



Building a Large Landscape Conservation Community of Practice

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Abstract

Over the past seven years—starting with the first policy dialogue at the Lincoln House in 2009—a Joint Program between the Lincoln Institute of Land Policy and the Center for Natural Resources & Environmental Policy at the University of Montana has played a leading role in exploring and advancing large landscape conservation as an important framework for addressing some of the most critical land and water issues facing people and nature. This working paper summarizes key elements of this work, including: (1) insights gained through policy discussions, surveys, and publications, (2) creation of a network of large landscape conservation practitioners to build and share knowledge on large landscape conservation (currently transitioning in name from the “Practitioners’ Network for Large Landscape Conservation” to the “Network for Landscape Conservation”); and (3) efforts to collect and share information and tools developed by partners and others in support of large landscape conservation.

Keywords: Environmental Management, Environmental Planning, Land Conservation, Land Dispute Resolution, Land Use, Land Use Planning, Natural Resources, Open Space, Public Policy, Regionalism, Smart Growth, Stakeholders, Sustainable Development

About the Author

Shawn Johnson is Managing Director of the Center for Natural Resources and Environmental Policy at the University of Montana and Co-chair of the Center's graduate certificate program in Natural Resources Conflict Resolution. For the past ten years, he has helped advance a joint effort between the Center and the Lincoln Institute of Land Policy on regional collaboration and large landscape conservation. The joint effort explores questions of policy, leadership, and governance at regional or landscape scales, where there is often a mismatch between the scale of an existing challenge or opportunity and that of existing organizations and jurisdictions. In May 2011, Shawn helped organize and convene a group of large landscape conservation practitioners that led to a new network of practitioners throughout North America who are working to improve community and conservation outcomes at the large landscape scale—the Practitioners' Network for Large Landscape Conservation. Shawn is co-author, with Matthew McKinney, of *Working Across Boundaries: People, Nature, and Regions* (Lincoln Institute, 2009).

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Building a Large Landscape Conservation Community of Practice

Landscape-scale conservation takes patience, persistence, energy and money. Landscapes took a long time to get the way they are today; they take a long time to change.

—Bob Bendick, 2003, Conservation Leadership Dialogue Co-Chair,
Practitioners' Network for Large Landscape Conservation

Introduction

Large Landscape Conservation has a long history but has recently come of age. A multitude of factors contribute to the current relevance of landscapes as an organizing principle. Perhaps most importantly, landscapes are identifiable places with real meaning and tangible value for people and nature. In a landscape, there is an intricately woven history of people, nature, and place. As the current stewards of a landscape, people are challenged to understand and act on their interests and responsibilities in a way that carries that story forward to the next generation.

Landscapes are also relevant because they are not bound by a particular jurisdiction, governed by a particular sector, defined by a particular issue, or untouched by human activities. Instead, landscapes are whole, “lived in” systems, complex by nature, inclusive of social and ecological dimensions, and always changing. As such, landscapes are places where integrated solutions are needed—across issues, jurisdictions, sectors, and scales.

In addition to these higher-level characteristics, there are many tangible reasons large landscape conservation has recently grown in favor, including (1) a changing conservation paradigm that encompasses social and ecological dimensions; (2) growing experience with collaborative approaches to natural resource planning and governance; (3) available funding sources, including incentives for partnerships and larger scale activities; (4) emerging and/or escalating threats to environmental health and well-being; and (5) emerging science and information that supports more integrated and larger scale conservation activities (Fisher et al. 2014).

As a relatively new way of organizing to understand and address a variety of land and water conservation issues, large landscape conservation isn't constrained by a lot of hard rules about what it is or how to do it. Instead, there are literally hundreds of experiments in large landscape conservation underway. Generally, these experiments are:

- Cross-sector, encompassing land owners and/or managers and conservation leaders in two or more sectors of the economy, including the public, private, non-profit and academic sectors;
- Cross-jurisdictional, encompassing land and water resources in multiple jurisdictions, across town, county, state, and even national boundaries;
- Designed to achieve at least one, and often multiple, conservation outcomes;
- Organized in a way that features collaboration, shared decision making, and coordinated implementation of decisions; and

- Targeted at a specific, mappable territory that is large enough to accommodate systematic, significant, and enduring conservation outcomes. (McKinney et al. 2010; Faber and Robertson 2011)

While large landscape conservation is seen as one of the best hopes for addressing a range of critical conservation challenges facing people and nature, it is difficult work. Existing organizations and jurisdictions do not have the ability or authority to undertake large landscape conservation efforts on their own. Rather, working at the large landscape scale relies on a network of people and organizations with the capacity, authority, and civic will to understand a complex web of overlapping and intersecting jurisdictions, sectors, issues, and scales. It requires thoughtful, informed, and coordinated action.

This working paper explores how and why people are realigning important land and water conservation activities at this increasingly relevant and meaningful scale, including what they are learning in the process of designing and implementing large landscape conservation activities. It concludes by offering a few recommendations for future research and learning.

Origins of Large Landscape Conservation

Large landscape conservation is an assemblage of past conservation paradigms, approaches, successes, and failures. These precursors provide important lessons about the complexities of resource conservation and management at the large landscape scale. They also point to the ongoing need to both learn from the past and to experiment with new approaches that are informed by the latest understanding and experience.

It is often said that one of the most significant contributions to conservation in America began with a box, the 3,500 square-mile rectangle known as Yellowstone National Park (Tabor et. al. forthcoming). Yellowstone was established in 1872 and has been followed by more than 400 national park units. The hallmark characteristic of national parks and other conservation efforts of the early part of the 20th Century was a boundary—the idea that management of land and natural resources could best be accomplished within a single, defined jurisdiction. While much was achieved through these bounded conservation efforts—indeed, the national park system has been called America’s best idea—it became apparent over time that these conservation islands did not match up with the way nature functioned.

Because of this mismatch, natural resource conditions were degrading across the country, especially in more populated and industrialized areas. Land use changes and development pressures, industrial processes, agricultural practices, and other factors increased pressure on ecosystem health in the 20th Century. The extent of the damage was wide-spread but perhaps best encapsulated by the day, on June 22, 1969, the Cuyahoga River burst into flames in Cleveland (Latson 2015). It was a moment that inspired a new relationship between people and the environment and ushered in a new wave of policies and regulations—the Clean Air Act, Clean Water Act, the National Environmental Policy Act, and the Endangered Species Act, among others—that set to protect land, air, water, and wildlife resources across the country.

From a scientific perspective, there were also shifts underway. A theory that ecosystems were stable, self-regulating systems that would return to “equilibrium” after a disturbance had been largely disproved by the latter half of the 20th Century. Instead, a new era of conservation science highlighted the need to better understand ecosystem functions and how they could be influenced, damaged, and ultimately restored (Robbins forthcoming). This new science was embraced by the environmental community and over time was effectively used to persuade natural resource managers to adopt an ecosystem-based management approach. It took time for science to inform practice, and the conservation community and resource managers explored various ideas and approaches to managing ecosystems. Because of this experimentation, multiple definitions of ecosystem management exist.¹ One of the definitions of ecosystem management assembled by the Ecosystem Management Institute at the University of Michigan stands out as foundational to the large landscape conservation approach. In 1994, US Forest Service Jack Ward Thomas offered, “Ecosystem management is a holistic approach to natural resource management, moving beyond a compartmentalized approach focusing on the individual parts of the forest. It is an approach that steps back from the forest stand and focuses on the forest landscape and its position in the larger environment in order to integrate the human, biological, and physical dimensions of natural resource management. Its purpose is to achieve sustainability of all resources.”²

In addition to these shifts in scientific understanding and resource management approaches, there were shifts in governance, as multiple people with vested interests in the outcomes of natural resource decisions—from landowners to community leaders to environmental advocates and beyond—were demanding a new, more collaborative role in how decisions were being made and how conflicts over natural resources were being resolved. Daniel Kemmis nicely captures this shift toward a more collaborative approach to natural resource governance in his book *This Sovereign Land*, noting in particular a passage from the “Chronicle of Community” at that time, which stated: “those who have come to be most enthusiastic about collaboration as a problem-solving tool believe that ‘solutions to today’s difficult natural resources challenges do not lie exclusively in the emergence of new technologies or management prescriptions [but] in the creative energies of individual and groups organized around particular places they care about.’” (Kemmis 2001).

This move toward more inclusive, collaborative approaches to resource conservation and management provided additional feedback loops, informing and influencing how science, policy, and management practices were developed to support both ecosystems and communities. The White House Conference on Collaborative Conservation in St. Louis in 2005, which had the explicit purpose to “strengthen shared governance and citizen stewardship,”³ was perhaps the

¹ See, e.g., “What People are Saying about Ecosystem Management,” Ecosystem Management Institute, School of Natural Resources and the Environment, University of Michigan. www.snre.umich.edu/ecomgt/emapproach/quotes.htm

² “What People are Saying about Ecosystem Management,” Ecosystem Management Institute, School of Natural Resources and the Environment, University of Michigan. www.snre.umich.edu/ecomgt/emapproach/quotes.htm

³ See archived materials from the “Whitehouse Conference on Cooperative Conservation,” at <http://govinfo.library.unt.edu/whccc/index.html>.

first large-scale gathering of people focused on integrating collaborative approaches into the mainstream of conservation practice.

The Emergence of Large Landscape Conservation

As these shifts toward more collaborative, science-informed, ecosystem-based conservation were underway, people in several places were eagerly experimenting with these new paradigms, providing practical experience in the emerging field of large landscape conservation. One of the earliest efforts focused on the 18 million-acre (30,000 square mile) Greater Yellowstone Ecosystem. There, a diverse group of stakeholders launched the Greater Yellowstone Coalition in 1983 with the aim to protect the entire ecosystem's land, water, and wildlife resources through more inclusive practices spanning multiple jurisdictions and land ownerships. The coalition's vision statement nicely captures the contours of the group's ground-breaking approach to large landscape conservation:

Greater Yellowstone Coalition Vision Statement⁴

Our vision is a healthy and intact Greater Yellowstone Ecosystem where critical lands and waters are adequately protected, wildlife is managed in a thoughtful, sustainable manner and a strong, diverse base of support is working to conserve this special place as part of a larger, connected Northern Rocky Mountain Region.

We envision a day when:

- All people work together to protect the ecological integrity and beauty of the Greater Yellowstone Ecosystem.
- Greater Yellowstone's natural and human communities flourish because people act with the understanding that their economic, cultural, and spiritual wellbeing depends on the health and vitality of the region's natural systems.
- Elected officials work with citizens, on the basis of scientific knowledge and the long-term needs of the ecosystem, to enact public policies that protect nature and preserve biodiversity in the ecosystem.
- Public and private institutions actively protect the ecosystem and embrace the region's unique potential for people to learn about living with nature's processes.

Other groups were experimenting in different landscapes, often focused on protecting or enhancing their unique values and concerns across a variety of scales. One of the largest and most visionary efforts in this early era of large landscape conservation was the Yellowstone to Yukon Initiative, launched in 1993 to catalyze cross-boundary planning for and conservation of a 200-mile long (500,000 square mile) corridor of the Rocky Mountains from Wyoming north to the Yukon.⁵

⁴ "Mission and Vision," Greater Yellowstone Coalition. www.greateryellowstone.org/mission

⁵ "Our Progress," Yellowstone to Yukon Conservation Initiative. <https://y2y.net/vision/our-progress>

Notably, these efforts weren't just conceived by scientists, policy-makers, and land managers, but were in many cases inspired and catalyzed by the people who lived in these landscapes and cared about their long-term stewardship. As the forward edge of conservation activity—integrating people and science across issues and scales—these efforts were attracting financial support from the philanthropic sector as well as interest from the cultural resource community and even those living in urban areas. These perspectives were nicely summarized by Jim Levitt in his 2004 *Land Lines* article, “Grappling with the Green Matrix”:

Ted Smith, in explaining why the Kendall Foundation has made philanthropic investments in landscape-scale initiatives, noted: “Ample evidence convinces us that land fragmentation is a threat to most species.... We are seeking to promote reconnections along, [for example], a large stretch of the Rockies at a scale that reflects the needs of keystone species.... Because fragmented land ownership works against nature, we are funding conservation strategies that embrace approaches to integrating the management of public and private lands. Not surprisingly, private lands often hold the greatest biological wealth and represent key corridors for wildlife movement.”

While present-day discussions of landscape-scale initiatives may sometimes start with biodiversity concerns, they frequently go well beyond that focus. Nora Mitchell stated: “To protect remaining wild lands and sustain working landscapes, many conservation efforts today operate at the landscape scale. To be successful at this large scale, these efforts must integrate ecological, cultural and recreational values with economic and community development. As a result, the practice of landscape-scale conservation is complex and challenging.... It requires working across political and ecosystem boundaries, adopts an interdisciplinary perspective, and involves the collaboration of many organizations.”

It is important to note that landscape-scale efforts may be directed not only toward relatively undeveloped and rural landscapes, but also to urban environments, reflecting, as Reed Holderman pointed out, “the diversity of relationships that exist between people and land.” In urban settings, the purpose may be as much about providing essential ecosystem services (for example, flood control and water purification) or recreational opportunities as they are about protecting wildlife habitat.

Exploring Emerging Theory and Practice

In response to increasing activity and interest in large landscape conservation theory and practice, the Lincoln Institute of Land Policy and the Center for Natural Resources & Environmental Policy at the University of Montana convened leaders from the public, private, and nongovernmental sectors in two national policy dialogues in 2009. At these dialogues, participants sought to synthesize what was known about large landscape conservation and to identify the most important needs facing the field. Ultimately, those dialogues informed the content of a Lincoln Institute Policy Focus Report in 2010, “Large Landscape Conservation: A

Strategic Framework for Policy and Action.”

The report provides a high-level summary of the characteristics of large landscape conservation, reviews seven representative case studies of large landscape conservation in practice, investigates barriers to success, and ultimately concludes with five recommendations to continue to inform the theory, practice, policy, and performance of large landscape conservation:

1. Gather and share information to improve the science and governance of large landscape conservation;
2. Encourage a network of practitioners to build capacity;
3. Establish a national competitive grants program to catalyze, enable, coordinate, and sustain promising efforts;
4. Improve the policy toolkit to achieve large landscape conservation; and
5. Facilitate innovative funding opportunities to support large landscape conservation.

Practitioners’ Network for Large Landscape Conservation

(Note: in late 2016, the Practitioners’ Network for Large Landscape Conservation was rebranded the Network for Landscape Conservation)

Noting the decentralized nature of large landscape conservation initiatives emerging across North America, the report emphasized “it would be extremely valuable to create a network to bring them all together” (McKinney et al. 2010, 39). Moreover, the report provides some early objectives of a network of practitioners:

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 [understand and refine key elements of success; acquire new skills and tools; network with other large landscape leaders; share lessons learned; coordinate across efforts; etc.]. A secondary objective is to build a national constituency to advocate for large landscape conservation into the future. (McKinney et al. 2010, 40)

On May 18 and 19, 2011, leaders of 19 large landscape conservation initiatives joined ten resource professionals and nine members of the Lincoln Institute of Land Policy’s executive committee on large landscape conservation (collectively, the Founders Group) to explore whether and how to create a network of practitioners working at the large landscape scale. At the end of the two-day session, these leaders decided to create a new “Practitioners’ Network for Large Landscape Conservation” and organized themselves into a Coordinating Committee to provide leadership and direction to the network and three working groups focused on capacity building, public policy, and networking respectively. Additionally, the Founders Group affirmed the following over-arching objectives and began to articulate a series of tasks that formed an emerging work plan for the network:

1. Build capacity for large landscape conservation at various scales and across sectors.

2. Promote and support large landscape conservation efforts.
3. Link existing and emerging large landscape conservation initiatives.

Early Years of the Practitioners' Network

With convening and organizational support provided by the Lincoln Institute—University of Montana partnership, volunteer leaders of the Practitioners' Network developed a Charter to guide the network. An important first decision was to determine how broad the Network should be, with Network leaders deciding that it would be best to include a broad network of people and organizations engaged in all manner of efforts related to large landscape conservation. As such, the Charter describes the Network as “an alliance of people and organizations engaged in leading, managing, researching, advocating, funding, educating or setting policy to advance large landscape conservation initiatives.”⁶

From 2011–2013, the Network evolved from a loose network of people and organizations into a nationally recognized “big tent” forum and collective voice for advancing the theory and practice of large landscape conservation. The Network grew to include conservation and community leaders from the non-profit, academic, private, philanthropic, and public sectors. It gained additional support from the US Forest Service and US Fish and Wildlife Service through agreements with the University of Montana and the University of Arizona. Moreover, the Network focused on “right-sized” efforts that enabled it to achieve several quick successes while it continued to grow, evolve, and find its niche within the large landscape conservation field.

Several early achievements of the Network are listed below:

Organizational Milestones, 2011–2013

- Developed a charter for the network that outlines the Network’s governance structure, membership, and central objectives;
- Established a Coordinating Committee, Policy Working Group, Communications Working Group, and Capacity Building Working Group to organize and lead the activities of the network;
- Developed and launched a web site; and
- Developed and maintained a master mailing list of large landscape conservation leaders and practitioners for e-Newsletters and announcements (500+ subscribers as of November 2013).

Contributions to the Field, 2011–2013

- In coordination with the Regional Plan Association and other partners, developed an inventory and map of large landscape conservation initiatives in the Northeast⁷ and the

⁶ “Charter,” Practitioners’ Network for Large Landscape Conservation. <http://www.largelandscapenetwork.org/wp-content/uploads/2015/12/Practitioners%E2%80%99-Network-Charter-December-2015.pdf>

⁷ “Northeast Landscapes,” Regional Plan Association. www.rpa.org/northeastlandscapes

Rocky Mountain states (McKinney and Johnson 2013) as well as a preliminary list of large landscape efforts across North America⁸;

- Facilitated a series of conversations with the National Fish and Wildlife Foundation, Partners for Conservation, Landscape Conservation Cooperatives, US Forest Service, US Geological Survey, Bureau of Land Management, and other federal agency officials to explore the feasibility of establishing a competitive grants program to promote and support large landscape conservation (ultimately, the Fish and Wildlife Foundation moved forward with a pilot grant program);
- Organized and led full-day seminars at the Land Trust Alliance Rally on large landscape conservation and the role of the Practitioners' Network in 2011 and 2012;
- Organized and convened a full-day seminar on large landscape conservation policy, practice, and performance at the US Institute for Environmental Conflict Resolution's Seventh National Conference, "ECR2012: Working Across Boundaries";
- Facilitated the development of a position paper outlining federal policy positions that would support large landscape conservation for the period 2012–2016;
- Organized a track on large landscape conservation as one of four tracks at the Rocky Mountain Land Use Institute in 2013;
- Organized and led a full-day workshop on large landscape conservation in metropolitan America in conjunction with the American Planning Association Conference in Chicago in 2013;
- Developed and administered a National Survey on Large Landscape Conservation Policy; and
- Organized and convened a three-day workshop for large landscape conservation practitioners in the Intermountain West focused on building knowledge and transferring lessons within the context of the politics, culture, and landscapes of the broader region.

These early efforts resulted in a better understanding of how many people and organizations were engaged in large landscape conservation, where they were focusing their efforts, and for what reasons; how they were working with multiple organizations in pursuit of their goals; what was working; what barriers existed; and what challenges and opportunities remained largely unexamined.

Growing in Scope and Scale

Following these early efforts, the Network pursued two higher-profile efforts that sought to engage even more people and organizations and to expand its reach beyond in-person meetings and workshops: (1) an online learning and knowledge sharing tool, "Taking Conservation to Scale," and (2) the first-of-its-kind National Workshop on Large Landscape Conservation—a workshop that was organized and convened by a diverse group of public, private, non-profit, philanthropic, and academic partners interested in the promise and practice of large landscape conservation.

⁸ "Explore Initiatives," Practitioners' Network for Large Landscape Conservation. www.largelandscapenetwork.org/resources/initiatives

The 2014 National Workshop on Large Landscape Conservation⁹ focused on a key question for the field as a whole: given more than a decade of promising work, what course should we set for large landscape conservation over the coming decade?

To guide this overarching conversation, the National Workshop asked participants to focus on a number of critical questions facing the large landscape conservation community, including:

- How can “mitigation at the landscape scale” foster land conservation and economic development?
- How can we effectively invest for measurable results and environmental resiliency in the context of climate change?
- How can we, across the continuum from urban areas to wilderness areas, engage diverse communities in the green spaces outside their doors?
- How can we leverage advanced technologies and innovative financing tools to dramatically advance the practice of large landscape conservation?

Ultimately, over 650 conservation practitioners, managers, scientists, policy-makers, and other interested individuals from across North America met at the National Workshop on Large Landscape Conservation on October 23–24, 2014, in Washington, DC. They shared their stories and successes as well as their views on the challenges and opportunities ahead for large landscape conservation. Participants also had a chance to connect with one another and explore the most effective tools, strategies, and science available to inform large landscape conservation practice.

The outcomes of the workshop are well-documented in the report “Expanding Horizons: Highlights from the National Workshop on Large Landscape Conservation” (Mitchell et al. 2015). As highlighted in the summary report, the scope of conversations at the National Workshop was expansive and impressive, spanning issues from diversity and inclusion to engaging the next generation, incorporating ecosystems services frameworks and approaches, integrating climate change, and articulating best practices for partnerships and collaboration. In addition, the report highlights the number of participants, sponsors, and organizers of the event—all of which exceeded expectations in sheer size and all of which point to the need for ongoing coordination and communication among the many people and perspectives involved in the field.

For the Practitioners’ Network, the workshop underscored the need to revisit and refine its role as an ongoing forum to examine, explore, experiment, share, and engage on all issues related to large landscape conservation. The National Workshop’s summary report articulated this call to continued action as follows:

Most of all, the conference pointed up the need for greater human and organizational connectivity. Network and networking were among the most frequently used words to appear in post-conference evaluations, (fourth in

⁹ For additional information related to the National Workshop on Large Landscape Conservation, see “2014 National Workshop,” Practitioners’ Network for Large Landscape Conservation. www.largelandscapenetwork.org/2014-national-workshop

frequency after sessions, conservation and landscape, excluding prepositions, basic verbs, and other common words). Large landscape practitioners are asking for more opportunities to forge connections [...] The tangle of obligations, expectations, reputations and mutual interests inherent in integration require a non-hierarchical organizational approach, with longterm, recurrent exchanges that create interdependencies. In short, large landscape conservation requires a diverse networked professional community, people from many walks of life connected by common necessity. Such a complex web must be built with great intention. It must be convened by a facilitative structure, informed by science, and supported as a natural solution to issues of human, wildlife, cultural and ecological health. (Mitchell et al. 2015, 33)

Following the National Workshop, leaders within the Practitioners' Network sought to take stock of the workshop's outcomes and to chart a meaningful and purposeful path forward for the Network. That effort started with a call to all interested Workshop partners and past leaders of the Network to a meeting at the Field Museum in Chicago in January 2015. The results of that conversation mark the beginning of the Network's current stage of development.

The Network's other large-scale effort during this period, "Taking Conservation to Scale,"¹⁰ launched in the spring of 2015 with a series of modules, webinars, and print resources to inform the policy, practice, and performance of large landscape conservation. It includes four core modules and a series of sub-modules, the latter of which draw upon the insights, experience, and expertise of Network partners and affiliates. These resources are provided without cost to any interested person or organization and are designed to both share information and catalyze conversations among practitioners.

- Core Modules
 - Introduction to Large Landscape Conservation
 - Large Landscape Science and Monitoring
 - Community-based Conservation
 - Design and Synthesis
- Sub-modules
 - Conservation Priority Setting
 - Scenario Planning
 - Collective Impact
 - Evaluating Collective Impact
 - Logic Model
 - Climate Change Governance

While "Taking Conservation to Scale" provides a new and useful source of information and guidance for large landscape conservation practitioners, developing the online tool in a way that could serve as a dynamic portal for both sharing information and gathering new insights from users proved difficult. These challenges, which included both content-design and user-interface

¹⁰ "Learning Platform," Practitioners' Network for Large Landscape Conservation.
www.largelandscapenetwork.org/taking-conservation-to-scale

obstacles, highlighted how much organizational capacity and technological know-how is required to design and deliver technology-based tools and resources.

Current Areas of Focus

The January 2015 meeting of the Network’s leadership in Chicago marked the start of the current era. At the meeting, the Network affirmed its role as a community of conservation leaders focused on connecting, educating, influencing, and inspiring fellow conservation practitioners to create a dynamic and innovative community of large landscape conservation practice. The Network also set about to develop its first multi-year strategic plan and to articulate Vision and Mission Statements to guide its work. These are its vision and mission statements:

Practitioners’ Network for Large Landscape Conservation

Vision

A broadly supported and enduring system of connected and protected ecological systems across the globe that sustain vibrant human and natural communities for current and future generations.

Mission

To help people work effectively at large scales, across boundaries to develop innovative strategies, programs, and practices to protect, connect, and steward natural systems at the large landscape scale for the benefit of people and nature.

Continued Focus on Understanding and Improving Practice

While 2015 marked a re-invigoration and broadening of the Practitioners’ Network following the 2014 National Workshop, many of the core ideas and inspirations remained. Notably, there was a continued focus on “the how” of large landscape conservation, including how to collaborate effectively across institutional and geographic boundaries and how to incorporate the best available science at the landscape scale. There was also recognition that convening and connecting were paramount roles for the Network to play, recognizing that large landscape conservation practitioners largely work in isolation at the initiative or sub-regional levels. By playing a linking and connecting role, the Network could leverage and amplify the efforts of individuals and organizations focused on a diversity of issues across a multitude of geographies rather than be limited to the efforts it coordinates and directs.

In the fall of 2015, the Network’s Coordinating Committee identified the following five specific objectives to advance the Network’s mission over the near term in practical and tangible ways:

1. Publish an educational and inspirational primer on large landscape conservation for conservation professionals, community leaders, and other key practitioners in the field.

2. Conduct a detailed survey of large landscape conservation activity across the U.S. to deepen understanding of this rapidly evolving field and to help develop the most effective tools and strategies based on practitioners' needs.
3. Work with the Bureau of Land Management and other land management agencies on an assessment of large landscape conservation efforts and their impacts.
4. Launch a carefully planned and researched exchange program to bring practitioners together to assist in problem solving within specific landscapes, sharing results with the entire community of large landscape conservation practitioners.
5. Expand the Network's website and associated communications (learning modules, e-news, webinars, resource library, LinkedIn Group, and presentations) as vehicles for sharing ideas and inspiring innovation.

Each of these efforts is designed to provide real-world help to key individuals who are facilitating and leading large landscape conservation efforts, often in the face of challenging organizational and political obstacles. To move each of these efforts forward, members of the Coordinating Committee and other large landscape conservation practitioners have formed working groups focused on the design and delivery of each item.

In addition, the Network is developing a more deliberate and sophisticated organizational structure, including hiring a dedicated network coordinator and part-time professional communications assistance. As part of this more formalized organizational structure, the Center for Large Landscape Conservation has taken on the role of fiscal sponsor and executive administrator, providing the core fiscal and administrative functions for the Network as a whole. These organizational developments are focused on ensuring that the many voices and efforts that come together through the Network have the information, support, services, and resources they need to be successful.

Connections to Other Large Landscape Programs and Initiatives

The Role of Other Large Landscape Efforts and Initiatives

The Practitioners' Network is in many ways a "network of networks," and every person participating in the Practitioners' Network is engaged in meaningful large landscape conservation work and often connected to other learning networks and professional associations. The Practitioners' Network Coordinating Committee recognizes the importance of the large landscape conservation activities occurring outside or tangential to the Network as well as the importance of providing opportunities to build relationships and exchange information across these efforts.

There are a growing number of complimentary and intersecting efforts focused on bringing people together at the landscape scale, including the Landscape Conservation Cooperative Network, Living Landscape Observer, Wildlands Network, Scaling Up Initiative, and

Landscapes for People, Food, and Nature initiative, among others. All of these efforts are spearheading important work, generating new knowledge, and connecting even more people to important conversations shaping the future of communities and landscapes.

Networked together, these initiatives not only help each reach a broader audience but also provide new information and insights on what makes large landscape conservation work in different places at different scales across a diversity of issues. One role of the Practitioners' Network in relationship to these other activities is to help link people together to catalyze new conversations, resources, and insights. As one example of this role in practice, members of the Practitioners' Network helped lead discussions about the role of networked governance in large landscape conservation. Those conversations focused on a number of important characteristics of networks—from the general life-cycle of a network to leadership dynamics, political challenges, and the difficulty of measuring progress or success. Ultimately, these discussions led to a series of articles in a special issue of *Frontiers in Ecology and the Environment* focused on Network Governance.¹¹

In addition to efforts to build shared knowledge and understanding, leaders from the Practitioners' Network have been building relationships across networks as well. For example, the Network has been sharing information and ideas with the leadership of the Metropolitan Greenspace Alliance, an alliance of collaborative partnerships working to address landscape conservation challenges in urban areas across the United States. In addition, the Network has worked from its early days to include the important work that public land management agencies are doing to support large landscape conservation, including insights from the Scaling Up team of the National Park Service, the Bureau of Land Management's strategic planning and healthy landscapes teams, the Landscape Conservation Cooperative Network, and others. Similarly, the Network's leadership has stressed the importance of including private landowners in these conversations and has built a relationship with Partners for Conservation, a national group of landowners advancing large landscape conservation as one of their strategies for sustainable private land and resource management. These more informal discussions and activities provide additional layers of depth and richness to our shared understanding of large landscape conservation. Simply by connecting these efforts and providing avenues to share information about their respective activities and insights, the Practitioners' Network is providing access to people, information, resources, and lessons learned that otherwise would not exist.

The Role of US Federal Government

Beyond the role of federal program leadership in the Practitioners' Network, the US federal government has played an influential role in shaping policy and advancing the practice of large landscape conservation through multiple avenues, including: (1) the establishment of the Landscape Conservation Cooperatives; (2) an increasing emphasis on tools and approaches (e.g. the mitigation framework) that are consistent with large landscape conservation; (3) expanding conservation measures under the Farm Bill; and (4) and supporting direct resources and technical

¹¹ *Frontiers in Ecology and the Environment*, Special Issue: Network governance and large landscape conservation, Volume 14, Issue Supplement 3, April 2016.
esajournals.onlinelibrary.wiley.com/hub/issue/10.1111/fee.2016.14.issue-3/

support to cooperative conservation (public-private) approaches to land and water resource issues.

In 2009, the Department of the Interior launched what is arguably the federal government's most explicit and comprehensive effort focused on large landscape conservation—the creation of Landscape Conservation Cooperatives spanning the entire country and including parts of Canada and Mexico. That year, Secretary Ken Salazar issued Secretarial Order No. 3289 to establish the Landscape Conservation Cooperatives (LCCs): a network of 22 individual, self-directed conservation areas covering all of the United States, including Pacific and Caribbean islands, as well as parts of Canada and Mexico. As noted in a recent National Academies of Science review of the LCCs, “the intent of the Secretarial Order was to provide a collaborative framework that could deliver the scientific information needed for effective management and catalyze conservation planning and actions across multiple jurisdictions through partnerships.” (National Academies 2016)

While the LCCs are perhaps the most well-known of the federal programs focused on large landscape conservation, they represent one of many programs and policies that support collaborative resource management at the landscape scale. A representative sample of other federal programs and policies, organized by the lead agency or department, is provided below:

White House

- President Obama issued an Executive Order titled “Preparing the United States for the Impacts of Climate Change” on November 1, 2013, which promotes: (1) engaged and strong partnerships and information sharing at all levels of government; (2) risk-informed decision-making and the tools to facilitate it; (3) adaptive learning, in which experiences serve as opportunities to inform and adjust future actions; and (4) preparedness planning.¹²

US Department of Agriculture

- USDA Secretary Vilsack initiated an All Lands Strategy in 2009, recognizing the need to manage the nation's forests across private and public boundaries.¹³
- Multiple USDA Forest Service programs adopt a landscape scale approach, including the Office of the Climate Change Advisor,¹⁴ the Climate Change Scorecard,¹⁵ Collaborative

¹² “Executive Order—Preparing the United States for the Impacts of Climate Change.” White House. www.whitehouse.gov/the-press-office/2013/11/01/executive-order-preparing-united-states-impacts-climate-change

¹³ “Agriculture Secretary Vilsack Presents National Vision for America's Forests.” US Department of Agriculture. www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=2009/08/0382.xml

¹⁴ “Office of the Climate Change Advisor,” USDA US Forest Service. www.fs.fed.us/climatechange/advisor/

¹⁵ “Performance Scorecard for Implementing the Forest Service Climate Change Strategy,” USDA US Forest Service. www.fs.fed.us/climatechange/advisor/scorecard.html

Forest Landscape Restoration Program (CFLRP),¹⁶ Watershed Condition Framework,¹⁷ National Forest Management Plans under the 2012 Planning Rule,¹⁸ and the national Inventory, Monitoring, and Assessment Strategy.¹⁹

- There are multiple conservation provisions of the 2014 Farm Bill²⁰ that support large landscape conservation activities, including the new Regional Conservation Partnership Program.²¹
- In addition, the Natural Resources Conservation Service has implemented a broad spectrum of landscape conservation initiatives since January of 2009.²² These initiatives enable NRCS to more effectively address priority natural resource concerns by delivering systems of practices, primarily to the most vulnerable lands within geographic focus areas.

US Department of the Interior

- Secretarial Order 3289 launched the Landscape Conservation Cooperatives (LCCs) to better integrate science and management to address climate change and other landscape scale issues. The Secretarial Order also established eight regional climate science centers.²³
- Secretarial Order 3323 established the America's Great Outdoors Program within the Department of the Interior to recognize, conserve, and enhance America's landscapes of national significance; urban wildlife and park areas; and America's rivers, lakes, and estuaries.²⁴
- Secretarial Order 3330 establishes a department-wide mitigation strategy that will ensure consistency and efficiency in the review and permitting of infrastructure development projects and in conserving our Nation's valuable natural and cultural resources.²⁵ Central

¹⁶ "Collaborative Forest Landscape Restoration Program," USDA US Forest Service. www.fs.fed.us/restoration/CFLRP/

¹⁷ USDA US Forest Service, 2010. "Watershed Condition Framework." Available at: www.fs.fed.us/sites/default/files/legacy_files/media/types/publication/field_pdf/Watershed_Condition_Framework.pdf

¹⁸ "The Forest Planning Rule," USDA US Forest Service. www.fs.usda.gov/planningrule

¹⁹ "Inventorying and Monitoring," USDA US Forest Service. www.fs.fed.us/emc/rig/inventory_monitoring.shtml

²⁰ "2014 Farm Bill Programs," USDA Natural Resources Conservation Service. www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farbill/?cid=stelprdb1244022

²¹ "2014 Farm Bill—Regional Conservation Partnership Program," USDA Natural Resources Conservation Service. www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farbill/rcpp/?cid=stelprdb1242732

²² "NRCS Landscape Conservation Initiatives," USDA Natural Resources Conservation Service. www.nrcs.usda.gov/wps/portal/nrcs/detail/national/home/?cid=stelprdb1042113

²³ "Secretarial Order 3289," US Department of the Interior. www.doi.gov/sites/doi.gov/files/migrated/whatwedo/climate/cop15/upload/SecOrder3289.pdf

²⁴ "Secretarial Order 3323," US Department of the Interior. www.doi.gov/sites/doi.gov/files/migrated/news/pressreleases/upload/AGOordersigned.pdf

²⁵ "Secretarial Order 3330," US Department of the Interior. www.doi.gov/sites/doi.gov/files/migrated/news/upload/Secretarial-Order-Mitigation.pdf

to this strategy will be the use of a landscape-scale approach to identify and facilitate investment in key conservation priorities within a region.²⁶

- The Bureau of Land Management is developing a landscape-scale management approach to better manage wildfire, control weeds and insect outbreaks, provide for energy development and urban growth, and address pervasive impacts from the effects of climate change. The BLM's efforts include the development of Rapid Ecoregional Assessments,²⁷ Ecoregional direction,²⁸ and field implementation, among others.
- Forty-nine National Heritage Areas have been designated by Congress and are administered by the National Park Service as places where natural, cultural, and historic resources combine to form a cohesive, nationally important landscape.²⁹
- The National Park Service's Call to Action report focuses on "Scaling Up"—promoting a large landscape conservation approach to support healthy ecosystems and cultural resources in and around national parks.³⁰

US Department of Defense

- The Department of Defense's Readiness and Environmental Protection Integration (REPI) supports cost-sharing partnerships between the military Services, private conservation groups, and state and local governments to protect military test and training capabilities and conserve land.³¹ Many of these partnerships are connected to larger landscape conservation efforts, including the Longleaf Pine restoration initiative.
- Through the Sentinel Landscapes partnership, the US Department of Agriculture (USDA), US Department of the Interior (DOI) and Department of Defense (DOD) work together near military installations to help farmers and ranchers make improvements to the land that benefit their operation, enhance wildlife habitat, and enable DOD's training missions to continue.³²

US Department of Transportation

- The Department of Transportation is leading efforts to integrate transportation planning and policy with social and ecological planning efforts at regional and landscape scales,

²⁶ The Energy and Climate Change Task Force, 2014. "A Strategy for Improving the Mitigation Policies and Practices of the Department of the Interior: A Report to The Secretary of the Interior." US Department of the Interior. www.doi.gov/sites/doi.gov/files/migrated/news/upload/Mitigation-Report-to-the-Secretary_FINAL_04_08_14.pdf

²⁷ "Rapid Ecoregional Assessments," Bureau of Land Management. www.blm.gov/wo/st/en/prog/more/Landscape_Approach/reas.html

²⁸ "Ecoregional Direction," Bureau of Land Management. www.blm.gov/wo/st/en/prog/more/Landscape_Approach/direction.html

²⁹ "National Heritage Areas," National Park Service. www.nps.gov/history/heritageareas/

³⁰ "A Call to Action," National Park Service. www.nps.gov/calltoaction/

³¹ "Readiness and Environmental Protection Integration," US Department of Defense. www.repi.mil

³² "Agriculture, Interior, and Defense Departments to Announce Sentinel Landscapes Partnership," US Department of the Interior. <https://www.doi.gov/news/mediadvisories/usda-dod-and-doi-to-announce-sentinel-landscapes-partnership>

including performance-based planning, planning for megaregions, and ways to incorporate considerations of climate change mitigation and resilience, sustainability, and public health, including the Eco-logical Approach to developing infrastructure projects.³³

Office of Personnel Management

- The OPM’s Learning and Knowledge Sharing Strategy³⁴ focuses on establishing a sustainable culture of learning and collaboration by focusing on people and processes and by establishing communities of practice that use action learning to solve organizational problems and spread innovation—consistent with a collaborative approach to large landscape conservation.

Capturing and Sharing Information, Tools, Strategies, and Lessons

As the Practitioners’ Network has evolved, Network leaders and coordinators have encountered useful information, tools, strategies, and lessons that can inform theory and practice.

Tools and Resources

Thinking and acting at the large landscape scale is complex, time-intensive work. Large landscape conservation by nature encompasses multiple jurisdictions, competing interests, complicated relationships, complex social-ecological processes, and ever-changing conditions.

Thankfully, there is a growing suite of tools and resources that can help those working at the large landscape scale better understand landscape conditions and trends, make sense of complex technical data, and improve group processes and decision-making. Moreover, as more people and organizations gain experience applying these tools in the context of large landscape conservation, there are emerging lessons about how best to use these tools and resources. The tools and resources presented below are categorized by the role they play in supporting large landscape conservation:

1. Tools that support collaborative approaches to large landscape conservation planning and governance;
2. Science- and GIS-based decision-support tools that inform conservation priority setting, planning, and design; and
3. Tools that aid in monitoring and evaluation.

Regardless of the tool or approach, it is important to remember that these tools are most effective when you know what you need. As noted in a recent article in *Conflict Resolution Quarterly*, “A

³³ “Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects” U.S. Department of Transportation Federal Highway Administration. www.environment.fhwa.dot.gov/ecological/eco_index.asp

³⁴ US Office of Personnel Management, 2011. “Learning and Knowledge Sharing Strategy.” Version 1.0. <https://www.opm.gov/about-us/open-government/reference-materials/learning-and-knowledge-sharing-strategy.pdf>

tool is a solution to a stated or unstated problem; a team needs to be certain that [everyone involved is] solving the same problem and view[s] the chosen tool as a solution in the same way.” (Cravens 2014)

Planning and Governance

Large landscape conservation is inherently a shared endeavor. It takes working across agency, jurisdiction, and sectoral boundaries to match the large landscape scale of many of our most pressing environmental and natural resource challenges. While there is shared interest and excitement in coming together to understand and address large landscape conservation issues, navigating the complexities of multiple interests and organizations, including the multiple scales at which people and information are organized, can be challenging. Below, a number of tools and resources are presented that can help sort through the challenges of (and help reach the potential of) collaboration in action.

There have been several notable efforts to capture the key elements of collaborative, large landscape conservation. *Working Across Boundaries* (McKinney and Johnson 2009) was an early attempt to capture the core principles of regional collaboration from startup and design, to developing a shared agenda, to sustaining an organization. *See Table 1: Ten Principles for Effective Regional Collaboration*. In 2012, the Bureau of Land Management and the Sonoran Institute engaged in a similar examination of collaborative approaches and distilled key themes and principles of collaboration in *Sustaining Large Landscape Partnerships: Strategies for Success* (Spillane and Wilson, 2012)—*see Table 2: The Seven Principles of Successful Collaboration*. The *Regional Conservation Partnership Handbook* (Labich, 2015) is a more recent look at what it takes to build effective partnerships at scale. The handbook moves beyond general principles and focuses instead on the key steps regional conservation partnerships should take to ensure success. Specifically, the handbook outlines 10 steps of collaborative conservation organized around three life stages—emerging, maturing, and conserving. Together, these resources provide helpful guidance in thinking through the broad contours of what it takes to build effective and enduring partnerships to think and act at the large landscape scale.

Table 1: Ten Principles of Effective Regional Collaboration

Diagnose	Design	Take Action	Evaluate
Identify the compelling issue or catalyst.	3. Determine who should convene and lead the effort.	7. Facilitate scientific and public learning.	10. Learn as you go and adapt as needed.
Determine if there is a constituency for change.	4. Mobilize and engage the right people.	8. Develop an action plan.	
	5. Define the region to match the place, problem, and people.	9. Move from vision to action.	
	6. Get organized.		

Source: McKinney and Johnson 2009

Table 2: The Seven Principles of Successful Collaboration

The Seven Principles of Successful Collaboration	
1	Build Lasting Relationships
	The most important factor for success is the strength of the relationships among the participants in a collaborative process. Developing trust and building credibility are paramount.
2	Agree Upon Legal Sideboards Early On
	The group’s decision-making authority must be clearly articulated and understood. Agency partners must be clear about any mandates and legal processes they need to follow.
3	Encourage Diverse Participation and Communication
	Diverse interests and perspectives should be invited to participate. This diversity brings additional insight and experience on different elements of a shared problem and contributes to a broader base of support for any decision reached.
4	Work at an Appropriate Scale
	The scale of the solution should match the scale of the underlying problem rather than match up with jurisdictional boundaries.
5	Empower the Group
	A group where everyone feels empowered to bring their ideas, experience, and expertise to the problem solving process will often lead to a more robust and durable solution.
6	Share the Resources and Rewards
	All participants should benefit from access to any additional information and resources that result from the collaborative process.
7	Build Internal Support
	Participants should work to secure the early and on-going support of their home agency, institution, or organization.

Source: Adapted from Spillane and Wilson 2012

In addition to these handbooks focused specifically on the context of large landscape conservation, there are a variety of useful guides for developing and leading collaborative, multi-sector forums regardless of issue or setting. The recently produced MSP Guide: How to Design and Facilitate Multi-Stakeholder Partnerships from the Centre for Development Innovation at Wageningen University and Research Centre is particularly useful and includes 60 tools that help multiple parties sort through issues, set priorities, take collective action, and follow through on their commitments. The guide is part of a broader “knowledge co-creation portal” focused on multi-stakeholder partnerships and is accessible at: www.mspguide.org/

Communications Tools

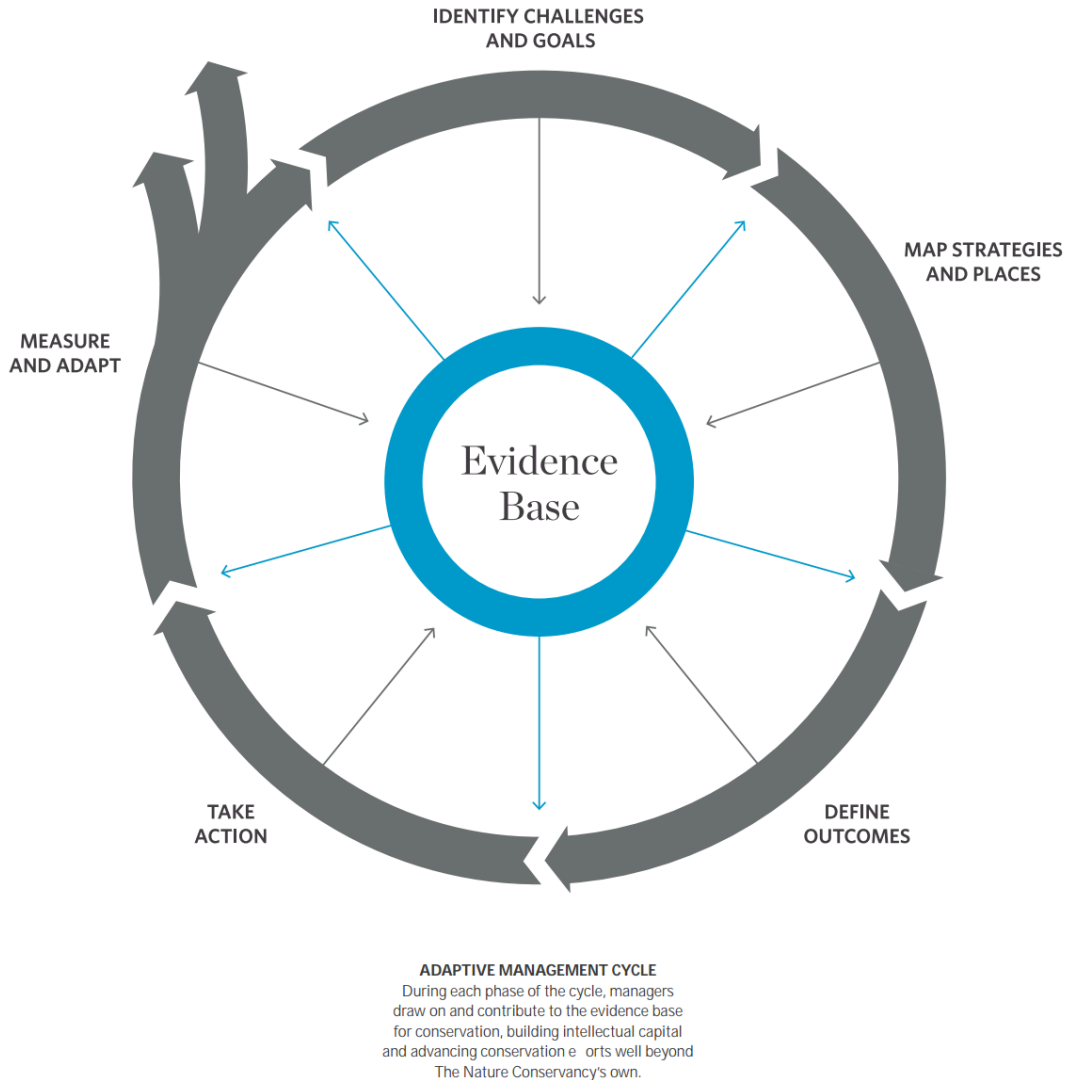
Effective internal and external communications strategies are critical to large landscape conservation success. While many people and organizations involved in large landscape conservation communicate effectively about a specific project or issue, few have the knowledge, expertise, or skills to develop communications and outreach strategies that focus on key messages or core audiences. Resource Media, a non-profit organization focused on helping the conservation community develop and deepen communications skills provides a helpful overview of tools, resources, and worksheets on their website at: www.resource-media.org/toolbox/ Among the tools and resources they provide are guides for messaging, working with the media, and using social media.

Science- and GIS-based Decision-support Tools

There are an ever-growing number of science- and GIS-based tools that provide important insights into large landscape conservation. Two notable science-based planning frameworks are The Nature Conservancy’s “Conservation by Design” and the “Landscape Conservation Design” approach being utilized by many of the Landscape Conservation Cooperatives (LCCs).

The Nature Conservancy’s Conservation by Design is an evidence-based, adaptive management approach to conservation, as depicted in the graphic below. The process emphasizes that conservation decisions and actions should be based on the best available science and that partners should continuously and rigorously examine the assumptions that are intrinsic in the work of collaborative conservation (Edwards 2015).

Figure 1: Conservation by Design



Source: The Nature Conservancy 2015

Landscape Conservation Design is also an adaptive management framework. It emphasizes the role of the landscape partnership in driving the adaptive learning and management process. Moreover, the Landscape Conservation Design approach “seeks to integrate societal values and multi-sector interests with the best-available transdisciplinary science to assess spatial and temporal patterns, risks, and opportunities” (Campellone, Griffin Groups LCD Community of Practice). The Landscape Conservation Design approach was introduced at the 2014 National Workshop on Large Landscape Conservation and has been utilized by several Landscape Conservation Cooperatives. An ongoing community of practice on Landscape Conservation Design is hosted on Griffin Groups and is accessible at:

<https://griffingroups.com/groups/profile/50095/landscape-conservation-design-lcd>

Whether within these adaptive management frameworks or in other contexts, there are innumerable tools that can help large landscape conservation practitioners examine specific questions or trade-offs. Below are several websites that aggregate tools particularly relevant to large landscape conservation:

- LCC Network Decision Support Tools
www.lccnetwork.org/resources/decision-support-tools
This site provides “online decision-support tools developed by LCCs to help meet large-scale and long-term conservation challenges.”
- SCOTie: Successful Communities Online Toolkit Information Exchange
www.scotie.org
SCOTie “is a database of active model smart growth and resource protection plans and policies from rural, amenity, and urban communities across the West. The information contained within the toolkit is designed to inform planners of best practices from peer western communities to preserve local identity, stimulate a healthy economy, safeguard natural and cultural resources, and empower communities to craft policies that fit their local circumstances.”
- World Wildlife Fund Conservation and Science Tools
www.worldwildlife.org/pages/conservation-science-data-and-tools
WWF’s tools page provides access to conservation science tools and datasets aimed at improving the effectiveness and efficiency of conservation activities.
- International Union for the Conservation of Nature (IUCN) databases and tools
www.iucn.org/knowledge/tools/
IUCN is a global community of 11,000 scientists with a primary focus on sharing knowledge, in part through a providing wealth of online conservation databases and action tools.
- NatureServe’s Data, Maps, and Tools
www.natureserve.org/conservation-tools/data-maps-tools
NatureServe provides a variety of information and tools in various formats, from raw data, to ready-made maps, to tools that can be used and adapted to specific landscapes.
- Data Basin
www.databasin.org
Data Basin “is a science-based mapping and analysis platform that supports learning, research, and sustainable environmental stewardship.”
- Landscapes for People, Food, and Nature
www.peoplefoodandnature.org/learning-network/find-tools
The site provides examples and tools of integrated landscape management from across Asia, Latin America, and Africa.
- Climate Adaptation Knowledge Exchange

www.cakex.org/tools

The Tools section of CAKE “directs you to the wealth of tools available online to help you process climate change information and make adaptation decisions. Within each Tools entry, you can also find related Case Studies, Virtual Library resources, and Directory entries; these links provide users with more detailed information about how and by whom a tool has been used.”

- Corridor Design

www.corridordesign.org/designing_corridors/resources/gis_tools

For those interested primarily in wildlife and habitat, Corridor Design provides an array of free tools for modeling wildlife and ecological corridors, connectivity, and habitat.

- Ecosystem Services Partnership

www.fsd.nl/esp/79757/5/0/50

The Partnership provides guidelines and toolkits to help organizations effectively apply the concept of ecosystem services to their conservation and planning efforts.

GIS Tools in Practice: The Conservation Innovation Center at the Chesapeake Conservancy

The Chesapeake Conservancy decided early on that in order to realize the potential benefits of available science, data, and technology-based tools, it would have to invest in the resources to bring those benefits to life in the region. The Conservancy’s answer to the challenge: its Conservation Innovation Center, a hub within the Conservancy dedicated to maximizing efficiency and effectiveness at targeting land for conservation by connecting the right conservation partners with the right products and processes. To date, the Conservation Innovation Center has partnered with colleges and universities throughout the Chesapeake watershed to leverage cutting-edge research and facilities. In addition, the Center is developing new spatially explicit methods for identifying landscapes that provide the best opportunities for conservation and restoration. The Center is also using technology and mobile platforms to engage the public, teaching them about the landscape and inviting them to participate in the Conservancy’s conservation activities. As the Conservation Innovation Center gains experience and expertise in applying these tools and technologies at the large landscape scale, it is both sharing lessons learned through conferences and reports as well as working on refined tools that can be shared broadly with other large landscape conservation efforts. More information is available at: www.chesapeakeconservancy.org/innovate

Monitoring and Evaluation Tools

One of the most critical roles that tools can play in large landscape conservation is in helping people monitor and track conditions, examine trends, and adapt plans and management approaches based on the results of those efforts. As with any of the tools described above, monitoring and evaluation efforts are most successful when they are thoughtfully designed to meet specific needs and are carefully implemented using consistent protocols.

Social Network Analysis in the Crown of the Continent

Understanding how the individual or organizational members of a network are connected to and sharing information with one another can lead to critical insights about the relationships within a network. Social network analysis is an especially powerful tool for exploring what these connections look like in practice and how they are changing over time.

The Roundtable on the Crown of the Continent began using social network analysis in 2013 to track the social connections among organizations involved in the Roundtable’s Adaptive Management Initiative—a suite of adaptation projects aimed at improving the region’s community, culture, and conservation values. The results of that analysis are summarized in the box below. From 2013 to 2014, the core organizations in the AMI network expanded from 12 to 21, and the number of ties expanded from 64 to 169. In 2014, each organization had on average 8.4 ties to other organizations, up from an average of 5.3. In 2015, the number of core AMI organizations went from 21 to 25, and the number of reported ties actually decreased slightly from 169 to 163.

By tracking these connections and relationships over time, AMI project managers were able to see whether and how organizations were connected across the entire ecosystem and with respect to particular conservation concerns and projects. They could also gain insight into how information was flowing throughout the network. These insights helped both the project managers and participants in the AMI network understand where the network was effectively scaling up by connecting individual, place-based efforts with peer organizations across the region as well as where there were potentially missed opportunities to connect organizations with shared interests or complementary capacities.

Figure 2: Adaptive Management Initiative Social Network Analysis Results

AMI Network Analysis Results				
	Pre-2013*	2013	2014	2015
Number of organizations	12	12	21	25
Number of connections	19	64	169	163
Average ties per organization	3.08	5.33	8.04	6.52
Density	--	.53	.401	.272
Number of network subgroups	--	2	2	3

*Pre-2013 data was collected using interviews and network relationships were coded through qualitative analysis. Data for 2013, 2014, and 2015 was collected using standardized survey protocol.

Source: Reuling et. al. 2015

The tools and resources presented are just some of the many options available to practitioners and partners engaged in large landscape conservation. As noted at the beginning of this section, the challenge isn’t necessarily finding tools suitable for large landscape conservation but in finding the right tool for the specific large landscape challenge or opportunity facing a particular collaborative large landscape conservation initiative.

Harvesting Lessons from Experience

One of the defining characteristics of large landscape conservation is that it defies a one-size-fits-all approach. While many organizations are developing tools, resources, and strategies to support practitioners, there is no substitute for reaching out directly to practitioners to learn about how they are doing their work, what is working, what is not, and what challenges they face moving forward. To help explore these dynamics, the Practitioners' Network has administered two surveys, one on monitoring and evaluation and one on federal policy barriers. A summary of the results of those surveys is provided below:

Monitoring Survey

To gain a sense of how large landscape conservation initiatives are applying monitoring and evaluation, the Practitioners' Network, with support from the USDA Forest Service and the US Fish and Wildlife Service, sponsored a nationwide survey of large landscape conservation programs. The questionnaire asked practitioners about the purpose and scope of their monitoring and evaluation efforts, who participates, the kinds of obstacles they face, and their views on what constitutes successful monitoring and evaluation. It also asked respondents to share monitoring "success stories" from their experiences. From January to March 2013, practitioners submitted 68 completed surveys.

The responses suggest that major challenges to monitoring fall primarily into two broad categories: (1) practical challenges, including lack of funding and time, and (2) organizational challenges, including outdated mandates, competing priorities, internal opposition to evidence-based methods, and difficulty in linking monitoring results to decision making. Additionally, respondents said that successful monitoring efforts are those that confirm they are meeting their goals, have an impact on program and policy, engage partners, and meet standards for quality and credibility.

These insights will be helpful in developing appropriate learning materials for the Network's membership, targeting learning materials and events to appropriate audiences, and facilitating broader sharing of insights and lessons learned. The common themes that emerged in the survey, particularly those related to the inherent challenges of monitoring, and the key elements in respondents' definitions of successful monitoring efforts, will be important in crafting content and core messages to the practitioner community, and may serve as a basis for a more unified definition and assessment of monitoring quality.

Policy Barriers Survey

In fall 2013, the Network conducted another survey with large landscape conservation practitioners. This second survey explored policy barriers and other policy-related aspects of large landscape conservation. The Network's Policy Working Group designed the scope and contents of the survey; the Department of Interior and the USDA Forest Service provided support to the Network for survey design, analysis and reporting. In addition to exploring policy barriers and dynamics, the Network hoped to use the survey results as a foundation for future planning and collaboration to advance policy ideas and proposals.

The Network worked with various partner to openly distribute the survey and encouraged recipients to share the survey with other interested parties. For this reason, the analysis is not statistically representative, but rather represents a general summary of practitioners' perspectives. The Network received 405 completed surveys from across a variety of geographies and sectors.

The following statements are drawn from a report of the survey results (Fisher et al 2014) and represent general conclusions and recommendations based on survey responses and the report authors' analysis:

- Federal agencies, non-profit conservation organizations, and scientific organizations appear to be leading the development of large landscape conservation initiatives, while state, county and municipal governments are becoming more active players. Concerns regarding the role of private landowners, tribes, and the business community should be addressed through enhanced education, outreach, and the development of new partnership opportunities.
- Large landscape conservation is occurring at a range of scales, and three primary themes are driving the approach: (1) species/habitat conservation, (2) ecosystem conservation, and (3) water/watershed conservation. Regional planning initiatives, watershed partnerships, and emerging metropolitan planning efforts offer important models for large landscape conservation practitioners, as do a range of federal programs (DOI's Landscape Conservation Cooperatives, public lands planning efforts, the Forest Service's Collaborative Forest Landscape Restoration programs, USGS's Climate Science Centers and the BLM's Rapid Eco-Regional Assessments). Large scale infrastructure development projects (e.g., energy, transportation, water) are viewed as both an opportunity and a threat to large landscape conservation initiatives.
- The big drivers to shift to a large landscape conservation approach appear to be experience with collaborative processes and efforts (including the many programs cited above), targeted funding, perceived threats to environmental health, and supportive new science and information.
- Habitat fragmentation, invasive species, climate change, drought, and wildfire are viewed as the most serious environmental threats, and they are also reported as primary catalysts for large landscape conservation efforts. Lack of awareness, weak planning and zoning policies, large-scale development projects, and population growth are considered the most important socio-economic challenges.
- The biggest constraints to implementing large landscape conservation approaches appear to be institutional, including lack of leadership, time and budget limitations, conflicts over management goals, and lack of coordination between jurisdictions and organizations. Respondents noted specific concerns about federal agencies' capacity to implement large landscape conservation actions due to limited staff, leadership turnover, lack of clear priorities and directives, insufficient funding, and the perception of generally hostile public.

- In terms of relevant federal policies, respondents shared concerns about time and cost, inconsistency across agencies, general limitations on agency capacity (staff and funding), and procedural challenges. Many recommended expanding the scope and scale of NEPA analysis, and there were a number of specific recommendations on improving and streamlining partnership authorities and funding mechanisms.
- Respondents complained about the lack of a common source or database for information about large landscape conservation efforts and suggested working toward greater coordination among agencies, reconciling units and scales, and making information more generally accessible.
- In summarizing the priority actions that can enhance support for large landscape conservation efforts, respondents again focused on institutional change and capacity building, increased funding support, reform of key policies (particularly NEPA and the Federal Advisory Committee Act (FACA)), greater public outreach, improved coordination among agencies, and more engagement with private landowners.
- Priorities identified for research included the need for more social science research (on the attitudes and behaviors related to large landscape conservation), performance metrics, case studies and lessons learned, and more natural science research on the effects of fire and climate change on ecosystem health.

Considerations for the Future of the Large Landscape Conservation Theory and Practice

These efforts to explore large landscape conservation and to support an emerging community of practice focused on the theory, practice, policy, and performance of large landscape conservation have yielded important new insights, tools, and approaches. Yet it feels as though we are in many ways just scratching the surface of what is possible when the right mix of people come together to focus their attention and capacities on the large landscape challenges we face. Nearly across the board, from practical and organizational challenges, to better integrating science and technology, to improving policy and governance frameworks, there appears to be tremendous opportunity to do more.

What do we need to do to take these important strides forward?

It likely starts with continued focus on building a robust community of people and organizations engaged in large landscape conservation. Making sure that everyone with an interest in large landscape conservation is invited and included in shaping the future of the field will yield tremendous returns over time. By sharing our collective experience and insights, we'll have a much better understanding of common challenges and the key ingredients for success. We'll also be better able to problem-solve around the unique challenges that present themselves in the context of a particular landscape.

To take those next steps, we'll also need to apply some of the lessons of large landscape conservation itself, exploring options to operationalize the Network at different scales and

focused on specific issues to make sure that people are able to connect with information or expertise in a way that is relevant and timely to the issues they are facing. That means looking at the Network as a whole and at sub-groups within the Network to explore gaps, identify needs, and build additional capacity where needed. It also means strengthening the relationships that enable the Network to function at their best—finding more time and resources to bring people and organizations together in well-designed forums to catalyze and strengthen relationships, ideas, and programs.

It will mean continued focus on the institutional, organizational, financial, and operational barriers we face to working across agencies, boundaries, sectors, and issues. This will mean better understanding individual resources, capacities, and expertise in relationship to those of other partners, both at the landscape scale and in consideration of activity at smaller and broader scales. Moreover, it will require examining options to remove or lower policy and regulatory barriers where possible to better enable the efficient and best use of time, energy, and resources.

Finally, it will likely take a more compelling storyline supported by better evidence. We are only beginning to understand what large landscape conservation is delivering in terms of a better future for people and nature. This community of practice should endeavor to improve the ways it monitors and evaluates its performance and communicates its success. And it should find ways to engage and motivate people with engaging stories as much as it does with solid research and analysis.

This final recommendation perhaps points to a far-distant future where the large landscape community of practice fades into the background, where society has realized and implemented the large landscape conservation vision entirely and where the interactions of people in response to landscape scale needs and dynamics are so much a part of business as usual that our attention can turn to other issues and challenges.

Until that time, it's onward with the business at hand. Together, we have much to learn, much to do.

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