

CONSERVATION PRIORITIES AND COLLABORATION IN THE UPPER MIDWEST AND GREAT
LAKES LANDSCAPE CONSERVATION COOPERATIVE

BY

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THESIS

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ABSTRACT

Large-scale drivers of environmental change, such as invasive species, climate change, and human land use, are prompting conservation planning and action at a landscape or regional scale. Historically, natural resource agencies worked within individual jurisdictional boundaries – both geographical boundaries and those boundaries created by differing missions. Yet the shift towards regional-scale conservation is prompting cross-jurisdictional coordination and collaboration among the various natural resource management agencies and conservation organizations within a region.

Landscape Conservation Cooperatives (LCCs) were established in 2009 by the US Department of the Interior in response to large-scale environmental drivers. Twenty-two LCCs were established in North America. They were provided a structure for operation as well as funding and asked to create a cooperative of conservation players that would work together on shared issues. These regional bodies are made up of representatives from federal, state, and tribal governmental agencies, inter-governmental commissions and joint ventures, and non-governmental organizations. LCCs provide an opportunity to study two facets of regional conservation – priority setting and collaboration.

A Shared Conservation Priorities Assessment was conducted for the Upper Midwest and Great Lakes LCC in 2012 to aid them in setting conservation priorities for future work. A mixed methodology approach was used to assess the perspectives of LCC members and help them arrive at a set of shared priorities. The iterative and sequential process ensured that results from one phase were used to help create subsequent phases. The sequential process provided time for relationship-building between the researchers and participants and between the participants

themselves. Semi-structured interviews, a document analysis, a Q-sort, and a workshop were used in the assessment.

Results show that the mixed methodology approach used to assess conservation priorities provided three overarching benefits. First, qualitative data gathered in preliminary phases of the assessment helped establish a foundational understanding of participant perspectives regarding the preferred role of the LCC in the Upper Midwest and Great Lakes region. That data were carried through and incorporated in subsequent phases and provided a road map for the LCC's future activities. Second, the different methodologies produced several kinds of data, allowing the researchers to present the data in multiple ways. Interview data was presented through quotes highlighting strongly-articulated perspectives, as well grouped into themes for a more quantitative understanding of the prevalence of perspectives. Word maps were created to visually assess how subgroups within the LCC were articulating conservation priorities. Background document data and Q-sort data were presented in tables and charts. The ability to display the data in numerous ways provided for a more holistic understanding of the data and is a benefit of mixed methods. Third, results from the interview and Q-sort phases of the assessment were kept confidential by the research team, which ensured that results were less biased and that each participant was represented equally. Many assessments of this nature found in the literature and undertaken by other LCCs do not use confidential results in their assessment processes.

The push for increased collaboration among conservation groups is due to the widespread and complex nature of many natural resource issues today, which require increasingly new skillsets. In addition, the push for more collaboration stems from declining agency budgets and reduced manpower. To better understand conservation collaboration in a regional setting, a conceptual framework based on natural resource collaboration literature was developed. This

framework identifies three “spaces” where barriers to effective collaboration may arise, including within individual agencies, between agencies, and external to a collaboration. This framework was used to assess barriers to effective conservation collaboration and best strategies for collaboration from the perspectives of natural resource professionals engaged in the LCC.

Participants provided new perspectives about barriers to effective conservation collaboration, but many of their thoughts built on ideas framed in existing literature. For example, constrained resources, stagnant agency culture, and a lack of trust were some of the barriers identified by participants that are also echoed in the literature. New barriers were also articulated, including having too many people in a group, individual personalities that aren’t collaborative, and having a large number of existing collaboration initiatives in a region. The conceptual framework used to examine barriers to effective collaboration provided a new way to understand where barriers are occurring and the potential for addressing them.

This study provides insight to LCCs and other regional conservation initiatives regarding priority assessment methodologies and a new way to examine barriers to effective collaboration.

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CHAPTER 1: INTRODUCTION

Natural resource management agencies and conservation organizations in the United States work to conserve natural resources in ways that are reflective of their missions or government mandates. Some agencies or organizations are charged with conducting science or protecting endangered species, while others work to maintain game animal populations or preserve tracts of land. Although conservation is generally used as an all-encompassing term for protecting or preserving resources, these organizations take a variety of different approaches to achieve their conservation goals. This diversity of approaches to conservation makes complicated two recent shifts in the conservation field. The first shift is a movement towards working at larger scales, such as at the region or landscape level. The second is an increase in collaboration among conservation entities and natural resource agencies within these landscapes.

Historically, agencies and organizations working on natural resource issues in the United States worked within their individual jurisdictional boundaries – both geographical boundaries and the imaginary boundaries created by differing missions. Yet many contemporary environmental issues, such as climate change and invasive species, occur over large areas and do not heed jurisdictional boundaries. Because such issues are broad-reaching, natural resource agencies and conservation organizations can no longer work independently to address them. In order to move beyond the individual jurisdiction approach, new conglomerations of federal, state, and tribal agencies, as well as NGOs and local entities are attempting to work together on conservation issues that span larger geographic regions. Specifically, regional or landscape scale conservation efforts are increasing in federal resource management agencies (Leong et al. 2011).

“Landscape” has been characterized as the scale at which humans engage with environmental phenomena (Gobster et al. 2007). Similar to “regions,” the terms have no pre-

defined geographical extent, and spatial interpretations of these terms vary. They are generally used to describe areas that are larger than some smaller, defined unit. The terms are used interchangeably in this text. They both involve a sense of hierarchy by referring to some middle scale, where they are affected by processes occurring at smaller scales, and also by processes at larger-scales (Nassauer 1997). Both landscapes and regions therefore lie nested in the middle range of a set of interrelated scales.

Landscapes and regions are also inherently heterogeneous (Nassauer 1997). In natural resource management and conservation efforts, that heterogeneity can refer to ecological diversity or the engagement of multiple human entities across a landscape. Conservation at a regional or landscape scale is complex. Taking action at a larger scale may mean those actions more closely match the scale of certain ecological processes, but other issues come into play. For example, the number of conservation partners within a region and the resulting jurisdictional complexity can complicate efforts of working at that scale. Each conservation entity will have their own mandates, resources, and beliefs, and those need to be negotiated for successful collaboration to occur.

Barbara Gray defines collaboration as “a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible” (Gray 1989: 5). Collaboration in natural resource management can take different forms and goes by many names, including coordinated resource management (Conley and Moote 2001), co-management (Conley and Moote 2001, Plummer and Fitzgibbon 2004), and collaborative planning (Margerum 2002, Goldstein and Butler 2010), among others. The various types of collaboration can be defined based on how the partners within them work together and the nature of their activities (such as planning,

management, science, etc.). Thorough research has been completed on the challenges with collaboration between agencies and entities. A number of factors have been identified as potential barriers to effective collaboration, as well as a number of strategies for successful collaboration.

Typically, collaboration between groups is catalyzed by a specific natural resource issue, but not always (Genskow 2009). For example, Wisconsin's Department of Natural Resources established "basin partnerships" in the late 1990s and did not clarify specific objectives for them (Genskow 2009: 419). They found that these partnerships lacked "clear drivers for collaboration that would unite stakeholders", and that the ability of these partnerships to "reduce issues and identify a clear focus proved critical for their long-term viability" (Genskow 2009: 419). Whether oriented around a clear catalyst or not, the recent push for more collaboration has provided incentives for groups willing to work with others.

As conservation organizations strive to work more holistically across landscapes and with various partners, difficulties can arise over how to set objectives and arrive at shared priorities. Agencies must consider their own missions and their stakeholders' priorities along with those of their potential partners to find synergies between objectives or approaches. Scale plays a role here as well. Some organizations choose to direct their actions at the landscape or eco-region scale in order to conserve targeted species and ecosystems within it (Redford et al. 2003). This is referred to as a coarse-scale approach to prioritization. Redford notes that "some targets such as rare and endangered species or even local-scale ecosystems... will pass through this coarse filter and will need to be conserved through individual, fine-filter [or fine-scale] approaches" (Redford et al. 2003: 126). Conservation priorities can consist of saving particular species, maintaining certain ecosystem processes, or protecting specific geographic areas that may contain either

species or processes of importance. In fact, many conservation priority assessments take the approach of identifying geographic locations of conservation importance. These assessments can involve the perspective of experts or local citizens who use or know those places.

Landscape Conservation Cooperatives

Landscape Conservation Cooperatives, or LCCs, are an example of large, regional bodies of conservation organizations meant to collaborate on shared issues. Developed by the Department of the Interior with funding that comes through the United States Fish and Wildlife Service (USFWS), LCCs were designed to address the complexity of natural and cultural resources, including “land use changes and impacts” (U.S. Dept. of the Interior). There are twenty-two established LCCs in North America (See Figure 1.1). LCCs at the time of this research were predominately led by staff from the USFWS, but not exclusively. The boundaries were designed based on landscape-scale eco-regions with the implication that even diverse stakeholder groups within the same region would share conservation priorities and information needs (Jacobson and Robertson 2012). Within each LCC, partners involved “identify best practices, connect efforts, identify gaps, and avoid duplication through improved conservation planning and design” (U.S. Dept. of the Interior).

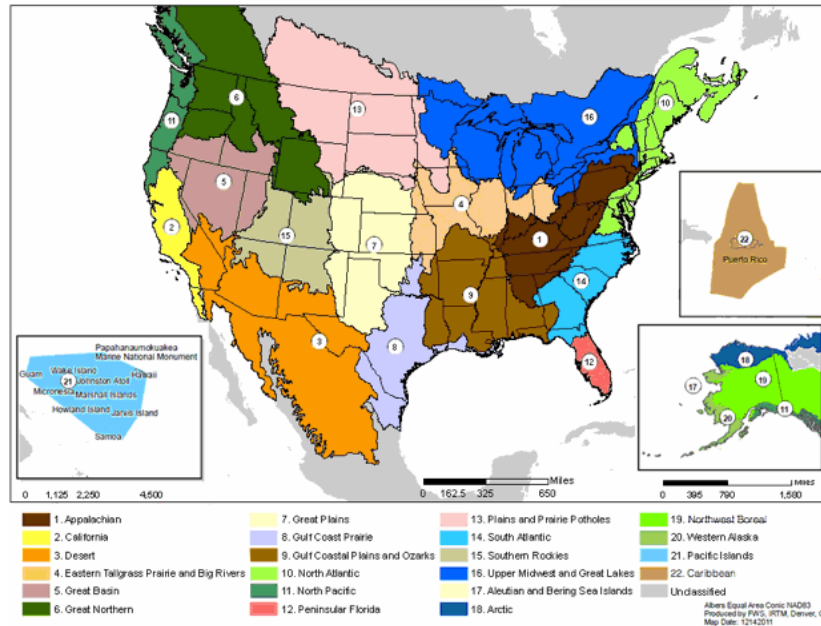


Figure 1.1: Department of the Interior's Landscape Conservation Cooperatives. Image courtesy of the Department of the Interior: <http://www.doi.gov/lcc/index.cfm>.

Acknowledging that the traditional model of working in “silos created by programs, agencies, property boundaries, organizational mandates, and funding sources” will be ineffective for addressing contemporary concerns, LCCs aim to be a “bridging entity”, that provide the structure and process for bringing together ecological issues with the social aspects of conservation (Jacobson and Robertson 2012: 334-5). In addition, they aim to “foster collaboration at multiple levels in and among organizations in an effort to address landscape-scale stressors that no one agency or organization could manage alone” (Jacobson and Robertson 2012: 337). Each LCC is self-directed, meaning the ways in which they foster collaboration and the issues they choose to work on may be different.

Problem Statement

LCCs provide a unique opportunity to study the themes mentioned above. The name contains the word “landscape” and each LCC encompasses a very large geographic area. They were organized to focus on complex conservation issues, such as climate change or invasive species, which affect multiple conservation players. The diverse players involved in LCCs are expected to come together to arrive at a shared vision for a landscape so that they can coordinate their efforts. Yet how do they do this? Conservation priority assessments in the literature do not typically happen at this large scale. If they do, they focus on biological data or identify “hotspots” of biodiversity, rather than focusing on the priorities deemed important by the mix of conservation players working across a landscape. And lastly, LCCs are meant to be arenas for conservation coordination and collaboration. Studying them provides an opportunity to explore collaboration barriers and strategies at the landscape scale. This research aims to investigate priority-setting and collaboration among conservation organizations in a regional context.

The studies detailed in the following chapters stem from research conducted with the Upper Midwest and Great Lakes (UM&GL) LCC in 2012. This LCC region contains portions of ten U.S. states, three Canadian provinces, and all five Great Lakes (See Figure 1.2). A number of conservation players are involved in this LCC, including U.S. and Canadian government agencies, U.S. state and Canadian province government agencies, tribal government agencies, non-governmental organizations (NGOs), joint ventures, and governmental commissions (UM&GL LCC). At the time of this research, the UM&GL LCC contained three internal committees, including a staff of three people, a Steering Committee, and a Technical Core Team. The Steering Committee of this LCC is made up of high-level executives from the member agencies. The Technical Core Team is made up of scientists charged with reviewing LCC

proposals and doing the groundwork for the LCC. The Steering Committee then reviews and approves Technical Core Team work. This region is home to many existing collaborative conservation entities from decades of collaboration surrounding Great Lakes issues.



Figure 1.2: The Upper Midwest and Great Lakes Landscape Conservation Cooperative Region. Image created by author. LCC boundary data courtesy of US Fish & Wildlife Service.

Thesis Organization

Chapters 2 and 3 were written as manuscripts for publication in peer-reviewed journals, and therefore are intended to ultimately stand alone. This introduction and the conclusion chapter were written to situate Chapters 2 and 3 in the larger literature and draw conclusions about these kinds of studies and their relevance and importance for conservation today.

Chapter 2 details a Shared Conservation Priorities Assessment conducted for the Upper Midwest and Great Lakes Landscape Conservation Cooperative in 2012. This chapter highlights the goals of the assessment as well as the methodologies utilized to uncover relevant themes. A sample of findings is presented to show the types of data gathered and how data were presented throughout the assessment. This assessment contributes to the conservation priority assessment literature by proposing potential methodologies and exploring the benefits they offer to large and regional collaborating bodies.

Chapter 3 provides results from one phase of the Shared Conservation Priorities Assessment described in Chapter 2. This chapter highlights the role of collaboration in conservation today, as well as barriers to and best strategies for effective conservation collaboration. This work was conducted using natural resource collaboration literature and data from participant interviews in the UM&GL LCC. Using a new synthesized conceptual framework, barriers and best strategies are evaluated in the various spaces of organizational-level collaborations, including those inside individual agencies, between agencies in a collaboration, and external to a collaboration.

Lastly, Chapter 4 provides a summarizing chapter that explores the significance of these two studies for conservation efforts today.

CHAPTER 2: A SHARED CONSERVATION PRIORITIES ASSESSMENT FOR THE UPPER MIDWEST AND GREAT LAKES LANDSCAPE CONSERVATION COOPERATIVE: A MIXED METHODOLOGY APPROACH

2.1 *Introduction and Background*

Conservation planning is increasingly occurring at landscape or regional scales, in order to address broad-reaching environmental issues such as climate change impacts or invasive species. Cash et al. (2006) note that the mismatch in scale between the traditional actions of humans and ecological processes is the “archetypal” problem, where “the authority or jurisdiction of the management institution is not coterminous with the problem” (11). Conservation decisions made within single administrative boundaries will not stop the tide of biodiversity loss and must be coordinated with simultaneous efforts across the landscape (Moilanen and Arponen 2011). This can be difficult when there are diverse and competing interests across landscapes. Natural resource issues today are motivating organizations to collaborate at larger, more regional scales which span multiple jurisdictions. Official regional collaboration initiatives have been on the rise to fill this need.

Collaboration around natural resource issues is not a new phenomenon. For decades, collaboration has been used as a tool for bringing stakeholders together to address a specific natural resource problem. Existing literature details deep knowledge about collaboration in natural resource settings. Collaboration barriers and best strategies are well documented, but collaboration usually occurs at smaller scales and is motivated by a particular problem or issue. Collaboration is often community-based and may involve citizens working together with a local government or non-governmental organization to address a pressing conservation concern. Collaboration can also occur between state and other natural resource organizations or agencies

when they have overlapping interests. Collaboration at larger, more regional scales is less documented, though there is currently a push for very large regional collaboration in conservation. The success of some regional collaboration efforts, for example, the migratory bird joint ventures, has led to an increase in popularity of and incentives for large regional groups to work together on natural resource issues. Collaboration at a smaller scale is often motivated by a specific issue, but collaboration that spans larger regions could potentially address any of the issues which are manifest in larger geographies. So how do collaborative entities, especially those comprised of multiple and diverse organizations with different responsibilities and jurisdictions, decide their priorities? Research questions for this chapter include: What are the methods that might best assess conservation priorities of collaborating partners in large regions? In addition, will diverse groups articulate natural resource and conservation priorities differently for the same region?

Conservation Priority Assessments

Conservation literature notes that planning and assessments for conservation must take place at a landscape or regional scale in order to account for the complexity of ecosystems (Franklin 1993, Adams 2009). Collaborative groups must be able to distinguish themselves from other existing efforts in the region by articulating their unique purpose and collective priorities “in a landscape dominated by single-function agencies that often depend on legal boundaries” (Sabatier et al. 2005: 11). Choosing which priorities to work on can be difficult because objectives for a group of different entities are “not defined at the start of the process” and must be negotiated (Termorshuizen and Opdam 2009: 1038). Collaborating with multiple organizations is also made difficult because “any physical place has the potential to embody multiple landscapes, each of which is grounded in the cultural definitions of those who encounter

that place” (Greider and Garkovich 1994: 2). Therefore conservation priority assessments must include “the emotional, value-laden, and inescapably political context of each and every conservation landscape” (Adams 2009: 66). Incorporation of the social understandings of landscapes is needed, but through scientific methods that allow for negotiation of objectives (Termorshuizen and Opdam 2009).

Assessments used to identify conservation priorities are often developed to address the needs of an individual agency, and mostly remain separate from published journal research (Knight et al. 2008: 611). There are some examples found in the literature of assessments which include a geographical component and aim to identify places of conservation need. Some utilize Geographic Information Systems (GIS) and mapping or other locational information in assessment (Nielson-Pincus 2011, Donovan et al. 2009, Moilanen and Arponen 2011, Fagerholm and Kayhko 2009, Natori et al. 2005). Many of these authors couple the geographical component of their assessments with other methods, including biological surveys, questionnaires about attitudes regarding conservation, and surveys about the aesthetics of landscapes. Many of these assessments utilize either local or expert knowledge regarding the information they are aiming to collect. There is a lack of conservation priority assessments in the literature that are conducted at very large scales such as regions and that evaluate conservation priorities from the perspectives of conservation professionals. No best management practices for conducting assessments at this scale were found in the literature.

Landscape Conservation Cooperatives

Very large-scale, regional collaboration is taking place in the Landscape Conservation Cooperatives, or LCCs, which were created by the Department of the Interior in 2009. LCCs are

regional cooperatives of conservation entities meant to address landscape-level natural resource issues, including drivers of environmental change. Cooperatives are made up governmental agencies, tribes, NGOs, and other conservation groups (Jacobson and Robertson 2012). Twenty-two LCCs were established for North America (See Figure 2.1). LCCs operate at an organizational level, where participants represent their home agencies and organizations in LCC decisions, and collaborate on science and the coordination of conservation efforts.

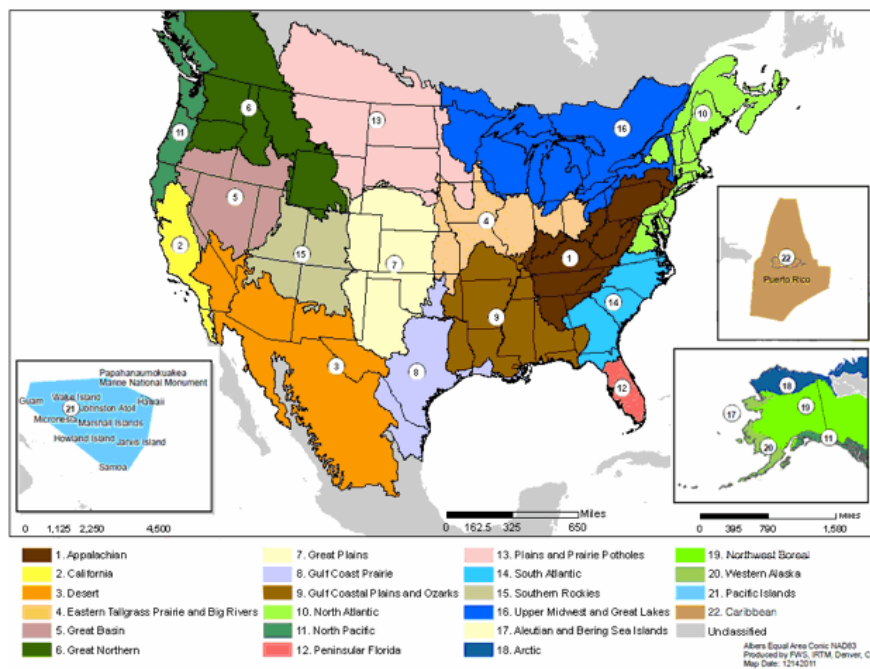


Figure 2.1: DOI LCC Regions in North America. Image courtesy of the Department of the Interior: <http://www.doi.gov/lcc/index.cfm>.

One of the LCCs, which is the focus of this work, is the Upper Midwest and Great Lakes (UM&GL) LCC. This region encompasses ten US states, three Canadian provinces, and all five Great Lakes. Participants in the UM&GL LCC come from US federal, state, and tribal

government agencies, Canadian government agencies, NGOs, commissions, and joint ventures (Figure 2.2).



Figure 2.2: Upper Midwest and Great Lakes LCC. Image created by author. LCC boundary data courtesy of US Fish & Wildlife Service.

LCCs were formed to address broad-reaching and shared issues, such as drivers of environmental change. Yet the breadth of issues experienced by regions provides an interesting challenge for LCCs. While most natural resource collaboration in the literature occurs around a specific issue, for example a polluted waterway, LCCs were provided a structure for operation and incentive to collaborate, while the specific targets of their efforts were left for each region to determine themselves.

By the end of 2012, thirteen of the twenty-two LCCs had established priorities after conducting some sort of assessment, while four LCCs were in the process of conducting an

assessment. Multiple strategies were employed by the various LCCs; many used more than one in their process. Table 2.1 contains data regarding the strategies employed by those seventeen LCCs which was collected through conversations with LCC leaders as well as through investigation of their respective websites and planning materials.

Table 2.1: LCC Strategies for Determining Conservation Priorities

| <u>Strategy</u> | <u>Number of LCCs who employed</u> |
|---|------------------------------------|
| Workshop, retreat, or meeting | 11 |
| Used existing needs assessments | 5 |
| One of the LCC committees made the decision | 4 |
| Interviews | 3 |
| Survey | 1 |

The UM&GL LCC sought an assessment methodology that would systematically assess the shared conservation priorities of its members. Operating on an annual request-for-proposal (RFP) process had resulted in the investment of ready-to-go scientific research projects for the region. While these projects were highly valued, the UM&GL LCC staff wanted to develop their own framework of operation that highlighted the conservation issues of importance to the LCC as well as how they would work. This was to ensure that their future work (and funding dollars) were feeding into a more strategic plan for the region that had the support of their partners. A Shared Conservation Priorities Assessment was conducted for the UM&GL LCC in 2012. The assessment process was developed by this author and Dr. Courtney Flint in consultation with UM&GL LCC staff. A mixed methods approach was developed to highlight broader issues with regional collaboration in addition to identifying the conservation priorities of the region. This chapter explores those assessment methodologies and highlights selected findings to illustrate the types of data produced and the ways in which it was used to inform later phases. Full results from the assessment remain internal to the UM&GL LCC. This chapter also includes

a discussion of the benefits and drawbacks of performing this kind of assessment with natural resource professionals working in regional collaboration efforts. In addition, participant feedback is explored regarding the helpfulness and effectiveness of the methodologies employed.

Mixed Methods

Mixed methodologies are used by researchers to more fully represent the perspectives of a group by gathering different kinds of information (Greene and Caracelli 1997). For example, qualitative research is often used to explore a concept or phenomenon when variables or theory are unknown or thought to be incomplete (Creswell 2003: 74). Quantitative methodologies, on the other hand, often collect data using “predetermined instruments that yield statistical data”, such as surveys (Creswell 2003: 18). A mixed methodology approach, in which multiple methods are used, can aid in the search for triangulation, or “convergence” across methods (Creswell 2003: 15). In addition, mixed methods can be used so that the results of one method help to inform or develop another method, or to get at different units of analysis (Creswell 2003: 16). Important in natural resource research is the ability to engage a diverse group of conservation professionals. Mixed methodologies allow for the exploration of various social understandings of landscapes because they can capture “a wider range of interests and perspectives” (Greene and Caracelli 1997: 6). This is important when engaging groups across a large landscape, because each agency or organization will have their own interpretations of what is important in the landscape, often dictated by their agency’s mission, but sometimes by the individual themselves.

2.2 Methods and Select Findings of the Shared Conservation Priorities Assessment

Background

The Shared Conservation Priorities Assessment was proposed to the UM&GL LCC Staff in December of 2011. Through conversations with the LCC Staff over the months following, it was observed that identifying the shared conservation priorities of the LCC members was their main goal. By identifying the most pressing priorities for their members and the region, the LCC could be more strategic about how to spend funding dollars in the future. Through these conversations, additional questions of interest were raised, including the role of the LCC in this Upper Midwest and Great Lakes region, LCC members' experiences with collaboration, and the criteria the LCC should use to identify future projects. It was decided that the assessment would strive to address these broader questions in addition to highlighting the top conservation priorities of LCC members.

The first phase was proposed to help highlight perspectives regarding these broader themes in addition to conservation priorities. It was determined that the results gathered there would help inform later phases in an iterative process in which the LCC Staff would be involved. The phases would then be sequential, allowing for the building of relationships between the participants and the researchers, as well as between participants themselves over a period of months (Creswell 2003). This was favorable to the LCC Staff, who understood the importance of providing opportunities for interaction between partners for fostering effective collaboration.

Phase 1: Participant Interviews

Methods

The first phase of the Shared Conservation Priorities Assessment consisted of semi-structured interviews with LCC participants and aimed to gather perspectives regarding the LCC role, perspectives around and experiences with collaboration, criteria for future projects, and the conservation priorities of the region. An email invitation to participate in interviews was sent to each LCC participant (n=41) in early March. Thirty interviews were conducted in person (14) or over the phone (16) between March and June 2012 for a response rate of 73%. These thirty participants were representative of the LCC participant population, and included members from all three internal subcommittees (Staff, Steering Committee, and Technical Core Team), as well as from all member “types”, including federal, state, commission/joint venture, NGO, and tribal agencies. All interviews were audio recorded with participant permission.

The conversational interviews consisted of open-ended questions about four topics of interest to the LCC (its role in the region, collaboration, criteria for projects, and conservation priorities). LCC Staff interviews were conducted first, and helped to continue framing questions for the other participants. Therefore, interview questions for LCC Staff differed slightly from the questions posed to the other two internal LCC committees (Steering Committee and Technical Core Team). Interviews ranged from 21 to 86 minutes in length. Audio recordings of the thirty interviews were transcribed in full and checked for accuracy. Interview transcripts were then analyzed for themes pertaining to the four topics of interest using QSR NVivo version 9. This was done in three ways. First, the range of perspectives about each topic was noted. Second, the most dominant perspectives were highlighted, noted by the number of participants who

articulated that concept. Although a quantitative analysis of sorts is demonstrated here, numbers merely represent how many interviewees articulated a concept, not how many of the thirty participants agreed or disagreed with a particular perspective. Themes emerged freely from each interview and a quantitative comparison of themes was not conducted in interviews. Third, alternative perspectives differing from the most dominant perspective were noted.

Findings

This analysis of themes in Phase 1 interviews produced different types of results, including quotes, a quantitative measurement of the prevalence of perspectives, and visual representations of how themes differed among LCC members. In regards to the preferred role of the LCC in this region, findings were organized into two main categories: things the LCC should NOT do, and things the LCC should do. The findings showed that some participants articulated roles for the LCC that others stated the LCC should not do, so contradictions existed about the role of the LCC in the Upper Midwest and Great Lakes region. Three different role categories emerged regarding what the LCC should do, or what its role should be. These role categories included coordination, conducting science, and information and data management or organization. The percentage of participants who articulated tasks that fell into one of these three LCC roles are presented in Table 2.2. A surprising finding was that many more participants mentioned that the LCC should be coordinating efforts rather than conducting science or dealing with information and data. At the time of this assessment, the LCC had made few attempts at coordination and had mostly focused on conducting and funding research.

Table 2.2: LCC Roles from Participant Interviews

| <u>Role</u> | <u>Percentage</u> | <u>Example tasks</u> |
|---------------------------------|--------------------------|---|
| Coordination | 73% | Communication about regional efforts, coordinate already existing efforts, identify and articulate shared priorities for the region, encourage landscape-level thinking and planning, host discussion forums, trans-boundary planning, education and outreach |
| Conducting Science | 43% | Identify science gaps, link science to management, research on vulnerable species, translate science into policy, vulnerability assessments |
| Information and Data Management | 30 | Provide a mechanism for information and data sharing, decision-support tool development |

Anonymous results of role information were presented to the LCC Staff. The LCC Staff appointed a small sub-committee of the LCC Steering Committee to discuss the findings with the researchers via a conference call and to clarify the role of the LCC, resolving any contradicting statements from participants. The subcommittee recognized and discussed that a higher percentage of participants were mentioning roles for the LCC pertaining to coordination. This was an important discovery for the LCC Staff and subcommittee, as the group had mostly funded scientific research up to that point. After reviewing the tasks that participants articulated for ways in which the LCC could better coordinate efforts in the region, the Steering Committee subcommittee chose to formalize the following two roles for the group: “Coordination of Regional Conservation Issues” and “Supporting and Conducting Science.” The information and data role was discussed, and it was decided that the LCC would not house or organize actual data, but rather try to understand and publicize which agency or organization has what data. In other words, information and data management actions were subsumed within the coordination role.

A number of criteria for future projects were articulated by participants and were categorized into five themes: 1.) landscape-scale focus, 2.) specific topic focus (such as forests), 3.) fill gaps in existing efforts without duplication, 4.) on-the-ground management relevance, and 5.) consideration of administrative concerns, such as overhead cost. These themes were analyzed for strength as well, or the number and percentage of participants who expressed them. Criteria findings were also presented to the Steering Committee subcommittee for review. They agreed that these criteria were important to consider moving forward, but noted that using “specific topics” as criteria did not make sense and that those findings more closely resembled conservation priorities. The remaining four were kept for future work.

In relation to themes regarding collaboration, four research questions were developed to explore participants’ experiences with collaboration and its role in conservation today, barriers to effective collaboration as well as best strategies, and definitional and applied differences between collaboration and coordination. The strength and diversity of perspectives expressed were analyzed by again counting the number of participants who expressed similar ideas, and highlighting important quotes. In this region, LCC participants were extremely experienced and well-versed in what makes collaboration work and fail. A fuller exploration of these findings and themes can be found in Chapter 3.

Perspectives on the top conservation priorities of the region were also analyzed. This question in the interview followed questions relating to the role of the LCC and the criteria for future projects. 158 conservation priorities were articulated across the full set of interviews, with varying levels of specificity. Conservation priorities were visualized in word maps (see Figure 2.3) based on categories established through analysis of interviews and with the Background Document Analysis in Phase 2 (discussed in next section). The broad categories of priorities

were: threat priorities (climate change, invasive species, development and land use change), ecosystem priorities, species priorities, and organizational and human dimension priorities.

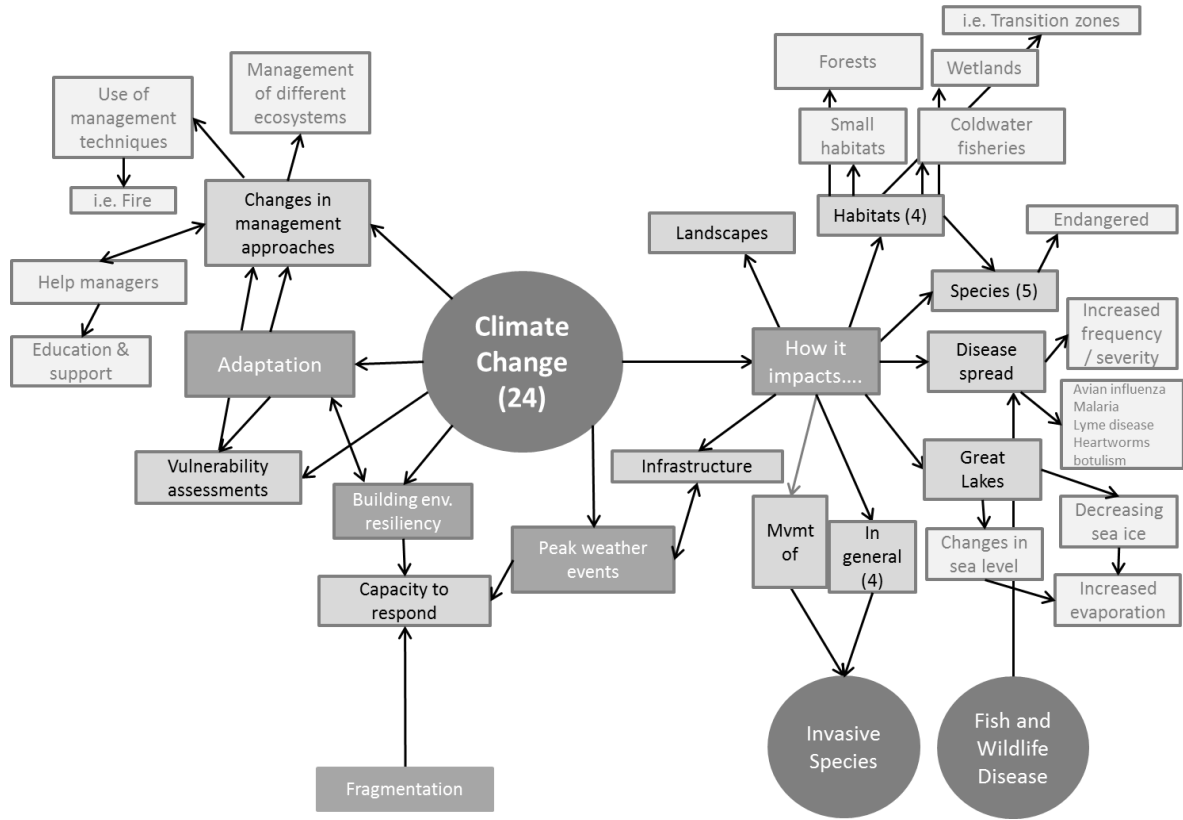


Figure 2.3: Threat Word Map for Climate Change

Each theme was quantified based on the number of participants (out of 30) who articulated a conservation priority in that theme. In the maps, each of the main categories is represented in the central circle shape. From these central circle shapes, the direction of arrows can be followed to illustrate the themes mentioned by participants. Numbers are included for those perspectives articulated by more than four of the participants. For example, Figure 2.3 shows the cumulative climate change word map. Following the arrow to the right, it can be seen that fewer than four participants mentioned how climate change impacts the Great Lakes. It can

also be seen that five participants mentioned climate change and how it impacts species. Lighter colors indicate an increase in specificity. Word maps were also generated using results from the different subgroups represented in the LCC (federal, state, and NGO) to highlight that the subgroups articulated priorities differently (See Figure 2.4 on following page). For example, you can see that while federal participants highlighted the impact of invasive species, state participants mentioned the management of invasive species, including monitoring and tracking. NGO participants mentioned invasive species as a general concern but did not go into any specifics in interviews.

Word maps were created to help visualize the range of different components within each priority theme that were highlighted by participants. At the time these word maps were created by the researcher, it was unclear how vague or specific the LCC would be with their final list of priorities. These word maps helped the researcher better understand the range of conservation priorities of the participants, but was also thought to be a potential resource for the LCC in the future as they worked towards conservation priorities. While the example priority word maps are shown here as separate, they actually connect to each other. For example, in referring to climate change, at least one participant mentioned that a priority is the way climate change may impact the movement of invasive species (of which there is a more detailed word map of all the ways in which invasive species were discussed (See Figure 2.3).

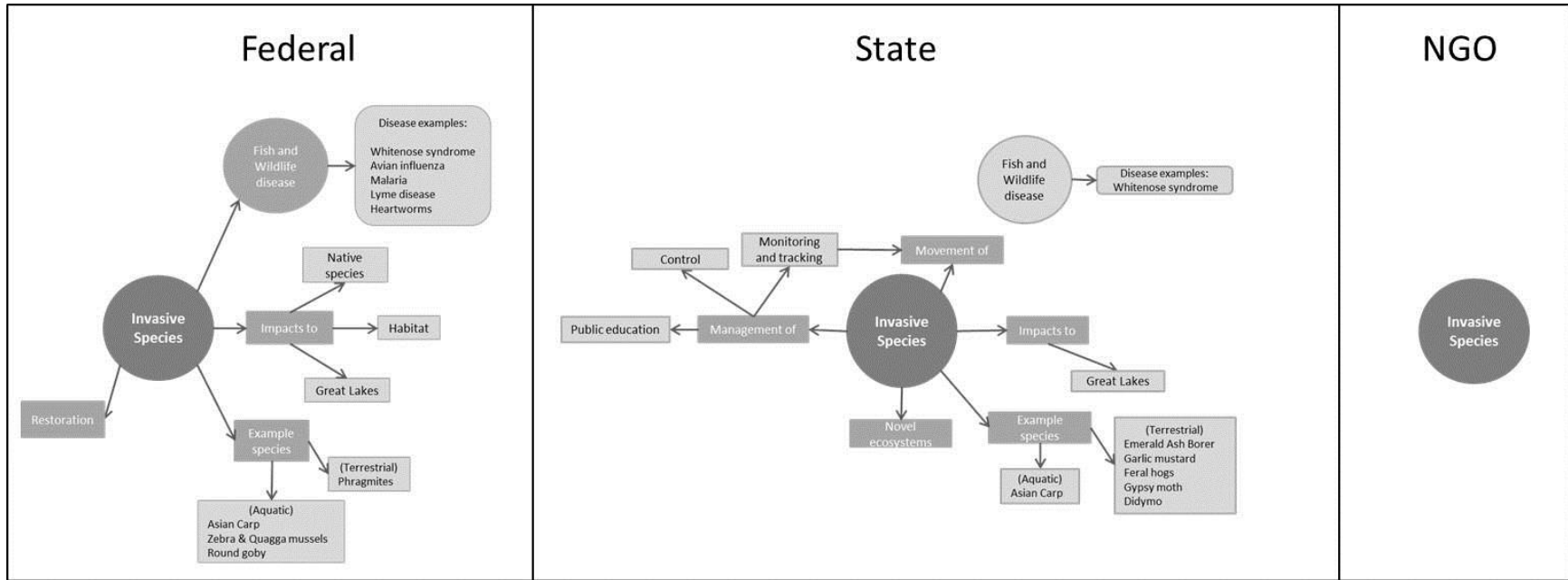


Figure 2.4: LCC Subgroup Word Maps for Invasive Species

Phase 2: Background Document Analysis

Methods

One sentiment repeated by participants during Phase 1 interviews was that their home agencies had already established conservation priorities and that the LCC should not “reinvent the wheel.” In recognition of the need to better understand the region’s existing conservation priorities, a background document analysis was undertaken concurrently with Phase 1. A search was conducted for documentation of published agency priorities for those agencies represented in the LCC. This search was conducted on agency websites as well as on related information provided by participants during interviews (for example, brochures or strategic documents). A determination of what constituted a “priority” was made by the research team, and was deemed to be a subject of importance for an agency’s current or future attention and resources. Varying names for “priorities” were also noted. For example, some agencies use the terms “focus area”, “goal”, or “issue”. This information on agency priorities was compiled into a spreadsheet and included links to each agency’s priorities, noting if information was missing. This analysis assessed the range of issues prioritized across the region and the degree of similarity and difference with priorities articulated in interviews.

Findings

Priorities from across the region varied substantially, both topically and in level of specificity. However, the general themes were strikingly similar to the categories of priorities articulated by interview respondents in Phase 1, thus providing useful validation. Details included in agency background document priorities may provide helpful information to the LCC Technical Core Team, who is charged with reviewing funding proposals for the LCC. This data

may also be helpful in the creation of work groups or task forces around particular issues or in identifying contrasting or varying approaches to priorities across partner organizations later on. The dataset was provided to the LCC staff and is organized in a way that allows for updates as the LCC partner list grows and/or changes over time.

Phase 3: Q-sort Analysis of Conservation Priorities

Methods

As described above, LCC members participating in Phase 1 interviews articulated 158 conservation priorities with varying levels of specificity. Word maps produced from this data also showed that conservation priorities differed depending on the interviewee's agency type (e.g. federal, state, NGO, other). An additional process was needed to distill priorities to a more manageable set for discussion and selection. The priorities articulated in interviews were condensed to a list of fifty-two priorities through a process by which very specific details were eliminated and similar priorities were combined.

A Q-sort was proposed at this stage because the Q-sort process “creates a simulated dialogue between participants and the ideas of their colleagues” (Neff 2011: 463). The goal was to have LCC participants interact with these priorities raised by their peers, and “sort” them in a rank-order process. The Q-sort process forces participants to identify the few ideas they feel most strongly and least strongly about, with a larger number of priorities ending up in the middle in a more neutral category. Q-sorts then typically allow for data reduction techniques and analysis, such as factor analysis (Neff 2011).

It was determined that the LCC Technical Core Team and Staff would be best suited to participate in a Q-sort process due to the Technical Core Team's charge of reviewing funding proposals and determining the final list of conservation priorities through this assessment. Because the LCC Steering Committee had participated in Phase 1 interviews, their perspectives had been collected and were represented in the findings, and they had a certain level of trust in the Technical Core Team to finish the assessment. The Technical Core Team and Staff were asked to complete two online "Q-sorts" using Flash Q software (available online at <http://www.hackert.biz/flashq/home/>). Nine participants completed this task. The first sort asked participants to consider the coordination role of the LCC, and the second sort asked participants to consider the LCC's role in conducting science. Both Q-sorts used the same set of the 52 priority statements. For each Q-sort, participants were first asked to sort all priorities into low, medium and high priorities "buckets" (for either coordination or science, whichever sort they were performing). Participants then sorted those low, medium, and high priorities into a tiered template (See Figure 2.5) for ranking priority statements from high priority (+5) to low priority (-5) which allowed for quantitative analysis. Participants were instructed to sort their highest two priorities first, followed by their lowest priorities. They were then instructed to work towards the middle, alternating between next highest and next lowest priorities.

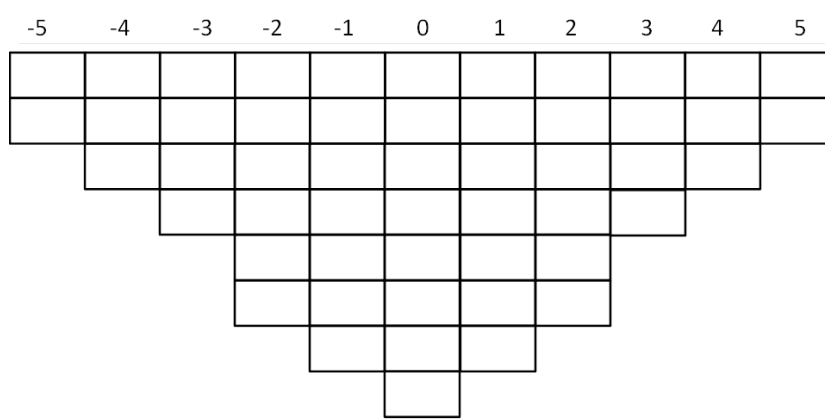


Figure 2.5: Q-sort Template for Sorting 52 Conservation Priorities

Findings

PQMethod, created by Peter Schmolck (2013) was used to enter all Q-sort data, and factor analyses were run on the Q-sorts themselves as well as on the priorities. While one advantage of a Q-sort is to allow a researcher to perform a factor analysis, the results on this data were inconclusive.

Descriptive statistics (mean, median, and standard deviation) were calculated for each priority, however, using the number value based on where they were ranked in each Q-sort template. For example, two priorities each received a score of “5” for each participant’s sort. These descriptive statistics were then used to rank priorities, first by median, then mean, into high, medium, or low priority groups for both Science and Coordination roles. Variability in rankings across these groups was substantial and determined by the standard deviation. These lists were used for further negotiation and discussion among the LCC Leadership and the Technical Core Team.

Table 2.3: Example of Some High Priorities for Science with Much Disagreement (High Standard Deviation)

| <u>Priority</u> | <u>Median</u> | <u>Mean</u> | <u>St. Dev.</u> |
|---|---------------|-------------|-----------------|
| Conserving biodiversity in the face of climate change, to enhance resilience and support migration | 3 | 2 | 3.02 |
| The need to build or maintain environmental resiliency for climate impacts | 3 | 1.78 | 2.62 |
| Linking science to management | 2 | 2 | 2.58 |
| Species that are threatened (endangered or threatened status, vulnerable, Species of Greatest Conservation Need (SGCN), species that are in population decline, species that are wetland dependent or dependent on small habitats | 2 | 0.89 | 2.13 |

This Q-sort process was not intended to be a final ranking of priorities, especially given a very small final sample size for this Q-sort (n=9), but to serve as a guide for further discussion. Tables (such as Table 2.3) were presented to the Technical Core Team in a workshop setting (discussed in Phase 4) where they were further refined. The Q-sort process facilitated the sorting of priorities for the LCC and a quantitative analysis for ranking and comparison. The basic descriptive statistics were interpreted with full awareness of small sample size. Numerical rankings were presented to encourage discussion, not to serve as cut-off points for decision-making.

Phase 4: Workshop

Methods

A workshop was held for LCC Staff and the LCC Technical Core Team in the fall of 2012. Two staff members and four Technical Core Team members were in attendance, either in person or via conference call. This workshop was intended to bring partners together and allow

for presentation of all assessment data to date, as well as the facilitation of a discussion around conservation priorities. The overarching goal was to narrow down conservation priorities for the LCC so a set of priorities could be recommended to the LCC Steering Committee.

Data were presented to those in attendance using a PowerPoint presentation. Those calling in via phone had access to the PowerPoint presentation through Go To Meeting. The morning session was used to present an update on the assessment and findings about priorities. This was done by showing main results from interviews, including the categories of conservation priorities and word maps (cumulative and by subgroup). Q-sort results were then presented using the conservation priority word maps as well, by shading the word map elements based on high, medium, and low priority rankings, and noting those with high variability. Q-sort results were then shown in tables for science and coordination, noting high, medium, and low priorities, and those with high variability. A short facilitated discussion following the presentation of data encouraged a quick trimming of the priority lists. The afternoon session of the workshop was used for a more in-depth discussion and trimming with the goal of reaching a short list of priorities for recommendation to the Steering Committee.

Findings

By viewing the tables showing Q-sort results, workshop participants created a revised list of priorities by combining priorities into themes. Participants reflected on the results from Phase 1, including the role of this LCC in the region, as well as the role of other entities and collaborative efforts already existing in the region, so as to avoid duplication. Participants also considered project criteria from Phase 1 findings. Consensus was reached on five science and four coordination priorities. These are shown in Table 2.4. The resulting priorities were then

revised post-workshop by the entire LCC Staff and the Technical Core Team using notes from the workshop. Priorities were then presented to the LCC Steering Committee at a later meeting.

The workshop setting provided an opportunity for face-to-face discussion and the establishment of a set of draft conservation priorities for the UMGL LCC. However, not everyone could attend and some attended over the phone and computer, thus limiting the level of engagement.

Table 2.4: Resulting LCC Science and Coordination Priorities

| <u>Science</u> | <u>Coordination</u> |
|---|--|
| Assessing terrestrial and aquatic connectivity | Information management, delivery, and communication |
| Conservation of species at a landscape scale | Using regional assets for relating science, management, and policy |
| Climate change adaptation for fish, wildlife, and natural resources | Emerging conservation issues |
| Quantifying and communicating ecosystem services | Regional conservation efforts |
| Energy development and landscape change | |

Assessment Follow-up

As a final component to this assessment, feedback was gathered from some LCC Staff and Technical Core Team members after the workshop and before the draft list of conservation priorities were presented to the Steering Committee. The gathering of feedback was limited to the Staff and Technical Core Team because they participated in all four phases of the assessment. Eight participants provided feedback in follow-up phone calls which assessed the effectiveness of the various phases and participants’ level of satisfaction with the outcomes. Four open-ended questions were asked. Conversations were not recorded but notes were taken by the researcher.

All participants who responded in follow-up feedback indicated the assessment methods were helpful in getting to shared priorities. Responses ranged from “moderately successful” to “very useful.” Three of those eight participants had trouble remembering each phase, and one participant noted that he was unsure how his answers fit into the overall results. The participants were then asked if any phase of the assessment was more helpful than the others. Five of the eight respondents felt that the Q-sort was most helpful. One participant noted that it wasn’t necessarily the quantitative results of the Q-sort that made it most effective, but rather the democratic process of sorting conservation priorities, both as an individual (examining one’s own take on each priority) as well as within the larger group. Another noted that taking the time to sit down and think about each priority was helpful because one could see the breadth of their options. Another participant noted that the Q-sort was fun and something new they had never done before.

The next two questions asked if respondents were happy with the outcomes of the assessment thus far and if they thought the LCC would be successful in addressing the resulting list of conservation priorities. Five of the eight respondents felt that they had constructed a good list of priorities through the process. The remaining three were more neutral in their responses. Two participants felt confident that the LCC would be successful in addressing these priorities, while five participants expressed some hesitancy with regards to future funding or group cohesion going forward.

2.3 Discussion

The Shared Conservation Priorities Assessment provided an iterative and sequential process for LCC participants that aided in establishing shared priorities for future LCC work.

The mixed methodologies produced different types of results, from qualitative quotes highlighting various perspectives in interviews, to quantitative analysis of conservation priorities that led to a ranking process. These methodologies were employed at different stages of the assessment process which helped the process logically flow from the more general to the specific. Each phase informed the next through the evaluation of data and consultation with staff members. This iterative process aided in the continual refinement of research questions and assessment goals, while the sequential aspect helped LCC participants build a relationship with the researchers as well as with each other.

The open-ended interview questions employed in Phase 1 allowed for themes to emerge organically from participants. Gathering the diverse perspectives of participants at the start of the project was important too, because their ideas and thoughts carried through the project and were included in later phases. Starting the project by gathering information about the broader topics of the role of the LCC, the criteria they should use for future projects, and perspectives on collaboration helped to provide a foundation for the LCC to refer to throughout the process, and build on when establishing priorities. Without establishing those foundational ideas at the beginning, making decisions about conservation priorities would have been more difficult and potentially more contentious. The questions about the role of this LCC helped bring to the forefront this idea that this LCC is just one of many efforts occurring in the region, and that many participants had concerns about being redundant.

Other phases provided benefits as well. The background document analysis conducted in Phase 2 provided validity to our interview results regarding conservation priorities, and also provided the LCC with important information regarding their member agencies. The Phase 3 Q-sort proved beneficial for both the sorting process it required and for providing data for

quantitative analysis. Lastly, the Phase 4 Workshop provided an opportunity for LCC members to get face-to-face and have an important conversation regarding the scientifically-collected data from this assessment.

An important component of this assessment was confidentiality. The other LCCs that conducted assessments to establish priorities used different methodologies and did not allow for confidential input. Gathering confidential data in the assessment and sharing the data anonymously with the LCC Staff reduced bias as members were more able to speak honestly. This differed sharply with what many of the participants claimed they were used to. In addition, during the Workshop, results from Phases 1-3 of assessment were presented to the Workshop participants. Because the data had been collected confidentially, those in the room discussed the results very respectfully because the originator of various quotes or ideas expressed in word maps were not revealed to them. The Workshop participants therefore were not dismissive of any conservation priorities and very thoughtful conversations were had about all of the priorities.

There were some challenges with conducting this kind of an assessment. Many participants were unfamiliar with taking part in qualitative research methodologies. For example, many had not participated in an interview as part of data collection. It was clear that some participants were unaccustomed to the confidential process where each voice is represented equally. It appeared that traditional approaches for reaching consensus in these collaborative bodies were that the loudest or most assertive participants were more likely heard. Letting go of that preconception appeared to be an issue for some. Lastly, the Upper Midwest and Great Lakes LCC participants played important roles in their respective agencies and organizations, so there was a limit on their time and ability to participate. As researchers, it was a struggle to get everyone together on a phone call, let alone in the same room.

Feedback collected after the completion of the assessment showed that participants generally enjoyed the process. However, some participants did not remember the interviews very well. Either too much time had passed because it was the first phase of the assessment, or because they did not see it as a form of data collection. Many had praise for the Q-sort and the “forced” sorting it required. Participants recognized that having to sort priorities was important for them individually as well as for the group. One person also noted that it was a democratic process to sort priorities individually first before being compared with the rest of the group.

2.4 Conclusion

This Shared Conservation Priorities Assessment employed multiple methodologies which engaged the participants of the Upper Midwest and Great Lakes Landscape Conservation Cooperative in a process to establish foundational elements of their cooperative while highlighting shared conservation priorities. The LCC staff was able to present the assessment findings to their Steering Committee in a meeting in which the priorities were reviewed. A priority planning process was employed by LCC Staff to evaluate priorities in terms of what can be achieved in the present and in the future. The LCC staff and Steering Committee kept in mind the LCC roles as well as things to avoid, such as redundant efforts. Their hope is that by establishing a framework of operation for their LCC, the science they conduct and the products of their funding now “have a home” because they fit into a larger process and can better link to their other efforts.

It is important to note that establishing conservation priorities for an entity like an LCC is just the first step towards implementation of conservation actions. The UM&GL LCC has not yet

reached the “partnership utilization phase” where relationships between players are strong enough to focus on conservation activities, rather than needing to focus on “tending to the relationships” (Lauber et al. 2011: 268). In addition to the need for strong relationships between partners, there are other reasons setting priorities may not result in implementation.

Implementation of practices and science to address conservation priorities can be limited by the resources that are available. This could result in a trade-off between priorities based on ability to achieve certain outcomes (Zerger et al. 2011). Priorities may become subject to a lack of initiative or motivation on the part of the members, a lack of resources or time, or a decrease in popularity. Alternatively, new priorities may emerge over time.

Still, establishing priorities in large regional collaboration initiatives is crucially important. A formal priority assessment process such as this one lays the groundwork for the role of the collaboration initiative and the criteria for future projects and helps keep conservation priorities organized for moving forward, like we saw in this research. In addition, by using a confidential process to evaluate the perspectives and priorities of natural resource professionals, each member’s ideas and opinions are given even weight, rather than hearing from only the loudest voices or the most passionate members. This process allowed each LCC participant, and therefore the agencies or entities they represent, to be heard and accounted for in the results.

This assessment process offers potential methodologies for use in assessing conservation priorities of natural resource and conservation agencies and organizations at large scales. LCCs are unique in that they are very large geographies containing a breadth of conservation issues, and LCC partners do not necessarily have obvious connections regarding those conservation issues. Conservation priority assessments in the literature take place at much smaller scales than LCCs, so this assessment is meant to be a unique response to that challenge. This assessment

process could prove useful to other large collaborations as these kinds of groups appear to be growing in popularity and use.

These assessment methodologies do not need to be conducted only at the formation of a collaboration entity. Many of these methodologies could be adapted for use in later stages, perhaps to check-in at various time intervals to make sure partners are on the same page and feel they are being heard and represented. The confidential interview process could be critical to address those issues, as partners would feel comfortable expressing their opinions in that setting. The word mapping process could be used to bring in potential new partners. If they are used to illustrate the various ways in which the LCC is working on or thinking about certain problems, they could be shown to outside groups as a way to get buy-in. In addition, the Q-sort process could be utilized to negotiate future projects by requiring members to sort statements based on the issue at hand.

Singularly and together, the assessment methodologies employed here highlight a new way to understand collaborative groups. They help lay foundational groundwork for the group which leads to established roles and responsibilities for members. They provide a confidential process by which partners are equally represented in results, which are then respectfully discussed and acknowledged by the group. In addition, the methodologies outlined here provided democratic and scientific results and resulted in agreed-upon conservation priorities.

CHAPTER 3: EFFECTIVE REGIONAL CONSERVATION COLLABORATION: BARRIERS AND BEST STRATEGIES IN THE UPPER MIDWEST

3.1 Introduction

Contemporary conservation in the United States is dominated by very different environmental issues than those under which governmental natural resource agencies were created (Lauber and Decker 2011). Traditionally, agencies addressed issues within their individual jurisdictions based on mandated objectives and approaches. Now, complex natural resource problems such as invasive species and climate change have led agencies to find different ways of approaching issues, often by working at multiple geographic scales. Addressing issues at a larger, more regional scale involves working with multiple stakeholders across landscapes with diverse views and values (Leong et al. 2011).

One approach to addressing cross-jurisdictional natural resource issues is the creation of partnerships or cooperatives of conservation agencies and organizations within a region. These groups collaborate on shared issues, often with the intent of sharing knowledge and developing more holistic strategies to address them. Collaboration, a tool with a long history in natural resource management, is used differently by various organizations and agencies, and its growth and popularity in recent decades has resulted in both successes and challenges.

The rapid growth of collaboration initiatives has occurred in spite of the limited ability of institutions to adapt to the challenges of collaboration. This chapter will highlight barriers to effective collaboration at a regional scale, as well as best strategies to overcome these challenges. This work draws on natural resource collaboration literature as well as from the perspectives of natural resource professionals engaged in the Upper Midwest and Great Lakes Landscape

Conservation Cooperative. The barriers and best strategies articulated by these experienced natural resource collaborators shed light on potential solutions for effective natural resource-based collaboration initiatives today and in the future.

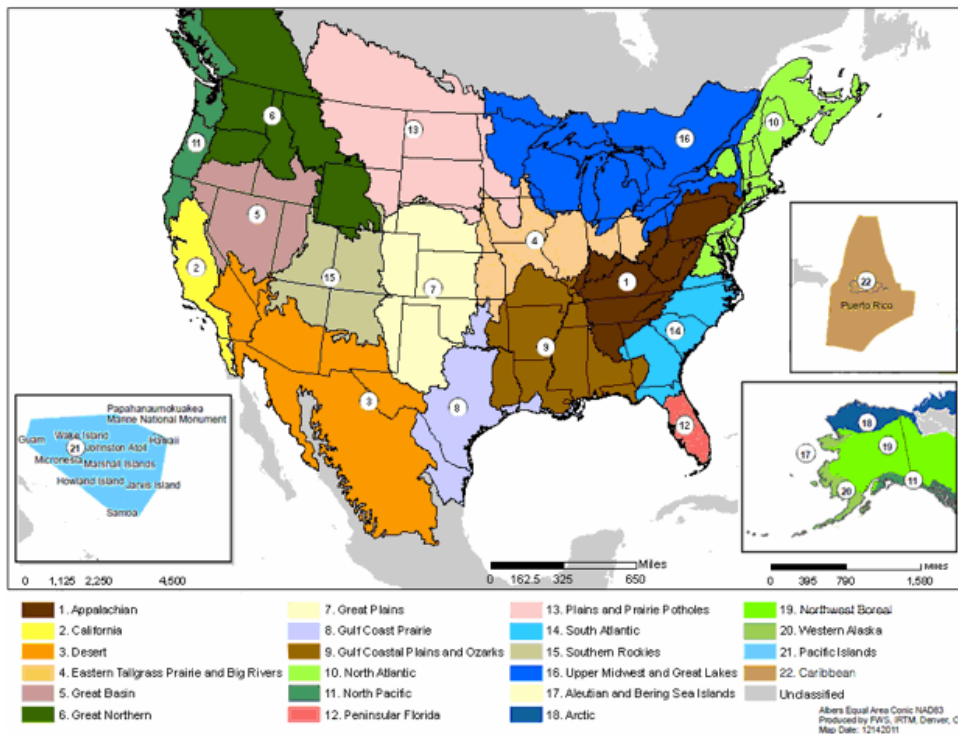
Landscape Conservation Cooperatives

While regional collaboration initiatives for conservation are not new, their missions are broadening. For example, bird conservation joint ventures (JVs) were established twenty-five years ago in North America, with the focus of protecting waterfowl (USFWS 2011). Over time, their mission expanded to the conservation of all birds. With hopes of recreating the success of joint ventures, the United States Department of the Interior (DOI) built on that model to establish Landscape Conservation Cooperatives (LCCs) in 2009 (Jacobson and Robertson 2012). LCCs focus on broader conservation concerns including climate change and other drivers of environmental change.

LCCs are regional partnerships of natural resource and conservation agencies meant to collaborate through the coordination of their efforts and by conducting science on the most pressing and shared conservation issues. There are twenty-two LCCs in North America with broadly-defined eco-regional boundaries (Jacobson and Robertson 2012) (See Figure 3.1). Partners in the LCCs include federal, state, and tribal agencies as well as non-governmental conservation organizations. Many LCCs are still in the early stages of development.

LCCs offer a unique opportunity to examine collaboration in a regional setting. Natural resource collaboration takes different forms depending on who is involved, the motivation for collaboration, and the kind of work performed. LCCs cover large geographic areas and partner membership can be different from region-to-region. LCCs are an example of “organizational-level” collaboration, where agencies and organizations collaborate through the evaluation of programs and projects (Margerum 2008). This pivots them away from other types of collaborations, because they are not conducting work on the ground (action-level) or establishing policy (policy level) (Margerum 2008). Member agencies within a collaboration may base their own agency’s actions off of decisions made by the collaboration, but the group focuses on “organizational activities rather than the details of the resulting actions” (Margerum 2008: 489).

Figure 3.1: DOI LCC Regions in North America. Image courtesy of the Department of the Interior: <http://www.doi.gov/lcc/index.cfm>.



The Upper Midwest and Great Lakes (UM&GL) LCC consists of portions of ten US states and three Canadian provinces, and encompasses all five Great Lakes (see Figure 3.2). Participants in this LCC come from federal, state, and tribal agencies, Canadian provinces, NGOs, commissions, and joint ventures.



Figure 3.2: Upper Midwest and Great Lakes LCC Region. Image created by author. LCC boundary data courtesy of US Fish & Wildlife Service.

The UM&GL LCC region is home to many existing collaborative conservation initiatives. Because the Great Lakes are a significant and shared resource in this region, natural resource issues are similar across various entities and jurisdictions and motivate partnerships and collaboration. Despite the dominance of the Great Lakes in this region, conservation groups also work on a variety of issues beyond aquatic systems, including urban green spaces, agricultural practices, and forestry.

Shared Conservation Priorities Assessment

The UM&GL LCC operates on an annual request-for-proposal (RFP) process, and has funded mostly scientific research since its inception in 2010. In late 2011, the LCC Staff sought to more systematically assess the shared conservation priorities of its members in order to better strategize how to spend future funding dollars. A “Shared Conservation Priorities Assessment” was conducted by the author (Lyndsey Girod) and Dr. Courtney Flint for the UM&GL LCC in 2012. The assessment process was developed in consultation with UM&GL LCC Staff. In order to best complement the LCC’s overarching Vision and Mission (see Figure 3.3), the assessment aimed to highlight important participant perspectives regarding four themes. While the main goal of this assessment from the UM&GL LCC Staff’s perspective was to find the shared or mutual priorities of its partners, additional research goals included gathering perspectives on the role of this cooperative in the Upper Midwest and Great Lakes region and the criteria the LCC should use to decide on future research and projects. Additionally, the ways in which their members collaborate, as well as their perspectives on barriers and best strategies for collaboration were examined and provide the basis for this chapter.

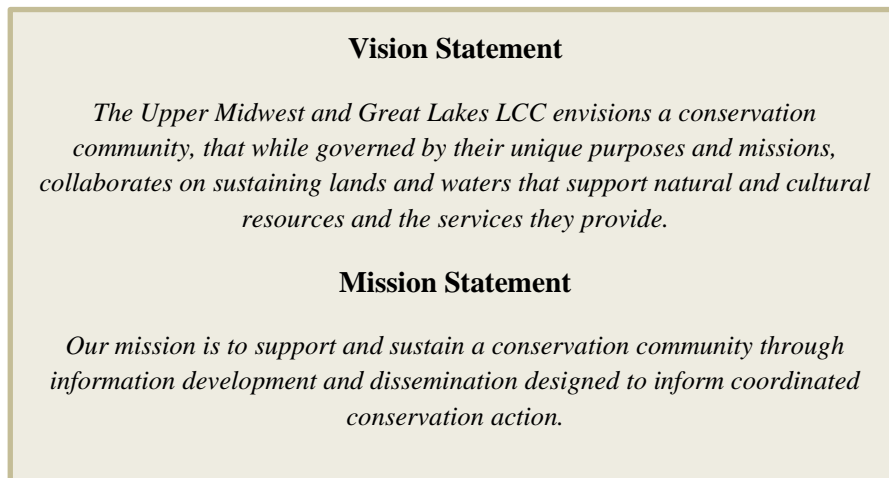


Figure 3.3: UM&GL LCC Vision and Mission Statements.

The assessment involved four integrated methodological phases. Phase 1 consisted of semi-structured interviews with LCC participants, while Phase 2 included a background document analysis from the member agencies. Phase 3 was made up of a Q-sort priority ranking activity with the LCC's Technical Core Team and Staff, and Phase 4 consisted of a workshop, also with the Technical Core Team and Staff. The phases were sequential, allowing for each phase to inform the next and for the building of relationships and trust over time between the researchers and partners and among the partners themselves. This chapter draws from data captured in Phase 1 of the priorities assessment, though the interpretation of results was informed by the assessment as a whole.

3.2 *Literature Review*

Contemporary Conservation and Collaboration

The complexity of contemporary natural resource issues such as invasive species or habitat fragmentation, as well as a trend toward more ecosystem-based approaches (Leong et al. 2011) has led to more regional or large-scale conservation and management efforts. In fact, there has been an emergence of regional scale governance in many sectors of the world today (Lockwood et al. 2009). Regional conservation efforts aim to approach environmental issues more closely to the geographic scales of their effects. The broad-reaching impact of many contemporary environmental problems has led to an understanding of the interdependence of conservation efforts, and calls for simultaneous and strategic efforts among multiple players (Leong et al. 2011).

Collaborative initiatives are characterized in different ways. Moore and Koontz (2003) created a typology of collaboration initiatives based on member composition, from citizen-based groups to agency-based groups, and those with mixed memberships. Collaborative initiatives are also described by the organization affiliations of the partners that participate in them. For example, if partners are associated with an organization or agency, the cooperative tends to adopt the parent organization's "problems and strategies" (Bidwell and Ryan 2006: 840). Margerum (2008) characterizes collaborative initiatives by the level at which decision-making occurs. He describes "operational-level" collaboration, where action occurs on-the-ground, and "organizational-level" collaboration, where partners focus on programs (such as the LCC). Lastly, he articulates a higher level collaboration type, that of "policy-level" collaboration, where organizations work on government legislation, policies, and rules (Margerum 2008).

Barriers and Limitations to Collaboration

Limitations or barriers to effective collaboration have been highlighted by many (Wondolleck & Yaffee 2000, Powell 2010, Trachtenberg and Focht 2005, Hilty and Groves 2008, Margerum and Whittall 2004, Perz et al. 2010, and Plummer and Hashimoto 2011). Wondolleck and Yaffee (2000) frame three broad categories of barriers to collaboration: institutional or structural, process-based, and social barriers. Institutional or structural barriers are those barriers that stem from the institutional arrangements of organizations, such as availability of resources or rules regarding travel (2000). Process-based barriers arise from difficulties with the processes involved in collaborating, including communication, problem-solving, and decision making (2000). For example, an unclear articulation of member

responsibilities can be a barrier to effective collaboration if the players are not sure who is responsible for which tasks. Social barriers are defined as those barriers stemming from attitudes and perceptions of the individuals and agencies, and can include things such as distrust between individuals or between agencies (2000).

Powell (2010) describes vertical and horizontal fragmentation as another way to frame barriers to collaboration. Vertical fragmentation occurs when government institutions at various hierarchical scales (local, state, national) attempt to work collectively in a large geographical region but have different mandates and laws based on their jurisdictions. Horizontal fragmentation occurs when organizations at the same level of governance work together but come into conflict because of their differing objectives and approaches (Powell 2010). Outside of these attempts to frame or typify barriers to collaboration, much of the literature takes a descriptive approach to barriers by producing context-specific lists.

Best Strategies for Collaboration

In addition to the extensive list of barriers and limitations to collaborative conservation found in the literature, studies have shown characteristics of successful collaborations. Schuett et al. (2001) asks participants from collaboration groups in which the US Forest Service was involved what makes collaboration successful. They identify a number of common factors including having a broad representation of stakeholders, clearly defining the group's goals and objectives, the ability to share and transfer information, sharing decision-making power, and building relationships beyond the community of collaborators (Schuett et al. 2001). Powell (2010) illustrates necessary steps for overcoming barriers, including the communication of the

relevance of an issue to enhance group members' motivation, and an understanding that working together is essential to solve the problem. Group members must feel the leaders of the cooperative are legitimate, and there must be opportunities for partners to interact (Powell 2010). In agreement with Schuett et al (2001), Powell (2010) also states that attracting a representative membership and clearly defining goals and the purpose of the group are keys to success. Lastly, leaders must possess skills necessary to manage partners and the process of collaborating, and a consensus should be reached regarding how the collaboration process will work (Powell 2010).

Context and Scale

Collaboration initiatives are not separate from the context in which they occur. Plummer and Hashimoto (2011) expand on the concept of problem context, which was identified by Honadle (1999). A problem is situated in a particular context, which influences how it is connected to other problems as well as its severity (Plummer and Hashimoto 2011). Environmental problems are also influenced by the context created by their ecological and administrative boundaries. For example, pollution issues are likely addressed differently in a highly populated urban center than they would be in a very remote and rural county. Plummer and Hashimoto (2011) detail the social context around problems, including how the political culture, power balance between organizations, and infrastructure play a role in shaping a problem. They further state that context can impact the outcome of a collaborative effort by influencing individual's behaviors. This occurs along a scale continuum, "with local factors directly influencing (and being influenced by) the community at one end, and at the other end,

remote factors that are exogenous to the regime and typically beyond the users' control" affecting collaboration differently (Plummer and Hashimoto 2011: 226).

Collaboration has become a solution for working on conservation issues at a regional scale. Yet collaboration is influenced by the particular regional context it is situated in, as well as internally affected by the smaller scales of conservation collaboration happening within individual agencies and between agencies in that region. To better understand barriers and best strategies for collaboration, they must be investigated in the multiple layers of context. While the literature has detailed many barriers to and best strategies for effective collaboration, no efforts have framed them with a consideration of the spaces of collaboration within regions. A more systematic assessment of the relationships between barriers to and strategies for collaboration is needed.

3.3 Conceptual Framework

Contextual factors influence both barriers to and strategies for effective conservation collaboration. Building from these ideas, a conceptual framework was developed by this researcher to illustrate barriers to collaboration in the three main "spaces" of an organizational-level collaboration: *within* individual agencies, *between* agencies, and *external* to the collaboration initiative (see Figure 3.4). If a collaborating body can identify the spaces in which barriers to effective collaboration exist, they can better understand their ability to control and/or address them. The three categories of barriers to effective collaboration articulated by Wondolleck and Yaffee (2000) – institutional, process-based, and social – help to categorize barriers articulated in the literature as well as to evaluate their prevalence in these three spaces of collaboration. Figure 3.4 shows a conceptual framework for how strategies or factors for

successful collaboration articulated in the literature can be grouped into themes similar to barriers. Understanding the spaces in which barriers and best strategies are articulated can help identify where gaps may be between how to address (the best strategies) the challenges (barriers) of collaboration. Table 3.1 shows both barriers to and strategies for effective collaboration found in the literature and organized by this researcher, with corresponding references.

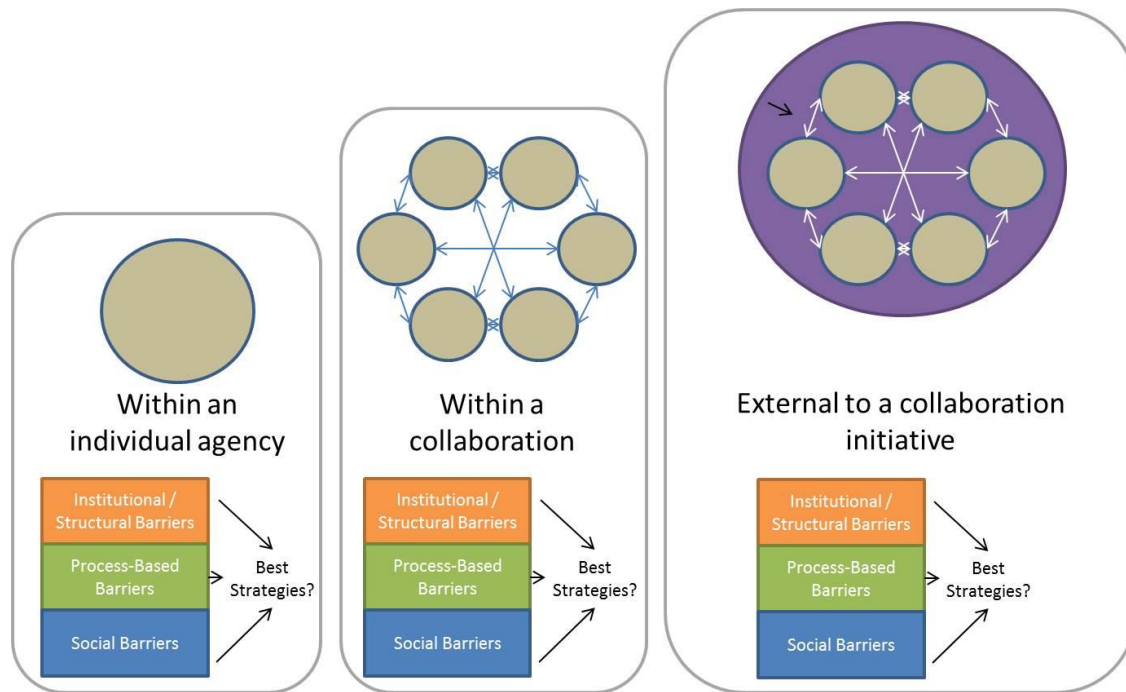


Figure 3.4: Barriers and best strategies and the spaces in which they occur.

Table 3.1: Barriers to and best strategies for effective collaboration, from the literature

| <u>Categories</u> | <u>Within individual agencies/organizations</u> | | <u>Within Collaboration Initiatives</u> | | <u>External to Collaboration initiatives</u> | |
|----------------------------|--|-----------------|--|---|---|--|
| | Barriers | Best Strategies | Barriers | Best Strategies | Barriers | Best Strategies |
| Structural / Institutional | -Inflexible policies & procedures ¹ -Constrained resources ¹ -Lack of incentive ^{1,4} | | -Conflicting goals, missions, and statutes ^{1,6} -Unclear articulation of purpose ⁸ | -Broad representation of stakeholders ^{8,10} | -Lack of incentive ^{1,4} | |
| Process-based | | | -Lack of process skills ¹ <u>-Failure to define clear goals^{5,8}</u> -Lack of consensus regarding rules & normative standards ⁸ -Unclear articulation of member responsibilities ^{5,8} -Lack of respect for agency authority ⁸ -Not including relevant stakeholders ⁵ -Data sharing issues ⁶ -Unclear communication between scientists & managers ⁶ -Lack of feedback loop (assessment, evaluation, adjustment) ⁸ | -Ability to share and transfer information easily ¹⁰ <u>-Clearly defining goals and objectives^{8,10}</u> -Sharing decision-making power ¹⁰ -Communicating relevance of issues to increase motivation ⁸ -Leaders must possess skills to manage diverse partners ⁸ -Reaching for consensus ⁸ | -Unclear communication between scientists and managers ⁶ -Leader not willing to be external face of collaboration amid criticism and doubt ⁶ -Lack of effective communication of goals to garner outside support ⁶ -Tensions with the outside world (politics, priorities) ⁶ | |
| Social | -Organizational norms and culture; turfiness ¹ | | -Mistrust ^{1,3,4,8} -Negative attitudes regarding group members ¹ ; legitimacy ^{2,8} ; representativeness ⁸ <u>-Lack of opportunities for building relationships and trust⁸</u> -Organizational norms, culture; | <u>-Members must have opportunities to interact⁸</u> <u>-An understanding that working together is essential to solving the problem⁸</u> | -The need for issues to be relevant or important to outside world ⁶ | -Building relationships beyond the partners in the |

| | | | | | | |
|---|--|--|---|--|--|-----------------------------|
| | | | turfiness ¹ <u>-Discomfort with or unaccustomed to sharing power⁶</u> -Inability to produce results that prove success to members ⁴ -Disciplinary chauvinism ⁷ <u>-Lack of leadership or leader not respected⁸</u> | <u>-Leaders must be legitimate/respected⁸</u> | | collaboration ¹⁰ |
| References: 1. Wondolleck and Yaffee 2000; 2. Trachtenberg and Focht 2005a; 3. Trachtenberg and Focht 2005b; 4. Cheng 2009.; 5. Hilty and Groves 2009; 6. Margerum and Whitall 2004; 7. Perz et al. 2010; 8. Powell 2010; 9. Plummer and Hashimoto 2011; 10. Schuett et al. 2001. | | | | | | |
| * Factors underlined were deemed to have a corresponding barrier or best strategy. | | | | | | |

Table 3.1 (cont.)

This conceptual framework and corresponding table reorganize barriers to effective collaboration as well as best strategies into spaces of organizational-level collaboration, and provide an opportunity to examine where barriers occur, and if best strategies are addressing the challenges and barriers to collaboration in those spaces. By identifying where barriers occur, collaboration participants may better understand who has the power or responsibility to address them. Barriers occurring in different spaces may require different strategies. Best strategies for collaboration from the literature may address some barriers, but not others, and may be effective in one space of a collaboration but not others. This framework is meant to identify gaps in the literature by identifying missing barriers and best strategies for the various spaces in which agencies and organizations work to collaborate.

This framework was evaluated by comparing with perspectives from participants of an active, regional, and organizational-level collaboration – the Upper Midwest & Great Lakes LCC. Findings should aid in articulating a more nuanced approach to connect barriers with best strategies in the real-world spaces in which they occur. Four driving research questions were examined with the help of this framework. First, how has the recent popularity of collaboration initiatives, and the success of some, influenced beliefs about their efficacy and their capacity for success? Do participant perspectives contradict these popular beliefs about collaboration? Second, do the perspectives of those participating in conservation collaboration in a regional setting reflect the barriers and limitations of collaboration outlined in the literature? Third, what are the best strategies for collaboration in a regional setting from the perspective of participants? How do these ideas compare to existing literature regarding what makes a collaboration attempt successful? And lastly, in what spaces of organizational-level collaboration do barriers occur? Do best strategies correspond to these barriers in these spaces?

3.4 Methods

Data Collection

As part of the Phase 1 of the assessment discussed above, perspectives on collaboration were gathered from thirty UM&GL LCC participants via semi-structured interviews. Thirty out of forty-one of the UM&GL LCC members participated in the assessment, yielding a response rate of 73%. Participants included members of the three LCC Committees: the UM&GL LCC Staff, Steering Committee, and Technical Core Team. Participants were representative of the various types of partners found within the UM&GL LCC, including US federal, state, and tribal government agencies, Canadian government agencies, NGOs, joint ventures, and commissions. Table 3.2 provides a list of the LCC partner types and the total number of partners in each type.

Table 3.2: UM&GL LCC Partner Types and Numbers

| <u>Types of Partners</u> | <u>Total Number of participants</u> |
|---|--|
| LCC Staff | 3 |
| US Federal | 10 |
| Canadian Province | 4 |
| Regional Entity (Commission, Joint Venture) | 4 |
| Native American Tribe | 1 |
| NGO | 4 |
| State | 15 |

Semi-structured interviews included open-ended questions regarding participant experiences with collaboration, perceived barriers and limitations to effective collaboration, best strategies for collaboration, and the difference between collaboration and coordination.

Interviews were conducted in person and by phone, and ranged in duration from 21 minutes to 86 minutes. Interviews were audio recorded with permission, then transcribed and quality checked for accuracy.

Analysis

The framework discussed in the above section on barriers, strategies, and spaces of collaboration was used to address the four guiding research questions. Themes were created to address each research question and to guide analysis. To answer how the recent popularity of collaboration initiatives, and the success of some, may have created beliefs about the efficacy of collaborative groups, themes included how conservation was perceived to have changed over time, the role of collaboration in conservation today, and participants' individual experiences with collaboration. In order to answer how barriers and limitations of collaboration in the literature reflect perspectives of conservation professionals participating in collaboration, themes were highlighted regarding what makes collaboration difficult or fail, and any mention of specific categories of barriers, including institutional/structural, process-based, or social barriers. To answer the question of best strategies for collaboration, themes regarding best strategies, attributes of successful collaborations, and measures of success were extracted from interviews. Lastly, the "spaces" in which both barriers and best strategies were articulated were noted to address the research question surrounding the relationship between barriers and best strategies: where do they occur, and are there corresponding best strategies to address barriers?

Interview transcripts from Phase 1 of the priorities assessment were analyzed using the above themes to reveal dominant and alternative perspectives as well as the range of perspectives across participants. Because interviews consisted of open-ended questions, the topics that

emerged were either important to participants, or simply what came to their minds at the time of the interview. Any quantitative description of the strength or prevalence of perspectives comes from the number of participants who articulated that perspective, not the number who necessarily agree or disagree with that opinion. Themes emerged freely from each interview and a quantitative comparison of themes was not conducted with the interviewees.

Additional themes not initially framed were allowed to emerge and were added into the systematic analysis process for all interviews. An iterative process was used in which theme definitions were formulated and reformulated as varying perspectives emerged.

3.5 Findings

Introduction to Results

A total of fifty-six barriers to effective collaboration were articulated by twenty-nine of the thirty participants. A total of forty-four best strategies for successful collaboration were articulated by the thirty participants. The following results are organized in response to the research questions. First, findings related to contemporary conservation are detailed, which provide some background to findings in later sections. Next, the most articulated barriers to effective collaboration are discussed with supporting quotes, enumerated by the spaces in which they occur. Those are followed by cumulative tables of barriers from the literature and interviews. Best strategies for collaboration follow, in the same format. An evaluation of the complementarity of barriers and best strategies articulated by conservation professionals is provided in the discussion section.

Contemporary Conservation and Collaboration

Active participants in the UM&GL LCC provided a glimpse into the state of collaboration in conservation today, specifically their understanding of the motivations for collaboration and its popularity. Calling collaboration “a way of doing business,” participants recognized its growth in recent decades and cited three main reasons for increased emphasis on collaboration. First, many natural resource issues were seen as shared across agencies and organizations:

I think we realize very deep down that we’re not an island and a lot of our landscapes, a lot of our conservation needs, overlap.

- State agency participant

There appeared to be an understanding that jurisdictional borders present administrative challenges, but that natural resource issues don’t stop at those boundaries. Therefore, agencies must work with partners of other jurisdictions because they share issues.

Second, in addition to highlighting issues shared by agencies and organizations, participants revealed the idea that natural resource issues themselves have changed. There was recognition that environmental problems are “unprecedented” in their complexity. They are widespread, or require effort that goes “beyond the operational footprint of each organization.” One state agency participant noted, as an example, that invasive species issues require working with external partners, to “just get the awareness out - get people to follow some of the suggested practices.”

Third, participants readily noted that individual agencies or organizations are less capable of achieving conservation successes alone due to declining budgets and lacking resources:

We can't pretend to do everything and we can't do everything that we used to do on our own.

- State agency participant

Partnering with other agencies and organizations was seen as the key to finding and utilizing skillsets and resources their own agencies lack:

We can't do this anymore, but if we had help from this state agency or that federal agency, or Ducks Unlimited... we could probably get this done. They have engineers, we have some money, they have some land, that group has three people that can develop a grant for this money....

- Regional entity participant

These three motivating factors provide insight into the popularity and rise of new collaborative initiatives. A potential new problem was articulated by participants, that of too many redundant and competing collaborative efforts. Participants noted that with so many opportunities for collaboration, they are not sure which to get involved with. Or that they are involved in so many collaborative efforts that they are "over-partnershiped," becoming spread too thin, and having difficulty managing their day-job responsibilities with that of collaborating. Many expressed that the process of collaborating, including meetings, phone calls, and emails, was taking up too much time and starting to overshadow their responsibilities for conservation implementation.

Barriers and Limitations

As articulated in the conceptual framework above, literature on natural resource management reveals barriers to effective collaboration among conservation organizations. These

barriers are organized by the “spaces” in which they occur: within individual agencies, within a collaboration, and external to a collaboration.

Within Individual Agencies: Institutional or Structural Barriers

Within their own individual agencies, participants noted internal institutional barriers to collaborating with outside agencies and groups. Limited or constrained resources was the most articulated barrier, with seven participants mentioning limited time, seven participants mentioning limited funding, and five mentioning limited manpower.

These limited resources are often related. For example, limited funding within an agency could explain why there is limited manpower, which is related to limited time for current employees to participate in outside collaboration initiatives:

Time and resources. You know, we’re continuously, and I think this is true all across the United States, we’re continually asked to do more with less resources and that puts a crunch on the time necessary to collaborate with our other partners.

- State agency participant

Essentially its lack of staff, lack of time, lack of money, the demands keep growing on agencies and organizations, you know, it’s more and more difficult to do the increasing work when staffing is being reduced and under stress because of extensive workloads.

- State agency participant

A new finding, and an extension of the limited resources idea, was also the idea that balancing “day job” responsibilities with collaborating was difficult. Collaboration activities (ranging from meetings, conference calls, sending emails, setting up travel, etc.) were found to take up an extensive amount of time, making more difficult the already pressing demands placed on agencies to fulfill their own statutory obligations.

An agency's jurisdictional statutes or authority restrictions were also articulated as a barrier by three participants. This specifically applies to governmental agencies that may not have statutory authority to work with other jurisdictions or outside partners.

Having the authority to do it is one, particularly with respect to governmental organizations, we can only do what the law authorizes and funds us to do, so if that's not there it can create a barrier to working across boundaries.

- State agency participant

Additional institutional barriers mentioned included the inability to travel into other jurisdictions, and a lack of incentive or temptation to focus on required work only. The three institutional barriers found in the literature that occur within an individual agency were all found to be supported by this study. Inflexible policies and procedures (in this example, travel restrictions), constrained resources, and a lack of incentive corresponded closely with those reported in the literature (Wondelleck and Yaffee 2000).

Within Individual Agencies: Process-Related Barriers

No specific process-related barriers were articulated within individual agencies, and the concept was not found to be a helpful way of understanding barriers within individual agencies. Many of the institutional or structural barriers that were articulated could be considered process-related, for example the time it takes to perform collaboration activities. Institutional and structural barriers can inhibit collaboration activities from occurring, thereby negating a distinction for process-related barriers within individual agencies.

Within Individual Agencies: Social Barriers

Within individual agencies, social barriers to collaboration were articulated. Three participants mentioned that some agencies have or promote a culture that stays within their own

organizational lines, which was supported in the literature (Wondolleck and Yaffee 2000). Two new findings emerged regarding social or agency culture barriers that were not mentioned in the literature reviewed. One participant mentioned that individuals can be inclined to follow tradition and work within jurisdictional bounds. One other participant mentioned that it is hard for some agencies to realize the value of knowledge gained in other jurisdictions, and prefer to only use resources within their domain.

Table 3.3 shows the total barriers to effective collaboration that occur within individual agencies or organizations, if they were found to be supported in the literature, and if they were found to be supported in interviews.

Table 3.3: Barriers within individual agencies or organizations found in literature and interviews

| Categories | <u>Barriers within individual agencies/organizations</u> | <u>Literature</u> | <u>Interviews</u> |
|----------------------------|---|--------------------------|--------------------------|
| Structural / Institutional | Inflexible policies & procedures (for example, travel or working outside jurisdiction) | Yes | Yes |
| | Limited/constrained resources (time, funding, manpower) | Yes | Yes |
| | Lack of incentive | Yes | Yes |
| | Balancing day job responsibilities with time it takes to collaborate | No | Yes |
| Process-based | --- | --- | --- |
| Social | Organizational norms and culture; turfiness | Yes | Yes |
| | Individuals inclined to stay within tradition | No | Yes |
| | Lack of organizational recognition of the value of knowledge or science produced externally | No | Yes |

Within a Collaboration: Institutional or Structural Barriers

Participants articulated barriers occurring within a collaboration initiative. These barriers discuss issues associated with how the collaboration itself is organized and managed, and how

partners function together in a collaboration. Institutional barriers to effective collaboration included the collaboration initiative itself having an unclear purpose, an idea supported in the literature (Powell 2010) and also mentioned by three participants:

You know there's not a clear role, it just kind of chugs along, there's not clear tasks for an organization to do...

- NGO participant

A lack of funding or resources within the collaboration was viewed as a barrier by two participants, and was seen to limit membership and continued participation by limiting incentives for members. Without the initiative being capable of incentivizing partners for their participation, it is harder to both recruit and sustain group membership. Additional issues mentioned by singular participants are included in Table 3.4.

Within a Collaboration: Process-Related Barriers

Process-related barriers articulated by participants included factors such as the lack of clear member responsibilities, which was mentioned by four participants. The lack of clear roles and responsibilities inhibits the process of collaborating because participants are not sure what they should or could be doing to advance the cause. This idea is supported by the literature (Hilty and Groves 2008). Four participants mentioned that the sheer number of people involved in collaborating can be a barrier. This was a new finding not found in the literature. Two participants mentioned that competing or conflicting conservation priorities between members was a barrier. Additional barriers were also mentioned, and have been listed in Table 3.4.

Within a Collaboration: Social Barriers

Social barriers to effective collaboration were found amongst the LCC participants. Lack of trust was the most strongly articulated social barrier, articulated by four participants. A new

finding was that some participants felt there were certain people who lacked collaborative personalities, and that having them as partners was a real barrier to collaboration:

You know there are some people who have collaborative personalities and there are other people who really don't. So the kind of human dynamics.... Sadly, individual personalities can be a barrier to collaboration and they can be barriers to *major* successes.

- LCC Staff participant

Turf issues and the associated egos that go along with them were also mentioned by three individuals. Additional social barriers found in interviews are listed in Table 3.4.

Table 3.4: Barriers within a collaboration found in literature and interviews

| Categories | Barriers within a collaboration | Literature | Interviews |
|---|--|-------------------|-------------------|
| Structural / Institutional | Conflicting goals, missions, and statutes | Yes | Yes |
| | Unclear articulation of purpose | Yes | Yes |
| | Lack of funding or resources within the collaboration itself | No | Yes |
| | Politics of working across jurisdictional boundaries | No | Yes |
| | Geographical boundary of the collaboration | No | Yes |
| | Unequal resources and levels of authority between partners | No | Yes |
| | The cooperative having no real power or authority over partners and relying on partner authority | No | Yes |
| Process-based | Lack of process skills | Yes | No |
| | Failure to define clear goals | Yes | Yes |
| | Lack of consensus regarding rules & normative standards | Yes | No |
| | Unclear articulation of member responsibilities | Yes | Yes |
| | Lack of respect for agency authority | Yes | No |
| | Not including relevant stakeholders | Yes | No |
| | Data Sharing | Yes | Yes |
| | Unclear communication between scientists & managers | Yes | Yes |
| | Lack of feedback loop (assessment, evaluation, adjustment) | Yes | No |
| | Number of participants (too many) | No | Yes |
| | Competing or conflicting conservation priorities between members | No | Yes |
| | Unclear direction from management arm of collaboration | No | Yes |
| | Logistical issues with getting members face to face | No | Yes |
| | Lack of accountability for members (collaboration itself has no authority) | No | Yes |
| Time inputs required to build relationships and trust | No | Yes | |
| Declining momentum leading to declining participation | No | Yes | |
| Social | Mistrust | Yes | Yes |
| | Negative attitudes regarding group members; legitimacy; representativeness | Yes | Yes |

| | | |
|--|-----|-----|
| Lack of opportunities for building relationships and trust | Yes | No |
| Organizational norms and culture; turfiness | Yes | Yes |
| Discomfort with or unaccustomed to sharing power | Yes | Yes |
| Inability to produce results that prove success to members | Yes | Yes |
| Disciplinary chauvinism | Yes | No |
| Lack of leadership or leader not respected | Yes | Yes |
| Individuals who participate in collaboration are likely participating in others, either as part of their role or because they volunteer. They get overextended | No | Yes |
| Conflicting individual visions of how the collaboration should work | No | Yes |
| Human dynamics, person-to-person issues | No | Yes |
| Lack of responsiveness of partners to other partners | No | Yes |
| Differences in definitions or usage of terms, language disconnects | No | Yes |
| Having the wrong people at the table (i.e. technical introverts when the problem calls for more strategic thinkers) | No | Yes |
| Discomfort sharing culturally sensitive information | No | Yes |
| Having people at the table who do not have collaborative personalities | No | Yes |

Figure 3.4: (cont.)

External to a Collaboration: Institutional or Structural Barriers

External barriers are those factors coming from outside of the individual agencies and the collaboration that impede or make effective collaboration difficult. These findings approach collaboration from a different perspective than much of the literature. As an example, institutional barriers that are external to the collaboration could include existing governance infrastructure or federal or other policies outside of the collaboration that restrict collaboration attempts or efforts somehow. An emergent finding, and one of the most strongly articulated barriers from the study, was that the number of existing collaborative initiatives in the Great Lakes region is actually a barrier to collaboration. This was mentioned by six of the thirty participants.

[There are] a lot of long-spanning existing partnerships and collaborations, already in this geography. And I don't think it's a barrier, but it's definitely a challenge, that that stuff already exists. Or that, just the very example that we're asking the same agencies and organizations to continue to come to multiple tables. And meet. And there is just a very physical limitation on how many meetings someone can attend.

- LCC Staff participant

In addition, the structure of state and federal government responsibilities or jurisdictions was mentioned by two participants as being an issue to collaboration.

External to a Collaboration: Process-Related Barriers

A process-related barrier articulated by one participant relates to the number of collaborative initiatives in the region: that the time it takes to do the process of collaborating, i.e. emailing, meetings, phone calls, etc. limits their ability to collaborate in the LCC. This builds on earlier sentiments that it takes a generous amount of time to do everything that is involved with collaborating.

External to a Collaboration: Social Barriers

Social barriers external to the collaboration articulated by participants were new findings not found in the literature review. Two participants mentioned tension between state and federal government agencies as a barrier to collaboration. One person mentioned they believe some agencies don't realize how important it is to collaborate with her organization. And another participant mentioned that with so many collaborative initiatives taking place, many of these partners have worked together before and may bring their bad experiences from one collaboration into another one.

A complete list of barriers occurring external to a collaborative initiative is given in Table 3.5, as well as if they were found in the literature, interviews, or both.

Table 3.5: Barriers external to a collaboration found in literature and interviews

| Categories | Barriers external to a collaboration | Literature | Interviews |
|----------------------------|--|-------------------|-------------------|
| Structural / Institutional | Lack of incentive | Yes | No |
| | Number of existing collaborations in the region | No | Yes |
| | Structure of state/federal government agencies, responsibilities | No | Yes |
| Process-based | Unclear communication between scientists and managers | Yes | No |
| | Leader not willing to be external face of collaboration amid criticism and doubt | Yes | No |
| | Lack of effective communication of goals to garner outside support | Yes | No |
| | Tensions with the outside world (politics, priorities) | Yes | No |
| | Time collaborating in multiple collaborations limits their time across all their endeavors | No | Yes |
| Social | The need for issues to be relevant or important to outside world | Yes | No |
| | Tension between state and federal government agencies | No | Yes |
| | Some agencies don't realize the importance of collaborating | No | Yes |
| | Partners bringing bad experiences from one collaboration into another | No | Yes |

Best Strategies

This section details the findings related to best strategies for collaboration. All thirty participants mentioned at least one example of a best strategy. Forty-four different best strategies were articulated, many of them by only one participant. Five of the strategies were echoed by more than four participants. This section details the most articulated best strategies, then provide a list of those articulated by singular participants.

The most articulated best strategy was for a collaboration to set shared goals and lay out strategies for what they want to achieve. This was articulated in some fashion by ten of the thirty participants. Many related this to having a stated and agreed upon purpose for the collaboration effort, but also in terms of staying focused and having members contribute:

So if you don't have goals, you can't set objectives and if you are not setting goals and objectives and you have a vision statement, you'll wander. So the secret to success is being focused, and that's how you get focused.

- Regional entity participant

I think that just the idea of setting shared goals and laying out strategies would go a long way to increasing that collaboration or insuring that that collaboration continues. When you have a set of shared goals that you're all working towards then it's much more natural to be checking in with your other partners that also have those same goals.

- State agency participant

The next two strategies were articulated by seven participants each. The first is continuous and effective communication. Many noted that with so much conservation and collaboration going on in the region, constant communication is important:

But I think the most important aspect for me is that constant communication. Everybody apprised of what's going on. You can never over-communicate, I think finding different ways that appeal to different partners is important.

- Federal agency participant

Finding ways of communicating that reach everyone was also articulated as important.

I think really clear, um, communication between sort of a number of modes... some people like the phone, and some people like their email and there's a difference. And so for a group like the LCC, they need to be using multiple modes of communication.

- Federal agency participant

Constant communication was also seen as important given some of the barriers listed above, such as travel restrictions or funding limitations.

Everybody communicates differently. Everybody connects differently. And everybody has their restrictions and limitations, so I think you have to do a plethora of all those.

- Federal agency participant

For those who cannot travel to attend face-to-face meetings, or have limitations on communication options, having a variety of tools for communication was listed as important.

Next, the concept of building trust and relationships between partners was mentioned by seven participants:

If you put the coordination before you have the cooperation, then you might think you are doing the right thing but if you don't have that trust and consensus built among the partners, there's always a little bit of a hesitancy to fully embrace your concept.

- Federal agency participant

Without trust, there can be no collaboration. I've seen the biggest barrier is just this lack of trust and particularly when making decisions about how resources are going to be allocated. My experience has been that organizations can work quite well together when there are no resources to do anything with, but once resources

are here, then some of the fighting starts and it comes down to trust, lack thereof, or once trust is built then I think those kinds of resource decisions can be made quite effectively.

- State agency participant

Many felt that face-to-face meetings were the best way to begin to build relationships, and stated that having those opportunities at the beginning of an initiative was important. Face-to-face interaction was mentioned by five participants:

You know nothing beats face-to-face, especially early on in a relationship.... I don't think you can replace that. But eventually I think having the wherewithal to know what to be accomplished, via... phone or e-mail... this is what's actually needed.

- Federal agency participant

Lastly, five participants mentioned the importance of having very clear roles and responsibilities for partners, as well as rules and bylaws for the collaboration:

Collaboration works best when the collaborators are equally confident in their responsibilities, their roles, and their expertise.

- LCC Staff participant

Regarding someone new coming in to the collaboration, one participant said the following about her agency's policy of having rules and roles documented:

At least they don't step into that role not knowing how it's going to operate and what their responsibilities are. That's why it's so important to take the time to get [roles] defined, to get agreement on it, and to get it down on paper.

- NGO participant

The following two tables include best strategies found in the literature and the most articulated strategies from interviews.

Table 3.6: Best strategies within a collaboration found in literature and interviews

| Categories | <u>Best Strategies within a Collaboration</u> | <u>Literature</u> | <u>Interviews</u> |
|----------------------------|---|--------------------------|--------------------------|
| Structural / Institutional | Having a broad representation of stakeholders | Yes | No |
| Process-based | Clearly defining goals and objectives | Yes | Yes |
| | Ability to share and transfer information easily | Yes | No |
| | Sharing decision-making power | Yes | No |
| | Communicating relevance of issues to increase motivation | Yes | No |
| | Members must have opportunities to interact, including face-to-face | Yes | Yes |
| | Leaders must possess skills to manage diverse partners | Yes | No |
| | Consensus should be reached | Yes | No |
| | Continuous and effective communication that reaches people (different modes of communication) | No | Yes |
| | Clear roles and responsibilities for members | No | Yes |
| Social | An understanding that working together is essential to solving the problem | Yes | No |
| | Leaders must be legitimate/respected | Yes | No |
| | Building trust and relationships | No | Yes |

Table 3.7: Best strategies external to a collaboration found in literature and interviews

| Categories | <u>External to a Collaboration</u> | <u>Literature</u> | <u>Interviews</u> |
|----------------------------|---|--------------------------|--------------------------|
| Structural / Institutional | --- | --- | --- |
| Process-based | --- | --- | --- |
| Social | Building relationships beyond the partners in the collaboration | Yes | No |

The following table presents additional best strategies articulated in interviews by fewer participants. The right-hand column shows the number of participants who echoed that strategy.

Table 3.8: Additional best strategies mentioned by participants

| Best Strategies | # |
|---|----------|
| Making sure each partner is heard so that they take ownership and responsibility for the group | 3 |
| Mutual benefit and outcomes for all the parties | 3 |
| Fostering a shared sense of ownership. Everyone feels it and contributes. | 3 |
| Making the extra responsibilities from being in the group easy to overcome or beneficial enough that people prioritize it over everything else they do in their day jobs | 2 |
| Pick localized or targeted objectives or implementation so people really see the effect of their efforts | 2 |
| Get everybody around the table to identify with the problem or the opportunity | 2 |
| Having a very clear idea for what the collaboration is meant to do. | 2 |
| Having good visioning. A communication issue. Getting out there what it is you're trying to do with this collaboration | 2 |
| Keep the group as small as possible, so you can make decisions and get everyone to feel responsibility | 2 |
| Operating on a consensus model that everyone agrees to (where you can live with the group decision rather than having to 100% agree). | 2 |
| Having meeting records available in a secure format online. | 2 |
| Having forums for discussion around issues | 2 |
| Having mutual interest and shared priorities (so partners see a value in collaborating) | 2 |
| The collaboration having funding (to hire, grant, subcontract, etc.) | 2 |
| Bring in the right kind of people to solve the problems you're going to work on | 2 |
| Awareness of partners' priorities, funding situation, programs, and skill sets. | 2 |
| Tying partner responsibilities to grant money | 2 |
| Having structures in place to allow travel | 1 |
| Partners having funding to leverage | 1 |
| Respecting the expertise of partners | 1 |
| Respecting the limitations of partners (their financial or political power, varying capabilities, etc.) | 1 |
| Being able to work with partners with different interests | 1 |
| Having good understanding between collaboration participants and their home agency | 1 |
| Having the collaboration objective be something that is highly valued and driven by the public | 1 |
| Having a charismatic or high-energy person that can find a way to rally the group. | 1 |
| Giving priority to collaboration in light of everything else you have to do in your day job | 1 |
| Organizations having confidence when bringing ideas to the table | 1 |
| Having a good facilitator for meetings, to help them run smoothly and stay on task | 1 |
| LCC (or governing body) should foster an environment of leading, coaching, and mentoring. Collaborating on common ground. | 1 |
| Having a communication strategy to get the word out | 1 |
| Good record keeping and documentation, notes and records of the meetings. Communicating those results and meeting notes rapidly to all partners for review and having them respond quickly. Recording of dissenting opinions. | 1 |
| Convenient meetings in nice places with time for bonding | 1 |
| Shadowing programs to learn about the other agencies and organizations | 1 |
| Vehicle transfer mechanisms for money exchange (MOUs, etc.) | 1 |
| When everyone is expected to have skin in the game – to bring something to the table (staff expertise, funding, etc.) | 1 |
| When partners get along with each other | 1 |
| Hire people that are respected in their field, like through national professional associations | 1 |
| When partners respect each other | 1 |
| Demonstrating and celebrating successes | 1 |

3.6 Discussion

Natural resource issues today are broad-reaching and shared across landscapes. They do not follow the jurisdictional boundaries of the organizations charged to address them. Natural resource challenges have become more complex, and require new skill-sets and more collective efforts. In addition, agencies find themselves less able to address issues due to declining budgets which affect conservation funding and manpower. Due to these motivations and others, collaboration has emerged in recent decades as a “way of doing business” in conservation. Yet real challenges remain.

In addition to those barriers to effective collaboration articulated in the literature, collaboration itself may be becoming overused in some regions. LCC participants expressed a new problem of being “over-partnershiped.” In a region like the Great Lakes, where a number of collaboration initiatives exist, conservation professionals struggle with which partnerships to become involved with, and must prioritize their time and energy for those that most effectively address their agency’s needs. Even in the partnerships they are involved in, the time it takes to collaborate may be taking away from actual conservation implementation. Collaboration activities, such as phone calls, meetings, and travel, take time, and not only limit the number of initiatives one can be involved with, but also take away from time needed for day job responsibilities.

It is important to note, however, that the number of existing partnerships and collaborative initiatives in a region is not entirely problematic. Due to the long history of collaboration in the Great Lakes region, natural resource professionals are experienced with collaboration and well-versed in potential barriers and best strategies. And while there is the

possibility of negative experiences from one collaboration being carried over into others, positive experiences with collaboration may also carry over into other initiatives.

The goal of this study was to examine barriers to and best strategies for effective collaboration, both in the literature and from the perspectives of conservation professionals who are participating in collaboration efforts. While an effort has been made to organize barriers and best strategies into the various “spaces” of an organizational-level collaboration, the interdependence of these barriers and best strategies cannot be ignored.

The data for this analysis came mostly from select interview questions, but using the entirety of the interviews and the later phases of the assessment for context provided a better overall understanding of the topics and how they fit in conservation today. Semi-structured interviews provided a unique forum to capture attitudes about barriers to collaboration as well as best strategies. The use of open-ended questions meant that LCC participants were not prompted to answer in a certain way, and many spoke at length about their understanding of the challenges with collaboration. The interview questions inquired about best strategies immediately following questions about barriers, and without an explicit prompt to connect the two, many did anyway. Responses were compiled in total, however, to evaluate the complementarity or lack thereof between barriers and best strategies from participants.

Participants provided new perspectives about barriers to effective conservation collaboration, but many of their thoughts built on ideas framed in existing literature. Constrained resources within individual agencies, well documented as a barrier in the literature, was the most articulated barrier to collaboration in interviews. When resources (including time, funding, and manpower) are limited within individual agencies, an agency’s ability to participate in and

capacity to contribute to collaboration efforts declines. This leads to the need for prioritization by agencies as to how to allocate the resources they do have. Some best strategies were articulated around the idea of limited resources, including making collaboration tasks beneficial enough that participants can prioritize them above other tasks. Limited funding or manpower within an agency, however, is a difficult issue to solve. One participant mentioned that the financial limitations of partners should be respected, but that is a strategy for living with limited resources, not a strategy for reversing the problem (or increasing resources). Likewise, there were no explicit best strategies for dealing with limited manpower.

Other pressing barriers to effective collaboration that occur within individual agencies were jurisdictional or statutory restrictions and stagnant agency culture. One suggestion that relates to jurisdictional or statutory restrictions is to put mechanisms in place that allow travel for collaboration activities. This is a very pressing issue that is related to budget shortages and that many state agencies deal with regularly. A travel mechanism that can allow for out-of-state travel for collaboration activities would enable more collaboration from partners from state agencies. No strategies were articulated to address stagnant agency culture, potentially due to the fact that the agencies involved in the LCC clearly approve of their employees collaborating and working with partners outside of their jurisdictional boundaries. Overall, within individual agencies, limited resources were the most important barrier, but articulated best strategies don't actually correct for the issue – they are simply ways to acknowledge it.

Additional strategies were articulated for the various barriers within a collaboration, which speaks to the extensive collaboration experience of these conservation professionals. Many understood the importance of laying out goals and strategies to give the collaboration initiative direction and purpose. Three additional best strategies were articulated to aid in this:

finding mutual interests and shared priorities (so that partners see a value in collaboration), having good visioning (including a good communicator who can deliver the group's message), and making the collaboration objective something that is highly valued and driven by the public. They also understood that clear roles and responsibilities are needed, to give partners a sense of ownership, and so progress is made and momentum stays high. Two specific strategies address this. First, defining and documenting clear roles, responsibilities, governance rules, and bylaws. And second, tying grant money to partner responsibilities. For a lack of funding or resources within the collaboration, best strategies included selecting partners who have funds or resources to leverage and requiring that all partners bring something (staff, expertise, funding, etc.) to the table.

Some new findings about the process of collaborating speak to the experience of the group. For example, four participants mentioned that having too many people trying to collaborate in a group is a barrier, and suggested keeping the group small. To have collaboration among groups that span a large region, deciding who and how many partners to include proves tricky, and was mentioned by multiple participants. Small numbers were also seen to increase individual responsibility. From the interviews it was clear that many had personally experienced this issue.

While a lack of trust wasn't echoed as strongly by the participants as it seems to be in the literature, these professionals had many suggestions for how to build relationships and trust. They include getting people face to face to interact socially, convenient meetings in nice places with time for bonding, and hiring or including people that are respected in their field, like through national professional associations. Participants who don't have collaborative personalities were identified as a barrier by three participants. It was suggested that bringing in

the right kinds of people to solve the problems at hand is the best solution. One participant noted that, for example, technical introverts may not be the out-of-the-box thinkers required to solve some of today's complex problems. Turf issues, egos, and the unwillingness to share power were articulated as barriers, but no concrete best strategies were articulated save the idea that partners should respect the expertise of their fellow partners.

One of the most noticeable findings was that the number of existing collaboration initiatives in a region was seen as a barrier by participants. This "external" barrier is related to barriers and best strategies that occur in other spaces, such as lack of time and manpower within agencies, because conservation professionals are spread thin trying to participate in multiple endeavors. This finding also highlighted the region-specific nature of these findings. This region has a long history of natural resource collaboration surrounding the Great Lakes. Another region in the United States or North America may not be inundated with collaboration as heavily as the Great Lakes. That may provide conservation professionals in other regions with more time to dedicate to more efforts, but their knowledge of collaboration barriers and best strategies would likely also be less than those working in the Great Lakes region.

No best strategies were articulated in interviews that addressed the issue of too many collaboration initiatives in the region. Likely the partners felt they had no control over the number of collaboration initiatives happening in their region, but the strength with which this was echoed as a barrier means it may likely need to be addressed. Other important social issues included the structure and resulting tension between state and federal agencies over the respective trust responsibilities. Having a good understanding of collaboration partners is important, but no concrete best strategies were articulated in interviews that addressed the relationship between state and federal agencies.

3.7 *Conclusion*

There has been an increase in collaboration in natural resource management in recent decades, as well as a shift to more regional and landscape-level approaches. Landscape Conservation Cooperatives are a product of both of these trends, and provide a unique opportunity to study how organizations collaborate over large spatial scales. A Shared Conservation Priorities Assessment was conducted for the Upper Midwest and Great Lakes Landscape Conservation Cooperative. This assessment had multiple goals, one of which was to highlight the challenges with natural resource collaboration, as well as best strategies for successful collaboration at a regional scale. This paper drew on collaboration barriers and best strategies from existing literature as well as from semi-structured interviews conducted in the Shared Conservation Priorities Assessment.

The conceptual framework used here helped to identify that barriers to effective collaboration don't always arise in the room where partners meet. In organizational collaborations such as the LCC, there are three spaces where barriers to collaboration might occur: within individual agencies and organizations, within a collaboration (or between organizations), and external to a collaboration. This study shows there are real challenges within individual agencies as well as external to a collaboration that may impact the success of an effort. By evaluating barriers in the spaces of collaboration, a more nuanced picture of barriers and best strategies was revealed. For example, limited resources have been identified in the literature as problematic for collaboration. Yet LCC participants highlighted limited funding, limited time, and limited manpower as barriers to effective collaboration that occur within their own individual agencies. Strategies articulated by LCC participants to address this issue were limited, and revolved around acknowledgement of the challenge rather than providing solutions.

Another barrier that proved important in this region is the number of existing collaboration initiatives and partnerships in the Great Lakes region. While the popularity of collaboration grows, the number of initiatives may be outpacing the ability of agencies and organizations to adapt to the challenges. This was a new finding, not articulated in the literature, which is also specific to this region. Because there are incentives to participate in multiple collaboration efforts, there were no best strategies articulated for avoiding the “over-partnership” problem.

This analysis also provided a basic synthesis of barriers with best strategies to identify gaps and address whether or not research is addressing these barriers by providing appropriate strategies. Also, new barriers not found in the literature were articulated by LCC participants. Some built off of existing knowledge of barriers, and some were potentially region-specific. This provided real-world feedback from conservation professionals about their most pressing collaboration issues and solutions. These findings provide a new way of examining the state of collaboration in conservation.

Further investigation of these topics could explore the relationships between barriers and best strategies in other kinds of collaboration enterprises, for example, an action-based collaboration made up of citizen participants. Because the researcher evaluated the complementarity of best strategies to barriers, this research could also be expanded in more of a problem-solving setting where participants look to directly provide best strategies for specific barriers.

CHAPTER 4: SUMMARY AND CONCLUSION

This thesis presents two studies examining priority-setting and collaboration within a landscape-based conservation initiative – the Upper Midwest and Great Lakes Landscape Conservation Cooperative (UM&GL LCC). The Department of Interior’s LCCs provide a unique opportunity to study these themes. LCCs were formed to be large, regional bodies of conservation agencies and organizations working together on shared issues. Each LCC operates similarly, but independently, and the agencies and organizations making up each LCC have the opportunity to set their shared priorities and choose future work. In addition, the LCCs are expected to coordinate efforts in the region, share expertise, and collaborate. The Upper Midwest and Great Lakes LCC provided an interesting example of a complex, multi-jurisdictional entity. This LCC not only included hierarchical levels of United States conservation jurisdiction, but international collaboration issues as well.

Chapter 2 highlighted an assessment process which used mixed methodologies to help the LCC arrive at a set of shared conservation priorities. The assessment process utilized an iterative and sequential process, and produced multiple kinds of results. The more qualitative findings gathered from the beginning phases of the assessment helped to establish a foundational understanding of participant perspectives regarding the role of this LCC in the region, as well as the ways in which the LCC would select future projects. Later phases built on these findings and more quantitatively assessed the group’s shared conservation priorities. The assessment methodologies included semi-structured interviews, a document analysis, a Q-sort, and a workshop. In addition to providing multiple ways of understanding the topics of interest, the mixed methodologies catered to the diversity of partners in the LCC, including scientists, managers, and those who work in advocacy.

Because the assessment utilized anonymous findings from each phase, LCC members were provided with a confidential space to discuss their opinions and beliefs. In addition, each participant was represented equally in the results. This proved to be an unfamiliar and rarely used mode for assessing priorities of collaborative conservation entities. Other LCCs utilized similar assessment methodologies but few, if any, chose to keep results anonymous. Some participants in the assessment enjoyed this democratic element. Others were uncomfortable with it, and would have preferred other methods that allowed them to voice their priorities and opinions more strongly.

Overall, the Shared Conservation Priorities Assessment successfully assessed the perspectives of LCC members regarding themes that were important to the LCC. The preliminary phases helped to lay foundational groundwork that the LCC referred to in subsequent phases of the assessment, but that they can also refer to and reevaluate as time goes on. The LCC also produced a list of conservation priorities which will provide direction for their future work.

There were, however, some limitations of the methodologies employed in the Shared Conservation Priorities Assessment. Most noticeably, the LCC participants were all very important to their respective agencies and organizations, and therefore extremely busy. Getting participants together for a meeting, phone call, or presentation, proved difficult and attendance at some meetings were low. As for the methodological limitations, most of the participants were unaccustomed to the use of interviews as data collection, including the use of anonymity. Some would have preferred a more vocal avenue for airing their opinions about conservation priorities. The background documentation analysis was performed at a surface-level; there was not enough time for a more in-depth analysis of agency and organization documentation, which could have

provided more systematic analysis of priority themes. The Q-sort method was new to most participants, and was conducted online. Instructions were emailed to participants, and at least one participant was unable to complete the task due to confusion over the instructions. Additional help completing the Q-sort was offered. Additionally, the participant was emailed the Q-sort template and list of priorities for manual sorting, but was not successfully completed. Lastly, issues with scheduling and participants' busyness limited their attendance during the workshop phase of the assessment.

Chapter 3 evaluated the role of collaboration in contemporary conservation, barriers to effective collaboration, and best strategies for collaboration from the literature and from the perspectives of UM&GL LCC participants. A conceptual framework was developed to better understand where barriers were occurring in organizational collaborations: within individual agencies, between agencies, or external to a collaboration all together. This framework also examined whether best strategies were addressing known barriers. Due to the history of natural resource issues in the UM&GL region, participants were very experienced in collaboration and validated much of the literature on barriers and best strategies. LCC participants also highlighted new barriers for consideration, such as the number of existing collaborative structures within a region, and being "over-partnershiped," suggesting participating in so many collaborative groups may take away from their effectiveness or the time needed to do actual conservation implementation.

By examining collaboration barriers and best strategies through the use of a conceptual framework, this study sought to provide a more systematic approach for assessing barriers, rather than producing a list. By highlighting the various "spaces" of organizational collaborations, a

collaboration entity can determine where barriers to effective collaboration are occurring, and potentially who, if anyone, might have the ability to address them.

One of the potential limitations of this analysis of interview data was the attempt to pair barriers with best strategies. Although interview questions were organized such that questions about best strategies followed questions about collaboration barriers, participants were not necessarily asked to come up with best strategies that responded to each articulated barrier. This chapter attempted to assess if barriers had potential solutions, but that was an attempt by the author in looking at the sum total of barriers and best strategies from all interviews. Also, responses from one interviewee were not used to solicit responses from other interviewees. Interview questions remained the same, and open-ended, for each participant. Therefore any quantitative assessment of the strength of perspectives was not necessarily the number of participants who agreed or disagreed with a concept, but simply the number of people who organically articulated a certain response.

Implications and Future Work

This research aimed to investigate priority-setting and collaboration in regional conservation cooperatives. The recent popularity of more regional conservation planning has been motivated by complex environmental issues that span large areas and involve multiple jurisdictions. The ability of conservation organizations and natural resource agencies to effectively assess shared priorities across a landscape results in more simultaneous and strategic work and less redundancy. In addition, the push for more collaboration has arisen despite known barriers to effective collaboration. By studying collaboration in new ways and at larger scales,

this work aimed to contribute to the understanding of barriers and best strategies for effective collaboration.

This work differed from assessments conducted by other LCCs, and offers a new way of bringing together the diverse set of participants engaged in an LCC. Results from this assessment justify both a mixed methodology approach and a confidential method. The mixed methods approach produced broader information about the LCC at the beginning of the assessment that provided a foundation for the LCC in terms of the best roles for them and criteria. Those two pieces of information, once evaluated and confirmed by LCC participants, provided a reference point for subsequent phases. Had the assessment simply tried to assess conservation priorities without that information, the LCC would have potentially struggled to accurately reflect the perspectives of their members and also would be lacking justification for their future actions. The inclusion of a confidential method, mostly absent from other assessments found in the literature and from the other LCCs, resulted in equal representation of LCC members. For a group that is meant to collaborate and articulate shared ideas, this provided a democratic process so that everyone's ideas were heard and accounted for. It also provided justification for future actions because everyone had the chance to be represented in the results.

Future work of this sort could assess the efficacy of the mixed methodology and confidential method approaches to assessing conservation priorities. This atypical approach could be compared to other assessment methods, for example, those that consisted of a workshop only, to determine if participants were satisfied with or felt represented in the results. One could also assess how individual agency or organization priorities transform throughout an assessment process. Lastly, an investigation of how results from this assessment and others are implemented, or not, in future LCC work would prove valuable. Assessing priorities is only part of the process.

The implementation of conservation actions on the ground is subject to some of the same limitations as assessments. For example, time, energy, and resources must be available for the implementation of conservation actions. Also, implementation can often be opportunistic. To assess whether implementation reflects the conservation priorities identified in an assessment like this would be extremely insightful.

In closing, Landscape Conservation Cooperatives are one response to the need for more regional-level coordination and collaboration across natural resources agencies. Facing environmental challenges that span large areas and are shared among agencies, LCCs provide an opportunity to work at scales that matter for today's issues. Most of the participants of this study echoed the sentiment that LCCs are a great idea and expressed a strong desire for them to work. They see the value of effectively working at a regional scale and recognize that singular agencies can no longer address some of these larger issues. Yet barriers to effective collaboration exist, many of which are institutional or structural mechanisms that need to be changed. The Department of the Interior should work with their partners represented in the LCC to find ways to ease the process of working together at the landscape scale and to look beyond the traditional mode of operation for federal initiatives. LCCs could be great institutions for adaptive learning, both within individual LCCs and across LCCs. This study has addressed two facets of regional collaboration, priority setting and collaboration, and sets the stage for LCC projects by helping to establish their priorities and identify potential barriers to their effective collaboration across large landscapes.

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