Summary of the Major Themes and Areas for Action

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The purpose of the 2016 Berkley Workshop was to explore some of the ways that land conservation groups might best respond to our changing climate, with particular emphasis on the science and finance guiding and enabling the stewardship of natural areas.

Among the major themes raised were the following:

• While *increasing numbers of land trusts are incorporating the changing climate into their work*, important issues arise around how useful traditional tools will be, as well as whether many land trusts have the capacity to engage in the more active management of conserved lands that is likely to be required.

• There are *many ways that the stewardship of conserved lands may help address aspects of climate change*, from storing carbon to mitigating flooding or heat waves. Capturing those benefits will require more systematic efforts to demonstrate that natural areas can provide those services in ways that fit infrastructure owners’ and investors’ decision-making contexts and criteria.

• *Sources of funding for conservation projects with climate benefits continue to expand* in number and quantity. However, the site specificity of many such projects raises real questions about how the volume of replicable investment opportunities that large investors are seeking can best be generated from such projects.

• In addition to science and finance, the participants felt it was *also critically important to engage on the social aspects of these topics*—in particular, the need to expand the range of human communities that benefit from the climate and other services provided by conserved lands. Meeting this need will require new collaborations among conservation organizations and others working on topics from renewable energy to climate justice.

The rest of this chapter provides a bit more detail on these wide-ranging discussions, along with the participants’ ideas for both action and future research.
There are real opportunities for natural areas to help address climate issues—and possibly to do so in ways that connect with other pressing social issues.

As described in more detail in Chapters 1 and 2 below, there is a growing awareness of the many ways that conserved lands may help address our changing climate. Natural areas store carbon, which helps to reduce/mitigate overall emissions. They can also help store water, manage flooding, and reduce temperatures—better enabling human communities to adapt to changing weather patterns.

Natural areas often provide these benefits at a lower cost than more traditional “engineered” solutions. As a result, (and as described in Chapters 3 and 4), growing numbers of funders—from cities to private equity managers—are looking at ways that they might invest in natural areas as part of their “infrastructure” portfolios.

“Land is not a side event in the climate arena, but a key part of the response.”

— Andrew Bowman, Land Trust Alliance

With over 55 million acres of U.S. land now under their stewardship, land trusts are increasingly grappling with the question of how best to manage those lands in the face of a changing climate, as well as how best to finance those efforts.

The Climate Solution Set

According to Lara Hansen and the work at EcoAdapt, natural areas can be part of the “climate solution set” by focusing on the following activities:

1) Maintaining at least some habitat function in the face of a changing climate, by protecting refugia, genetic diversity, connectivity, topographic gradients, riparian zones, and forest cover.

2) Enhancing the ability of human communities to adapt, by capturing the opportunities natural areas offer to improve water and air quality, store water, mitigate flooding, improve health, and provide food, shelter, and energy.

3) Supporting the expansion of renewable energy through land use planning that identifies areas for protection, as well as for development.

For more information, visit:
http://ecoadapt.org/

At the same time, the US faces a wide range of social unrest—from inequality, to violence, health, politics and other pressing issues. Several workshop participants also pointed out how valuable access to natural areas can be in these troubled times—from the power of Outdoor Afro’s “healing walks” (http://www.outdoorafro.com/), to the City Project’s work to expand access to urban parks as safe places for kids to play (http://www.cityprojectca.org/), to the
increasing numbers of land trusts expanding their efforts to meet the needs of their communities through their “community conservation” programs (http://www.landtrustalliance.org/topics/community-conservation).

“What is the science of justice – who benefits, who gets left behind?”
— Robert Garcia, The City Project

As a result, much of the workshop was spent exploring how best to make the most of these opportunities to have natural areas play both an increasingly important role in addressing climate change, as well as pressing social issues.

Capturing these opportunities is likely to require many land trusts to change how they work—from goals, to tools, expertise, locations and partners—as well as to navigate a wide range of uncertainties.

While the wide variety of organizations working on “land conservation” across the U.S. makes it difficult to generalize, there are some features that many of these organizations appear to share:

• Protecting particular animal or plant species by keeping people out of their habitats is a key goal;
• Donated conservation easements are a major tool for their land protection strategies;
• Expertise in acquiring rights to land and passive stewardship of those rights are among their key organizational capacities, (plus charitable fundraising);
• Suburban and rural areas are the places where most of their work is done; and
• Other conservation-focused organizations are their primary partners in larger projects.

All of these features have led to great gains in the amount of land conserved across the U.S.—as well as to significant climate benefits by preventing the development of those parcels.

At the same time, more is required—both to contribute meaningfully to addressing the scale of the challenges posed by climate change, as well as to do so in ways that also help address our pressing social issues. Some of the implications of this need to do more include the following:

Goals — Many land trusts will need to consider how to add to their existing goals, for example by moving from:

• Focusing primarily on individual species, to larger ecosystem structures and functions;
• Protecting static landscapes, (“keep the land as it is forever”), to changing habitats/landscapes; and
• Concentrating on non-human species, to adding habitat protection for humans as well—particularly our most vulnerable communities.
“Our ‘healthy people/healthy places’ work means that we are striving to do land conservation in ways in which the neighboring communities really do matter.”

— Jay Espy, Elmina B. Sewall Foundation

**Tools** — Many land trusts will need to explore moving beyond primarily accepting donated conservation easements to more participation in:

- Active selection and management of conserved lands to increase their climate benefits.

“Only six of the 269 conservation easements we studied mentioned climate change – and that was mostly in the form of a release of liability.”

— Mary Scoonover, Resources Legacy Fund

- Landscape scale planning and the negotiation of standards for or the regulation of development/land management, such as:
  - Where should “good” development go – particularly cleaner energy facilities?
  - What should “good” forest carbon storage or green infrastructure projects include?

  In California, large-scale solar facilities are widely seen as necessary to meet the state’s climate targets. At the same time, such facilities can have huge impacts on the areas in which they are sited and the species that live there. According to Mary Scoonover of the Resources Legacy Fund, more attention needs to be paid to identifying both priority protection and development areas.

- Assembling deals around co-benefits, (flood control, temperature reduction and increased recreation), and layered financing, (public, philanthropic and for-profit).

“Resilience is likely not accurately priced into real estate investing because real estate is insured at the portfolio level – to really understand the risks one needs to evaluate each individual property.”

— Hilary Irby, Morgan Stanley

- Aggregating deals involving many smaller parcels into attractive public or private investment opportunities at scale.
**Organizational Capacities** — Many land trusts will need to consider whether and, if so, how best to move from their more passive approach to easement monitoring and focus on charitable fundraising, to more active participation in the design, financing and management of projects and policies/standards to provide climate and social benefits at scale, such as:

- Design and construction of natural infrastructure installations (bioswales, rain gardens, etc.), forest carbon management plans, (harvest areas, frequencies, etc.), or similar projects.
- Financial engineering across the “layers” of finance that are increasingly being assembled.
- Community organizing to ensure that projects reflect and are designed to meet the needs of affected communities.
- Policy engagement around the types of land use/management standards and regulations noted above.
- Ballot measures to help provide funding for regional adaptation and mitigation actions (such as those in the San Francisco Bay Area).

A key part of this process will be recognizing and capturing the value offered by the huge variety of land trusts across the country—from all-volunteer, extremely local groups, to those with many staff and a global reach. That full range of contacts, credibility, and expertise are going to be needed across the wide variety of locations where these efforts need to be made.

“Don’t confine these discussions to the coasts — find ways to engage on these topics with folks from across the US.”

— Rick Huffines, Tennessee River Gorge Trust

**Places** — Much of this work remains to be done in the wilderness, rural, and suburban areas where land trusts have traditionally focused their efforts. At the same time, increasing attention is being paid to the benefits natural areas provide to cities – both within their borders (flood management, heat reduction, places to play/relax, etc.), as well as parts of more resilient supply chains, (water quality and quantity, food, building materials, etc.). Given the pattern of increasing urbanization, as well as this conceptual integration of natural areas and the services they provide into cities and their regional infrastructure, connecting the efforts of land trusts with groups in the cities is of increasing importance.

**Partners** — Many other organizations have been working on climate change for a long time. Many other groups have been working to address social issues in the U.S. for a long time. As more of these organizations see the opportunities for natural areas to help them achieve their own goals, land trusts have a huge opportunity to partner with them. Conservation organizations need to continue to reach out, listen, and build bridges with organizations whose work might benefit from increased access to natural areas.
Navigating Uncertainties — As land trusts enter these domains, there are many areas of uncertainty that they will need to navigate, including the following:

- What are the likely impacts and timing of our changing climate on the planet as a whole and on individual natural areas, as well as what are the likely effects of natural and human responses?
- Whether climate impacts on protected lands will undermine the original conservation values for which properties were acquired such that they can no longer fulfill their original purposes of conservation, and
- What the most appropriate balance between managing to retain original conservation values, encouraging system adaptation towards new conservation values, or allowing properties to evolve without human interference in the face of intense degrees of change may be.

Uncertainty and Climate Impacts

As pointed out by John Thompson from the Harvard Forest, there are huge regional differences in how our changing climate is manifesting itself. For example, in California and Oregon, it is becoming harder and harder to keep forests as forests, due to severe droughts, increasing fires, decreasing rates of forest recovery, and a biome shift to shrublands. In contrast, in the Northeast, there appear to be fewer direct threats to forests from the changing climate, but many indirect ones, such as pests, pathogens, and increased development.

In addition, several participants noted that while huge changes are happening in the oceans – rising sea levels, increasing temperature and acidity—the impacts of those changes on terrestrial systems are not well understood.

For more information, visit:
http://harvardforest.fas.harvard.edu/other-tags/climate-change

- What is the likely performance of natural areas as tools to help address climate and social issues, as well as what are the risks of doing so, including:
  - The need more actively to monitor and assess the performance of “natural infrastructure” against the problems to be addressed
  - As well as to bring the performance and cost data into the decision contexts of infrastructure investors
  - So that natural areas can compete with traditional “grey” infrastructure where they are more cost-effective.
“The science of conservation biology is way ahead of that supporting investments in green infrastructure.”

— Chris Larson, New Island Capital

• How best to measure and communicate the co-benefits natural areas often provide—particularly as part of efforts to layer financing by monetizing as many benefits as possible?

“We need to make the concept of using nature to help address climate impacts more accessible to the investment community.”

— Hilary Irby, Morgan Stanley

• How best to address the displacement of lower income residents that often occurs as the amount of public greenspace in a neighborhood increases?

• How to find acceptable allocations of benefits and burdens in efforts to address climate issues—such as the debates around California’s forest offset program (see box below)?

**California’s Forest Carbon Offsets Program – Environmental, Economic and Social Uncertainties Wrapped Together**

California has one of the most robust programs allowing emitters of greenhouse gases to meet a portion of their emission reduction requirements by purchasing forest carbon offsets that meet certain regulatory standards—see: https://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm.

While this system has generated funding for forest conservation efforts from Maine to California, as well as involved a wide range of landowners (such as land trusts, tribal nations and timber investment management organizations), its future faces a wide range of uncertainties, such as:

1) Environmental: Are the regulatory standards sufficient to ensure that forest carbon offset projects are delivering the anticipated emission reductions?

2) Economic: For how long will the current standards be in place, i.e. how much certainty is there for potential future investors in forest carbon projects?

3) Social: Are the benefits and burdens of California’s forest carbon offset program equitably shared—particularly for those living near major emitters in California or in forests in developing countries—and how will those questions be addressed during the review of the program going forward?
Getting one’s arms around these and other, related areas of uncertainty, goes beyond the range of topics usually considered by a land trust in its traditional activities, but is none-the-less crucial. As noted by Dylan Jenkins, from Finite Carbon: “As a white, male forester, the social issues raised by carbon project development have challenged me – diversifying my contacts as I pursue this work has likewise expanded my perspective and increased my sensitivity to issues beyond simple project economics.”

• How best to expand work on these human-centered initiatives as part of a wider effort that also embraces protecting habitats for non-human species as part of intact ecosystems?

These efforts also offer powerful opportunities for land trusts’ emerging work on “community conservation.”

The Land Trust Alliance defines “community conservation” as: “us[ing] the strengths of the land trust to meet needs expressed by people in the community.” Of the five examples provided on the Alliance’s website, three are likely to have climate benefits as well, from the expansion of tree canopy and the reduction of impervious services in parks and trails (flood management and temperature reduction).

“How do we increase human well-being through land conservation?”

— Jen Molnar, TNC

Such opportunities mesh powerfully with the workshop session on how land conservation might help address not only climate, but also pressing social issues – particularly in light of the shootings that had occurred just before the gathering. Those tragedies, combined with other deep divisions in U.S. society, make it clear that we need to weave a new social contract if we are to have any hope of either reducing or adapting to the impacts of climate change.

“The land conservation community has a huge opportunity to link values across a wider range of communities – we need to be better bridge builders.”

— Rue Mapp, Outdoor Afro

The encouraging take-away from the workshop was that natural areas can help do so in so many ways – by creating great opportunities for land trusts to contribute their land, science and financial assets to partnerships with organizations pursuing:
• Improved mental and physical health, as well as community cohesion, through increasing access to natural areas
• Temperature reductions in cities by expanding green spaces/parks
• Better water management by using natural areas to clean and store water, as well as help control floods
• Capturing carbon in these natural systems and keeping it there by stewarding/managing it for carbon storage
• Assisting in the deployment of more clean energy facilities, by helping to inform and navigate siting issues – including on some conserved lands

“Watershed associations make progress dirt road by dirt road.”

Chris Larson, New Island Capital

Such efforts should also attract funding from sources not usually used for protecting/restoring natural areas, as well as engage new beneficiaries across a range of communities – particularly for and with those people who are most vulnerable to the impacts of climate change. This can start in the locations where individual land trusts work and connect through the Alliance for even wider impacts.

It is important to use well the privilege that the private land conservation community has enjoyed to make progress on both climate and inequality issues – since, as the Pope and other religious leaders have noted, ultimately, they are one issue.

“We need to bring better justice to our work, to see what we have traditionally dismissed.”

— Marc Smiley, Solid Ground Consulting

“Should more land trust people volunteer to work with community development organizations?”

— Avery Anderson Sponholtz, Impairative

Many different areas for both action and further research were noted by the participants. During the final session of the workshop, participants were asked to describe actions they were planning to take as a result of the discussions, as well as any topics on which they thought further research would be helpful.
As for the actions they were planning to take, they included the following:

- Bringing the opportunities to link climate change, social justice and land conservation to the funders networks in which they participate
- Surveying the sites over which their organization has control to see if any are suitable for solar, wind, or other renewable energy projects
- Finding better ways to make the business case for using natural areas to help address climate and related issues as part of infrastructure planning and finance—particularly for cities, utilities, and companies managing large facilities

“Using a musical analogy – we need to move from playing the notes that were written in the past, to performing improvisational jazz as we adjust to the future …”

— Lara Hansen, EcoAdapt

- Reevaluating the criteria used to evaluate proposals for funding conservation-related projects to ensure that they adequately reflect opportunities in urban areas
- Reaching out to environmental justice advocates to understand better their concerns about forest carbon offset projects and to explore possible ways forward
- Experimenting with new investment products to meet the growing investor appetite for opportunities in physical assets
- Becoming more actively involved in policy change—from energy siting, to new conservation tools and new infrastructure investments
- Doubling down on climate change education in communities of color
- Exploring opportunities for their land trusts to offer “healing walks”
- Taking ideas from the discussions and submitting them as suggestions for sessions during the 2017 National Adaptation Forum (http://www.nationaladaptationforum.org/)
- Writing about the need to think and act regionally around cities and their supply chains, particularly their connections to surrounding rural areas

“Everyone here was hopeful—which was inspiring, as it is so easy to despair and withdraw.”

— Chris Larson, New Island Capital
As for areas for further research, the following questions were identified:

- What experiments/data collection should be conducted to help support the climate-related services that natural areas can provide?
- How might the research results from conservation biology and ecological economics be most useful to efforts to design and implement natural infrastructure projects?
- How is investment capital flowing in these arenas and how might we use it to benefit more communities?
- How should the economic development benefits of land protection be captured and used in program development?
- How should gentrification/displacement issues best be addressed as access to natural areas is improved?
- How is social capital formed? How can disengaged/disconnected communities form it? How can doing so help them address climate vulnerabilities, including with natural infrastructure?
- How should the linkages between land conservation and addressing climate change best be made accessible and useful to non-specialist audiences?
- How should we define the metrics of success for adaptation efforts?

“I do worry that we are fiddling while the planet is burning — can we make progress fast enough?”

— Judy Anderson, Community Conservation