Improving Human Health by Increasing Access to Natural Areas: Linking Research to Action at Scale

Report of the 2014 Berkley Workshop

Held at the Wingspread Conference Center, Johnson Foundation, Racine, Wisconsin June 2014

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Yale Program on Strategies for the Future of Conservation
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.

Yale Program on Strategies for the Future of Conservation
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Introduction and Workshop Summary

Bradford S. Gentry
Yale School of Forestry & Environmental Studies

Scaling-Up the Connections Between Health and Nature: Summary of the Major Areas for Action

Bradford S. Gentry
Yale School of Forestry & Environmental Studies

Both the health and conservation communities are currently in periods of transformational change. The need to improve human health, while reducing costs and increasing access, is leading health organizations “upstream” toward more preventive and community-based measures. At the same time, the need to expand the value of conserved land to a wider range of publics is pushing conservation organizations to incorporate their lands into broader efforts to build healthy communities.

As described in the chapters that follow, many different groups are now working to expand the connections being made between improved health and increased access to natural areas. At the same time, many of these efforts are happening in individual locations or around particular topics in ways that make it hard to connect them across the country. Other barriers include competing priorities and skepticism about the mechanism of these connections within both health and conservation organizations.

The 2014 Berkley Workshop was convened to provide researchers and practitioners in both the health and conservation fields with the opportunity to discuss how to surmount these obstacles, collectively brainstorm ways to scale up the impacts of what we already know, and set the direction of work moving forward.

Rather than reinventing the wheel, the goal of this work should be to build from the wide range of efforts already underway – from research to advocacy to action. This will require time spent voluntarily sharing information and coordinating across multiple actors. Such a “network of networks” will only emerge and be sustained if participating in it helps each of the groups involved meet their own goals and missions even more effectively.
“To deepen the connections between health and nature, we need a radical disregard of boundaries – working within, outside and around (through ‘bank shots’) existing health and conservation institutions.”

—Howard Frumkin, University of Washington

So what do we need to do and where should we act now to deepen these connections still further? The remainder of this section summarizes the actions suggested by workshop participants (listed in Box 1) under the following broad headings:

- Develop statements of shared beliefs and calls to action around which to organize joint efforts
- Share the work already underway on multiple aspects of the connections between health and nature
- Enhance efforts to improve health by working with willing partners to increase time in nature and to learn from those experiences
- Conduct more research on health impacts, but also on the social and business aspects
- Explore new business models – for expanded action connecting health and nature
- Make more compelling stories of the benefits of these connections available for use with different audiences
- Acknowledge and address the risks of and barriers to more time in nature

**Box 1: List of Workshop Participants**

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Robert Zarr, Pediatrician, Unity Health Care, and DC Parks Rx, DC
Develop statements of shared beliefs and calls to action around which to organize joint efforts

While the connections between health and nature are complex, we already know enough to move forward more aggressively. In doing so, we need to talk about these complex connections in ways that resonate with the audiences we are seeking to influence.

What follows are some of the major “frames” or ways of thinking and talking about these connections that are rallying support with different audiences.

For health and conservation professionals: the “Wingspread Declaration on Health and Nature”

Carrying on the Wingspread Conference Center’s history of generating influential “declarations” on topics of pressing social concern, Box 2 contains the “Wingspread Declaration on Health and Nature.” The Declaration was developed during and just after the workshop. It is intended as a concise statement of both the reasons for and the steps that should be taken to deepen the connections between improved health and increased access to natural areas.

Box 2: The Wingspread Declaration on Health and Nature

November 15, 2014

Nature and human well-being are connected:

The connection between people and the natural world is fundamental to human health, well-being, spirit, and survival. Nature is a source of food, clean water, clean air, medicine, shelter, and economic opportunity. Moreover, in order to thrive, humans require direct access to nature. Whether a city park, a community garden, a tree-lined street, or wilderness – nature in people’s daily lives reduces stress, renews the spirit, connects people to each other and increases physical activity. In short, humans are part of nature, our connection with nature is a fundamental human need, and we believe access to nature is a basic right.

However, large numbers of people – many of them children – are now disconnected from nature. As a direct consequence, people around the world are suffering from substantial health challenges, many of them preventable. Likewise, the natural world faces increased pressures and vulnerability. The human, natural, and economic consequences of these challenges are already enormous.

This situation calls for placing consideration of the nature-health connection at the center of research, design, and decision-making across multiple fields. Concerted, cooperative action from health, environmental, educational, governmental, and corporate actors is needed to reconnect people with nature and to secure commitment to protecting nature.
**Call for action to connect people with nature:**

We know enough to act now. A robust body of evidence demonstrates the benefits to human health and well-being of the natural world and of nature contact. Evidence also demonstrates substantial co-benefits, such as more vibrant communities, reduced health disparities, mitigation and adaptation to a changing climate, and business opportunities.

Therefore we commit our own efforts to the following goals. We also call on leaders in the public and private spheres to recognize these commitments as central to their own aims, and to commit their own organizational efforts to these goals:

1. Today's children will grow up with an understanding of their interdependence with nature. They will habitually incorporate outdoor activity into their everyday lives, and grow up with an appreciation for nature. Achieving this goal will require changes in school facilities and curricula, urban design, public spending priorities, pediatric healthcare, and more. In approaching this goal, we will focus on the most vulnerable and under-served populations of children first.

2. Employers and business leaders will recognize the powerful economic benefits of reconnecting people with nature and, in particular, of encouraging outdoor activity in order to lower healthcare costs, improve employee recruitment, retention, and performance. In so doing, employers will become leaders in preventing illness and disability, promoting health and well-being, and working to steward nature.

3. Nature, and access to nature, will be recognized as an important part of our health infrastructure and we will invest in places for healing and places to promote health.

4. We will help build organizations that have the competencies to factor the nature-health connection into their decisions on a regular basis. This will require training and hiring of knowledgeable employees. It will also rest on incorporation of research findings on this topic, thus:

5. New research will further reveal the interdependencies between nature and human health. We will undertake quantitative and qualitative research initiatives to measure and illustrate the health, well-being, and economic benefits of embedding the nature-health connection into decision-making at all levels.

6. To support these measures, we will create a clearinghouse of research, information, case studies of success, and partnerships to support good decision-making and to help connect new networks of health and environmental organizations.

To sign on to the Declaration and commit to the call to action, contact Kristin Wheeler with the Institute at the Golden Gate at health@instituteatgoldengate.org.
Not only did all of the workshop participants sign the declaration, but many new signatories have already been added since it was released in November 2014. If you are interested in joining this effort please go to www.healthandnature.org for more information.

For physicians: “Park Prescriptions” for their patients

Increasing numbers of primary care physicians are also attracted to the idea of prescribing walking or other exercise in natural areas as a way to help address chronic diseases. For example, see the description of Dr. Robert Zarr’s work with primarily lower income patients in Washington, D.C. provided in Section 1. Since the workshop, the State of Maine has also announced that patients with park prescriptions from their physicians will be admitted free to state parks (see Box 3).

Box 3: 10,000 Free Maine State Park Passes

Let’s Go — a nationally recognized childhood obesity prevention program — Harvard Pilgrim Health Care, and Maine’s Bureau of Parks and Lands have partnered to provide more than 10,000 free passes good at 47 Maine State Parks for patients and their families. The passes, distributed by participating primary care physicians, promote an active, healthy lifestyle and make it affordable for families to take advantage of Maine’s fantastic outdoors resources.


If you are interested in helping physicians in your area join the Park Prescriptions movement you can find more information about it at http://instituteatgoldengate.org/national or http://www.parksconservancy.org/conservation/sustainability/parks-and-health.html.

For land trusts: improved health as one of the community benefits of more parks and trails

As land trusts work to expand public support for the parcels they conserve, an increasing number are pointing to health benefits – as well as benefits to biodiversity, water, temperature, attractive neighborhoods and other community goals – as some of the major reasons to support their efforts.

Section 1 includes a description of how the Freshwater Land Trust has worked with local health partners to substantially expand the park and trail systems in Birmingham, Alabama – all as part of a broader effort to revitalize the region’s economy. More and more land trusts are now exploring these connections.

“Access to nature is directly linked to the American ideals of democracy and justice for which veterans fought – after all, ‘everyone gets wet outdoors.’”

— Stacy Bare, Sierra Club
Within the health community: conceptual models supported by statistical analyses

All of these and related efforts require a strong foundation in science. While the participants agreed that we know enough to continue scaling up action, they also agreed that many questions are deserving of further research.

Two particular efforts to “state the case” for the beneficial links between health and nature in scientific terms, and thereby help point the way for both future action and research, were described:

- Box 4 contains a conceptual model developed by Hartig, Mitchell, DeVries, and Frumkin (2014) for how increased access to nature can lead to improved health (see also the discussion in Section 4). More recent research by Ickovics and others at Yale finds that this model is strongly supported by statistical analyses of both health and nature data sets for the New Haven region.

- Box 5 contains the diagrams developed by Dr. William Bird to describe the conceptual model he uses for these connections – i.e. that the human body is still that of a pre-industrial hunter-gatherer for which time in nature is a major reducer of stress.
These were just a few of the efforts to describe the connections between health and nature in a concise way that reaches different audiences – for example, several attendees also spoke of the spiritual connections they feel when spending time in a natural area. In the sections that follow, such conceptual framings are essential both to future research, as well as to efforts to tell “compelling stories” about the opportunities created by these connections.

They do also raise the question of what we mean by time in “nature” or “natural areas”? Do healing gardens in malls, exercise equipment in outdoor parking lots, community gardens or even paved trails through woods constitute “nature” or “natural areas”? In many ways, these questions get at the core values of the health and conservation organizations trying to partner around shared goals. As such, the answers will vary dramatically from organization to organization.

Among the commitments individual attendees made to follow-up on such statements were the following:

• Develop and follow a strategic plan for disseminating and using the Wingspread Declaration in ways that will generate the greatest impact
• Bring the Declaration back to each of their organizations as a way to review their existing programs and consider changes going forward
• Disseminate the Declaration widely across the different networks in which they are involved
• Use the Declaration as a vehicle for starting discussions with possible new partners in new locations
• Publicize the Declaration across a variety of media sources and provide opportunities for others to sign on.

Share the work already underway on multiple aspects of the connections between health and nature

Given the large number of efforts already underway around the connections between health and nature (see the Sections that follow), as well as the pressures on new resources to do even more, it is imperative that an effort be made to build on each other’s work, rather than duplicating it.

Fortunately, the workshop participants felt that there was so much work to be done – in specific locations, on specific topics and with different audiences – that there was virtually unanimous support for trying to connect the existing networks in ways that will increase their impact through the sharing of information and opportunities. This will require respectful engagement – i.e. making sure that this sharing helps the different groups meet their own goals even more effectively. Formal agreements like the one made by groups in the Bay Area (see Box 6) can help establish ground rules.

Box 6: Healthy Parks Healthy People Bay Area MOU

In 2013, 29 cooperating agencies in the Bay Area came together to sign a Memorandum of Understanding that established a general framework for cooperation on the “Healthy Parks, Healthy People Initiative.” Agencies included groups representing parks and open space, healthcare, and public health and educational institutions, all committed to furthering the mission of getting people outside and active.

See more at: http://www.openspace.org/activities/hphp.asp.

Among the commitments individual attendees made to share information on these topics were the following:

• Devote organizational resources and staff time to the efforts to build and sustain a network of networks around health and nature
• Create a clearinghouse for new developments and on-going sources of information on health and nature
• Bring additional partner organizations into the effort, particularly from the Southern U.S.
• Coordinate conferences and other convenings on health and nature to be supportive of this effort across the U.S.

• Share experiences from the U.S. and gather information on international efforts in this area at the World Parks Congress, to be held in Sydney, Australia from November 12-19, 2014.

*Enhance efforts to improve health by working with willing partners to increase time in nature and to learn from those experiences*

Increasing numbers of health providers, foundations, land trusts and others are already working to improve health by increasing access to natural areas (as described in Sections 1 and 2) – even though more work needs to be done. In one example of an innovative partnership, the Bronx Zoo is leveraging its appeal to children to help bolster health programs.

**Box 7: Bronx Zoo Health Partnerships**

In 2008, the Bronx Zoo and the Wildlife Conservation Society (WCS), which manages the zoo, partnered with the New York State government to host a day-long child health insurance enrollment event. Families came to the zoo to ask questions and get help from professionals on how to get their kids signed up for a new state insurance program, and received free admission to the zoo for the day.


WCS and the Bronx Zoo also partner with the local Children’s Hospital at Montefiore to host an annual “Family Diabetes Day” with fun activities, diabetes education, and free access to the zoo.

See more at: [http://www.cham.org/services/endocrinology/events/](http://www.cham.org/services/endocrinology/events/).

We need to support and learn from these efforts to make a difference today, including in the following ways –

**Health providers:** During the workshop, participants from Kaiser Permanente and Unity Healthcare described their remarkable efforts to get their patients outdoors as part of their programs (see Section 1).

“Park Prescriptions give doctors hope that they can make an impact on ‘lifestyle diseases.’”

*Robert Zarr, Unity Health Care*
They can do so, in part, because it fits their business models – which are not focused primarily on getting paid for treating sick individuals, but rather capture revenues by preventing individuals from getting sick in the first place. For health providers with similar incentives/goals, some of the following steps were suggested:

• Include activity/park prescriptions in vital signs/treatment plans for patients
• Provide outdoor recreation options for patients – through ratings of local parks
• Develop intermediaries/aggregators for connecting patients to accessible, safe natural areas
• Focus on hotspots – communities most at risk
• Consider offering electronic patient records as data sets for research trials on access to nature and impacts on health

Foundations: Increasing numbers of foundations are also exploring the connections between health and nature as part of their community improvement efforts. To date, this is happening mostly through their environmental programs, but efforts appear to be growing on the health side as well.

Should a foundation decide to engage on these topics, it might consider the following types of steps:

• Convening different parties from across their regions and sponsoring planning efforts around what types of programs might best fit the local context and needs
• Supporting proof of concept efforts, taking action designed to learn what might work best
• Evaluating the results and revising the approaches taken accordingly – as well as funding new research on any unexpected results
• Leveraging their own and others’ resources to take actions that seem most likely to have a larger impact at scale

Others facing health issues: Over the course of the workshop, many other organizations – employers, schools, Y’s, boy’s and girl’s clubs, etc. – were noted as also having strong interests in the health of their people.

This creates the possibility for even more partnerships around connecting improved health and increased access to natural areas. Such efforts might be organized through and around:

• Existing health networks, such as Park Prescriptions, Every Body Walk, Convergence Partnership and others described in the sections that follow
• Regional collaborations on:
  › Trails/programs, such as those in Houston, Birmingham, Denver, San Francisco, New Haven and others
  › Policy, such as those developing in Oregon and Maine, or between the Children & Nature Network and the National League of Cities
• Existing conservation networks, such as with the members of the Land Trust Alliance
• Coordinated convenings/conferences, through the network of networks described above

Among the commitments individual attendees made to follow-up in this arena were the following:
• Bring the Park Prescriptions, Every Body Walk, Healthy Parks/Healthy People and similar programs to their communities
• Use the Land Trust Alliance events and publications to encourage members to reach out to and build partnerships with local health organizations
• Connect outdoor user groups (such as Outdoor Afro) to health organizations in their communities
• Reach out to park managers to investigate possibilities for increasing health activities/programming in their parks
• Rethink the design of parks to maximize the possible health benefits of capital improvements
• Work with county health departments, schools and others in rural areas to explore ways to use increased time in nature as a way to reduce chronic illnesses
• Work with schools to incorporate more time in nature into their curricula
• Bring approaches designed in the U.S. – Park Prescriptions, Wingspread Declaration, user/affinity groups, monitoring technology, others – to the U.K. as part of its effort to connect health and nature
• Encourage land trusts to consider bringing health professionals onto their boards

“We know that increased activity can improve health. We also know that access to nature can encourage and empower increased activity. So we should do everything possible to increase access to nature for everyone.”

— Ray Baxter, Senior Vice President Community Benefit, Research and Health Policy, Kaiser Permanente

Conduct more research on health impacts, but also on social and business aspects

As the growth of Park Prescriptions has shown, every detail of the causal connections between health and nature does not need to be completely worked out before action can be taken by some physicians and other health providers.

At the same time, changes in conditions do need to be measured – i.e., how does the rate of increase in chronic illnesses go down as a result of increased access to nature? If increased physical activity is one of the clearest routes to better health (but not the only one – see framing discussion above), then the following types of questions should be answered:
• What is the role of expanded access to parks and trails in increasing the “functional movement” of individuals?
• If the health benefits of access to nature are derived not only through increased physical activity, what other benefits are easy to demonstrate and compelling for health groups? These and related questions do suggest that research efforts to connect health and nature need:
  • More analyses of existing data – as more patient (electronic health records), population/community health and environmental data becomes available, more statistical analyses can be done to understand better the relationships
  • More trials – as more actions are taken to connect different populations in different locations to nature in a variety of ways (veteran and youth programs, park prescriptions, patient directed spending in the U.K., etc.) there will be more opportunities for clinical trials
  • More sharing of research protocols – as more such analyses and trials are done, the network of networks should be used to move toward shared protocols and measurement tools yielding comparable results
  • Incorporation of data on access to nature into national health surveys, health department accreditation programs and similar efforts to capture health data
  • Better understanding of how the connections between health and nature work or might be improved in rural areas
  • Better understanding of the costs of poor health – such as the work that has been done in Birmingham, AL
  • Better understanding of how and why parks are used by different groups in different locations, such as the research now underway in New York and California, as well as across several hundred parks in more than 20 cities by the Rand Corporation
  • Better mutual understanding of the missions/incentives/business models facing both:
    › Conservation organizations – from working in wilderness to urban areas, to capturing the benefits of nature for human or non-human populations
    › Health organizations – from working with individuals to populations, as well as from treating to preventing illnesses
  • More case studies on how health and conservation organizations might work together, such as the agreement among parks and health organizations in San Francisco
  • More access to funding for such efforts – from governments, as well as from foundations, corporations and others who will benefit from the work

Kaiser Permanente demonstrates how compliance with Affordable Care Act-mandated Community Health Needs Assessments (see Box 8) provides an opportunity to gather baseline data, establish guidelines for sharing and comparing information, and incorporate access to the outdoors into an understanding of community health.
Among the commitments individual attendees made to expand the research underway were
the following:

- Conduct and disseminate regular reviews of the results of research on health and nature
- Convene a national gathering of researchers on health and nature – possibly to be held in the Pacific Northwest
- Actively share access to the huge data sets that are increasingly available on the health of child and adult populations, as well as community social and environmental factors
- Actively share research methodologies
- Expand the number of research projects and proposals that incorporate both health and nature
- Increase the number of interventions/trials designed to produce measureable results
- Incorporate more factors on access to and use of natural areas into health surveys
- Incorporate more health factors into surveys on park use
- Investigate more directly the connections between health and nature in rural areas
- Investigate the economic returns from improved health through increased access to parks
- Compare the role that access to nature plays (or does not) in different health providers’ community health needs assessments under the Affordable Care Act
- Analyze and disseminate a range of policy options for increasing access to natural areas
• Publish not only a high quality, peer-reviewed paper at the end of a research project on health and nature, but also a short summary for the broader public of the results and their implications for action

• Work with U.S. Senators and others to advocate to the National Institute of Health and the U.S. Environmental Protection Agency that they co-fund more research on this topic.

• Bring conservation and health leaders together to write an editorial on the connections for the Journal of the American Medical Association

• Advocate for an Institute of Medicine Panel on nature and health

**Explore new business models – for expanded action on health and nature**

While the vast majority of health organizations are incentivized to focus on treating people who are already ill, there is money to be made by keeping people healthier longer. The trick is finding ways to capture some of that money by increasing access to natural areas.

“The rise of consumer medicine – more self-monitoring, more data – creates huge opportunities for more feedback, more trials and better health outcomes.”

— Perry Robinson, Greenwich Biomedical, Inc.

Among the ideas from the participants for doing so were the following:

• Make it even easier for physicians to write park prescriptions – such as through park rating or activity services

• Work to incorporate improved access to nature into the Affordable Care Act community health benefit programs/requirements (see Section 4), such as through comparative analyses of plans, development of new guidance materials and collaboration with other networks working on these topics

• Investigate the application of “shared savings models” – share savings with whomever ends up with more cash if health costs go down over time – similar to those developed in the energy efficiency sector. Such efforts might include looking at:
  › Prepaid private plans like Kaiser and others
  › Public health clinics/Medicaid
  › Patient controlled plans like in the UK
  › “Social impact bonds” for improved health if savings can be measured and shared

• Engage with organizations outside the health industry who stand to gain from improved health through increased access to nature, such as:
  › Suppliers to more active publics – from activity monitors to shoes
  › Large employers
Among the commitments individual attendees made to explore new business models were the following:

- Work to incorporate access to nature into the community benefit requirements for non-profit health providers
- Analyze opportunities for public-private-nonprofit partnerships around parks, trails and other “green infrastructure” for health and other benefits to communities from natural areas
- Dig more deeply into the business case for health and nature in rural areas
- Investigate possible investment products for pension funds and other long-term investors interested in health

*Make more compelling stories of the benefits of these connections available for use with different audiences*

For many people, better health means clean, sterile places in which new tests are run and drugs administered. Having them think about access to woods, fields, waterways and similar areas as part of better health will require stories/examples that fit for them – engaging both their logical “heads” and their emotional/instinctual “hearts”. They will then need opportunities to see these stories in action in ways that meet their needs.

“This work needs both stories to help people believe and facts to convince them that they should.”

— Jeannette Ickovics, Yale School of Public Health

As such, building from the great work already being done by informal user/affinity groups to bring more people into natural areas for the benefits to their health makes a lot of sense. An ever-growing number of such groups include the following:

- Patients seeking physical activity: “Walk with a Doc” and similar programs
- Communities of color: Outdoor Afro and similar groups
- Veterans: the Sierra Club’s Outings programs and similar groups
- Programs in individual cities, such as Houston, Denver, Birmingham, Little Rock, New Haven, New York and elsewhere
“Who reads JAMA? We need ESPN, Jet, or Essence to make a big deal about the connections between health and nature.”

— Stacy Bare, Sierra Club

These and other efforts generate compelling stories – which can then be used to attract the attention and support of political officials at the local, state and national levels. Those stories also need to be told by “credible messengers” – individuals who are respected by the target audience(s).

“The messenger is as important as—or more important than—the message itself in trying to reach and move discreet audiences. People are tribal by nature, and to get them to stretch beyond their comfort zone, they will need to hear from a trusted advisor.”

— Elizabeth Ward, Land Trust Alliance

Among the commitments individual attendees made to capture and disseminate compelling stories on these connections were the following:

• Bring the stories, the Declaration and the opportunities to as wide a range of potentially influential audiences as possible, including:
  › Mayors and urban planners, as well as state and federal officials as part of conservation and health policy initiatives
  › Regional hospital councils
  › Designers and administrators of health care facilities
  › Networks of foundations
  › The World Parks Congress in Australia
  › The Outdoor Industry Association and others who will benefit from/support increased time in nature
  › Veterans’ organizations and the Department of Defense
  › The World Economic Forum Global Council on Health
  › The Land Trust Alliance

• Blog more regularly about health and nature connections – and encourage more guest blogs on their websites

• Prepare short pieces for the popular media more regularly on the health/nature connections
• Author textbooks which provide more complete descriptions of the connections between health and nature
• Incorporate health connections into training materials for land trusts
• Incorporate nature connections into training materials for medical professionals
• Make the training materials that have been developed for veterans and time in nature open source and publicly available

Acknowledging and addressing the risks of and barriers to more time in nature

While the health benefits of access to nature are large, there are also risks to humans in natural areas, as well as barriers to access:
• “Feral spaces” that pose risks of crime
• Exposure to ticks, mosquitos and other vectors for illness
• Cold, wet, dirty places that are uncomfortable and unattractive to many people
• Differences across cultural groups as to what makes a natural area more or less attractive
• Lack of effective access for some groups to attractive natural areas

“As the more a park is used, the safer it gets.”

— Kristin Wheeler, Institute at the Golden Gate

As part of the efforts to increase access to nature, it is important to acknowledge and work to address these and other risks and barriers. Some of the health risks of natural areas and ways to manage those risks are described in the report of the 2013 Berkley workshop on “Improving Human Health by Increasing Access to Natural Areas: Opportunities and Risks” (available at http://environment.research.yale.edu/publication-series/6131). Some of the cultural differences in attraction to and use of natural areas are described in the report of the 2008 Berkley workshop on “Saving Land by Serving People” (available at http://environment.research.yale.edu/publication-series/5864).

“Connecting folks with ‘nearby nature’ in their neighborhoods is the key place to start.”

— Rue Mapp, Outdoor Afro

Access to nature is best seen as one component of improving human health, but by no means the only answer or one that is free from risks. Rather, it is essential to understand and address the risks and barriers through:
• Conducting medical and social research to inform management options, as well as by
• Listening to and building genuine partnerships with affected groups in areas where interests converge

Among the commitments individual attendees made to work on these risks and barriers were the following:

• Work with health departments, community organizations, foundations and others to understand better the barriers to increased access to natural areas and their impacts on health

• Make efforts to meet people “where they are” on the spectrum of comfort in the outdoors

Background materials for workshop participants

The rest of this report includes the background materials that were provided to participants prior to the workshop. This paper builds from the report of the 2013 Berkley Workshop (see workshop report at http://environment.research.yale.edu/publication-series/6131 ). Its purposes were to:

• Provide the participants – given their wide range of backgrounds and experience – a common foundation for the discussions; and

• Offer some examples and ways to frame efforts to deepen the connections between increased access to nature and improved health by making them even more actionable.

As growing numbers of communities work to improve health by increasing access to natural areas, the major question is how might these efforts be scaled up to benefit even more people? The 2014 background paper is organized around two possible pathways for deepening these connections:

1. Helping to bring health, conservation and other interested groups together community-by-community through gathering, sharing and using examples from other cities/regions to help spark local action in new regions; and

2. Identifying critical data to collect and pathways to use that data for changing health practices, standards and other rules to include access to and time in nature as a core element of health programs into the future.

The first path focuses on the lessons being learned from the collaborations that already exist between conservation and health organizations in some communities:

• Inside hospitals, where healing gardens and green roofs help shorten recovery time.

• In community parks and playgrounds, where increasing access to safe, enjoyable places to spend time can reduce stress and increase physical activity.

• Across interconnected greenways, where trail systems offer opportunities to commute, exercise or just enjoy seeing different parts of a community.

Capturing examples and disseminating a menu of approaches that have worked in other communities should provide both conservation and health organizations a starting point for seeing what might fit in their locations.
Section 1 of this paper looks at some of the emerging collaborations between health providers and conservation organizations. Section 2 looks at some of the work being supported by foundations.

Since health providers need to meet their standards of care and their business models, while foundations are often more free to push the envelope, our hope is that by looking at these two groups together the paper gave the participants a wide range of examples to spark discussion. Clearly, in any particular community, other groups will also have major roles to play in acting on these connections – from local employers, to schools, health departments, community and economic development groups and many others.

The question for the first path is how might this growing body of experience best be used to spark action in even more communities?

The second path is aimed at expanding the more formal/institutional connections being made between the science on the health benefits of time in nature and the treatment or prevention regimes offered by health organizations. This involves at least two inter-connected efforts:

- Reviewing the existing science, both to determine which of the activities already underway are best supported by the research, as well as to identify new areas for or approaches to future research – including how best to measure the health impacts of time in nature; and
- Bringing the results of the science into the institutions and processes that establish the protocols for health care, from various standard-setting bodies, to political processes and the popular media.

- The goal of these efforts is to have health providers consider investing in gardens, parks or trails on the same basis that they consider investing in new emergency rooms or operating theaters.

Section 3 lays out a wide range of options for the types of data that could be collected to understand even better the health effects of time in nature. Section 4 then considers some of the major pathways for using current or future science to change health practices.

The question for the second path is how to move time in nature from being a “nice to have” to a “must have” in even more health systems.

The background materials for the 2014 Berkley Workshop were developed by Yale graduate researchers in collaboration with participants. The workshop offered opportunities for both facilitated exchanges of experiences and ideas, as well as free time for informal discussions exploring possible new ways forward. The results of the workshop are published by the Yale School of Forestry & Environmental Studies as part of the on-going Berkley Workshop series at http://environment.yale.edu/publication-series/land_use_and_environmental_planning/. The workshop was made possible by the generous support of donors to the Berkley Program on Strategies for the Future of Conservation. The views expressed in this report are not necessarily those of the Johnson Foundation, its trustees, or its staff.