

# Large Landscape Conservation: A Strategic Framework for Policy and Action



MATTHEW MCKINNEY, LYNN SCARLETT, AND DANIEL KEMMIS

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## **Policy Focus Report Series**

The policy focus report series is published by the Lincoln Institute of Land Policy to address timely public policy issues relating to land use, land markets, and property taxation. Each report is designed to bridge the gap between theory and practice by combining research findings, case studies, and contributions from scholars in a variety of academic disciplines, and from professional practitioners, local officials, and citizens in diverse communities.

## **About this Report**

In response to increasing activity at the large landscape scale, leaders from the public, private, and nongovernmental sectors participated in two national policy dialogues and many other informal discussions in 2009. Convened by the Lincoln Institute of Land Policy and the Center for Natural Resources and Environmental Policy at The University of Montana, the dialogue participants sought to synthesize what we know about large landscape conservation and to identify the most important needs as we move forward. They also generated a list of nearly 200 examples of large landscape conservation that are posted, along with other background information, on the Regional Collaboration subcenter of the Lincoln Institute Web site at [www.lincolninst.edu/subcenters/regional-collaboration](http://www.lincolninst.edu/subcenters/regional-collaboration).

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113 Brattle Street  
Cambridge, MA 02138-3400, USA  
Phone: 617-661-3016 x127 or 800-526-3873  
Fax: 617-661-7235 or 800-526-3944  
Email: [help@lincolninst.edu](mailto:help@lincolninst.edu)  
Web: [www.lincolninst.edu](http://www.lincolninst.edu)

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# Executive Summary

**T**he most important land and water issues facing North America—including land use patterns, water management, biodiversity protection, and climate adaptation—require new approaches. While most of these challenges need to be addressed at several scales simultaneously, ranging from the local to the global, it is increasingly imperative to address them at the scale of large landscapes. The territory of these issues often transcends the legal and geographic reach of existing jurisdictions and institutions.

**The Florida Everglades**



Since no single entity has the power or authority to address these types of cross-boundary issues, there is a gap in governance and a corresponding need to create informal and formal ways to work more effectively across boundaries. Large landscape conservation also provides significant economic and fiscal benefits to rural and urban communities. Since taking office in January 2009, President Barack Obama and his administration have made the concept of large landscape conservation a component, and often a focus, of many natural resource initiatives.

In response to increasing activity at the large landscape scale, leaders from the public, private, and nongovernmental sectors participated in two national policy dialogues and many other informal discussions in 2009. Convened by the Lincoln Institute of Land Policy and the Center for Natural Resources and Environmental Policy at The University of Montana, the intent of the dialogues was to synthesize what we know about large landscape conservation and to identify the most important needs as we move forward.

There is general agreement that the promise of large landscape conservation is its focus on land and water problems at an appropriate geographic scale, regardless of political and jurisdictional boundaries. While it is hard to define precisely what constitutes a large landscape conservation effort, there is a growing consensus that such efforts are multijurisdictional, multipurpose, and multi-stakeholder, and they operate at various geographic scales using a variety of governance arrangements.

The common currency in large landscape conservation is regional collaboration



—the ability to work across boundaries with people and organizations that have diverse interests yet share a common place. While there is no single model for large landscape conservation, a number of key elements are evident in the most successful efforts. Practitioners apply these elements on a case-by-case basis to create homegrown processes and solutions for particular places.

With the increasing movement toward large landscape conservation, several barriers still must be addressed for this approach to land and water conservation to endure. Barriers include the lack of both scientific information and knowledge about the structure and function of large landscape conservation initiatives; the lack of capacity to organize, achieve, and advocate for large landscape conservation goals; the lack of a strategy to facilitate coordination among fragmented efforts and to foster innovative experiments; the lack of policy tools to implement large landscape conservation; and fragmented financial investments.

In response to these barriers, participants in the national policy dialogues, along with many other planners, practitioners, and policy officials, believe that large landscape conservation can be improved significantly by implementing the following recommendations:

- ***Gather and share information to improve the science and governance of large landscape conservation.*** Establish a common, coherent database on the science of large landscapes, and develop an annotated atlas of governance efforts to clarify who is doing what and what needs to be done.
- ***Encourage a network of practitioners to build capacity.*** Catalyze collaboration through a network akin to the Land Trust Alliance to identify best practices and advocate for policy reforms.

- ***Establish a national competitive grants program to catalyze, enable, coordinate, and sustain promising efforts.*** Facilitate homegrown partnerships, improve coordination among ongoing efforts, and recognize the most promising approaches to large landscape conservation.
- ***Improve the policy toolkit to achieve large landscape conservation.*** Strengthen incentive-based tools for landowner conservation and improve coordination and participation by federal and other governmental agencies.
- ***Facilitate innovative funding opportunities to support large landscape conservation.*** Maximize and focus the use of existing federal and state programs and authorities that can be implemented quickly and without new funding; combine existing funding sources to target large landscape conservation projects; require in-kind or matching funds from nonfederal sources to leverage resources, including local, state, private, and philanthropic foundations; employ existing and new tax incentives, tax credits, easement purchase programs, and management agreements to encourage private lands conservation; and use some funding for the planning and coordination of strategies to conserve watersheds, ecosystems, greenways, and corridors.

The history of American conservation has been marked from the beginning by an inspiring capacity to adapt to new circumstances. In the challenging circumstances of the twenty-first century, the growing emphasis on large landscape conservation promises to be as important and inspiring as earlier chapters in the history of conservation, and like them to contribute to the strengthening of our democracy.



## CHAPTER 1

# Taking Conservation to Scale



Forest stream  
in New Hampshire

**G**rowing numbers of conservationists, policy makers, and practitioners agree that the most important land and water issues facing North America require new approaches. Some of these challenges involve protecting ecosystem integrity and connectivity; restoring and protecting water resources; providing access for recreational opportunities; sustaining the working farms, ranches, and forests that are critical to local economies and cultures, and provide important wildlife habitat; protecting and interpreting cultural resources as part of our national heritage; enhancing economic viability and resilience in rural and urban communities; and adapting to climate change.

In response to these concerns, people from many walks of life are experimenting with a variety of approaches that are best captured by the term *large landscape conservation*. This new paradigm for conservation is provocative, but can be difficult to define. Based on research and a range of examples, the paradigm encompasses three criteria: (1) multijurisdictional—the issues being addressed cut across political and jurisdictional boundaries; (2) multipurpose—they address a mix of related issues, including but not limited to environment, economy, and community; and (3) multistakeholder—they include public, private, and non-governmental actors.

While most of these conservation challenges need to be addressed at several

geographic scales simultaneously, ranging from the local to the global, it is increasingly imperative to address them at the scale of large landscapes because their territories transcend the legal and geographic reach of existing jurisdictions and institutions. Since no single entity has the power or authority to address these types of cross-boundary concerns alone, there is often a gap in governance and a corresponding need to create informal and formal ways to work more effectively across boundaries.

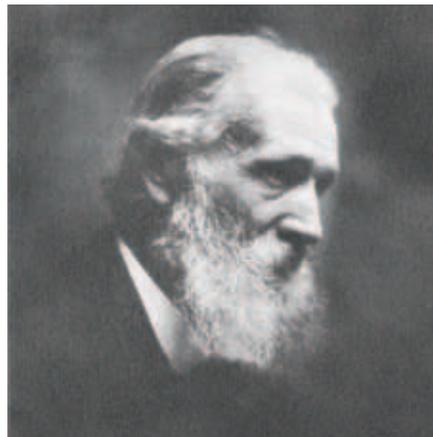
### **HISTORICAL PERSPECTIVE**

One way to understand the increasing interest in large landscape conservation is to see it as a distinct new stage in the history of American conservation (Hays 1959; Fox 1981; Nash 1990; Levitt 2005). That history has always been informed and inspired by the landscapes of this continent, from towering mountains to deep canyons, from lush prairies to searing deserts, from “sea to shining sea.” Beginning with the First Nations, people from many backgrounds have been inspired to preserve and protect the natural and cultural values of these landscapes, while providing satisfying livelihoods and creating resilient communities.

While Americans have often taken these landscapes for granted and have heedlessly endangered their related ecosystems, many individuals have also periodically stepped up to protect them against greed and carelessness in new and creative ways. The earliest conservation efforts in America are associated with people such as John Winthrop, Thomas Jefferson, George Catlin, Henry David Thoreau, George Perkins Marsh, and John Wesley Powell. Building on this foundation, the recent history of American conservation can be recounted in two major stages.

First came the conservation movement of the late nineteenth and early twentieth centuries. Associated with the names of

Theodore Roosevelt, Gifford Pinchot, and John Muir, this stage left a lasting legacy of national parks, forests, and monuments, as well as private land trusts. Those conservation leaders created a public land system, reserving millions of acres from settlement. The creation and expansion of the National Park System gave even stronger protection to some of the most magnificent of those landscapes. During the same period, states, communities, and individuals also used a variety of means, both public and private, to protect special places.



**John Muir**

The second major historical stage is associated with the environmental movement of the 1960s and 1970s, which produced an array of important legislation, including the Wilderness Act and the Endangered Species Act. In recent decades, a great range of private efforts—from conservation easements to land trusts and a variety of habitat enhancement organizations—have helped to preserve countless treasured ecosystems.

Each of these stages arose out of its own set of compelling historical forces, and each made its unique contribution to the long-term public good. The current attention to large landscape conservation constitutes a third stage in the history of American conservation that is still being written.

## CURRENT CHALLENGES

This policy focus report explores the nature of current environmental and governance challenges, examines the promise of large landscape conservation, and highlights the range of responses emerging throughout North America. It also identifies the barriers to large-scale conservation and offers a set of recommendations for policy, research, action, and financing.

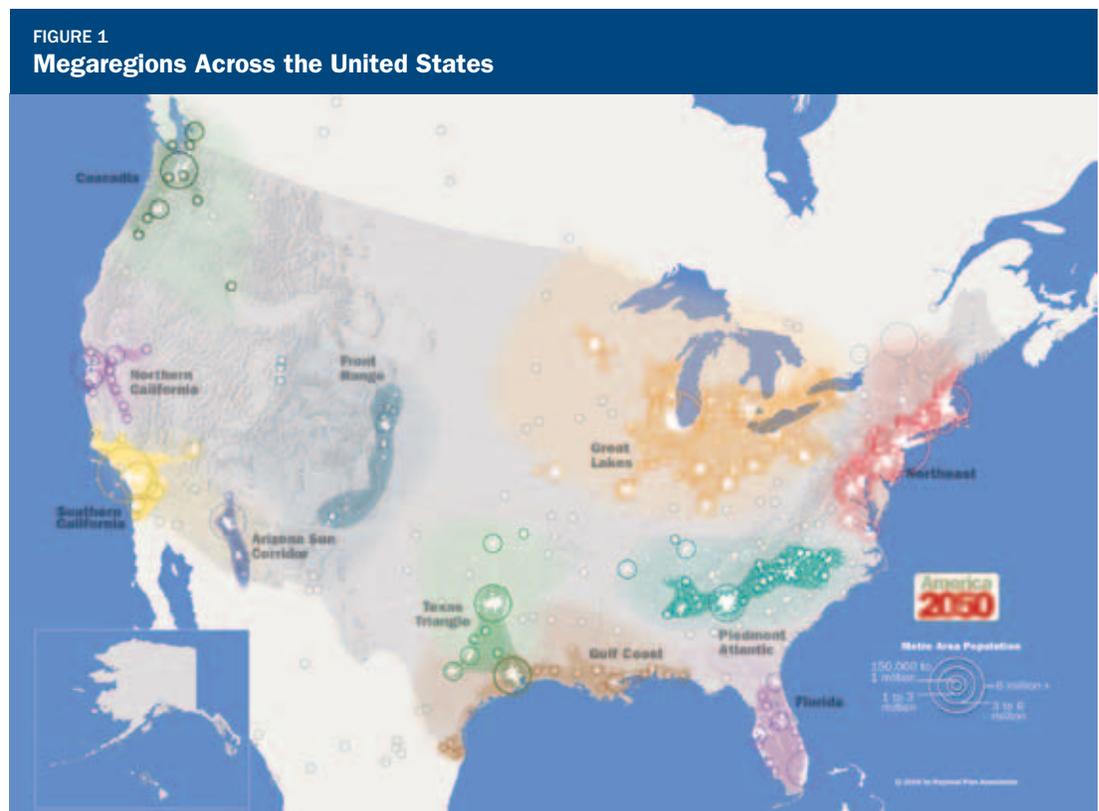
The issues associated with land use patterns, water management, biodiversity protection, climate change adaptation, and economic and fiscal benefits illustrate the compelling need for a strategic framework to advance policy and action.

### *Land Use Patterns*

The case for the large landscape conservation approach is readily apparent by exam-

ining a map of emerging megaregions in the United States (figure 1). All of these regions, no matter how large the metropolitan footprint, include and rely on resources the cities cannot live without—water, food, energy, wood products, open space, wildlife corridors, and recreational opportunities—sometimes referred to as ecosystem services.

Other considerations such as drought and wildfire create a growing need to develop a capacity to address land use at a more appropriate scale (Stewart, Radeloff, and Hammer 2006). At least in the western United States, much of the rapid growth in recent decades has taken place at what is called the wildland-urban interface. Most of the wildlands fall under the jurisdiction of state or federal land management agencies, while adjacent land development is usually subject to the authority of local governments.



Wildfires that start on public land often threaten nearby private homes, whose owners expect to be protected from the advancing flames. Land management agencies, their budgets already stressed, have to make judgment calls about which fires to suppress and which ones to leave burning. In the long run only a shared, cooperative approach to development decisions, operating at the landscape scale and involving local, state, and national entities, can provide a solution to this kind of problem.

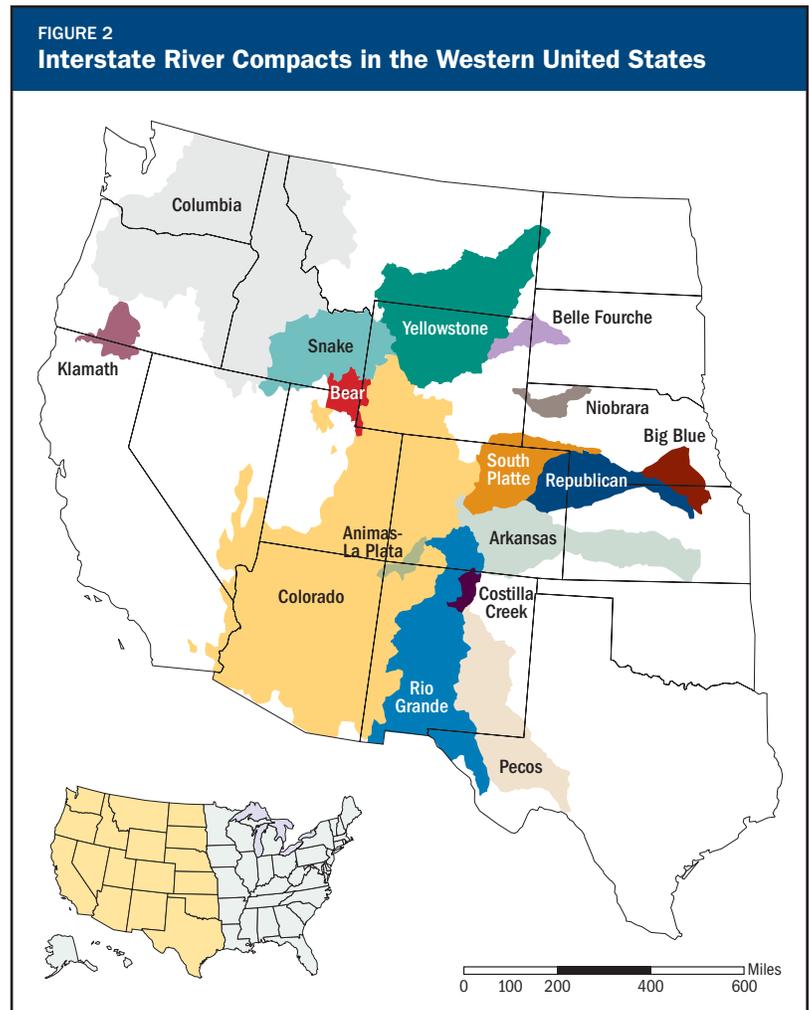
### **Water Management**

Like land use patterns, water does not respect the artificial boundaries that humans impose on the landscape. No major river basin in the United States conforms exactly to the contours of a state boundary. As a consequence, water resources administration has been characterized by multijurisdictional conflicts from the first days of the republic (Kenney 1994).

The need to develop the capacity to manage water at an appropriate scale is heightened by the fact that many of the most arid regions have been, and are likely to remain, the fastest growing parts of the country. Growing populations mean more pressure on scarce water resources, the even greater likelihood of conflict, and the need to manage those resources at the watershed scale.

The expansion of metropolitan regions throughout North America that are dependent on the quantity and quality of water often pits upstream and downstream interests against each other. As the frequency and severity of droughts increase, the tendency of water issues to divide rather than unite communities also increases. America's most endangered rivers likewise require action at the scale of large landscapes.

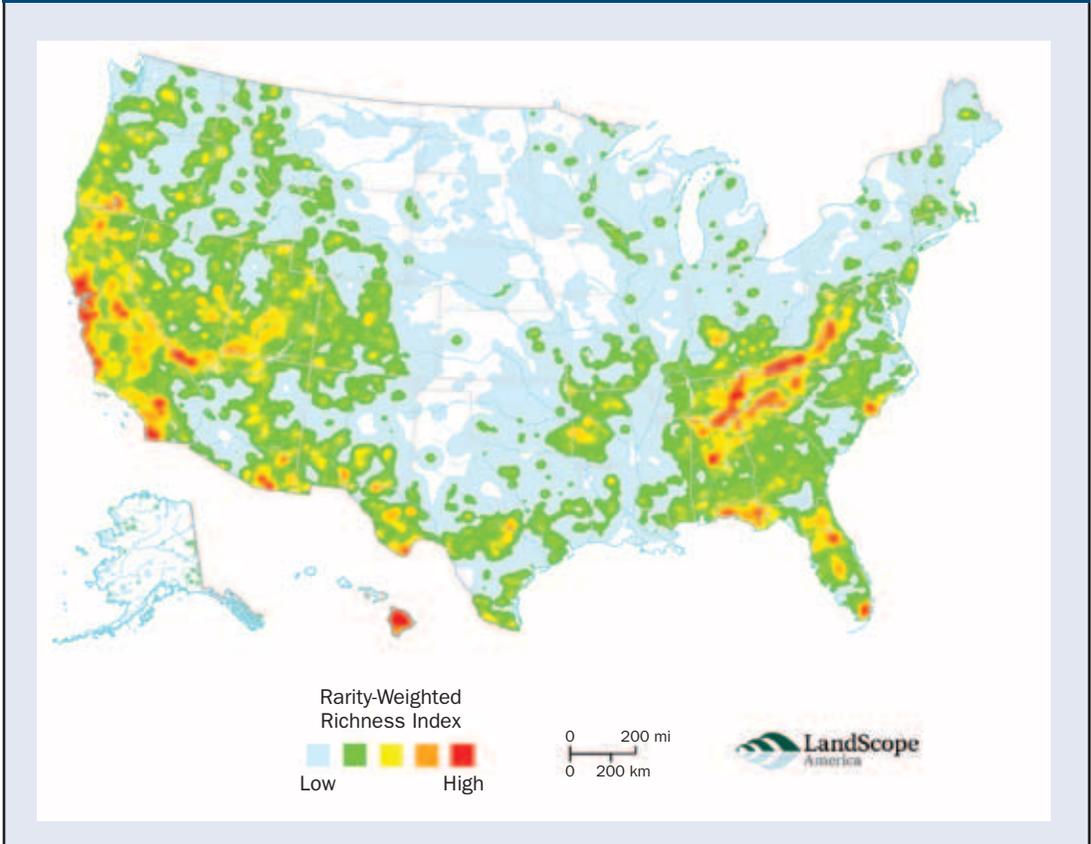
The good news is that substantial historical momentum is focused in this direction. Several types of formal coordinating mecha-



Sources: Base map prepared by Dustin Garrick for NSF Project 0451559, Boundary Conflicts, Collective Choice Institutions, and Conflict Resolution Mechanisms, Edella Schlager and Tanya Heikkila, principal investigators. Colorado River Basin: Transboundary Freshwater Dispute Database (TFDD). Oregon State University (2007). <http://www.transboundarywaters.orst.edu>. Columbia River Basin: Transboundary Freshwater Dispute Database (TFDD). Oregon State University, Department of Geosciences (2004).

nisms have been implemented in dozens of river basins to address the unique challenges posed by interstate water resources (figure 2). To complement these more formal responses, a different type of political engagement and problem solving began to emerge in the 1990s (Kenney et al. 2000). Driven by the often competing or conflicting concerns of different sets of stakeholders within a given watershed, many adversaries began turning to their opponents to explore mutually satisfactory ways to manage large-scale watersheds that cut across political and jurisdictional boundaries.

FIGURE 3  
Hot Spots for Imperiled Species



Source: NatureServe and its Natural Heritage member programs (July 2008). Produced by National Geographic Maps and NatureServe (December 2008).

Note: The Rarity-Weighted Richness (RWR) analysis of critically imperiled and imperiled species shows hot spots that represent concentrations of limited-range species and highlights locations with species composition different from adjacent areas. By combining overall species richness and the relative rarity of the species, the RWR analysis points to locations that are essentially irreplaceable, thus presenting conservation opportunities found in few other places.

As these efforts proved increasingly promising, they were supported and encouraged by various state policies and initiatives, and were nurtured nationally through the Department of the Interior, the Environmental Protection Agency, and other federal agencies. Restoration projects in the Everglades, Chesapeake Bay, California's Bay Delta, the Louisiana Gulf Coast, the lower Rio Grande, New York City drinking watersheds in the Catskills and Delaware basins, and other areas transcend political boundaries, focusing instead on whole watersheds and natural systems (Foster 1994).

### ***Biodiversity Protection***

Wildlife and plant species inhabit geographies of different sizes and shapes, none of which conforms to legal and political jurisdictions. For many threatened or endangered species, particularly megafauna and migratory birds, the range required for viable populations is very large, and almost always includes parts or all of several adjacent political jurisdictions (figure 3).

Concerns about what we now call biodiversity were present from the earliest stages of the conservation movement over a century ago, and they bore lasting fruit with the



enactment of the Endangered Species Act in 1973. Since then, and especially over the past decade or two, there has been a steadily growing awareness that the preservation of many species depends fundamentally on the protection of habitat at a more substantial scale than had previously been understood or thought possible.

Spatial scale is now considered critical for biodiversity, both to provide essential habitat and to protect multiple species. The resulting expansion and deepening of commitment to provide adequate habitat and connectivity to preserve these species is clearly a major contributor to the large landscape conservation movement.

### ***Climate Change Adaptation***

Land use patterns, water management, biodiversity protection, and many other conservation issues facing North America are even more challenging in the face of climate change. A report by the U.S. Global Change Research Program (2009) concludes that current and future impacts of climate change are pervasive and wide-ranging, and affect the core systems of society—transportation, ecosystems, agriculture, business, infrastructure, water, and energy. Given this scientific understanding, the report asserts that it is imperative to take action now to adapt to changing conditions.

Climate change provides one of the most compelling cases for the need to develop governance capacity at the scale of the problems. Because greenhouse gases pay no attention to national boundaries, the individuals, communities, states, and nations affected cannot effectively address climate change by reducing carbon emissions unless such efforts are simultaneously undertaken worldwide.

Within that global context, specific actions to mitigate climate change can and should occur at national, state, and local levels. At the same time, strategies to adapt

to the effects of climate change on land, water, and wildlife must occur at the scale where the impacts are most apparent and the solutions most effective, often at the local level and, increasingly, across regions.

When droughts occur, for example, they affect landscapes that bear little or no relationship to existing political jurisdictions (figure 4). This simple geographic fact of life becomes much more important when climate change makes drought even more persistent across some of those areas. Many of the other effects of climate change, including shifting patterns of vegetation and species composition, and the frequency and intensity of storm events and wildland fire, will likewise manifest themselves regionally, regardless of legal and jurisdictional boundaries.

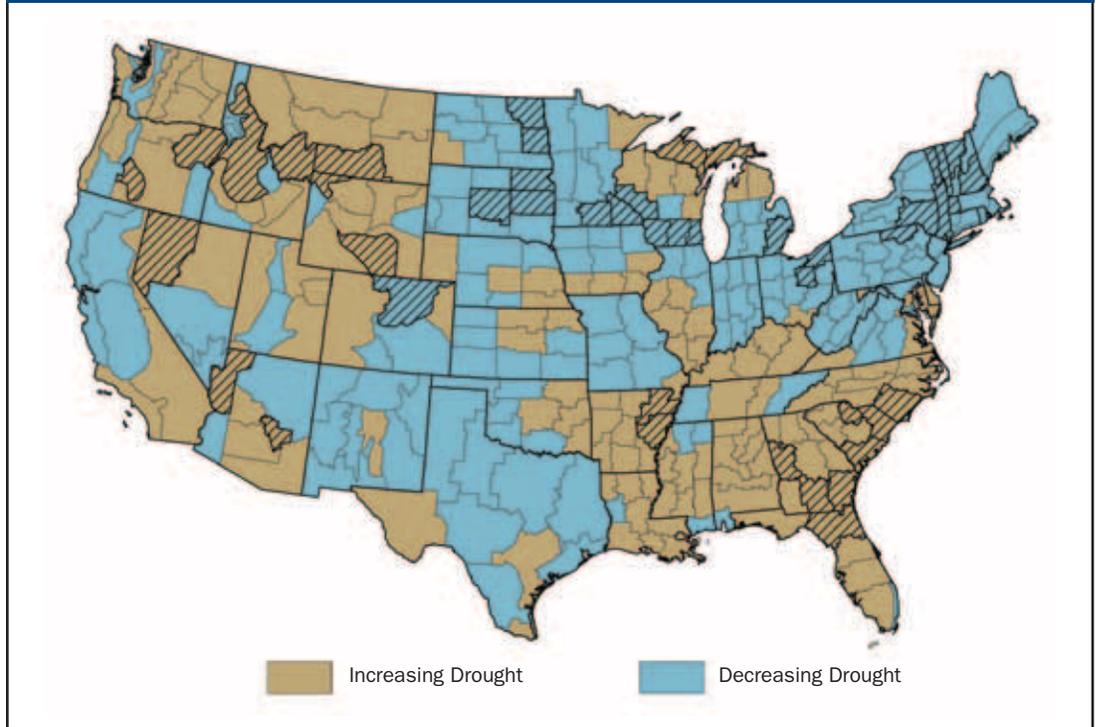
### ***Economic and Fiscal Benefits***

Large landscape conservation provides significant benefits to rural and urban communities in areas near the conserved landscapes through increased income, employment, and economic prosperity, and improved fiscal balance (American Society of Landscape Architects 2009). These benefits to human communities flow directly or indirectly from services provided by the ecosystems present within the conserved lands.

Ecosystem services can be categorized as general services that provide water, food, fiber, and energy; regulating services that purify water and air, sequester carbon, regulate climate, decompose waste, pollinate crops, and provide pest and disease control; supporting services such as nutrient cycling, soil formation, photosynthesis, and seed dispersal; and cultural services that provide spiritual and intellectual inspiration, recreational experiences, and aesthetic benefits (Millennium Ecosystem Assessment 2005).

Many people move to rural areas to live, work, and conduct business due to quality-

**FIGURE 4**  
**Trends in End-of-Summer Drought, 1958–2007**



Source: Karl, Melillo, and Peterson (2009, 43).

Notes: Trends are measured by the Palmer Drought Severity Index in each of 344 U.S. climate divisions. Hatching indicates significant trends.

of-life considerations associated with the environmental amenities provided by ecosystems, such as clean air and water, active outdoor recreation, and hunting and angling opportunities. Protected public lands, such as designated wilderness, national parks, and national conservation areas, are also an essential component of large landscape conservation. They provide valuable environmental amenities and protect lands that are significant economic assets for local and regional rural economic development.

An extensive study of the role of protected public lands on economic prosperity in the West concluded that counties hosting or close to protected lands have the fastest economic growth (Rasker et al. 2004). Economic activities associated with ecosystem ser-

vices arising from conserved and protected lands, such as tourism, agriculture, hunting and angling, and outdoor recreation, directly contribute both dollars and jobs to local and regional economies. Other studies have documented the positive effect of protected open space on residential property values. The closer a property is to open space or park land, the higher the premium placed on its value (de Brun 2007).

In addition to these economic benefits, large landscape conservation provides extensive fiscal benefits on both the revenue and cost sides of local government budgets. Nearly all of the economic activities noted above are taxed in some way, and increased property values resulting from conserved lands produce increased property tax revenues for local governments.

Conserving natural and working landscapes also improves the fiscal balance for communities by concentrating residential development in appropriate locations. Working lands and conserved natural landscapes generally generate less revenue than residential properties, but they require very little in the way of public infrastructure and services. Many fiscal analyses of the costs of providing community services indicate that working landscapes generate more public revenues than they receive in the form of public services (American Farmland Trust 2006).

Ecosystem services maintained through conservation of natural landscapes can significantly improve the fiscal balance. Allowing ecosystems to do what would otherwise require engineered systems avoids the costs to construct and maintain man-made structures. Some examples are flood control by healthy riparian systems, water purification by forest landscapes, mitigation of tidal

surges by coastal wetlands, and wastewater treatment by freshwater wetlands.

A recent study of water suppliers found that the extent of forest cover in their watersheds affects the water treatment costs (Ernst, Gullick, and Nixon 2004). Data analyzed for 27 water suppliers indicated that for every 10 percent increase in forest cover in the watershed, the treatment and chemical costs decreased by approximately 20 percent. Due to these and other fiscal and economic benefits, an increasing number of communities are including land conservation as part of their strategy for providing safe water supplies.

**RECENT POLICY RESPONSES**

Policy leaders at regional, state, and national levels, along with representatives of conservation organizations, have initiated a number of new policies and programs over the past several years to address land and water issues at a large landscape scale. These initia-



Christopher Creek, Arizona

tives broaden the foundation for large landscape conservation within the context of other activities.

The New England Governors' Conference (2009, 10) adopted a regional conservation strategy as an "initiative to conserve the region's diverse landscapes and help ensure that they will remain forever healthy, productive, and accessible to the citizens of New England and the nation." In a similar vein, the Western Governors' Association (2008, 3) adopted a Wildlife Corridors Initiative to "identify key wildlife migration corridors and crucial wildlife habitats in the West and make recommendations on needed policy options and tools for preserving those landscapes."

Meanwhile, every state has completed a comprehensive wildlife action plan as charged by Congress in order to be eligible to receive funds through the Wildlife Conservation and Restoration Program and the State Wildlife Grants Program. As the product of public-private partnerships, these plans articulate practical measures to protect and restore important lands and waters, curb invasive species, and address issues related to habitat corridors and connectivity. Many action plans emphasize both the need to inform decisions with the best available scientific information and the use of market-based incentives and collaboration (rather than regulation).

At the national level, former President George W. Bush's White House Conference on Cooperative Conservation (2005) recommended that the Secretary of the Interior be authorized "to support innovative landscape-level, multiyear projects that place an emphasis on collaborative approaches to conservation." The National Parks Second Century Commission (2009, 16–17), an independent body convened by the National Parks Conservation Association, recently concluded, "Parks will be key elements in a

network of connected ecological systems and historical sites, and public and private lands and waters that are linked together across the nation and the continent. Lived-in landscapes will be an integral part of these great corridors of conservation."

Since taking office in January 2009, President Barack Obama and his administration have made the concept of large landscape conservation a component, and often a focus, of many natural resource initiatives.

- The White House Conference on America's Great Outdoors on April 16, 2010, addressed the challenges, opportunities, and innovations in current land conservation. Among other things, the initiative is designed to reconnect Americans of all ages to the great outdoors, promote community-based recreation, build on established programs and priorities, and use science-based management to restore and protect America's land and water for future generations (Obama 2010).
- Agriculture Secretary Vilsack announced in early March 2010 his intention to create the Collaborative Forest Landscape Restoration Advisory Committee authorized by the Omnibus Public Land Management Act of 2009 (U.S. Department of Agriculture 2010). The committee will help prioritize the landscape restoration needs of national forests and adjacent lands.
- Tom Tidwell, chief of the U.S. Forest Service, directed the agency in November 2009 to produce "landscape conservation action plans" to guide its day-to-day response to climate change (Straub 2009, 1).
- Interior Secretary Ken Salazar (2009, 3) recognized that "Interior bureaus and agencies must work together, and with other federal, state, tribal, and local gov-

ernments, and private landowner partners, to develop landscape-level strategies for understanding and responding to climate change impacts.” To that end, his Secretarial Order 3289 of September 2009 calls on Interior bureaus and agencies to develop a network of collaborative landscape conservation cooperatives, which are now being established by the Fish and Wildlife Service (FWS) jointly with the National Park Service, Geological Survey (USGS), Bureau of Land Management (BLM), and many other partners. In addition, the USGS is creating regional climate change response centers to identify key ecosystem changes and provide scientific information to management agencies with the goal of better protecting climate-sensitive ecosystems. The BLM also is initiating a set of ecoregional assessments to document and analyze the conditions, trends, and disturbances of large landscapes.

- In a speech titled “National Vision for America’s Forests,” Secretary of Agriculture Tom Vilsack (2009, 4) declared that “the Forest Service must not be viewed as an agency concerned only with the fate of our National Forests but must instead be acknowledged for its work in protecting and maintaining all American forests, including state and private lands. Our shared vision must adopt an all-lands approach.”
- In testimony before the House Appropriations Subcommittee on Interior, Environment, and Related Agencies, Nancy H. Sutley (2009, 2), chair of the White House Council on Environmental Quality, pledged to “direct CEQ to help conserve, and where needed, restore, our working landscapes and great ecosystems.”

- The Office of Management and Budget issued an executive memorandum in August 2009 directing all federal agencies to develop effective place-based policies for the FY 2011 budget: “Place-based policies leverage investments by focusing resources in targeted places and drawing on the compounding effect of well-coordinated action. Effective place-based policies can influence how rural and metropolitan areas develop, how well they function as places to live, work, operate a business, preserve heritage, and more. Such policies can also streamline otherwise redundant and disconnected programs” (Orszag et al. 2009, 1).

To complement these government initiatives, a group of ten national nongovernmental conservation organizations released a proposal in February 2010 to support large landscape conservation through existing federal programs and authorities (American Rivers et al. 2010). These and other recent efforts build on a solid foundation of regional land use planning, ecosystem management, and interstate water management throughout the United States.

## SUMMARY

Increasingly, the major land and water issues facing North America require concerted action at the scale of large, multijurisdictional landscapes. Unless these and other problems are addressed at an appropriate scale, the scope of the problems will overwhelm the capacity of existing communities and institutions to meet the challenges of a constantly changing environment. Recent attention to these concerns from the Obama administration and other policy leaders provides new hope to the hundreds of local, state, and regional organizations already involved in large-scale conservation activities.



## CHAPTER 2

# The Promise of Large Landscape Conservation



**Workshop participants planning for the Crown of the Continent**

In response to the challenges and opportunities posed by the nation's most compelling land and water issues, people across the continent are experimenting with a variety of approaches to achieve large landscape conservation. In addition to being multijurisdictional, multipurpose, and multistakeholder, these initiatives operate with various governance arrangements and at diverse geographic scales. The goal of each project is to address issues at a scale that is big enough to surround the problem, but small enough to tailor the solution (Porter and Wallis 2002).

### **VARIATION IN GOVERNANCE**

The process of achieving large landscape conservation requires regional collaboration, and people have invented a variety of

approaches tailored to fit the scope and nature of their particular issues. Based on both practical experience and a study of hundreds of regional initiatives in North America, there appears to be a continuum of approaches—from informal networks, to more formal partnerships, to regional institutions (McKinney and Johnson 2009). This continuum reveals that these approaches overlap in some ways and the differences among them are often subtle (figure 5). Large landscape conservation initiatives also tend to follow a progression from informal to more formal governance and implementation as people begin to think and act regionally.

The distinction between a network and a partnership, or a partnership and a regional institution, is not always clear, and these categories are intentionally broad. Within

each are various models and approaches that also range from informal to formal. According to Douglas Porter (McKinney and Johnson 2009, 12):

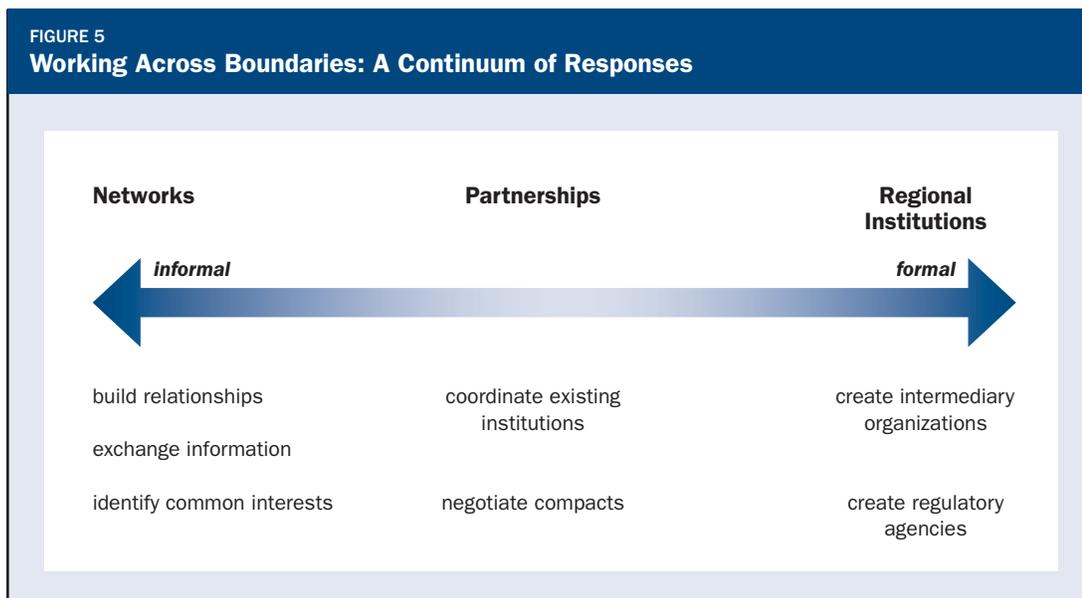
All regional efforts are assemblages of cooperating interests and groups, and all have established some type of working arrangement—some more artfully framed than others. The differences appear in aspects such as the range of issues and concerns that bring them together, the size and complexity of the geographical area they are focused on, the strength of the structural relationships they have established in which to function, the type of official establishment within recognized public or private organizations, and their method of assuring (or not) a continuing presence.

Although there is no single model of collaboration for large landscape conservation, ten key elements help explain what catalyzes, enables, constrains, and sustains such efforts (box 1). These elements, which can guide choices about how to prepare, organize,

and take action, focus on the process of regional collaboration, rather than the substantive policies and plans to deal with specific conservation issues.

The distinction here between substance and process is not trivial. There is a fundamental difference between what should be done about a particular large landscape and how people who care about such issues should determine what ought to happen. The first problem is one of substance and the relative effectiveness of alternative policies and plans. The second is one of process: how to bring together the appropriate people with the best available information to address large landscape conservation.

All ten elements are present in every successful large landscape conservation effort, regardless of the style or approach adopted by the practitioners. In each case, however, the elements are managed in a unique way to create a homegrown set of solutions and institutional arrangements. Successful practitioners manage these elements in such a way that the process and set of actions that emerge are designed and built by those who best know the particular landscape.



Source: McKinney and Johnson (2009, 12).

To understand what the ten elements are, it is also important to distinguish what they are not. They are not habits or skills that one can acquire or steps to success that need to be taken in a particular order, but rather integral aspects of every regional collaboration and large landscape conservation effort. In some cases, the elements might be discussed in stages. In others, they may be woven together intricately, with several elements appearing in close succession. Some elements (strategy, for example) might not be discussed in a large landscape conservation effort at all, although they still influence the process and outcome of the regional collaboration effort.

Just as the content of each large landscape conservation initiative is different, so is the order in which these elements must be addressed. As a public policy matter, the challenge is how to reinforce and replicate

these key elements in ways that respond to the unique set of social, environmental, and economic characteristics within a particular landscape.

## VARIATION IN SPATIAL SCALE

In some cases, landscape-scale conservation initiatives are nested within one another at varying geographical scales, as illustrated in the following examples. This situation accentuates the difficulties in defining what we mean by large landscape conservation, yet each case represents its appropriate “problem-shed” that inevitably crosses geographical borders.

The Blackfoot Challenge is a landowner-based group that coordinates management of the Blackfoot River, its tributaries, and adjacent public and private lands, covering approximately 2,400 square miles in Montana (figure 6). It is organized locally and known nationally as a model for preserving the rural character and natural beauty of a watershed. Although the charter dates only to 1993, Blackfoot landowners have played an instrumental stewardship role since the late 1970s in bringing conservation easement legislation, walk-in hunting areas, and recreation corridor management to the region.

The mission of the Blackfoot Challenge is to coordinate efforts that will enhance, conserve, and protect the natural resources and rural lifestyles of the Blackfoot River Valley for present and future generations. It supports environmentally responsible resource stewardship through cooperation of private and corporate landowners, federal and state land managers, and local government officials. All share a common vision of how the group operates in the Blackfoot watershed and believe that conservation success results from building trust, maintaining partnerships, and working together.

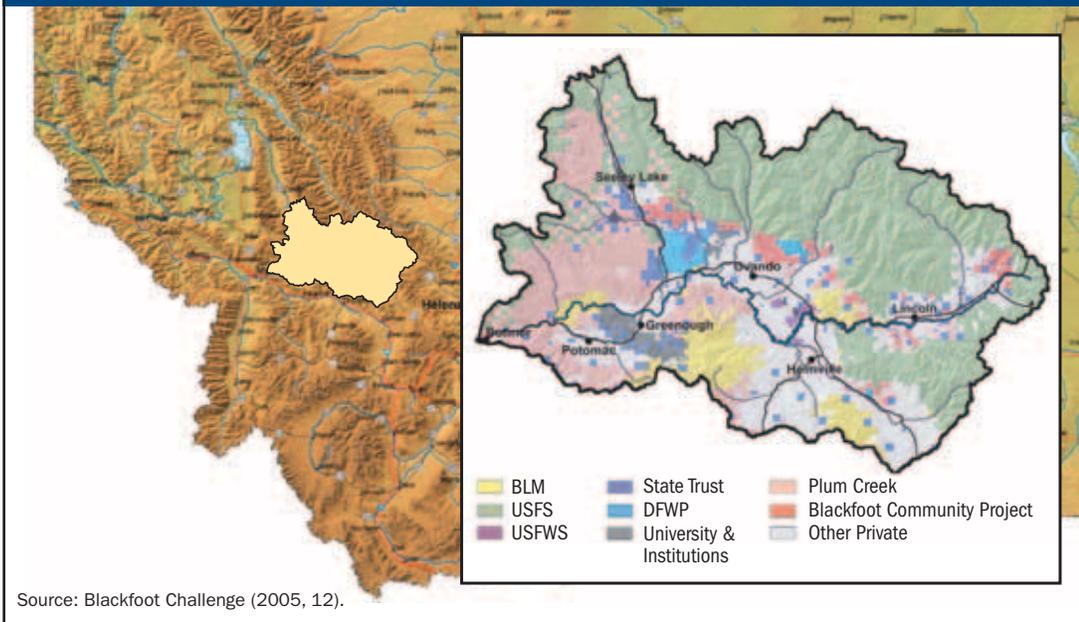
The Blackfoot Challenge has produced an impressive list of accomplishments over

### BOX 1

#### Ten Key Elements of Regional Collaboration

1. **Catalyst:** the crisis, threat, or opportunity that compels people to think and act regionally.
2. **Leadership:** the need for different types of leaders to catalyze, enable, and sustain action.
3. **Representation:** the people, organizations, and jurisdictions needed to achieve the desired outcome.
4. **Regional fit:** the tension of matching the problem-shed with people’s interest.
5. **Governance:** the degree of decision-making authority, along with mechanisms for funding and dispute resolution.
6. **Learning:** the process of facilitating scientific and public learning.
7. **Strategy:** the formulation of a vision, goals, and aspirations.
8. **Implementation:** a plan to move from vision to action.
9. **Outcomes:** the agreements, policies, programs, and on-the-ground accomplishments achieved.
10. **Adaptation:** the ongoing process of monitoring, evaluating, and adapting as needed.

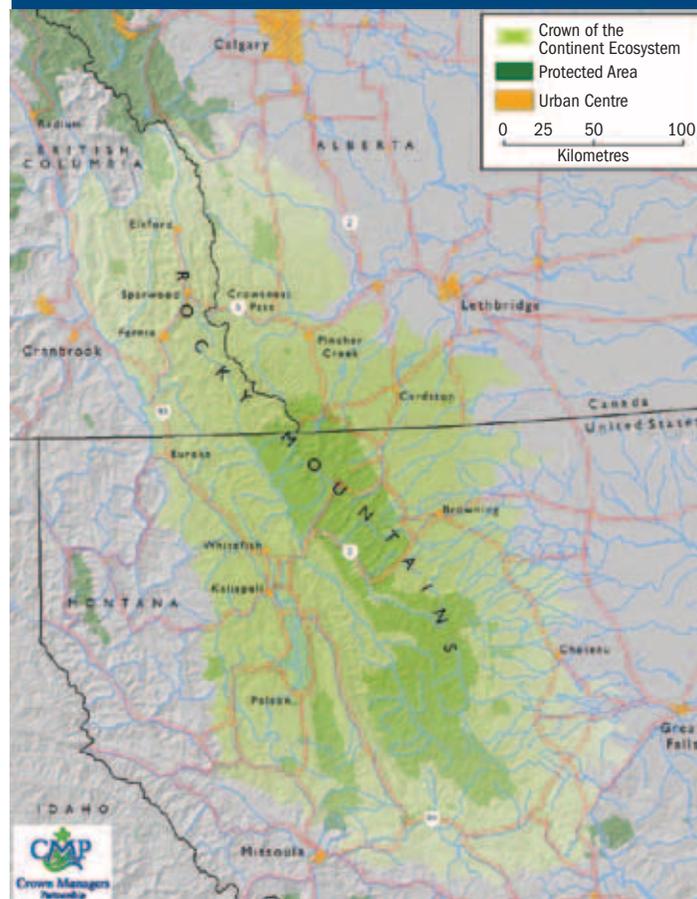
**FIGURE 6**  
**Blackfoot River Watershed in Montana**



the years, including integrated weed management practices; land protection through conservation easements; restoration of streams, riparian areas, and native grasslands; removal of fish passage barriers; and educational outreach about the watershed. The organization clearly meets the criteria for large landscape conservation—multiple jurisdictions, multiple purposes, and multiple stakeholders—and illustrates one way to organize and govern such an initiative, in this case as a nonprofit organization. With respect to the issue of scale, it is large by eastern standards but small by western standards.

The Blackfoot Challenge is also a good example of how landscape-scale efforts often nest within one another. The watershed lies within a region known as the Crown of the Continent (figure 7). During the past eight years, a number of independent and complementary initiatives have emerged to promote conservation and community stewardship in this remarkable landscape that covers 18,000 square miles (about twice the size of New Jersey). Numerous Crown-wide initiatives and subregional efforts address issues

**FIGURE 7**  
**Crown of the Continent Ecosystem**



Source: Crown Managers Partnership ([www.rockies.ca/cmp](http://www.rockies.ca/cmp)).

in southeast British Columbia, southwest Alberta, the Rocky Mountain Front, the Blackfoot-Clearwater watersheds, and the Flathead Valley.

Beginning in 2006, the Lincoln Institute of Land Policy and the Center for Natural Resources and Environmental Policy at The University of Montana convened a series of roundtables to facilitate communication and understanding among these initiatives, and to explore opportunities to work together. The roundtables created an informal, ad hoc network of networks, representing another promising model of large landscape conservation. The Crown meets the basic criteria of what we mean by a large-scale landscape, but operates at a much larger

geographic scale than the Blackfoot Challenge and functions with a different model of organization and governance.

Scaling up to an even larger level is the Yellowstone to Yukon Conservation Initiative (Y2Y), an effort to protect core wildlife areas and corridors across 500,000 square miles (nearly three times the size of California) and spanning the U.S.–Canada border (box 2). Y2Y began as a network of biologists and conservationists who were concerned about the northward trend of declining wildlife populations and habitats (figure 8). Today, Y2Y continues its networking function, but programmatically focuses on protecting key connectivity areas for wildlife—areas that both currently harbor endangered species such as the grizzly bear and face significant threats from habitat loss, invasive species, and climate change.

While Y2Y focuses on wildlife corridors and connectivity, it works closely with private landowners, community leaders, and others to address a range of issues related to land use, community and economic prosperity, and wildlife management. In this respect, Y2Y meets the basic criteria of large landscape conservation, but operates at a much different scale than either the Crown or the Blackfoot Challenge. While it operates as a nonprofit organization, it relies heavily on partnerships with diverse stakeholders to achieve its objectives, thus embracing several ways to organize and govern a large landscape conservation initiative.

### **THE ESSENTIAL ROLE OF COLLABORATION**

These and other examples suggest that the currency of large landscape conservation is regional collaboration. In countless places across North America, the old warriors of economic development and environmental protection have battled each other to a stand-still for decades, but are now working

#### **BOX 2**

#### **International Dimensions of Large Landscape Conservation**

**T**he U.S. borders with Canada (5,525 miles) and Mexico (1,969 miles) cut across many ecologically cohesive regions. The borders generally start in the East following natural features—principally rivers—but they soon harden into straight lines. Protecting these transborder landscapes is not a recent or isolated phenomenon. Some areas are home to multiple efforts, such as the Great Lakes with three prominent examples: the Ecosystem Charter for the Great Lakes, the Council of Great Lakes Governors, and Great Lakes Information Network. Some landscape-scale efforts have existed for decades, including the Waterton–Glacier International Peace Park (established in 1932) and a number of efforts on the U.S.–Mexico border to replicate the peace park idea. A more recent example along the Mexican border is the Colorado River Delta project of the Sonoran Institute.

Structurally, some transboundary initiatives revolve around public land management agencies, but most either include or originate within civil society. Other types of collaborations in North America feature the involvement of sovereign First Nation and Native American groups, such as the International Sonoran Desert Alliance. And, while most initiatives are terrestrial, a few are marine-based—for example, the Gulf of Maine Council on the Marine Environment and the trilateral Baja to Bering Marine Conservation Initiative.



**Theodore Roosevelt**

together to advance individual and collective interests. Some communities ask, for example, whether it might be possible to protect key grizzly habitat while keeping some saw-mills in operation. Might there be a way to keep the salmon running while providing water for farms and families?

While the interests of the participants are diverse, these collaborative efforts nearly always arise from a common commitment to sustaining communities and landscapes. They also spring from a perspective that existing legal and institutional mechanisms need to be supplemented with more responsive, homegrown, public decision-making processes. It would be next to impossible to mobilize the political will that most large landscape conservation efforts require in the absence of this historically powerful phenomenon of diverse interests finding common ground.

From the beginning, the conservation of America's most precious landscapes and ecosystems has also been understood by the most visionary conservationists as contributing to the cause of American democracy. The protection of public lands, for example, was never about only the land; it was also, crucially, about the public. As Theodore

Roosevelt (1910, 8) said in his famous "new nationalism" speech:

Of all the questions which can come before this nation, short of the actual preservation of its existence in a great war, there is none which compares in importance with the great central task of leaving this land even a better land for our descendants than it is for us,

**FIGURE 8**  
**Yellowstone to Yukon Conservation Initiative**



Source: Yellowstone to Yukon: A Blueprint for Wildlife Conservation (2002). ([http://www.y2y.net/data/1/rec\\_docs/675\\_A\\_Blueprint\\_for\\_Wildlife\\_Conservation\\_reduced.pdf](http://www.y2y.net/data/1/rec_docs/675_A_Blueprint_for_Wildlife_Conservation_reduced.pdf)).

and training them into a better race to inhabit the land and pass it on. Conservation is a great moral issue, for it involves the patriotic duty of insuring the safety and continuance of the nation. Let me add that the health and vitality of our people are at least as well worth conserving as their forests, waters, lands, and minerals, and in this great work the national government must bear a most important part.

Large landscape conservation rests on a new form of democracy that we term *collaborative democracy* (Kemmis and McKinney 2010). It seems likely that sustained movement toward landscape-scale conservation can only be achieved by bringing existing (national, state, tribal, and local) and emergent (regional, cross-jurisdictional) forms of governance together in place-specific, highly adaptive ways. This kind of collaboration seems to be emerging organically in response to a number of human and ecological problems.

This suggests, further, that the focus on large landscape conservation might well result in a healing of not only ecosystems, but also related human systems. As traditionally adversarial conservation, community, and economic interests search for common ground, one arena of shared interest is a growing recognition that unscarred landscapes, clean water, fresh air, and a rich biodiversity based on healthy ecosystems are becoming the best economic engine available to many local communities. The potential of strengthening those economies

while healing and preserving large ecosystems creates a significant new political context in which conservation and economic action converge.

Perhaps even more appealing is the prospect that, in the course of working hard to discover and claim that common ground, the people who inhabit those ecosystems will have contributed to the strengthening of their civic culture, and to expanding their capacity to address the next set of challenges and realize the next set of opportunities they encounter. At the same time, the roles of federal, state, and local governments are being refined as they act more as a catalyst, partner, and resource to facilitate home-grown conservation of large landscapes.

## SUMMARY

The promise of large landscape conservation is that it seeks to address land and water problems at an appropriate geographic scale, regardless of political and jurisdictional boundaries. While it is difficult to define precisely what constitutes a large landscape conservation effort, there is a growing consensus that such efforts are multijurisdictional, multipurpose, and multistakeholder, and that they operate with various governance arrangements at diverse geographic scales. The common currency in large landscape conservation is regional collaboration—the ability to work across boundaries with people and organizations that have diverse interests yet share a common place and purpose.



# CHAPTER 3 Seven Large Landscapes: A Continuum of Responses



**Buffalo in Yellowstone National Park**

**D**uring the past two years, participants in the national policy dialogues have identified nearly 200 cases that, depending on the criteria used, represent examples of large landscape conservation (Lincoln Institute 2010). Taken together they reflect the variations in governance and spatial scale explained in chapter 2, and include policy initiatives, plans, government programs, and nongovernment organizations that serve as either advocates or intermediaries. This preliminary inventory also reveals that such efforts are organized for multiple purposes, from informing and educating people to sharing data, planning, decision making, implementation, monitoring, and evaluating on-the-ground outcomes.

The following seven vignettes illustrate different approaches to large landscape

conservation, presented from the most informal to the most formal type. The cases represent the range of program responses emerging throughout North America, including the diverse issues that catalyze such efforts and the multiple forms of leadership and governance that shape and sustain them.

### **FREEDOM TO ROAM**

*This nongovernmental organization facilitates a broad-based network of organizations and businesses to protect and enhance wildlife corridors and landscape connectivity in North America.*

**SUMMARY:** Based on the realization that many conservation groups have worked on corridor protection efforts for more than 20 years, Freedom to Roam is a unique coalition of people, businesses, conservation groups, and recreation groups (figure 9).

Its goal is to leverage the lessons and resources of these disparate efforts through a coordinated approach to secure long-term corridor and landscape connectivity.

The organization's primary objectives are to raise the awareness and understanding of corridors and connectivity to new constituencies and the public in general; engage major corporations in the campaign; create a national brand for connectivity projects; and support new and ongoing efforts to create local, state, and national policy change. These activities are pursued through a decentralized organizational structure that includes a steering team and four working groups.

**FUNDING:** Freedom to Roam was established with start-up support from Patagonia, Inc. and the Doris Duke Charitable Foundation. Ongoing funding is provided by a steering committee of conservation and sportsmen groups, government, and corporations. Freedom to Roam's annual budget is approximately \$750,000.

FIGURE 9  
Freedom to Roam



Source: Freedom to Roam (<http://freedomtoroam.org>).

**ACCOMPLISHMENTS:** Freedom to Roam was instrumental in helping advance and pass the Western Governors' Association (WGA) policy framework for wildlife corridor conservation across the West and continues to be closely involved in WGA's wildlife corridor initiative. It has also developed a national campaign to promote and conserve wildlife corridors as a solution to habitat fragmentation and climate change impacts on species. One of Freedom to Roam's programs is Witness for Wildlife (W4W), which focuses on building grassroots awareness of the great wildlife corridors in North America. W4W combines citizen science with a Web-based community, wherein participants are encouraged to report, share stories, and upload data, images, and videos onto a W4W Web site.

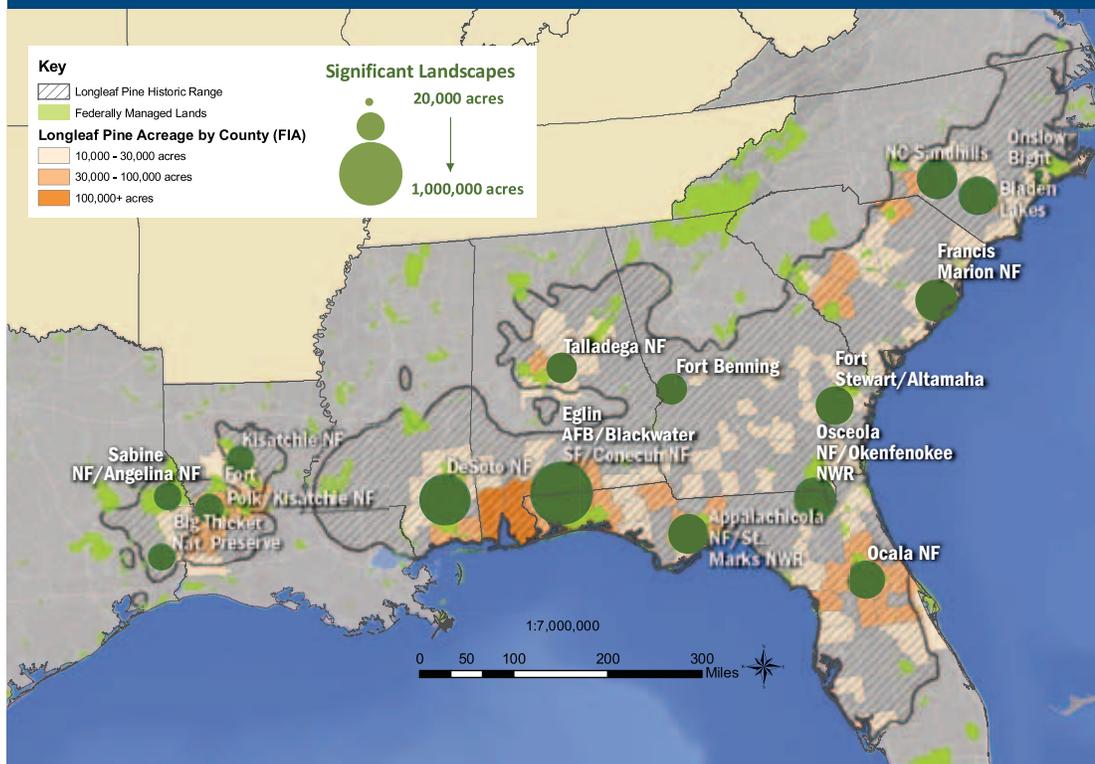
**CHALLENGES:** One of the key challenges facing Freedom to Roam is the lack of a central organizing theme to bring together all the existing, disparate, species-specific or geographically defined corridor efforts, and to harness the potentially great conservation values that would be associated with such a coordinated effort.

### AMERICA'S LONGLEAF PINE INITIATIVE

*This ad hoc public-private partnership creates a more coherent and targeted strategy to restore America's longleaf pine forests in the southeastern states.*

**SUMMARY:** Longleaf pine forests once covered more than 90 million acres from Virginia to Texas (figure 10). Today, less than 3 percent of that original landscape remains. Although there have been efforts to restore the regional ecosystem in the past, a cadre of conservationists began to meet in 2005 to develop a more focused restoration initiative and build broad-based support. At the same time, longleaf pine conservation efforts were

FIGURE 10  
Significant Landscapes for Longleaf Pine Conservation



Source: America's Longleaf Initiative ([www.americaslongleaf.org/resources/maps](http://www.americaslongleaf.org/resources/maps)).

being initiated or expanded by state and federal agencies and a host of other organizations, including The Nature Conservancy, the National Wild Turkey Federation, and the Longleaf Alliance. Meanwhile, an independent effort by several states and federal agencies in the region identified “restoring the land of the longleaf pine” as a top conservation priority to promote better collaboration in making resource use decisions. It is known as the Southeast Regional Partnership for Planning and Sustainability (SERPPAS).

**FUNDING:** It is difficult to discern the current level of funding that each partner contributes on an annual basis in staff time and resources, but several partners, including the Longleaf Alliance and the Southern Envi-

ronmental Law Center have provided significant support. Federal agency partners will be making funding contributions as the plan is implemented.

**ACCOMPLISHMENTS:** The partners recently completed a longleaf ecosystem conservation plan that identifies priority actions at a regional scale that add value to the many longleaf conservation efforts currently underway. Local implementation teams are now being formed to guide and accomplish on-the-ground work within Significant Geographic Areas (SGAs) and Significant Geographic Sites (SGSs). Each team will convene multistakeholder groups; develop priority actions for restoration; work with partners to carry out restoration activities; and evaluate projects as they are completed.

**CHALLENGES:** The central challenge for America's Longleaf Pine Initiative is moving from plan development to implementation and evaluation. Implementation of the plan relies on voluntary collaborative efforts among many partners. Establishing an effective network for communication, sharing opportunities, managing issues, solving problems, and consistently tracking accomplishments is proving to be a challenge. One specific need is to inventory and map existing longleaf pine restoration efforts in order to prioritize and target available resources. Several partners have already developed the internal strategies and additional capacities that will help them carry out specific components of the ecosystem conservation plan.

### **PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM**

*A negotiated agreement creates a formal partnership and plan to manage a multistate river basin and associated endangered species.*

**SUMMARY:** After several years of negotiation, the states of Colorado, Nebraska, and Wyoming, and the U.S. Department of the Interior signed the Platte River Cooperative Agreement in July 1997 (figure 11). The agreement is based on the belief that a basin-wide, cooperative effort is the best approach to help resolve endangered species issues of the whooping crane, piping plover, interior least tern, and pallid sturgeon, while allowing various water uses to continue. A 10-member governance committee developed the Recovery Implementation Plan, which is now implemented through the Platte River Recovery Implementation Program (PRRIP).

**FUNDING:** Funding for the implementation program is shared equally between the federal government and the states of Colorado, Nebraska, and Wyoming. Over the course

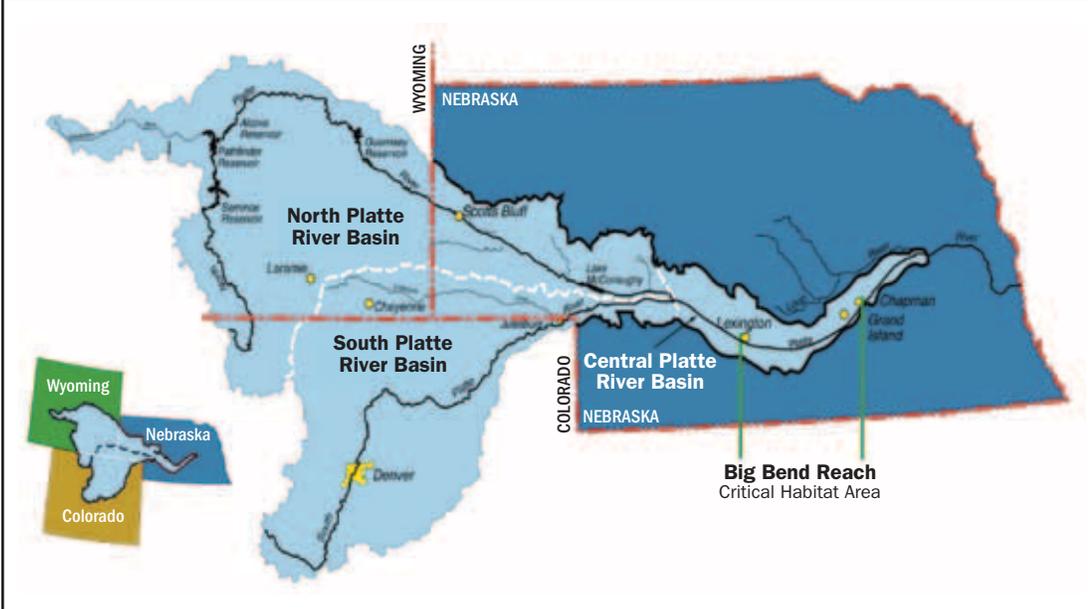
of the Recovery Implementation Program, the federal government will contribute an estimated \$157 million to the effort, while the states will provide an equivalent contribution through a combination of funds and other resources.

**ACCOMPLISHMENTS:** Participants developed a Recovery Implementation Plan from 1997 to 2007 with the aim of satisfying the requirements of the Endangered Species Act while accommodating other water users in the basin. The Secretary of the Interior and the governors of Colorado, Nebraska, and Wyoming formally adopted the plan and it was launched in early 2007. The PRRIP, which coordinates the implementation, currently has a 12-person staff, including engineers, biologists, ecologists, real estate specialists, and administrative support.

One goal of the implementation program is to protect, restore, and maintain 10,000 acres of habitat by 2019, with a long-term objective of acquiring 29,000 acres. Habitat will be acquired through either purchase or cooperative arrangements where designated lands could be managed by other entities, such as environmental organizations, utilities, and irrigation districts. To date, a total of 6,125 acres have been secured. The program also established an Independent Science Advisory Committee (ISAC) to review the program's adaptive management plan. The ISAC completed its review of the plan in 2010, and a number of new adaptive management research projects have been initiated based on its recommendations.

**CHALLENGES:** The basic barrier or obstacle is to satisfy competing interests during implementation of the plan. Through joint fact-finding and adaptive management, participants are seeking ways to meet the environmental and species protection goals

**FIGURE 11**  
**Platte River Basin**



Source: Platte River Recovery Implementation Program (<http://platteriverprogram.org>).

articulated in the plan while simultaneously attending to the competing interests of states and individual water users.

**BLACKSTONE RIVER VALLEY NATIONAL HERITAGE CORRIDOR**

*Congressional legislation implements a grassroots effort to protect the natural and cultural heritage of a special place*

**SUMMARY:** After years of grassroots efforts by local leaders and communities, Congress created the Blackstone River Valley National Heritage Corridor in 1986 to preserve the region’s industrial history (figure 12). Known as the birthplace of the American industrial revolution, the valley remains a dynamic working landscape of hilltop farms and industrial villages. Water-powered textile mills proliferated up and down the river, utilizing its 430-foot drop in elevation to support mills from Worcester, Massachusetts to Providence, Rhode Island.

The Heritage Corridor includes 24 cities and towns along the 46-mile valley. Although the corridor is federally designated, the government does not have regulatory powers or own any lands within it. Instead, the National Park Service works with agencies and organizations at all levels to uphold a unified vision for the region that includes historic preservation, unveiling the Blackstone story to visitors and residents, improving the ecological health of the land and water resources that have been impacted by industrialization, developing recreational opportunities, and implementing heritage-based economic development strategies.

**FUNDING:** Funding varies from year to year and includes a variety of sources. From 1987 to 2004, the commission that oversees the corridor received \$23,658,600 from the National Park Service (an average of over \$1.3 million per year). Almost the entire amount required a 1:1 match, which was provided by local and regional sources.

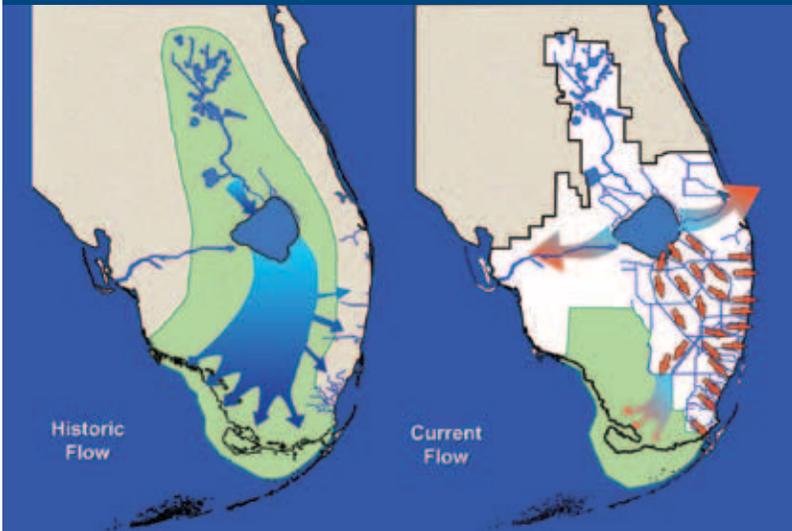
FIGURE 12  
Blackstone River Valley National Heritage Corridor



Source: Tuxill and Mitchell (2005, 4).



FIGURE 13  
The Florida Everglades



Source: Provided by Nanciann Regalado, U.S. Army Corps of Engineers (2001).

Everglades restoration programs have improved water management practices by the Army Corps of Engineers and the South Florida Water Management District. Since 2008, several substantive milestones have been achieved, including commencement of work to raise a portion of the Tamiami Trail to enable more water to flow south into the Everglades National Park and the start of work on the C-111 spreader canal.

**CHALLENGES:** The NRC also concluded, however, that agency implementation of CERP to date has been mostly programmatic. The NRC and other analysts have noted that (1) the condition of the Everglades ecosystem is declining; (2) the CERP is entangled in procedural matters involving federal approval of projects and lacks consistent infusions of financial support from the federal government; and (3) without rapid implementation of the projects with the greatest potential for Everglades restoration, the opportunity for meaningful restoration may be permanently lost. Other critics fault an unbalanced stakeholder process,

which they see as emphasizing development interests concerned about maintaining water supplies over environmental water needs.

### LAS CIENEGAS NATIONAL CONSERVATION AREA

*Congress directs the Bureau of Land Management (BLM) to look to the land management goals of the Sonoita Valley Planning Partnership (SVPP).*

**SUMMARY:** Sonoita Valley, just 50 miles southeast of Tucson, Arizona, is a vast, high desert basin of oak-studded hills and rolling grasslands fed by Cienega Creek (figure 14). The valley forms an important wildlife corridor connecting the Sonoran desert regions of the Southwest and northern Mexico, but it is split nearly evenly between public and private land ownership, and traditionally supported ranching and mining. Recently rediscovered as a recreation destination, the valley is now feeling the effects of Tucson's regional growth. In the late 1960s, developers purchased the 50,000-acre Empire Ranch, alerting Sonoita residents that the open spaces they prized might soon be engulfed by the rapidly expanding Tucson metropolitan area.

In the late 1980s, the BLM acquired 35,000 acres of the former ranch in exchange for scattered federal lands nearer Phoenix. The BLM subsequently began developing a management plan for its holdings in the valley, but the agency's traditional planning process gained little local support. In 1995, the agency changed its approach and started to engage local stakeholders more directly. Later that year, federal, state, and local government officials, along with stakeholders representing diverse viewpoints, agreed to form the Sonoita Valley Planning Partnership (SVPP) to promote community-based public land management.

At the request of SVPP, Congress created the Las Cienegas National Conservation

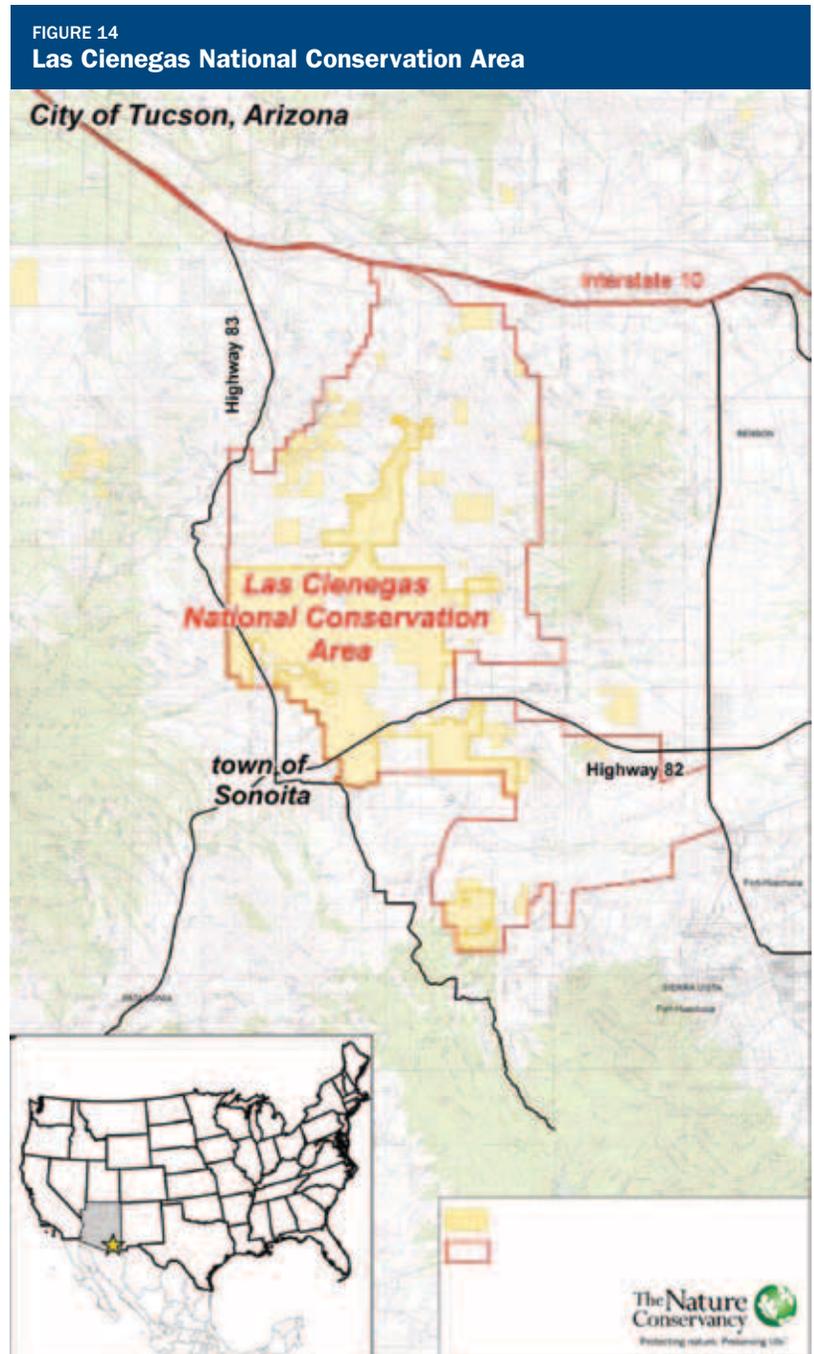
Area, which includes 42,000 acres (66 square miles) of public land. The federal legislation in 2000 established the Sonoita Valley Acquisition Planning District to facilitate future acquisition of important conservation lands on an additional 100,000 acres (156 square miles) of public, private, county, and state trust land. It also specifies management provisions pertaining to grazing, military airspace, access to state and private lands, motorized vehicles, and hunting.

One of the most unique features of the legislation is its requirement that the BLM develop a management plan “in accordance with the resource goals and objectives developed through the Sonoita Valley Planning Partnership process . . . giving full consideration to the management alternative preferred by the Sonoita Valley Planning Partnership, as it applies to Federal lands or lands with conservation easements” (Las Cienegas National Conservation Area 2000).

**FUNDING:** The SVPP is a voluntary partnership. Partners contribute time and resources, but no comprehensive accounting of SVPP’s financial capacity is available. In 2007, the SVPP and the Cienega Corridor Conservation Council, a complementary organization at the northern end of the watershed, created the Cienega Watershed Partnership. Its function is to administer and support the two voluntary partnerships and to seek resources for the priority work of both groups.

**ACCOMPLISHMENTS:** The BLM adopted a resource management plan in 2003 consistent with the goals and objectives of the SVPP. Additionally, the SVPP has partnered with the BLM and The Nature Conservancy to develop a monitoring and adaptive management plan for the National Conservation Area. Participants continue to be involved in complementary land use and conservation efforts.

**CHALLENGES:** During negotiations over the bill, Congress and the Arizona State Land Department removed the area between I-10 and the wilderness area from consideration under the SVPP program, thus creating a gap in coverage. The area, known as the



Source: Bodner (2009, 5).



**Shoreline houses at  
Lake Tahoe, Nevada**

Cienega Corridor, is important for cultural, economic, and biological values. Ongoing efforts to protect the Cienega Corridor show promise, but commentators are quick to point out that there are no guarantees. Implementing the adopted plan also seems to be a challenge. Funding staff and monitoring work also remain pressing needs, and the SVPP is currently exploring new organizational structures that allow it to be self-sustaining and play a more active role in helping the BLM implement the plan.

### **TAHOE REGIONAL PLANNING AGENCY**

*This bistate compact creates the nation's first interstate land use authority to govern development and maintain environmental quality within the 500-square-mile Lake Tahoe Basin.*

**SUMMARY:** More than 100 years ago, conservationists voiced concern about the impacts of tourism, ranching, and logging on the Lake Tahoe environment (figure 15). Their idea to make Lake Tahoe a national forest or national park did not gain wide

support in Washington, DC, primarily because much of the land in the basin was already privately owned and had been developed or logged. Conservationists continued lobbying for environmental protection as logging and ranching waned, and ski resorts and casinos expanded. The debate came to a climax in the late 1960s after two decades of rapid growth. The governors and lawmakers in California and Nevada approved a bistate compact that created a regional planning agency to oversee development at Lake Tahoe. In 1969, Congress ratified the agreement and created the Tahoe Regional Planning Agency (TRPA).

**FUNDING:** In 2009, TRPA's budget was approximately \$11 million, with funding from the states of California and Nevada, various grants, and impact, development, and environmental fees.

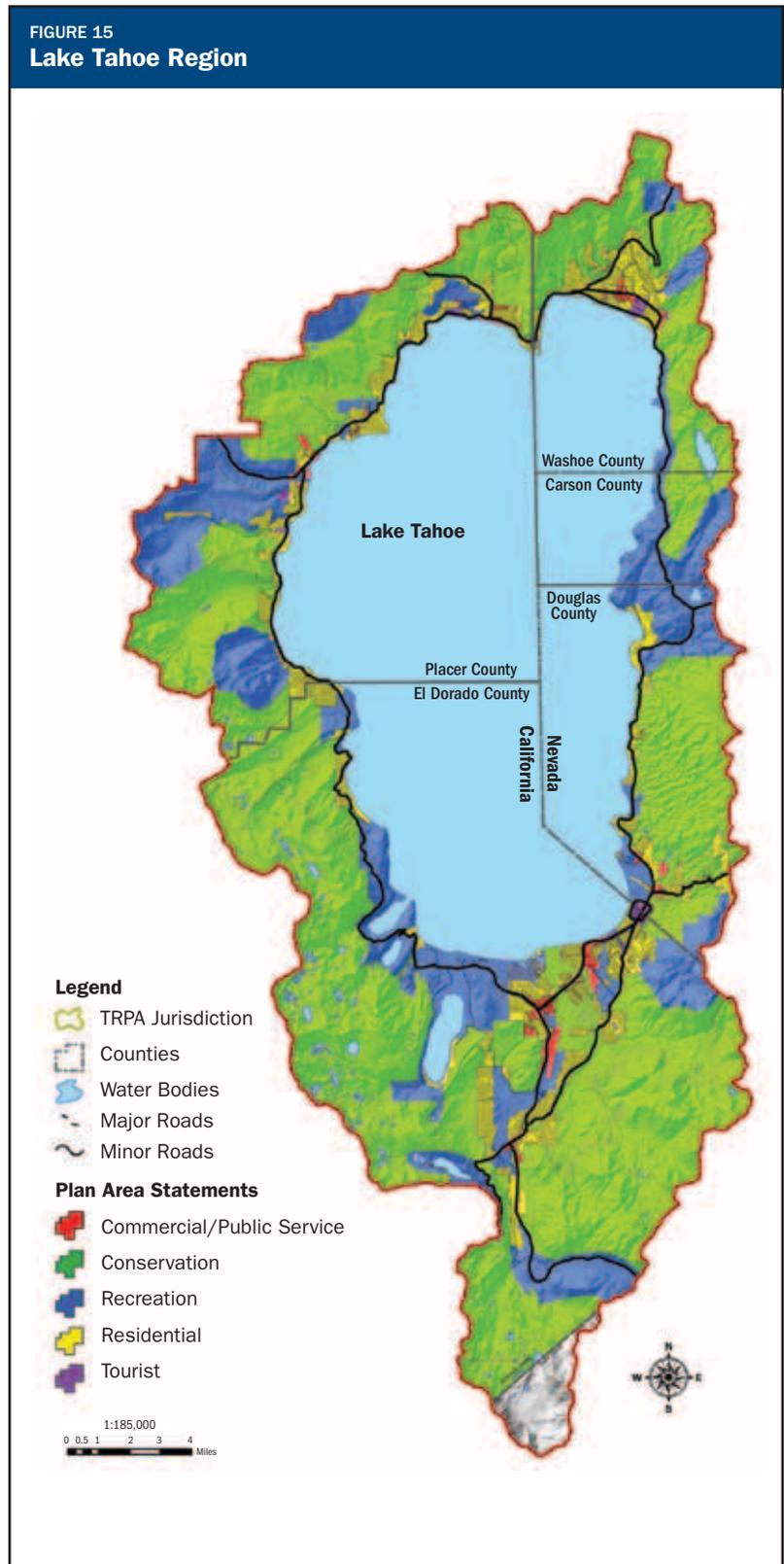
**ACCOMPLISHMENTS:** Following a rocky start that threatened the viability of TRPA's regional planning approach, California and Nevada officials adopted a series of amend-

ments to the compact in 1980, laying the groundwork for a more scientifically rigorous, participatory planning process. One of the most significant changes was the creation of Environmental Threshold Carrying Capacities (ETCC) around nine basinwide values: scenic, recreational, water quality, air quality, noise, wildlife, soil conservation, fisheries, and vegetation issues. ETCC also had a mandate that progress be made toward meeting these carrying capacities. Another change was to increase the size and diversity of TRPA's board.

A period of robust planning and stakeholder involvement during the 1990s helped the agency make positive progress. In the mid-1990s, public and private partners launched the Environmental Improvement Program (EIP), and some \$1.4 billion has been spent since then on EIP projects. The Lake Tahoe Restoration Act, which authorized the federal share of the EIP, could be updated in the summer of 2010 to help leverage another \$2.5 billion in EIP projects over the next 10 years. TRPA is often upheld as a model for regional planning and governance that is scientifically grounded, participatory, and adaptive.

**CHALLENGES:** TRPA's central challenge is to make continued progress toward the ETCC in the face of changing circumstances, including future and proposed development; fiscal constraints brought about by shrinking state budgets in California and Nevada, as well as uncertainty in federal funding; evolving relationships with local stakeholders; and changes in the environment brought about by climate change.

**FIGURE 15**  
**Lake Tahoe Region**



Source: Tahoe Regional Planning Agency ([www.trpa.org](http://www.trpa.org)).



## CHAPTER 4

# Barriers to Large Landscape Conservation



**New England  
stone wall**

**D**espite the increasing recognition of the need to approach many land and water issues at the scale of large landscapes and a growing number of place-based initiatives throughout North America, several barriers and challenges must be addressed if this movement is to reach its full potential. The five types of barriers described below have been identified by participants in our national policy dialogues and reinforced in many workshops and research reports in recent years (Western Consensus Council 2001; Foster 2002; McKinney, Fitch, and Harmon 2002).

### **LACK OF INFORMATION**

Policy makers and conservation leaders have responded to a number of emerging large landscape opportunities, but it is not

always clear who is doing what within a particular region or across the country as a whole. In addition, the results or outcomes of these efforts often are not well-documented to show how they are building knowledge and relationships, shaping and implementing policies and programs, or improving on-the-ground conditions of natural and cultural resources and local economies. In short, there is no comprehensive inventory of existing and emerging large landscape conservation efforts and their effectiveness.

Likewise, the lack of scientific information and databases on the conditions, trends, and disturbances within large landscapes makes it difficult to set priorities, identify gaps in terms of what is being done and what should be done, and explore opportunities to link existing and emerging efforts.



All of this baseline knowledge is critical to facilitate the advancement of well-designed and well-managed large landscape conservation initiatives. Clarifying the nature and scope of these projects, including both scientific and governance factors, will also help frame this important body of work in terms that will resonate with policy makers and the people who inhabit these places (Metz and Weigel 2009).

### **LACK OF CAPACITY**

Another factor limiting the short- and long-term effectiveness of large landscape conservation is the lack of capacity, which plays out in two distinct ways (Center for Natural Resources and Environmental Policy and the Lincoln Institute 2009). First, there is a need to improve the capacity of individuals and organizations to work across boundaries at the scale of large landscapes.

Regional practitioners have consistently expressed an interest in acquiring additional information, skills, tools, and resources; learning from one another; and expanding contacts and interaction with government agencies, universities, foundations, and non-government organizations. A related need (or opportunity) is to further develop and refine metrics for measuring the progress of large landscape conservation, which in turn will help clarify what is and is not working and why, and how to replicate best practices.

Second, as more and more regions organize to advance the objectives of large landscape conservation, it is critical to bring various constituencies together to exchange ideas, identify lessons learned, and clarify best practices. Such efforts will help to develop a community of practice that can advise local, state, and federal government officials, and advocate for policies to promote and support large landscape conservation projects.

### **LACK OF A COORDINATED STRATEGY**

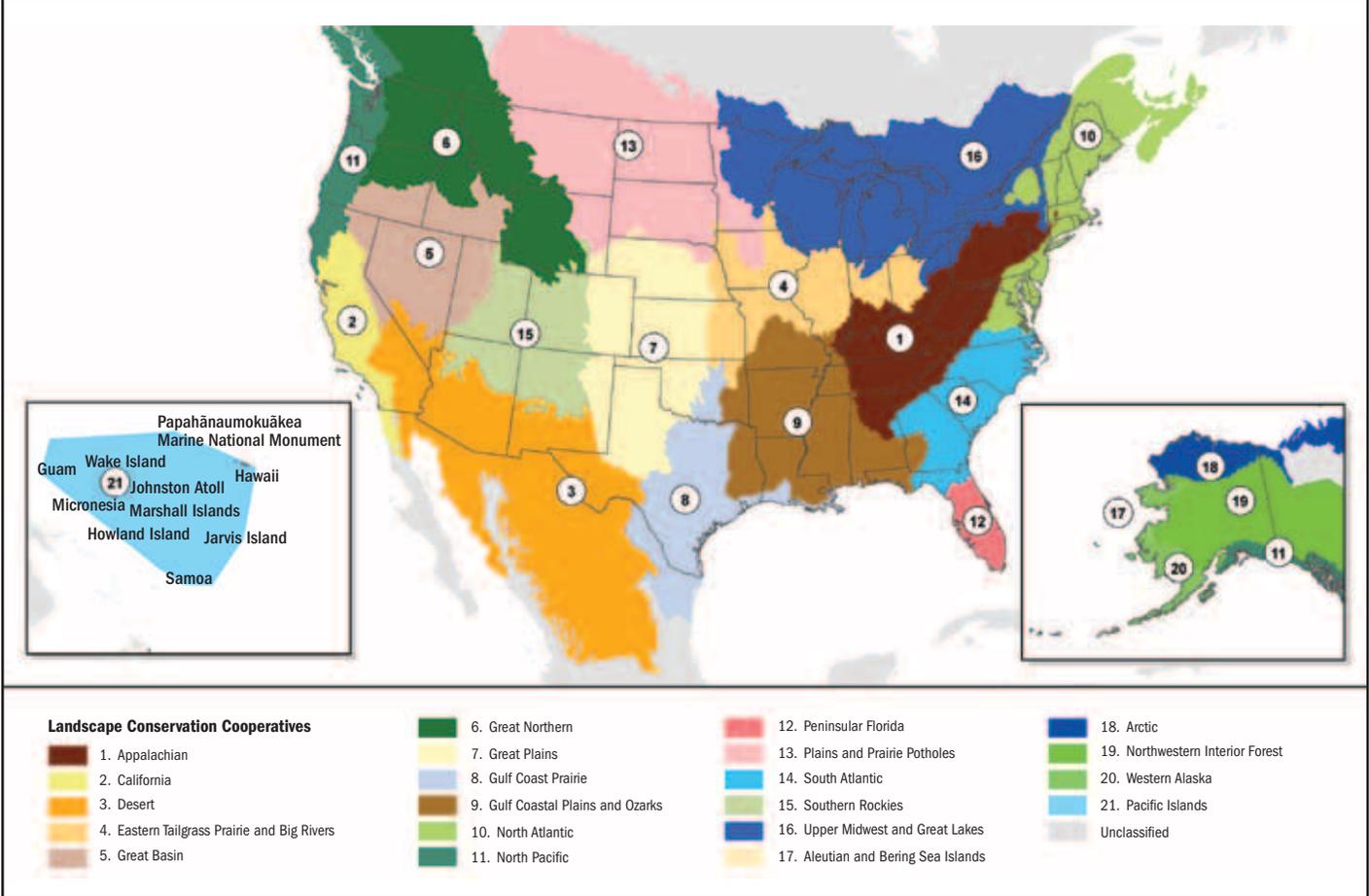
A third major challenge limiting large landscape conservation is the lack of an explicit strategy to facilitate coordination among fragmented efforts and to promote and support a variety of innovations and experiments. Policy makers at all levels are becoming more interested in conservation at the scale of large landscapes, but most of the emerging policy responses are still situated within separate legal and institutional “silos” created in the past.

Parallel efforts exist within the federal departments of the Interior and Agriculture, for example. Even within Interior, the Fish and Wildlife Service, Bureau of Land Management, and Geological Survey are all pursuing different initiatives according to different spatial and administrative boundaries and overlapping objectives (figures 16 and 17). While there may be good reasons for the variety of current programs, this new era of large landscape conservation requires a more integrated approach.

A key challenge in this context is to integrate the resources and expertise of federal agencies in coordination with state and local land use and other planning processes and with the energy, enthusiasm, and actions of grassroots efforts. The goal here, at least in part, is to test the proposition that more can be accomplished by encouraging federal agencies and other entities to focus collaboratively on a common set of large landscapes.

A related need is an explicit strategy to promote and support a variety of experiments and innovations, recognizing that there is no single model for large landscape conservation. The challenges are to harness the vision and activism of emerging efforts and combine them with the resources and responsibilities of federal, state, and local governments. This is easier said than done given that bureaucracies thrive on

**FIGURE 16**  
**U.S. Fish and Wildlife Service, Proposed Landscape Conservation Cooperatives**



Source: U.S. Fish and Wildlife Service ([http://www.fws.gov/science/SHC/pdf/DOI\\_LCC\\_All\\_031910\[1\].pdf](http://www.fws.gov/science/SHC/pdf/DOI_LCC_All_031910[1].pdf)).

standardized approaches and tend to resist challenges to the status quo.

### LACK OF APPROPRIATE POLICY TOOLS

The nation’s major environmental laws and policies, including the Endangered Species Act, National Environmental Policy Act (NEPA), National Wildlife Refuge Act, and Clean Water Act, have created strong foundations for conservation through environmental planning, regulation, and public lands acquisition and protection (Coggins et al. 2007). Other laws and policies have established grant programs to enhance private stewardship, particularly conservation grant provisions of the Farm Bill and some Interior Department programs. Some state laws

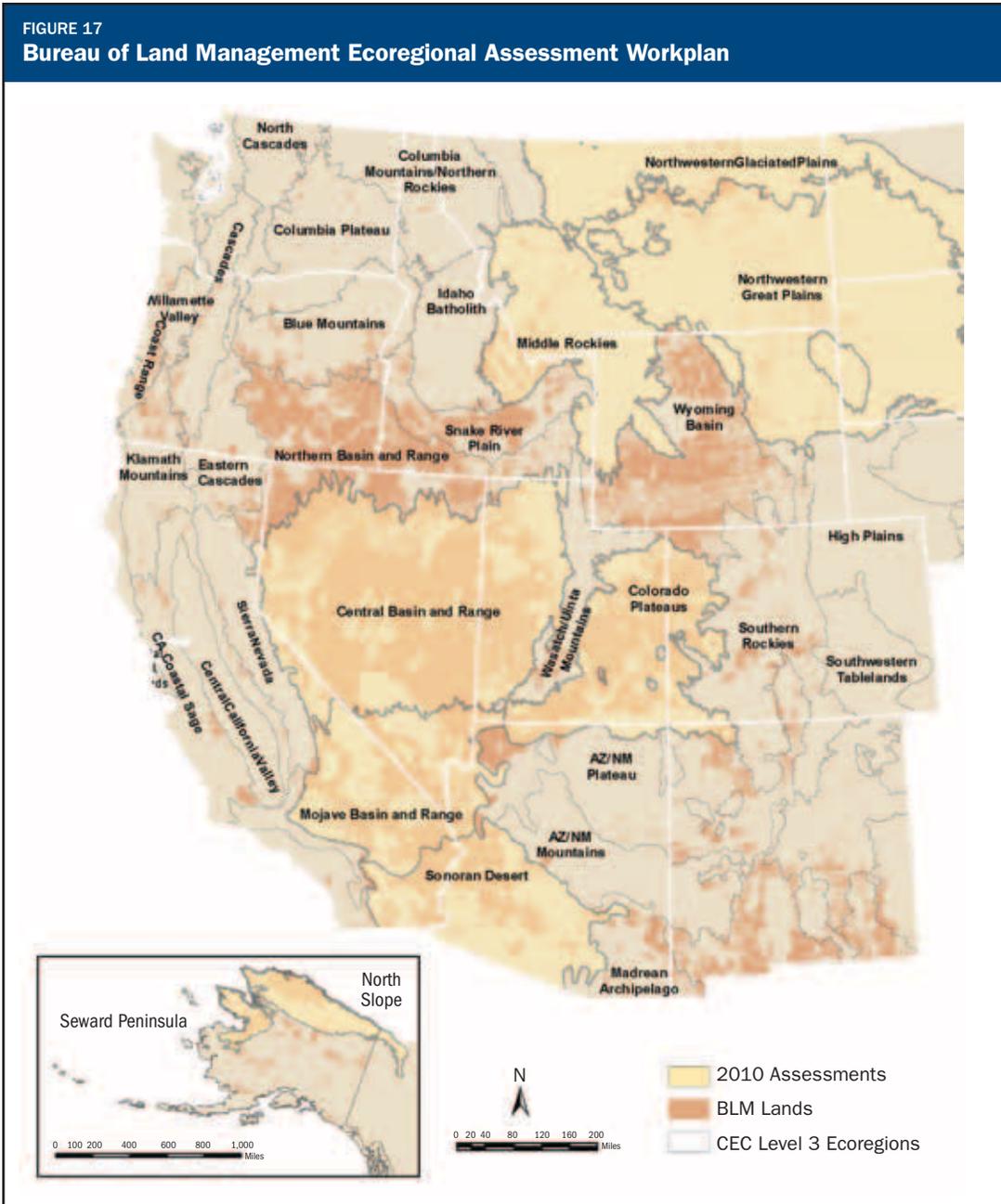
also support conservation on public and private lands. However, these federal and state policies were not designed to facilitate large landscape conservation projects in which multiple agencies must team with other public and private partners and landowners to pursue shared conservation goals.

Furthermore, many government agencies have developed tools and regulations within the context of their traditional statutes to facilitate multispecies protections, collaboration in the NEPA process to identify preferred management alternatives, and other measures consistent with landscape-scale conservation. As currently employed, however, these tools have limited applicability and often are not appropriate to promote and assist large-scale conservation efforts.

As demonstrated earlier, large landscape conservation requires and relies upon partnerships. Among the policy constraints faced by some federal agencies is the lack of clarity on the use of cooperative agreements through which agencies can partner with

nonprofit organizations, academic institutions, and other nonfederal entities. It is also not clear whether and to what extent federal agencies can expend federal funds to support partnership activities, including land restoration and conservation projects.

**FIGURE 17**  
**Bureau of Land Management Ecoregional Assessment Workplan**



Source: Provided by Patrick Mahoney, Geospatial Program Analyst and Presidential Management Fellow, and Kit Muller, Strategic Planner, Bureau of Land Management (2010).

Note: This assessment workplan is subject to Congressional and Department of the Interior direction and discussions with potential partners.

Another barrier is determining which types of federal relationships with other entities constitute contracting relationships for the purchase of goods and services subject to federal acquisition regulations, and which types constitute partnerships to advance a public purpose. The distinction is important since most contracts must be allocated through competitive bidding processes that are not designed to facilitate the types of ongoing conservation partnerships associated with many landscape-scale initiatives.

### **FRAGMENTED FINANCIAL INVESTMENTS**

Most large landscape conservation initiatives rely on a medley of public and private funding, and over the past two decades diverse public funding sources have emerged to support these efforts. The Department of Agriculture provides billions of dollars in annual conservation funding through multiple grant programs, some of which support large landscape conservation initiatives. The Department of the Interior, Environmental Protection Agency, and National Oceanic

and Atmospheric Administration, through its estuaries program, also provide conservation funding. As in the policy arena, however, these programs generally were not designed to support large, multijurisdictional conservation initiatives.

Current federal conservation budgeting has several features that limit its application and effectiveness for large landscape conservation.

- Most funding for landscape-scale conservation and restoration efforts remains within annual budgets and appropriations, thus limiting the potential for multiyear, integrated, and sequenced project planning and implementation.
- Many large programs must involve multiple federal (and nonfederal) agencies. However, budgeting typically occurs within bureaus that miss opportunities for coordinating and integrating priorities through cross-cut budgeting. Several exceptions that might serve as models for the future are the CALFED Bay-Delta Program and restoration funding in the Everglades and Klamath Basin regions.

**Sacramento and the Sacramento River estuary, California**





- The Land and Water Conservation Fund (LWCF) focuses on specific projects and land acquisition, rather than strategies to promote and support large landscape conservation partnerships.
- The Army Corps of Engineers budgeting for restoration projects has generally been undertaken within the context of the Water Resources Development Act, placing these efforts in competition with more traditional infrastructure projects and requiring them to use cost-benefit processes ill-suited to evaluating restoration benefits.
- Funding levels for cross-agency restoration budgets are not commensurate with actual project and program authorizations and needs, and these gaps will grow as the effects of climate change unfold. They are already apparent for large projects such as the Bay-Delta, Chesapeake Bay, and the Everglades, as well as in spending programs such as LWCF, which is authorized at \$900 million annually but has seldom been funded above several hundred million dollars per year (with a few annual exceptions) over the past 20 years.
- Some agencies face limitations on their authority to expend funds on lands other than those under their direct jurisdiction, or to pool agency resources into a common restoration fund dedicated to a specific, cross-jurisdictional restoration initiative.
- Available funding typically has a targeted focus, such as for habitat conservation planning or wetlands restoration. Few programs are available to support general governance, planning, and monitoring of landscape-scale efforts or multiple project elements that transcend individual program purposes.
- Federal agencies use both grants and challenge cost-share programs to fund conservation partnerships and leverage

other federal, state, philanthropic, and private funding sources, but several factors limit the full potential of these opportunities. First, matching fund requirements by potential partners sometimes exceed their capacity to meet the match. Second, there is little coordination among grant programs to better leverage funds to focus on the highest priorities. Third, while agencies are improving the use of performance criteria for grant allocation, their application remains inconsistent.

- Creation of new funding sources can occur through both authorizing legislation and the annual appropriations process. However, creation of new sources of mandatory spending not subject to annual appropriations often requires identification of offsets equivalent to the proposed spending.

### **SUMMARY OF BARRIERS**

Large landscape conservation is attracting increasing interest in both the public and private sectors, but numerous barriers must be addressed for this approach to land and water conservation to endure:

- the lack of scientific information about large landscapes and their governing structures;
- the lack of capacity to organize, achieve, and advocate for large landscape conservation goals;
- the lack of a strategy to coordinate fragmented efforts and foster innovative experiments;
- the lack of appropriate policy tools to implement large landscape conservation; and
- fragmented financial investments, especially at the federal level.



## CHAPTER 5

# Recommendations for a Strategic Framework



### Identifying options for large landscape conservation

**K**eeping in mind recent federal, regional, and local policy initiatives and the significant barriers to implementing large landscape conservation projects, participants in our national policy dialogues discussed a variety of ideas to help create a robust strategic framework. This report summarizes the suggestions into five sets of recommendations.

### GATHER AND SHARE INFORMATION

The first steps in developing a long-term strategic framework for large landscape conservation are to (1) create a common and coherent scientific database; and (2) prepare an annotated atlas to identify existing initiatives, priorities, and gaps.

There is currently no single body of scientific information on the state of large landscapes, although the Bureau of Land Management (BLM) is in the process of launching a scientific assessment of the conditions, trends, disturbances, and treatments for selected ecoregions, regardless of jurisdictional authority. This effort will embrace both terrestrial and aquatic resources, and should produce data that can be used by many large landscape conservation initiatives.

The long-term goal should be to encourage various agencies within the federal government to work together in building and maintaining these scientific assessments. For example, the U.S. Geological Service (USGS) science centers, the Fish and Wildlife Service (FWS) landscape conservation cooperatives,

and the Forest Service’s recently announced “all lands” initiative could contribute to this critically important task.

An annotated atlas of large landscape conservation initiatives could be modeled after the National River Restoration Science Synthesis of the National Biological Information Infrastructure. The first step in developing such an atlas is to inventory existing efforts, including policy initiatives, plans, government programs, and nongovernmental organizations that serve as either advocates or intermediaries. Over the past two years, the dialogue participants have generated a list of nearly 200 examples of large landscape conservation. The final set of criteria to determine what is or is not a qualifying initiative needs to be confirmed through this mapping exercise.

The chosen initiatives should also be placed on a single map of both existing and emerging efforts, realizing that changes may be needed as future funding and other resources are made available. The next step is to synthesize existing maps that prioritize which landscapes need to be protected for different purposes. A wide range of non-profit conservation groups already have compiled some information for this purpose, such as American Rivers, Landscape America, The Nature Conservancy, the Conservation Fund, and the Sierra Club. In addition, state and tribal wildlife management plans can supplement the plethora of recent federal initiatives.

Once the atlas has been completed, it will be possible to analyze the information and address two key questions: Where are the gaps between current large landscape initiatives and large landscapes that should be a priority focus of conservation? Where are there opportunities to link one or more existing initiatives to leverage resources and accomplish more on-the-ground conservation?

The development of an atlas provides several practical tools. First, it creates an inventory of who is doing what, as well as a current picture of outstanding needs and interests. Second, it provides information to government officials, foundations, and others about where they might invest scarce resources. Third, it builds on what people are already doing and provides a useful way to link bottom-up approaches to top-down interests, resources, and priorities. Finally, it creates a database to help users probe deeper questions about this emerging form of collaborative governance: How do these groups make and implement decisions? How do these initiatives endure over time? What types of governing structures have been created to sustain the initiative and enable it to adapt to inevitable changes?

The combination of scientific information, knowledge about who is doing what, and identification of conservation priorities and gaps is critical to facilitate the advancement of well-designed and well-managed large landscape conservation initiatives. This should be viewed as an ongoing task, and both the scientific database and the atlas should be updated regularly.

## **ENCOURAGE A NETWORK OF PRACTITIONERS**

Given the decentralized nature of large landscape conservation initiatives across North America, it would be extremely valuable to create a network to bring them all together. Assuming the recommendation to map large landscape initiatives is implemented, the resulting atlas will provide a solid foundation for creating such a network to support the following objectives.

- Build awareness and understanding of the diversity of approaches to catalyze, enable, and sustain large landscape conservation initiatives.

- Understand and refine the key elements of success.
- Develop skills and acquire tools, including the capacity to identify leaders; convene diverse people across political and jurisdictional boundaries; mobilize and engage private landowners and the business community; formulate and assess future scenarios; and monitor and evaluate progress.
- Share stories and learn from one another.
- Document and evaluate what is or is not working and why.
- Promote innovation.
- Examine alternative governance arrangements.
- Secure the necessary financial resources.
- Link theory, practice, and policy through dialogue and deliberation.
- Interact with other practitioners, government agencies, universities, foundations, and nongovernmental organizations.
- Strengthen linkages among initiatives to provide the building blocks for coordination and integration of these separate conservation efforts.

These resources or services could be provided in a variety of ways, such as workshops, conferences, publications, Web sites, and online social networking. Other suggestions are to create a “Placebook”—the equivalent of Facebook—for large landscape conservation, or to establish an organization akin to the Land Trust Alliance. The primary objective of such a network or alliance is to improve large landscape conservation projects by providing some or all of the resources and services identified above. A secondary objective is to build a national constituency to advocate for large landscape conservation into the future.

A leadership forum for 25 or 30 key leaders from both established and emerging large landscape conservation initiatives could

test these ideas. The forum might also include government agency officials, foundation officers, and scholars from appropriate colleges, universities, and professional associations as guests to inform and invigorate its work.

### **ESTABLISH A NATIONAL COMPETITIVE GRANTS PROGRAM**

Participants in the national policy dialogues agreed that the most effective way to achieve large landscape conservation is through homegrown approaches that meet local, regional, and national goals and aspirations. Federal and state agencies have resources, knowledge, and the capacity to help coordinate such efforts, and they are already responsible for lands and water bodies that often become the focus of large landscape conservation. Linking homegrown efforts to broader state and federal capacities will likely generate the most effective action on the ground.

To facilitate such partnerships, a competitive grants program could promote and support a diversity of experiments in large landscape conservation. The program should recognize that there is no single best approach to working at this spatial scale, and that success is based on harnessing the energy, synergy, and enthusiasm of citizens, agencies, tribes, businesses, nongovernmental organizations, and communities within particular regions. The program would support the following objectives.

- Facilitate an interconnected network of metropolitan and urban parks and greenways; cultural and historical landmarks; important rivers, watersheds, and estuaries; working landscapes; and large areas of mostly undeveloped public and private land.
- Encourage projects across a range of administrative and spatial scales that represent diverse ecosystems, land tenure

patterns (urban, rural, working, and wild), and models of governance.

- Require cross-sector and cross-jurisdictional collaboration, thereby empowering all elements of American society—government at all levels and tribal, business, local community, nonprofit, and scientific sectors.
- Embrace and encourage both citizen-driven and agency-initiated projects.
- Improve coordination among federal agencies and local, state, tribal, and federal governments by encouraging all of them to actively seek ways to achieve their objectives and to identify and remove regulatory or other obstacles to large landscape conservation efforts.
- Encourage coordination with state and local land use planning and decision making.
- Provide federal matching funds and other incentives to support large landscape conservation initiatives and to build the capacity of regional coalitions to participate in this national program.
- Require monitoring and evaluation of both processes and outcomes.
- Ensure broad dissemination of the results and lessons learned.

For example, a commission representing diverse perspectives could be established, perhaps within the National Fish and Wildlife Foundation or a similar existing organization, to guide the selection, recognition, support, and monitoring of experiments or pilot projects involved in the competition. Each applicant would complete a strategic assessment to document its needs, interests, objectives, and current practices relative to six key issues: biological diversity, ecosystem services, economic vitality, community resilience, amenities, and climate change mitigation and adaptation.

The assessment would also demonstrate the applicant's civic, political, and organiza-



**Ranchland in Montana**

tional capacity to work across boundaries—including a commitment of matching funds (or in-kind services) from local, state, and tribal governments, private businesses, non-governmental organizations, and the philanthropic community. Finally, the assessment should articulate a plan to measure progress, adapt strategies as appropriate, and sustain the enterprise over time.

The commission would review, evaluate, and select the most promising efforts according to five criteria: creativity and novelty in conception; strategic and ecological significance; measurable effectiveness; transferability across jurisdictions; and an ability to endure over time. The selected projects or partnerships would prepare a conservation strategy consistent with their initial assessment and would be eligible for federal matching grants or other investments such as Farm Bill landowner cost-share and reserve programs, environmental restoration funds, or transportation improvement funds.

These partnerships would also qualify for certain types of regulatory flexibility under appropriate conditions, such as using watershed-based water quality permits and regional mitigation strategies; employing program-

matic environmental assessments; or increasing coordination with federal agencies through a federal consistency clause similar to the Coastal Zone Management Act.

This competitive grants program is not and should not be a federal mandate; nor should it be a proposal to consolidate federal agencies or their planning functions. It does not connote any new regulatory authority, duplicate existing initiatives, or promote one best way of undertaking the challenge of large landscape conservation. Rather, it encourages a distinctly entrepreneurial framework that emphasizes innovation, collaboration, and flexibility among diverse sectors of society.

This type of program will require some federal funding, such as a set-aside fund to directly support or reimburse large landscape conservation partners for the development or maintenance of administrative services, governance activities, and dissemination of information necessary for the implementation of a national competition. This funding could be provided over a start-up period of some specified timeframe for a particular project.

The U.S. departments of Agriculture, Interior, Commerce, Defense, Energy, Labor, Housing and Urban Development, and Transportation, as well as the Environmental Protection Agency and the Council on Environmental Quality, should all be involved, given their respective duties and responsibilities for land, water, and communities (including jobs and infrastructure). One way to implement this recommendation is to appoint staff from various agencies to serve as liaisons within designated large landscapes to coordinate across agencies and governments, and in Washington, DC, to coordinate budgets and so on.

## **IMPROVE THE POLICY TOOLKIT**

A number of federal policy tools could strengthen the incentives and capacity to initiate, enable, and sustain large landscape conservation. Some of these tools currently exist and could be refined. In other cases, new legal authorities or regulations may be required. These recommendations fall into two categories.

### ***Incentive-based Tools for Landowner Conservation***

The participation of private landowners is essential, since large landscape conservation initiatives often include both public and private lands, but this may be difficult for several reasons. First, their engagement typically requires investments in time and resources, which may be limited. Second, privately held lands that could usefully serve conservation purposes are often dispersed and fragmented, suggesting the need to assemble multiple blocks of contiguous, high-priority conservation lands. Third, federal laws currently constrain the ability of federal agencies to engage in some types of conservation partnerships by limiting the conditions under which they can operate and share project funding. The following federal policy tools could strengthen incentives to encourage private landowners to become involved in large-scale conservation.

### **Broaden the Use of Conservation Banking.**

Under the Endangered Species Act, current policies developed by the Fish and Wildlife Service (FWS) provide for the creation of conservation banks. This tool presents opportunities for environmental entrepreneurs to conserve and enhance habitat to serve as mitigation for infrastructure, development, and other projects that affect threatened and endangered species. Conservation banks create a context for assembling larger protected areas than typically result from indi-

vidual on-site mitigations associated with land development projects.

Under current Fish and Wildlife Service rules, conservation banks must contain natural resource values that are ecologically suitable with regard to topographic features, habitat quality, compatibility of existing and future land use activities surrounding the bank, species use of the area, or any other relevant factors necessary to mitigate specified listed species. The bank must be conserved and operated or managed in perpetuity through a conservation easement held by a sponsor responsible for enforcing the terms of the easement, and can be used to offset impacts occurring elsewhere to the same resource values on nonconservation bank lands.

Spatial scale requirements for conservation banks and an interagency review team structure may be adaptable to large landscape conservation efforts to create funding opportunities, enhance cross-agency coordination, and provide a potential model for cross-jurisdictional governance. Conservation banks, as currently applied, provide habitat for threatened and endangered species. However, the tool could potentially be adapted to broader circumstances, including, for example, source water protection, energy development mitigation, and other environmental goals that benefit from a landscape-scale focus.

#### **Utilize Existing Federal Grant Programs.**

The Department of the Interior currently funds coastal and at-risk species conservation initiatives through its Coastal Program, Partners for Fish and Wildlife Program, and other grants. Other departments and agencies have similar grant programs to support conservation partnerships that target public, private, tribal, and other lands and waters, and support consortia of individuals, groups, or agencies who agree to work on habitat restoration or protection strategies identified



**Migrating snow geese in the Platte River Valley of central Nebraska**

as priorities. Such support could include technical assistance, such as biological and habitat assessments, inventories, project coordination, monitoring, mapping, grant writing, and habitat restoration expertise.

#### **Clarify Federal Authority for Cost-sharing Arrangements.**

Large landscape conservation could benefit from clear federal agency authority to negotiate and enter into cooperative arrangements with any state or local government, tribe, public or private agency, organization, institution, corporation, individual, or other entity to carry out public-private cost-sharing for conservation activities. These agreements could include functions and responsibilities relating to habitat improvements on public or private lands. Under current Interior Department programs, the federal share for a project does not exceed 50 percent and is provided on a matching basis.

**Amend Tax Codes.** Some Department of Agriculture conservation grant program funds are not taxable, and similar provisions under the Internal Revenue Code could be amended to include all cooperative assis-



**Chesapeake Bay  
Bridge-Tunnel viewed  
from Virginia**

tance programs that conserve threatened or endangered species, or protect or restore sensitive habitat. In addition, the incentives for private landowners to participate in large landscape conservation efforts would be improved by allowing tax credits for conservation easements to supplement similar credits already authorized for fee simple conservation transactions.

### ***Tools to Strengthen Federal Participation***

A second set of measures could improve the ability of federal agencies to engage in homegrown, multistakeholder, large landscape conservation initiatives and improve the effectiveness of these partnerships.

**Identify Top Priorities and Set Common Performance Metrics.** Among the activities that federal agencies can undertake are the use of state and tribal wildlife action plans to help identify priorities and focus investments through state comprehensive conservation plans as required under the FWS State and Tribal Wildlife Grant Program.

The FWS joint ventures partnership model for migratory bird conservation, for example, offers a framework that could be adapted to other conservation goals within a landscape-scale conservation setting by developing partnerships among federal, state, tribal, and local government agencies with nonprofit organizations and private individual to identify priorities for land acquisition and conservation on both public and private lands.

Another opportunity is the Market Environmental Registry that provides a multicredit environmental registry to facilitate ecosystem market development. The Chesapeake Bay restoration effort and the Willamette Partnership in Oregon are using this registry to develop multicredit ecosystem regional programs. Federal and other support for this kind of metrics development could provide a basis for monitoring and evaluating performance of large landscape conservation.

**Facilitate Multiagency and Public-Private Coordination.** Federal lands often anchor conservation partnerships that transcend the boundaries of an individual agency, but some agencies have limited authority to contribute funding or other types of assistance to other federal, state, local, public or private agencies, nonprofit organizations, private individuals or tribes to carry out activities that directly contribute to achieving conservation or natural resource goals. Clear authorization for federal agencies to engage in resource management, conservation, or restoration activities on nonfederally owned lands could facilitate landscape-scale conservation initiatives.

Where initiatives include private lands, conservation activities would be conducted only with the permission of the landowner. Use of agency funds could be required to clearly and directly benefit the federal land

management unit or other federal environmental responsibility by contributing to their programmatic and performance goals.

For example, the Forest Service and the Bureau of Land Management pioneered the use of Service First authorities in which they co-located their offices and undertook some joint planning and management. This policy could be extended to other federal land and resource management agencies to facilitate large landscape conservation. In other cases, federal agencies may need authority to provide assistance to nongovernmental organizations to advance the mission of a federal agency and its management units (such as a park, refuge, or national forest).

As noted earlier, agencies also need clear authority to enter into cooperative agreements with nonfederal partners, provide funding for public purposes, and distinguish such agreements from traditional federal acquisition of goods and services through competitive contracting procedures.

**Authorize Federal Agencies to Issue Combined Permits.** At a landscape scale, some activities may require Clean Water Act or other permits. One way to facilitate large landscape conservation would be to provide a means to combine permits to achieve water quality or other goals on a watershed or ecosystem basis.

For example, in the Tualatin Basin in Oregon, water managers worked with the Environmental Protection Agency to combine four wastewater treatment permits and one stormwater permit into a single permitting action. In the Menominee Watershed in Wisconsin, multiple stormwater districts within and among six watersheds in the Milwaukee metropolitan region collaborated to establish a group permit that covers eight entities. While both of these examples occurred in urban areas, the clustering concept could be applied to permitting requirements

associated with large-scale conservation and restoration.

**Develop Guidelines to Integrate Consensus-based Recommendations into NEPA Processes.** Where large landscape conservation includes federal lands, procedures for developing and evaluating actions under the National Environmental Policy Act (NEPA) could facilitate interagency and public-private conservation. For example, the Department of the Interior developed administrative rules to clarify how to incorporate consensus-based management options into NEPA documents for public review. The Council on Environmental Quality or individual agencies might consider developing similar guidelines as a tool to foster large landscape conservation partnerships, keeping in mind potential constraints imposed by the Federal Advisory Committee Act and other laws and rules (Bates 2006).

## **FACILITATE INNOVATIVE FUNDING OPPORTUNITIES**

Many federal grants and other programs provide conservation funding, but current practices limit opportunities to encourage large landscape conservation. Key challenges include how to better coordinate funding across programs and agencies to focus on shared priorities; sustain multiyear funding for projects with phases and sequenced implementation steps; better ensure program effectiveness by allocating funds based on performance criteria; and use funding to create incentives for conservation. Direction from the Office of Management and Budget, the Congress, or individual departments could prioritize many existing funds to provide more focus and greater funding for landscape-scale conservation.

It is imperative to develop and implement innovative public-private funding arrangements to improve the effectiveness and

sustainability of large landscape conservation. While such initiatives may warrant additional sources of funding, the following principles should help garner political support at local, state, and federal levels, as well as within the philanthropic and private sectors (box 3). These principles should also inform and govern the competitive grants program described earlier.

To implement these principles, policy makers and others should focus their attention on both the structure and sources of funding. Some of the most promising options to better align federal budgets with the objectives of large landscape conservation are summarized here. Many current federal funding sources that could directly facilitate conservation goals are described in the Resources section of this report.

**BOX 3**

**Principles of Innovative Funding for Large Landscape Conservation**

- Maximize and focus the use of existing federal and state programs and authorities that can be implemented with little delay and without additional funding.
- Combine existing funding sources to target large landscape conservation projects.
- Provide federal funds through a competitive matching grants program for pilot projects.
- Require in-kind or matching funds from non-federal sources to leverage resources, including local, state, private, and philanthropic foundations.
- Employ existing and new tax incentives, tax credits, easement purchase programs, and management agreements to encourage private lands conservation.
- Use some funding for the planning and coordination of strategies to conserve whole watersheds, ecosystems, greenways, and corridors.

**Provide Multiyear, Multiagency Funding**

**Commitments.** Large landscape conservation often requires a multiyear sequence of projects and sustained actions to achieve restoration and conservation goals. Moreover, conservation responsibilities are often distributed among multiple agencies. Annual, individual agency funding currently constrains the capacity to coordinate, plan, and execute phased project components.

**Transition the Land and Water Conservation Fund to a Mandatory Fund.**

Authorized in 1964, LWCF has both stateside and federal components with a combined authorized funding level of \$900 million derived from oil and gas proceeds from federal resources. Actual combined funding has often ranged from \$120 to \$250 million, and has occasionally fallen below this range. The stateside funds are typically used for projects that benefit recreation and have included land acquisition and local recreation project development. The federal funds are generally used for easements and fee simple land acquisition.

Two actions could make these funds better suited to advancing landscape-scale conservation: (1) a mechanism for full (mandatory) funding to provide more resources for conservation; and (2) a competitive set-aside for landscape-scale conservation, including capacity building and governance. Transitioning this fund to a mandatory account would ensure that the original intentions of the Congress would be achieved more consistently, and it could designate that a portion of the federal funds support large landscape conservation programs.

**Reform the Conservation Spending Category.**

Congress created this spending category in 2001 to support a number of federal and state land conservation and natural resource protection programs (including the LWCF,



Sunset in the  
Florida Everglades

state wildlife grants, and the North American Wetlands Conservation Fund), and has subsequently added other programs to this category. One option would be to propose that this combined spending category be set at a particular level, with appropriations language specifying that some percentage be applied toward large landscape conservation initiatives.

This change could be legally complicated, since some of the grant programs under this spending category have specified funding purposes. However, to support large landscape conservation, agencies may need to take a closer look at this category to determine whether it could provide a basis from which to identify dedicated funding for large landscapes.

#### **Reorganize the Army Corps of Engineers**

**Budget.** Generally, restoration projects and traditional Corps infrastructure projects are evaluated and prioritized within a single review process. Yet these two types of projects are fundamentally different, potentially warranting different review and ranking criteria.

A separate restoration budget would make these projects more transparent and provide a means of dedicating targeted annual and multiyear amounts for restoration projects, especially those related to large landscapes.

#### **SUMMARY OF RECOMMENDATIONS**

Large landscape conservation can be improved significantly by establishing a coherent database on the science of large landscapes; mapping existing and emerging governance efforts; creating a network for practitioners to build capacity; establishing a competitive grants program to promote, coordinate, and support promising efforts; providing the necessary policy tools and incentives to achieve large landscape conservation projects; and facilitating innovative funding arrangements. Implementing these recommendations will take a sustained, collaborative effort among all levels of government, philanthropic foundations, academic institutions, and the hundreds of entrepreneurs who are achieving multiple conservation objectives for large-scale landscapes.



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## RESOURCES

### Large Landscape Examples

Freedom to Roam  
[www.freedomtoroam.org](http://www.freedomtoroam.org)

America's Longleaf Pine Initiative  
[www.americaslongleaf.org](http://www.americaslongleaf.org)

Platte River Recovery Implementation Program  
[www.platteriverprogram.org](http://www.platteriverprogram.org)

Blackstone River Valley National Heritage Corridor  
[www.nps.gov/archive/blac/home.htm](http://www.nps.gov/archive/blac/home.htm)

Comprehensive Everglades Restoration Plan  
[www.evergladesplan.org](http://www.evergladesplan.org)

Las Cienegas National Conservation Area  
[www.blm.gov/az/st/en/prog/blm\\_special\\_areas/ncarea/lascienegas.html](http://www.blm.gov/az/st/en/prog/blm_special_areas/ncarea/lascienegas.html)

Tahoe Regional Planning Agency  
[www.trpa.org](http://www.trpa.org)

### Federal Government Departments and Programs

Army Corps of Engineers  
[www.usace.army.mil](http://www.usace.army.mil)

Bureau of Land Management  
[www.blm.gov](http://www.blm.gov)

Climate Strategy  
Department of the Interior  
[www.doi.gov/whatwedo/climate/strategy](http://www.doi.gov/whatwedo/climate/strategy)

Collaborative Forest Landscape Restoration Program  
Forest Service  
[www.fs.fed.us/restoration/CFLR/index.shtml](http://www.fs.fed.us/restoration/CFLR/index.shtml)

Geological Survey  
[www.usgs.gov](http://www.usgs.gov)

Land and Water Conservation Fund  
[www.nps.gov/lwcf](http://www.nps.gov/lwcf)

Landscape Conservation Cooperatives  
Fish and Wildlife Service  
[www.fws.gov/science/shc/index.html](http://www.fws.gov/science/shc/index.html)

National Landscape Conservation System  
Bureau of Land Management  
[www.blm.gov/wo/st/en/prog/blm\\_special\\_areas/NLCS.html](http://www.blm.gov/wo/st/en/prog/blm_special_areas/NLCS.html)

National Oceanic and Atmospheric Administration  
[www.noaa.gov](http://www.noaa.gov)

National Park Service  
[www.nps.gov](http://www.nps.gov)

National River Restoration Science Synthesis  
National Biological Information Infrastructure  
<http://nrrss.nbi.gov>

North American Wetlands Conservation Fund  
Department of the Interior  
[www.doi.gov/partnerships/wetlands.html](http://www.doi.gov/partnerships/wetlands.html)

Open Space Conservation  
Forest Service  
[www.fs.fed.us/openspace](http://www.fs.fed.us/openspace)

Service First  
Forest Service  
[www.fs.fed.us/servicefirst](http://www.fs.fed.us/servicefirst)

Southeastern Ecological Network  
Environmental Protection Agency  
[www.geoplan.usf.edu/epa](http://www.geoplan.usf.edu/epa)

US Global Change Research Program  
[www.usgcrp.gov](http://www.usgcrp.gov)

US Institute for Environmental Conflict Resolution  
[www.ecr.gov](http://www.ecr.gov)

### State and Regional Programs

New England Governors' Conference  
[www.negc.org](http://www.negc.org)

Policy Consensus Initiative  
[www.policyconsensus.org](http://www.policyconsensus.org)

State Wildlife Action Plans  
[www.wildlifeactionplans.org](http://www.wildlifeactionplans.org)

Western Governors' Association  
[www.westgov.org](http://www.westgov.org)

### Foundations

Conservation Lands Foundation  
[www.ourconservationlegacy.org](http://www.ourconservationlegacy.org)

Doris Duke Charitable Foundation  
[www.ddcf.org](http://www.ddcf.org)

The William and Flora Hewlett Foundation  
[www.hewlett.org](http://www.hewlett.org)

Kresge Foundation  
[www.kresge.org](http://www.kresge.org)

National Fish and Wildlife Foundation  
[www.nfwf.org](http://www.nfwf.org)

National Forest Foundation  
[www.nationalforests.org](http://www.nationalforests.org)

National Park Foundation  
[www.nationalpark.org](http://www.nationalpark.org)

### Nongovernmental Organizations

Alliance of National Heritage Areas  
[www.nationalheritagearea.com](http://www.nationalheritagearea.com)

America 2050  
[www.america2050.org](http://www.america2050.org)

American Farmland Trust  
[www.farmland.org](http://www.farmland.org)

American Rivers  
[www.amrivers.org](http://www.amrivers.org)

American Society of Landscape Architects  
[www.asla.org](http://www.asla.org)

Center for Large Landscape Conservation  
[www.climateconservation.org](http://www.climateconservation.org)

Conservation Fund  
[www.conservationfund.org](http://www.conservationfund.org)

National Parks Conservation Association  
[www.npca.org](http://www.npca.org)

Land Trust Alliance  
[www.lta.org](http://www.lta.org)

Landscape America  
[www.landscape.org](http://www.landscape.org)

Lincoln Institute of Land Policy  
Regional Collaboration Subcenter  
[www.lincolninstitute.edu/subcenters/regional-collaboration](http://www.lincolninstitute.edu/subcenters/regional-collaboration)

Northeast-Midwest Institute  
[www.nemw.org](http://www.nemw.org)

Northern Arizona University  
Beier Lab of Conservation Biology  
& Wildlife Ecology  
[www.corridor-design.org](http://www.corridor-design.org)

Private Landowner Network  
[www.privatelandownernetwork.org/grantprograms](http://www.privatelandownernetwork.org/grantprograms)

Sierra Club  
[www.sierraclub.org](http://www.sierraclub.org)

Society for Conservation Biology  
[www.combio.org](http://www.combio.org)

The Nature Conservancy  
[www.nature.org](http://www.nature.org)

University of Michigan  
School of Natural Resources and Environment  
Ecosystem Management Initiative  
[www.snre.umich.edu/ecomgt](http://www.snre.umich.edu/ecomgt)

University of Minnesota  
Jon Foley Institute of the Environment  
<http://environment.umn.edu/gli/index.html>

University of Wisconsin  
Monica Turner Laboratory  
<http://landscape.zoology.wisc.edu>

## SELECTED FEDERAL FUNDING SOURCES

The following current conservation funding sources could be used, with some implementation refinements, to facilitate large landscape conservation initiatives.

### **Department of the Interior** [www.doi.gov](http://www.doi.gov)

*Challenge Cost-Share Funds:* Amounts range from \$10 to \$20 million per land management bureau per year (e.g., Fish and Wildlife Service, Bureau of Land Management). These funds are flexible, but projects must encourage partnerships that conserve, protect, and enhance fish, wildlife, and plants for the continuing benefit of the American people.

*Cooperative Endangered Species Conservation Fund:* This fund includes four grant programs (Recovery Land Acquisition, Conservation, Habitat Conservation Planning Land Acquisition, and Habitat Conservation Planning) and typically receives \$80 to \$90 million annually.

*Landowner Incentive Grants and Private Stewardship Grants:* Both programs were launched under the Bush administration, but were not sustained. Similar programs could be developed and funded at the \$40 to \$50 million level of their predecessor programs.

*Coastal Program and Partners for Fish and Wildlife Program:* These two programs, funded jointly at around \$60 to \$65 million, could be directed in part to landscape-scale conservation partnerships for capacity building, governance, and new initiatives.

*North American Wetlands Conservation Act Grants:* These grants, funded at around \$50 million, are currently used for land acquisition as well as restoration, management, and enhancement of wetland ecosystems and other habitat that benefits migratory birds and other fish and wildlife species. Some flexibility in these grants could be directed to landscape-scale initiatives.

*Federal Aid in Wildlife Restoration (Pittman-Robertson funds):* This is a sizeable funding source at over \$200 million per year. Participation is limited to state fish and wildlife agencies, but funding can be used for land acquisition, planning, outreach, research, surveys and inventories, coordination, habitat management, and other purposes. With some modification, some percentage of these funds could be used for competitively allocated funds to support large landscape, perhaps with states as the lead agency.

### **Department of Agriculture** [www.usda.gov](http://www.usda.gov)

The nation's largest conservation programs are authorized in the Food, Conservation, and Energy Act of 2008 (Farm Bill) and operated by the Department of Agriculture, including both the Natural Resource Conservation Service (NRCS) and the Forest Service. The 2008 Farm Bill includes a total of \$733 million over five years for the Farm and Ranch Lands Protection Program, reestablishes the Grasslands Reserve Program with an acreage goal of 1.22 million acres, the Wetlands Reserve Program, and a Healthy Forests Reserve Program; and extends the tax incentive for conservation easement donations.

Conservation program funds within the 2008 Farm Bill for the purchase of easements on working lands are over a billion dollars over a five-year period. Other related funding programs include, for example, the Wildlife Habitat Incentives Program, Conservation Stewardship Program, and Environmental Quality Incentives Program. These are not, strictly speaking, considered grant programs. They provide funding for approved eligible partners who enter into multiyear agreements with the NRCS to "help enhance conservation outcomes on agricultural lands and private nonindustrial forest lands." These programs also include provisions for multistate partner proposals that may lend themselves to supporting large landscape conservation.

Other funding within this department includes the Forest Legacy Program and the Wetlands Reserve Program. USDA's State Forestry Grants Program offers a possible model of competitively allocated, performance-focused, landscape-scale funding that could provide a model for shifting Interior and other programs in this direction.

### **Environmental Protection Agency** [www.epa.gov](http://www.epa.gov)

The U.S. EPA has some funding for watershed initiatives that could be relevant in a large landscape conservation context, including a Targeted Watersheds Grant Program and a National Estuary Program that funds wetland protection under the Clean Water Act state revolving fund and other estuary enhancement funds.

EPA also manages grant and loan programs that can support land acquisition to protect water supplies, though they have infrequently been used for these purposes. The Clean Water Act's State Revolving Fund offers loans for water quality improvements that have generally funded wastewater treatment infrastructure. These funds (over \$1 billion, combined with another \$4.7 billion in state monies) can be

used to implement nonpoint source management plans and develop and implement estuary plans.

Under the Safe Drinking Water Act, State Revolving Fund loans (pegged in 2003 at \$787 million in grants and \$1.3 billion in loans) help fund public water system infrastructure. A third of these monies can be used for investment in water source protection that includes land acquisition. Of this amount, 15 percent can support voluntary and incentive-based measures. These programs could contribute to support large landscape conservation projects, though priority setting to target areas would require working with states that largely manage the allocation of these funds.

For example, the Ohio Water Restoration Sponsorship Program provides significant loan rate reductions for wastewater treatment projects if the recipient uses a portion of the savings to invest in watershed protection and restoration directly or contributes to a land trust, park district or other watershed protection effort. New Jersey's Green Acres Program allocated funds under the Clean Water State Revolving Fund to give three times the weight to projects with a water supply protection benefit through land conservation.

### ***National Oceanic and Atmospheric Administration***

[www.noaa.gov](http://www.noaa.gov)

Through its estuaries program, NOAA funds a number of conservation initiatives in its Coastal and Natural Resource Management category. Some of these grants fund scientific research, such as the National Sea Grant Program and National Undersea Research Program. Other programs, such as NOAA's Community-Based Restoration Program, generally fund restoration partnerships.

### ***Cross-agency Funding***

Another possibility is to evaluate how to take a combined percentage of several key programs and designate them for an interagency landscape-scale grant program. The National Fish and Wildlife Foundation (NFWF) grant program, managed by the private, nonprofit organization established by the Congress, supports public-private partnerships in natural resource management, habitat protection and restoration, and conservation policy. NFWF programs are flexible, match federal funds with other donations, and may be tailored to pool funds from multiple agencies for large landscape conservation.

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## PARTICIPANTS IN THE NATIONAL POLICY DIALOGUES

Anne Archie, US Forest Service, Durham, NH  
Bryan Arroyo, US Fish and Wildlife Service, Washington, DC  
Dan Ashe, US Fish and Wildlife Service, Washington, DC  
Robert Bendick, The Nature Conservancy, Washington, DC  
Evan Berger, MLA for Livingstone-Macleod, Fort Macleod, Alberta, Canada  
Armando Carbonell, Lincoln Institute of Land Policy, Cambridge, MA  
Alice Chamberlin, Two Countries, One Forest, Warner, NH  
Nina Chambers, Sonoran Institute, Bozeman, MT  
Charlie Chester, Brandeis University, Waltham, MA  
Lisa Cloutier, Lincoln Institute of Land Policy, Cambridge, MA  
Michael Creasey, Lowell National Historical Park, Lowell, MA  
Michael Donahue, Water Resources and Environmental Services, URS Corporation, Farmington Hills, MI  
Michael Eaton, Resources Legacy Fund, Sacramento, CA  
Kevin Essington, The Nature Conservancy, Providence, RI  
Gloria Flora, Sustainable Obtainable Solutions, Helena, MT  
Racene Friede, Glacier Country Regional Tourism Commission, Missoula, MT  
Steve Frisch, Sierra Business Council, Truckee, CA  
Andrea Gerlak, Udall Center for Studies in Public Policy, The University of Arizona, Tucson, AZ  
Shawn Johnson, Center for Natural Resources & Environmental Policy, Helena, MT  
Robert Keiter, University of Utah College of Law, Salt Lake City, UT  
Rick Kendall, US Department of the Interior, Washington, DC  
Daniel Laven, Conservation Study Institute, National Park Service, Woodstock, VT  
Judith Layzer, Massachusetts Institute of Technology, Cambridge, MA  
James Levitt, Program on Conservation Innovation at the Harvard Forest, Waverley, MA  
Timothy Male, National Fish and Wildlife Foundation, Washington, DC  
James Melonas, US Forest Service, Washington, DC  
Nora Mitchell, Conservation Study Institute, National Park Service, Woodstock, VT  
Mary Mitsos, National Forest Foundation, Missoula, MT  
Rich Moy, Crown Manager's Partnership, Helena, MT  
Kit Muller, Bureau of Land Management, Washington, DC  
Garry Oye, National Park Service, Washington, DC  
Dan Perlman, Environmental Studies Program, Brandeis University, Waltham, MA  
Peter Pollock, Lincoln Institute of Land Policy, Boulder, CO  
Luther Propst, Sonoran Institute, Tucson, AZ  
Mary Sexton, Montana Department of Natural Resources and Conservation, Helena, MT  
Mark Shaffer, Doris Duke Charitable Foundation, New York, NY  
John Singlaub, Tahoe Regional Planning Agency, Stateline, NV  
Ted Smith, Kendall Foundation, Boston, MA  
Tarissa Spoonhunter, Blackfoot Tribe/Blackfoot Nation, Browning, MT  
Fritz Steiner, School of Architecture, University of Texas, Austin, TX  
John Swett, Lower Colorado River Multi-species Conservation Plan, Boulder City, NV  
John Thorson, Administrative Law Judge (ret.), Plains, MT  
Petra Todorovich, Regional Plan Association, New York, NY  
Julia Wondolleck, University of Michigan, School of Natural Resources & Environment, Ann Arbor, MI

## OTHER ADVISORS AND REVIEWERS

Robert Bonnie, US Department of Agriculture, Washington, DC  
Mike Boots, Council on Environmental Quality, Washington, DC  
Jeff Lerner, Doris Duke Charitable Foundation, New York, NY  
Joe Marlow, Sonoran Institute, Tucson, AZ  
Rob Pirani, Regional Plan Association, New York, NY  
Will Shafroth, US Department of Interior, Washington, DC  
Gary Tabor, Center for Large Landscape Conservation, Bozeman, MT

## ABOUT THE AUTHORS

**Matthew McKinney** is director of the Center for Natural Resources and Environmental Policy (CNREP) at The University of Montana, where his work focuses on collaboration and conflict resolution. He is also an adjunct professor at The University of Montana's School of Law; chair of the university's Natural Resource Conflict Resolution Program; senior partner with the Consensus Building Institute; director of the Lincoln Institute–CNREP joint venture partnership; and a member of several professional associations.

**Lynn Scarlett** is an independent environmental consultant working on issues pertaining to climate change, ecosystem services, water, and landscape-scale conservation. From 2005 to January 2009 she served as deputy secretary and chief operating officer of the U.S. Department of the Interior, a post she took on after four years as the department's assistant secretary for policy, management, and budget. She served as acting secretary of the department for two months in 2006. She chaired the department's Cooperative Conservation Working Group and the Climate Change Task Force. She is a fellow of the National Academy of Public Administration and author of numerous publications on incentive-based environmental policies.

**Daniel Kemmis** is a private consultant, working primarily in the natural resource and philanthropy arenas. He is a senior fellow of the Center for Natural Resources and Environmental Policy, and an associate of the Charles F. Kettering Foundation. He is a former mayor of Missoula, Montana, and a former speaker and minority leader of the Montana House of Representatives. He serves on the board of directors of Philanthropy Northwest and the Missoula Redevelopment Agency, and previously served as a director and senior fellow at the Center for the Rocky Mountain West. He is the immediate past chair of the board of the Northwest Area Foundation and serves on the Public Policy Committee of the Council on Foundations.

## ABOUT THE LINCOLN INSTITUTE OF LAND POLICY [www.lincolnst.edu](http://www.lincolnst.edu)

Lincoln Institute is a private operating foundation whose mission is to improve the quality of public debate and decisions in the areas of land policy and land-related taxation in the United States and around the world. The Institute's goals are to integrate theory and practice to better shape land policy and to provide a nonpartisan forum for discussion of the multidisciplinary forces that influence public policy. The Institute seeks to inform decision making through education, research, demonstration projects, and the dissemination of information through publications, our Web site, and other media. Lincoln Institute programs bring together scholars, practitioners, public officials, policy advisers, and involved citizens in a collegial learning environment.

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The Center for Natural Resources and Environmental Policy is an applied research and education center based at The University of Montana. It informs and invigorates public policy through research, education, and collaborative problem solving. We believe that the most effective way to address natural resource and environmental issues is through public processes that are well informed and provide meaningful opportunities for all interested citizens, stakeholders, and decision makers to participate. To this end, we specialize in both process and substance. Our staff and senior fellows are recognized experts in facilitation, mediation, collaboration, and conflict resolution. They are also well-known for their work in public lands policy, water law and policy, land use planning, and transboundary resource management.

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800-LAND-944 (800-526-3944)

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# Large Landscape Conservation: A Strategic Framework for Policy and Action

The most important land and water issues facing North America—including land use patterns, water management, biodiversity protection, and climate adaptation—require something more than business as usual. While most of these challenges need to be addressed at several scales simultaneously, ranging from the local to the global, it is imperative to address them at the scale of large landscapes because the territory of these issues transcends the legal and geographic reach of existing jurisdictions and institutions.

Large landscape conservation provides significant economic and fiscal benefits to rural and urban communities. Since taking office in January 2009, President Barack Obama and his administration have made the concept of large landscape conservation a component, and often a focus, of many natural resource initiatives.

Leaders from the public, private, and nongovernmental sectors have participated in two national policy dialogues and many other informal discussions to synthesize what we know about large landscape conservation and to identify the most important needs as we move forward. The dialogue participants, along with many other planners, practitioners, and policy officials, believe the following recommendations can help to advance successful large landscape conservation initiatives:

- **Gather and share information to improve the science and governance of large landscape conservation.** Establish a common, coherent scientific database, and develop an annotated atlas of governance efforts to clarify who is doing what and what needs to be done.
- **Encourage a network of practitioners to build capacity.** Catalyze collaboration through a network akin to the Land Trust Alliance to identify best practices and advocate for policy reforms.
- **Establish a national competitive grants program to catalyze, enable, coordinate, and sustain promising efforts.** Facilitate homegrown partnerships, improve coordination among ongoing efforts, and recognize the most promising approaches to large landscape conservation.
- **Improve the policy toolkit to achieve large landscape conservation.** Strengthen incentive-based tools for landowner conservation and improve coordination and participation by federal agencies.
- **Facilitate innovative funding opportunities to support large landscape conservation.** Maximize and focus the use of existing federal and state programs and authorities that can be implemented quickly and without significant new funding.



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