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Increasing Access to Natural Areas: Connecting Physical and Social Dimensions

Bradford S. Gentry

Jazmine da Costa

Katie Christiansen Holsinger

W. Colby Tucker

Matthew R. Viens

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Increasing Access to Natural Areas: Connecting Physical and Social Dimensions

Report of the 2015 Berkley Workshop

Held at the Asticou Inn, Northeast Harbor, Maine
July 2015

Bradford S. Gentry, Jazmine da Costa, Katie Christiansen Holsinger, W. Colby Tucker,
Matthew R. Viens



Yale Program on Strategies for the Future of Conservationf **Bradford S. Gentry, Director**

The purpose of the Yale Program on Strategies for the Future of Conservation is:

- To support the efforts of the Maine Coast Heritage Trust, the Land Trust Alliance and similar private organizations to develop and apply new, innovative strategies for land conservation by linking the convening, research, and teaching activities at the Yale School of Forestry & Environmental Studies ever more closely to the needs of the land conservation community.

Established by a gift from Forrest Berkley '76 and Marcie Tyre, the Program has two parts:

- Sponsoring student internships and research projects (through the Berkley Conservation Scholars program), to bring the passion, experience and creativity of Yale graduate students to bear on these issues; and
- Convening workshops and other conversations across sectors and perspectives in the search for new approaches to expanding the resources applied to land conservation in the United States.

Berkley Conservation Scholars are students of high potential who receive funding for their research and professional experiences at the cutting edge of land conservation. Support is available during both the school year and the summer, creating a virtual "R&D Department" for the U.S. land conservation community. The Berkley Conservation Scholars play a critical role in helping to bring together practitioners and academics in the search for new conservation tools.

The Yale Program on Strategies for the Future of Conservation is a major extension of the Yale School of Forestry & Environmental Studies' continuing efforts to enhance the effectiveness of land conservation. Working with an advisory group of land conservation leaders, the program hosts workshops, training programs and other activities around the themes of engaging new communities in conservation, expanding the conservation toolkit, and ensuring the permanence of conservation gains.

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Table of Contents

Introduction and Participants <i>Bradford S. Gentry</i>	5
Summary of the Major Themes and Areas for Action <i>Bradford S. Gentry</i>	7
Section 1: The Importance of Access to Natural Areas <i>Matthew R. Viens</i>	31
Section 2: Who Uses Natural Areas – Perspectives from Researchers <i>Katie Christiansen Holsinger</i>	55
Section 3: Who Uses Natural Areas – Perspectives from User Groups <i>Katie Christiansen Holsinger</i>	69
Section 4: How Can Physical Design Create Access and Attract More Users? <i>Jazmine da Costa</i>	79
Section 5: Using Social Media and Technology to Increase Access to Natural Areas <i>W. Colby Tucker</i>	105
Section 6: Actions Underway to Address Issues of Access <i>Matthew R. Viens</i>	123
Biosketches of the Authors	149

Introduction and Participants

Bradford S. Gentry

Yale School of Forestry & Environmental Studies

Permanent protection of natural areas requires that people care enough about the land to work to conserve it for generations to come. As many mainstream conservation organizations watch their traditional supporters age, their attention is increasingly focused on how best to attract new, younger, more diverse groups to finding value in natural areas – which requires that those individuals have access and choose to engage with such lands.

The purpose of the 2015 Berkley Workshop was to explore ways to increase access to conserved lands for a broader range of publics – both through physical design and facilities, as well as through social networks and programming. It did so by exploring the following questions:

- Who uses what natural areas and why?
 - Researcher perspectives (academic, parks, others)
 - User group perspectives (veterans, children/families, patients, ethnic groups, others)
- How can design attract more users?
 - Physical structures (planning and construction)
 - Social programming/connections (digital technologies/social networks)
- How are land trusts engaging around these topics in their communities?

Workshop participants (see box below) reflected a diverse set of perspectives, information and experiences on these questions.

This is the tenth year of the Berkley Workshops. The workshops are designed to help the members of The Land Trust Alliance address pressing issues facing the future of private land conservation, by connecting them to new, potential partners from organizations that start from a different place, but share a commitment to the land. The proceedings from prior year's workshops can be downloaded for free from http://environment.research.yale.edu/publication-series/land_use_and_environmental_planning.

Box 1: List of Workshop Participants as of June 13, 2015

- *Jerry Adelman, President, Openlands, IL*
- *Forrest Berkley, Board Member, Maine Coast Heritage Trust, ME*
- *Steve Burrington, Executive Director, Groundwork USA, NY*
- *Jake Caldwell, Program Officer, LOR Foundation, WY*
- *Gordon Clark, Director, Program Development, Peninsula Open Space Trust, CA*
- *Deborah Cohen, Senior Natural Scientist, Rand Corporation, CA*
- *Jazmine da Costa, Yale Masters Degree Student/Background Paper Co-Author, CT*
- *Kim Elliman, President, Open Space Institute, NY*
- *Jay Espy, President, Elmina B. Sewall Foundation, ME*
- *Myron Floyd, Department Head and Professor, NC State University, NC*
- *Cassandra Johnson Gaither, Research Social Scientist, USDA Forest Service, GA*
- *Robert Garcia, Founding Director and Counsel, The City Project, CA*
- *Brad Gentry, Associate Dean, Yale School of Forestry & Environmental Studies, CT*
- *Walker Holmes, Program Manager, Trust for Public Land, CT*
- *Jeannette Ickovics, Professor, Yale School of Public Health*
- *John Judge, President, Appalachian Mountain Club, MA*
- *Rue Mapp, Founder, Outdoor Afro, CA*
- *Xavier Morales, Executive Director, Latino Coalition for a Healthy California, CA*
- *Catherine Nagel, Executive Director, City Parks Alliance, DC*
- *Marta de la Garza Newkirk, Rivers, Trails and Conservation Assistance Program, National Park Service, TX*
- *Mary Scoonover, Executive Vice President, Resources Legacy Fund, CA*
- *Lisa Sockabasin, Director, Minority Health, Maine Health Department, ME*
- *Marc Smiley, Principal, Solid Ground Consulting, OR (facilitator)*
- *Peter Stein, Managing Partner, The Lyme Timber Company, NH*
- *Colby Tucker, Yale Masters Degree Graduate/Background Paper Co-Author, CT*
- *Elizabeth Ward, Communications Director, The Land Trust Alliance, DC*
- *Rand Wentworth, President, The Land Trust Alliance, DC*

Summary of the Major Themes and Areas for Action

Bradford S. Gentry

Yale School of Forestry & Environmental Studies

The 2015 Berkley Workshop was an intense and productive session – yielding many moments when new ways of looking at the world were heard and new possibilities for collaboration were explored. It also engaged both the head and the heart – bringing data together with ethics in powerful ways.

The purpose of this summary is to describe some of the major themes from the discussions, as well as the areas for future action and research identified by the participants. The major themes included the following:

- Participants agreed that ensuring that everyone has effective access to natural areas was critically important for a ***remarkably wide range of reasons*** – laying the foundation for many new connections and collaborations.
- There is a ***groundswell of leadership*** at the local, national and global levels for efforts to increase access to natural areas – creating real opportunities to make progress now.
- Actually increasing access to nature for all ***raises many, really complicated issues*** to work through across scales and communities of interest – meaning that progress will require sustained efforts over time.
- Organizational inertia and, in some instances, active resistance will need to be overcome in pursuit of these goals – highlighting the importance of ***finding points of leverage*** for moving forward.
- Participants came away with many ***innovative ideas on how best to capture these opportunities*** to increase access to natural areas – including both areas for immediate action, as well as longer-term research.

Why is access to natural areas so important?

As described in Section 1 of these proceedings below, there is a growing list of reasons why different individuals and communities are working to increase access to natural areas.

Many of these are based on the *growing scientific evidence* of the beneficial services provided by nature, such as:

- Improved health
- Enhanced children's development
- More resilient urban infrastructure

These are important and powerful reasons to pursue increasing access to natural areas and are reflected throughout this summary.

“Underpinning all of this work is ethics.”

– Jay Espy, *Elmina B. Sewall Foundation*

At the same time, participants also challenged each other to think about the *ethical and legal reasons* for working to ensure that everyone has effective access to natural areas. On the ethical, moral and spiritual sides, much attention was focused on Pope Francis' recent Encyclical on “Care for Our Common Home.” In it, he calls for us to recognize that care for the environment and for the poor are inextricably linked. While he notes that such a call builds on many others' works and beliefs, its release in 2015 creates a new moment for translating its message into action – both around the world and across millions of different locations.

“Access to safe and healthy places to play is a civil right.”

– Robert Garcia, *The City Project*

On the legal side, The City Project has been working with school districts, cities, states and others to help them meet the requirements of U.S. civil rights legislation by ensuring that children and their families have effective access to natural areas. A more thorough discussion of both the Encyclical and the requirements of the Civil Rights laws, as well as their implications for access to natural areas, are provided in Appendix 1 to this summary below.

This wide array of reasons for working to ensure access to natural areas blends head and heart in powerful ways – as witnessed in the growing number of efforts to do so across scales.

Why is this a real opportunity now?

Over the course of the workshop, the sense that this moment in time offers many opportunities to make real progress continued to grow. This took many forms:

The first were the *leadership examples* that were shared across the local, national and global scales:

- At the local level:
 - Outdoor Afro's “healing walks” in nature as one part of the response to the recent shootings of African Americans;

- The Latino Coalition for a Healthy California’s view of parks as “Wellness Centers” offering fresh air and places to exercise or relax;
- The “derelict land partnerships” in Chicago, bringing together open space, affordable housing and community economic development groups to revitalize neighborhoods;
- The Appalachian Mountain Club’s “gear exchanges” as part of their effort to attract urban youth to outdoor experiences;
- The Trust for Public Land’s work with lower income urban communities to expand school yard parks;
- The Peninsula Open Space Trust’s use of social media to attract millennials to its properties, such as through the monthly hiking series it offers;
- The Land Trust Alliance’s efforts to help its members become valued partners in “Community Conservation” work;
- The City Park Alliance’s coordination of the “Mayors for Parks” campaign which advocates for the reauthorization of the Land and Water Conservation Fund to preserve funding for urban parks;
- “Every Kid in a Park” initiative implemented by federal agencies at the local level;
- And many more.
- At the U.S. national level:
 - President Obama’s creation of the first urban national monument in the San Gabriel Mountains just outside of Los Angeles;
 - The reallocation of federal funding to expand the natural features of and enhance access to the LA River corridor as part of its revitalization;
 - The increased efforts of the National Park Service to attracting a wider range of younger users to its parks and other outdoor spaces (see Appendix 2 to this Summary below);
 - The U.S. Supreme Court’s recent decision that the protections of the Civil Rights Act are triggered by discriminatory impact (in addition to intentional discrimination) – such as differences in access to safe places for kids to play (see Summary Appendix 1 below);
 - And many more.
- At the global level:
 - Not only the Pope’s Encyclical (see above) and its implications for action at the local level, but also
 - The growing efforts around the world to expand natural areas in cities as part of the response to a changing climate – such as the “Resilient Cities” initiative being sponsored by the Rockefeller Foundation;
 - And many more.

“There is a nascent ‘healthy communities’ movement emerging around increasing play/activity, healthy eating and access to natural areas.”

– Steve Burrington, *Groundwork USA*

The second was the *growing amount of scientific data* that was shared about the benefits of access to nature and the wide range of ways that people spend time in natural areas (see Sections 1 and 2 below). Having more such data helps make the case with land or resource managers whose decision-making calls for such proof. Understanding how and why different communities are or are not drawn to natural areas helps with the design of engagement efforts and, eventually, new parks. Thinking about the role of such data also raises complex questions about the metrics that efforts to increase access to natural areas should use to measure their performance.

The third was the fact that *traditional funders of land conservation efforts are increasingly asking about who benefits* from conservation efforts and how best to ensure that conserved land is protected far into the future. This reflects a shift in donor thinking from just acquiring land, to not only ensuring that there are people who will steward it over time, but also that wider constituencies are actively engaged in efforts to increase access to natural areas. Given the catalytic effect of charitable dollars, this is an important development in the traditional land conservation community.

The final form was the *way the participants engaged with each other* about the opportunities offered now – the clear expressions of their differing experiences, histories and values; the honest give and take around sensitive topics; as well as the energy everyone took from the new perspectives and possible ways forward they exchanged.

What are some of the complicated topics to continue to work through?

Making progress on access issues at scale raises a host of complicated issues – ones that will ultimately need to be worked through over time community by community. Among those discussed during the workshop were the following:

Community engagement with parks is usually more important than their physical design.

Research on the use of existing parks shows that while some are quite widely used, most are much less used than they could be (See Section 2 below).

“Many parks are more empty than used.”

– Deborah Cohen, *Rand Corporation*

These findings suggest that physical design or access are not sufficient to increase park usage – parks must also be perceived as meeting the needs of users in order to draw visitors.

Ensuring that parks are relevant to peoples' lives is a key need. This starts with park planners and event coordinators listening to the people and communities they are hoping to attract. Depending on the findings from that listening, one can then seek to match community needs to the range of reasons why access to natural areas can help meet those needs – rather than being a luxury item for later. For example, viewing and designing parks as “Wellness Centers” may be one way to meet the needs of some communities. Social media can also help connect entirely new networks of folks to parks much more rapidly and efficiently than ever before.

“You have to meet people where they are.”

– Rue Mapp, *Outdoor Afro*

Many different types of natural areas are needed to meet the needs of different communities.

Matching community needs to natural areas across a wide variety of communities also means that a wide variety of accessible natural areas are going to be required – from urban to rural, as well as from more to less “natural”/“wild.” As communities evolve over time, so too will the natural areas to which they connect – both in terms of the social programming/uses on offer, as well as the responses to the changes to their physical components that will occur over time.

“Urban parks are a place for us to figure out how we relate to each other.”

– Catherine Nagel, *City Parks Alliance*

This also suggests that a range of opportunities to connect with nature should be offered – from an initial threshold experience, to many other ways to build relationships with and commitments to particular natural areas over time.

Conflicts across uses may be inevitable – and efforts should be made to involve competing user groups directly in designing ways to reduce those conflicts. Finding ways to bridge such differences may also help strengthen local communities.

“There are two conversations here: one about the need for new parks in some areas; the other about the need to activate park use across all locations.”

– Jazmine da Costa, *Yale*

Clearly there are areas that need new parks – particularly in lower income urban areas.

As one strives to meet people where they are, this often means connecting them with natural areas near where they live – which, in many lower income urban neighborhoods, is difficult

to do given the absence of green spaces. With more than 80% of the nation's population in urban settings, finding ways to create new, accessible and attractive natural areas in these neighborhoods is essential.

“Not only do people want to be at the table, they want to cook and enjoy the meal as well.”

– Myron Floyd, NC State,
referencing Carolyn Finney's book Black Faces, White Places

Doing so will require engaging community members directly in the planning process. For land trusts, such community outreach is often outside of their traditional skills in “doing land deals.” New collaborations or hires may well be required. More thought will need to be given to ways to connect with community members, such as through collaborations with existing organizations to host meetings, the timing of meetings, as well as the provision of child care, food or payment for participants' time.

Some locations are combining new, local parks into a wider vision for regional greenways/trails – such as Atlanta (Atlanta Beltline), Birmingham (Red Rocks Trail), Louisville (21st Century Parks), and Seattle (Mountains to Sound Greenway). Such efforts create opportunities for individuals and communities to “have their local section” of a much larger effort/greenspace system.

Ensuring that all neighborhoods have access to natural areas may also be one way to help reduce the displacement problem that often accompanies the creation of a new park in a low-income area – as the park takes shape, the attractiveness of the neighborhood increases, driving up housing prices and driving out traditional residents. In addition to more specific protections for tenants and traditional home owners, having a goal of nearby parks for all neighborhoods is an attractive way to try and address this issue – particularly given the other benefits provided by natural areas.

“How do we turn infrequent users into frequent users?”

– Mary Scoonover, *Resources Legacy Fund*

At the same time, all parks need more attention to maintenance, programming and marketing.

Attractive parks are those that welcome people in to do the things they look forward to doing with family, friends and others like them. To do so, the park facilities need to function, there need to be things for people to do and potential users need to know about them.

The experience of the workshop participants, however, suggests that:

- Park maintenance is almost always underfunded;

- Programming in parks follows behind maintenance in terms of priority for funding; and
- Marketing what parks offer is a distant third place – if any marketing is done at all...

“People need to see themselves in the ads for parks.”

– *Myron Floyd, NC State*

Fortunately, more groups are looking for places to host programs in natural areas (such as the Boys and Girls Clubs or the Appalachian Mountain Club) and social media/networks are making it much easier to reach out to many potential users (witness the work of Outdoor Afro or the Peninsula Open Space Trust). In one park, adding Frisbee Golf and promoting it through social media was found to be the most cost-effective way to increase use and improve security.

Capturing these opportunities for individual parks, however, will require even more concerted efforts in the future – whether that be improving transportation connections to the park or dedicating staff/volunteer time to reaching out to and then hosting participants in park programs.

“Events are the biggest draws for bringing people to parks, but often run up against protecting habitats.”

– *Mary Scoonover, Resources Legacy Fund*

Will require new collaborations/constituencies – across many different scales.

For many traditional land conservation organizations, working through these issues will require new ways of thinking and working. Instead of taking the lead on identifying “important” lands primarily based on habitat quality or donor interest, they will have to work as one party in a joint effort by a wider group of folks to understand and choose sites or offer programs meeting community needs.

In some cases, conservation organizations will be able to hire individuals to help them make these connections. In most instances, however, they will also need to reach out to and find overlapping interests with organizations bringing other skill sets/resources – thereby making more progress together than separately. For example, the growing number of “park prescriptions” programs offer ways for health and conservation organizations to work together (See the proceedings of the 2014 Berkley Workshop).

“Land Trusts should aspire to be cherished local institutions.”

– *Marc Smiley, Solid Ground Consulting*

The fact that land trusts are rooted in their communities for the long term may well be their greatest asset in these efforts. If their focus widens to include a broader definition of “community needs,” they establish a reputation for getting things done to help meet those needs and they do so consistently over time, they should be able to play a particularly valuable role in the communities they serve.

Since each location is different, however, this also raises the question of how best to “scale-up” efforts to increase access to nature across many communities? Some of this may happen through national or state policy or funding. Progress may also happen through expanded sharing of local experiences as a “menu” of approaches that might be considered or adapted to fit different locales.

“Trust and respect take a huge amount of time to gain, and a moment to lose.”

– Jeannette Ickovics, Yale

Will also require funding for building relationships/trust – in addition to acquisition and stewardship of land.

The budgets of most conservation organizations are built around acquiring and stewarding/protecting land. Resources for efforts to build relationships, earn trust, establish operating collaborations and assemble constituencies will require new types of funding.

“Conservation organizations can provide the constancy, stability and accountability that can help people believe they can make a park happen.”

– Walker Holmes, Trust for Public Land

Some of this transition in the focus of conservation funding is already underway: More foundations are requiring conservation organizations to articulate how their work benefits a wider array of local communities. For example, the Elmina B. Sewall Foundation in Maine is now requiring their grant applicants to show how their proposals enhance both “healthy places” and “healthy people.” In addition, ballot measures to fund land conservation in places such as California essentially must include “equity plans” for ensuring that the money is spent in the locations most in need of natural areas.

“The lingering legacy of segregation – and its impacts on feelings of safety in or attraction to natural areas – has to be acknowledged and addressed in efforts to expand access and use.”

– Myron Floyd, NC State

And that will require a rethinking of the metrics for success to be used.

Such a shift in the conditions for funding will also drive a shift in the way performance is measured – the contours of which are still in the early stages of discussion. As the land trust community moves from just measuring “bucks and acres” – i.e. how much money was raised and used to acquire how much land – to measuring relationships, collaborations, engagement and usage, entirely new metrics will need to be developed.

As part of the metrics discussion, care will need to be taken to find the right balance between detailed quantitative measures and more qualitative measures of the attractiveness of parks and the level of community engagement in them.

“Success can be measured in the smiles on children’s faces when they play in parks and school playgrounds that did not exist before.”

Robert Garcia, The City Project

What points of leverage can be used to help overcome inertia/opposition?

Not only are there these and other complicated issues to work through, institutional inertia and, in some cases, active opposition to change will also need to be overcome. As one participant noted, “if it ain’t broke, don’t fix it” is a sentiment that is heard more often than one might hope from traditional park managers and some conservation organizations.

This suggests that attention also needs to be paid to identifying threats – threats to goals land conservation people value that can only be addressed by increasing community engagement in efforts to expand access to and use of natural areas. Such threats/risks can then be used to help frame arguments about why more attention should be paid to increasing access to natural areas. In some ways, this mirrors the success of the private land conservation community in using the threat of development to drive efforts to meet traditional “bucks and acres” metrics.

Among the possible points of leverage that came out of the discussions were the following:

Healthy communities need access to natural areas – if inequalities in access to safe places to play, attractive places to exercise, places to grow or acquire healthy food, job skills and related opportunities continue to widen, our communities will not thrive. Natural areas are an important part of efforts to improve the health of our communities.

“While we spent over \$9,000 per person on health care in 2013, in our major cities we spent an average of less than \$75 per person on parks.”

– Deborah Cohen, The Rand Corporation

Resilient cities need natural areas – as more and more cities face increasing temperatures, more severe flooding and other changes in weather patterns, natural areas are increasingly seen as a cost-effective part of the municipal infrastructure for responding to these threats. The cooling, flood management and water quality improvement services provided by such “green” or “natural” infrastructure are critical parts of resilient cities.

Civil rights law requires equal access to natural areas – unequal allocations of safe places to play or exercise, such as in natural areas, has a discriminatory impact on particular communities/ethnic groups, thereby violating the Civil Rights Act. Agencies responsible for providing access to such places are required to remedy those impacts.

“Many civil rights groups don’t work on parks because they believe they face more pressing issues – parks are seen as a luxury.”

– Robert Garcia, *The City Project*

Funders are requiring increased access to natural areas – whether it be foundation giving or ballot measures, attention has to be paid to who is benefitting from the proposed use of the funds and those benefits have to be more widely shared. Unless conservation organizations can make those showings, funding will go elsewhere.

Competing organizations will be started – if traditional conservation organizations do not become valued local institutions combining the interests of land and people, new organizations will be formed to bring the benefits of increased access to natural areas to more people. Unless conservation organizations make this transition, communities will look to other organizations to meet their needs.

Conserved land will be lost – if no one cares about the land that has been conserved, it will not be protected in perpetuity. Only by ensuring that the land it has conserved provides value to the surrounding communities over time, will a land trust be able to meet its goal of perpetual conservation.

“What is the new ‘noble framing’ for the work of land conservation organizations?”

– Walker Holmes, *TPL*

What are some of the actions participants will be taking to increase access to natural areas?

At the end of the workshop, participants were asked to talk about actions they were planning to take when they returned to their places of work, as well as areas that they thought warranted further research. Among the areas for action were the following:

- ***Understand what resources land conservation organizations can bring to efforts to increase access to natural areas*** and work with organizations in need of those resources. Improve

the conservation community's ability to listen and tell stories about the ways natural areas can help meet community needs.

“Promoting parks requires a listener’s mentality.”

– Marc Smiley, *Solid Ground Consulting*

-
- ***Stay in touch with other attendees***, as well as meet people in each other’s networks, to keep the discussions going across sectors and explore an even wider set of collaborations, including: with local universities to bring students and faculty into efforts to increase access to natural areas; across the traditional divide between “conservation” and “city parks” organizations; regionally about recruiting staff and board members bringing diverse perspectives.
 - ***Bring the ethical and civil rights aspects of access issues more directly into conservation work*** – read the entire Encyclical by the Pope; understand better the Civil Rights Act requirements/opportunities; reflect their principles in efforts to fund land conservation, including increasing access to natural areas; connect more directly with environmental and social justice groups as part of efforts to increase access to natural areas.
 - ***Reach out to a wider array of organizations who might help with access issues***, such as: water utilities about easements/trails along water pipeline/utility corridors; the Outdoor Industry Association as it seeks to expand its customer base of folks spending time outdoors; Community Economic Development agencies and the National Community Foundation Network, as they strive to improve the communities in which they work; health providers and the foundations pursuing healthier communities (see the 2014 and 2013 Berkley workshop reports).

“We should gamify time in parks to use millennials’ ‘Fear Of Missing Out’ (FOMO) to draw them in. We can then turn a nanosecond ‘like’ into a hike and, ultimately, a relationship.”

– Gordon Clark, *Peninsula Open Space Trust*

-
- ***Expand marketing efforts around natural areas, particularly through social media***, along a continuum of experiences, from time in wilderness areas to that in urban gardens; use the “At-a-Glance Trip Planner” (providing guidance on time, transit, kids, dogs, highlights, and similar features of particular trips) in the AMC’s book *Discover Acadia National Park* as a thought exercise for work in one’s own community; research historical accounts of greenspaces and publish in innovative tools like *TravelStoriesGPS* (see Section 5 below).
 - ***Create more opportunities for jobs or job skills around increasing access to natural areas***, such as: considering shared staff positions across land conservation and community service organizations; offering more internships for people from diverse backgrounds; building

pipelines of opportunities for alumni of youth programs; bring the realities of park planning, engagement, design and operation to students wanting to work in this arena.

“Parks should be seen as a tool for serving communities.”

– Jazmine da Costa, Yale

- **Figure out how best to describe the changed reality to traditional conservation organizations** – that the future really is about enhancing community engagement/building constituencies. Write articles about the needs to: (i) shift more funding to building constituencies for natural areas; as well as (ii) hire more community organizers into conservation organizations. Host webinars, conferences, and other events highlighting innovative practices.
-

“Land Trusts need more creativity on the human side as they build their capacity and funding as a community resource.”

– Peter Stein, *The Lyme Timber Company*

- **Develop new metrics for land conservation organizations and funders**, covering access, usage, community, cultural, social and related values. Include both hard data and softer metrics about people and stories.
-

“How do we fund and take to scale this ‘high touch’ work?”

– Jerry Adelman, *Openlands*

- **Revise the Land Trust Alliance Standards and Practices** to reflect best practices around increasing access, improving park equity and related topics.

What areas for further research did the participants think might be most helpful?

In addition to areas for action, participants offered the following questions as ones on which more research would be helpful:

- **What are the best ways to understand, map and activate/mine/connect the organizations working to increase access to natural areas?** How best to connect across locations? Scales? Areas of focus?
- **How to use “threshold experiences” to build longer-term connections to natural areas?** What has experience to date shown about how people (kids or adults) respond?
- **How best to demonstrate the health benefits of parks as “wellness centers”** to different target audiences – from medical professionals to neighbors?

- *How do millennials build long-term relationships with each other or with lands?* How do their practices compare to those of prior generations?
- *What questions should be added to surveys that are already being planned (park usage, health indicators, land trust census) to reflect this wider array of interests/values?* How best use “respondent driven sampling” to help build community engagement?

Summary Appendix 1: Park Access, Civil Rights, and Environmental Justice and Health, Robert Garcia, The City Project



MEMORANDUM

To: Land Conservation Community
From: Robert García
Date: August, 2015

Re: Park Access, Civil Rights, and Environmental Justice and Health

A. Overview

The purpose of this memo is to address the laws and principles that were discussed at the July 2015 Berkley Workshop on park access, civil rights, and environmental justice and health. Several attendees asked me if we have published law review articles on these topics. Yes, we have published law review articles and articles in peer-reviewed social science journals. They are listed in part C below. In addition, you do not have to take our word for it. We summarize below best practices by federal authorities that show how to do an analysis of park access, civil rights, and environmental justice and health.

In Pope Francis' recently released encyclical he asks the people of the world to care about climate, creation, and the poor and underprivileged. The Pope writes about parks and green space: "In some places, rural and urban alike," he writes, "the privatization of certain spaces has restricted people's access to places of particular beauty. In others, 'ecological' neighborhoods have been created which are closed to outsiders in order to ensure an artificial tranquility. Frequently, we find beautiful and carefully manicured green spaces in so-called 'safer' areas of cities, but not in the more hidden areas where the disposable of society live."¹

According to President Barack Obama:

Too many children . . . especially children of color, don't have access to parks where they can run free, breathe fresh air, experience nature and learn about their environ-

¹ See Pope Francis Parks make us feel at home, bring us together, and are needed where the disposable of society live (The City Project Blog 2015), www.cityprojectca.org/blog/archives/38366.

ment. This is an issue of social justice. . . . Because it's not enough to have this awesome natural wonder within your sight – you have to be able to access it. My commitment to conservation isn't about locking away our natural treasures; it's about working with communities to open up our glorious heritage to everybody – young and old, black, white, Latino, Asian, Native American – to make sure everybody can experience these incredible gifts.²

The words of Pope Francis and President Obama are true for many communities of color and low income communities that lack access to parks and recreation throughout the United States.³

The diverse values at stake in green access include: fun, health, and human development; climate justice and conservation; economic vitality for all; culture, history, and art; spiritual and Native American values; and equal justice, democracy, and livability for all.⁴

It is worth noting that equal access to parks and recreation has been a civil rights issue since shortly after the U.S. Supreme Court held in *Brown v Board of Education*, 347 U.S. 483 (1954), that separate is inherently unequal. See, e.g., *Watson v. City of Memphis*, 373 U.S. 526 (1963) (ordering immediate desegregation of public parks and other publicly owned or operated recreational facilities).

B. Policy and Legal Framework for Environmental Justice, Health, and Civil Rights Compliance

There are best practice examples of leadership to address the values at stake within an environmental justice and civil rights framework. These examples include the Pope's encyclical, the President Obama's words and actions, Under Secretary Bonnie, USFS, the National Park Service, U.S. Army Corps of Engineers, U.S. Department of Housing and Urban Develop-

2 The White House Office of the Press Secretary, <https://www.whitehouse.gov/the-press-office/2014/10/10/remarks-president-designation-san-gabriel-mountains-national-monument>. See also Robert García and Michelle Kao, The San Gabriel Mountains: A National Monument for All, *NPRA Parks & Recreation Magazine* (Dec 2014), www.cityprojectca.org/blog/archives/34698.

3 See, e.g., Penny Gordon-Larsen et al., Inequality in the Built Environment Underlies Key Health Disparities in Physical Activity and Obesity, 117 *Pediatrics* 417 (2006); Lisa M. Powell et al., Availability of Physical Activity-Related Facilities and Neighborhood Demographic and Socioeconomic Characteristics: A National Study, 96 *Am. J. Pub. Health* 1676 (2006); Lisa M. Powell et al., The Relationship between Community Physical Activity Settings and Race, Ethnicity, and Socioeconomic Status, 1 *Evidence-Based Preventive Medicine* 135 (2004); Robert García, The George Butler Lecture: Social Justice and Leisure, 45 *J. Leisure Research* 7 (2013); Robert García and Seth Strongin, Healthy Parks, Schools and Communities: Mapping Green Access and Equity for Southern California (2011); Chona Sister et al., Got Green? Addressing Environmental Justice in Park Provision, 75 *GeoJournal* 229 (2010); Jennifer Wolch et al., Parks and Park Funding in Los Angeles: An Equity-based Analysis, 26 *Urban Geography* 4 (2005); Anastasia Loukaitou-Sideris & Orit Stieglitz, Children in Los Angeles Parks: A Study of Equity, Quality and Children's Satisfaction with Neighbourhood Parks, 73 *Town Plan. Rev.* 467 (2002).

4 See also NPS, Healthy Parks, Healthy People Community Engagement eGuide (2014), available at www.nps.gov/public_health/hp/hphp/press/HealthyParksHealthyPeople_eGuide.pdf.

ment, Representative Judy Chu, and Representative Raúl Grijalva, the Ranking Member of the U.S. House Committee on Natural Resources.

According to the NPS draft study to expand the Santa Monica Mountains National Recreation Area,⁵ the NPS final study for the San Gabriel Mountains National Recreation Area,⁶ and the U.S. Army Corps of Engineers (USACE) draft study to restore the Los Angeles River:⁷

- (1) There are disparities in green access along the river and in the region based on race, color, or national origin;
- (2) This contributes to health disparities based on those factors; and
- (3) Environmental justice laws and principles require agencies to address these disparities.

Maps and relevant, highlighted portions of these studies are available on Dropbox here: goo.gl/wvNbnh.

Each of those analyses is in turn based in part on the work of The City Project, as you can see in the excerpts.

Representative Raúl Grijalva and the U.S. House Committee on Natural Resources held a forum in Los Angeles in April 2015 attended by seven members of Congress. The forum explicitly addressed the need to implement Executive Order 12898 and Title VI in the context of the San Gabriels.⁸

Representative Judy Chu cites environmental justice and health as two of the main justifications for her legislation to create the San Gabriel Mountains National Recreation Area. Rep. Chu spoke on environmental justice and parks at the April House forum in Los Angeles:

I'd like to talk about environmental justice as it relates to parks. Los Angeles is one of the most park-poor places in the country. Just 15 percent of the region's population has pedestrian access to green spaces, leaving more than 85 percent of residents without easy access to public parks or green spaces, particularly affecting minorities and those from low-income communities. And there's a color divide. Did you know that in L.A.,

5 NPS, *Rim of the Valley Corridor: Special Resource Study and Environmental Assessment* (April 2015). See NPS *Rim of the Valley Draft Study: Best Practice for Expanding Green Access, Health, and Environmental Justice for All* (The City Project Blog 2015), www.cityprojectca.org/blog/archives/36966.

6 NPS, *San Gabriel Watershed and Mountains Special Resource Study & Environmental Assessment* (Sept. 2011). See *San Gabriel Mountains Best Practice Environmental Justice Framework for Parks, Health, and Conservation Values* (The City Project Blog 2014), www.cityprojectca.org/blog/archives/32899.

7 USACE, *Los Angeles River Ecosystem Restoration Integrated Feasibility Report* (Sept. 2013). See U.S. Army Corps of Engineers *Study Best Practice Framework for Revitalizing L.A. River* (The City Project Blog 2014), www.cityprojectca.org/blog/archives/33093.

8 See Steve Scauzillo, *Environmental justice used to fight GOP bills*, *San Gabriel Valley Tribune*, April 8, 2015, www.sgvtribune.com/environment-and-nature/20150408/local-democrats-wield-environmental-justice-to-fight-republican-bills.

white neighborhoods enjoy 32 acres of parks per 1,000 people, but for African-American neighborhoods it's 1.7, and for Latino neighborhoods it's 0.6?⁹

Andrew Cuomo, who was then the Secretary of the U.S. Department of Housing and Urban Development, provides a best practice to address the values at stake within the environmental justice and civil rights framework. Secretary Cuomo withheld federal subsidies for proposed warehouses at what is now Los Angeles State Historic Park unless there was a full environmental review that considered the park alternative and the impact on people of color and low-income people. Secretary Cuomo cited Title VI of the Civil Rights Act of 1964 and the President's Executive Order 12898 on environmental justice and health. Secretary Cuomo acted in response to an administrative complaint filed by diverse community allies including The City Project. His decision led to the creation of Los Angeles State Historic Park. The site could have been warehouses. Instead, it's a park. This community victory is a seminal moment for people, planning, and parks in the Los Angeles region, and a best practice for managing the national monument in the San Gabriels. "On a deserted railroad yard north of Chinatown, one of Los Angeles' most powerful and tenacious real estate developers, Ed Roski, Jr., met his match," as reported in a front page article in the L.A. Times. "Robert Garcia . . . organized a civil rights challenge that claimed the project was the result of discriminatory land-use policies that had long deprived minority neighborhoods of parks."¹⁰ The L.A. Times magazine called the community victory "a heroic monument" and "a symbol of hope." "According to Kevin De Leon, the president of the California Senate, "This park is not here because of the vision of politicians, or some design or plan. This park is here because of the struggle and agitation by the community. The community stopped the industrial warehouses to create the park in the most park poor city in the nation." "Deservedly, their action is renowned as one of the most significant environmental justice victories in Los Angeles, and is the catalyst for the revitalization of the Los Angeles River."¹²

Disparities in access to parks and recreation occur in the context of extreme inequalities in income, wealth and power. During the past four decades, extreme income and wealth inequality in the United States has exploded among the top 1, 10, and 40%, and the bottom 50%, according to Profs. Thomas Piketty and Emmanuel Saez.¹³ In 2010, the top 1 percent of the U.S. population owned 42 percent of non-home wealth, and the top 5 percent owned 72 percent of non-home wealth; according to a report from the University of California,

⁹ See Rep. Judy Chu, San Gabriel National Recreation Area Proposal Frequently Asked Questions, <http://chu.house.gov/content/san-gabriel-national-recreation-area-proposal-faq>. The transcript and video of Rep. Chu's remarks are available at www.cityprojectca.org/blog/archives/36870.

¹⁰ Jesus Sanchez, L.A.'s Cornfield Row: How Activists Prevailed, L.A. Times, April 17, 2001.

¹¹ James Ricci, A Park with No Name (Yet) but Plenty of History, L.A. Times Magazine, July 15, 2001.

¹² See Best Practice HUD Los Angeles State Historic Park

¹³ Inequality in income top 10% CA and U.S. Saez & Piketty (The City Project blog 2015), www.cityprojectca.org/blog/archives/37962.

Santa Cruz, the bottom 80 percent owned less than 5 percent. Average non-home wealth for non-Hispanic white people was almost 20 times more than African-American and 70 times more than Latino wealth.¹⁴ These inequities threaten prospects for democracy, environmental justice, and health.

The following planning process applies to federal agencies and recipients of federal funding to help ensure compliance and equity under environmental justice and civil rights laws and principles.

1. *Describe what you plan to do* – for example, manage the San Gabriel Mountains National Monument.
2. *Analyze the benefits and burdens on all people, including people of color and low-income people.*
Who benefits, and who gets left behind? Analyze the values at stake. The analysis can include numerical disparities, statistical studies, and anecdotal evidence; impacts based on race, color or national origin; inequalities based on income and wealth; and the use of GIS mapping and census data. Follow the money.
3. *Include people of color and low-income people in the decision making process.*
4. *Analyze the alternatives.*
5. *Develop an implementation and monitoring plan to distribute benefits and burdens fairly, avoid unjustified discriminatory impacts and intentional discrimination, and comply with civil rights, environmental justice and health, and environmental laws and principles.*¹⁵

Robert Bonnie, Under Secretary for Natural Resources and Environment at the U.S. Department of Agriculture, provides leadership and commitment on environmental justice and health on behalf of the USFS when he writes as follows:

Environmental justice is a very important issue for the U.S. Department of Agriculture (USDA) and the U.S. Forest Service. Executive Order 12898 requires each Federal agency to address environmental justice as part of its mission. Pursuant to this Executive Order, USDA has an Environmental Justice Strategic Plan which was updated in 2012 and signed by Secretary Vilsack. . . . In keeping with this direction from the strategic plan as well as the requirements for stakeholder input in the 2012 Forest Service planning rule, the Forest Service will pursue an inclusive, open and transparent process in developing the San Gabriel Mountains National Monument plan that will meet with the requirements of the Executive Order as well as USDA's environmental justice poli-

14 G. William Domhoff, Wealth, Income, and Power, www2.ucsc.edu/whorulesamerica/power/wealth.html.

15 In addition to the studies above, see Federal Transit Administration, Environmental justice policy guidance for Federal Transit Administration recipients, Circular (FTA C 4703.1) (Washington, DC: Department of Transportation, Aug. 15, 2012); FTA, Title VI Requirements and Guidelines for Federal Transit Administration Recipients, Circular (FTA C 4702.1B) (Washington, DC: Oct. 1, 2012); Letters from FTA to Metropolitan Transportation Commission and San Francisco Bay Area Rapid Transit District (Jan. 15, 2010 and Feb. 12, 2010), available at www.cityprojectca.org/blog/archives/38688.

cies. Beyond that, the Forest Service is deeply committed to strengthening relationships with all communities and citizens. This planning process will afford an opportunity to build on that commitment.¹⁶

Under Secretary Bonnie refers to the following authorities in his message above. Executive Order 12898 requires each Federal agency to achieve environmental justice as part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. This is discussed in the USDA Environmental Justice Strategic Plan: 2012-14. USDA will integrate environmental justice strategies with its enforcement responsibilities under Title VI of the Civil Rights Act. Title VI and its regulations guarantee equal access to publicly funded resources, and prohibit both intentional discrimination and unjustified discriminatory impacts, on the basis of race, color, or national origin, by recipients of federal funding. This includes park agencies, and private entities such as land conservancies. The 2012 U.S. Forest Service Planning Rule and Land Management Planning Handbook are in accord.¹⁷

The U.S. Department of Justice publishes a Title VI Legal Manual setting out Title VI legal principles and standards.¹⁸ The disparate impact standard of discrimination plays an important role in uncovering discriminatory intent: it allows people to counteract disguised animus, unconscious prejudices, and implicit bias that escape easy classification as intentional discrimination. See *Texas Department of Housing and Community Affairs v. Inclusive Communities Project*, 576 U. S. — (2015) (upholding discriminatory impact standard under the Fair Housing Act of 1968).

C. Structural Obstacles to Funding Green Access

There are structural obstacles to funding environmental justice and civil rights compliance for park access. Strategic foundation support has enabled the success of the environmental justice movement. Yet, the movement is still underfunded after three decades of proven victories. Constrained funding has made it difficult to build organizational infrastructure, community organizing, leadership development and more effective community participation in the policy and legal arena. Reliable, predictable and flexible multiyear core support for environmental justice, health and racial equity organizations is necessary for them to carry out their mission, respond to new challenges and opportunities, and serve the community.

Mainstream environmental organizations, government agencies, and foundations exacerbate rather than alleviate disparities in green access and funding for communities and organizations of color and low-income communities. Studies show that the more committed a foundation

¹⁶ Email message from Under Secretary Bonnie to The City Project, June 19, 2015 (on file with The City Project).

¹⁷ Relevant and highlighted portions of the USDA Environmental Justice Strategic Plan: 2012-14, the U.S. Forest 2012 Planning Rule preamble, and the U.S. Forest Service Land Management Planning Handbook are available on Dropbox at goo.gl/Bz1XiT.

¹⁸ The DOJ Title VI Manual is available at www.justice.gov/crt/title-vi-civil-rights-act-1964-42-usc-i-2000d-et-seq.

is to the environment, the less likely it is to fund social justice. Foundations should invest at least 25 percent of their funds with communities of color and low-income communities, building on the civil rights movement to advance social justice through advocacy and organizing for structural change.¹⁹ Foundations should require recipients to prohibit intentional discrimination and unjustified discriminatory impacts, applying the standards of Title VI and its regulations and Executive Order 12898 to their grantees.

Recent articles conclude that in Southern California, public and nonprofit expenditures alike are most strongly associated with race and ethnicity after controlling for population size. Both communities of color and the groups that serve them are left behind. This reproduces disparities in health and park access, and makes it harder for organizations that work with underserved communities to get the job done.²⁰

Environmental justice groups have been vital to the greening of Southern California during the past 15 years. But, mainstream environmentalists receive vastly more funding, and many more are in a gold rush to open offices here to get funding from river greening projects. The risk is they will snatch up money and staff, take the credit, and drive out grassroots groups that make change possible. Mainstream environmentalists, stunned by their failure to pass climate legislation under the Obama administration, are in a sustained drive to diversify their overwhelmingly white staffs and boards. We agree with Green 2.0, an initiative dedicated to increasing racial diversity across mainstream environmental NGOs, foundations and government agencies. However, diversifying the mainstream groups is not enough. Simply diversifying mainstream groups will help raise them more money with no assurances that they will change their values and cultures to serve environmental justice communities.

This is similar to what happened in the South following desegregation after the Civil Rights Act of 1964 passed. When people were free to shop at white-owned or black-owned businesses, they generally shopped at white-owned stores and drove black-owned establishments out of business. This reflects years of “internalized oppression,” and the idea that “the white man’s ice is colder.”²¹ We do not want to repeat this sorry history with a diversity strategy focused solely on “integrating” people of color into white groups.²²

19 See Sarah Hansen, *Cultivating the Grassroots: A Winning Approach for Environment and Climate Funders* (National Committee for Responsive Philanthropy 2012); Theda Skopcol, *Naming the Problem: What It Will Take to Counter Extremism and Engage Americans in the Fight against Global Warming*, Prepared for the Symposium on the Politics of America’s Fight Against Global Warming (Jan. 2013).

20 P. Joassart-Marcelli et al., “Building the Healthy City: The Role of Non-profits in Creating Active Urban Parks,” *32 Urban Geography* 682 (2011); P. Joassart-Marcelli, “Leveling the Playing Field? Urban disparities in funding for local parks and recreation in the Los Angeles region” *42(5) 1174 Environment and Planning* (2010); Gavin Wright, *Sharing the Prize: The Economics of the Civil Rights Revolution in the American South* (2013).

21 Gavin Wright, *Sharing the Prize: The Economics of the Civil Rights Revolution in the American South* (Harvard Press) (2013).

22 Robert Bullard and Robert García, *Diversifying Mainstream Environmental Groups Is Not Enough*, NRPA (National Recreation & Park Association) *Parks & Recreation Magazine* (July 2015). Available at www.cityprojectca.org/blog/archives/38559.

D. Publications

The following are relevant publications, as some attendees have requested.

Our most complete analysis is our nine-county study: Robert García and Seth Strongin, *Healthy Parks, Schools and Communities: Mapping Green Access and Equity for Southern California*, Policy Report (The City Project 2011), goo.gl/pAi7v.

Law review articles:

Robert García, *Warren County's Legacy for Healthy Parks, Schools, and Communities: From the Cornfield to el Congreso and Beyond*, 1 *Golden Gate University Environmental Law Journal* 127 (2007), goo.gl/pvsme.

Robert García and Erica Flores Baltodano, *Free the Beach! Public Access, Equal Justice, and the California Coast*, 2 *Stanford Journal of Civil Rights and Civil Liberties* 143 (2005), goo.gl/RVgBJ.

James Salzman, Craig Anthony (Tony) Arnold, Robert García, Keith Hirokawa, Kay Jowers, Jeffrey LeJava, Margaret Pelosa, and Lydia Olander, *The Most Important Current Research Questions in Urban Ecosystem Services*, 25 *Duke Environmental Law & Policy Forum* 1-47 (2014), goo.gl/OGeZR4.

Peer reviewed journal article and book chapter:

Robert García, *The George Butler Lecture: Social Justice and Leisure*, 45(1) *Journal of Leisure Research* 7-22 (Winter 2013).

Robert García, Ariel Collins, and Nancy Negrete, *The Children of the Los Angeles River* (forthcoming in Smithsonian Anacostia book on urban waters and civic engagement 2015).

Law school casebook on parks and green access as environmental justice issues, citing our work, and Title VI:

Clifford Rechtschaffen, Eileen Gauna, and Catherine O'Neill, *Environmental Justice: Law, Policy, and Regulation* at 61-65, 480-517 (2d ed. 2009).

Chapter in book:

Robert García and Erica Flores Baltodano, "Anatomy of the Urban Parks Movement: Equal Justice, Democracy and Livability in Los Angeles," chapter in the book *The Quest for Environmental Justice: Human Rights and the Politics of Pollution*, edited by Dr. Robert Bullard (Sierra Club 2005), goo.gl/etV2W.

Summary Appendix 2: National Park Service: Engaging the Next Generation FY 2015-FY 2017

The Millennial Generation (35 years and younger) is one of the most important stakeholders for the future of the United States. The National Park Service (NPS) sees itself as stewards of the nation's cultural and natural resources. This generation will be expected to assume the mantle of leadership for the NPS and continue to support the protection and stewardship of these American treasures for perpetuity.

The NPS has developed goals and action steps to help the Service remain relevant for its next one hundred years and beyond as the idea of national parks and the U.S. National Park Service turns 100 in 2016. Millennials offer an opportunity for NPS to enlist innovative and new ways to engage a generation with a world view very different from any other generation that has preceded it. World-wide social, economic and technological integration have created new challenges and exciting new opportunities for engaging today's youth.

“Play, learn, serve, and work” (PLSW) reflects the arc of human development from infancy to adulthood. We know that recreation is restorative, and necessary to maintain the health and good spirits needed for work, but play also provides great opportunities for reflection and insight – learning. We know that learning is crucial for preparing people to work and serve in society; but we also know that service exposes us to new skills and knowledge.

This continuum of experience becomes a natural strategy as we seek to bolster park visitation, a broader sense of public ownership, and deeper connections between upcoming generations and national parks. The parks, places, and programs that make up the NPS cannot enjoy those outcomes in the long run unless we engage young people. Recently signed national agreements with the YMCA and the Boys and Girls Clubs of America are typical of key partnerships the NPS will use to amplify PLSW opportunities for diverse urban youth.

This three-year plan outlines the NPS commitment to build on existing relationships and take advantage of new opportunities to reach a broader youth audience in the four focus areas listed below:

- **PLAY:** NPS staff, partners, the health and wellness community, and the public at large are increasingly aware that fun, self-directed recreational enjoyment of the great outdoors is a critical factor in creating life-long affinity between people and the natural world. Engaging youth through play, therefore, is an essential gateway to building long-term connections to parks, promoting understanding and appreciation of our shared heritage and natural and cultural resources. Promoting opportunities for structured (programmed) and unstructured play, recreation, and engagement in the outdoors are also beneficial to the health and well-being of our nation's children. The NPS offers diverse recreational resources to provide exciting opportunities for play.
- **LEARN:** Education has been a core function of the NPS since its inception in 1916. It plays a critical role in promoting public enjoyment and stewardship of the national parks. The Service provides interpretive (visitor experience) opportunities, such as guided walks, talks, and tours, for park visitors; it also provides on-site, curriculum-based education programs for several million school children annually and off-site programs for more

than 30 million students. Through targeted programs and expansion of collaboration with partners the NPS has a great opportunity to reach new communities as an informal education institution and with the use of new technology

- **SERVE:** The NPS works hand-in-hand with communities, engaging over 246,000 people in 2013 of all ages and backgrounds through meaningful and mutually beneficial volunteer and service-learning opportunities. The NPS has a great opportunity to increase its volunteer totals by: (1) developing new volunteer opportunities that enhance existing national and local efforts; (2) increasing its engagement with urban communities, and; (3) increasing operational capacity to manage increased volunteer opportunities.
- **WORK:** Engaging the next generation through the strategic use of student internships and vocational skills training opportunities with government and with partner organizations under agreements allows the NPS to invest in cost efficient ways to recruit entry level talent, predict future performance, and build a more diverse workforce. The integration and preparation of this generation into the workforce of the NPS is critical for the Service.

1. The Importance of Access to Natural Areas

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“With children spending half as much time outside as their parents did, and with many Americans living in urban areas without safe access to green space, connecting to the outdoors is more important than ever for the economic and physical health of our communities.”

– *Nancy Sutley, former head of the White House Council on Environmental Quality*

As America’s urban and suburban centers have grown and the general population continues to diversify, linking communities with natural areas has become increasingly difficult. Land conservation organizations have a critical role to play in helping ensure that these linkages continue to be made.

Yet, enabling users from an increasingly diverse array of communities to access natural areas in a way that is safe, meaningful and beneficial is no small task. It requires a fundamental understanding of “access” and of the benefits of human-nature interactions, which range from improved cognitive development in children (for example, see Strife and Downey, 2009) to the long-term stewardship of natural lands (see Kals et al., 1999).

Many conservation organizations and their partners have attempted to characterize these benefits and use the results to guide future programming around access. The following chapter builds on these efforts to take a more detailed look at some of the many benefits of access to natural space (although this is by no means an exhaustive list) and make a case for why action is needed in the short-term. It is meant to serve as a foundation for further discussion and to help target future efforts by land conservation organizations and a wide array of partners to promote constructive interactions across a diverse array of communities/individuals and natural lands.

It is worth noting that while this chapter will focus exclusively on the benefits of access to natural areas, there are also some potential risks that are important to consider for any organization working in this realm. While they will not be discussed in detail here, these

risks may include: vector-borne or insect-transmitted diseases (e.g. Lyme Disease, West Nile virus and others), animal-borne or zoonotic diseases (e.g. Hantavirus) and public safety concerns (e.g. robbery and other property crimes, drug-related activities, etc.). For those interested in taking a more in-depth look at the potential risks associated with increasing human use of and access to natural areas, please consult Section Four of the 2013 Berkley Workshop report (<http://environment.yale.edu/publication-series/6131.html>).

1.1 Understanding Access to Nature

In order to understand the benefits of access to natural areas, and to work to promote human-nature connections in a way that is meaningful and beneficial, it is important to investigate what “nature” and “access” in this sense really mean. A number of individuals and organizations have attempted to define both terms in ways that capture their many facets and complexities.

Defining Nature

Defining “nature” and “natural space” has been a particularly challenging task for researchers and practitioners alike, prompting one individual to write that “nature is perhaps the most complex word in the language” (Williams, 1976). As a starting point, the Oxford Dictionary defines nature as “the phenomena of the physical world collectively, including plants, animals, the landscape, and other features and products of the earth, as opposed to humans or human creations” (Oxford University Press, 2015). Others have similarly noted that the term “nature” is used to describe things that have not been made by humans, and that the natural environment “is not the result of human activity or intervention” (Lester and Maudsley, 2007).

This is in stark contrast with the built environment, which in the broadest terms is the product of human intervention, manipulation and design. It would seem, therefore, that there is a fairly strong divide between “nature” and anything “natural” – including landscapes – and places and objects that have been wholly or partly engineered by humans.

Over the years, however, as human influence on both resources and natural systems has expanded, this divide between “natural” and “built” has proven increasingly difficult and impractical to maintain. With 95% of the earth’s surface under direct human influence as of 1997 (see Baskin, 1997), either-or definitions have given way to more nuanced interpretations of nature. Natural areas, instead of representing something apart from human influence, are increasingly being seen as occurring “on a continuum of human-environment influence” (Lester and Maudsley, 2007).

These more nuanced perspectives recognize the fundamental importance of context when discussing natural areas. What may count as “nature” or “natural” in an urban setting is likely to be quite different from what qualifies as the same in a remote village. In other words, “the phrase is dependent on context and degree rather than a set definition” (Lester and Maudsley, 2007). This is perhaps why defining nature has proven to be a difficult task.

A wide array of objects and environments can be “natural,” and a similarly broad interpretation of “natural space” is needed as land conservation organizations and their partners look to engage new and diverse user groups. By adopting a broad view of what constitutes natural space, organizations can meet communities where they are and take greater advantage of local amenities and features in strengthening human-nature connections.

Defining Access

In thinking about access, there are two fundamental components: physical exposure and emotional or spiritual connection. Some organizations and individuals assert that in order to have access to nature both emotional and physical components are necessary, whereas others hold that one or the other is enough to constitute access.

As an example of the former, the UK’s Royal Society for the Protection of Birds (RSPB) holds that “connection to nature” is an important part of access, and that such connection “describes the mix of feelings and attitudes that people have towards nature” (RSPB, 2013). With a specific focus on children, they characterize “connection to nature” as consisting of the following four attitudes or beliefs:

- Enjoyment of nature.
- Empathy for animals and other natural creatures.
- A sense of oneness with nature.
- A sense of responsibility for the environment.

As the Society further explains, “connection to nature is about long-held attitudes and beliefs, rather than the kind of short-term, warm feeling we experience after a day outdoors” (RSPB, 2013). These connections, and the attitudes and beliefs that inform them, are an important part of access and result from regular experiences in natural settings. Access, therefore – in terms of meaningful, beneficial interactions between people and nature – is a product of both physical and emotional connectivity. In fact, it is this emotional connectivity that drives people to want to access natural areas on a regular basis.

Other organizations have taken a much more immediate and physical approach in framing access to nature, with less emphasis placed on emotional connections. For example, one of the measures used by the Trust for Public Land (the “ten minute walk”) focuses on the physical aspects of human-nature connections, targeting their access-driven work to ensure that everyone in America has a park within ten minutes of their home (see box below).

The Trust for Public Land: Parks for People

The Trust for Public Land's Parks for People initiative is an effort to ensure that every American has easy and safe access to a park or open space in their neighborhood. Work under the initiative is generally centered on urban and suburban projects and focuses largely on the design and preservation of neighborhood-scale green space.

In order to target their work and quantify impact, the Trust adopted walk time as a quantifiable metric for access to open space. Any individual living within a ten-minute, uninterrupted walk (approximately a half mile) of a park or other green space is characterized by the Trust as having access to that park or green space.

The ten-minute (or half mile) standard was adopted after examination of a number of national studies – including U.S. DOT's National Survey of Bicyclist and Pedestrian Attitudes and Behavior (2012) – and individual municipal goals. Using this metric, the Trust for Public Land has found that the percentage of the population with access to a nearby park ranges from 27% in some cities to 98% in others, with a median of 65%.

For more information see:

Parks for People: <https://www.tpl.org/our-work/parks-for-people>

Ten-minute Methodology: http://parkscore.tpl.org/Methodology/TPL_10MinWalk.pdf

In the academic realm, access to green space is similarly measured by quantitative representations of physical proximity. Most commonly used are measures of distance to nearest green space, count of green areas within a specific distance of home, and percentage of green space within a predetermined area (Lachowycz and Jones, 2011). The better a particular household or community scores against each of these measures, the greater the access they are thought to have.

Despite these differing conceptions of what does and does not constitute “access,” it is clear that both physical connections and emotional/spiritual connections play an important role in moderating and promoting human-nature connectivity. Without emotional connections people will not want to access natural areas, and without physical connections people will not be able to access natural areas.

In this regard, narrow, either-or conceptions of access are likely misplaced, making broader definitions both appropriate and necessary. At the very least, it is worth recognizing that the combination of physical and emotional components is what enables people and communities to experience nature in a way that is both recurrent and meaningful. These experiences, in turn, convey a number of benefits to communities and land conservation organizations alike, a broad sampling of which are discussed below.

1.2 The Health Benefits of Connecting Humans with Nature

“Our national parks have always been loved for their symbolism and scenery, but we aim to increase the awareness and recognition of their efficacy for health prevention, medicine and therapy.”

– *Jon Jarvis, Director of the U.S. National Park Service*

In 2011, the National Park Service (NPS) established the Healthy Parks, Healthy People U.S. program in an effort to “reframe the role of parks and public lands as an emerging, powerful health prevention strategy” (National Park Service, n.d.). Reflecting the sentiments of NPS director Jon Jarvis, the program aims to strengthen linkages between America’s natural space and public health by connecting people with local and national park systems.

While the Healthy Parks, Healthy People movement has grown significantly in recent years, with cities such as Greenville, South Carolina playing a leading role in expanding “parks prescription” programs (see box below), the idea that access to nature can benefit human health is not a new concept. The early Greek physician Hippocrates believed that there were fundamental connections between the four “bodily humours” (blood, phlegm, yellow bile and black bile), physical qualities (warmth, cold, dryness and moisture) and the natural elements (earth, wind, fire and water), and recognized the “therapeutic power of nature” (Falagas et al., 2006). Centuries later, John Muir referred to natural parkland areas as “fountains of life” for “tired, nerve-shaken, over-civilized people” (Fox, 1981 as cited in Frumkin and Louv, 2007).

LiveWell Greenville, South Carolina

In Greenville County, South Carolina, LiveWell Greenville – a coalition of more than 100 public and private partners (including hospitals, schools, and all six of the county’s parks & recreation departments) – has been working to connect residents with natural spaces in an effort to improve public health. In partnership with local physicians, the coalition has developed a clinically-focused park prescription program to reduce obesity amongst underserved youth throughout Greenville County.

As a result of these efforts, park prescriptions are now offered as a treatment option through LiveWell Greenville’s New Impact Initiative, an active treatment program for overweight and obese low-income youth. The coalition has also produced county maps outlining the location of natural parks and recreation centers as part of a toolkit to aid physicians in discussing options and opportunities for park prescription with their patients.

Given the early success of these initiatives, efforts are currently underway to expand LiveWell Greenville's park prescription program to reach more children and families.

For more information see:

Prescribing Parks for Better Health: http://www.nrpa.org/uploadedFiles/nrpa.org/Grants_and_Partners/Health_and_Livability/FINAL%20Prescribing%20Parks%20for%20Better%20Health%20Success%20Stories.pdf

LiveWell Greenville: <http://livewellgreenville.org/>

Modern understandings of the positive impacts of access to nature on human health have come a long way since these theoretical beginnings. These impacts, discussed below, can be organized into two broad categories – physical health and mental health – and offer significant partnership opportunities for land conservation organizations and healthcare institutions alike. Readers interested in a more in-depth exploration of the health benefits (and risks) associated with access to nature are encouraged to explore the 2013 (<http://environment.yale.edu/publication-series/6131.html>) and 2014 (<http://environment.yale.edu/publication-series/6132.html>) Berkley workshop reports.

Physical Health Benefits

A great deal of research has been dedicated to the impacts of spending time in nature on physical health. Documents such as Frumkin and Louv (2007), Maller et al. (2008) and Charles and Senauer Loge (2012) compile many of the most influential studies on the subject. Others, including Li (2010) and Nieuwenhuijsen et al. (2014) continue to work to identify specific health benefits of access to nature and the pathways by which these benefits are realized (see below).

PHENOTYPE Research Initiative, Europe

The PHENOTYPE – Positive Health Effects of the Natural Outdoor environment in Typical Populations of different regions in Europe – initiative is a multi-institutional research partnership working to strengthen our understanding of the linkages between exposure to natural spaces and human health and well-being. Ongoing research efforts focus primarily on urban environments, and are concentrated in cities and/or regions not typically represented in studies of this nature, including: Barcelona, Spain; Doetinchem, Netherlands; Kaunas, Lithuania; and Stoke-on-Trent, United Kingdom.

Research under the PHENOTYPE initiative is grouped into the following focus areas:

- Characterizing natural spaces and understanding human use
- Short-term effects of the natural environment on human health and well-being
- Long-term effects of the natural environment on human health and well-being
- Mechanisms underlying linkages between human health and the environment

By involving a number of different stakeholder groups, including policymakers, urban planners, architects, land managers and health professionals, the goal of the PHENOTYPE initiative is to use research results to inform future policies, land use planning and land management efforts. In so doing, the hope is to create urban environments and natural spaces that better reflect human health needs.

For more information see:

PHENOTYPE: <http://www.phenotype.eu/>

BMJ Open: <http://bmjopen.bmj.com/content/4/4/e004951.full>

In addition to other health benefits, access to natural space has been shown to reduce levels of obesity and associated chronic diseases. A 2011 review of 60 relevant academic studies found that over two-thirds (68%) reported a linkage between access to green space and obesity-related health indicators (Lachowycz and Jones, 2011). Specific studies have shown that increased levels of vegetation and natural space lower the risk of obesity in densely populated communities (Liu et al., 2007), and residents in communities with high levels of greenery were found to be 40% less likely of being overweight and obese (Ellaway, Macintyre and Bonnefoy, 2005).

The prevalence of specific diseases known to be linked to obesity – including coronary heart disease, asthma, and chronic obstructive pulmonary disease (COPD) – has accordingly been found to decrease as the amount of green space in a community increases (see Maas et al., 2009). Other unrelated indicators of overall health – including immune system functioning and microvascular health – have also been found to have positive correlations with access to green space (see Li, 2010 and Gopinath et al., 2011).

A number of the positive health impacts of access to nature may stem from the promotion of higher levels of physical activity amongst adults and children (though air quality, social cohesion and stress may also play roles). For example, a 2006 study conducted at 6 different field sites across the United States found that adolescent girls with parks near their homes had higher levels of moderate to vigorous physical activity (a 4% - 6% increase) than those without (Cohen et al., 2006). Researchers in Australia have similarly determined that access to nearby areas of large public open space encourages increased physical activity amongst community members (Giles-Corti et al., 2005).

Increases in physical activity and many of the health-related benefits associated with access to nature depend on the specific qualities of green space being accessed. Natural spaces that are very close to home, easy to access, larger in size and attractive to potential users are the most likely to drive use and promote the associated benefits.

Red Rock Ridge and Valley Trail System, Birmingham, AL

Recognizing the health benefits of access to natural space and the role of physical activity in driving these benefits, Birmingham's Fresh Water Land Trust has committed to designing and constructing the 750-mile Red Rock Ridge and Valley Trail System. When completed, the network of multi-use trails – including six primary trails constructed around existing water features – will connect 30 municipalities throughout the Birmingham region.

By encouraging people to interact with Alabama's natural landscapes and increasing the ease with which they can do so, the Red Rock Ridge and Valley Trail system aims to have major impacts on regional health. Researchers at the University of Alabama, Birmingham estimate that the system will result in up to \$42 million in healthcare savings annually. In a state where two out of every three residents are overweight or obese, these estimates indicate major impacts on both medical spending and individual and communal livelihoods.

For more information see:

Freshwater Land Trust: <http://www.freshwaterlandtrust.org/red-rock-ridge-and-valley/>

By understanding the characteristics of natural space that help promote positive health outcomes, land conservation organizations can partner with healthcare organizations to better design and conserve open space in a way that fosters meaningful, beneficial connections. Conservation organizations that have expertise in physical health research or existing partnerships with organizations and/or research institutions working in this realm are well positioned to harness the positive physical health impacts of open space.

Mental Health Benefits

In his 2005 book *Last Child in the Woods*, Richard Louv introduces the concept of “nature deficit disorder” to describe the fundamental disconnect between people and nature in their everyday lives. Louv asserts that direct exposure to natural space is “essential...for the physical and emotional health of children and adults,” specifically referencing its role in assuaging symptoms of depression and attention disorders (Louv, 2013).

Louv is not alone in his assertions. A 2004 study by Frances Kuo and Andrea Faber Taylor looking at the impact of natural settings on ADHD symptoms in children found that “green outdoor activities reduced symptoms significantly more than did activities conducted in other settings,” (Kuo and Faber Taylor, 2004). These results held true for both boys and girls regardless of social setting (e.g. whether conducting activities alone, in a pair, or in a group), from the ages 5 to 18, and across 4 different income brackets (Kuo and Faber Taylor, 2004).

More generally, access to nature has been linked to a number of components of mental wellness, including reductions in anxiety, stress and depression (see Beyer et al., 2014) and increased feelings of happiness and vitality. For example, one study published in 2010 and involving a number of student subjects at the University of Rochester found that individu-

als who spent time in or imagined natural settings experienced higher levels of energy and enhanced feelings of vitality (University of Rochester, 2010). Said lead author Richard Ryan, “A better way to get energized is to connect with nature,” (University of Rochester, 2010).

The positive effects of access to nature on mental health are not exclusively short-term. A team of researchers led by Mathew P. White compared subjects in the United Kingdom that moved to greener urban areas with those that moved to less green urban areas in an effort to observe the effects of access to nature on mental health over time. Using data from the British Household Panel Survey, White et al. determined that individuals moving to greener urban areas had significantly better mental health for multiple years (the study’s limit was three years) post move (White et al., 2014). Those moving to less green urban areas also experienced mental health improvements post move, but these improvements were short-lived and returned to a baseline level in subsequent years (White et al. 2014).

Recognizing the many benefits of green space, hospital systems have begun to incorporate elements of greenery – primarily in the form of healing gardens – into building and campus design with greater frequency (see box below). By enhancing access to natural spaces in a healthcare setting, these gardens not only help in the patient recovery process, but can be used by doctors and visitors looking for mental and emotional respite.

Healing Gardens to Enhance Hospital Experience



Image sources:

Left – ©Ravanesi Healing Garden Massachusetts General Hospital, Yawkey Acute Care Center Boston MA
8th floor rooftop Healing Garden

Center – <http://news.yale.edu/2010/05/07/smilow-melds-welcoming-touches-state-art-care>

Right – <http://lda.ucdavis.edu/people/websites/francis/designwork/wildlife.html>, credit: Mark Francis

Long considered periphery to the primary healing process, green space has become a significant component of most new and many existing hospitals. Many of these projects have been developed with support and input from the landscape architecture, horticulture and land conservation communities. Some prominent examples include:

- Massachusetts General Hospital – Massachusetts General Hospital features a number of gardens and green elements, including a 6,300-square-foot rooftop garden at the Yawkey Center for Outpatient Care. The garden was planned and executed by hospital leadership, cancer center caregivers and a number of volunteers in partnership with two different design firms (above, left).
- Yale New Haven – One of the hospital’s most prominent features is the 2,500-square-foot Hollander Healing Garden, located on the 7th floor of the Smilow Cancer Hospital. Suggested by a committee of cancer patients and designed by landscape architects Towers|Golde, the garden provides views of downtown New Haven and offers respite for patients undergoing treatment and their families (above, center).
- University of California, Davis Medical Center – Designed for a multitude of uses, the 4.3-acre Urban Wildlife Preserve adjacent to the UC, Davis Medical Center serves as a healing garden, a gathering space and an outdoor classroom. The preserve is the result of a participatory design process and a series of partnerships between medical center staff, UC, Davis students and faculty, and leadership from a nearby elementary school (above, right).

For more information see:

Healthcare Design (Boston): <http://www.healthcaredesignmagazine.com/article/yawkey-center-rooftop-capping-bostons-green-building-0>

Power of Smilow: <http://inside.shepleybulfinch.com/2011/10/power-of-smilow-healing-garden-celebrated/>

Yale News: <http://news.yale.edu/2010/05/07/smilow-melds-welcoming-touches-state-art-care>

UC Davis: <http://lda.ucdavis.edu/people/websites/francis/designwork/wildlife.html>

The increasing popularity of healing gardens and other natural spaces as mechanisms for treating mental (and physical) health issues provides a wealth of partnership opportunities for land conservation organizations and healthcare systems. Technical support from the conservation community is needed to ensure that green space is healthy, accessible and functional over time. Similarly, input from the healthcare community can help ensure that natural spaces infuse elements that promote both physical and mental health amongst users.

1.3 Childhood Development and Nature

“If a child never sees the stars, never has meaningful encounters with other species, never experiences the richness of nature, what happens to that child?”

– Richard Louv, author of *Last Child in the Woods*

Exposure to and experiences in nature can have significant impacts on multiple facets of childhood development. These impacts start from the very earliest stages of life, with Donovan et al. (2010) finding that increases in tree cover and proximity to open space for pregnant women significantly lowers the risk of babies being born small for their gestational age (Donovan et al, 2010).

These early developmental benefits of access to nature carry over into later years as well. A wide array of researchers have shown that children who grow up and play in or in close proximity with natural settings display higher levels of cognitive functioning (e.g. greater levels of concentration and improved academic performance) and better motor and social skills than those who do not.

For example, a 1998 study of 40 schools across the United States (ranging from the elementary to high school level) found that those students in schools that used the natural environment as a hands-on teaching tool demonstrated improved performance across multiple subjects (including math, science, social studies and writing) than those that were not (Lieberman and Hoody, 1998). Students in schools that offer hands-on learning opportunities in natural settings are also better able to synthesize information and think strategically, are less likely to have discipline issues than their peers, and exhibit improved attitudes and attendance (Lieberman and Hoody, 1998).

Another study in Norway found that children with regular opportunities for unstructured play in natural environments (in this case forested areas) performed better on motor skills tests than did their counterparts who played in standard playgrounds (Fjortoft, 2001). This corroborates results from an earlier analysis in Sweden, in which researchers found that children attending daycare centers surrounded by green space had greater attention capacities and motor skills than those attending daycare centers surrounded primarily by tall buildings (see Strife and Downey, 2009).

Many school districts, recognizing the benefits of access to green space on development and student performance, have worked with external experts to get students outdoors and incorporate aspects of nature learning into their curricula. Through participation in initiatives like the Mighty Acorns program (see below), schools can provide students with experiential, place-based learning opportunities by connecting them to natural spaces that may otherwise be inaccessible.

The Northwest Indiana Mighty Acorns Partnership Program

The Mighty Acorns program is a regional environmental education initiative that works to introduce 4th through 6th grade students in the Chicago metropolitan area to environmental stewardship and nature learning. The program is supported by a series of partners, who sponsor environmental education activities in a particular geographic region.

The largest such partnership is the Northwest Indiana Mighty Acorns program, developed in 2009 by the Shirley Heinze Land Trust, Chicago's Field Museum of Natural History, and the Dunes Learning Center. By working with a number of individual schools and school districts, the Northwest Indiana program – which serves 139 classrooms and over 3,700 students – connects urban youth with natural areas through a series of experiential education curricula.

Students participating in the program make three seasonal study trips to nature preserves near their schools throughout the academic year. While on site, they are given lessons on topics ranging from adaptation, competition for resources and ecological diversity. Students also have an opportunity to participate in hands-on conservation initiatives, including invasive plant removal and native seed collection and planting.

In exposing urban youth to natural areas close to home, the Northwest Indiana Mighty Acorns partnership helps new user groups foster connections with nature and encourages ongoing stewardship of natural space. Funded primarily by a multi-year commitment from ArcelorMittal, this partnership is exemplary of the types of work that can be achieved through collaborations between land trusts, educational institutions and funders.

For more information see:

Shirley Heinze Land Trust: <http://www.heinzetrust.org/mighty-acorns.html>

From Acorns to Oaks: <http://www.landtrustalliance.org/conservation/community-conservation/from-acorns-to-oaks>

ArcelorMittal: <http://usa.arcelormittal.com/News-and-media/Our-stories/Stories-Folder/2014-Stories/Oct/Mighty-Acorns/>

Mighty Acorns: <http://www.mightyacorns.org/index.html>

As evidenced by the Mighty Acorns partnership, these programs offer exciting opportunities for land conservation organizations to partner with educational institutions and school districts in an effort to connect a greater number of children with nature. In school districts looking to implement nature-based curricula or incorporate natural elements into school design, the conservation community has a particularly important role to play in helping protect and/or develop accessible natural spaces and curricula to go along with them.

1.4 Access to Nature and Ongoing Stewardship of Conserved Lands

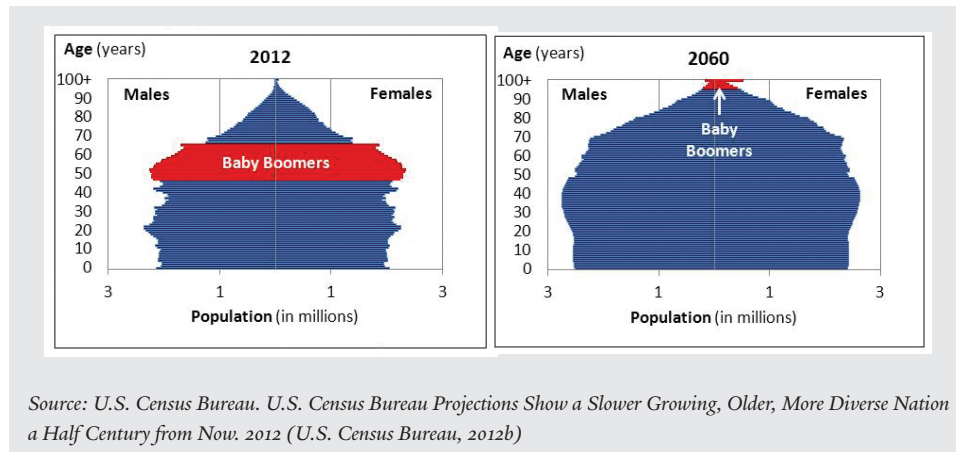
“In order to protect and conserve the environment, we must first value it. In order to value it, we must know it, and in order to know it we must touch, smell, breathe, and experience nature.”

– Dr. Robert Zarr, pediatrician and leader of the DC Park Prescription program

In a 2013 report for the Land Trust Alliance, authors from the Center for Whole Communities concluded that, “the United States that is emerging right now is very different from the USA of the 1980s, when the majority of land trusts were formed” (Atencio, Forbes and O’Hara, 2013).

Indeed, the United States is experiencing a fundamental shift in demographics – one that promises to have a profound effect on the land conservation movement.

Between 2000 and 2010 the United States’ urban population grew by 12.1%, outpacing the 9.7% increase in the nation’s overall population (U.S. Census Bureau, 2012a). Reflecting this growth, urban areas are now home to over 80% of U.S. residents (id.). Baby boomers, many of the original supporters of the land trust movement in the 1980s, will represent only 0.6% of the national population in 2060 (U.S. Census Bureau, 2012b). And while the population itself will age between now and 2060 and those 65 and up will continue to be a non-Hispanic white majority, the younger segment of the population – the next generation of land stewards – will increasingly be from communities of color (id.).



Source: U.S. Census Bureau. *U.S. Census Bureau Projections Show a Slower Growing, Older, More Diverse Nation a Half Century from Now. 2012* (U.S. Census Bureau, 2012b)

In response to these trends, land trusts must be able to attract and engage increasingly urban and diverse populations if they hope to meet their commitment to stewardship of natural space over the long term. Moreover, these responses must be immediate, as current projections estimate that there are less than thirty years until the U.S. has a minority-majority (see U.S. Census Bureau, 2012b). Efforts to increase access to natural space – and partnerships to this effect – will play a critical role in moving beyond the traditional base to engage new and more diverse user groups in conservation.

As Dr. Robert Zarr’s quotation (above) suggests, there is an intimate linkage between access to nature and the continued stewardship of natural spaces. Randy White (CEO of the White Hutchinson Leisure & Learning Group) agrees, stating that a lack of experience in natural settings “breeds apathy towards environmental concerns” (White, 2004). These sentiments

are also shared by Richard Louv, who states that “most conservation leaders credit their commitment to the environment to two sources: many hours spent outdoors, when they were children...and an adult who taught respect for nature” (Louv, 2007).

This trend extends beyond adult populations. In a 2009 literature review of studies focusing on the many benefits of access to nature and the inequalities associated with such access, researchers from the University of Colorado determined that “youth with more experience in nature exhibit stronger personal relationships to nature” (Strife and Downey, 2009). Furthermore, these youth are “more likely to express the need to protect nature compared with youth with less outdoor experience” (Strife and Downey, 2009). The benefits of these childhood experiences in nature are therefore multi-generational, eventually leading to an adult population that is more inclined to support environmental protection initiatives and organizations.

Conservation-minded organizations are working to ensure that these multi-generational benefits are realized. In 2014, for example, the National Audubon Society and Philadelphia Outward Bound School partnered to offer nature experiences to Philadelphia’s urban populations through development of a “Discovery Center” (see below). The center – constructed on land previously controlled by the Philadelphia Water Department – not only provides public land on which people can develop informal connections with nature, but also offers facilities for formal conservation training and leadership development.

Discovery Center at Strawberry Mansion Lake, Philadelphia, PA

In late 2013, the Pennsylvania branch of the National Audubon Society and the Philadelphia Outward Bound School launched a partnership to begin development of the Discovery Center at Strawberry Mansion Lake. Complete with an eco-friendly education facility, the center is expected to provide experiential education and outdoor classroom experiences for over 10,000 children, and will offer opportunities for informal outdoor exploration and activities to many other children and adults alike.

The project will also play a critical role in greatly increasing access to natural space for communities throughout the Philadelphia area. The center will encompass a 37-acre artificial lake that was formerly part of the City of Philadelphia’s water supply system and has been closed from public access for multiple decades. It will also link with and strengthen plans for new access points to build connectivity between the existing East Fairmount Park, Strawberry Mansion, and North Philadelphia neighborhoods. By opening and facilitating interactions with natural space in close proximity to downtown, the Discovery Center initiative will greatly enhance opportunities for Philadelphia’s inner-city residents to access nature. In so doing – and through the provision of both Audubon and Outward Bound programming and curricula – the center will help attract and train new communities as the stewards of tomorrow.

For more information see:

Outward Bound: <http://blog.outwardbound.org/?p=1827>

Fairmount Park Conservancy: <http://www.fairmountparkconservancy.org/>

Partnerships that work to promote greater and safer access to natural space for a diversity of user groups can help ensure that a fundamentally different generation of Americans has the opportunity to develop connections with and a love of nature. In so doing, they can attract, engage and inform the conservationists of the future. Such partnerships not only afford benefits for the natural environment through both immediate and multi-generational stewardship, but also for organizations working to protect the natural environment through sustained membership and engagement, employment interest and financial contributions. The conservation community has a prominent role to play in the development of such collaborations.

1.5 Access as a Tool for Community Cohesion and Social Equity

“When we think about what’s important to people in their community, or what addresses a community need, and then choose and design conservation projects that address those desires, we are taking another step forward in terms of making conservation responsive rather than prescriptive to a broader sector of the community.”

-Judy Anderson, principal of Community Consultants

In addition to the wealth of evidence cited above and its fundamental role in expanding the stewardship base for public lands, enhancing access to natural space can also be an important tool for promoting community cohesion and equality. As it stands, equal access to natural space is not a reality for all individuals and communities. These differences are not random, but rather reflect systematic discrepancies in the types of people who can and do experience nature.

Social equity

In a 2006 report for the Trust for Public Land, it was concluded that “low-income neighborhoods populated by minorities and recent immigrants are especially short of park space” (Sherer, 2006). Data from Los Angeles shows that white neighborhoods (75% or more white residents) enjoy 31.8 acres of park space for every 1,000 individuals, whereas African American and Latino neighborhoods have only 1.7 and 0.6 acres per 1,000 individuals, respectively (Sherer, 2006). Expressed differently, Los Angeles’ white neighborhoods have, on average, more than 27 times as much park space as its minority neighborhoods.

Similar gaps in parks-related funding help perpetuate these issues. Wealthy neighborhoods – those that tend to have greater park space to begin with – often receive more money per-resident for parks development than do low-income neighborhoods. Another study in Los Angeles found that between 1998 and 2000, the city’s South-Central neighborhood (which has LA’s second-highest poverty rate and lowest access to nearby green space) received approximately half as much parks funding per-child than did West Los Angeles (Sherer, 2006). This exacerbates current discrepancies by severely limiting the future development and conservation of much-needed natural space in low-income communities.

Fighting the trends outlined above and ensuring equality in access is critically important to members of the land conservation community. By promoting access to green space and beginning to close the gaps cited above, land conservation organizations can fulfill their community obligations and help alleviate some of the standing inequalities in both urban and rural settings. In this way, they can ensure that all individuals and communities enjoy the benefits and opportunities (health, educational and otherwise) provided by natural areas.

Community Safety, Cohesion and Vitality

Even beyond its role in helping bridge gaps between low- and high-income, minority and non-minority populations, access to nature promotes community safety, cohesion and vitality. In serving as gathering spaces, parks promote social interactions among and between children and adults, raising levels of public trust and perceptions of safety (Strife and Downey, 2009). To this effect, a team conducting research across 98 apartment buildings in Chicago’s Ida B. Wells public housing development found that the greener a building’s surroundings, the lower the rate of both property and violent crimes at that location (Kuo and Sullivan, 2001).

Furthermore, studies have shown that neighborhood greening can increase nearby property values – by 9% with the planting of street trees and nearly 40% with the establishment of a community garden (Springer, 2006). This trend holds true for both commercial and residential properties, driving investment in communities and resulting in potentially significant economic growth.

Similarly, research by the Trust for Public Land has found that increasing green space can have substantial economic benefits for a community. In a 2010 study of Long Island’s parks and open space, for example, the Trust determined that these areas provide “quantifiable economic benefits worth over \$2.74 billion a year” (Trust for Public Land, 2010). This includes a one-time increase of \$5.8 billion in the aggregate value of nearby residential properties and over \$27 million in sales-tax revenue from out-of-state visitors (id.).

While many urban conservationists point to these trends as positive developments, the impacts of rising property values and economic growth on low-income populations can be mixed. These trends may seem beneficial on paper but there is a very real possibility that such increases will lead to “gentrification and a displacement of the very residents the green space strategies were designed to benefit” (Wolch, Byrne and Newell, 2014). This phenomenon is what researchers have coined the “urban green space paradox” – increases in green space make neighborhoods healthier and address park-related discrepancies in low-income

communities, but also make neighborhoods more attractive to higher-income individuals and families. An influx of higher-income individuals can in turn elevate housing costs, resulting in “displacement and/or exclusion” of existing populations (Wolch, Byrne and Newell, 2014). While not certain, the possibility of these outcomes should be considered by land conservation organizations and their partners working in low-income communities.

Despite these uncertainties, various conservation organizations operating under the principle of “community conservation lands” (a term popularized by Judy Anderson), have worked to drive such investments and social returns. These organizations often leverage their strengths and the strengths of their partners to maximize impacts.

The Western Reserve Land Conservancy, Moreland Hills, OH

To help harness the role of green space in improving and revitalizing neighborhoods and promoting social equity, the Western Reserve Land Conservancy has played an active role in ensuring access to parks for northern Ohio’s low-income and minority communities.

Highlights include the establishment of a “Reforest Our City” grant program, which provides \$35,000 for tree-planting projects throughout Cleveland, and the operation of the Thriving Communities Institute, which works to acquire and transform vacant and unproductive properties into community green spaces and opportunities for economic development.

Drawing from the Conservancy’s specialization in policy advocacy and fundraising, both initiatives are aimed at enhancing the design and management expertise of professional and community partners.

For more information see:

Western Reserve Land Conservancy: <http://www.wrlandconservancy.org/index.html>

Thriving Communities Institute: <http://www.thrivingcommunitiesinstitute.org/>

By partnering with neighborhood groups, urban coalitions, and local leaders, and investing in park-poor communities, land conservation organizations can help target their initiatives to serve those people whose needs for green space are the greatest. In so doing, this can help promote access for a greater array of individuals and aid in the development of safer and friendlier cities and towns.

1.6 Conclusion

Understanding the benefits of exposure to natural space can help guide efforts within the land conservation and potential partner communities to enhance access to nature for an increasingly diverse array of user groups. As American demographics continue to shift and younger, urban generations lose (or never form) connections with nature, it is important that

issues of access are addressed in the short-term. Human and community health, childhood development, and the continued stewardship of natural space depend on it.

Land conservation organizations have a varied and active role to play in enhancing access and ensuring that the many benefits of open space are realized for more people in more communities. In so doing, the conservation community can help leverage innovative partnerships and community engagement to promote meaningful and beneficial connections with nature and drive future conservation initiatives. Some of these partnerships, and the ways in which they have materialized at multiple scales, will be explored in later chapters.

Possible Questions for Discussion

- What are the best roles for land conservation organizations in helping promote access to natural space?
- How do land conservation organizations identify unique, value-added partnerships to address issues of access?
- How should one weigh both the quantity and quality of human-nature interactions in defining access? Is a commonly agreed upon definition of “access” needed in order for the land conservation community and its partners to act in a comprehensive manner?
- What do we mean when we say “nature”? In an effort to attract more diverse groups of users, is it time to redefine the boundaries of what is and is not natural space – and therefore what we work to conserve?
- How can the land conservation community work to ensure that the natural spaces they manage and/or interact with provide as many of the benefits listed above as possible?
- In what ways can effective local collaborations be expanded into comprehensive partnership frameworks at a national level?
- What (if anything) is the role of policy in promoting and expanding access at broader scales?

Some of the Organizations Doing Interesting Work on this Topic

The Nature Conservancy – through the Nature Rocks program, TNC is helping kids and families find nature in their cities and communities. By tailoring searches by geographic location, weather, and type of natural feature (e.g. water, forest, or local park), Nature Rocks makes it easy for youth to realize the many physical and emotional benefits of activity in nature regardless of weather conditions and environment. See: <http://www.naturerocks.org/index.htm>.

Children & Nature Network – a nonprofit organization aimed at reconnecting children with nature, the Children & Nature Network provides training, technical support and resources to individuals and organizations working to increase access to nature for kids. Training and

support are specifically targeted at the Natural Leaders Network (youth ages 18-29 working to inspire future stewards), grassroots leaders (individuals leading campaigns to connect children with nature worldwide) and municipal leaders (individuals working to green urban areas and improve access to nature, namely for low-income communities). See: <http://www.childrenandnature.org/>.

U.S. Department of Health and Human Services – HHS and its subsidiary divisions (including the National Institutes of Health) have funded a variety of research studies looking at the various health and developmental impacts of time spent in nature. Environmental Health Perspectives, a monthly journal of peer-reviewed research looking at the interrelationships between the natural environment and human health, is a product of the National Institute of Environmental Health Sciences, a NIH subsidiary. See: <http://www.ncbi.nlm.nih.gov/pmc>.

Unity Health Care – located in Washington, D.C., Unity Health Care is a leader in the District's Park Prescription (Rx) movement. With the leadership of Dr. Robert Zarr, Unity Health Care has integrated a searchable database of 350 D.C.-area parks into existing medical records systems, making it easy for physicians at Unity providers to find and prescribe open areas to patients based on geographic location and medical needs. See: <http://www.nps.gov/news/release.htm?id=1610>.

National League of Cities – the National League of Cities, in partnership with the Children & Nature Network, launched the Cities Promoting Nature Initiative, a three-year project to develop and expand municipal strategies for connecting youth with the outdoors. NLC is also part of an agreement with YMCA of the U.S.A and the U.S. Department of the Interior to promote meaningful connections to nature for young people in conjunction with DOI's youth initiatives. See: <http://www.nlc.org/media-center/news-search/new-initiative-to-help-cities-increase-nature-access-for-children-launched-by-league-of-cities>.

Teens to Trails – Teens to Trails (T3) is a nonprofit organization working to increase the ability of Maine teens to connect with natural areas through the creation of high school outing clubs. To support these clubs, T3 offers training materials, start-up guides, conferences, and financial grants to cover equipment and development costs. See: <http://www.teenstotrails.org/what-t3>.

Paradox Sports – by offering specially-tailored outdoor and adventure sport events, Paradox Sports works to connect physically disabled individuals with outdoor areas. Specific programs include Paradox Rocks (a series of adaptive climbing and camping events) and Paradox Veterans (an array of outdoor-oriented trips designed to help injured veterans reintegrate into civilian life). See: <http://paradoxsports.org/>.

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2. Who Uses Natural Areas – Perspectives from Researchers

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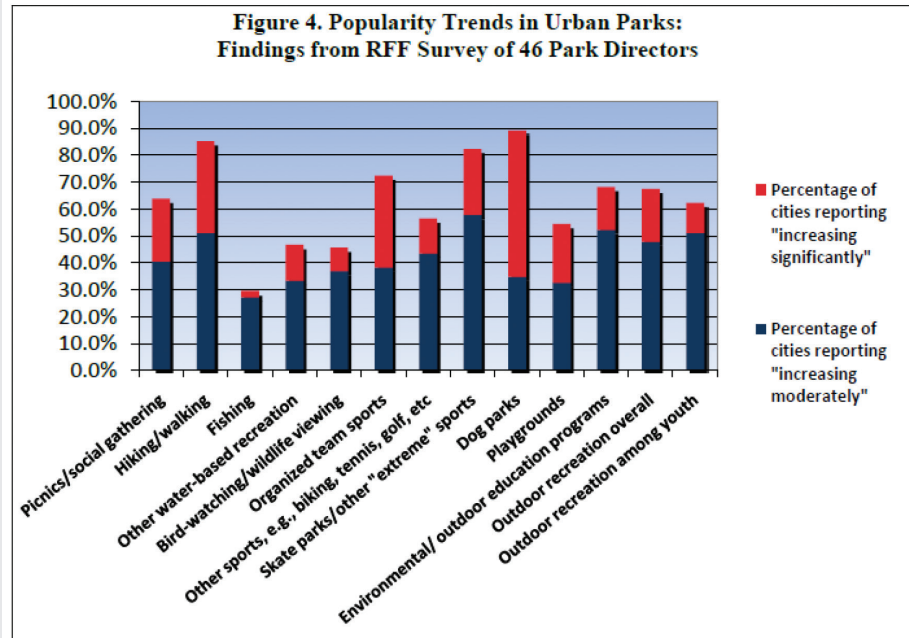
Research on the use of natural areas is rich and continues to grow. Research can help inform decision making by answering questions as to who uses natural areas and who does not, and why. Results are at times as expected, but at others can differ from assumptions. Considering the results of such research is important in order to guide actions by land-based organizations seeking to increase access and use of natural areas.

2.1 The Need for Research

There is a trend of increased use of natural areas by a wide variety of user groups. Along with this growth is a mounting recognition of the need for serving these users. At the individual park level, demographic and use research is not always available, and yet without it, park directors have to manage with incomplete information. A 2009 study by Resources for the Future explains well the need for research on natural area user groups.

Resources for the Future: Parks and Recreation in the United States

Margaret Walls (Senior Fellow, Resources for the Future) studied the use of urban parks in 2009 through surveys of park directors. In one question, directors were asked their opinions as to the trends of various activities taking place in parks. The figure below shows the percentage of park directors who reported “increasing moderately” or “increasing significantly” to each of the 13 activities represented on the survey.

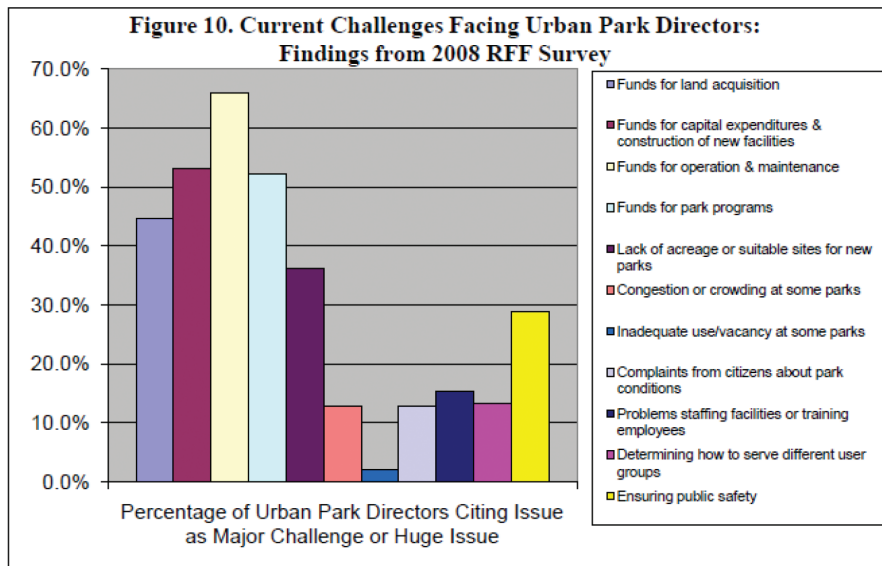


Source: *Current Challenges, Funding, and Popularity Trends in Local Parks and Recreation Areas*, Walls, M. 2009

Of note is the overall percentage of reports suggesting increasing activity. Of the 13 activities, only 3 fall below the 50% mark of reporting an increasing. In almost 90 percent of urban parks, dog parks are increasing. In 85%, hiking and walking are up. And in almost 70% of urban parks, total overall outdoor recreation is growing.

This study also asked park directors if they collect park visitor and use data, and just over half (26 out of 46 respondents) said they do. This information is collected mostly at sites where fees are charged, and some collect the data periodically from community master plans. But most of the data collected is simply a measurement of visitors and not a collection of demographic or other information that would allow for an analysis of the data.

The survey of park directors also inquired on challenges they face. The figure below summarizes responses by showing the percentage of “major challenges” and “huge issues” as reported on the survey.



Source: *Current Challenges, Funding, and Popularity Trends in Local Parks and Recreation Areas*, Walls, M. 2009

The graph shows two important trends. First, less than 5% reported a challenge in inadequate use or vacancy at parks. Second, around 13% cited challenges in determining how to serve different user groups.

Another study conducted by a team of researchers at Resources for the Future and led by Walls asked state park managers in 47 states their perspective on the challenge of determining how best to provide access to different user groups in their park. Only one respondent identified this issue as “not a challenge.” When the directors were asked for their perception of the overall trend in outdoor recreation in their state parks, 6% sensed a decline, 38% no change, and 53% an increase in use.

These studies show park use is increasing overall and among a variety of user groups. At the same time, park directors face difficulty when tackling the challenge of determining how to provide access and serve different user groups. Walls’ studies reinforce the need for research on users of natural areas, as a tool to inform management, access funding, and address access, among other challenges.

For more information: www.rff.org/

2.2 Research Findings

This section summarizes results from studies on natural area user groups in both urban and rural settings. Important to remember when considering these studies is the context of each. For example, low rates of senior citizen park use in the City of Los Angeles is a trend that may or may not be specific to this city. The unique context of each of the following study sites is especially important to keep in mind if scaling the results is being considered.

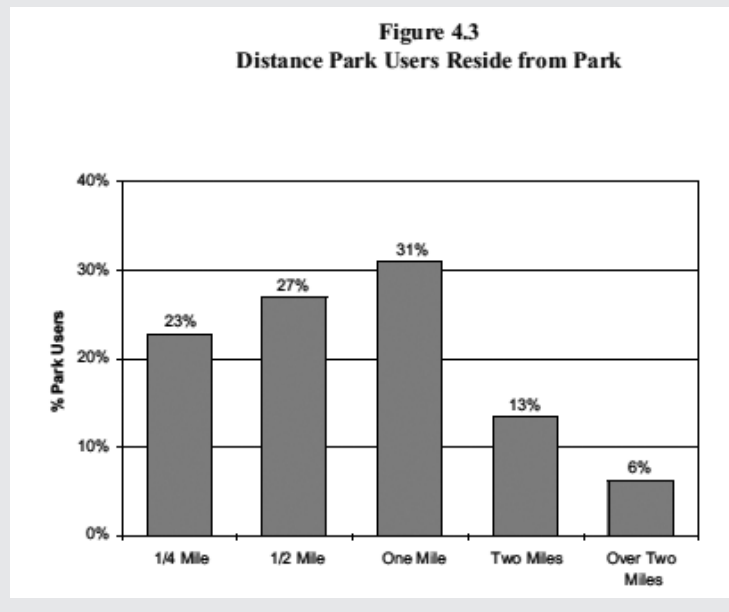
Urban Natural Space Use

Urban parks provide natural area access to millions of Americans living in cities. The City of Los Angeles has recognized the importance of these areas and has invested in the improvement of the city's public parks, including through a 30-year, \$25 million-per-year program: Proposition K.

Park Use in Los Angeles, CA

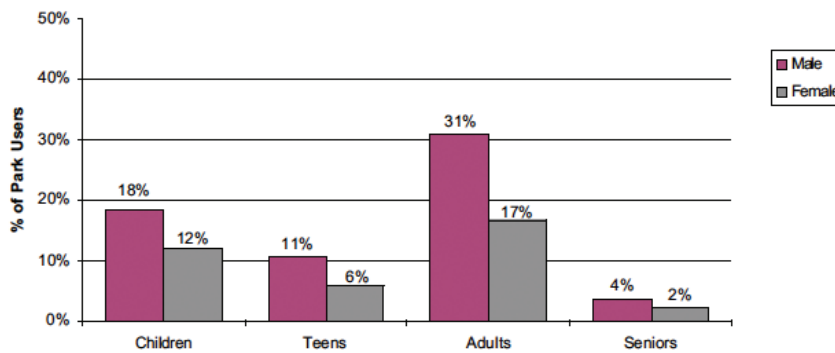
A 2006 study headed by Deborah Cohen from the RAND Corporation examined the use of parks within the City of Los Angeles. Each of the 12 neighborhood parks, one skate park, and two senior citizen centers selected for study were located in an urban setting and within low-income neighborhoods. The majority of these parks were in predominately Latino and African American communities. Important findings from the study including the following:

1. Proximity to park is a significant determinant of park use. Over all the parks, 81% of users live within one mile of the park they use, and only 19% live over a mile away. The figure below shows this breakdown.



2. Males use parks more often than females, while children and teens use parks more than seniors. The demographic findings make clear that “parks do not serve everyone in the community equally, even within local neighborhoods.” Males (63%) were observed more frequently than females (37%) across all age groups. And regardless of gender, seniors were the least likely to use the park, accounting for only 6% of total users. The figure below shows the age and gender breakdown of park users.

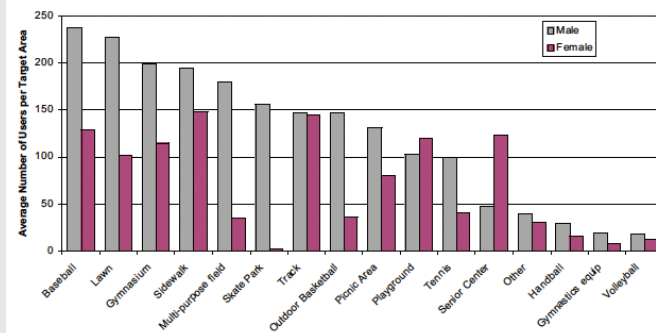
Figure 4.1
Percent of Park Users by Age Group and Gender



Source: *Park Use and Physical Activity in a Sample of Public Parks in the City of Los Angeles*, Cohen, D. et al. 2006

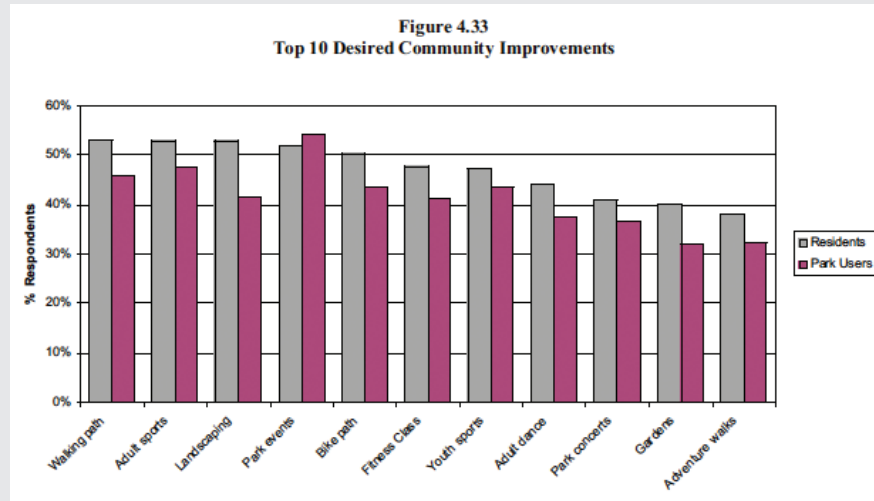
3. Park target areas and therefore use activities are diverse and differ among male and female users. The study identified 16 different park target areas and assessed use of each, from which one can assume user activity (for example, park users in skate park are most likely skating or watching others skate). There were significant differences between male and female users in each identified target area, as seen on Figure 4.12 below.

Figure 4.12
Average Number of Park Users by Target Area and Gender



Source: *Park Use and Physical Activity in a Sample of Public Parks in the City of Los Angeles*, Cohen, D. et al. 2006

Survey respondents identified areas of desired community improvement, information that could be used to help inform future management decisions. Preferences are laid out in the following figure.



Source: *Current Challenges, Funding, and Popularity Trends in Local Parks and Recreation Areas*, Walls, M. 2009

Of note is the overall percentage of reports suggesting increasing activity. Of the 13 activities, only 3 fall below the 50% mark of reporting an increasing. In almost 90 percent of urban parks, dog parks are increasing. In 85%, hiking and walking are up. And in almost 70% of urban parks, total overall outdoor recreation is growing.

This study also asked park directors if they collect park visitor and use data, and just over half (26 out of 46 respondents) said they do. This information is collected mostly at sites where fees are charged, and some collect the data periodically from community master plans. But most of the data collected is simply a measurement of visitors and not a collection of demographic or other information that would allow for an analysis of the data.

The survey of park directors also inquired on challenges they face. The figure below summarizes responses by showing the percentage of “major challenges” and “huge issues” as reported on the survey.

Central Park in New York City is an iconic natural space. In 2011, the Central Park Conservancy assessed visitor use over the period of an entire year – the first time since 1873 that such an effort had been undertaken. As the report acknowledges, there is a difference between “knowing” that the park gets millions of visitors each year, and “Knowing” how many millions this actually means. The difference between these two types of knowledge is important: the latter gives managers as much information as possible about their constituencies, in order to make better decisions under restricted budgets, increased operating costs, and a growing diversity and volume of users.

Central Park: New York City's backyard

From June 2008 through May 2009, the Central Park Conservancy measured an estimated 37-38 million visits to Central Park by approximately 8-9 million different people. These numbers show a great increase in park use since 1973 when it was estimated that 3.3 million people made 12.77 million annual visits to the park. A study in 1982 suggested that park use had stayed consistent over the span of that decade. This shows an increase of threefold in park use over the last three decades.

More specific findings included use activity type, as shown in the figure below. In general, passive recreation (subdued activities, including walking, reading, picnicking, bird-watching, or visiting the zoo) accounted for approximately 85% of park use, with 15% of use involving active recreation (those involving physical activity like sports, exercise, and playground use).

Figure 5.2 – Activity Categories Participated in During Visit

ACTIVITY	% Visits*	Estimated Visits
Passive Recreation	89.5%	32,700,000
Walking / Wandering / Sight-Seeing	63.8%	23,300,000
Relaxing / Socializing	36.3%	13,300,000
Nature Study / Appreciation	15.0%	5,500,000
Dog Walking	11.8%	4,300,000
Photography & Art	5.1%	1,900,000
Commuting	4.8%	1,800,000
Attractions, Programs & Events	4.8%	1,700,000
Metropolitan Museum Visit**	2.1%	800,000
Boating & Fishing	0.3%	100,000
Active Recreation	21.9%	8,000,000
Exercise / Physical Activity	13.9%	5,100,000
Playground	8.5%	3,100,000
Team Sports	2.6%	1,000,000
Spectating (sports, races, etc.)	0.8%	300,000
Races	0.6%	200,000

* General park use (excludes large events)

** Includes only those museum visitors who also visited/exited the Park. The museum receives approximately 5 million visitors annually.

Source: *Report on the Use of Central Park, Central Park Conservancy 2011*

Also of note was the social nature of park visits. The majority of users (63%) visit the park alone. See the complete list of social visits in the following figure.

Figure 6.1 – Social Nature of Visits

WHOM DO VISITORS COME WITH?	% Visits*	Estimated Visits
Alone	63.4%	23,150,000
Family Group	17.9%	6,550,000
Spouse / Partner	12.0%	4,380,000
Friend / Co-worker	13.7%	5,000,000
Child in their care (unrelated)	0.7%	250,000
Organized Group (school, tour, etc.)	0.8%	300,000

* General park use (excludes large events)

Source: Report on the Use of Central Park, Central Park Conservancy 2011

Age of visitors and perceived cultural heritage was also counted (figure below). Since 1982, park visitation by adults aged 50 and older is up from 12.6% to currently 40%. 49.8% of visitors are male and 50.2% female, another significant difference since 1982 when female visitors accounted for only 34% of visitors. The majority of visitors to Central Park were Caucasian (70%).

Figure 10.1 – Age of Visitors

AGE	% of Visits (Total)*	Estimated Visits*	% of Visits by Adults
< 18 years old**	18%	6,670,000	
18 to < 21	2%	720,000	2%
21 to < 30	13%	4,700,000	16%
30 to < 40	17%	6,250,000	21%
40 to < 50	17%	6,370,000	21%
50 to < 60	16%	5,620,000	19%
60 to < 75	14%	5,120,000	17%
75 and over	3%	1,050,000	4%
TOTAL	100%	36,500,000	100%

* General park use (excludes large events)

** Rough estimate based on reported ages of children in the company of interview subjects.

Perceived Race/Ethnicity ⁵	Total Sample	±	Interviews	Non-Participants
Asian	6.8%	0.5%	5.5%	7.6%
Black	6.9%	0.5%	6.4%	6.9%
Caucasian	70.0%	0.9%	74.3%	68.5%
Hispanic	10.4%	0.6%	6.8%	11.4%
Other / Not Answered	5.9%	0.5%	7.1%	5.6%
Total	100%		100%	100%

Source: Report on the Use of Central Park, Central Park Conservancy 2011

As to why 8-9 million people visit Central Park annually, consider visitor answers to the question of what they most appreciate or enjoy about the park (see figure below). 58% of answers note how the park provides a retreat from the City and an attractive landscape.

Figure 12.1 – Things Visitors Appreciate or Enjoy Most about the Park

APPRECIATE / ENJOY MOST	NYC	NY Metro	Rest of USA	Foreign	TOTAL
Landscape	31.2%	26.3%	30.0%	31.6%	31.0%
Retreat from City	25.3%	29.4%	28.1%	33.6%	27.1%
Activities	9.1%	10.4%	8.9%	7.1%	8.8%
Everything About the Park	5.2%	4.8%	4.2%	2.5%	4.6%
People / Social Aspect	4.4%	8.2%	6.0%	3.2%	4.5%
Free and Open to All	5.5%	3.9%	1.7%	1.4%	4.3%
Variety	4.1%	3.0%	6.2%	3.6%	4.2%
Level of Upkeep	3.5%	1.0%	2.6%	3.6%	3.3%
Size	1.9%	1.6%	3.9%	5.4%	2.7%
Specific Landscapes	2.4%	4.8%	1.5%	3.7%	2.6%
Good for Dogs	2.6%	1.3%	0.7%	0.2%	1.9%
Good for Children	1.4%	2.8%	0.2%	0.4%	1.2%
Safety	1.3%	1.9%	0.7%	1.7%	1.3%
Events	0.8%	0.3%	0.6%	0.5%	0.7%
History	0.4%		1.6%		0.5%
Other / Unclear Response	0.8%	0.4%	3.0%	1.6%	1.2%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Report on the Use of Central Park, Central Park Conservancy 2011

The Central Park Conservancy notes that: “Now more than ever, New Yorkers use the Park as their backyard, and they include it at the top of their lists of places they tell their friends and family from out of town to visit. That the Park is used more now, by more people, in more ways (and from more places) than ever before is readily apparent to those who have witnessed its transformation in recent decades and know something of its longer history.” The results of this study make knowledge of park users more than just “readily apparent.” Rather now, park users have been measured, an important step towards better management.

For more information: http://www.centralparknyc.org/assets/pdfs/surveyreport_april2011.pdf

Rural Natural Space Use

The United States Forest Service manages 154 national forests across 40 states, equaling 188 million acres. National Forest and Wilderness lands provide nearby access to natural areas for many Americans. Studies conducted by the U.S. Forest Service show the varied uses and user groups accessing these federally operated natural places, and reveal specific needs for improvement.

National Forest and Wilderness Users

The U.S. Forest Service hosts the National Visitor Use Monitoring program (NVUM), which on five-year cycles provides information on the volume and characterizes of recreation visitation to the National Forest System. The most recent field data available spans 2008-2012. During this time, results yield an estimate of just over 160 million recreation visits to National Forests, with an additional 300 million occasions of people traveling on scenic byways and similar routes near National Forest lands.

The results show that the most popular recreational activities in National Forests are first, hiking or walking, and second, downhill skiing. Further, fifty-five percent of visitors engage in a primary activity that is physically active.

Individual characteristics of National Forest sites and Wilderness users over the study period were as follows:

- Over one-third are females
- One-sixth are children 16 and under
- Over 50% of National Forest visitors live within 50 miles of the forest they visited, and about 20% are from at least 200 miles away
- 58% of people visit fewer than 10 times annually and 15% of people visit over 50 times annually

Overwhelmingly, National Forest and Wilderness visitors identified themselves as “White,” as seen in the following table.

Table 4. Percent of National Forest and Wilderness visits by race and ethnicity, for FY2008 - FY2012.

Race/Ethnicity ^a	National Forest visits (%)	Wilderness visits (%)
American Indian/Alaska Native	2.4	1.8
Asian	2.1	3.1
Black/African American	1.1	0.6
Native Hawaiian or other Pacific Islander	1.1	0.6
White	95.3	95.7
Spanish, Hispanic, or Latino	5.4	5.5

Source: National Summary Report, USDA Forest Service 2013

Diversity of visitors by age is seen in the next table.

Table 4. Percent of National Forest and Wilderness visits by race and ethnicity, for FY2008 - FY2012.

Race/Ethnicity ^a	National Forest visits (%)	Wilderness visits (%)
American Indian/Alaska Native	2.4	1.8
Asian	2.1	3.1
Black/African American	1.1	0.6
Native Hawaiian or other Pacific Islander	1.1	0.6
White	95.3	95.7
Spanish, Hispanic, or Latino	5.4	5.5

Source: *National Summary Report, USDA Forest Service 2013*

Cassandra Johnson Gaither is a social science researcher with the U.S. Forest Service. She studies ethnic perceptions of the natural world and the way these perceptions affect outdoor recreation behavior for minority groups.

In a 2015 report, Gaither and others studied differences in visitor diversity between Forest Service regions 8 (US South) and 5 (California). These regions are two of the Forest Service's most racially and ethnically diverse.

Gaither summarized Census and other data to compare use of Forest Service lands in California by Hispanics with Forest Service lands in the South by African Americans. In 2010, Hispanics accounted for 37.6 percent of California's total population and 41.9% of the population in the 11 southern California counties near national forests. In 2002, Hispanics represented 20-25% of visitors to these southern California National forests. In contrast, African Americans represent over 60% of the population in some counties adjacent to region 8 National forests and yet account for only 2% of visits to these natural areas.

The work of Gaither and others in the Forest Service call attention to the various user groups served by these natural areas and raise "questions [about] whether the Agency's services and programming are reasonably accessible by racial and ethnic minority populations." These studies seek to build a better understanding of USFS priorities aimed at "better reflecting both the current and future U.S. populations" and, importantly, how the emphasis on diversity actually plays out in management.

For more information:

http://www.fs.fed.us/recreation/programs/nvum/2012%20National_Summary_Report_061413.pdf

<http://www.treesearch.fs.fed.us/pubs/47924>

2.3 Future Research

Research on the use of natural areas by different groups is ongoing, especially as use increases and user groups continue to expand and diversify. This continued research is vital in order to appropriately respond to new and emerging trends in access.

Possible Questions for Discussion

- How can this research best inform management decisions seeking to help increase access to natural areas?
- What other research has been done that reveals important information on why and how different groups use natural areas?
- On what other questions would future research be most helpful to efforts to increase access to natural areas?

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3. Who Uses Natural Areas – Perspectives from User Groups

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Increasing access to preserved lands for a broad range of user groups is the focus of many organizations, programs and individual missions. The reasons for attending to this issue vary by group and include the health benefits of spending time outdoors, connecting hands-on with environmental issues, developing values in the natural world, overcoming personal obstacles, and connecting as a human group through outdoor experiences, among many others. (For more information on this range of motivations, see Chapter 1: The Importance of Access to Natural Areas.)

This chapter will explore some of the many powerful connections arising between human communities and natural areas. Taken together, the examples show the breadth and depth of connections being made across diverse user groups and geographies.

3.1 Connecting Users with Natural Areas

Increasing Cultural Diversity in Natural Spaces

Numerous individuals and organizations are working to increase the cultural diversity across users of natural areas. The following represent some leaders of these efforts.

Outdoor Afro: Celebrating and Inspiring Africa-American Connections to Nature

Outdoor Afro is a nation-wide “social community that reconnects African-Americans with natural spaces and one another” through outdoor experiences. Founded by Rue Mapp, the organization works at the front lines of increasing user access to natural areas, shifting the “visual representation” of who connects with nature. Rue grew up experiencing natural areas regularly in the northern Woodlands of California, to which she attributes her appreciation for natural spaces. Reflecting on her own nature experiences, Rue was “troubled by the consistently low numbers of African Americans participating in [outdoor] activities.”

Importantly, Outdoor Afro targets a user group that traditionally has had low access opportunities (“under natured”), and where the pathways to interacting with nature are not necessarily clear. In response, Outdoor Afro builds up and maintains these access points. They organize recreational activities that include camping, hiking, biking, birding, fishing, gardening, and skiing.

For more information: <http://www.outdoorafro.com/>

Much like Outdoor Afro, GirlTrek works with an African-American user group where there has not been a clear path to accessing the outdoors. GirlTrek promotes walking as a way to achieve a healthy and more fulfilled life.

GirlTrek: Lace Up!

“When Black women walk, things change. When Harriet Tubman walked, things changed. When the women in the Montgomery Bus Boycotts walked, things changed. And when we walk, things will change!”

GirlTrek is a Washington, D.C. based nonprofit that mobilizes African American women in walking programs in order to inspire and support healthier and happier lives. In its first three years, the organization has supported over 20,000 walkers and has a five-year goal of reaching 1 million GirlTrek walkers in high-need communities.

“We walk to heal our bodies, inspire our girls and reclaim the streets of our communities. We trek to live.”

Recognizing the reality that African American women are disproportionately affected by obesity-related, preventable diseases, GirlTrek inspires healthier lives by getting women outside and moving.

For more information: <http://www.girltrek.org/>

Like Outdoor Afro and GirlTrek, Wonderful Outings in the Wilderness! (or WOW!) programs provide outdoor opportunities for African Americans. WOW! is led by Carolyn Hartfield whose work targets the Atlanta Baby Boomer demographic. Among others, she started the “OPAL” Meetup group (a social network for helping to organize off line gatherings, see Section 5 for more details), “Older People with Active Lifestyles,” that brings together men and women over age 50 interested in being outdoors and active.

In less than three years, OPAL has organized 169 Meetups in and around Atlanta. WOW! leads hikes and other outdoor adventure trips geared towards this user group. WOW! also promotes positivity, adventure, and joy as ways to approach and experience the outdoors, and in general, life. (For more information: <http://www.carolynhartfield.com/#!wow-programs/c1ykp>.)

A theme of many of these efforts is connecting a traditionally low access user group with the outdoors. These organizations are not building physical paths to natural areas, but rather revealing existing paths to new users. They bring people to established, accessible natural spaces through new initiatives. They are unique in their high level of cultural competency and commitment to the outdoor component. As such, they offer great opportunities for collaboration with land-holding organizations such as land trusts.

Latino Outdoors is another example of connecting a specific user group, the Latino community, with the outdoors. Their aim is to change the presence of Latinos in the conservation movement, accomplishing this in part by providing connections with and experiences in the outdoors.

Latino Outdoors: Connecting “Cultura” and Community with the Outdoors

In the words of Latino Outdoors, the organization completes work in response to a single question: “Where are the Latino-led organizations with conservation and the environment as a primary focus?” From this jumping off point, they have identified four areas of focus intended to:

- Build Latino leadership in conservation,
- Provide pathways for youth to realize employment in this field,
- Build community and partner networks, and
- Empower Latinos to be able to speak of the environment as “this is how and why it matters, this is us, listen to our stories and support us.”

Latino Outdoors works to accomplish this mission by providing outdoor opportunities for Latino families and communities. Their programming seeks to provide positive and transformative first experiences in the outdoors, as well as to reframe past experiences. They organize trips through which shared experiences and knowledge are built in order for Latinos to engage and learn about the outdoors and position themselves as leaders in conservation.

For more information: <http://latinooutdoors.org/>

Veterans and Service Members in the Outdoors

Also working to connect a specific user group with natural areas are the organizations committed to outdoor experiences for service members and veterans. These include groups like Outward Bound that lead veterans through wilderness courses, Project Healing Waters Fly Fishing that provides fly fishing classes and experiences to wounded military members, and the Sierra Club’s Military Outdoors program. This veteran-specific programming provides valuable opportunities for service members, veterans, and their families to spend time in nature.

Programs that serve the service member and veteran communities do so with the knowledge that time spent in natural areas, as put by the Sierra Club Military Outdoors, “promotes mental health, emotional resiliency, and leadership development prior to deployment, [and] it provides invaluable know-how to help returning vets enjoy and engage with nature upon returning from deployments.”

Outward Bound for Veterans

Outward Bound for Veterans structures their programming much like that of their traditional Outward Bound experiences. This happens through wilderness expeditions that present physical, mental, and emotional challenges. Their goal is to “build the self-confidence, pride, trust, and communication skills necessary to successfully return to their families, employers, and communities following wartime service.” In particular, these adventures “purposefully scaffold wartime experiences...with authentic achievements to create positive emotional and mental outcomes.” The program uses wilderness activities as “metaphors for daily life experiences.”

The program originated to meet the needs of returning Vietnam veterans and today serves over 600 veterans a year. In addition to addressing the physical, mental, and emotional challenges of the veterans they serve, the program importantly and intimately connects participants with the natural world. In the words of one participant: “As an additional takeaway, I learned that respect for nature is extremely important and that I have a lot in common with those that promote good stewardship. I have also taken this home and to work. I have a new commitment in my life: it is to respect, love and protect our environment.”

For more information: <http://www.outwardbound.org/veteran-adventures/outward-bound-for-veterans/>

Project Healing Waters Fly Fishing

Project Healing Waters Fly Fishing has been serving disabled active military personnel and veterans since 2005. Today, they work in 49 states through 173 programs. Each program is led by local-level volunteers, based primarily at Department of Veterans Affairs’ facilities.

In 2013, Project Healing Waters served over 5,400 recovering warriors and disabled veterans in its dedication to “physical and emotional rehabilitation...through fly fishing and associated activities including education and outings.” Of the program, a Virginia recreational therapist said, “Fly fishing grants our veterans the opportunity to experience the therapeutic benefits of nature.”

For more information: <https://www.projecthealingwaters.org/>

Sierra Club Military Outdoors

The Sierra Club's Military Outdoors program is deliberately forming lasting connections between the outdoors and military service members, veterans, and their families. It works to “ensure that service members, veterans, and their families have the skills, exposure, knowledge, and confidence to access the great outdoors.”

The program works with the understanding that “time spent outdoors eases the transition and improves both mental health and social skills.” Staff members believe that “providing service members, veterans, and their families with quality outdoor experiences will help foster the development of a new generation of Sierra Club leaders and supporters... [who can] become outdoor leaders in their communities.”

The testimony of participant Elle Hansen sums up well why the Military Outdoor program works to connect military service members, veterans, and families with nature: “There is no better place to clear your mind than being in the great outdoors.”

For more information: <http://content.sierraclub.org/outings/military>

Nature for All Ages

Increasing age diversity in natural spaces is the focus of many organizations. From groups targeting youth populations, to those contributing to nature experiences in senior populations, this work is varied and helps provide age-specific connections with nature. Below are some examples of organizations working to diversify user age in natural spaces.

Cities Promoting Access to Nature

The National League of Cities and Children & Nature Network recently partnered to launch a new initiative aimed at increasing children's access to and time in green spaces. Cities Promoting Access to Nature aims to ensure that “all children have the opportunity to play, learn, and grow in outdoor green spaces.” The three-year initiative targets “economically stressed communities” to bring to this user group the benefits of outdoor experiences. Access to parks and natural settings are critical to children's development, encouraging healthy habits and the development of social and emotional skills.

The initiative will include:

- City scans of over 100 cities and assessment tools intended to provide information on current connections to nature in different communities.
- Leadership academies to share survey results and train on nature connection opportunities.
- Pass-through grants for the support of action plans.

- Partnership opportunities including with organizations such as the U.S. Department of the Interior, Wilderness Inquiry, YMCA, and Outdoor Alliance for Kids.
- Technical assistance and peer support.

The initiative “seeks to ensure that a connection to nature becomes an integral part of city priorities, planning and policy-making in a broad range of areas, including community health and wellness, education, out-of-school time programming, job creation, transportation, and land use.”

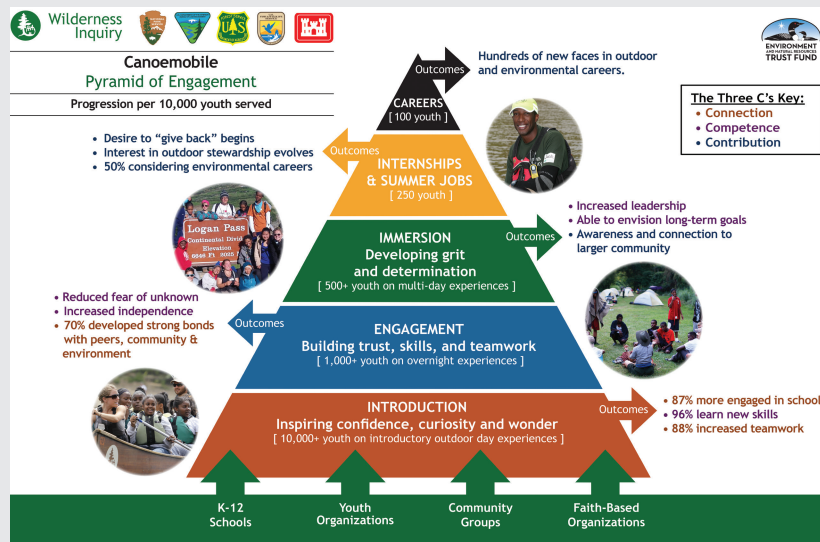
For more information:

http://www.childrenandnature.org/2014/11/19/new_initiative_to_help_cities_increase_nature_access_for_children_launched_/

Urban Wilderness Canoemobile: “Discover the Wilderness in Your Backyard!”

Wilderness Inquiry’s Canoemobile program connects America’s urban young people with close-to-home natural areas. The program works on addressing “the academic achievement gap; connecting diverse youth to outdoor jobs, scholarships and careers; and fostering the next generation of community and environmental stewards.”

Their vision, to engage every child and family in Minnesota with the state’s many outdoor, public spaces, has served over 100,000 individuals nationwide since the program’s creation in 2008. The Canoemobile works to accomplish its mission through a “Pyramid of Engagement” that has a foundation “inspiring confidence, curiosity, and wonder” through day, overnight, and multi-day experiences.



Source: Wilderness Inquiry, 2015

The Canoemobile program also provides teacher professional development opportunities, youth internships, and a number of “Outdoor Clubs” throughout the Twin Cities metro. These clubs serve as an entry point to the “Pyramid of Engagement” and thus, increased access to the outdoors.

For more information:

<https://www.wildernessinquiry.org/programs/urban-wilderness-canoe-adventures/>

Another example of work that targets diverse age ranges is that of Groundwork USA. Their mission, to “bring about the sustained regeneration, improvement and management of the physical environment by developing community-based partnerships which empower people, businesses and organizations to promote environmental, economic and social well-being,” is addressed through many different programs. These include programs aimed at reclaiming vacant lots, cleaning and caring for neglected areas, restoring brownfields, and “[raising] the profile of urban environmental improvements as part of a comprehensive approach to smart growth strategies and rejuvenation of inner city communities. (For more information: <http://groundworkusa.org/>)

Maintaining Connections with Sporting Communities

Sportswomen and men have long been users of natural areas, and this trend continues today. These users contribute to conservation of natural spaces through taxes on equipment purchases and licenses, as well as by providing economic benefit to communities near used natural areas. Some examples of organizations working with such users of natural areas include: Ducks Unlimited (<http://www.ducks.org/>), Trout Unlimited (<http://www.tu.org/>), and the Boone and Crockett Club (<http://www.boone-crockett.org/>) among many others.

Adaptive Nature Experiences

Accessing and using natural areas can be a challenge to some users with physical and mental handicaps. Organizations committed to engaging people with disabilities in natural areas must often offer adaptations that make nature experiences possible.

Eagle Mount, Bozeman, Montana: “Everybody has challenges. We have adventures.”

Eagle Mount is a Bozeman, Montana non-profit organization dedicated to providing outdoor experiences for people with disabilities. “Since 1982, Eagle Mount has been transforming the lives of people with disabilities and children with cancer. With the help and support of a generous community, Eagle Mount opens up a world of adventures — skiing, horseback riding, swimming, camping, rock climbing, kayaking, cycling, fishing, and more — that foster freedom, joy, strength, focus, and confidence.”

Their full range of programs use adaptive approaches and equipment, and thus provide a wide array of nature experiences to a user group often unable to participate in these activities. In the organization's own words: "No matter what your 'disability,' you deserve to enjoy all the wonderful recreational opportunities Montana has to offer."

In addition to a user group dealing with handicaps, Eagle Mount also provides nature programming for kids with cancer through their program, Big Sky Kids. "The Big Sky Kids experience features Montana outdoor adventures such as white-water rafting, horseback riding, fly-fishing, zip-lining, and touring the wonders of Yellowstone National Park. Since 1985, Big Sky Kids has been helping campers to heal and grow – both as individuals and as a group – and simply be reminded how it feels to be a kid again, free from the chains of treatment and the hospital. Our camps create a sense of normalcy where campers and families can share their stories in a natural and pressure-free environment." The oncology programs seek to give participants "the opportunity to bond with each other in a gorgeous, caring, and natural environment conducive to sharing hopes and fears."

For more information: <http://eaglemount.org/>

Similar organizations:

Hole in the Wall Gang: <http://www.holeinthewallgang.org/>

Possible Questions for Discussion

- What user groups are underrepresented in natural areas and who is successfully addressing issues of access for such groups?
- What barriers do certain user groups face to accessing natural area and how might those barriers be overcome?
- What successes in increasing user access for one group can be replicated for use with other user groups and geographies?
- How might well-established user groups contribute to increasing access to natural areas for other user groups in other locations?
- What other examples of user groups increasing access to natural areas offer valuable lessons for efforts to do more?

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4. How Can Physical Design Create Access and Attract More Users?

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When one wants to design a space that is ‘accessible’ or that grants ‘access,’ she will probably, at some point, find herself referring to the Americans with Disabilities Act Standards for accessible design. There she will find descriptions of appropriate pavement and surface coverings, plumbing hardware and incline percentages. The ADA standards and guidelines is a valuable tool to designing accessible spaces, specifically for those with disabilities. However, we must look to expand the definition of access to also acknowledge and include other marginalized populations. When it comes to providing an equal opportunity, designs should also consider people with limited financial capacity and familiarity with nature. In addition, age, gender, literacy, culture and comfort all need to be taken into account when designing for access. While it may be impossible or unfeasible to create a space that is relevant and accessible to all, we must try. Luckily, research in landscape design, land management and the social sciences has been able to identify universal principles and unique elements of physical design that can help attract a wide spectrum of users.

This chapter focuses on how physical design is used and manipulated in intentional ways to connect more and diverse individuals to the natural world. First, it explores the issue of accessibility as it relates to physical design, and then examines fundamental human attractions to certain design principles. This is followed by a discussion and a selection of noteworthy examples of designs in the built and natural landscape that bring people to natural areas and bring natural spaces to people. The chapter concludes with an exploration of under-examined, but important social factors that influence design, such as the visitors’ background and perceived safety.

At the crux of this chapter is a discussion of how design can be used to create experiences in nature that are welcoming, accessible, and familiar. The way to provide these experiences is to build familiar touchstones into the nature experience. Recognizable flora, multi-lingual signs, familiar play apparatus or landmarks build a sense of place and comfort.

4.1 On 'Access' in Built Design, Framing the Issue

A major challenge facing recreation service providers and the land trust movement is how to make the preserved spaces and programs attractive and relevant to as many people as possible. A key to addressing this problem lies in making the offerings accessible. The easier a space is to access and relate to, presumably, the more it will get used and attract new users. But, to simply provide the opportunity is not enough. Needs must be met, opportunities must be advertised, and individuals must feel empowered by their experiences. In order to discuss access in the following chapter, it is important to clarify the idea of what access means and how it can be addressed.

The Andersen and Newman Model and the Enabling Factor

One definition of accessibility that is useful is marked in the Andersen and Newman (1973) model. The model defines accessibility as the “ability of the individual to travel to the recreation site or service” and “the extent to which programs are available and accessible to those we serve” (Andersen et al. 1973).

This definition of accessibility will naturally raise questions about the user: Do they have transportation to and from the space? Do they live near the resource? At the same time, providers of the resource, program, or natural space, must also ask themselves “What opportunities do we really provide?” (Andersen et al. 1973). By asking this question and by being reflective, the provider may be able to identify opportunities that actually end up limiting use. For example, what opportunities to attract users are lost when a natural areas park does not provide a map of the trails, when an area has no seating or when certain trails are designated for mountain biking instead of mixed use? What messages are our spaces sending to our visitors?

Dr. Frances Ming Kuo's 3 Ways to Create Access to Nature

Dr. Frances E. (Ming) Kuo, Associate Professor and Director of the Landscape and Human Health Laboratory at the University of Illinois at Urbana-Champaign provides a framework useful to thinking about accessibility to the natural world. The framework includes three ways of connecting people to nature:

- Provide as much nature, in as many forms, as possible.
- Bring nature to people.
- Bring people to nature.

By expanding the conversation from ‘how do get people to or parks’ to ‘how do we bring nature to people,’ the opportunities for access become more numerous. Design can be leveraged both within small, indoor spaces and landscape level outdoor spaces to ‘bring nature closer to people and bring people closer to nature’ (2010). For a full discussion on designing outdoor spaces see the appendix at the end of this chapter.

4.2 How Design Can Bring Nature to Us

The most direct way to create access to nature is by physically bringing green spaces closer to people. This can be made possible on a macro scale, for example, by building more public parks and creating nature corridors in densely populated areas. Alternatively, it can be achieved on micro levels by ‘greening’ indoor environments. By integrating and inserting opportunities for nature into multiple levels of design it is possible to shift a person’s relationship with nature towards one that is familiar and that may give him or her the confidence and curiosity to explore nature outside of their homes (Kuo 2010).

The Importance of Variety

In the 2010 National Recreation and Parks Association Report, Dr. Kuo proposes that a way designers can create access to nature is by providing “as much nature as possible,” in a variety of forms. Variety ensures that the experience can be accessed by individuals with different levels of learning, ability and also aesthetic preferences. The greater the diversity of the natural experience allows for more chances of interaction and frequency of interaction (Kuo 2010).

The urban landscape can be interpreted as a hierarchy of experiences where each ascending hierarchy represents more involved levels of interaction (Kuo 2010). A view of a mountain from one’s office or a kitchen window box provides a base level experience of nature. A higher level nature interaction may be experienced on a tree-lined street; higher still would be a community garden and eventually a city park and perhaps even a ‘wilderness experience’ in a state or national park.

All are valid ways of experiencing nature and Kuo suggests that landscape designs should provide varying levels of engagement with nature and ways to move between them (Kuo 2010). Individuals will then exercise their choice in whether to transition from one space to the other, and expose themselves to higher level nature experiences.

Eco District of Hammarby Lake City

The Eco District of Hammarby Lake City in Stockholm Sweden is a prime example of how effective design incorporates a variety of natural experiences into a comprehensive plan. Hammarby Sjostad was designed to use half of the amount of energy used in a typical development (Inghe-Hellström 2005). While concerns of access are not mentioned in the design mission, the resulting product provides easy and ample access to nature, whether a citizen is outside or inside. All of the apartments have views of the water or at least of green space and the natural sounds of native reeds and rushes blowing in the breeze can be heard by most residents. A network of varied parks, green spaces and walkways runs through the district to provide a counterbalance to the dense urban landscape.

The vegetation and green corridors that filter storm water runoff pollutants also provide a link and a shortcut to a nature reserve just outside of the city; among the waterfront reeds is a secluded walkways extend out into the water and there is a preserved oak forest on site (Ignatieva 2014). All of these features are experiences that citizens can engage with en route to their normal places of interest or activities.

For more information see the Hammarby Sjostad Case Study:

<http://www.aeg7.com/assets/publications/hammarby%20sjostad.pdf>

4.3 How Design Can Bring People to Nature

As Dr. Kuo (2010) writes, the way to create accessible and used spaces “is to find green places, protect them and devise ways to encourage people to spend significant, frequent amounts of time in them.” Design that brings people to natural areas includes macro, landscape-level infrastructure that provides modes or routes such as transportation corridors, public transit and greenways.

Public Transportation

Two questions that arise when assessing the accessibility of a space are, ‘Do users live near the resource?’ and, if not, ‘How will they get to it?’ Accessibility as it relates to transportation is perhaps one of the most blatant measures of designed accessibility, but surprisingly is one of the most under-addressed when it comes to getting people to the more remote natural areas: preserves, state parks, and national parks. When you do not have a car, what are the options?

In Chicago, there are many options, according to Carol LaChapelle, author of the “Have Train, Will Travel” article in the Chicago Wilderness Magazine (Summer 2007). LaChapelle writes, “I’ve used it all – buses, El trains, and commuter trains, including the South Shore Line to Indiana.” While ‘doable,’ LaChapelle acknowledges that there are many tradeoffs and caveats associated with taking public transportation to natural areas, which automatically excludes certain users. One must have access to the Internet, time to search and plan, knowledge of the place they want to go and probably an existing relationship with the space, or nature at a base level. It is unlikely that an individual who does not have a relationship with nature would go to all the trouble. Another fault in design is that wild land parks and preserves are usually not designed to receive those traveling, at least partially, on foot. If alternative routes or designs exist, then they are poorly indicated. LaChapelle writes of her encounter with this design flaw:

In January, for instance, I took the Metro north to Zion for a first-time visit to Illinois Beach State Park... I walked half an hour from the train stop, down busy Sheridan Road, past a stream of mini malls and fast food joints, just to enter the park at Wadsworth Road, the main entrance to the south end, which was clearly designed for cars, not pedestrians. At that point I was still another 20 minutes away from the hiking trails... The silver lining, however, came when park

staff informed me that I could have stepped onto a bike trail just south of the station – they said they’d put up new signs alerting visitors who arrive this way.

TriMet, Portland, Oregon

Portland, Oregon is one city that is ‘getting it right’ in designing for access and in creating connectivity between its urban and natural areas via public transportation and trail networks. Portland’s transit association, TriMet, provides bus, light rail and commuter rail service throughout the region. Their website even has a dedicated ‘Transit to Trails’ page that encourages visitors to “leave the car at home” and use public transit to access the more than 10,000 acres of parks and natural areas. The page is organized by region and has highlighted parks to visit, including a short summary of the park, a link to the trail map, a difficulty rating, bus lines that will take the visitor there and a link to their ‘trip planner’ page.

NW Portland

Forest Park ^{en}

NW 29th Avenue & Upshur Street to
Newberry Road, Portland

Forest Park’s 5,156 acres includes natural areas, biking, hiking and equestrian trails and an abundance of wildlife. The 30-mile Wildwood Trail in Forest Park is part of the region’s 40-Mile Loop. 70 miles of trails, fire lanes and gravel road, portions in the Washington Park section are accessible.



EncMstr/Wikimedia

[Trail information](#) ^{en}

Difficulty

Easy to difficult, depending on trail

How to get there

Access available from many points, including MAX Blue or Red Line, 16-Front Ave/St Helens Rd, 20-Burnside/Stark

[Plan your trip](#)

For more information see:

TriMet: <http://trimet.org/destinations/transittotrails.html>

The issue of interconnectivity is brought to light in LaChapelle's excerpt. While multiple public transport options may exist, such as a train to a bike trail or a train to a shuttle or bus, sometimes there is lack of communication between means of transport and the park destination itself. The simplest design solution to remedy this problem may be to provide signage at every node and transfer point that is clear, stated in multiple languages and which uses symbols to indicate direction, wait times and distance to the destination.

Greenways

Greenways are spaces that serve the double function of creating local green spaces at the same time they create a way and route to get to a more remote natural area. According to the Trails and Greenways Clearinghouse, a joint project of Rails to Trails Conservancy and The Conservation Fund's American Greenways Program, "Greenways are corridors of protected open space managed for conservation and recreation purposes. Greenways often follow natural land or water features, and link nature reserves, parks, cultural features and historic sites with each other and with populated areas."

Greenways are a useful design solution to exposing and providing green space to multiple neighborhoods. Greenways provide a variety of experiences that allow the user to 'choose your own adventure.' Important design aspects incorporated into greenways include nodes of passive and active recreation, trails that connect and loop, public and visible entry and access points along street corridors and amenities that provide rest, and encourage gathering like benches, picnic areas and open lawns.

The Lafitte Greenway & Revitalization Corridor

A greenway that received national recognition by the American Planning Association in 2013 was the Lafitte Greenway, one of New Orleans's first revitalization projects since Hurricane Katrina in 2005. Fashioned by the Design Workshop, the Lafitte Greenway will transform a 54 acre site of a former shipping canal into a 3.1 mile linear greenway that provides a multi-modal transportation green corridor and connects nine neighborhoods within a ¼ mile to each other and to the heart of New Orleans. The trail weaves through fields, orchards, rain gardens, recreational spaces and a resurrected, historical community garden. The recreational fields double as storm water reservoirs, and the project restores native ecology and provides essential recreational space for the underserved community. As if that was not enough, the plans were formed through collaboration with local community members whose needs for open space and public programming and whose concerns for safety inform the entirety of the Lafitte Greenway design. Explicitly noted design aspects asked for by community members include shaded recreational zones and places to gather.

For more information see:

American Society of Landscape Architects: <http://www.asla.org/2013awards/328.html>

Designing Transitions

Another small-scale way of ‘bringing people to [more] nature’ is to incorporate design aspects that blur the line between wild and manicured spaces in order to create more accessible and fluid pathways to exploring nature. The Nature and Learning Initiatives Guidelines explain that this new experience may lead to the development of new habits and affinities for nature in the future: “Families may be more apt to adopt a new practice in an unfamiliar place that they can replicate back at home” (Moore 2014).

Nature Play Zone at the Indiana Dunes National Lakeshore

The Indiana Dunes National Lakeshore utilizes the opportunity to transition visitors from familiar play and learning settings to more unstructured play areas that engage the user more with nature. The park strategically built the new Nature Play Zone adjacent to the popular Paul H. Douglas Center for environmental education. The natural “Playground” does not have traditional fixtures such as slides or swings but it does have places where children can probe logs, dig in sand and enjoy “hands-on nature experiences” that are inaccessible in other parks.

For more information see:

National Park Service: <http://www.nps.gov/kids/features/2014/naturePlayZone.cfm>

4.4 Social Factors that Influence Design

So far we have explored how design can be inserted and utilized in different levels of our lives in order to bring nature to people or bring people to nature. The next section acknowledges some of the major social factors that influence physical design, including diversity of user experience and background and issues of safety. This section will also explore tailored design features that comfortably connect users to natural areas.

The Visitor

According to Jay Beckwith (2014), a playground design professional, “Good design is all about asking the right questions.” The same applies when designing natural areas. When it comes to the design of the park, preserve, green corridor or path, we need to first ask, “Who is the visitor?” This one question will inform the bulk of the facilities that will need to be offered and the look of the landscape.

When thinking about the ‘visitor’ it is important to think about visitors of the past, present and future. The following questions are designed to encourage the subtle nuances that help to identify different visitors that can and will use the park space. The questions are adapted from Jay Beckwith’s (2014) list of questions from “How Design Relates to Play”:

- What elements exist or can be added that give the space a sense of place?
- How is the space connected to the people who will use it?

- What is the “message” the space gives to people? Is it warm, inviting, calming?
- How does the space connect to its neighborhood and community?
- What are the existing circulation patterns?
- What community groups are involved with the space already and how are they empowered to continue to be engaged?
- Are there places that provide a sense of enclosure where small groups can just hang out?
- Will everyone in the community feel welcome and included?

At a fundamental level, in order to attract and grant people access to outdoor green spaces we must design to make places “safe, pleasant and rewarding” (J.B. Jackson).

After understanding who the visitor is, we must also try to understand the values that visitor holds and the social factors that affect their use of the natural area. Natural areas are influenced and shaped by the society around them. They are part of a singular system, and behaviors in one affect the other. For example, a park may be designed with all the ‘right’ features, but still be underused because of larger social factors, such as the presence of violence in the surrounding community. That park will not be visited or truly accessible until the larger issues of violence are addressed. In reading this section, it may be useful to measure the success of space and particular design feature by how well it reflects the visitors’ values or how it addresses a present social issue. In thinking about your own spaces, try to gauge what social factors or values enable or inhibit the surrounding community from accessing the space.

Children and Families

Key values to keep in mind when designing for children and family are play, safety and wonder. To truly understand (or remember) these values, one must forgo thinking like an adult and begin to think like a child. While an adult may think of and design around the aesthetic features of a space, it is the functional features of the environment that really draw children and honor these values (Acar 2013). When designing to draw children to nature, think about the activities and opportunities that the space creates and invites.

According to Habibe Acar (2013), author of *Landscape Design for Children and Their Environments in Urban Context, Advances in Landscape Architecture*, “Environments that offer opportunity for movement and that offer diversity for children are the most favored” and aid in a child’s natural development. Movement is essential to the discovery and enjoyment of an area and it is an essential component of play. The following open space and natural public areas features, as specified by White and Stoecklin (1998), have been shown to draw the greatest positive response from children and are most utilized:

- Water
- Vegetation including trees, bushes, flowers and the long grass
- Animals and creatures living in ponds, sand and water
- Natural colors

- Diversity and change
- Places to sit under, in, and on
- Sheltered places/ hidden and private places
- Places providing good views
- Natural and replaceable structures, materials, and equipment (Acar 2013)

While constructing built play areas, design connections to the wider natural areas by building paths and trails that link areas of high active usage to passive hiking areas.

Recommendations to creating effective, child centric corridors and play areas sourced from Nature Play and Learning Places National Guideline (2014) and Parks and Other Green Environments: Essential Components of a Healthy Human Habitat (2010):

- Signage
 - Invite children to decorate entrances or personalize signs, especially those that lead into and out of designated play zones.
 - Should be easy to read for people of all levels, include visual representations.
 - Should be at child height or at least visible to children.
- Names
 - Consider naming child-friendly areas more playful names that indicate their target visitors. For example, ‘Play Stream,’ or a ‘Critter Creek.’
 - Enclose nature play and learning areas so that families with young children feel safe. A natural looking fence will provide assurance for parent users and allow the children to wander safely within a set boundary.
 - Make trails wide enough to walk side by side with another person.
 - Create child and nature-friendly subdivisions where rules and regulations do not restrict the form of play.

Seniors

According to the U.S. Census Current Population Reports, between 2012 and 2050 the U.S. will experience considerable growth in its older population (May 2014). There are projected to be 83.7 million people over the age of 65 in 2050 (Ortman et al 2014). That is almost double its estimate population of the 43.1 million in 2012 (Ortman et al 2014). The size of the older population is important to public and private interests, and designers need to think about designing for this growing user audience. Values to keep in mind when designing for senior visitors are comfort, rest, community and places to socialize.

Comfort is integral when designing for seniors. In order to design open spaces and natural areas that are physically accessible and comfortable, the ADA recreation guidelines can be helpful; it indicates surfaces, gradient, egress and seating standards that apply to older

users with mobility limitations. Other physical components that make for comfortable and usable spaces:

- Railings alongside steps
- At-height drinking fountains
- Benches at the tops of inclines to provide rest
- A variety of well-marked short trails that loop and indicate distance
- Park entrances located near bus stops and crosswalks
- Shelters or seated covered areas that can provide relief from the sun and heat
- Shaded resting spots alongside trails that are strategically positioned to include an ‘experience’ such as a view of a body of water, or within a bird sanctuary. (Judd 2015)

According to the book “People Places: Design Guidelines for Urban Open Space, Part 4,” parks and open space areas serve two functions for senior users (1997). Parks provide peaceful, natural settings where seniors can sit, walk, contemplate nature and be with other people. Thus, in order for design to be accessible, relevant and attractive to older users it must foster revitalization and social opportunities. The “People Places” guidelines suggest the following designs to help cater to, attract and make parks and open spaces welcoming to senior users who seek social interaction:

- Place seating directly inside the park’s entrance and by busy places where there are opportunities to people watch.
- Place benches in a variety of arrangements to facilitate conversation.
 - Make some benches short enough for single users and others long enough so that multiple people can sit together.
- Provide game tables and seating for spectators.

Social programming is a big draw for seniors and so parks and open spaces must be designed to foster programming and aid in socially led interactions. One park designer that weaves the concept of designing open space and parks for social programming and interactions in the senior population is Australian landscape architect, Grant Donald. He is the Creative Director of Silk Tree international and the designer of the world’s first designated “Aged Park” designed for China’s elderly community.

Wanshou Park, China

The premise of the ‘Aged Park’ is to provide physical design and programs that are specifically for elderly individuals. The design encourages active engagement in physical and social activities. A key to the design are its flexible spaces that cater to a range of different recreation types and enable any level of active interaction.

For more information see:

Silk Tree International: <http://www.silktreegroup.com/active-ageing.html>

Yibada Article: <http://en.yibada.com/articles/7387/20141009/beijing-opens-park-promoting-active-aging-among-seniors.htm>

Culturally Diverse Users

The main challenge in attempting to understand the values of and to create designs for ‘culturally diverse’ users is how not to indulge in stereotypes. While it may be easy to say that ‘Hispanic’ users value ‘family’ and want spaces that will allow them to recreate in big groups, this does not acknowledge the cultural nuances and differences between ‘Hispanic’ communities. For example, a Cuban person and a Peruvian person are both considered ‘Hispanic.’ However, their cultural identity, values, experience of place and preference for site features are probably different. When aiming to design, engage or cater to a group of ‘diverse’ minority users, it is important to understand there is no general principle that will touch and cater to everyone. Before designing, we must understand a visitor’s relationship (or lack of relationship) to the space, observe existing regular patterns of recreation and ask people what they value and want from and in their natural areas and open spaces. All of the information provided in this section is sourced from personal interviews with people who identify as U.S. minorities and from researchers who have conducted ethnographic research on how different cultural groups interact with open spaces and natural areas.

Newcomers and Immigrants

Parks and open space, especially within cities, have the potential to be the unifying and strengthening heart of the community. Research has shown that the best way to create landscapes that are inclusive of immigrant populations is to allow the open spaces to adapt to the communities that surround them.

Lanfer and Taylor (2004) conducted research on use of and engagement in open space and parks by immigrant populations in the culturally evolving city of, what they termed, “New Boston.” The researchers found that immigrants are often drawn to areas that remind them of their home countries. Therefore, a key value for immigrants or newcomers is familiarity. In order to attract a specific cultural group, weave in familiar touchstones into the landscape.

Park designers in the Chumleigh Gardens at Burgess Park in London found that their use of bamboo really resonated with Malaysians and that stunted vegetation planted along a steep cliff evoked a familiar coastline for some Bosnians (Lanfer and Taylor 2004). Herter Park, along Boston’s Charles River is frequented by Guatemalans because it is said to remind them of the riverbanks and the willow trees they left behind (Agyeman 2013). These users were drawn to the look, feel and smell of a familiar landscape. New and existing designs can be utilized and manipulated to evoke these impressions and to help make an often estranged population feel more welcome and at home.

Though it is honorable to try to design specifically for different groups, it is often difficult to represent all culturally diverse users at the same time. There is a risk associated with trying to honor multiple users: the open space may feel fractured. Lanfer and Taylor advise that sometimes it is okay for a park to only reflect one type of ideal or cultural perspective.

Seattle Chinese Garden

One example of a park that was designed with the aesthetics and values of a single culture is the Seattle Chinese Garden. It upholds the elements of a traditional Chinese garden and was designed with the help from Seattle's sister city in China, Chongqing. It reflects the Sichuan province and has been well received by Seattle-ites, both Chinese and non-Chinese visitors.



Image Source: Seattle Chinese Garden

For more information see:

Seattle Chinese Garden: <http://www.seattlechinesegarden.org/>

Domestic Minorities

After interviewing many people on how to attract cultural minorities to natural areas, values are always at the crux of the answer. Several interviewees including Rue Mapp, Founder of

Outdoor Afro, Juan Martinez, Director of Leadership Development for the Children and Natures Network, Ray Oladapo-Johnson, Director of Park Operations for the Emerald Necklace, Alvin Dodson, Director of Park Design for City of Atlanta, and Hanmin Luo, Co-Director of the Wildflowers Institute, have all said that socialization is at the center of how domestic minorities utilize and engage within natural spaces. Therefore, it is essential that if natural areas aim to welcome and accommodate these users, they must improve and expand the facilities that are most utilized for social gatherings. In order to encourage socialization in natural areas consider the following:

- Provide and maintain parking lots, bathrooms and garbage receptacles.
- Create shaded and shared places for picnicking.
- Provide ample seating, especially in play areas so adults can socialize while supervising.
- Make grills and campgrounds big enough to accommodate larger families.

The size of grills and campgrounds is an issue that came up in several interviews. Since most campgrounds are designed for a couple or small family, it makes it more difficult to recreate with and include extended family members. Providing a few ‘oversized’ grills, or a few standard grills placed side by side sends a signal that larger groups are welcomed to use that space.

Another central issue brought up in these conversations is the invalidation domestic minorities feel when critics or researchers say that U.S. minorities have no connection to nature. Juan Martinez (2015) articulated it best in his interview:

There is a perception that all users are privileged, white, older and middle/upper class people. If you expand your definition of natural areas then you see that that is not true. In urban spaces you see more diverse people fishing, gardening, eating outside, and going for walks... People need to understand that the built environment with some nature is just as valid an experience as the wild spaces that we advocate to conserve.

Interaction and appreciation of nature does not only mean backpacking, hiking and bird watching. It can mean getting together with family or church members for a picnic, planting in a community garden or napping in the shade of a park tree. The only design recommendation left to make in order to attract domestic minorities to natural areas is to cast a broad net: make green spaces available across the spectrum from within the built environment to the wilderness and create places that are flexible, that allow people to recreate as they choose, and that enable socialization and are that considered ‘safe.’

Designing for Safety

One social factor and value that dominates the question of accessibility is the feeling of safety. The safety factor is especially important in cities and urban parks. Hartley (1992), Mitchell (1995) and Berney (2010) all determined that accessibility to urban parks, and the key determinant in whether or not the surrounding population would use that park, relates back to the presence of ‘legitimate behavior’ in that public space. If residents feel that the presence of that behavior is illegitimate and unregulated, then they will perceive the space as unsafe.

While safety is a social concern that cannot be resolved through design, there are features that can help deter illegitimate behavior. Kuo et al. (1998) found that tree density and grass maintenance increased the preference and sense of safety for a sample of low-income residents in Chicago, Illinois. Complimentary, Troy et al. (2012) found an inverse relationship between crime rates and tree canopy cover in Baltimore, Maryland (Santiago et al. 2014). But simply having trees and vegetation is not enough. The spaces are perceived 'safe' when the vegetation is cared for. Thus, it is very important that when designing a natural area, a designer and manager spend time thinking about the long term maintenance of the park and its features.

One example of how increasing maintenance of a public space leads to greater perceived safety, access and use is in "Sanchez Park" in Santa Fe, New Mexico. The public park was underutilized due to high crime rates in the low income Mexican-American barrio. In order to create a safe space for children and families, the extended Sanchez family began to clean up their local park, painted murals of Mexican American experiences, and kept the park well maintained, which lead to greater use and a strengthened community (Moore et al. 2014).

Something to keep in mind when landscaping and designing natural urban spaces is that while well-maintained trees and low story vegetation may signal greater overall watch and regulation, shrubs and high grasses may also present opportunities for hiding and illicit behavior. Ground maintenance that establishes clear lines of site to hubs of activity, like a street or passive gathering space should be a best practice. Flowers have also been found to signal ownership and care for a space (Stapleton 2015). Local police routes can also be incorporated into park areas in order to provide a greater sense of safety. Other physical infrastructure solutions as indicated in the Santiago et al. 2014 study of underused ecological amenities in urban park include better lighting, improving controlled access to the facilities, reinforcing entrance locks and installing fences.

Safedesign™ and Anniversary Park, Hollywood, Florida

In 1990, Anniversary Park in downtown Hollywood Florida had become a nuisance public space dominated by homeless people and drug users. The trees and vegetation were overgrown, limiting natural surveillance and sightlines. The park was originally designed as a passive recreation space and had benches and tables that were adopted for undesired behavior. Safedesign™ was hired to implement a design that would transform the space. This included trimming up existing trees, removing shrubs and undergrowth to improve natural surveillance. Most seating was removed except those located near the front sidewalk, a small stage was built to use for performances and music, and a mural highlighted local ecology of South Florida was painted on the adjacent building. Low Mexican heather, small pink flowers, a low fence and additional lighting was added. The problems with homeless camping, alcohol consumption and drug use stopped immediately, no additional police patrols were needed or added and daytime park use increased.

Before (left) & After (right)



Image Source: Ken Stapleton, Safedesign™ Executive Director

Participation and Engagement

In spite of the research and studies being conducted on designing for inclusivity and tailoring natural areas, open spaces and parks to different communities, there will always be inherent flaws in understanding the values of a community from a distance and only through observation. The most powerful tool when designing a space are the voices of the public who will visit the space.

Participation is a tool for empowerment and continued investment in an area and individuals of all ages should be included (Acar 2013). “Participation is local, transparent, inclusive, interactive, responsive, relevant, educational, reflective, transformative, sustainable, personal and **voluntary**” (Acar 2013). Though people in the community may not be knowledgeable of formal landscape design or conservation terms or practices, their knowledge should not be discounted. They are the local experts of their neighborhoods and of the climate of their community. Two organizations doing excellent work within community engagement and design are The Trust for Public Land and The Wildflowers Institute.

Outreach also has to be designed carefully in order to be accessible to the population it hopes to engage. For example, formal invited or open meetings may not always be the most effective route to engagement and participation. As one Asian immigrant member of a community garden remarks, “If you ask people to come to a meeting with parks authorities to talk about how to get access to green space resources, they are not going to come. They would sooner find an abandoned lot and plant their peppers there” (Lanfer et al. 2010). Formal community meetings are a useful tool to engagement, but they are also off-putting for people who don’t speak the language, who feel participation means regulations and for undocumented community members who don’t want to put themselves at risk by attending a meeting where names are typically recorded. One open space planner for the City of Boston found

that to ensure a democratic process of getting feedback on their open spaces, they needed to go door-door with several interpreters in order to cull the opinions and voices of local communities (Lanfer et al. 2010).

As noted, engagement is a useful tool to understanding community values and desires for a space. It is also a useful tool to employ during times of conflict when spaces are used in an undesired way.

MC Francis Community Garden and the LA Neighborhood Land Trust

Neighbors adjacent to the MC Francis Community Garden notified the LA Neighborhood Land Trust of ‘gang activity’ which included loud music, drinking and smoking within the garden. Instead of reporting the incident to the police, the Land Trust, notified the authorities and told them they were going to go through their own process of conflict resolution. The Trust also interviewed community members who reported the illicit behavior, asking the neighbors what exactly was ‘making you feel unsafe.’ The LA neighborhood Land Trust Executive Director, Alina Langworth says that this is a valuable step in the process as it helps to clearly define the problem and to discount any racism or bigotry as a hidden factor. The Land Trust then partnered with a local gang organization, Aztec Rising, to directly engage in conversations with the gang members. Over the course of several meetings, the gang members and garden community members were invited to a lunch within the gardens in order to discuss what safety looked like and meant for the surrounding community. As a relationship between the gang members and the community was built, the illicit behaviors stopped and the gang members became woven into the bigger fabric, and safety, of the garden.

For more information see:

Los Angeles Neighborhood Land Trust: <http://www.lanlt.org/parks-and-gardens.php>

(This story is as presented by Alina Langworth at the 2015 Green and Greater City Parks Alliance Conference)

The keys to the LA Neighborhood Land Trust’s success in handling the conflict was to address each of the users separately, bring in experts (Aztec Rising) and communicate desired use of the space through conversations and an invitation to the garden through a lunch. While this approach may not always work, it is an available avenue that serves to strengthen the community as a whole.

4.5 Conclusion

Open spaces, parks, greenways and natural areas can be used and interacted with in many ways. They are stages for activity, discovery, relationship building and contemplation. Each person whom interacts with these spaces is a temporary visitor, expressing herself in the ways

that make the most sense to her, in ways that are the most comfortable and natural. It is the job of the landscape architects, designers, land stewards and managers to create spaces and provide elements, facilities and features that allow for these myriads of expression and also invite the visitor to explore something new. By using universal design principles, community engagement tools and by understanding the values of our visitors, we will be better able to build spaces that are functional, comfortable, and flexible and that are expansive: honoring the past and serving visitors of the present and future.

A space cannot be designed in a vacuum. The natural areas, the parks, the buildings and the people do not exist nor function in silos. They are all part of a unified landscape in which the values and interactions in one bleed into and mix with the other. As the landscape becomes more varied and diverse, the construct of nature and definitions of interaction and use must grow. In order to truly promote access, we must design with a systems approach and look at the big picture – design is only one piece of the access puzzle. When designing for access, we must not tunnel our vision to the features and elements of a space. Remember to step back, learn about the entire landscape, and reflect on how the finished design will meet the needs of the society and build in the potential for more.

Additional Questions to Think About

- Will the visitors have a choice in their level of activity and interaction with the space?
- What are the opportunities and constraints upon access to the resource or services?
- Are there equal opportunities of access and use?

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Appendix 1: Universal Physical Designs and Elements

It seems that humans have a proclivity for open spaces and certain aesthetic characteristics found in the natural world. These preferences have been studied by social scientists and designers alike and can mainly explained by evolution. Many widely accepted evolutionary hypotheses have shown that over time humans have evolved to prefer landscape qualities that enhanced survival, such as a preference for open areas versus heavily wooded ones. These preferences are explained by several hypotheses including Oriens' and Heerwagen's the savanna hypothesis (1992), the Appleton's habitat theory and prospect-refuge theory (1977), Kaplan's preference matrix (1989) and the Wilson's biophilia hypothesis (1993 and 1984). Wilson's biophilia hypothesis is the most useful and holistic hypothesis and framework to employ when designing physical attributes that promote attraction and access.

Biophilic Design

Biophilia, or the 'love of living systems' is a hypothesis developed by Edward O. Wilson in 1984, and built on by Peter Kahn and Stephen Kellert, editors of *Children and Nature: Psychological, Sociocultural, and Evolutionary Investigations* (2002). Biophilic design acknowledges that there are certain health conditions, sociocultural norms and expectations that sway attractions between different groups and subcultures based on ethnicity, gender and age. The research deduces, however, that there is some overriding universality to landscape preferences. It outlines 14 different analogues and elements that create connection with nature and to which humans respond favorably. The following is a modified list of Biophilic patterns, published by Terrapin Bright Green LLC (2014). Under each element, in *Italics*, are examples that can help a designer or landscape planner achieve the effect.

Nature of the Space: Design aspects to consider and include in outdoor, natural spaces

- Prospect: An unimpeded view over a distance for surveillance and planning.
 - *Site trails that reach hill tops, precipices or construct lookout platforms if the natural area is on relatively flat marshland or plains.*
- Refuge: A place for withdrawal from environmental conditions or the main flow of activity, in which the individual is protected from behind and overhead.
 - *This effect is achieved with rest places off of main trails that carve out a section of the surrounding natural area. This can be as simple as a bench, or as elaborate as an Adirondack shelter if designing for long range, thru-hikers (Good et al.1999).*

This Gazebo Offers Refuge and a View



Image Source: [bigstock-White-Gazebo-On-The-Water-106353560.jpg](#)

- **Mystery:** The promise of more information achieved through partially obscured views or other sensory devices that entice the individual to travel deeper into the environment.
 - *Provide bends in trails or slowly reveal desirable destinations; experiencing a waterfall first by hearing it, and then eventually by seeing it is often more enjoyable than happening upon it all at once.*
- **Risk/Peril:** An identifiable threat coupled with a reliable safeguard.
 - *A precipice secured with sure railing, a trail that leads in and out of a dark tunnel or thicket, or onto a precarious, but secure landing.*

Trolltunga, Norway. The Ledge is Accessible from a Main Trail.



Image Source: [bigstock-Young-girl-on-the-Troll-s-tong-90279512.jpg](#)

Nature in Space: Design elements that can be utilized indoors, such as in visitor centers or in built environments to reference natural features

- Visual Connection to Nature: A view to elements of nature, living systems and natural processes.
 - *Achieve this by placing overhead skylights, viewing windows, a green wall, art work depicting natural scenes.*

The New York Times Building Moss and Birch Garden, by Renzo Piano



Image Source: © Hubert J. Steed

- Non-Visual Connection with Nature: Auditory, haptic, olfactory, or gustatory stimuli that engender a deliberate and positive reference to nature, living systems or natural processes.
 - *Digital simulations of nature sounds, audible and/or physically accessible water features, natural plant smells that can be achieved by bringing in flowers or pine branches.*
- Presence of Water: Enhance an experience of a place by seeing, hearing or touching water
 - *Can be achieved with indoor fountains, water walls and meditation pools. If employed outside in a built environment, the water should be shaded so as to decrease water loss through evaporation and to improve people's enjoyment.*

Seattle's Thorton Creek, which was Daylighted and Restored, Transforming a Parking Lot to a Public Park, Swale and Urban Oasis



Image Source: Kaid Benfield

- Material Connection with Nature: Material and elements from nature that, through minimal processing, reflect the local ecology or geology to create a distinct sense of place.
 - Use local boulders to construct seating or play structures.
 - Utilize native plants in visitor center landscaping.

Rock Chairs along the Appalachian Trail



Image Source: <http://eitherbraveorstupid.com/susquehanna-state-park-loop-07-20-2014/>

For more information on Biophilic Design see: <http://www.terrapinbrightgreen.com/report/14-patterns/#sthash.Wr3SElez.dpuf>

Specific Design Elements to Consider and Incorporate

The following is a summary of universal design elements and principles compiled from interviews with landscape architects, social scientists, program leaders, designers and the National Learning Initiatives publication, “Nature Play & Learning Places” (2013). This list can be used to encourage accessibility to nature, and make a visitor’s experience more enjoyable regardless of cultural background, age, gender or experience level.

Entrances

- These should be portals that announce welcome and provide adequate information to begin a journey.
- The first sign a visitor sees should not be filled with ‘No’s’ or regulations; this limits use and dissuades the visitor.
- Provide accessories like bike racks, water fountains and maps within the surrounding area.
- Provide seating to promote gathering and socializing.
- Consider that the entrance space should be big enough to welcome and invite field trips or larger gatherings.
- Have shaded seating and meeting space for intergenerational visitors.
- Include restrooms nearby.

Restrooms and Facilities

- Provide and service them regularly.
- Include them in high trafficked areas such as at trailheads.

Pathways and Trails

- Should loop, without dead ends.
- Connect entrance to all major play and learning activity settings.
- Accessible surfaces for multiple users such as pavement or boardwalks for short loop trails.
- Curvy with bends to retain sense of exploration.
- Should have a range of difficulties.
- Elevation gains on a trail encourage people to keep going and give a sense of accomplishment.
- Connect areas and spaces. Trails are the nodes or networks that feed between areas of interest.
- Honor the topography of the space by creating trails and pathways that utilize natural or obvious desire lines (improvised pedestrian trails) and emphasize natural features.

Signs

- Comprehensive communication system of information that can easily be read and understood by people of all ages, cultures and backgrounds and abilities.
- Include difficulty or elevation ratings of each hike on the map.
- Invite community members to partake in the design.

Flexible Use

- Open areas should allow for wide ranges of activities and give visitors an opportunity to engage in the way they want to.
- Allow users to determine their level of interaction with nature.

5. Using Social Media and Technology to Increase Access to Natural Areas

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People are always within three feet of their phones and they can be inspired through this familiar means to connect with and care for natural places both near and far.

– Heidi Clark, *TravelStoriesGPS*

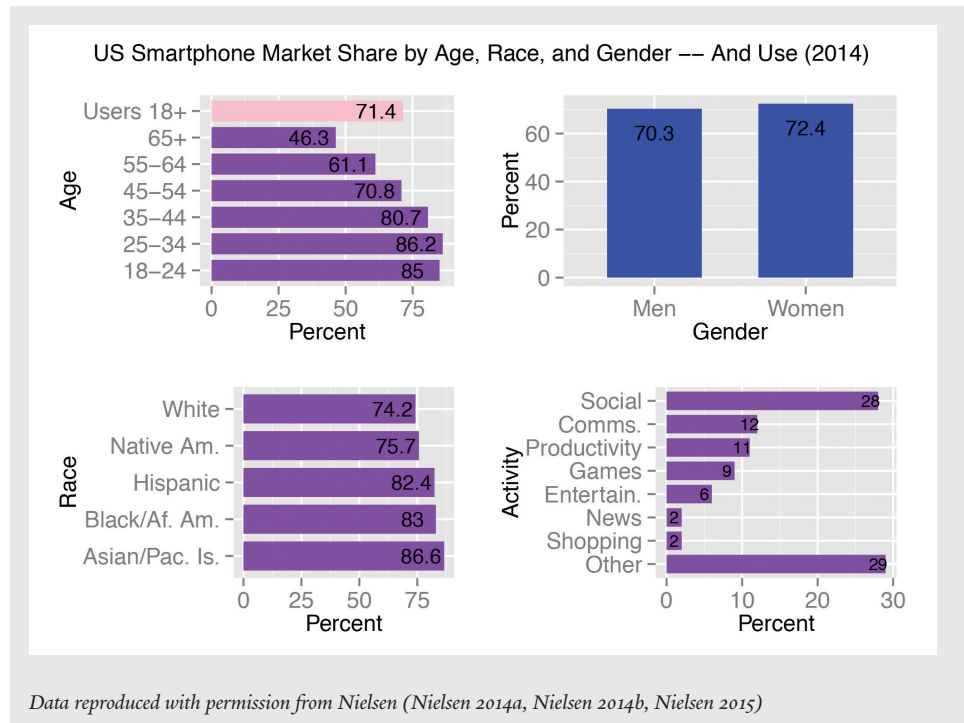
Social media and technology have transformed the way we interact with one another, and increasingly, how we interact with natural areas. We use social media to connect and plan with others, to share our experiences and thoughts, to advocate for our causes, and many others. These avenues of social media can be used purposefully to promote the use of natural areas. Indeed, they can promote use unintentionally as well. Supporting social media and a host of other innovations, technology enhances our outdoor experiences through better planning and preparation, faster and more thorough dissemination of information, and the customization of outdoor experiences. This section explores how some organizations and parks are using social media and technology to increase the number of users, expand user group demographics, and increase the use of the space overall. Relevant to this chapter, but ultimately not a focus is the work many organizations are doing surrounding social programming in natural areas. Social programming is critical to increasing access to natural areas, and social media and technology likely have a role in promoting and supporting social programming. This chapter, however, focuses on the technical and digital.

For the purposes of this section, **social media** is defined as an Internet website or application that carries “media impressions created by consumers, typically informed by relevant experience, and archived or shared online for easy access by other impressionable consumers” (Xiang and Gretzel, 2010). Facebook, Instagram, Twitter, and Pinterest are the most common forms of social media (Duggan, 2015). **Technology** is defined here as other websites and

applications that convey information in specialized ways or physical tools that are relevant to support being active outside. Smartphones, smartphone apps, personal blogs, and other websites are the most common forms of relevant technology, though a few other creative physical technologies are explored as well.

5.1 Smartphones

Smartphones and their ubiquity have changed the way we communicate, document and process information, interact with others, and spend time by ourselves. As of July 2014, 71.4% of all Americans older than 18 years of age possessed a smartphone, an important tool for the social media and technology discussed in this chapter (Nielsen 2014a). The full age, gender, and racial demographic breakdown along with an analysis of the activities for which we use our smartphones can be seen below.



Data from December 2013 showed that the average U.S. citizen uses their device 34 hours and 21 minutes a month, which has almost certainly increased since then and will continue to rise (Nielsen 2014b). Note that the activity “Social” is separated from “Comms” (communication), which is presumably talking to individuals. This suggests that in 2014 the average person spent nearly 600 minutes a month interacting on social media websites on their smartphones alone.

There is little doubt that smartphones have been integrated into our daily lives and habits. Fortunately, organizations looking to leverage or grow their networks already have a seed planted in most of our pockets.

5.2 The Importance of Social Media: Reaching Adults and Children

This section highlights the importance of including a social media presence for any organization that hopes to stay relevant and garner support from the general public. The following table presents results from a September 2014 Pew Research Center survey looking at social media use and preferences for American adults (ages 18+) (Duggan, 2015):

Website	Among <i>all</i> American adults, the percentage who use the following social sites:	Among <i>online</i> American adults, the percentage who use the following social sites:
Facebook	58	71
Pinterest	22	28
Instagram	21	26
Twitter	19	23

The study also separates the data (specifically relating to internet users) through a variety of other demographic filters (gender, age, education, and salary). Surprising to note is the exceptionally high use of social media among 18-29 year olds (89%) and 30-49 year olds (82%). All other demographic populations were in the 70% range, except for older populations, which fell to 65% and 49%, for ages 50-64 and 65+, respectively.

The data confirms what our intuition tells us: Millennials (18-29 year olds) are leading the charge with Internet and social media use. By extension, we may presuppose that this active demographic no longer relies on newspapers, local periodicals, or billboard posts to learn what activities are available in an area. Scarce are the people who use a library or travel agent to organize the next trip to a national park and no longer are local community spaces required in order to communicate with a group of people. The phrase “word of mouth” no longer literally applies. The Internet and social media has simplified, and accelerated many of these transactions. It is now important for any park steward or outdoor organization seeking a public connection to have a presence online and, in particular, in social media.

Children are becoming online users in comparable numbers. In the United Kingdom, a recent study found that 59% of children have used a social network by the age of ten and the network most frequently used is Facebook (Williams 2014). This study, however, was conducted through the lens of online safety for children. Most social media websites (Face-

book, Instagram, Twitter, and others) require account holders to be at least 13 years old, albeit this is somewhat unenforceable. For YouTube, the age limit to own an account and upload videos is 18 though anyone can access posted videos.

While Internet safety is not likely to be a concern for outdoor organizations using social media, it does suggest that social media may not be a useful outlet for engaging children younger than 13 years old. Also, it reminds us that the very nature of social media requires website moderators to be ever vigilant to make sure their message boards maintain an appropriate discourse. While social media can effectively engage Millennials, reaching children (13 years old or younger) through social media may be more successful with a campaign directed at families and parents.

5.3 Social Media Brings Us Outside, Together

Understanding the pervasiveness of social media is important, but understanding why and how people use social media can be particularly informative for outdoor organizations. People use social media to stay connected or become connected if they move to a new place. These people engage through sharing their experiences with family, friends and the general public. Social media creates the framework where people can meet, keep in touch with one another, and learn about upcoming events and news.

Understanding that social media is primarily people-centric makes it clear that park use is often a secondary consequence or even an ulterior motive by those organizations employing social media. This fact, however does not devalue the importance of social media for outdoor organizations. Indeed, social media is an important tool to support event and news communication and to coordinate event logistics.

More powerful than these tools may be social media's ability to demonstrate access and encourage participation. Photographs and videos are a crucial aspect of a social media experience because they can connect imagination with reality allowing for viewers to place themselves in the location portrayed by the image. The art community and many others call images and videos "invitations" (Mapp 2015).

Seeing pictures of people with whom others can identify allows the viewer to place him or herself in the event or place. Furthermore, when people see pictures of themselves on these websites, it provides an "imbedded validation" (Mapp 2015). For those who normally do not identify with hiking or exploring, these invitations and validations are often what open up the door to the wilderness, however defined.

Outdoor Afro

As described in Section 3 earlier, Outdoor Afro, founded by Rue Mapp, self describes as a “community that reconnects African-Americans with natural spaces and one another through recreational activities...Outdoor Afro uses social media to create interest communities, events, and to partner with regional and national organizations that support diverse participation in the Great Outdoors.” The organization operates by having leaders (also known as organizers) post events through the social media websites Meetup or Facebook. These leaders are facilitators by being the stimulus for trips, plan most logistics, and monitor the group’s Meetup and Facebook pages.

There are 13 publicized Meetup groups on the Outdoor Afro website from San Francisco to Ohio to Washington D.C. The Meetup platform is becoming more ubiquitous and is ideal for promoting group activities, as there is easy functionality for members to participate in social media and modify and take ownership of their experience. For example, members can post pictures to each event. Mapp also maintains a presence on the other social media platforms like Twitter, Instagram, and YouTube. She notes an age barrier between the different platforms. Generally speaking, Facebook reaches people 25 years and older and Twitter and Instagram around 15 to 25 years old.

For more information see: www.OutdoorAfro.com and www.meetup.com

Other organizations similar to Outdoor Afro are:

Latino Outdoors – www.LatinoOutdoors.org (see Section 3 above)

Black Girls Run! – www.BlackGirlsRun.com

Social media is ever evolving as new apps reach the market place and as people find new ways to interact through smartphones and other devices. Some current best practices for organizations in using social media are presented at the end of this chapter in the appendix.

5.4 Technology Enhances Our Experience Outside

Some may call it emerging technologies, others call them “gadgets”, and still others may call them toys or something else altogether. Technology is changing the landscape of how people experience the outdoors. It is hard to say whether the technology is outpacing the demand or the demand driving the technology, but the horizon is becoming clearer – people are increasingly reliant on digital technologies to learn about, plan, and experience their adventures. Parks, land trusts, and other organizations have a growing ability to ease logistical hurdles and enhance our experience outside.

Planning and Mapping

The first step in going outside is deciding to go outside. The second and third steps are choosing where to go and what to do when you are there. In an age where all other ques-

tions are answered with a click of a mouse or smartphone, outdoor organizations should expect the public to seek answers to their outdoor adventure questions in a similar fashion. While some Park Rangers and Outward Bound instructors may quiver at the idea of people going for a hike with just the information on their phone, this is a reality that a few well-intentioned app developers are facilitating.

Chimani: Apps for the Outdoors

This app functions as an all in one digital guidebook, trail map, and park pamphlet. Each individualized park app includes varied information: bus schedules, time of Ranger talks, campground notes, wildlife information, points of interest and relevant information, and much more.

Started in 2010, by Kerry Gallivan, Chimani, LLC has so far created these slick apps for 16 parks and national monuments from Acadia to Zion. Reflecting the reality of poor service where this app is most useful, Chimani's apps are large files that include all maps, photographs, and text to be used without signal. These apps can be downloaded on your smartphone for free. As of April 2015, Chimani has been downloaded 674,000 times and has 130,000 active users (used the App within the previous calendar year).

Future developments regarding Chimani will be the addition of more park specific Apps and to "gamify" the experience. Through the phone's geolocation ability, users will earn points and earn unique badges for spending time outdoors, reaching certain landmarks, and accomplishing feats such as seeing the sunrise on Cadillac Mountain (Acadia National Park) on January 1st. These badges ensure that users be present in natural areas while using technology. See Section 5.4 for more information on the gamification of natural areas.

For more information see: <http://www.chimani.com>

Other organizations similar to Chimani are:

Yonder – <http://www.yonder.it/>

AllTrails – alltrails.com

TrailLink (Rails to Trails Conservancy) – www.TrailLink.com

Not surprisingly, some of the larger parks with big budgets are designing their own apps as well. For example, Grand Teton National Park will be rolling out their Places app in 2016 which has the ability to sync with the park website. Grand Teton National Park Chief Interpreter Vickie Mates says, "The app will function as a portable information center where people can get updates, park news, and any park alerts right on their smartphone." One of the many novel functions of this app includes augmented reality where a viewer can point his or her phone towards a scene and see what the park may have looked like with glaciers 10,000 ago. While it may make sense for many parks and land trusts to have their own app, Facebook

page, and Twitter handle, this ever-increasing number of unique apps/social media outlets creates a space for others to bundle this information in one clearinghouse.

CaliParks

Launched in February 2015, *www.CaliParks.org* serves as a clearinghouse for the nearly 12,000 national, state, and city parks in California. The website was conceptualized by Jon Christensen and created by Stamen, a San Francisco tech company with expertise in data visualization. The idea started with the desire to display social media produced within the physical boundaries of each park in order to show “how people feel about their open spaces” and to creatively display “evidence for the argument that access to open space must be protected” (Rodenberg 2014).

The final website gathered social media of 500,000 unique users and consolidated these photos (Flickr and Pinterest), “tweets” (Twitter), and “tips” (Foursquare) to advertise each parks. The simple website offers a search function to find your nearest park, how to get there, what activities you can do when you arrive, and the pictures and sentiments of the previous visitors who used social media in the park. A link to the park’s native website is included if available. The project was supported by the Parks Forward Commission and the Resources Legacy Fund and more work is being done to make the website an app for easier smartphone use.

With respect to the technology market place, Stamen recognizes the danger in duplication and future competition to their websites and apps. CaliParks is itself an upgrade from the Android-only California State Parks app, CalParks, which houses information of just the 279 state parks. Visit the CA Department of Parks and Recreation website to compare with CaliParks.

For more information see: <http://www.caliparks.org/>

Parks Forward Commission: <http://www.parksforward.com/>

In producing the CaliParks website, the creators stated two realizations. First, parks are a social place where people will gather with or without support from park agencies. Second, diverse user groups are using parks, despite the underrepresentation of some groups (Christensen and Gold 2015). These creators are in agreement with many other park advocates that social media serve as an important invitation to diverse user groups. Summed up, “People want to see people like themselves in public spaces in order to feel welcome there. And if we can represent that diversity by sharing those images, it is an invitation to California’s parks” (Christensen and Gold 2015).

These invitations may not have explicit RSVPs, but it appears feasible that in the creation of CaliParks new metrics for park use were explored. In compiling the photographs and text produced in a California park, creators Christensen and Gold added a technological

component to calculating park use, a term difficult to quantify in many natural areas with free and open access. (See Chapter 3 of the Proceedings to the 2014 Berkley Workshop for a discussion on measuring park use.)

Another important media outlet is more formal blogs, reminiscent of magazine or news articles. These writers can serve as “power referrers” because they combine the influence of a dedicated readership with something like the rapport of a friend. Bloggers portray a user or consumer opinion which is valued above other information sources (Schmallegger 2007). Not to mention that the reach of each blog is extended through each reader’s click of the “share” button—this validates the information not only by increasing the number of shares and views, but also can influence readership depending on who shares the article.

American Latino Expedition (ALEx)

Beginning in 2013, the American Latino Heritage Fund and the National Park Foundation funded the first American Latino Expedition (ALEx). The expedition is a week-long event that brings a handful of bloggers from the Latino community to a different national park each year.

The bloggers, more specifically called “dedicated bloggers, dynamic social media personalities, and overall influencers,” travel throughout the park together and communicate their adventures to their respective blog following. The members of each mission covered a wide range of interests: culinary, lifestyle, art and photography, popular culture and more. This broad range allowed the team of eight or so writers to reach a large audience in the Latino community and beyond.

In 2014, ALEx traveled to Grand Teton National Park and was sponsored by Go RVing, Aramark, REI, and Columbia Sportswear. In a report to the sponsors, the following statistics were gathered. (Note: according to Twitter, one “impression” is each time a user is served a Tweet in his or her “Timeline” or “Search Results.”)

- 23 blog posts to the American Latino Heritage Fund’s website and 18 posts to the individual blogs of the expedition participants.
- 29.5M impressions generated and 2.1M unique individuals reached using hashtag #ALEx14 on Twitter from September 7 – October 15.
- 12.9M impressions generated and 5.9K unique individuals reached using hashtag #LatismGoParks on Twitter from October 8 – October 12.
- 700K people reached using hashtag #ALEx14 on the National Park Foundation Facebook page.
- 21.5K people reached using hashtag #ALEx14 on the American Latino Heritage Fund Facebook page.
- 334 posts on Instagram using hashtag #ALEx14.

- 15K unique visitors to the American Latino Heritage Fund’s website from June 1 to October 31.

Note: As of this writing, there is no information on the website regarding the 2015 expedition.

For more information see: <http://www.alhf.org/alex>

Learning, Context, and Content

Guidebooks, historical societies, and even non-fiction stories indulge our desires to learn about the places in which we find ourselves. A sign at an overlook may describe the significance of the valley below or a placard on a courthouse wall describes the famous lawyers who litigated inside. This information is not likely what brought the traveler out to explore – certainly this person could learn much about a location without being present. Yet, the combination of information and place enhances both the learning experience and the visual experience. Technology is becoming more creative to build context for our daily adventures and convey content in interesting ways. These innovations have the ability to draw in more people to the natural landscapes around them and spark an interest that may lay dormant.

TravelStorysGPS

TravelStorysGPS is a mission-driven mobile app development company that provides the technical and creative expertise to create location-based audio tours. The clients, or “sponsors,” of TravelStorysGPS are organizations looking to improve content and/or how that content is disseminated to visitors. For example, Grand Teton National Park Foundation created an audio tour presenting stories while driving along the Teton Road through the inner loop of the national park. All of the audio stories are “GPS-triggered,” meaning users automatically hear about site-specific stories as they pass by certain locations. Users can also access stories remotely and view a virtual exhibit hall of images, text, videos and links. The geolocation feature and the mission-driven local authorship (tours are created by the organization themselves rather than by some outside publisher or author) are the two mainstays of TravelStorysGPS. Indeed, many of the stories have a particularly authentic air as they are told by local residents, or by the subject of the story themselves. The app also provides the framework to create partnerships throughout the community. Not only can organizations partner to create tours that integrate more than one site, but also sponsor organizations can harness the power of marketing for other local businesses. For example, “App for an App” is a marketing tool that partners sponsors and restaurants – visitors show they have learned of the restaurant from their tour and receive a free appetizer in return.

The general public can download this app from iTunes or Google play for free and can access any tour hosted on the platform.

For more information see: <http://www.travelstorysgps.com/>

Other applications that are similar to TravelStorysGPS are:

Detour (Walking tours of San Francisco, CA and Austin, TX) – www.detour.com

Field Trip (A generalized version for an entire city with less audio) – www.fieldtripper.com

The power behind this technology is its ability to communicate information, tell a story, and draw a listener or viewer into the moment. Effective apps like these can improve the value of an experience, and hopefully, will encourage further exploring.

It should be noted however, that these types of apps are somewhat “consumable.” That is to say, one would not likely return to a location in Grand Teton National Park to listen to a story they have already heard. In order to combat this issue, TravelStorysGPS and other similar apps strive to frequently add content. Even so, one is not likely going to travel to Grand Teton National Park just to listen to one of these stories or use a similar app. Essentially, these apps offer one more alternative for recreation in natural areas and, perhaps, offer a way to engage a more technologically reliant and younger demographic.

Another type of app that helps engage a young, technologically savvy demographic are the suite of identification apps available. These digital guides can satisfy any interest: wildlife, bird, plant, geology, and more.

Identification Apps

Many field identification guidebooks are making their paper versions app friendly. Perhaps most famous are the bird apps – Audubon, Sibley, Peterson, National Geographic, and Cornell Lab of Ornithology (Merlin Bird ID) all have their own apps.

The major advantage is that the apps have more engaging functionality than their paper cousins. Some have interactive questions that help narrow down the species in question. Many have birdcalls. All of them have a greater variety of photographs to aid in field identification. Other advantages are that the average hiker is also less likely to leave his or her phone behind than the guidebook and, with much less forethought, can purchase and access the guide wherever there is a WiFi signal or cell phone service.

For more information see: <http://leafsnap.com> and www.inaturalist.org

Citizen Science

Citizen science is touted as an important tool to get people more involved in the environment around them. People who are given responsibility or are given a platform to be a part

of something large will likely take ownership over their community's natural spaces. With this ownership likely come stewardship and perhaps, a few science publications (Conrad and Hilchey 2011).

RASCals – Los Angeles Museum of Natural History

The goal of the Reptiles and Amphibians of Southern California (RASCals) citizen science project is to improve the body of knowledge for native and non-native reptiles and amphibians in southern California. Any person with a smartphone can participate by taking pictures of the critter and submitting it to the museum for identification. The location of the photograph is recorded and added to the database. In order to submit the pictures, the participants must be a user of the app iNaturalist, a fun online community for sharing in the find.

For more information see:

<http://www.nhm.org/site/activities-programs/citizen-science/rascals/about>

Similar app/website to RASCals:

Project Noah: *<http://www.projectnoah.org/>*

Yale Sustainability - Citizen Science:

<http://sustainability.yale.edu/research-education/citizen-science>

The landscape of each of these digital technologies is far from certain. While large parks are devoting resources to develop their own digital information packets, smaller organizations with less staff may not prioritize these technologies. More than three-quarters of Americans (over 18 years old) say they use their smartphone for information about their location (Zickur 2013) and digital location-base-services are expected to rise by 400% by 2019 (ABI Research 2014). Some sort of app or innovation will likely fill the space if not these.

It is worth noting that smaller organizations with may be able to team up with app developers and larger organizations to include land trust parcels or city parks on emerging technologies. Indeed, it is quite possible that many parks and parcels are present on websites or apps without the knowledge of their respective caretakers. It may behoove these caretakers to have digital information (digital maps, park information, and transportation, for example) ready to send or link to should an opportunity arise.

5.5 The Gamification of Natural Areas

Some define “gamification” as “the process of game-thinking and game mechanics in non-game contexts to engage users in solving problems and increase users’ self-contributions” (Zichermann and Cunningham 2011, and Deterding and Others 2011). Games or structured, semi-competitive activities may entice people to natural areas who otherwise might not ven-

ture outside. People who need an incentive to participate more regularly in outdoor activities benefit from these events as well. These games and activities take place in the wild places near and far from our cities, the local parks in our neighborhoods, and throughout our cityscapes. The impetuses for these activities include adventure seekers-explorers (Geocaching) and public health advocacy (Beat the Streets).

Groundspeak – “Location Based Adventure”

Started in 2000, Groundspeak is the company that supports geocaching, the adventure activity where boxes are hid in various places with known GPS coordinates. The company boasts more than 2 million geocaches in more than 185 countries in a community of more than 6 million geocachers.

This company has leveraged their technological infrastructure to create CITO (Cache In Trash Out) and many other events. To increase the game experience, people can earn points by uncovering caches and attending events. These points are recorded and people can achieve certain statuses and compete against friends.

For more information see:

<http://www.groundspeak.com/>

<https://www.geocaching.com>

<http://www.wherigo.com/>

Other organizations similar to Groundspeak are:

Waymarking – www.Waymarking.com

Beat the Streets – Public Health in Thurrock, England

In an effort to increase the walking habits of a community and improve public health, more than 100 “Beat Boxes” were set up around the city. Players used tap cards, similar to some public transit cards, to record their presence at different destinations they traveled to throughout the day. Each tap earned points based on the distance traveled in a given day and participants could track their scores online. After a two-month competition, those with the most points were given awards. It may be worth noting that events were promoted through newspapers, other periodicals, schools, as well Facebook, Twitter, and a dedicated website.

A few major results are:

- 22% said they were doing no physical activity at the start of the competition. By the end, this had reduced to 9% and in a survey two months after the end of the competition the figure was 3%.

- 85% of people said Beat the Street helped them to walk more than usual.
- 87% of people said they would try to continue the change after the competition ended.

For more information see: <https://www.thurrock.gov.uk/beatthestreet>

5.6 Conclusion

Social media and technology are fundamentally changing the ways people interact with each other and conduct themselves everyday. While more and more people become connected through social media and rely on technology for their everyday lives, it may be a false assumption to believe that all people will benefit from an increased social media and technology presence in organizations that serve natural areas and in the natural areas themselves. Indeed, based on the conversations and research conducted to write this chapter, the outdoor community disagrees with what the future of social media is and, even more vociferously, with what the future of technology ought to be with respect to natural areas.

That said, land trusts and other organizations can leverage the ubiquity of smartphones, social media and other technologies to make local parks and natural spaces more inviting. Importantly, for the future of the conservation movement and outdoor organizations, young adults and teenagers are most apt to already be involved in social media and more likely to pursue the technologies that are being developed. These technologies can support logistics, improve experiences, and give incentives for more trips to natural areas. Various technological tools are becoming more available and can be used to involve both adults and children alike. Also, this new technology and social media may offer additional data points for new metrics that can be developed to measure park use and user engagement.

Questions to Consider

- How many people rely on social media to be involved in park use? Is it a deal breaker?
- What is the role for technology with children's experiences in the outdoors?
- Does social media and technology detract from park use? And if so, how can this effect be mediated while still using social media and technology?
- What is the academic research necessary to further our knowledge with how social media and technology affects our relationship with natural areas?

Some of the Organizations Doing Interesting Work on this Topic

California Environmental Protection Agency (CalEPA) – The California Office of Environmental Health Hazard Assessment (OEHHA) and the California Environmental Protection Agency (CalEPA) created CalEnviroScreen, a geographic information system (GIS) based tool that shows areas in California that are disproportionately burdened by multiple sources

of pollution. While “green space” is not currently a factor in this tool (and some organizations are lobbying to include it), citing locations for parks can be enhanced using this tool. See: <http://oehha.ca.gov/ej/ces2.html>.

U.S. National Oceanographic and Atmospheric Administration (NOAA) – In the Chesapeake Bay, NOAA and the National Park Service (NPS) collaborated to create the Smart Buoys app. Smart Buoys is the interface for the Chesapeake Bay Interpretive Buoy System (CBIBS) combining real time data on weather, water conditions, and water quality with information for the Capitan John Smith Chesapeake National Historic Trail. Each buoy serves as the location of an interpretive trail sign that can be accessed through the app. See: <http://buoybay.noaa.gov/> and Smart Buoys in the App Store.

U.S. Environmental Protection Agency (U.S. EPA) – Similar to CalEPA’s CalEnviroScreen, the U.S. EPA developed a tool called EJSCREEN. This mapping tool is meant to help the EPA satisfy its charge to protect the environment and public health. Users can draw a polygon anywhere in the United States and receive a graphical breakdown of 12 different environmental justice indices and environmental indicators (for example, relative exposure to ozone, lead paint, and permitted water discharger) and seven different demographic indicators (for example, percent minority, low income, and age). See: <http://www2.epa.gov/ejscreen>

Walk Score – serves primarily as a website for apartment and house seekers to determine “walkability” for errands. One of the determinants included is proximity to parks. Users can type in their address and learn about the neighborhood and select local parks. See: <https://www.walkscore.com/>

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Appendix 2: Tips for Effective Social Media Use

A Google search of “tips for social media marketing” will leave you with innumerable articles and blogs to filter through. The following list of six tips is a consolidation of many of the themes presented in some of these websites and an academic paper focused this topic.

1. Share at the best times (1, 2, 3, 4, 7, 9, 10)

Several articles discussed testing different times and using analytics (see #3) to see which times are reaching the most viewers. Others mentioned that the same information could be shared throughout the day with a different headline. Posting at regular intervals (for example, 10am and 4pm each day) can build confidence in and reach different viewers. Having a schedule can make it easier on your organization to stay on task as well.

2. Use the right platform (3, 4, 6, 7, 9)

Facebook? Instagram? Twitter? MeetUp? Using the right platform can help you reach a larger and more appropriate audience. Experts generally suggest going “deeper” with fewer platforms than “broader” posting less regularly on more platforms, but consider your goals for social media before you adhere to any “rule”.

3. Use data analytics (1, 2, 4, 6, 7, 10)

Most social media platforms offer analytics so that you can see how many people are interacting with your content, sharing it to their own networks, and more. This data can be a useful tool identifying successful content and style and the interests of your viewers. Some experts suggest experimenting with your grammar (short versus long and formal versus informal) and order of content (pictures, text, links) in your post.

4. Include pictures and videos in your posts (2, 3, 4, 7)

People are generally more attracted to posts with images and short video clips. Posts with pictures/videos garner more engagement and are shared more than posts without. Experts suggest that embedding a message or headline in a photo can boost messaging.

5. Balance sharing content and creating your own (2, 5, 7)

Several writers discuss a “4-1-1” rule of thumb for social media content. This rule suggests four posts of sharing other content (i.e. a post from a relevant partner), one post sharing your own content (i.e. a photo from a recent event), and one post advertising/selling/fundraising. This can help balance your status as an organization that influences and informs and as an organization that is self-serving.

6. Listen to and engage your audience (2, 4, 5, 6, 7)

Social media can and should be viewed as an on-going conversation, not a unidirectional voice. Simple games like voting for picture of the day/week/month can be good ways to engage and build a following. Solicit information from your viewers to build a conversation. For example, ask “What is your (favorite trail, time of day to visit, season)?”

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6. Actions Underway to Address Issues of Access

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“We must make the outdoors relevant to today’s youth by making sure that all Americans have access to safe, clean, and close-to-home places to recreate.”

— *2011 America’s Great Outdoors report*

Changing demographics, increasing urbanization, and the proliferation of new user groups with little or no access to natural space have forced the land conservation community to rethink its role in fostering human-nature connections. While these issues are still emerging, many land trusts have shed traditional models and begun to take concrete steps to ensure that the spaces they work to conserve are open and enjoyable to a diverse array of individuals.

From partnering with school systems to develop experiential environmental curricula to working with hospitals and physicians to use nature to promote healing processes, the access-related work of land trusts varies widely and is often driven by innovative partnerships. Some of this work, and the user groups it has targeted, has been discussed in previous chapters and will be further elaborated below.

Yet land trusts are not alone in these efforts. Governmental agencies, healthcare systems, community organizers, schools and teachers, and the outdoor industry (to name a few) have recognized the importance of connecting children and adults with natural spaces and have taken action on this behalf. Whether in the form of federal programming or guided outdoor excursions, in tandem with land trusts or not, these actions have had a significant impact on the ability of people and communities to access natural spaces.

By exploring trends in and highlighting a number of specific examples of access-driven work across different sectors, this chapter will bring to light some best practices and successes in connecting people with nature. Elements of successful programs from one sector can be adopted by land conservation organizations working to develop their own programming around access. The chapter will also focus on the broad spectrum of organizations working in this realm in an effort to expose unique partnership opportunities for those in the land conservation community.

6.1 Land Trusts and Others Involved in Private Land Conservation

Land trusts, recognizing both the public and conservation benefits, have taken a variety of steps to increase access to natural spaces. Toward this end, many have shifted at least some of their initiatives to focus on what have been termed “community conservation lands.” Also referred to as Ambassador Landscapes, these spaces are the result of extensive community engagement efforts and managed in direct response to local needs in order to “promote strong emotional connections between people and the outdoors” (Judy Anderson as quoted in Goltra, 2014).

As Edith Goltra goes on to explain, community conservation lands:

- Are chosen and designed to connect people with the land and people to people.
- Promote conservation missions in a way that is interactive, fun, accessible and relevant to a diversity of individuals.
- Address community challenges and needs, including physical barriers, social and cultural challenges, and economic barriers.

In so doing, these landscapes are designed and managed to foster a sense of community in which natural areas play a central role. To this effect, Maine’s Damariscotta River Association created and maintains a free outdoor ice rink on which people can gather and play during colder parts of the year as a part of their conservation portfolio.

Community Ice Rink, Damariscotta River Association, Damariscotta, ME

Located on the historic property of a previously profitable dairy operation, the Damariscotta River Association’s outdoor community ice rink has been a local fixture since 2011. Maintained by volunteers, the ice rink is open to the public free of charge and provides opportunities for both skating and competitive hockey during colder months.

Though not a historic or natural feature of the community, the ice rink is located on property managed by the Damariscotta River Association and serves as a hub for both outdoor recreation and personal interactions. In this way it is in direct service of a local need, since Damariscotta previously had limited recreational facilities for children to use.

The community ice rink also offers a way for Damariscotta residents to experience property (in this case a historic farmhouse, barn and the surrounding natural area) conserved by the Association in a way that is engaging and mutually beneficial. Accordingly, the rink provides a strong example of how conservation organizations are approaching and conducting land conservation activities with local needs and community values in mind.

For more information see:

DRA ice rink: <http://www.damariscottariver.org/preserves-trails/round-top-farm/dra-round-top-community-ice-rink/>

It is worth noting that while projects like the Damariscotta River Association's ice rink have been well received. They often force land trusts into an uncomfortable position: that of de facto parks agencies. This is indicative of a larger shift in which work that has traditionally been in the realm of public agencies (e.g. municipal parks departments) has become the responsibility of non-profit conservation organizations.

Michael Murray notes in a research piece for the Harvard Environmental Law Review that "private organizations control an increasing number of urban public spaces" (Murray, 2010). He goes on to note that private groups (most of them non-profits) participate in the management of half of New York City's 1,700 parks – including Central and Bryant Parks (Id.). He also cites similar examples of urban parks management in Washington, D.C.

Murray's discussion highlights what he perceives as the benefits of private management of public parks spaces. Through his research, he asserts that private, typically non-profit organizations are more accountable managers of natural public space because they are more responsible, more readily answer to external interests, and are less costly to monitor than governmental entities (Murray, 2010).

Yet such management schemes also put new and significant pressures on land trusts and other non-profit conservation organizations. These pressures are both capacity-based (in terms of staff time, expertise and money) as well as mission-based (in terms of ensuring that ongoing public park responsibilities align with organizational goals), and can strain a land trust's ability to acquire, conserve and protect additional (or even current) natural areas.

This raises a few key questions, namely: to what extent is it appropriate for non-profit conservation organizations to step into roles previously held by public agencies? And how can land trusts avoid falling into parks management roles to the extent that it becomes detrimental to their other conservation work?

While there is no clear answer to either question, many land trusts have worked to avoid associated pitfalls through partnerships and skill-pooling. The Thriving Communities Institute (discussed in the following section) is one such example.

Despite these challenges, community conservation projects and other access-related work by land trusts have been highly regarded and continue to span a broad spectrum. For the

purpose of further discussion, this work is loosely grouped into three major categories: partnership and collaboration; working along gradients; and food and nutrition.

Partnership and Collaboration

“Building relationships with new nonprofit organizations, public agencies, companies, and funders will make possible a whole new generation of conservation projects that will broaden our reach into communities and our conservation impact.”

— 2015 *Conservation Horizons* report, California Council of Land Trusts

A major component of the access-driven work of land trusts – as evidenced above – has been the identification and formation of a diversity of value-added partnerships. For example, a 2010 survey of New York City’s community gardens (of which a quarter were owned and operated by land trusts) found that 43% were in active partnerships with local schools (Gittleman, Librizzi and Stone, 2010).

Such partnerships can serve as avenues for groups to access land trust-managed natural areas, as well as a means by which land trusts can leverage the expertise of other organizations in land acquisition, management and programming. As an example of the latter, the Western Reserve Land Conservancy’s Thriving Communities Institute uses its expertise in policy advocacy and finance – in combination with the design and stewardship skills of other local organizations – to acquire and improve vacant lots throughout northern Ohio.

Thriving Communities Institute, Cleveland, OH

The Thriving Communities Institute’s primary goal is helping to revitalize northern Ohio’s urban communities through the transformation of vacant plots into natural park areas. However, the Institute is not directly involved in the greening and use of these spaces.

Rather, recognizing its unique expertise in policy and finance issues, the Institute works to “enable others’ capacity through policy and funding at the federal, state, and local levels.” By engaging with policymakers and local county land banks, staff members help mobilize political support and gain funding to actually purchase vacant properties. These properties are then turned over to partners with different areas of expertise to demolish any existing infrastructure and re-develop properties as open spaces for public access.

Partner-first strategies such as this can be valuable tools for land conservation organizations looking to avoid the risk of becoming de facto parks agencies. By contributing very specialized expertise to the land acquisition and conservation process, conservation organizations like the Thriving Communities Institute ensure that partners (also with specific areas of expertise) are responsible for open space design and encouraging and managing access.

For more information see:

Thriving Communities Institute:

<http://www.thrivingcommunitiesinstitute.org/>

Strategy for demolition and greening:

<http://www.thrivingcommunitiesinstitute.org/about-demolition-greening.html>

While the Thriving Communities Institute’s work is likely to involve no more than a handful of partners on any individual project, partnerships to improve access can also take the form of large coalitions. The California Council of Land Trusts, which consists of 56 land trusts and other conservation organizations from throughout the state of California, has done a significant amount of work to connect diverse user groups with natural areas. As highlighted in the coalition’s 2015 Conservation Horizons report, a key component of their efforts moving forward will be to “connect all Californians with...protected lands in ways meaningful to them,” (CCLT, 2015).

Conservation Horizons, California Council of Land Trusts

The California Council of Land Trusts prepared the Conservation Horizons report with the goal of exploring how California’s land conservation organizations can and should realign to effectively mirror an increasingly urban and diverse population. Recognizing that land trusts “do not reflect the demographic makeup of California” and protected natural areas “are not readily accessible to most Californians,” the report outlines key future challenges faced by the conservation community, as well as ways in which these challenges might be overcome.

Highlights include:

- A discussion of important trends in demographics, public health, culture, and access and equity that will inform the future of land conservation work.
- A presentation of guiding themes, including land, communities, people and partners, that should be addressed to help land trusts and their partners respond to these trends.
- A call for more and diverse partnerships to support land protection and stewardship that is relevant and accessible to a wide variety of people and communities.

Through this research and a series of recommendations for both short- and long-term action, the report works to effectively ensure that “conservation’s future is as successful as its past.”

For more information see:

Conservation Horizons report:

http://www.calandtrusts.org/wp-content/uploads/2014/03/CH2015_webfinal_lr.pdf

It is important to note that these examples provide only a small sampling of the types of partnerships that land trusts are engaging in around access. A wealth of partnership institutions, including school systems (i.e. the role of local schools in launching the Lookout Mountain Conservancy’s Environmental Connections program)²³, healthcare institutions (i.e. the Jefferson County Dept. of Health’s role in developing the Red Rock Ridge and Valley trail system), businesses (i.e. ArcelorMittal’s support of the Mighty Acorns conservation education program)²⁴ and foundations (i.e. the San Diego Foundation’s Opening the Outdoors program)²⁵ have been involved in efforts to improve connections between communities and nature. Some of the sectors below may offer additional opportunities for partnerships to improve access moving forward.

Working Along Gradients

Another major facet of efforts by the land trust community to increase access to natural areas has been a commitment to working along gradients. By working along gradients – gradual transitions from urban centers to the surrounding suburban and rural areas – land trusts can help connect city dwellers and rural communities with the surrounding natural landscape in a way that is effective, accessible and proximate.

Much of this work centers on the design and management of trail systems and other corridors that connect neighborhoods and urban downtowns with existing (but previously inaccessible) regional trail and parks networks. As the Rails-to-Trails Conservancy states, such efforts to enhance local and regional connectivity “[allow] trail users to access the trail from their home or workplace and safely reach community destinations,” (Rails-to-Trails, n.d.).

There are a number of specific examples of these types of initiatives from the land trust community. The Gallatin Valley Land Trust (GVLТ) in Bozeman, MT, for example, is a critical driver behind Bozeman’s Main Street to the Mountains trail program. By “constructing new trails, acquiring new public land and trail easements, and participating in subdivision review and community planning,” GVLТ is working to enhance Bozeman’s trail network and connect residents with natural areas and one another (GVLТ, n.d.).

²³ <http://lookoutmountainconservancy.org/news/lmc-and-the-howard-school-environmental-connections>

²⁴ <http://usa.arcelormittal.com/News-and-media/Our-stories/Stories-Folder/2014-Stories/Oct/Mighty-Acorns/>

²⁵ http://www.sdfoundation.org/Portals/0/GrantsandScholarships/PDF/grantguide_2015_oto.pdf

Main Street to the Mountains, Gallatin Valley Land Trust, Bozeman, MT

Coined by Gallatin Valley Land Trust's founder Chris Boyd in 1990, "main street to the mountains" refers to the land trust's goal of connecting Bozeman residents with larger regional trail networks and park systems without the need for motorized transport. This involves expanding existing trail networks into or close to Bozeman's downtown and residential areas.

Highlights of the Main Street to the Mountains trail program include:

- The construction of a paved, multi-use trail connecting the northern side of Bozeman with popular trails in Gallatin National Forest and the Bridger Mountains.
- Completion of a pedestrian bridge connecting neighborhoods and a middle school with Bozeman's previously difficult-to-access Regional Park.

By linking local and regional trail networks and park systems, these and other Main Street to the Mountains initiatives enable urban residents to easily access surrounding natural areas in ways that are safe and promote health and recreational activities.

For more information see:

GVLТ Trails: <http://www.gvlt.org/trails/>

Main Street to Mountains article: http://www.bozemandailychronicle.com/news/environment/million-grant-awarded-for-main-street-to-mountains-trail/article_0436710e-f3d2-11e2-a6cd-0019bb2963f4.html

Wyoming's Jackson Hole Land Trust has also conducted a series of initiatives to enhance access to nature by focusing on the protection and improvement of urban-rural gradients. In particular, the Trust's Flat Creek Corridor project (which protected 40 acres of riparian habitat and trail area running through the town of Jackson) and the River Springs - Rendezvous Park initiative (which converted a former gravel distribution and storage site into a community park and access point to the Snake River) are good examples.

The Jackson Hole Land Trust River Springs - Rendezvous Park Project

The Jackson Hole Land Trust's River Springs – Rendezvous Park project is located on a 40-acre area of open space at the intersection of the Jackson, Wilson and Teton Village communities. The property was acquired with the assistance of The LOR Foundation, and is now co-managed by the two partners (who collaborated to form the Rendezvous Land Conservancy).

The property offers a popular point of access to the Snake River for boaters, swimmers and fishers alike, and its protection ensures this access in the long-term. In addition, future plans for the site include a mixed-use trail system linking the communities of Jackson, Wilson and Teton Village with one another and with the surrounding natural landscape.

In this way the River Springs – Rendezvous Park project serves as an important regional connector, allowing urban and suburban residents to link with one another and utilize the natural amenities, trails and waterways of the greater region.

For more information see:

River Springs - Rendezvous Park:

<http://jhlandtrust.org/land-protection/current-projects/river-springs-rendezvous-park/>

By improving regional connectivity and strengthening the linkages between urban centers and surrounding suburban and rural areas, these types of initiatives are key components of the access-driven work of land trusts. In focusing less on design and more on convenience, this work ensures that new and diverse communities can access natural areas that already exist close to home.

In many ways, this has a magnifying effect on the efforts of a specific land trust in the sense that protection and stewardship of relatively small areas of land can help ensure that communities have access to much larger natural systems and park networks. This principle of “magnifying” can and should be an important component of other access-driven work in the land trust community moving forward.

Food and Nutrition

Land trusts and other organizations involved in the conservation of private land have additionally worked to expand access by linking with local food and healthy eating initiatives. Particularly in urban areas, these initiatives are working to connect communities with surrounding natural spaces in new and creative ways centered on human health.

Efforts around local food and gardening are particularly popular because they have served to address two fundamental types of access: access to natural space and access to proper nutrition. While the need for access to natural space has been discussed in depth in previous chapters, it is worth briefly investigating the need for improved access to healthy food.

According to the USDA, nearly 30 million Americans live in food deserts: both rural and urban areas with limited or no access to nearby supermarkets (Mansour, 2013). This has made it difficult if not impossible for many low-income communities – in which virtually all food deserts are concentrated – to receive adequate nutrition. Unfortunately, such issues are not new: the World Health Organization reported a linkage between food insecurity and obesity and related chronic health issues in 2002 (Hallberg, 2009), and evidence and impacts far preceded their report.

In many ways, this has resulted in a natural connection between the land conservation movement and the food and nutrition movement. By converting vacant and unused space into community gardens, land conservation organizations create opportunities for people to experience nature while improving their access to fresh, healthy foods, both of which

serve to reduce the incidence of obesity in underserved and improperly nourished populations (see, for example, Hallberg, 2009 and Adams, Grummer-Strawn and Chavez, 2003).

Recognizing these dual benefits, organizations like the New Haven Land Trust have centered much of their work on community garden creation and management.

The New Haven Land Trust, New Haven, CT

Founded in 1982, the New Haven Land Trust currently manages a network of 50 community gardens throughout the city of New Haven. Located on previously vacant plots of land leased from the city, gardens are sited and developed through a competitive application process. Communities that submit successful applications work with the land trust to access and transform vacant plots into safe, cultivable spaces through mulching, weeding, sodding and raised bed construction. With ongoing technical and material assistance from the land trust, community members then perform long-term planting and upkeep.

Through this partnership, the land trust provides low- and moderate-income community members with opportunities for outdoor activity, healthy food production and gardening education. It also allows local residents to shape and steward their own gardens and control greening in their neighborhoods, ensuring the development of open spaces that are locally relevant and meaningful.

For more information see:

New Haven Land Trust: <http://www.newhavenlandtrust.org/>

It is worth noting that while not directly related to increasing access to nature, many other land conservation organizations have tapped into the food and nutrition movement by working to preserve small- and medium-scale farmlands in more suburban and rural settings. The Mesa Land Trust in Grand Junction, CO (<http://mesalandtrust.org/>), PCC Farmland Trust in Seattle, WA (<http://www.pccfarmlandtrust.org/>) and Texas Agricultural Land Trust in San Antonio, TX (<http://www.txaglandtrust.org/>) are all examples of organizations doing work in this realm. This work is a fundamental aspect of the land conservation movement, and aids in the protection of the ecological integrity and long-term functionality of working lands across the country. It also helps ensure the health and nutrition of rural and urban populations alike by increasing access to high-quality sources of food. In this way, while not directly increasing access to nature, this work improves the accessibility of natural products that can have similarly positive impacts on lives and livelihoods.

By linking with food and nutrition movements around the country, land trusts have been able to successfully address two components of access (either together or individually): access to nature and access to healthy, high-quality food. In so doing, they have formed robust partnerships with traditional and urban farming communities toward the conservation (and opening for use) of natural spaces while positively impacting the health of human and natural communities alike.

6.2 Federal, State and Local Government

While there has been an overall shift in much of the access-related, park-based work from the public to the non-profit sector in recent years (see the introduction to section 6.1), national, state and local governments are still taking significant steps to help ensure that people and communities have access to natural spaces. From the national-level Every Kid in a Park Initiative to the City of Austin's work on urban trails, these actions focus largely on connecting people to existing natural areas near their communities.

One way the public sector has been involved is through funding land conservation initiatives. For example, the Land and Water Conservation Fund, established by Congress in 1965, sets aside a portion of receipts from oil and gas leases to fund national, state and local conservation projects up to a level of \$900 million annually (Trust for Public Land, 2015). To date, the fund has aided in the development of over 41,000 parks and recreation projects at both the state and local levels (Id.). Another example is the Federal Highway Administration's Recreational Trails Program, which "provides funds to the States to develop and maintain recreational trails and trail-related facilities" (see FHWA, 2015 and <http://www.landtrustalliance.org/policy/public-funding>).

Many other federal-level programs are focused more explicitly on increasing access to natural areas. The aforementioned Every Kid in a Park initiative, designed to "protect our Nation's unique outdoor resources and ensure that every American has the opportunity to visit and enjoy them," will provide 4th grade students and their families free admission to every National Park and other federal lands for one year, starting in 2015-2016 (White House Office of the Press Secretary, 2015). It will also result in the creation and distribution of materials that make it easier for parents and teachers to identify and use nearby natural areas.

Another Presidential effort, the America's Great Outdoors (AGO) initiative, is similarly aimed at protecting natural spaces and increasing the opportunities for individuals and communities to connect with them. By increasing public-private and community-level partnerships, the program aims to use grassroots engagement to "help citizens realize the wide-ranging benefits of a revitalized connection to the outdoors" (U.S. Dept. of the Interior, n.d.). Among the conservation and recreation focal points of the AGO initiative are the identification and expansion of outdoor recreation opportunities and the connection of inner-city communities with urban parks and green spaces (Id.).

While these multi-agency initiatives promise to increase collaboration and large-scale project implementation, individual agencies have also spearheaded their own access-driven programming. As a leader in this realm, the National Park Service has taken a suite of steps aimed at increasing access to natural areas, both through concrete on-the-ground initiatives and the realignment and re-articulation of organizational objectives.

National Park Service: Centennial Goals, Urban Expansion and Access

In advance of its 100-year anniversary, occurring in 2016, the National Park Service is working to prepare for a second century of park use and stewardship. As a part of this preparation, the Service has developed a number of organizational themes and specific programs focused on making parks relevant and accessible to all communities.

A Call to Action – which outlines the National Park Service’s themes, goals and actions as the organization moves into its second century of operation – identifies “Connecting People to Parks” as one of four broad themes of primary importance. Specific goals outlined under this theme, to which the National Park Service has pledged a series of measurable actions, are:

- Develop and nurture lifelong connections between the public and parks.
- Connect urban communities to parks, trails, waterways, and community green spaces.
- Expand the use of parks as places for healthy outdoor recreation.
- Welcome and engage diverse communities.

In conjunction with these goals, the Service released its “Urban Agenda” in March 2015, which outlines the need for and helps guide parks-related work in urban communities in the next century. It also outlines the ways in which broader work conducted by the National Park Service can be made more relevant to urban residents now and in the future.

Other, specific examples of how the National Park Service is working to make parks relevant and accessible to a diversity of user groups can be found on the Service’s Call to Action success stories webpage (below).

For more information see:

NPS Urban Agenda: http://www.nps.gov/subjects/urban/upload/UrbanAgenda_web.pdf

A Call to Action: http://www.nps.gov/calltoaction/PDF/C2A_2014.pdf

Success Stories: <http://www.nps.gov/calltoaction/success.htm>

In addition to these and other federal-level programs and activities, a number of state and local public institutions are working to connect constituents with natural areas. These initiatives range far and wide, from the provision of funding to the application of technical expertise. The City of Austin, for example, has been an active player in the design and implementation of urban and regional trail systems – both as solo efforts and in partnership with local land conservancies and other non-profit organizations.

City of Austin Urban Trail Initiatives, Austin, TX

Through the Public Works Department, the city of Austin, Texas has taken significant strides to expand their urban trail network. Most plans and actions currently underway align with the City of Austin Urban Trails Master Plan. The plan, which serves as a guidebook for urban trail development and helps target future design and expansion efforts, was adopted as ordinance by the city on September 25, 2014. Specific trail-related projects the city has undertaken include:

- Violet Crown Trail – designed in partnership with the Hill Country Conservancy, this trail will start in Austin and run for 30 miles, connecting neighborhoods with parks, pools and hiking and biking opportunities in the surrounding county.
- Austin to Manor Trail – a 5-mile concrete trail connecting communities in eastern Austin with parkland in the neighboring municipality of Manor.

The objective of these projects, and the plan as a whole, is to encourage alternative means of transport and increase the ease with which urban residents can access larger, regional trails. It also helps ensure that individuals from a diversity of age groups and ability levels can enjoy outdoor activity. As the Urban Trails Master Plan states, expansion of the trail network “allow[s] residents to go from one end of the city to another in a safe and healthy way” and “create[s] a true ‘8 to 80’ network, where an 8 year old child can walk or ride with an 80 year old.”

For more information see:

Urban Trails Master Plan: http://www.mediafire.com/view/qusnf4qg3h4v4z7/UTMP_online.pdf

Austin’s current trail projects: <http://austintexas.gov/page/current-urban-trails-projects>

Through these and other initiatives, public institutions at all levels have proven to be potentially valuable partners in enhancing access to natural areas. Federal, state and local grant processes represent valuable sources of funding for land conservation organizations and their partners. Yet the benefits of partnership go beyond funding: non-financial resources, access to other (i.e. private sector) partners and staff expertise are all potential benefits of collaboration with governmental agencies.

6.3 The Healthcare Industry

National parks have always been loved for their symbolism and scenery, but we want to increase the awareness of their role in preventative medicine and therapy.

– Dr. Jon Jarvis, Director, National Park Service

As discussed earlier in this report (and in previous iterations of the Berkley workshop: see, for example, the 2014 workshop report at <http://environment.yale.edu/publication-series/documents/downloads/a-g/Berkley-2014-Workshop.pdf>) there are significant connections between human health and access to natural areas. Recognizing the diverse health-related benefits, many healthcare institutions have taken action to increase access to nature for patient and other user groups.

Some of this work is centered on the very design of healthcare facilities, from the location of patient windows to the incorporation of healing gardens and other green space into hospital campuses. Informed by pioneering research such as that conducted by Roger Ulrich in 1984 (see Ulrich, 1984), these “green” design approaches have gained major popularity in the construction of new hospital complexes, including the Mercy Health system in Cincinnati, Ohio.

Mercy Health West Hospital, Cincinnati, OH



When Mercy Health designed the West Hospital campus to replace two older hospitals in western Cincinnati, Ohio, they did so with the goal of connecting new facilities with elements of the surrounding natural landscape. Recognizing the potentially profound benefits of nature views to sick and recovering patients, designers and planners installed floor-to-ceiling windows in many patient rooms and skylights to improve the availability of natural light. The hospital also features a 2.5 acre green roof planted with a mixture of over 60,000 native plants, which is visible from every patient room and provides a calming environment to aid in healing processes.

For more information see:

Healthcare Design:

<http://www.healthcaredesignmagazine.com/article/mercy-health-goes-bold-and-beautiful>

Room to Bloom:

<http://www.healthcaredesignmagazine.com/article/room-bloom-mercy-health>

Other hospitals and doctors – particularly those working with overweight and obese patients (and youth in particular) – have adopted and encouraged more active connections between patients and natural areas. In many of these cases nature is not only used as a means to boost patient recovery, but as the primary method of treatment.

Dr. Robert Zarr’s leadership of the D.C. Park Prescription program (see <http://www.nps.gov/choh/learn/news/upload/Park-Rx-One-Page-2.pdf>) is a particularly successful example of this type of work, but it is far from the only one. The Walk With a Doc initiative – created by cardiologist David Sabgir and now active in 36 states – works to reduce the risks of a sedentary lifestyle by encouraging patients to go on organized walks with healthcare professionals in natural settings (see <http://walkwithadoc.org/>). And Portland, Oregon’s Rx Play program uses a doctor referral system to link patients and their families with the city’s system of parks and natural resources in an effort to promote regular exercise and combat obesity.

Rx Play Park Prescription Program, Portland, OR

Created by Terry Bergerson (Oregon State Parks and Recreation) and Jean Rystrom (Kaiser Permanente) as a part of the Statewide Comprehensive Outdoor Recreation Plan (SCORP), Portland’s Rx Play program has been in operation since 2008. As a part of this program, clinicians from throughout the city of Portland provide park prescriptions to young patients (ages 6-12) at risk of weight-related health impacts. Included in these prescriptions are referrals for patients and their families to specific park spaces and recreation programs in their communities.

Having grown in recent years, and following the expansion of services targeting non-English speaking families, the program now distributes roughly 200 park prescriptions annually and includes participation from over 50 clinicians. Said program co-founder Jean Rystrom, “The pediatricians are wildly enthusiastic. They want to have something to offer patients, and they are willing to bend over backwards if they’ve got something to make it work.” Based on this success, there are now plans to further expand the reach of Rx Play throughout the Portland metropolitan area.

For more information see:

Park prescription success stories:

<http://www.nrpa.org/Grants-and-Partners/Recreation-and-Health/Park-Prescriptions/>

Financial backing for Park Rx:

<https://www.portlandoregon.gov/parks/article/508516>

Beyond offering valuable partnership opportunities, these and other examples of the health-care community's access-driven work can provide potentially valuable lessons in the physical design of open space and public engagement. In borrowing best practices from physicians and hospitals alike, land conservation organizations and their partners can thereby serve to strengthen their own access-based initiatives in a number of ways.

6.4 Educational Institutions

Recognizing the educational and developmental benefits of increased access to nature, educational institutions have also been major partners in and drivers of the movement to connect more and diverse communities with natural areas. This involvement runs the spectrum from large universities (which have been major contributors to research on both the importance of and current state of access to natural space) to elementary schools and individual educators who have helped design and implement experiential education programs. For the purpose of discussion, this very natural divide – between research and programming/implementation – will be used to categorize ongoing efforts.

Access-Driven Research

A number of universities have been using their expertise to expand the body of knowledge on the benefits of and methods for increasing access to natural space. While not directly creating or enhancing connections between people and nature, these efforts are critical in informing the access-driven work of other organizations and individuals (and in some cases, the research institutions themselves).

Through work by the Natural Learning Initiative and Department of Parks, Recreation & Tourism Management, North Carolina State University has established itself as a leader in this realm. Research at the university is being used to inform the design of open spaces and the management of conservation lands in ways that accommodate multiple uses and attract diverse user groups.

The Natural Learning Initiative and Department of Parks, Recreation & Tourism Management, N.C. State University, Raleigh, NC

North Carolina State University has been a leader in both research and action on behalf of access to natural areas. Through the Natural Learning Initiative – a program within the College of Design – the university conducts and disseminates research on the importance of outdoor space in promoting children’s education and development, as well as the specific characteristics of outdoor space that help promote these benefits. This research is used primarily to “generate new knowledge that may support evidence-based design” of outdoor areas.

The Department of Parks, Recreation & Tourism Management, under the leadership of Dr. Myron Floyd, has conducted research in a variety of areas related to access, including:

- The relationship between various neighborhood (e.g. safety and demographics) and built environment (e.g. pedestrian infrastructure) characteristics and urban park use.
- Usage and recreation trends in park environments.
- The role of interracial relations in shaping outdoor leisure experiences and opportunities for immigrant and minority populations.

Through this and other research, the Department is hoping to find answers to questions such as: do different ethnic and cultural groups experience nature differently? And in what ways are experiences different in natural and human-engineered outdoor settings? In so doing, the hope is to inform both policy initiatives and management strategies so that outdoor areas and experiences are responsive and inclusive to an increasing diversity of user groups.

For more information see:

NLI: <http://www.naturalearning.org/>

PRTM: <http://cnr.ncsu.edu/prtm/>

Similarly, faculty, students and staff in San Francisco State University’s Recreation, Parks and Tourism Program have been researching the state of access to natural areas with a particular focus on barriers and trends.

Findings from these universities and others are important in identifying both where and how access to nature is a concern and devising potential solutions to issues of access and equity. This research will become increasingly critical as land conservation organizations and their partners explore ways to make their work relevant and responsive to new and diverse user groups at the local, regional and national levels.

Department of Recreation, Parks, and Tourism, San Francisco State University

In operation since 1935, San Francisco State University's Department of Recreation, Parks, and Tourism offers both undergraduate and masters-level degree programs in the realms of parks management, recreation, tourism and related fields. In addition to providing students and continuing professionals with the skills needed to develop careers in these areas, the department sponsors a significant amount of research on inclusion and access.

Primarily through the work of Dr. Nina Roberts, the department has conducted and supported research on race/ethnicity, culture and gender as they relate to access to parks and recreation opportunities on public lands. Research has also focused on urban youth and youth development and the role that outdoor spaces and experiences have to play in each. Through this research, Dr. Roberts and the department hope to "break down barriers of inequality especially relating to park access and recreation opportunities."

For more information see:

Department of Recreation, Parks, and Tourism: <http://recdept.sfsu.edu/>

Dr. Roberts' bio: <http://online.sfsu.edu/nroberts/>

Programming and Implementation

Using techniques and conclusions from the institutions and types of research cited above, other schools and educators are working to directly promote human-nature connections through on-the-ground programming and implementation. These efforts range from the creation of experiential nature learning curricula to the design and maintenance of community trail systems.

In some cases, universities conducting research are also engaged in on-the-ground activities in response to this research. North Carolina State University, for example, has moved from theory to practice in contributing to the design and development of a number of outdoor learning environments, recreation areas and neighborhood parks.

Heritage Park Natural Learning Environment, Raleigh, NC

In 2002, North Carolina State University's Natural Learning Initiative partnered with the Junior League of Raleigh and Communities in Schools North Carolina (a leading dropout prevention organization) to create an outdoor learning area in the Heritage Park public housing community.

Using expertise in open space design/research and a community visioning process, NC State and its partners developed a series of outdoor spaces that “reflect the cultural values of residents of Heritage Park” and provide a high-quality learning and recreational environment for local residents. By locating the outdoor learning area in close proximity to an existing community center and reconfiguring entry points, project participants worked to ensure that children and adults alike had (and continue to have) safe, convenient access to the new natural amenities.

For more information see:

Heritage Park Learning Environment:

<http://www.naturalearning.org/heritage-park-natural-learning-environment>

NC State NLI Projects:

<http://www.naturalearning.org/content/projects>

In other cases, pre-collegiate schools and school systems have worked with members of the land conservation community to develop public green spaces and create hands-on curricula designed specifically to get students into natural areas. For example the Howard School, a high school in Chattanooga, Tennessee, was a major collaborator in restoring open space owned by the Lookout Mountain Conservancy for public use (see <http://lookoutmountain-conservancy.org/news/lmc-and-the-howard-school-environmental-connections>). Additionally, California’s Encinitas Union School District has been a primary partner in the establishment of the Encinitas Environmental Education (E3) Cluster – a platform for delivering environmentally-focused experiential learning programs to Encinitas’ urban communities.

The Encinitas Environmental Education Cluster, Encinitas, CA

The Encinitas Environmental Education (E3) Cluster is a collaborative partnership between the Encinitas Union School District, Magdalena Ecke Family YMCA, San Diego Botanic Garden, San Dieguito Heritage Museum, Seacrest Village Retirement Communities and Leichtag Foundation. Through this partnership, participants are working to develop experiential learning and multigenerational engagement programs focusing on agriculture, nutrition, natural history and community building.

In developing these programs, two of the Cluster’s primary goals are to preserve and encourage access to nature and support environmental education, health and well-being for individuals from a variety of age groups and backgrounds. By realizing these and other goals, the E3 cluster hopes to expand nature-based learning opportunities, encourage stewardship and forge stronger connections between people and nature.

For more information see:

Leichtag Foundation:

<http://www.leichtag.org/2014/04/encinitas-cluster-becomes-hub-environmental-education/>

Memorandum of Understanding:

<http://www.leichtag.org/encinitas-environmental-education-cluster-signed-mou/>

Through research, stewardship activities and the development of curricula at the nexus of people, nature and sustainability, schools can be a gateway by which communities connect with natural areas. They can also offer valuable experience in partnership and programming to help inform the access-driven work of land conservation organizations and their colleagues. Accordingly, access to nature represents an important area of collaboration and mutual learning for both the education and conservation communities.

6.5 Others Working to Enhance Access to Nature

While the sections above highlight a few of the key sectors involved in enhancing access to natural spaces, there are a number of other types of organizations working to this effect. Some work directly in the realm of land conservation and environmental preservation and others work in very different areas. All have in common the understanding of the benefit of connecting people with nature. This section highlights some of these additional players.

It is worth noting that while this section explores some other types of organizations not listed above, it is by no means an exhaustive “catch all”. Rather, it highlights a few additional sectors not discussed in previous sections of this report that have done significant work to support access to nature and may therefore offer valuable partnership opportunities for land conservation organizations in the future. Many more such partnerships with many other types of organizations will need to be explored as work to expand access to natural areas continues.

Sports and the Outdoor Industry

The sports world – while not often considered a traditional player in the land conservation movement – has also taken steps to connect people with natural areas. Though not commonly referenced in discussions of access to nature, this involvement likely stems from a natural connection between sports and the benefits of connecting people with the outdoors. Both promote physical activity among children and adults, improve health and well-being of communities and individuals, and are largely focused on getting people outside.

In particular, outdoor sports companies and organizations have played a significant role in increasing access to natural areas. Because such organizations, companies and the athletes affiliated with them directly depend on the availability and integrity of publically accessible natural spaces, they are often keenly interested in promoting ongoing stewardship and instilling a love of (and ability to connect with) nature in a diversity of individuals. The outdoor

outfitting company The North Face, for example, works to promote access to natural areas through a number of funding initiatives.

The North Face Explore Fund

In an effort to “welcome and engage more people in the outdoors”, the clothing/equipment company “The North Face” runs an annual grant program called the Explore Fund. Through this program, The North Face provides financial support to organizations working to connect a variety of people to outdoor settings and recreational opportunities. Examples of previous award recipients include:

- First Descents: offers young adults fighting cancer and cancer survivors a multi-day outdoor adventure experience free of cost (<https://firstdescents.org/>).
- Big City Mountaineers: provides free, weeklong wilderness mentoring expeditions for underserved urban youth aged 13-18 (<http://www.bigcitymountaineers.org/>).

Since 2010, the fund has resulted in the investment of over \$1 million in local communities and supported more than 300 different grassroots organizations.

For more information see:

North Face Explore Fund: <http://www.explorefund.org/>

In addition to clothing and equipment outfitters, outdoor athletes and enthusiasts themselves have played an active role in ensuring the preservation and public accessibility of natural areas. For example, the Outdoor Alliance – a coalition of outdoor recreation organizations from the American Canoe Association to the International Mountain Bicycling Association – has dedicated its efforts to “[protecting] and [enhancing] recreational opportunities on America’s public lands and waters” in the recognition that “we all need places to get outside” (Outdoor Alliance, 2015).

By promoting the recreational components of natural areas, the outdoor industry and the athletes involved are working to increase access to nature for a diversity of individuals. The powerful connection between nature and sports – and the mental and physical benefits that come from active time outside – has made the outdoor sports community a prominent driver in linking humans and nature. Outdoor outfitters and athletes have proven to be willing partners in and advocates for access-driven initiatives, indicating an opportunity for greater collaboration with the land conservation community.

Charities and Foundations

Recognizing the community benefits of enhanced access to natural space, a number of foundations and other charitable organizations have begun to incorporate access to nature into their funding structures and outreach programs. Such contributions can either help others in their work to promote access to natural areas or serve as direct avenues by which people

connect with nature. In some cases – such as the LOR Foundation’s support of the Jackson Hole Land Trust’s River Springs-Rendezvous Park initiative (see section 6.1) – both types of benefit can be delivered in tandem.

The TKF Foundation, located in Annapolis, MD, has worked to increase access to parks with a specific focus on urban environments through the Nature Sacred National Awards Program. The program, which supports “projects of national significance,” is aimed at the development of urban green spaces that align with the foundation’s mission of “treating human health and the environment as an integrated whole” (TKF Foundation, 2015).

The Nature Sacred National Awards Program, TKF Foundation, Annapolis, MD

In conjunction with its vision that “every urban community in the U.S. will provide people with opportunities for intimate, intentional daily doses of nearby urban nature,” the TKF Foundation has committed to awarding \$5 million to six projects through the Nature Sacred National Awards Program. The awards, which were recently granted, target projects of national importance that “integrate landscape design and empirical research.” To meet this criterion, selected projects will combine the creation of dynamic urban green spaces with the ongoing study of their impacts on users and communities. User groups targeted by these projects include:

- Cardiovascular patients in Portland, OR.
- Wounded warriors and their families in Bethesda, MD.
- Communities recovering from natural disasters and other disturbances in Joplin, MO and Queens, NY.
- Inner-city high school students in Brooklyn, NY.

The hope is that these spaces, and the ongoing research conducted therein, will help inform and target future green space development initiatives in stressed and inner-city communities across the country.

For more information see:

Nature Sacred Awards: <http://naturesacred.org/national-awards/about-the-awards/>

While the TKF Foundation’s Nature Sacred awards initiative is national in scope, others are working to promote access to nature at a more local level. For example, the Escondido Charitable Foundation - an affiliate of the San Diego Foundation - has designed their 2015-2016 grant cycle around the Great Outdoors, and will be accepting applications for projects that “promote the rich natural resources and open spaces throughout Escondido” (The San Diego Foundation, 2015).

The Escondido Charitable Foundation, Escondido, CA

By making The Great Outdoors the focal point of their 2015-2016 grant cycle, the Escondido Charitable Foundation has demonstrated its commitment to connecting Escondido area residents with natural space. The foundation – which accepted letters of intent through January 12 from nonprofits serving Escondido – will award grants to projects that “foster healthy lifestyles and connect, protect, or increase access to nature for people of all ages and abilities.” Grants awarded will range in value from \$10 thousand to \$30 thousand.

For more information see:

The Escondido Charitable Foundation’s current grantmaking: www.sdfoundation.org/CommunityFoundations/EscondidoCharitableFoundation/Grants.aspx

The work of these foundations and many others like them goes beyond direct funding and support for access-driven initiatives at multiple scales. By demonstrating that there is both national and local interest in – and financial support available for – increasing access to natural areas, such work serves to expand the number of people and organizations thinking about and working on these initiatives. As such, it is important to ensure that foundations and other charitable organizations continue to support access-related projects in a significant way – either through long-term partnerships with conservation organizations or collaborations amongst multiple, smaller funding entities.

6.6 Conclusion

Increasing access to natural areas will be a critical priority for land trusts moving forward. The long-term stewardship of natural and open spaces, as well as the sustainability of the land conservation movement as a whole, depends on it. Work by land trusts to build and add value to coalitions and innovative partnerships, strengthen connections along urban-rural gradients, and engage with food and nutrition initiatives represents a concerted effort to enhance accessibility and harness these associated benefits.

Land trusts are not alone in these endeavors, however. Recognizing the positive health, developmental, ecological and social impacts of ensuring people have access to nature, organizations and individuals from a variety of different sectors have begun to take action.

Schools are conducting cutting-edge research to inform the access-driven work of other organizations, and many are directly involved in the development of hands-on, nature-based programming to get students into nature. Healthcare institutions and physicians are harnessing the healing benefits of green space by designing gardens and operating innovative park prescription programs. Federal, state and local governments are providing funding and technical expertise to increase the number of communities with safe access to natural areas. And a number of other organizations, groups and individuals – including environmental groups, outdoor sport outfitters, athletes and foundations – are also contributing their passion and expertise to increase the accessibility of nature for a diversity of user groups.

Such a multi-sector approach is well-equipped to address complex issues like access and park equity. By understanding the landscape of access-driven initiatives, land trusts can adopt best practices from other sectors and identify and engage in new and unique partnerships. In so doing, they can leverage capacity, funding and expertise in the pursuit of improved access, avoiding the potential pitfalls of becoming de facto parks agencies.

Possible Questions for Discussion

- What are the valuable roles that land trusts can play in the spectrum of access-driven work?
- Are there best practices evident in access-driven work from other sectors that could help guide the efforts of the land conservation community moving forward?
- Are best practices from one city or region transferrable to another? How can the scalability of successful access-based initiatives be ensured?
- How intentionally are land trusts stepping into what was previously a public agency role in terms of public park management? To what degree is this transition appropriate?
- How can land trusts avoid falling into parks management roles that they are not equipped to perform? Are multi-sector partnerships the best, most effective option? And in this regard, should land trusts merely be contributors to – rather than managers of – increased access to natural areas?
- What sectors not mentioned here might be valuable to explore for partnership opportunities around access to nature?

Some of the Organizations Doing Interesting Work on this Topic

National Wildlife Federation – in conjunction with their goal to get 10 million kids outdoors, the National Wildlife Federation is using a variety of new and existing programs to address issues of access. From the Nature Find tool – which helps families and individuals locate natural areas in their communities – to the Earth Tomorrow program – an environmental education and leadership program targeting underserved youth – these initiatives are helping engage and serve the stewards of tomorrow. See: <http://www.nwf.org/What-We-Do/Kids-and-Nature.aspx>.

U.S. Environmental Protection Agency – through the Greening America’s Capitals program, EPA is helping capital cities across the country envision and implement neighborhood-scale green space and environmentally-informed urban design techniques. The program is run in partnership with the Department of Housing and Urban Design and Department of Transportation. See: <http://www2.epa.gov/smart-growth/greening-america-capitals#background>.

U.S. Forest Service – USFS has helped spearhead a number of initiatives geared towards lowering boundaries to accessing parks, forests, and playgrounds. The Discover the Forest Program, an online platform that makes it easy for individuals and families to locate nearby

natural areas, plan trips, and engage (including a number of interactive games) is one such example. See: <http://www.discovertheforest.org/>.

Resources Legacy Fund – by working with philanthropic partners, the Resources Legacy Fund conducts a wide array of donor-driven conservation activities, many of which center on access. In partnership with the David and Lucile Packard Foundation, James Irvine Foundation, and S.D. Bechtel, Jr. Foundation, RLF is now working to engage urban youth and adjacent communities in Los Angeles, San Diego, and the San Joaquin Valley in park development and preservation initiatives. See: <http://www.resourceslegacyfund.org/strengthening-communities-and-broadening-the-conservation-base/>.

Latino Coalition for a Healthy California – LCHC has targeted four strategic areas – chronic disease prevention, safe & vibrant communities, healthcare access and just immigration reform – to address Latino health issues throughout the state of California. In conjunction with these target areas and the goal of improving health equity throughout the state, LCHC has distributed information on and advocated on behalf of increased access to safe parks and recreation areas, particularly in park poor neighborhoods. See: <http://www.lchc.org/>.

Groundwork USA – through a network of 20 local Groundwork Trusts across the country, Groundwork USA delivers community and environmental revitalization initiatives in ways that are locally relevant. Many of the organization’s specific project areas – including Brown-fields and Vacant Lots, Active Living/Healthy Communities, and Community Food – focus directly on strengthening the connections between underrepresented communities and new or existing natural amenities. See: <http://groundworkusa.org/>.

Outdoor Outreach – Outdoor Outreach runs a series of both short- and long-term nature-based programming and youth development curricula to connect underserved kids with the outdoors. These experiences, ranging from one-day outings to multi-day excursions and a yearlong leadership development program, use outdoor activities to develop both technical and life skills – all at no cost to participants. See: <http://www.outdooroutreach.org/>.

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- Hutchinson, Hal, phone conversation with Brad Gentry, February 18, 2015.
- Ickovics, Jeannette, telephone conversation with author, February 25, 2015.

- Judge, John, phone conversation with Brad Gentry, April 23, 2015.
- Nagel, Catherine, phone conversation with Brad Gentry, February 18, 2015.
- Nagel, Catherine, phone conversation with author, February 18, 2015.
- Newkirk, Marta de la Garza, telephone conversation with author, April 22, 2015.
- Scoonover, Mary, phone conversation with Brad Gentry, April 6, 2015.
- Smiley, Marc, telephone conversation with author, April 10, 2015

Biosketches of Authors

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Jazmine da Costa is a native New Yorker who has spent the last five years in the Pacific Northwest. She holds a B.A. from Princeton in Anthropology and is currently, a joint degree M.B.A. and Master of Forestry candidate at the Yale School of Management (SOM) and Yale School of Forestry and Environmental Studies (F&ES), respectively. At F&ES she serves as the President of the Land Use and Urban Coalition and is a member of the Equity, Identity and Diversity Committee. At SOM she serves as a leader of Special Projects for the Design and Innovation club. Her interests lie in the design, stewardship and funding of parks and recreational spaces that serve people and wildlife.

Katie Holsinger is pursuing her Master of Environmental Management ('16) at the Yale School of Forestry and Environmental Studies. She was recognized as a Wyss Scholar in 2015 for her work in and commitment to conservation of the American West. Katie has worked on conservation initiatives as a part of the Northern Rockies Conservation Cooperative (Jackson, WY), the Project WET Foundation (Bozeman, MT), and Montana State Extension Water Quality (Bozeman, MT), among others. At Yale F&ES, Katie is the Senior Arts Editor of the school's environmental publication, *Sage Magazine*, and serves as the Program Coordinator of the Yale Farm's Seed to Salad education program. She is also writing a book, *The Artist's Field Guide to Greater Yellowstone*, expected out Summer 2016. Katie is interested in issues of large-landscape conservation and human well-being.

W. Colby Tucker has spent nine of the ten last academic calendar years in Connecticut schools. Graduating Trinity College in 2009 with a B.S. in Environmental Science, he then taught Chemistry and Environmental Science at the Pomfret School from 2010-2013. Most recently, he completed a Master's of Environmental Science from the Yale School of Forestry and Environmental Studies in 2015. In the summers, Colby has worked on a variety

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Matthew Viens is a second-year Master of Environmental Management candidate at the Yale School of Forestry & Environmental Studies. While at Yale, Matthew is focusing his studies on community forestry and the ways in which traditional forestry and land conservation techniques can be adapted to urban areas to provide joint socio-environmental benefits. These studies have been supplemented by Matthew's involvement with the Urban Resources Initiative, a non-profit organization working on street tree and neighborhood greening initiatives throughout the city of New Haven, CT. Prior to coming to Yale, Matthew spent two years working in the U.S. Environmental Protection Agency's Office of Research and Development as part of a small innovation skunkworks. In addition to his interests in urban and community forestry and land conservation, Matthew enjoys hiking, biking, soccer, basketball and playing and writing music.

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