a park warden and assistant park superintendent. Eventually, I joined Parks Canada, where I served for twenty-three years, working across Canada and learning from local people their priorities for biodiversity protection and wilderness management.

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Today, I am the senior manager responsible for the Capital Regional District's (CRD's) Regional Park Service on southern Vancouver Island, British Columbia, Canada, managing six million visits per year. The CRD's regional park system is unabashedly loved by local residents and celebrated by visitors from across Canada and around the world. It is an inspiring system.

The CRD is the regional government for 13 municipalities (including the city of Victoria) and three electoral areas on southern Vancouver Island and the nearby Gulf Islands. Its jurisdiction is 237,000 hectares (585,640 acres), of which nearly 21,000 hectares (51,892 acres) are inaccessible to the public as they protect the drinking water for the population of Greater Victoria.

From the Gulf Islands, on the border with Washington State, to the historic forestry and fishing community of Port Renfrew, located on the west coast of Vancouver Island, 31 regional parks protect 13,000 hectares (32,124 acres) that are home to three large carnivore species: black bear, wolf, and cougar. Including the Greater Victoria Water Supply Area, nearly 14% of the lands owned by the CRD are protected by legal means (CRD 2012). The CRD's protected lands include coastal Douglas fir, coastal western hemlock, and mountain hemlock habitats. Additionally, the regional parks system includes 94 km (58.5 miles) of regional trails that serve recreational walkers and cyclists as linear parks, connecting people of all ages and abilities to nearby nature. The regional trails are increasingly popular alternatives for commuters.

If one considers all lands within the CRD's geographic area that are under some form of protected status (national parks, provincial parks and ecological reserves, regional parks, municipal parks, Islands Trust Fund, land trusts, and the Greater Victoria Water Supply Area), the CRD is approaching 20% protection (47,826 hectares or 118,181 acres) across the landscape (CRD 2012). This percentage is expected to increase as the CRD applies its regional parks land acquisition strategy through 2019 (CRD 2015).

Steady growth in park visitation (between 1% and 5% annually over the last decade) means the CRD's regional parks system has not experienced the declining visitation that has been reported in some recent years for the US and Canadian national park systems (Shultis and More 2011; Rollins et al. 2016). This trend is expected to continue due to the growth of communities located along the west shore of Vancouver Island. To accommodate and manage visitor increases, the regional park classification system will be relied on to address recreation and conservation challenges.

The CRD's regional park system operates as a continuum (Figure 1). Situated at one end, recreation-classed parks invite high visitor use and welcome special events. At the other end of the continuum are wilderness parks. Large in size and relatively remote, visitors must rely on backcountry travel and minimum impact camping skills. Between recreation and wilderness park classifications are, in increasing wilderness character, natural areas and conservation areas (CRD 2012).

Like the national park systems in Canada and the US, wilderness is a fundamental value in the CRD's regional park system. According to the CRD (2012: 72), "wilderness" is characterized by:

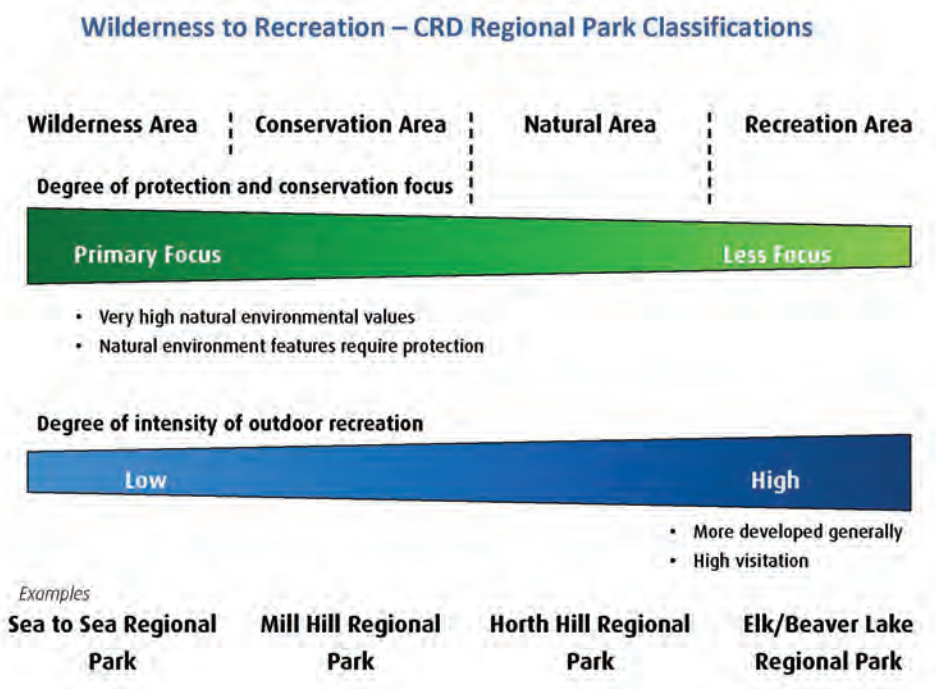

Figure 1. Spanning wilderness to recreation–the CRD Regional Parks classification system.

- A large land base, generally more than 1,000 hectares;
- The conservation of ecosystems with minimal human interference;
- Opportunities for visitors to experience the park's ecosystems firsthand;
- Opportunities for backcountry recreation and camping;
- The provision of only few rudimentary services and facilities, if any; and
- The experience of remoteness, solitude, and harmony with nature.

The wilderness characteristics and outcomes described are likely familiar to PA managers across the US and Canada. Pointedly, the CRD's regional park system recognizes that:

> Maintaining wilderness areas in the region is an important part of the regional parks' function. Wilderness is critical to sustain wildlife and plants that rely on sizable natural areas for their survival and to provide wilderness outdoor experiences and activities. They are places where residents can experience wilderness close to their home (CRD 2012: 72).

Many GWS readers will remember studying Hendee, Stankey, and Lucas' first edition of *Wilderness Management.* Others will know Roderick Nash's *Wilderness and the American Mind,* "Thinking Like a Mountain" by Aldo Leopold, and Rachel Carson's *Silent Spring.*

Figure 2. Visitors enjoying Elk/Beaver Lake Regional Park, a regional recreation area (CRD).

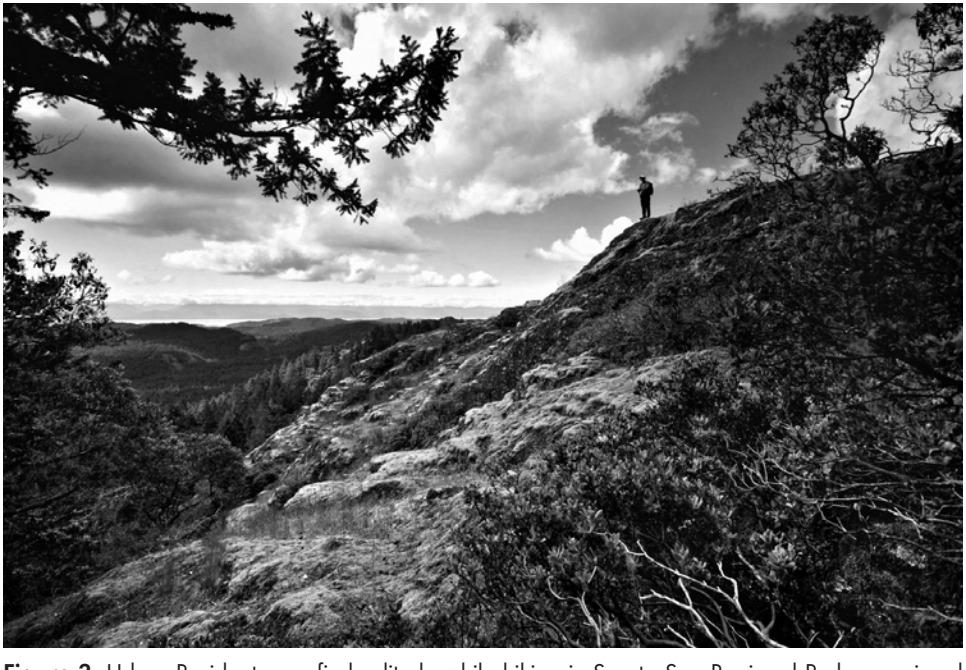

Figure 3. Urban Residents can find solitude while hiking in Sea to Sea Regional Park, a regional wilderness area (Mary Sanseverino).

The writings of Catlin, Thoreau, Marsh, Muir, Mather, Olmsted, Marshall, Harkin, Leopold, Wright and others have influenced a body of knowledge about wilderness that has fundamentally shaped the language, understanding and significance of PAs in Canada and the U.S.

Armed with such understanding, PA managers face growing numbers of complex issues while being cognizant of how few staff are available to address the challenges. Additionally, PA leaders are aware that increasingly urban, multicultural, and ethnically diverse populations may in fact be thinking differently about the need for wilderness and why it is important. William Tweed, writing as part of the GWS's National Park Service Centennial Essay Series, cautions:

> In many ways, traditional national park experiences are not competing well in the leisure-time market.... [S]elling larger segments of society on the value of places where the long-advertised mission is no longer possible, where resources seem to be unravelling, where quality experiences require pre-acquired skills and knowledge to enjoy, and where significant blocks of time are required to recreate, will be anything but easy. Add the complication that this marketing must speak to people who have little or no tradition of national park use and little interest in nature, and the challenge becomes daunting (Tweed 2010: 11).

Similarly, Robert Keiter charges, "wilderness that is far away and home to mountain lions and wolves and bears, may be preferable to today's predominantly urban populations" (Keiter 2011: 240). The warnings are troublesome to PA authorities responsible for regional park and near-urban PA systems, as well as for authorities responsible for distant, larger, state/provincial, and national PAs, but for different reasons.

From the local perspective, the presence of large carnivores on the landscape often signals that wildlife management programs have been successful in creating habitat favorable to large species. On the other hand, human–wildlife conflict in near-urban PAs raises the possibility of negative public reaction that could cause feelings of fear and unwillingness to share the landscape with carnivores (Penteriani et al. 2016). From the state/province or federal PA perspective, observing declines in attitudes favoring the presence of species iconic to PA system values and key species for the restoration and maintenance of ecological integrity raises serious policy issues.

Amidst concerns about remaining relevant to our respective nations' citizens, Canadian and American national park leaders launched campaigns to connect with urban populations. From a Canadian perspective, Pamela Wright notes, "renewed emphasis on providing a broader range of experiences [is] often touted as necessary to attract non-traditional park visitors—that are often heavily dependent on infrastructure—may be tipping the scales in favour of use over ecological integrity" (Wright 2016: 188).

Worryingly, our respective federal systems may be advancing initiatives to increase visitation by drawing from populations that for many reasons are not aligned with existing national park values. The distinct possibility that increased infrastructure spending may only yield modest increases in visitation is necessarily, for some PA authorities, an uneasy reality.

However, in favor of our national park systems continuing to serve national audiences and in support of their mandates, regional parks and near-urban PA systems across Canada and the US offer experiences that are close to home, bringing urban lifestyles to wild nature. In this role, regional parks play a key role in introducing urban populations to the idea of wilderness, wilderness travel, and associated wilderness values. Additionally, because regional parks are located nearby to urban populations, local PAs' association with local political decision-makers is more clear than the link between, for example, Ottawa or Washington decision-makers and federal PAs local to the area.

The combination of responsiveness by local elected officials to their constituents, daily use of regional parks by local citizens, and regional parks' management availability to elected officials and visitors addresses fundamental trust issues between PA authorities and local citizens (Stern 2008). This trust relationship could serve larger conservation and engagement goals associated with upper-tier government priorities.

Regional park systems could play the role of a bridging organization between local and state/provincial and national PA organizations (Olsson and Folke 2001; Berkes 2009). For example, at the CRD's Regional Parks Service, full-time interpreters deliver programs throughout the year at schools, in classrooms, out in the parks and at campgrounds, educating audiences about the natural environment and how human behavior affects wildlife. The social science program gathers baseline information about residents' values toward regional parks, use, wildlife, and preferences for outdoor recreation opportunities. Visitor intercepts at regional parks further assist management's understanding about what park visitors are enjoying about their park system and what can be improved.

Similar programs are taking place across the US and Canada by municipal governments or at regional government levels. Information gathered by local systems, the programs that have been developed to address local issues, and efforts undertaken to address future needs of local residents may be used as key informants to upper-tier governments' conservation, engagement strategies, and visitor use planning.

The tenth meeting of the Conference of the Parties (COP) to the Convention on Biological Diversity, held in Nagoya, Japan, in 2010 produced *The Strategic Plan for Biodiversity 2011–2020* and the Aichi Biodiversity Targets (COP 2010). Of significance to PA authorities around the world is Aichi Target 11, which calls for by 2020:

> At least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes. (COP 2010: 9)

Aichi Target 11 wording, points to the need for "equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, [which are] integrated into the wider landscape and seascapes"

(emphasis added). Regional park systems, known for contributing to the well-being of local people and visitors, are often unrecognized for their contributions to global commitments to the conservation of nature.

While some contest the effectiveness of PAs in protecting biological diversity, many believe they play a role in influencing land use decisions in favor of biodiversity and mitigate against climate change (Butchart et al. 2010; Leverington et al. 2010; Geldmann et al. 2013; Hagerman and Satterfield 2014; Pimm et al. 2014). Woodley et al. acknowledge that "protected areas are a tried and tested approach to nature conservation.... [T]hey remain one of the most diverse and adaptable management and institutional tools for achieving conservation" (2012: 23).

Generally, only PA systems managed by upper-tier governments in Canada and the US have been included in the count toward international conservation targets. However, regional park systems across the two countries have been present on the landscape for longer than some national and provincial/state PAs, and in many cases are protecting lands larger than some national parks. East Bay Regional Park District in the San Francisco's Bay Area, for example, was established in 1934 (EBRPD 2013). At the CRD, the regional park system celebrated 50 years in 2016, and Canada's Metro Vancouver regional park system is celebrating their 50th anniversary in 2017.

Regardless of length of time on the landscape, what is striking about regional parks systems are: their volume of satisfied visitors, their responsiveness to local people and local politicians, and their active land acquisition programs, which reflect a pace of PA expansion not always possible at higher-order authorities. This combination of affirming qualities creates a circumstance where collaboration between local PA officials and local residents is often more possible than between higher-order government officials and local people. This circumstance may be helpful when landscape-scale multi-jurisdictional initiatives are necessary to achieve conservation priorities.

A vision shared by many conservationists is one that sees Canada and the US overlain with interconnected PAs where at least half of the landscape is protected for nature (Locke 2015). It is a landscape where core PAs, whether federal, regional or local, are connected by conservation corridors (Worboys et al. 2016). The corridors allow uninterrupted movement of species and people because areas outside of PAs are stitched together through governance arrangements that recognize conservation values (Walton 2016). Achieving the vision of an interconnected PA landscape requires urban populations to feel safe and welcome in natural environments close to where they live. Efforts to slow, halt, and reverse biodiversity loss are closely tied to our understanding of what is important about nature to those who live in cities (Dawson and Hendee 2009; Hassell et al. 2015). In this realization there is great optimism. It was, after all, city dwellers who inspired the need for wilderness and protected areas (Nelson 1989; Nash 2001; Runte 2010).

Working together, local, regional, state/provincial, and national PA systems can advance public support for PAs as natural solutions to improving human health and well-being, reducing biodiversity loss, and mitigating against climate change (UNEP-WCMC and IUCN 2016). Given that regional parks are backyards to millions of city dwellers, they represent

Figure 4. A near-urban wilderness area on the outskirts of Victoria, British Columbia, Canada (Michael Walton).

tangible spaces where human beings might reconcile cultural, spiritual, and social beliefs about wilderness in order to ensure the space for non-human species to live for generations to come.

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Michael Walton, CRD Regional Parks, 490 Atkins Avenue, Victoria, BC V9B 2Z8 Canada; mwalton@crd.bc.ca

Total Economic Value of US National Park Service Estimated to be $92 Billion: Implications for Policy

Michelle Haefele, John Loomis, and Linda Bilmes

Introduction

America's national parks "are the best idea we ever had." So said Pulitzer Prize-winning American author Wallace Stegner.[1] A new survey suggests Americans also consider the National Park Service (both the parks, and the associated programs of the agency which runs them) to be of the most valuable assets we ever had—worth some $92 billion a year.

The present paper describes the results of the survey, which is the first-ever comprehensive estimate of the total economic value of the National Park Service (NPS). The valuation estimate covers NPS-administered lands, waters, and historic sites—the national park system. It also includes NPS programs, many of which extend far beyond the parks themselves, such as protection of natural landmarks and historic sites, partnerships with local communities, support of recreational activities, and educational programs. These two components of the NPS mission—managing the 400+ units of the national park system, and carrying out the 30+ external partnership programs—are the focus of our analysis. The remainder of this article describes the economic concepts, methodology, survey design, and results.

Economic concepts and methods

A number of studies conducted over the past 30 years have looked at the amount the public would willingly pay for *individual units* or *specific benefits* of the US national park system. Such studies utilize a range of attributes, values, and methodologies.[2] Other studies have focused on the direct economic impact (in terms of employment, tax revenue, and so forth) of visitor spending at national parks.[3]

The present study is different. It estimates the total economic value (TEV; Freeman, 2003) of the entire national park system and NPS programs, including recreation and other direct use values that derive from onsite use, as well as passive use values that are independent of onsite use. Passive use values include existence value (the benefit derived by consumers

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from simply knowing that national parks are protected), bequest value (the value of knowing that their continued protection today provides benefits for future generations), and option value (the benefit one gains from knowing that one may use national parks in the future). This application of TEV to national parks and NPS programs was proposed by Choi and Marlowe (2012).

Most of the economic value associated with the National Park Service derives from non-traded services for which there are no formal markets: recreation opportunities, clean air, wildlife habitat, and so forth. Economic values can be defined as the maximum amount that an individual consumer would pay for a particular good or service ("willingness to pay," or WTP). An alternative measure is "willingness to accept," or WTA, which is the minimum amount of money that an individual would require in order to relinquish a particular good or service. This measure is typically used by economists to estimate the value associated with taking away a resource that the public already "owns" or is entitled to (Freeman 2003).

In the current restrictive environment for public spending, we chose to look at program cuts rather than additions to NPS programs or services, which were viewed by survey pretest respondents as politically unrealistic. This would normally point to the WTA method. However, research shows that WTA is often substantially larger than WTP, especially for non-market goods (Horowitz and McConnell 2002) when applied to the same public good. Willingness to pay can be applied to cases where one is taking away a public good if the scenario is described in terms of the need for additional funding to maintain a certain quantity of the public good. Therefore, in order to be conservative and to be consistent with the valuation methods used by other federal agencies, we selected WTP.[4]

Survey design

Because the magnitude of existence and bequest values are not reflected in market prices, economists rely on what people say they would pay in surveys that present respondents with a "simulated" market. In particular, the methodology used by academic and government economists to measure TEV involves presenting people with a trade-off between different quantities of publicly provided goods and specific costs, often in the form of increased taxes. This specificity is what distinguishes our TEV economic survey from the usual public opinion poll. The typical public opinion poll simply asks, "are in you favor or opposed?" with no cost mentioned, or asks if respondents would pay an unspecified increase in taxes for an unspecified amount of a public good.

The goal of our economic survey was to estimate the value of the entire national park system and NPS programs to American households, including those that are not visitors. We therefore surveyed a random sample of households and asked what they would pay to prevent to the sale of some national park lands, waters, and historic sites, or cuts to some NPS programs.

Participants were asked whether they would pay specific increased annual federal income taxes in order to retain all the current national parks and NPS programs. We used income taxes as they are a recommended approach to obtaining a conservative measure of the amount of money a household would pay for a public good (Carson and Groves 2007). The

economic survey methodology used is consistent with the techniques employed by numerous federal agencies and academic economists for economic valuation of public programs (US Office of Management and Budget 1992; Arrow et al. 1993; US Environmental Protection Agency 2010).

To accomplish the goal of valuing the entire national park system and the NPS programs, the survey first clearly defines national park lands and waters (including historic sites such as battlefields, birthplaces of presidents, national monuments, and memorials) as well as NPS programs. It then specifies that without an increase in income taxes, a specific number of acres and historic sites would be sold. The amount sold ranged from 20–40% of the current total. We specified this range rather than sale of 100% of the national park system and NPS programs because we felt respondents would not treat such a scenario as realistic, even though the ultimate goal of the study was to value the entire NPS system and programs.

The respondent is then asked to choose from among three options: one which retains all parks and which has the highest tax increase; a "middle" option which has smaller cuts, but also a smaller cost to the household; and a third option with both the largest cuts and no cost to their household. By making a choice of their most preferred option, the respondents indicate whether their household would pay the specified tax increase to prevent the sale. The same approach is used for NPS programs such as the National Register of Historic Places, educational programs, and so forth. The specific increase in taxes and the size of the cuts are varied across 16 versions of the survey in order to estimate statistically the economic value.

The TEV survey was administered using a 12-page color questionnaire that was mailed to a random sample of all deliverable addresses in the United States. Two separate mailings totaling 4,200 (1,800 in 2013–2014 and 2,400 in 2015) were performed, with a total of 3,876 ultimately deliverable. The mailing included a postage-paid return envelope. A URL was also provided for those who wished to complete the survey online. Multiple follow-up contacts with non-respondents were made (by phone and mail), and included a second mailing of the survey and postage-paid return envelope.

Survey results

Despite our efforts to encourage responses, the final response rate was 18%—a low rate, but one which reflects a recent trend toward declining participation in similar surveys.[5] Furthermore, the respondent demographics were different from those of the general population. To account for this we adopted a post-survey weighting procedure called "raking" (suggested by the National Research Council 2013) to reweight the sample observations to make the survey responses more representative of the general public.

Raking is a technique which uses known population proportions on specific characteristics and weights each sample observation so that the sample proportions reflect the population proportions. We used an algorithm in the Stata statistical package and performed several different weighting procedures—one using education level, age, income, race, and work status (retired or not); another using these characteristics along with national park visitation; and a third using only the visitation. Reducing the weight given sample observations to reflect visitation rates in the population resulted in the most statistically robust rank-ordered regres-

sion results and was chosen for the final valuation analysis. Since demographics are often determinants of national park visitation (Henrickson and Johnson 2013; Neher et al. 2013), weighting on visitation may implicitly adjust for demographics as well.

The survey results reflect rational economic behavior—the higher the cost (dollar amount) presented in the survey, the less likely a household would pay. This indicates that respondents were paying close attention to the payment amounts and gives us high confidence in our economic valuation.

Nearly half the sample indicated they would pay the highest income tax increase (by choosing the option which avoided all cuts to national park lands waters and historic sites as the preferred option).[6] About one-third would pay the smaller income tax increase to reduce the size of the proposed cuts to national parks. The remainder would not pay at all and would allow the full cuts specified in the survey. The presence of a significant percentage of respondents who would not pay the full amount to avoid all cuts, and another significant percentage that would not pay anything, indicates that respondents were making economic trade-offs. In particular, 11% of the respondents who chose the full cut/no cost option indicated they could not afford to pay as much as was asked in their version of the survey and 2% indicated that national parks were not worth the cost to them. It should be noted that economists define "willingness to pay" to mean that a person is both willing and able to pay. Thus income and other expenses must enter into the determination of one's willingness to pay. Table 1 shows the percentage of respondents' selection of each option as their most preferred for parks and programs.

As noted, the survey asked respondents to indicate their most- and least-preferred options, which provides an implied ranking of the three choices. This enables us to use a rank-ordered logistic regression to estimate per-unit[7] values for the national park system as well as for the NPS programs. Results from that analysis yielded a negative and statistically significant coefficient on the income tax cost of the option for both the parks and NPS programs. See Tables 2 and 3. This provides evidence of what economists call "internal validity": that our valuation results are consistent with the law of demand—the higher the tax price,

Table 1. Responses to most preferred option.

	Cost of option to household	**Parks**	**NPS Programs**
		Percentage selecting as most preferred	
Sale of some land in all parks; Cuts to all programs	$0	12.71%	16.38%
Smaller lands sales in some or all parks; Smaller cuts to some or all programs	$15–$100	31.64%	45.48%
No sale of parks; No cuts to programs	$115–600	49.44%	31.36%

Table 2. Results for national parks: Rank-ordered logit, weighted for national park visitation.				
Dependent variable = Rank of the NPS park policy option				
	Coefficient	**Std. Error**	**Z**	**P>|z|**
Annual cost of option (federal income tax)	-0.0017724	0.0002924	-6.06***	0.000
Nature-focused NPS (cuts avoided)	2.49E-08	6.99E-09	3.57***	0.000
History-focused NPS (cuts avoided)	0.0068598	0.0017039	4.03***	0.000
Water-focused NPS (cuts avoided)	3.60E-07	1.14E-07	3.14***	0.002
Number of observations = 1941 Number of groups = 647 (3 observations per groups)	Wald Chi-Sq(4) = 232.03 Prob > Chi-Sq = 0.0000		Log pseudo-likelihood = -1133.892	
*** significant at 99% confidence level				

Table 3. Results for NPS programs: Rank-ordered logit, weighted for national park visitation.				
Dependent variable = Rank of the NPS program policy option				
	Coefficient	**Std. Error**	**Z**	**P>|z|**
Annual cost of option (federal income tax)	-0.0041514	0.0003244	-12.8***	0.000
Historic sites and buildings protected each year (cuts avoided)	0.0006566	0.0002887	2.27**	0.023
Acres transferred to communities each year (cuts avoided)	0.0001513	0.0002011	0.75	0.452
Natural landmarks protected each year (cuts avoided)	0.012672	0.0051371	2.47**	0.014
School children served by NPS educational programs each year (cuts avoided)	6.91E-07	1.09E-07	6.33***	0.000
Number of observations = 1902 Number of groups = 634 (3 observations per groups)	Wald Chi-Sq(5) = 244.06 Prob > Chi-Sq = 0.0000		Log pseudo-likelihood = -1117.304	
*** significant at 99% confidence level, ** significant at 95% confidence level, * significant at 90% confidence level				

the lower the percentage of people that would "buy" the associated quantity of national parks and NPS programs.

Incremental (marginal) values for the attributes are calculated as the ratio of the attribute coefficient over the price coefficient (Holmes and Adamowicz 2003). From these marginal values we are then able to calculate per-household total values for each type of park and program output.

Using the marginal values, we estimated a per-household annual value for the average number of national park acres or sites spared from sale (the survey values ranged from 5% to 40%) of $524.[8] The estimated per-household annual value for NPS program outcomes spared from cuts is $254.[9] Both of these estimated per-household values are consistent with other national environmental surveys. Carson and Mitchell (1993) found the value of improving water quality of the nation's water bodies to swimmable levels to be $438 (adjusted for inflation) per household. A recent economic survey indicated that households would make a one-time payment of $150 to avoid an oil spill comparable to the 2010 Deepwater Horizon incident in the Gulf of Mexico (Meade 2016). Walsh et al. (1984) found Colorado households would pay on average $91.14 (in 2015 dollars) to protect 10 million acres of roadless land as wilderness.

To calculate the TEV of the entire national park system (lands, waters, and historic sites) and NPS programs we performed two calculations. First, we extended the values per unit (per acre, site, or program output) to the entire system and to the current total program outputs (Table 4). Second, we applied this value to 18% of US households (21 million).[10] The result is a total value of $62 billion for maintaining the entire national park system and an additional $30 billion for maintaining all NPS programs. Hence the estimated total economic value of the National Park Service is $92 billion.

Table 4. Per-household total economic value (TEV) for the national park system and NPS programs.

National parks	**Estimated value**
Nature-focused national parks (79,096,632 acres)	$1,113.24
History-focused national parks (226 sites)	$874.71
Water-focused national parks (4,818,275 acres)	$977.93
Per household value for all national park acres/sites	***$2,967.00***
NPS programs	
Historic sites and buildings protected each year (2,000)	$316.31
Acres transferred to communities each year (2,700)	$98.41
Natural landmarks protected each year (114)	$347.98
Schoolchildren served by NPS educational programs each year (4.1 million)	$682.62
Per household value for all NPS programs	***$1,445.00***

Comparison to other economic surveys

We can gain some perspective on this result by comparing our estimate with those of other studies. An analysis of national park visitors (using observed spending and travel behavior) by Neher et al. (2013) indicates the total *recreation* value of the national park system is $28.5 billion.[11] Subtracting $28.5 billion from our $62 billion figure for the system indicates that existence and bequest value of national parks is $33.5 billion. Put another way, slightly more than half of the TEV of the national park system is passive use value.

Our TEV values are also in line with estimates of total benefits from other nationwide contingent valuation method (CVM) surveys regarding environmental goods. Carson and Mitchell (1993: 2452) estimated a value of improving the water quality of America's rivers and lakes at $69.5 billion (in 2015 dollars). This estimate is similar in magnitude to our estimate of the value of national parks (and would include bodies of water inside national parks). Schulze et al. (1983) estimated the value of maintaining air quality at three US national parks (Grand Canyon, Mesa Verde, and Zion) at $17.8 billion in 2015 dollars. This suggests that our estimates for maintaining the entire national park system are conservative. Finally, according to a recent economic survey, the total WTP to avoid another oil spill like the 2010 Deepwater Horizon spill in the Gulf of Mexico is $17 billion (Meade 2016).

Policy implications

Budget and maintenance backlog. There are at least three budgetary implications of our results. First is the great disparity between the monetary value the American public places on units of the national park system and NPS programs and the funding that they receive. In round numbers, federal funding for the National Park Service is $3 billion annually, just one-thirtieth of the value Americans place on the asset. Americans value many government programs highly (e.g., federal highways, NASA, etc.). However we doubt that the gap between TEV and funding for these programs is as large as it is for the National Park Service.

Second, our results imply that there are substantial benefits to the American public from reducing and eventually eliminating the NPS maintenance backlog, which currently stands at $12 billion. If Congress were to increase the NPS budget from $3 billion to $4.5 billion annually (still under 5% of the total value of the National Park Service), and all the additional increment were devoted to deferred maintenance, the $12 billion backlog could be cleared in less than 10 years.

Third, given that slightly more than half of the value of the national park system and NPS programs is passive use value that does not arise from visitation, placing increasing emphasis on funding parks through user fees is inappropriate. The general public values these areas and programs regardless of whether or not they visit. Increased funding from general sources is therefore more appropriate.

Sagebrush Rebellion. Part of our survey specifically addressed the perennial push to turn over federal lands to states, counties, and private individuals (a tenet of the so-called "Sagebrush Rebellion"). Without mentioning the Sagebrush Rebellion, we noted in our survey that one of the possible outcomes of the sale of national park lands, waters, and historic sites would be that they "may be developed for houses, offices, resorts or other develop-

ments. They may also be used for timber harvesting, oil and gas development or mining." These potential uses are consistent with the goals of Sagebrush Rebellion advocates. Our survey results indicate little support for this option. Not only do 93.8% of respondents *disagree* that "the U.S. should sell off some national parks," 49% of respondents would pay at least $115 a year in increased taxes to avoid any such sale of national parks.

Conclusion

In sum, national parks, monuments, memorials, seashores, lakeshores, battlefields, and historic sites are a valuable asset to a broad cross-section of the American public, not just to visitors. Current federal funding grossly undervalues the benefits that these assets provide. Moreover, slightly more than half the total economic value consists of non-use (existence, bequest, and option) values, which are received even by taxpayers who do not visit the facilities or benefit directly from the programs. For this reason, the National Park Service should be funded in a similar way to other federal programs that provide public goods—from broad-based taxes and not just user fees.

[Ed. note: The full report can be viewed at http://webdoc.agsci.colostate.edu/DARE/PubLinks/NPSTotalEconValue.pdf .]

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Endnotes

1. Wallace Stegner, quoted by National Park Service, "Famous quotes concerning the national parks." Online at https://www.nps.gov/parkhistory/hisnps/NPSThinking/famousquotes.htm (accessed August 23, 2016).
2. See Schulze et al. 1983 and 1985, Welsh et al. 1997, Kerkvleit et al. 2002, Leggett et al. 2003, Douglas and Harpman 2004, Duffield 2006, Heberling and Templeton 2009, Neher et al. 2013, and Turner and Willmarth 2014 for examples.
3. See Cullinane Thomas et al. 2016 for the most recent national park visitor spending effects.
4. WTP is the approved measure of value used in cost-benefit analyses by many federal agencies, including the US Bureau of Reclamation (Welsh et al. 1997); US Water Resources Council (1983); US Office of Management and Budget (1992); National Oceanic and Atmospheric Administration (Arrow et al. 1993); and US Environmental Protection Agency (2010).
5. This result is consistent with the National Research Council's (2013) findings and the authors' own experience with other similar survey response rates dropping from 68% in the mid-1990s to 24% in 2015.

6. The tax increase ranged from $115 to $600 for the option with no cuts and from $15 to $100 for smaller cuts, depending on the survey version.
7. With respect to the national park system portion of the study, calculations were done in acres for larger types of parks and in the number of sites for smaller historical parks. With respect to the NPS program portion of the study, units also varied. Sites were used for historic preservation and for natural landmarks programs, acres for recreation lands programs, and the number of schoolchildren served by educational programs.
8. The 95% confidence interval is $378 to $670.
9. The 95% confidence interval is $227 to $281.
10. Since we had an 18% survey response rate we assumed a zero value for the other 82% of households.
11. This $28.5 billion is in addition to the $16.9 billion in visitor spending (Cullinane Thomas et al. 2016).

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Michelle Haefele, Department of Agricultural and Resource Economics, Colorado State University, Fort Collins, CO 80523-1172; Michelle.Haefele@colostate.edu

John Loomis, Department of Agricultural and Resource Economics, Colorado State University, Fort Collins, CO 80523-1172; John.Loomis@colostate.edu

Linda Bilmes, John F. Kennedy School of Government, Harvard University, Mailbox 60, 79 JFK Street, Cambridge, MA 02138; Linda_Bilmes@hks.harvard.edu

A National Park System for the 21st Century

Robert Manning, Rolf Diamant, Nora Mitchell, and David Harmon

In anticipation of the National Park Service centennial, we prepared A Thinking Person's Guide to America's National Parks, *a very different type of guidebook to the national parks. Our objective was to celebrate the growing diversity and values of the national parks, but at the same time to offer a sober assessment of the increasingly urgent issues facing the parks, now and in the second century of the National Park Service. As the title suggests, this book is for thinking people such as those who support the George Wright Society, people who appreciate the parks, but understand the implicit obligation to help sustain them. All royalties from the book go directly to the George Wright Society. In preparing the book, we asked more than 20 people with deep connections to the national parks—a mix of practitioners and academics—to write about the "big ideas" that bind the national parks into a national park system. These ideas include biological and cultural diversity, democracy, civil rights, conservation, indigenous voices, wilderness, sustainability, and much more. In the last chapter of the book, we focus on the future of the national parks and the work that will be needed to meet the associated challenges. In the following paper, we offer an edited, stand-alone version of this chapter in which we allow the voices of our authors to speak for themselves. For more on the book, including the complete table of contents, go to http://thinkingpersonsguide.info/.*

There is much to celebrate about America's national parks. We can be grateful that our country, as it emerged from the Civil War with "a new birth of freedom," had the foresight to profoundly reinterpret and expand our concept of democracy by embracing a new responsibility for government: the protection of special places for the benefit of all. That momentous decision in 1864, reserving Yosemite Valley and the Mariposa Grove of giant sequoias, set the stage for the establishment of Yellowstone National Park in 1872, widely recognized as the

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first time a society permanently set aside a large area of its land for the benefit of all its people, not just a privileged elite. We can also celebrate the fact that we have a professional, dedicated National Park Service, created in 1916 to manage America's growing national park system.

Our national park system is impressive by any standard: more than 400 parks covering over 84 million acres, tens of thousands of historic structures and cultural sites, and over 120 million natural objects and historic artifacts in its museum collections, drawing more than 300 million visitors a year. In addition to managing the national parks, the National Park Service administers an extensive system of national rivers and trails and a suite of programs that deliver funding and technical assistance to local communities for recreational and historic preservation projects. The work of the National Park Service's 20,000 full-time employees wouldn't be possible without the support of an extensive network of seasonal workers and volunteers, as well as a network of partners—friends groups, concessionaires, universities, generous donors. Another reason to celebrate the national park system: it generates an estimated $30 billion of annual economic activity, supporting more than 250,000 jobs.

For most of us, the national park system has a special place in our society that can't easily be quantified. As Denis Galvin writes in the Foreword, "The national parks are the American experience expressed in place," and their impact on our lives is often powerful and transformative. Our experiences in national parks help us to better understand our constantly changing world, serving as important guideposts on our journey through the 21st century. Parks can be places for us to build greater confidence and proficiency in civic engagement, sustainable practices, lifelong learning, and healthy living.

The national park system is meant to be our great public commons, places where each of us can go and experience a profound sense of belonging. Even so, we know that the democratic promise of national parks is still not available to everyone. Significant segments of our national community may not feel welcome in the parks. They may not see people who look like themselves or find any reference to their heritage, culture, or stories in the parks. And they may simply lack affordable access to many national parks. The National Park Service has promised to address these issues and the national park system is changing to meet these challenges. While progress has been considerable, a more inclusive and accessible national park system remains an elusive goal. The national parks represent an uncommon commitment to the common good, and a chance to immerse ourselves in something fundamentally important to human beings. At its best, the national park system brings out the best in us.

In this light, America's national park system is remarkable, but imperfect; much loved, but inadequately funded; diligently safeguarded, but subject to a never-ending array of environmental, economic, and political issues. Addressing them will require thoughtful and creative ideas, but ultimately the national parks need all of us, as citizens, to help set their course through the 21st century.

The future of the national park system

On our journey across the country, we've learned much about our national park system. We've gotten a sense of some of the challenges facing the parks and, perhaps most importantly, we've gained insights into innovations that build on the success of the National Park

Service's first 100 years while setting a new course for the next century. Let's step back now and consider a framework for thinking about the future of the parks—and ways you can help shape that future.

The main challenges fall into two broad categories. One is finding effective ways to respond to rapid environmental change and build ecological resiliency into the national park system. The other challenge is to adapt to a fast-changing social context. The parks have always had to cope with new conditions, but the speed and scale of change today far surpasses anything in the past.

When it comes to the environment, climate heads the list. An increasingly unstable climate fundamentally undermines our national park system. As we burn fossil fuels, emitting climate-warming greenhouse gases such as carbon dioxide, a cascade of consequences ensues, including melting glaciers and ice packs, rising sea levels, flooding in some regions and drought in others, more frequent weather extremes, and species extinctions. These changes are causing pervasive disruptions across the national park system. Climate models suggest that glaciers in Glacier National Park will disappear within the next few decades, the namesake trees in Joshua Tree National Park may ultimately be unsustainable, freshwater wetlands in Everglades National Park may be contaminated by massive saltwater intrusion, and coral reefs at Virgin Islands National Park may die from bleaching.

We are now affecting nature on a global scale, and this fundamental shift in the earth's history raises important issues of about how we should manage the national parks—even how we understand and define the term "natural." The 1916 Organic Act of the National Park Service calls for the national parks to be preserved "unimpaired" for the enjoyment of "future generations." But, as William Tweed asks in Chapter 7, "What does 'unimpaired for future generations' mean in a world where humans seem to be affecting—and thus changing—everything?"

This already-difficult question is complicated even more by the fact that park management historically has been plagued by confusion over the role of natural processes. In the early days, wolves, mountain lions, and other predators were killed in an effort to favor animals that were preferred by park managers and visitors: deer, elk, and other charismatic ungulates. But the resulting population explosion of these grazing animals caused unintended consequences, including overgrazed meadows, soil erosion, limited forest reproduction, and massive die-offs among the herds themselves. Now we see things differently. We view predators as critical elements of ecosystems and protect them in the parks.

Wildfire is another case in point. For decades, the National Park Service "protected" the iconic groves of giant sequoias in the Sierra Nevada parks by preventing forest fires. However, park scientists ultimately came to understand that, through their evolution, these trees had adapted to periodic fires. Ironically, keeping natural fires out of sequoia groves was actually threatening their existence. The National Park Service now allows for natural wildfires in many parts of the parks where they are deemed an important part of natural processes, and even uses "prescribed burning," or setting fires under carefully controlled conditions, where needed.

As David Graber points out in Chapter 6, in many national parks these kinds of "enhanced levels of active management " will be necessary "if we are to preserve as much nature as we can in the 21st century." Ben Minteer and Robert Manning note in Chapter 9 that even in designated wilderness areas, human-driven environmental change "may require management interventions … that will challenge the traditional idea of wilderness as a place free from human manipulation, change, and control." While parks will likely leave natural processes alone to the extent possible, these observations suggest there may be a need for careful intervention in physical and biological processes to actively conserve what we value most.

Cultural resources will be affected by climate change too. As just one example, historic structures near ocean coasts, such as Fort Jefferson at Dry Tortugas National Park or the Statue of Liberty in New York Harbor, may be damaged or even inundated by rising sea levels. Moving structures away from unstable shorelines is possible—it's been done with the Cape Hatteras lighthouse at Cape Hatteras National Seashore—but the price tag is huge and cultural resource managers readily admit that there will never be enough money to save everything we'd like to save. Consequently, they've begun discussing a "triage" approach to historic sites and monuments in coastal zones: deciding which ones are "must-saves," which ones should be saved if the cost is reasonable, and which ones to document and then let go.

Daunting though all this is, John Reynolds and Rolf Diamant rightly note in Chapter 21 that "climate change will no doubt be a major driver accelerating experimentation and innovation." It is more important now than ever, they argue, that national parks demonstrate leadership in sustainable practices, minimizing impacts from park activities. However, they believe that the national park system's paramount role in responding to climate change will be "stimulating meaningful conversations around the country about the stewardship of our communities, our parks and all the places we hold dear."

Adapting successfully to global environmental change will require ever-evolving scientific knowledge, but the National Park Service has had a checkered relationship with the biological and physical sciences. In the agency's early days there was little interest in science; national parks were viewed primarily as scenic resources to be managed for their appeal to tourists. It wasn't until the early 1960s, with the birth of the environmental movement, that the National Park Service came under intense scrutiny and criticism for its lack of science-based management. In response, two influential external reviews strongly recommended that management rely more heavily on science, but not until the late 1990s did the National Park Service commit itself to a stronger scientific program.

Today, as Michael Soukup reminds us in Chapter 8, national park system managers must synthesize a wide range of information about park resources into usable knowledge. This requires continuous collaboration with a wide network of universities to tap the parks' "reservoirs of knowledge." Contributions will be needed from "scholars in a wide range of academic disciplines, including natural sciences, social sciences, and cultural heritage studies, [who] in turn benefit from using national parks as their laboratories." As our knowledge expands, we are beginning to recognize "new" park resources, such as natural soundscapes and night skies, as described in Chapter 20. Similarly, we are recognizing new roles for parks, such as

serving as carbon sinks and as catalysts for healthier lifestyles. The growing consciousness and importance of these values and services demands that we study, monitor, and managed them more closely.

The second constellation of issues facing America's national parks revolves around their rapidly changing social context. As the American population continues to diversify, the national parks must change and grow to fully reflect this diversity. This will require new parks that focus on the heritage and culture of a wider variety of communities, as well as reinterpretation of existing parks in order to tell more inclusive stories. Considerable progress is being made: the widely lauded interpretation of the role of the Buffalo Soldiers at Yosemite National Park is a high-profile success, as noted in Chapter 5. "Native American voices are now featured as an essential part of the story at Little Bighorn, and not just as accessories to the drama of Custer's Last Stand," Edward Linenthal points out in Chapter 11. In Chapter 10, Melia Lane-Kamahele discusses a Haleakalā National Park brochure written by the local community in the Hawaiian language with English translation "to share and express the information that they want park visitors to know and appreciate about their special, sacred place."

In order to more fully reflect a changing America in which a greater percentage of the population lives in cities, the national park system will have to enhance its already substantial urban presence, expanding to more cities through new parks and associated programs. It will also need to concern itself with the many young people now disaffected from nature. This will require new programs designed to connect younger generations with the natural environment, using the national parks in school curricula, and extending the presence of the national parks and the National Park Service on the Internet and social media. These and other approaches are imperative if the national parks are to remain relevant to future generations and be able to actively address pressing environmental and social issues.

Many of our contributing authors agree that one of the core assets of the national park system is the great diversity and complexity it already has. The value of having a broad spectrum of parks was recognized early on when Frederick Law Olmsted argued that social benefits could be derived from places as different as New York City's Central Park and Yosemite Valley. In Chapter 2, David Harmon discusses sense of place, explaining how a wide range of places can become a part of how we understand the world. Similarly, layered stories, multiple values, and different perspectives, such as those associated with cultural landscapes, invite us to rethink our choices for the present and the future. Such "storied landscapes" play an increasingly important role in the national park system, as described by Nora Mitchell in Chapter 14. In Chapter 13, Joseph Corn reminds us that you can experience America's rich history of industrial and technological innovation in many national parks across the country. The variety of the national park system is also emphasized by John Maounis in Chapter 15 in his discussion of the millions of items held in its museum collections, which collectively represent the wealth of stories that make up our nation's history.

These examples all point toward a fundamental but often overlooked fact: the national park system is one of the few national institutions with the potential to bring citizens together

and encourage them to have sustained, informed, and civil conversations about a wide range of issues of lasting importance. At first this might seem a paradox, because over the decades parks have been added to the roster piecemeal and with no overarching plan. Yet precisely because the process is open-ended and nonpartisan, what has resulted is, in fact, a system—one uniquely suited to American democracy. But the national parks maintain this foundational democratic character only to the extent that people use and benefit from them. If our national park system is to remain relevant and meaningful, the National Park Service must, according to Rebecca Stanfield McCown and Vanessa Torres in Chapter 22, "continually adapt to be part of the lives of new audiences and engage the next generation in stewardship of national parks and the histories they tell."

When it comes to integrating previously excluded voices and grappling with an increasing array of complex subjects, the National Park Service is making steady progress. In Chapter 12, for example, Dwight Pitcaithley and Rolf Diamant are optimistic about the capacity of the National Park Service "to examine a broad range of civil rights movements" and, they hope, "grow more adept at, and comfortable with, increasingly sophisticated, contextual ways of interpreting the painful histories that have made those movements so necessary." Edward Linenthal further points out in Chapter 11 that "we may not have every question answered, but civic engagement encourages critical thinking. At its best, national park interpretation does not tell us what to think, rather it serves as a catalyst for further inquiry and reflection." And, as Thomas Hudspeth, Megan Camp and Jennifer Cirilo note in Chapter 5, national parks across the country "are leveraging their educational impact through partnerships with schools, community organizations, universities, and a variety of other educational organizations." Thanks to all this good work, we can think of the national park system as America's greatest classroom.

The bedrock for these achievements is a growing network of effective park partners. Partnerships are transforming the national park system, opening the system up to new users, enhancing civic and environmental literacy, and creating a new generation of committed stewards. Historically, the national park system benefited from many volunteers, supporting associations, and philanthropists. However, as Brenda Barrett and Nora Mitchell note in Chapter 18, beginning in the 1990s there has been "a renaissance of national park partnerships with nonprofit organizations such as friends groups, park conservancies, and cooperating associations with increasing sophistication in programming, constituency building, and fund-raising." Most national parks enjoy the support of cooperating associations that sell books and other merchandise in the parks and invest profits in park research and management. Friends groups associated with individual parks are instrumental in advancing programs and projects. Many parks offer opportunities for volunteers to conduct interpretive programs or work on other park projects. Volunteering can be personally rewarding and offers powerful experiences and connections to national parks.

Partnerships on a much broader scale are also transforming the work of the parks. To tackle unprecedented environmental and social change, the National Park Service is "scaling up"—cooperating with a network of partners on projects that link national parks with large-

scale conservation and historic preservation efforts outside their boundaries. Most national parks are too small to effectively preserve representative elements of biodiversity, and park boundaries have often been drawn on the basis of political rather than ecological considerations. As David Graber observes in Chapter 6, "National parks do not function in isolation when it comes to protecting nature" and we need to manage them within the context of the larger landscape. "Indeed," William Tweed writes in Chapter 7, "the most important realization of our time may be the profound interconnectedness of all landscapes."

Now that we know there are no completely secure islands in the natural world, as issues such as global climate change have made startlingly clear, the national parks have a new role to play. They can serve as vital protected cores of larger ecosystems, and surrounding lands can serve as buffers to these core areas as well as corridors for wide-ranging wildlife. This idea has created excitement in the conservation community as seen in proposals such as the Crown of the Continent, Yellowstone to Yukon (Y2Y), Greater Grand Canyon, and Path of the Pronghorns. As Brent Mitchell and Jessica Brown explain in Chapter 19, scaling up can often mean cooperation on an international level.

The principle of scaling up works for cultural sites and historic preservation, too. Brenda Barrett and Nora Mitchell note in Chapter 18 that many national parks have begun to envision conservation of cultural heritage "as a collaborative endeavor at a large landscape scale" with national parks forging new alliances to tell stories and interpret traditional uses that extend across boundaries. National heritage areas, for example, conserve cultural and natural heritage in large lived-in regional landscapes. At Great Basin National Park, the surrounding Great Basin National Heritage Area connects the park with two states, surrounding tribal lands, national forests, and numerous small communities. Conservation at this scale depends on collaboration and collectively shaping a long-term vision.

Another form of scaling up involves urban national parks. As detailed in Chapter 16, Rolf Diamant and Michael Creasey see an opportunity to achieve "a more integrated vision of urban national parks as part of a seamless network of metropolitan parks, programs and community partnerships." They suggest that the National Park Service adopt more outwardly oriented management approaches "that stress collaboration and civic engagement." As Robert McIntosh describes in Chapter 17, these networking efforts can receive a critical boost through better coordination and alignment with National Park Service programs such as Rivers, Trails, and Conservation Assistance, which enhances quality of life in local communities around the country.

All this ingenuity, innovation, and commitment lays a strong foundation for a hopeful future, but behind it all the National Park Service continues to wrestle with the inherent tension between making the parks available for recreational use and preserving them in an "unimpaired" state, as called for in the agency's founding law. With visits to the national park system climbing into the hundreds of millions annually, this tension has become more urgent. The National Park Service has responded with efforts to "harden" resources where appropriate (for example, constructing boardwalks in meadows and wetlands as well as tent platforms in sensitive areas), limit use when and where necessary (restricting inappropriate activities, for instance, or requiring permits in order to limit use of selected areas), and educate visitors

about reducing impacts (for example, asking them to refrain from feeding wildlife, stay on maintained trails).

Of course, this issue can be contentious because recreation remains central to the national parks. From the very beginning, the National Park Service has encouraged recreational visits to the national parks to help us appreciate them and to build a strong constituency. But at the same time, the agency struggles with use of the national parks. As Robert Manning asks in Chapter 4, how much and what types of recreation can be accommodated without unacceptable impacts to resources and the quality of the visitor experience? Clearly, the national parks should provide a diversity of appropriate recreation choices. For example, small portions of many parks should include development of recreation opportunities for large numbers of visitors: roads for access, trails for hiking and biking, scenic viewpoints, campgrounds, visitor centers, public transit, lodging and other commercial services where needed. Designing and managing these recreational features to maximize public appreciation while limiting associated environmental and experiential impacts is imperative. Other portions of the parks—the vast majority of the larger, more remote ones—should remain largely free from development with the exception of trails and campsites. The National Park Service must address these tensions between enjoyment and preservation through sound science, thoughtful management, and public involvement.

Mobilizing broad public support is crucial because the political process directly affects the parks. Here, Congress plays a vital role. For example, only Congress can establish national parks (though the president holds executive authority to create national monuments). As Rolf Diamant outlines in Chapter 3, Congress has adopted a suite of legislation that has supported, grown, and protected the national park system over the years. Examples include the Yellowstone National Park Act of 1872, the Antiquities Act of 1906, the Organic Act of 1916 (creating the National Park Service), the Wilderness Act of 1964, the Wild and Scenic Rivers Act of 1968, and the Alaska National Interest Lands Conservation Act of 1980. Moreover, many high-profile national park issues play out at the national level: the appropriateness of motorized rafts on the Colorado River in Grand Canyon National Park, snowmobiling in and the reintroduction of wolves to Yellowstone National Park, and the intrusive sounds of "flight-seeing" aircraft over an increasing number of national parks. People who care about the parks need to make their opinions known to their elected representatives. Still, given the inherent limitations of public funding (the National Park Service receives less than one tenth of one percent of the national budget), the National Park Service must be creative in its efforts, continue to expand its network of friends and partners, and leverage its financial base as much as possible.

A call to stewardship

The noted marine biologist and environmentalist Rachel Carson won fame writing books celebrating her love of nature. But her horror at the growing damage to the environment by pesticides called her to write a very different kind of book, *Silent Spring* (1962), in which she documented the effects of these chemicals on birds and other vital but vulnerable elements of the environment. While this best-selling book helped launch the environmental movement,

it also led to stinging personal attacks by the chemical industry and others. Reflecting on her decision to write *Silent Spring*—a somber and troubling assessment of an increasingly urgent environmental issue—Carson wrote that "no carefree love of the planet is now possible." We who love the environment are obligated to protect it, and the national parks are an important means by which we can answer this call.

Personal action in the cause of the national parks is a strong and revered American tradition. Adding his powerful voice to this idea, President Theodore Roosevelt wrote, "We have fallen heirs to the most glorious heritage a people ever received, and each one of us must do his part if we wish to show that the nation is worthy of its good fortune." Roosevelt was an extraordinary man, but many who have distinguished themselves in advancing the national park movement came from more ordinary backgrounds. John Muir was a humble wanderer who taught himself about the natural wonders of what would become Yosemite National Park and used the insights he developed to advance the national park idea. Enos Mills, a local naturalist and guide, worked tirelessly for the establishment of Rocky Mountain National Park. Marjory Stoneman Douglas was a newspaper columnist before she wrote her influential book *The Everglades: River of Grass* (1947), which spurred the movement to designate Everglades National Park. As you can see, many parks owe their existence to everyday champions like Muir, Mills, and Douglas, and today ordinary people around the country who care about the parks are following in their footsteps. Without the support of everyday people who visit and love the parks, the national park system will become vulnerable and could even one day disappear.

So, here we are at the end of our journey together, having traveled across the landscape and, in our minds, across the whole reach of America's remarkable system of national parks. We've visited many of the country's most distinctive places and touched on some of the enduring values that they can bring to our lives. Looking back on it, what does it all mean to you as a thinking person who loves the parks and wants to see them flourish for all time?

You get to decide that for yourself, of course. The parks have many meanings, not just one, and each of us ultimately chooses exactly which lessons, what kind of inspiration, we take from the national parks. But we do think there is one message that applies to us all, coming through loud and clear from everything we've learned: No matter how daunting the challenges facing the parks may appear, you can make a positive difference in their future. It is within your power to do good for the national parks, and every bit of good you do resounds across them more deeply and widely than you can ever know. When you do something like volunteer at a visitor center, monitor sea turtle nests, rebuild a storm-damaged trail, or help organize historical archives—or even if you just write letters to your representatives encouraging them to support the parks, make a donation to park friends group, or make yourself an informed voter on conservation issues—you are quite literally saving the national parks for future generations.

We hope this book encourages you to continue to explore the national parks and engage with new places, new people, and new ideas. The more you come to know the national park system, its many places and stories, the better positioned you'll be, in the words of contrib-

uting author Dwight Pitcaithley, to make use of "the very democratic values upon which this country was built, environmental lessons with the potential to make our communities more livable, and civic messages that will move us toward 'that more perfect Union' imagined over two hundred years ago."

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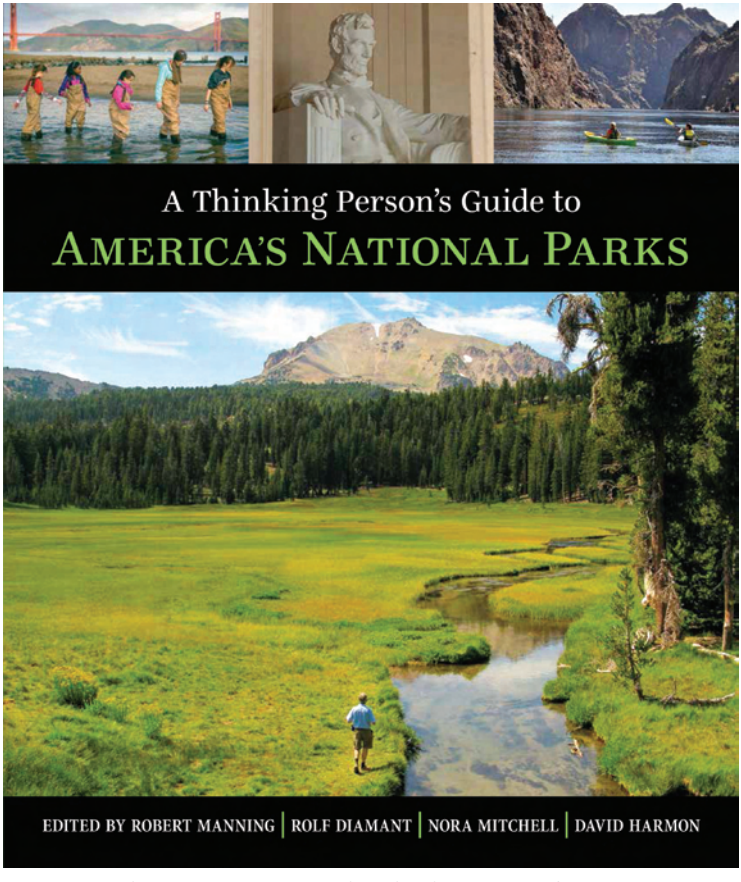

A Thinking Person's Guide to America's National Parks takes you on a fascinating journey of discovery through the ideas that unite the hundreds of national parks into a single system. In twenty-three essays, richly illustrated with more than 350 color photographs, authors with deep personal and professional connections to the parks examine them from a wide range of thought-provoking perspectives. Even better, your purchase of the book benefits the George Wright Society!

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