Practitioners' Guide

Facilitating Local Stakeholder Participation in Collaborative Landscape Conservation Planning

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Guide Overview

This document provides guidance on integrating local stakeholder participation and social data into collaborative landscape conservation (CLC) planning. CLC is a conservation model intended to address geographically broad environmental challenges. The model relies on collaborative decision making among diverse conservation partners that span jurisdictional boundaries. Local stakeholders are organizations, networks, and individuals that have direct administrative authority over resource use and management, and influence over social and political resources necessary to support conservation actions. These stakeholders are therefore instrumental to implementing conservation actions needed to accomplish CLC goals. Social data relates to the values, beliefs, interests, concerns, needs, knowledge, preferences, cognitive traits, demographics, and behavioral tendencies of people living within landscapes targeted for conservation.

Considering social data and local stakeholders' input during CLC planning can produce a range of benefits. These include increasing the inclusivity of CLC planning, the likelihood landscape conservation goals will be supported by local stakeholders, and the probability that CLC planning products (such as environmental assessments, spatial analysis, decision-support tools, etc.) will be used to inform local management decisions. Despite these potential benefits, social data and local stakeholders' input are not always considered during CLC planning. In many cases this is because process leaders and traditional conservation partners are unsure of when and how local stakeholders and social data might be most effectively included in CLC planning.

This Guide draws on empirical analysis of current CLC initiatives to highlight how local stakeholders and social data have been used in a range of landscape conservation planning efforts. We share insights regarding local stakeholders' preferences for participation in CLC planning and some of the undesirable impacts resulting from not considering social data or local stakeholders' input during these planning efforts. We offer a process model indicating when and how local stakeholder participation and social data might be usefully integrated during CLC planning. We close the Guide by examining resources that those responsible for developing CLC planning products might draw on to find existing social data and how they might collect new data from local stakeholders. We believe guidance provided in this document can help foster effective landscape conservation planning by increasing local stakeholders' investment in CLC planning processes and products and their sense of ownership over conservation decisions and outcomes.

Glossary of Terms

Collaborative Landscape Conservation (CLC): A planning model that involves collaboratively developing common goals for the future condition of natural and cultural resources within broad geographic areas that span social and political boundaries. CLC is multi-purpose, seeking to address environmental (and in some instances social) issues within a defined landscape. Accomplishment of CLC goals is encouraged through co-production of CLC planning products, which are provided to local resource practitioners and land-use planners. Planning and implementing conservation across social-ecological landscapes requires the engagement of stakeholders from different disciplines working at various geographic (e.g., international, national, regional, state, and local) and institutional (e.g., policy, organizational, managerial) levels.

Collaborative Landscape Conservation Planning Product: The outcome or product of CLC planning. These products are co-produced by development teams, ideally in collaboration with local stakeholders who are not already members of these teams. CLC planning products may include environmental assessments identifying priority areas for conservation actions, spatial analysis of current and projected species and habitat ranges, decision-support tools to assist management planning, and management goals (e.g., native grassland restoration, species population targets) and strategies (e.g., dyke removal, changes in take quotas for game species).

Conservation: Sustainably using and managing natural resources to ensure they are accessible to current and future generations of the public.

Development Team: A group of conservation partners who are formally associated with a CLC initiative and charged with developing CLC planning products.

End-User: End-users are a subset of local stakeholders. They are individuals or representatives of groups, organizations, or government agencies that have direct impacts on resource management and use. End-users (1) influence, develop, or implement land and resource management plans, and (2) may use CLC planning products to inform the development or implementation of site- or species-specific management plans.

Local Stakeholder: Organizations, networks, and individuals that (1) focus primarily on issues and actions occurring at the level, where resource management, use, and planning occur, (2) have active interests in the management of resources targeted for conservation, (3) may be impacted by resource management decisions, and (4) have the power (e.g., political power, social influence, or control over resource management) to support or impede implementation of conservation-promoting management actions.

Participation: Opportunities for lay publics or stakeholders to participate in administrative decision making. Participation in CLC planning can be fostered through two primary mechanisms, including consultation (wherein development teams solicit information from stakeholders, but no formal dialogue exists) and engagement (involving multi-directional information flow and deliberation by development teams and various stakeholders).

Social Data: Provides insight into the values, beliefs, interests, concerns, needs, knowledge, preferences, cognitive traits, demographics, and behavioral tendencies of people living within landscapes targeted for conservation.

Social-Ecological Landscapes: Landscapes in which human and natural systems interact and influence one another.

Guide Highlights

Current threats to environmental conservation, including habitat degradation and loss resulting from altered land use as well as ecological uncertainties driven by climate variability, pose unprecedented challenges to natural resources conservation. Conserving natural and cultural resources within social-ecological landscapes, in which human and natural systems interact and influence one another, inherently requires working across political, cultural, and institutional boundaries. Collaborative landscape conservation (CLC)—through which diverse conservation partners and stakeholders work together to determine landscape-level conservation goals and implement transboundary management actions—is considered the way forward for the conservation community. Ensuring the resilience and success of this conservation model relies on local stakeholders who are invested in common or complementary landscape conservation goals and take ownership over conservation decisions and outcomes in their sphere of influence. Building this sense of investment and commitment is contingent on engaging local stakeholders in CLC planning and determining ways to support the interests and needs of diverse stakeholder groups while crafting conservation goals.

Our hope is that guidance offered in this document will help CLC development teams think strategically about how they might include local stakeholders and social data related to these stakeholders' values, beliefs, interests, concerns, needs, knowledge, preferences, cognitive traits, demographics, and behavioral tendencies in their CLC planning. Major takeaways from our research include the following:

1. CLC planning involves a series of processes intended to generate both conservation-supporting products and foster a community of practice. Focusing on the development of interpersonal bonds and a foundation of trust between development teams and local stakeholders can be essential to maintaining partnerships and stable networks of collaborators. Hosting in-person participation opportunities and not allowing external pressures to accelerate the pace of planning can promote the development of trusting relationships.

2. Fostering local stakeholder participation and consideration of social data during CLC planning requires leadership by individuals who value, respect, and seek diverse perspectives and different sources of knowledge to inform decision making. Development teams might also include trusted representatives of local stakeholders to ensure the interests and values of those stakeholders are incorporated, or at least considered throughout CLC planning.

3. Ensuring a diversity of local stakeholders' interests can be represented during CLC planning starts with having a broad planning purpose. Ideally, a CLC initiative's purpose is broad enough to allow flexibility in defining the specific goals of the CLC initiative, identifying conservation targets, and determining process outcomes. Development teams that avoid tightly constraining the planning processes and products may also avoid alienating local stakeholders by expanding these stakeholders' capacity to influence decision making.

4. The effectiveness of participation opportunities can be improved by consulting with local stakeholders about their preferences for participation and addressing barriers to their participation (e.g., financial or logistical barriers). Informing local stakeholders about how their contributions impact conservation decisions increases the transparency of planning and may help sustain these stakeholders' interest in participation.

5. The potential end-users of CLC planning products are particularly important local stakeholders to engage in CLC planning. End-users are stakeholders who may (1) influence, develop, or implement local land and resource management plans, and (2) use CLC planning products to inform development or implementation of site- or species-specific management plans.

6. Local stakeholders are more willing to participate in planning efforts and support conservation actions if the targeted landscape has meaning and importance to them. If ecological drivers require the targeted landscape extend beyond the boundary of areas valued by or which have meaning to local stakeholders, establishing socially meaningful sub-geographies that act as focal areas can be advantageous.

7. Developing socio-politically feasible, supported conservation goals and useful planning products is contingent on considering the needs and interests of local stakeholders, and especially potential end-users of CLC planning products. Needs assessments can be used to understand the values and priorities of local stakeholders and to determine what CLC planning products would be useful to end-users. Planning products can be refined based on feedback from end-users before they are released for general use.

8. Targeted communications can potentially increase the likelihood of end-users adopting planning products by highlighting (1) how CLC planning products may be relevant to various stakeholder groups, (2) how the products address current gaps in capacity, and (3) how the products might help potential end-users achieve their goals. Peer-to-peer learning through demonstration sites and testimonials can also increase end-users' trust of planning products and illustrate how these products have been and might be used in practice.

9. Planning products and the CLC planning process should be adapted over time to address end-users' feedback, the evolving needs of end-users, and changing social and ecological conditions within the landscape. These adaptations should also be used to rectify problems generated by assumptions made at the outset of CLC planning that prove inaccurate or require adjustment. Refining planning processes and products adaptively requires consistent access to development teams and end-users who are willing and able to participate iteratively in planning efforts. A strong focus on relationship- and trust-building, and the capacity to demonstrate that CLC initiatives are supporting local management implementation can help sustain these long-term relationships and promote continued interest in CLC planning. Adaptation also requires as-needed access to experts with the capacity to modify planning products. This may present a challenge, as in many cases these experts are contracted for finite periods. Anticipating the potential need for adjustments, development teams can build in provisions for modifying planning products over time.

We recognize that a CLC initiatives' capacity to follow best-practice guidance offered in this document is context-dependent. Pressure from funders and organizational leaders, conflicts generated by organizational cultures, political circumstances, competing obligations, and other factors can limit a development teams' adherence to best-practice guidance found in this Guide. Engaging local stakeholders and integrating social data into CLC planning also requires tradeoffs in comparison to planning focused on a narrower array of data and including only a small development team.

Despite challenges that may exist, considering the human dimensions of landscapes targeted for conservation and providing local stakeholders a voice in CLC planning is essential. Conservation goals and decision support tools developed in the absence of input from these stakeholders may remain underutilized due to lack of local support and investment. Using such input, as described in this guide, CLC planning leaders and partners can avoid unproductive diversions of time and resources from needed conservation actions.

Chapter 1

Introduction to the Guide

1. Guide Purpose

This document provides guidance on integrating local stakeholder participation and social data into collaborative landscape conservation (CLC) planning. Local stakeholders, especially end-users of CLC planning products, are often instrumental to successful implementation of conservation actions needed to accomplish CLC goals[1]. These stakeholders often have direct administrative authority over resource use and management and have access to resources (e.g., natural, social, and political capital, local knowledge) necessary to support pro-conservation management actions. Despite this, local stakeholders' role in CLC planning is not yet institutionalized[2], meaning that, in some instances, local stakeholders are not included in CLC planning. This magnifies prospects of developing landscape conservation goals that will not be socio-politically feasible and planning products that are not used to inform management plans[3]. Helping CLC planners avoid this situation is the goal of this Practitioners' Guide.

Drawing primarily on empirical analyses of contemporary CLC initiatives[4], we present a range of guidance for integrating local stakeholder participation, especially that of end-users, and social data into CLC planning. The majority of our empirical work focused on Landscape Conservation Design, the CLC approach adopted by most of North America's Landscape Conservation Cooperatives. We also draw on interviews with coordinators of other kinds of CLC initiatives throughout the United States. See Doyle-Capitman & Decker (in preparation) for details on our research methods.

Based on insights emerging from our research, we present guidance, and an associated process model, indicating when and through what mechanisms local stakeholder participation and social data may be most effectively integrated into CLC planning.

2. Guide Focus

2.1 Collaborative Landscape Conservation

Collaborative landscape conservation (CLC) is a conservation model intended to address complex and geographically broad environmental challenges[5]. The model relies on collaborative decision making among diverse conservation partners that span jurisdictional boundaries.

CLC involves:

1. Collaboratively developing common goals and objectives for the future condition of natural and cultural resources within broad geographic areas, such as entire ecosystems or species' ranges, and identifying the targets of conservation or restoration efforts.
2. CLC **development teams** (those formally involved in CLC planning) encourage accomplishment of these goals by providing local resource practitioners and land-use planners with **planning products**, such as environmental assessments identifying priority areas for conservation actions, climate projections, spatial analysis of current and projected species and habitat ranges, decision-support tools to assist management planning, and management goals (e.g., species population targets) and strategies (e.g., culvert removal). CLC planning is also intended to help build a **community of practice**, consisting of networks of conservation partners and others working toward common resource conservation goals.[6]

CLC planning products are intended to inform resource management plans that will be implemented through coordinated management actions. Examples of CLC planning products include Migratory Bird Joint Venture's implementation plans and Landscape Conservation Cooperative's Landscape Conservation Designs.

In North America, examples of CLC efforts include the following:

- Algonquin to Adirondacks Collaborative
- Landscape Conservation Cooperatives (initiated by the U.S. Department of the Interior)
- Migratory Bird Joint Ventures
- National Estuary Program (U.S. Environmental Protection Agency)
- National Fish Habitat Partnerships
- National Wild and Scenic Rivers, National Scenic and Historic Trails, and National Heritage Areas (U.S. National Park Service)
- Working Lands for Wildlife (U.S. Department of Agriculture's Natural Resources Conservation Service)
- Yellowstone to Yukon Conservation Initiative

While this is not always accomplished in practice, CLC planning is intended to be **iterative**[7]. This means that planning processes and products are intended to be adapted over time based on changing social and ecological conditions within the landscape, as well as feedback regarding the usefulness and usability of planning products.

This Guide focuses on planning efforts that take place at the start of CLC endeavors. Planning stages we focus on include:

1. Conceptualizing the landscape conservation effort
2. Establishing landscape conservation goals and objectives
3. Determining and developing planning products
4. Distributing planning products and promoting their adoption
5. Monitoring adoption of planning products
6. Adapting CLC planning processes and products

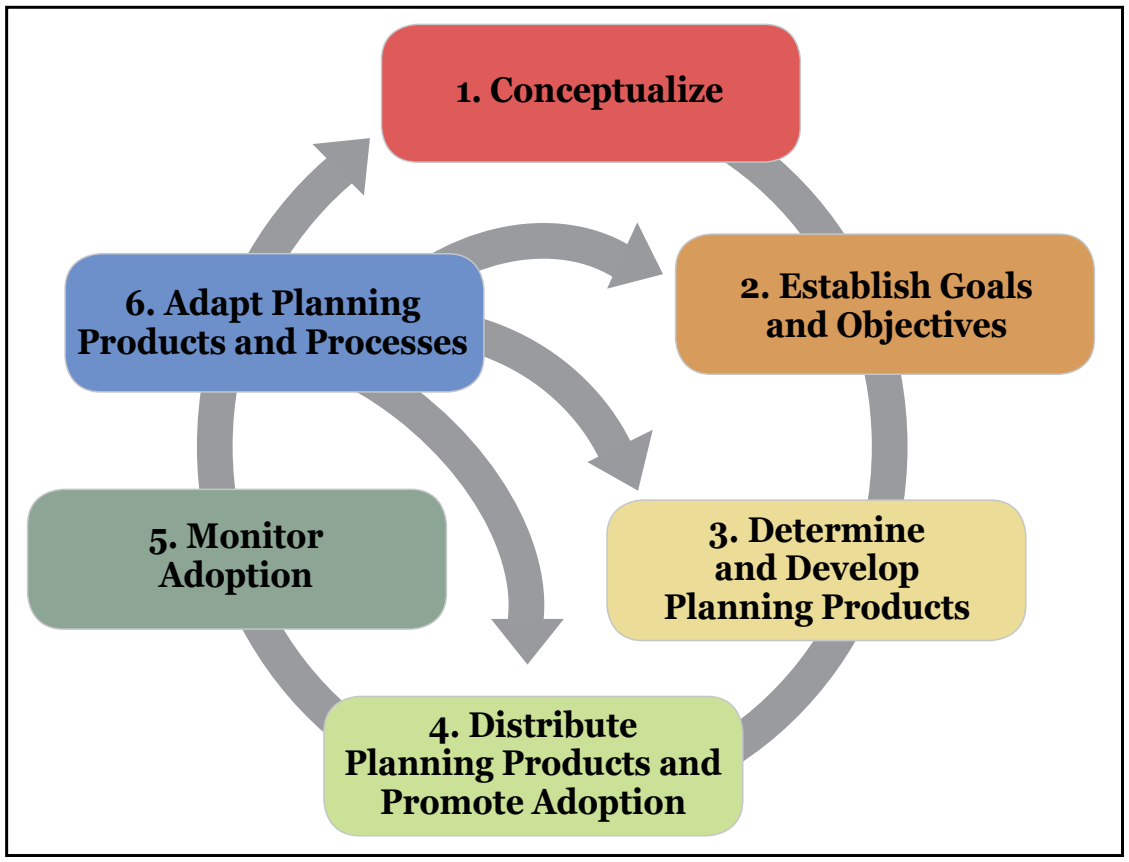


Figure 1. The process of Collaborative Landscape Conservation planning depicted as an adaptive planning cycle.

2.2 Local Stakeholders

Local stakeholders are organizations, networks, and individuals that:

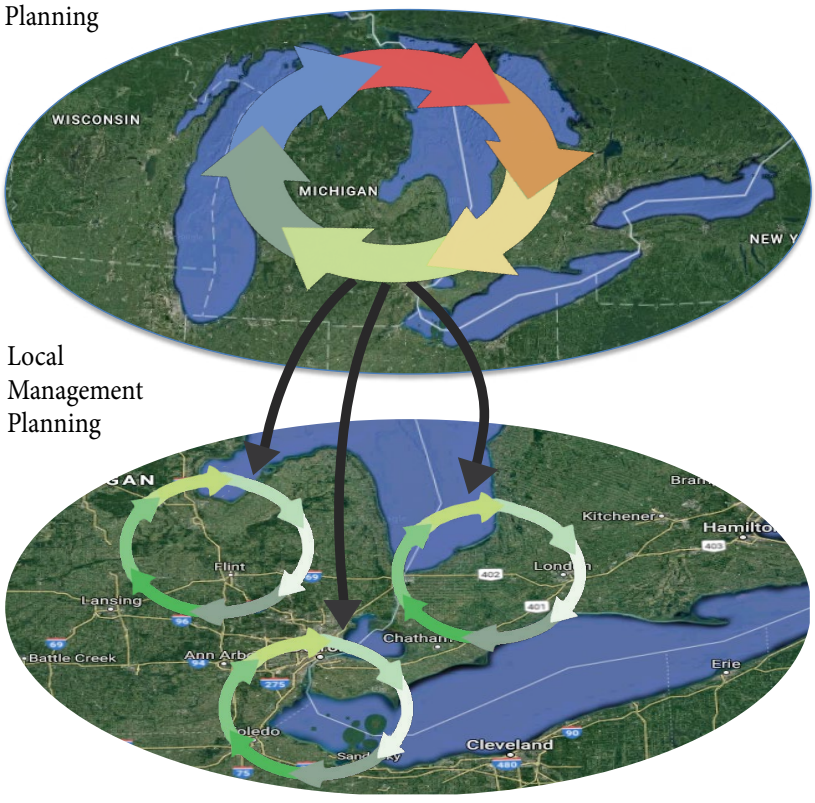
1. Operate at the ground level, where resource management, use, and planning occur
2. Have active interests in the management of resources targeted for conservation
3. May be impacted by resource management decisions
4. Have the power (e.g., political power, social influence, or control over resource management) to support or impede implementation of conservation-promoting management actions

Social data relates to the values, beliefs, interests, concerns, needs, knowledge, preferences, cognitive traits, demographics, and behavioral tendencies of people living within landscapes targeted for conservation.

The local stakeholders this Guide focuses on are primarily end-users of CLC planning products.

End-users are individuals or representatives of groups, organizations, or government agencies that:

1. Influence, develop, or implement land and resource management plans
2. May use CLC planning products to inform their site- or species-specific plan development or management actions



Development teams: conservation partners formally involved in CLC planning (depicted as an adaptive planning cycle) and development of CLC planning products (e.g., environmental assessments, spatial analysis, decision-support tools)

End-users: responsible for the development and implementation of management plans (depicted as adaptive planning cycles), in some cases informed by CLC planning products

Figure 2.

Including local stakeholders, and especially end-users of CLC planning products in CLC planning can produce a range of benefits. The following benefits are particularly valuable:

- Including local stakeholders in CLC decisions that may impact them can promote good environmental governance by fostering inclusive, fair, transparent, and legitimate planning[8]. These conditions can help local stakeholders understand how CLC decisions are made and provide them a voice in decision making.

- Involving local stakeholders in CLC planning can provide CLC development teams opportunities to learn from local stakeholders. This can enhance the local relevance of transboundary conservation decisions, and the capacity of associated management plans to benefit local stakeholders and fit within local contexts[9].

- Local stakeholder participation can facilitate achievement of landscape conservation goals by fostering stakeholders' sense of ownership over conservation decisions[10], increasing awareness of local and landscape-level environmental threats[11], and creating local capacity for transboundary resource conservation[12].

In summary , the purpose of integrating local stakeholder participation and social data into CLC planning is to:

1. **Ensure CLC planning reflects good governance principles (i.e., inclusiveness, fairness, transparency, legitimacy, and effective and efficient performance)**

2. **Improve the likelihood CLC planning products will be used to inform management plans and local management actions**

3. Authors' Assumptions and Purpose

Results of our empirical analysis revealed that CLC development teams (including team leaders and members) in many cases were interested in involving local stakeholders and considering social data during CLC planning. However, these actors often reported they had little formal training in or experience with stakeholder engagement or social science. Many also reported they were unsure of how to identify local stakeholders, and when and through what mechanisms these stakeholders and social data might be integrated into CLC planning.

We assume that those using this Guide are already interested in including local stakeholders or social data in CLC planning. Given this assumption, we share insights about:

Figure 2. *(left page)* Moving from Collaborative Landscape Conservation planning to local management planning. All planning processes are depicted as adaptive planning cycles. Planning efforts shown are strictly hypothetical. Image background credit: Google Maps.

- Local stakeholders' preferences regarding participation
- Undesirable impacts created by inefficient or ineffective opportunities to integrate local stakeholders or social data into CLC planning
- When and how local stakeholder participation and social data integration might be most effective and produce the greatest benefit during CLC planning
- How to find existing social data and collect new data from local stakeholders

4. Guide Development

4.1 Research Question

The question that motivated the research underlying this Guide was:

> *When in the planning process and through what mechanisms can the values, interests, knowledge, and needs of local stakeholders be most effectively integrated into CLC planning?*

4.2 Data Collection

We addressed this question through three data collection and analysis efforts:

1. A literature review to gather insights into lessons, strategies, and caveats related to local stakeholder participation and social data integration within a variety of CLC efforts.
2. Semi-structured scoping interviews with the coordinators of 33 CLC programs and initiatives throughout the United States to understand how local stakeholder participation and social data have been used in decision making.
3. Case-study analysis of three Landscape Conservation Design (LCD) initiatives throughout the United States. This involved interviews with a total of 115 individuals, including 55 development team leaders and members, 50 potential and current end-users of LCD planning products, and 10 coordinators of alternative LCD initiatives. The objective of these case studies was to understand how social data and local stakeholder participation are currently being used to inform development and implementation of LCDs, how well these efforts have worked, and how they might be enhanced. In addition, we gathered recommendations for how local stakeholder participation might be integrated into future LCD efforts.

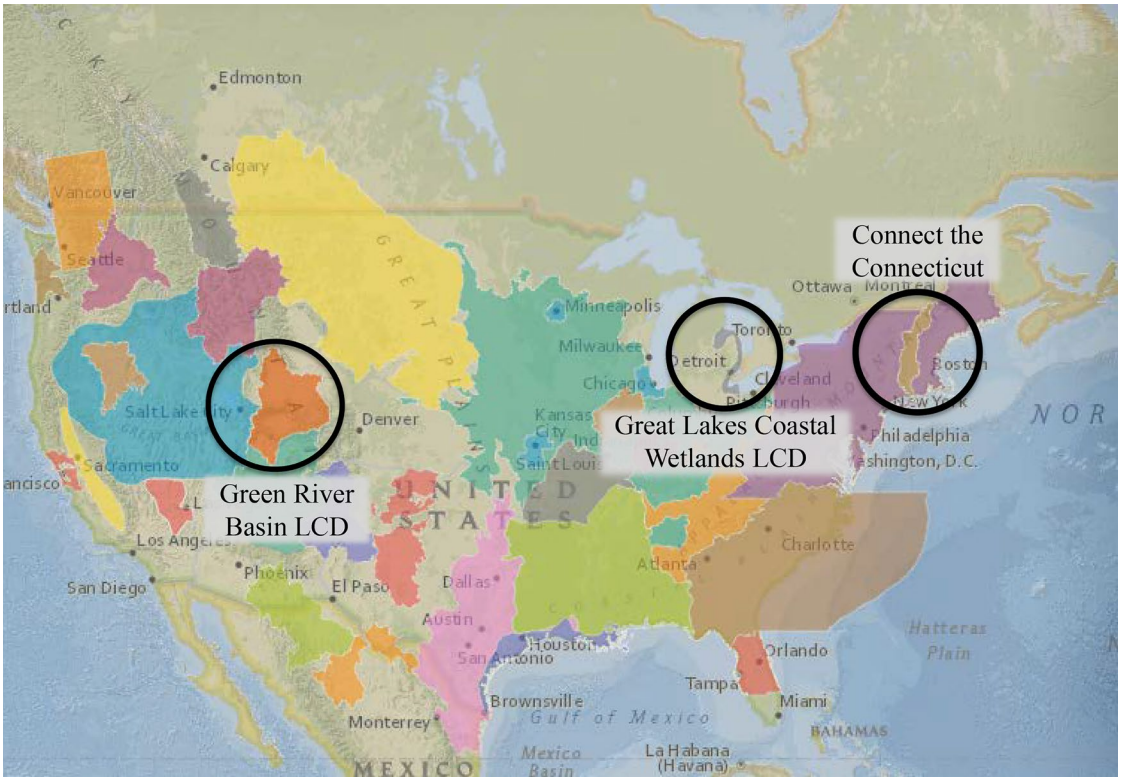


Figure 3. Locations of Landscape Conservation Design case studies. Image credit: LCC Network. For further information on our methods, please refer to Doyle-Capitman & Decker (in preparation).

4.3 Overview of Case Studies

4.3.1 Connect the Connecticut

Connect the Connecticut, formerly known as the Connecticut River Watershed LCD Pilot, is a LCD effort sponsored by the North Atlantic Landscape Conservation Cooperative (LCC). The purpose of the LCD is to collaboratively identify priority areas for species and habitat conservation within the Connecticut River Watershed. Local stakeholder participation has been fostered primarily through engagement (see page 10 for a definition of this term). Some local stakeholders—including state and federal resource managers with direct control over species and land-use planning—were represented on the LCD's development team. Information about the LCD was provided through brochures available online and distributed to LCC affiliates, the LCD's website, presentations at professional meetings, and through educational webinars and meeting targeted to potential end-users of the LCD products. These communication efforts were intended to raise awareness of the LCD effort and demonstrate how the LCD products might be used.

4.3.2 Green River Basin Landscape Conservation Design

Sponsored by the Southern Rockies and Great Northern LCCs, the Green River Basin (GRB) LCD's mission is to use a collaborative process to identify and analyze ecologically vulnerable areas and conservation opportunity areas within the GRB ecosystem. Local stakeholder participation in the development of the GRB LCD has been fostered primarily through consultation (see page 10 for a definition of this term). At the outset of the LCD effort, collaborative planning facilitators conducted semi-structured inter-

views with key stakeholders in the GRB geography to identify (1) the relevance of the LCD to their management work, (2) data that might contribute to the LCD's development, and (3) what management questions and data needs might drive the LCD's development. After conservation targets had been determined and priority conservation areas identified by the LCD's development team, a workshop was convened with local stakeholders to inform these stakeholders about the LCD products and solicit information about existing data sets, ongoing conservation programs, and local stakeholders' conservation priorities. A second local stakeholder workshop was held once prototypes of the LCD products had been completed in order to raise awareness of these planning products and how they might be used. Coordinators of the LCD have also hosted a series of online webinars intended to educate viewers about the LCD planning process and products and solicit questions and feedback.

4.3.3 Great Lakes Coastal Wetlands Landscape Conservation Design

The Great Lakes Coastal Wetlands LCD is sponsored by the Upper Midwest and Great Lakes LCC and led by representatives of the U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration. The LCD is intended to build a community of practice around coastal wetland conservation and promote conservation, restoration, and management of coastal wetlands in the Saginaw Bay to Western Lake Eerie region. Local stakeholder participation in the development of the LCD has been fostered through consultation and engagement. Conservation targets identified through analysis of existing wetland planning documents, as well as ecosystem services associated with wetland restoration, were evaluated and refined by two expert panels consisting of research scientists, resource practitioners, and representatives of environmental NGOs, some of whom were responsible for resource management planning and implementation. The development team then convened local stakeholder workshops in different locations within the LCD geography to better understand these stakeholders' needs and interests related to coastal wetland management. These workshops were also used to ground-truth and further refine conservation and ecosystem services targets. The LCD's decision-support tools were developed and are being actively refined through engagement and consultation with the intended end-users of the tools. When decision support tools were released, the development team sponsored multiple webinars targeted to potential end-users. These webinars sought to inform stakeholders about the existence and potential use of the tools.

In the following chapters we explore a range of topics related to local stakeholder participation in CLC. First we define what we mean by "participation" and "social data," and briefly examine how local stakeholders have played a role in a variety of CLC initiatives. We then explore local stakeholders' preferences for participating in CLC planning, and what might impact local stakeholders' willingness to contribute to these planning efforts. Next we examine the impacts insufficient and ineffective opportunities for local stakeholder participation can have on CLC initiatives' capacity to demonstrate good environmental governance. Building off of these proceeding chapters, we provide a range of best practice guidance for stimulating productive local stakeholder participation at distinct stages of CLC planning. We close the Guide by examining a range of resources development teams might draw on to find existing social data, and how they might collect new data pertinent to CLC planning. In the Appendix, we offer a range of information categories and example questions and response options development teams might draw on to solicit social data from local stakeholders.

Chapter 2

Stakeholder Participation and Social Data: Background on Concepts and Terms

Before presenting guidance on best practices for facilitating local stakeholder participation and social data integration into CLC planning, we'll define what we mean by participation and social data. We'll also examine how local stakeholder participation and social data have been used in the development of a variety of CLC efforts.

1. The Concept of Participation

1.1 Background on Participation

Since the 1960s in the United States, public participation—meaning "a range of mechanisms used to involve [stakeholders] in administrative decision-making"[13] —has played an increasingly prevalent role in environmental governance[14]. Primary drivers behind this shift include:

- The increasing complexity of balancing evolving expressions of public values related to natural resources[15].
- The need to enable citizens to have a greater role in decisions related to environmental risks that do or may impact them[16].
- The delegitimization of inflexible, top-down decision making, which often fails to capture the range of interests and values of local stakeholders[17].

1.2 Stakeholder Participation

Stakeholder participation can be fostered through two general approaches[18].

1. **Consultation**, wherein development teams seek information from stakeholders, but no formal dialogue exists.
2. **Engagement**, which allows bi-directional dialogues (multi-way information flow) and deliberation between development teams and various stakeholders.

Consultation and engagement present opportunities for enhancing local stakeholders' knowledge of conservation issues and ongoing conservation efforts. Each also has differential potential for facilitating local stakeholders' involvement in decision making.

A broad variety of mechanisms can be used to implement these two approaches to stakeholder participation. The following table outlines some of these mechanisms.

Consultation	• Questionnaires (e.g., surveys, opinion polls) • Focus groups • Referenda • Listening sessions • Interviews (face-to-face, web-based, or telephone-based)
Engagement	• Task forces • Action-planning workshops • Town meetings with voting • Direct involvement or representation in planning groups

Adapted from Rowe and Frewer (2000) and Reed (2008).

While it is not technically a mechanism for participation, effective **communication** can be vital for developing well-informed stakeholders. Communication is thus an important prerequisite for effective participation. The kind of communication referred to here is a process through which information is conveyed to stakeholders by development teams, but no feedback is sought. Through this one-way communication local stakeholders can learn about landscape-level environmental threats and landscape conservation planning efforts and remain informed about planning outcomes and management actions. Communication can be facilitated through:

- Informational brochures
- Recurring newsletters
- Informational broadcasts (e.g., webinars, educational modules)
- Presentations (during professional or community meetings)
- Public hearings
- Awareness raising campaigns

1.3 Defining Social Data

While participation refers to the process by which stakeholders are informed about or involved in decision making, social data is the information that is produced through consultation, engagement, and remote, systematic data collection. Social data can be quantitative information (conveyed through numbers) or qualitative information (conveyed through description) that provides insight into individuals' and groups' values, beliefs, interests, concerns, needs, knowledge, preferences, cognitive traits, demographic and socio-economic conditions, and behavioral tendencies.

Social data does not necessarily have to relate to social phenomena. Social data can, for example, convey information about the historic conditions of natural resources or the degree to which management efforts have achieved their bio-centric goals. Social

data can also convey information regarding economic, political, demographic, or cultural conditions. The Census, for example, solicits quantitative data on demographic and socio-economic conditions.

Social data can be **primary** or **secondary**. *Primary data* are collected directly by development teams or their contractors for a specific purpose. *Secondary data* are collected by someone else, likely for another purpose, but used by development teams to inform decision making. The importance of these two sources of data will become evident in Chapter 6 when we discuss various ways to find and collect social data.

Examples of Stakeholder Participation in CLC Planning

- The Great Lakes Coastal Wetlands Landscape Conservation Design spans coastal regions from Saginaw Bay in Michigan to Western Lake Eerie in Ohio. Ground-truthed information from municipal, state, and regional wetland management plans were used to identify conservation targets within the landscape. Local stakeholders were engaged early in planning through multiple workshops hosted throughout the LCD's range such that the development team could better understand these stakeholders' interests and needs related to coastal wetland restoration and management. Landscape planning products were also developed in response to local stakeholders' information needs and refined based on consultation with end-users. This has helped ensure these products are useful and usable.
- The Hudson River Estuary Program, which operates throughout most of the Hudson River Watershed of New York State, is charged with developing and administering a management strategy and long-term plan to support the Hudson River Estuary Act. These planning products were developed through iterative consultation with and engagement of local stakeholders. A group of local stakeholder representatives was engaged in the initial development of planning products and a broad range of stakeholders were involved in product refinement. The development team worked closely with early adopters of Strategy recommendations to ensure these planning products were usable and useful. Cumulatively, stakeholder participation helped ensure the program's planning products met end-users' needs and local stakeholders supported the program's conservation goals.

2. Examining Local Stakeholders' Influence During CLC Planning

Having defined local stakeholder participation and social data and examined local stakeholders' roles in a variety of CLC initiatives, we will explore how local stakeholders can influence decision making during CLC planning.

The International Association of Public Participation Spectrum provides interesting insight about how members of the public can participate in and influence planning outcomes.

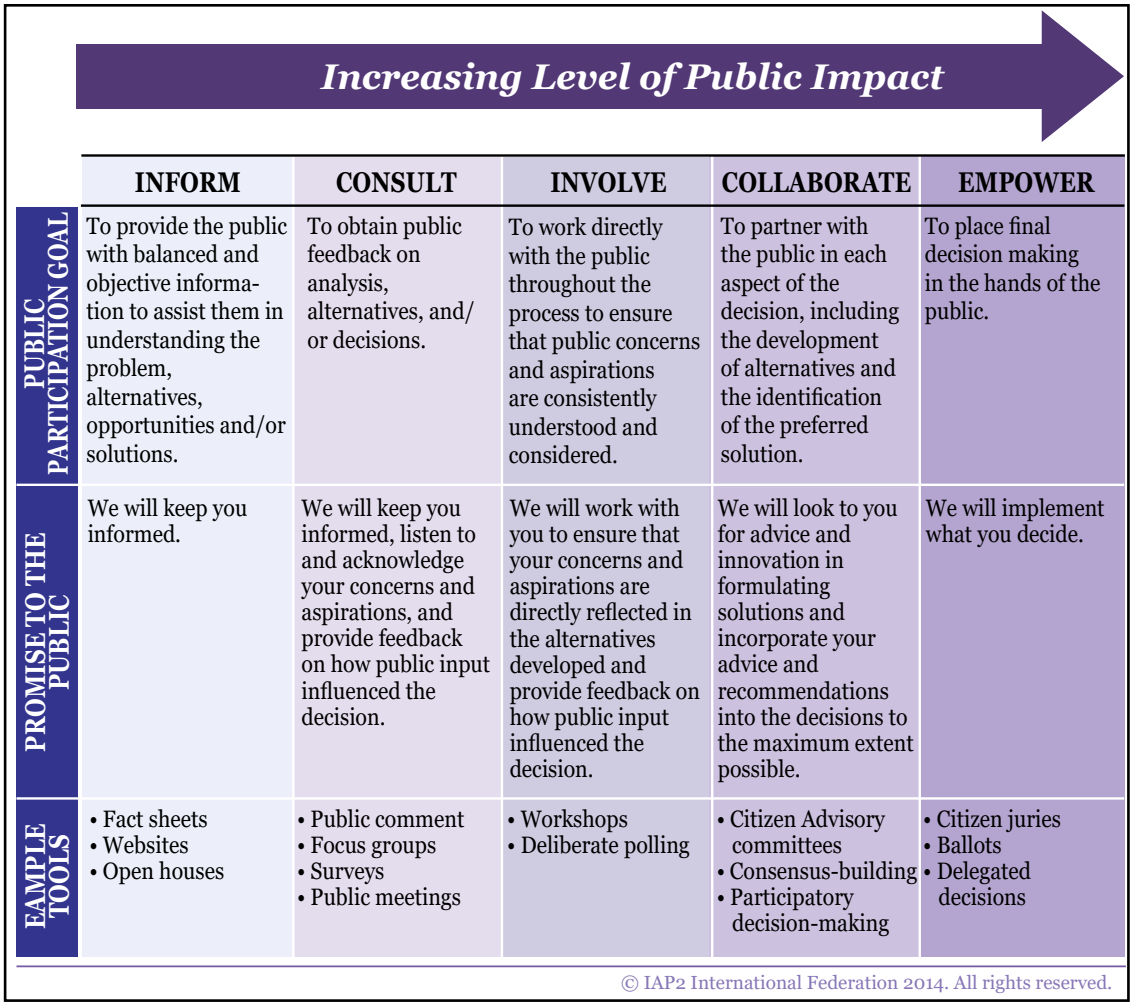


Figure 4. The International Association of Public Participation's Spectrum of Public Participation. Credit: International Association of Public Participation Federation.

What follows is an assessment of the various ways local stakeholders can impact CLC decisions and outcomes. Most of the following categories were adapted from Decker & Chase (2006).

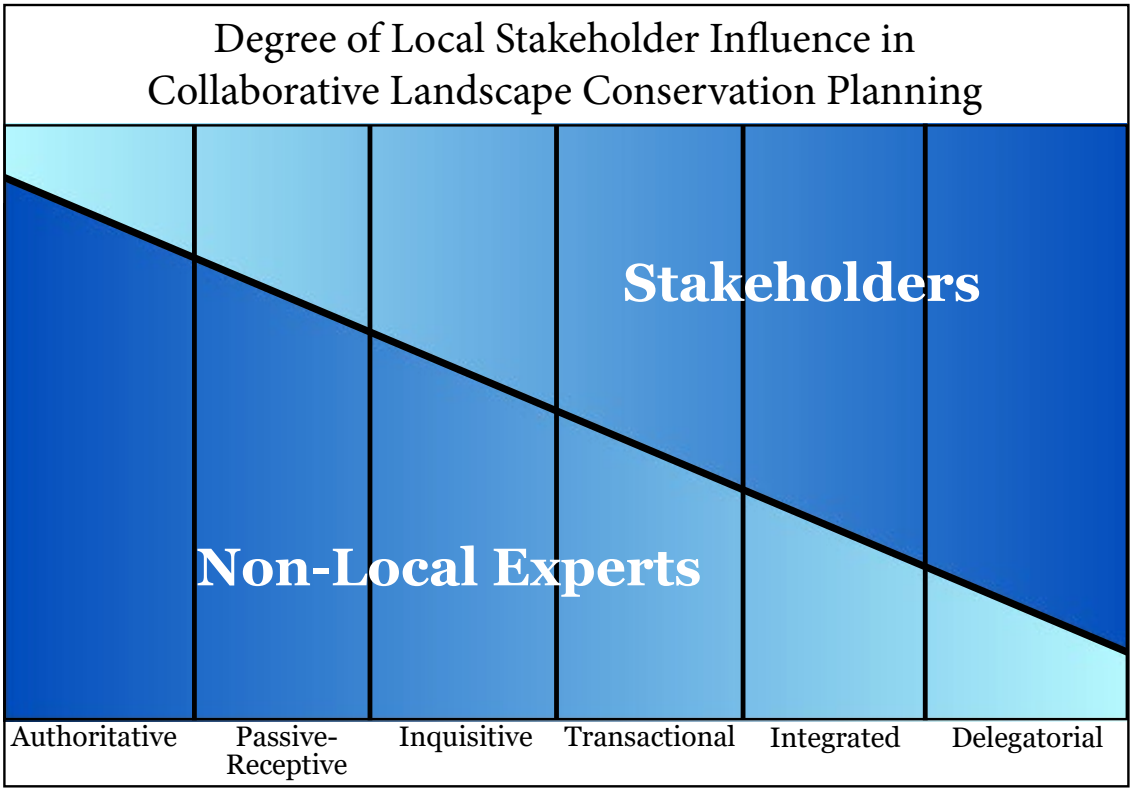


Figure 5. Degree of local stakeholder influence in collaborative landscape conservation planning. Figure adapted from Decker & Chase (2006).

2.1 Authoritative Approach

This is a top-down approach to decision making about landscape conservation goals and products. **Non-local resource management experts** (i.e., those without direct authority over management planning or implementation) make decisions regarding CLC goals and the form and function of CLC planning products. Local stakeholders do not engage directly in CLC planning, nor are they necessarily consulted. Their interests may be represented through a representative.

- **Pros**: The authoritative approach can be relatively expedient because fewer people are involved in CLC planning.

- **Cons**: This approach may not follow good environmental governance principles and planning outcomes may not reflect socio-political realities or the interests and needs of end-users[19].

2.2 Passive-Receptive Approach

In this approach, non-local, expert-led CLC development teams are receptive to input from local stakeholders and may consider social data presented to them. However, they do not create systematic, deliberate opportunities for local stakeholders to participate in CLC planning. Development team members determine if and how local stakeholders' input is integrated into decisions.

- **Pros**: Local stakeholders have the opportunity to communicate with CLC development teams and potentially impact decisions regarding landscape conservation goals and planning products.

- **Cons**: Non-systematically collected input can be biased, only representing the interests, values, and knowledge of a subset of local stakeholders[20]. Stakeholders have no assurance their input will be incorporated into CLC planning, which may frustrate them or make them disinclined to participate[21].

2.3 Inquisitive Approach

In this approach, non-local, expert-led CLC development teams identify diverse local stakeholders and systematically consult with them or their representatives during CLC planning. Development team leaders provide assurances that the social data derived from consultation will be used to inform landscape conservation decisions. Development team members are still the primary decision makers during CLC planning. Local stakeholders do not engage directly in decision making.

- **Pros**: Local stakeholders are provided systematic opportunities to contribute to CLC planning, potentially reducing bias in the range of social data collected.

- **Cons**: Since they are not able to directly engage in CLC planning, local stakeholder' influences in decision processes is still potentially limited.

2.4 Transactional Approach

In the transactional approach, non-local, expert-led CLC development teams remove themselves as intermediaries during negotiations involving local stakeholders. They instead initiate and implement opportunities, such as task forces, for local stakeholders to (1) articulate their interests, needs, and priorities directly to one another, and (2) negotiate directly among themselves to determine common landscape conservation goals and weigh tradeoffs associated with various planning scenarios. Consensus among these stakeholders is reached through a process of learning, discussion, and debate[22]. Decisions reached through stakeholder negotiations inform the development of conservation goals and CLC planning products. In some instances, local stakeholders may be directly responsible for decision making during CLC planning.

- **Pros**: The transactional approach allows diverse local stakeholders to participate in CLC planning and learn from their peers.

- **Cons**: Local stakeholders may not have opportunities to engage directly in CLC planning. Since CLC development teams do not facilitate negotiations, they may miss opportunities to learn about local stakeholders' interests and values.

2.5 Integrated Approach

In the integrated approach, local stakeholder representatives are members of CLC development teams. Local stakeholder representatives consult regularly with their constituents to ensure they are effectively supporting these stakeholders' interests and needs during CLC planning.

- **Pros**: Local stakeholders' interests are directly represented during the development of CLC goals and planning products.

- **Cons**: Given the diversity of perspectives represented during CLC planning, the process may be time-consuming and contentious[23].

2.6 Delegatorial Approach

In the delegatorial approach, CLC planning is led by local stakeholders and directly engages other local stakeholders and their representatives in decision making. These initiatives may be grass-roots, emerging from the interests and actions of local stakeholders, or decision-making responsibility may be assigned to local stakeholders by funders or program administrators.

- **Pros**: Decision-making authority sits with those who will ultimately implement management actions and be impacted by these actions, enhancing the likelihood of local support for conservation goals and the utility of planning products.

- **Cons**: This approach can be challenging in ecologically or socially heterogeneous landscapes where local stakeholders' interests and resource conservation threats are diverse[24]. Coordination of local stakeholders across broad landscapes may be difficult to achieve, especially in the absence of common environmental concerns.

Now that we have explored the concepts of participation and social data, we next examine how local stakeholders prefer to participate in CLC planning and supply social data to development teams.

Photo credit: Desert Landscape Conservation Cooperative

Chapter 3

Insight into Local Stakeholders' Preferences for Participation in Collaborative Landscape Conservation Planning

A fundamental challenge CLC development teams face is the question of *if, when*, and *how* local stakeholders might **want** to participate in CLC planning. On many occasions during our research it was clear that CLC development teams were unsure about local stakeholders' preferences for participation. As a result, team leaders and members at times *made assumptions*—some of them believed afterward to be misguided—about how, when, and through what mechanisms these stakeholders would or would not want to participate in CLC planning. This, at times, led to the exclusion of local stakeholders who might have been interested in participating in decision processes.

> *"A municipality dealing with an open space plan or a comprehensive plan for their infrastructure and development is looking at schools, they're looking at sewers, water systems, how school bus routes go…If you ask them to be involved in a larger plan, like an LCD…it's not something that they can do effectively. They are thinking and planning on another level."*
>
> *—LCD coordinator*

In this chapter we shed light on local stakeholders' preferences for participation in CLC planning. We also provide insights into how the nature of participatory opportunities can impact (1) local stakeholders' willingness to participate in CLC planning, and (2) the likelihood local stakeholders will adopt resulting planning products. Beyond this, we indicate when it might be necessary to collect data about stakeholders' preferences regarding participation. Insights offered in this chapter are based on interviews with potential end-users of LCD planning products.

1. Interest in and Motivation for Participation

1.1 Interest in Participation in CLC Planning

- The majority of potential end-users we interviewed indicated they would like to be informed about landscape conservation efforts and given the opportunity to contribute to the development of CLC planning products.

1.2 Motivations for Participation in CLC Planning

End-users offered a range of motivations for wanting to participate in CLC planning. These included:

- Ensuring *the interests and values of their organization or constituency group are considered during decision making*.

> *"Regional planning efforts typically tend to overlook endangered species. So, from that standpoint we figured it made sense for us to go to that particular (LCD) meeting just to be able to make sure that somebody was raising awareness about that type of stuff… that our priorities didn't fall through the cracks and there was at least somebody sitting in the room that was pointing out 'yah, let's not forget about this,' and making sure… we're not writing a plan (that) overlooks every single rare species that's there."*
>
> *—Director of an environmental NGO*
>
> *"We would really want to make sure that whatever the outcomes of this (LCD effort), they recognize the contribution that agriculture plays in keeping the landscape like it is."*
>
> *—Director of an agricultural land trust*

- Ensuring decisions are based on ground-truthed data and that planning *outcomes reflect social and ecological realities within the landscape*.

> *"It would've been a great thing to be involved in these conversations at the beginning, and in the formulation of these tools 'cause again, maybe we could've addressed some of the issues—the ones we just talked about—at the very beginning. You know, how do we make sure things are ground-truthed and how do we make sure that we can drill down more specifically onto a particular property and still know that it's accurate."*
>
> *—Land trust director*

- Keeping informed about CLC initiatives' goals, objectives, and intended outcomes.

- Keeping informed about how and by whom CLC decisions are made and what types of data are used to develop decision support tools and management recommendations.

- Gaining access to *networking opportunities at workshops and conferences, where stakeholders can (1) meet and learn from their peers and alternative resource management experts,* and (2) develop opportunities for future collaboration.

> *"I used to go to state and regional meetings all the time through the U.S. Department of Agriculture and the Resource Conservation and Development Programs. They were the most valuable two, three weeks a year that you'd spend because you got the chance to interact and communicate with those other folks, and not during the daylong sessions. It was in the evenings when you could sit someplace and visit. And get to know people. And understand what they were doing and why they were so successful at it. And out here I'm just pulling my hair out trying to do it."*
>
> *—Director of a Regional Conservation and Development program*

- Keeping informed about priority resources and land areas within a landscape. *Funding opportunities (e.g., government incentives, grants) often arise to support identified conservation priorities*. Remaining aware of these priorities can therefore be strategic for groups—such as land trusts— that rely on external funding sources. Remaining aware of conservation priorities set for an area can also help local stakeholders anticipate how regulations might impact their resource use and management.

> *"We try to prioritize easements where they overlaps with other groups' interests and where we think we can help landowners attract money. So, for example like (XXX Area) is really good for sage grouse habitat and migratory birds. So funders are really interested in protecting that basin. We think we can play a role helping (our landowners) conserve their property and get a lot of financial benefit from doing conservation easements. So that's why we want to know what is being prioritized. Priority areas attract funding."*
>
> *—Land trust director*
>
> *"Funding drives our work to the extent that we have landowners who are willing to donate restrictions to us, that's easy, but some of the land that we want to conserve does require money and the state is the most likely entity to come up with that money. And if the state is focusing on some of this information (i.e., information coming from the LCD), some of these tools and using some of these tools in its decision-making process, I think that'll also impact where the funding is flowing.*
>
> *—Land trust director*

2. Timing of Participation

Within the population of potential end-users we interviewed, preferences regarding timing of participation in CLC planning were strikingly consistent.

2.1 Early Participation

- Potential end-users unanimously wanted to be informed about the existence of the CLC planning effort during the early scoping stages.

- Whether or not they would choose to do so, potential end-users wanted to be invited to participate in CLC planning from the start.

One of the greatest advantages interviewees saw in early opportunities for participation was that they could engage in planning before constraining decisions had been made. Respondents recognized that after the goals, objectives, and outcomes of CLC planning had been determined their impact on decision processes was inherently limited. End-users we interviewed found these circumstances frustrating and offensive. Being asked to participate in CLC planning after major decisions had been made even reduced some respondents' willingness to participate. End-users particularly sensitive to being engaged when flexibility in decision making had already been reduced were those (1) who were economically reliant on access to and use of resources targeted for conservation, and/or (2) whose use of and access to natural resources had historically been constrained by top-down regulations they had little power over.

2.2 Mid-Process Participation

- Most potential end-users reported they would want to be updated about the initiative's progress at the very least midway through the project. This could help these stakeholders anticipate how CLC planning products might be used in their management plan development, and whether and how the initiative was making progress toward its goals.

- *If mid-way through the planning effort local stakeholders felt little progress was being made or stakeholders' input was not being meaningfully incorporated into decisions, end-users reported they would likely reconsider (i.e., reduce) their level of investment in the CLC planning effort.*

> *"You know, it was a time commitment to go to this (LCD planning) meeting. They asked us for our input. So are they using it? What stage are they at? Was it worth my time? Is this going to help me? So, I want to know, should I continue to be involved in this? At the end is this going to be useful to me? And if not, then I can disengage, I guess."*
>
> *—State wildlife manager*

2.3 Late-Process Participation

- Potential end-users unanimously reported they would want to be informed when a draft of CLC planning products had been completed.

- At this point, potential end-users would want an opportunity to test and contribute to the refinement of these planning products prior to them being released for general use. They would also want training on how to use the planning products both during this refinement period and after the products had been released.

3. Participation Through Representatives

- Many potential end-users we interviewed reported they would be interested in being involved in CLC planning, but felt their time and availability for this purpose were limited.

- These stakeholders would therefore be interested in remaining informed about the conservation initiative through regular communications, but would want their interests and values to be championed by a trusted representative during decision making.

Among those who would be willing to participate through a representative, the affiliation of preferred representatives varied widely. Consulting with local stakeholders regarding their preference of representative is therefore important.

4. Preferences for Initial Contact

- End-users did not express consistent preferences for how or from whom they would want to learn about or be invited to engage in CLC planning. However, multiple respondents reported that first receiving a phone call and then a follow-up email might enhance the likelihood the information and/or invitation would come to their attention.

- Delegating responsibility for initial contact to development team members or conservation partners acquainted with local stakeholders is likely to be beneficial.

Some potential end-users we interviewed, especially those in our Western case study (the Green River Basin LCD), indicated they would likely be more responsive if someone they knew contacted them. This trend is consistent with the emphasis we observed in this case study on the importance of relationship- and trust-building between local stakeholders and LCD development teams.

- Multiple potential end-users reported they would be more responsive to an initial contact effort if it came from someone *with power and influence in natural resource management. Being contacted by this type of individual would impart assurance that the CLC initiative might have power and capacity to achieve its conservation goals.*

> *"The likelihood of engagement is going to be a lot higher if it's somebody that has wherewithal, has some horse power to make something happen. Maybe a major institution with a regional vision. Ideally they'd have some ability to influence what was going on. And some resources too, for implementation."*
>
> *—Land trust director*

5. Geographic Scope of Interest

- Many respondents reported that although they cared about environmental and social issues throughout CLC geographies, they preferred to participate in decision making focused on smaller geographies.

Proponents of engaging in decision making at the sub-landscape level had a range of motivations. Many did not identify as working or living within the more expansive CLC ecoregion and felt more closely associated with a sub-geography. Others reported that, based on their experience, decisions made about resources within broad, ecologically defined regions often failed to acknowledge environmental and social nuances within these expansive geographies. *Yet others felt it would be logistically challenging to simultaneously engage all local stakeholders from throughout an entire landscape.*

> *"Given all the municipalities in the watershed, it would be difficult for us (all municipal planners) to participate at the same time. It could be more effective if they (the CLC initiative leaders) could be targeting sub-basins."*
>
> *—Town environmental planner*

6. Preferences Regarding Modes of Participation

- Multiple respondents mentioned that, although they would be willing to attend virtual participation opportunities (such as webinars), they preferred direct, in-person activities. In-person workshops, conferences, and educational opportunities appealed to these respondents because they felt such experiences were more personal.

Some potential end-users felt local stakeholders were often ignored and disrespected during management decision processes. Respectful, inclusive, in-person engagement events were seen as opportunities to help local stakeholders feel valued and given a voice in decision making. In-person participation was also viewed as (potentially) facilitating relationship- and trust-building between CLC development teams and local stakeholders who were not members of these teams.

- Potential end-users reported that holding events after normal work hours and scheduling them so they did not conflict with these stakeholders' busiest times—such as harvest or construction seasons— could promote attendance.

- Providing some form of financial assistance for travel and lodging, if possible, could also reduce barriers to attendance.

- Our interviews did not produce robust data on what types of activities end-users preferred to participate in during participation events. However, multiple respondents mentioned they enjoyed scenario planning (used to assess and discuss the social and ecological outcomes of different conservation approaches) and value mapping (used to geospatially reference places and resources that local stakeholders value for particular reasons). These activities are further described in Chapter 5.

7. Precursors of End-User Participation

Potential end-users articulated a range of conditions that would need to be met for them to be willing to initiate and sustain their participation in CLC planning. These included:

- Assurances that (1) the planning process and products would benefit potential end-users' organizations or agencies, (2) *local (e.g., state, county, or municipal) inventories and planning documents would be used to inform planning decisions*, (3) the planning effort was oriented toward promoting management implementation (as opposed to being an academic or theoretic exercise), and (4) potential end-users' contributions would meaningfully influence planning outcomes.

"I'm telling you, our county natural resource management planning process, we've been at this for so many years. The plan we have now is the result of the last 8 years…We've turned over every rock. And there's always a new science, always new information that we're trying to incorporate. We've always got our antennas up. You know, what's new, what's the new impacts? What are we learning?… I believe we could provide some helpful stuff (to LCD development). They should look at our plan. Especially in terms of where we've identified conservation areas."

—County natural resources planner

- Clarification on the expected duration of commitment to the decision-making effort.

- Demonstration that ongoing conservation initiatives in the geography were acknowledged and engaged during CLC planning.

- In-person meetings and workshops would be reasonably convenient for local stakeholders to attend, and associated traveling would not incur excessive costs.

"Would I participate in those meetings? That's going to be based on how many hours are we talking about. Where are you going to have these meetings? How are they going to be conducted? What kind of time are you talking about? What time of year are you talking about? Because for some reason Federal agencies like to do a lot of meetings in what we consider to be the construction season."

—Soil and Water Conservation District manager

8. Would Participation Impact Adoption of CLC Planning Products?

- Potential end-users reported that, whether or not they were engaged in CLC planning, if they (1) trusted those involved in CLC planning, (2) trusted the sources of data used to create planning products, and (3) saw how planning products could help their organization or agency achieve its mission, they would be willing to use these planning products to inform their management planning and implementation efforts.

- Participating in CLC planning would, however, *increase the likelihood potential end-users would be aware of planning products. They therefore might be more likely to use these products. Participating in planning might also increase end-users sense of ownership over and trust in the planning products.*

"I'd be more likely to use it (a LCD planning product) if I participated in it's development. Because I would be more aware of it. I use lots of GIS tools I wasn't involved in the development of. But I'd be more likely to think about something I was involved in and have pride in it. If you spend a lot of time on something you'll be proud of it. You know about it. And then you remember it even five years later."

—County environmental planner

This chapter has provided insight into local stakeholders' preferences for participation in CLC planning, and how opportunities for participation may impact the likelihood of planning product adoption. In the next chapter we explore some of the impacts that may result from insufficient or ineffective opportunities for local stakeholders to contribute to CLC planning.

Chapter 4

Challenges Associated with Insufficient Local Stakeholder Participation during Collaborative Landscape Conservation Planning

One of the greatest benefits of local stakeholder participation in CLC planning is that it can foster good environmental governance practices. **Environmental governance** involves the processes by which natural resource-related decisions are made and implemented. It is also how responsibilities and influence over decision making are shared among conservation partners and stakeholders at different organizational and geographic level[25]. Promoting **procedurally just** decision processes, in which stakeholders are not only satisfied with the outcome of the process, but with the process itself, requires development teams to follow **good governance principles**[26]. These principles encourage inclusive, fair, transparent, legitimate, forward-thinking planning. Following good governance principles can help process leaders and development team members demonstrate respect for and valuation of local stakeholders and their values, interests, needs, and beliefs. Lack of attention to these principles, on the other hand, can degrade local stakeholders' capacity to influence or have their interests and values reflected in conservation decisions.

Based on findings from our interviews and review of the literature, we found that:

- Inattention to good governance principles can result in insufficient and ineffective opportunities for local stakeholders to participate in CLC planning.

- Lack of local stakeholder participation in the development of CLC goals, objectives, and planning products can undermine an initiatives' capacity to achieve or exhibit good governance.

The following section provides a brief overview of governance-related challenges associated with insufficient or ineffective opportunities for local stakeholder participation in CLC planning.

1. Inclusivity

CLC planning that is inclusive provides actionable opportunities for all stakeholders, including those at the local level, to participate in and influence decision making.

- CLC planning that is inclusive and represents a diversity of local stakeholders in decision making can avoid being viewed as exclusionary.

- Restricting decision-making responsibility to development team leaders and select stakeholders can make the planning efforts' leaders *appear authoritarian* (i.e., asserting their own dominance and authority) and biased (i.e., privileging one group of stakeholders over all others).

> *"You know one of the problems I see for this particular Landscape Conservation Design is it was top-down. We didn't ask for it here. We were told we were going to do it. There was no asking for input, 'What do you think,' 'How should we go about doing this.' I got a cc of a cc of an email eventually. I kept waiting for the call and waiting for the call... It's top-down. There's been a lot of discussion about it at the top levels. But you know, if it comes from the top and it's pushed down, the odds of it being successful on the ground are low."*
>
> *—Federal land manager*

- Non-inclusive decision processes have been observed to damage relationships between development teams and local stakeholders.

Our case studies revealed that agriculture, timber, and extractive industries were systematically underrepresented in LCD decision processes, despite the extensive resources these industries manage and their interests in the future of resource administration. This bias in representation has already created conflict in some LCDs.

In one of our LCD case studies, forestry interests were not represented during LCD development. This led forestry interest representatives we interviewed to feel that the leaders of the LCD effort had not been accountable to forestry constituents' values or needs, making the initiative appear exclusionary.

State and regional transportation planners were also not represented in any of our LCD case studies. Examination of alternative LCD efforts revealed that these can be important stakeholders to include in landscape planning as they have perspectives on and power over regional land use.

2. Fairness

Given robust representation of local stakeholder viewpoints, fairness in CLC planning is achieved when development teams acknowledge and respect the views and opinions of those who participate in decision making[27]. Respect means allowing participants' perspectives to be voiced, considered, and either incorporated into decision making or not included for a justified reason. Achieving fairness is also contingent on CLC development teams avoiding biases in how they make decisions. Fairness is thus contingent on flexibility within the decision process that allows diverse local stakeholders' insights, values, needs, and interests to shape planning outcomes.

When decision processes are dominated by environmentally oriented agencies or organizations, these stakeholders' needs and interests may be given higher priority than those of stakeholders focused on social, cultural, and economic aspects of the landscape.

- Allowing powerful, vocal stakeholder groups to dominate decision processes can bias whose (i.e., which stakeholders') interests CLC planning decisions serve.

- *This can lead to non-dominant stakeholders discontinuing their involvement in decision processes because they feel their perspectives are not being fairly considered or reflected in planning outcomes.*

> *"I was invited to participate in the (LCD planning effort) because of the recreational interest that my organization promotes. I attended one meeting. After the meeting it was clear that recreation would not be a focus or really considered at all, so I did not participate after that meeting."*
>
> *—Director of a recreation-focused organization*

3. Performance

Long-term, collaborative decision processes that underpin landscape conservation planning are resource intensive and time consuming[28]. The expectation of those who participate is that their time, energy, and financial investments will eventually contribute to the joint production of valuable planning products[29]. An initiative's performance thus relates to its capacity to efficiently produce CLC planning products that can be effectively used by and are useful to end-users.

- *Insufficient participation by local stakeholders and incorporation of their input, particularly during the early stages of CLC planning, can undermine the effectiveness of associated planning products.*

> *"When you're trying to regionalize data across multiple states you tend to rely more heavily on conceptual modeling or data that's a little bit washed down because it applies to the entire (area). And you know, it's good to have a model as a starting point. But for me, as a state resource manager, a low-resolution model isn't very helpful. It can't kind of step in for actual data. So the (LCD) model isn't very useful to us. I brought this up several times and I feel like it was acknowledged, but that's as far as it went."*
>
> *—State natural resource manager*

- Revisions necessary to retroactively enhance the utility and usability of planning products can reduce the overall efficiency of the planning effort.

4. Transparency

Promoting local stakeholders' trust of planning efforts and products is in-part contingent on development teams clearly communicating how and by whom decisions are made during CLC planning[30]. These decisions include how and by whom (1) conservation priorities and goals are set, (2) outcomes of the planning effort are determined, and (3) the landscape's geographic boundaries are defined. Information about how the initiative's governance structure operates, meaning how decision-making influence is allocated among development team leaders, members, and external stakeholders, must also be readily available.

- *Insufficient transparency regarding planning can reduce local stakeholders' awareness of CLC planning products,* and their trust of CLC process leaders and development team members.

> *"Folks didn't really feel like they were communicated with afterwards. And they were not sure sort of what's happening with the process....Where it gets a little bit frustrating is, you know, we're always changing. Since that meeting administrations have turned over. Funding sources will be turning over. So it's kind of like, well what's the plan now? Does that all still fit? How will it fit into our state plan?"*
>
> *—State wildlife manager*

- This in turn can diminish local stakeholders' willingness to (1) participate in decision making, and (2) adopt planning products to inform their local management plans and actions.

5. Legitimacy

Legitimacy relates to who is entitled to lead and be represented on CLC development teams, and how these governing entities exercise power[31]. Legitimate leaders are those who are (1) accepted by a CLC initiative's members and stakeholders, (2) seen as having the rightful authority to lead decision processes, and (3) exercise power with integrity, meaning they do not allow special interests to drive decision making[32]. Legitimate development teams reflect, or at least represent, the diversity of stakeholders with power over and a vested interest in the outcome of resource conservation decisions[33].

- *Consultation with local stakeholders and analysis of socio-political realities is essential to selecting legitimate process leaders and representative development teams. Lacking focus on these social considerations, process leaders who local stakeholders do not view as legitimate may be chosen, and development teams may fail to represent a diversity of relevant local interests.*

> *"During the workshop they started showing us, 'well this is what we want to do and this is what we've done' and they wanted us just to say 'oh it's great' and buy into it and say 'this is all wonderful'. And so, then they got to the maps and they started putting these maps up on there and they had, I can't even remember, it was horrible. Instead of...(properly) naming a major drainage, they had picked out some minor (never used) name and put it on there. I mean you could tell they'd done it from afar. They had no idea. They'd talked to no local people. It was clear no local people were involved in the (planning) effort."*
>
> *—Member of a Soil and Water Conservation District commission*

- These conditions can lead to sub-optimal potential for promoting (1) stakeholder engagement in decision making, (2) acceptance of the initiative's conservation goals and objectives, and (3) adoption of the initiative's decision support tools and management recommendations.

6. Direction

CLC planning is intended to achieve a variety of goals. Beyond generating decision-support tools intended to guide local management actions, it is intended to foster social networks of actors with access to social, political, and natural capital necessary

to achieve landscape-wide conservation objectives[34]. The intended impact of CLC planning therefore extends far beyond the development of planning products. As a result, development teams must be forward-thinking throughout planning efforts to ensure their conservation goals have broad social support and that the planning products will be used to inform management actions[35].

- *Insufficient collaboration with local stakeholders can result in unsupported planning goals and planning products with limited utility.*

> *"You know, it's just not clear what the return is. What's the value-added (by the LCD planning product)? As a (state natural wildlife agency) we need to be responsive to our constituents. But they (the LCD development team) are more research-oriented. So the LCD model isn't really useful to us. It's just not a priority, so we stopped being involved.... My shelves are full of plans that were never implemented. There's definitely a distaste for doing that in the department 'cause it's like 'oh here we go again'."*
>
> *—State wildlife manager*

- Exclusion of stakeholders with authority over natural resources use and management, or those with social or political capital instrumental to achieving management outcomes, can reduce an initiative's access to these resources. This, in turn, can undermine an initiative's capacity to foster management actions that support landscape conservation goals.

In this chapter we explored some of the impacts of insufficient or ineffective opportunities for local stakeholders to contribute to CLC planning. In the next chapter we build upon insights offered in proceeding chapters to offer best-practice guidance for promoting productive local stakeholder participation during distinct stages of CLC planning.

Chapter 5

Best-Practice Guidance for Promoting Local Stakeholder Participation in Collaborative Landscape Conservation Planning

CLC development teams have struggled, succeeded, and at times stumbled in their efforts to effectively incorporate local stakeholder participation and social data into their planning efforts. A variety of lessons can be learned from these experiences, and from the experiences of local stakeholders.

This chapter provides guidance on best practices for stimulating productive local stakeholder participation at distinct stages of CLC planning. These stages include:

1. **Conceptualizing the landscape conservation effort**
2. **Establishing landscape conservation goals and objectives**
3. **Determining and developing planning products**
4. **Distributing planning products and promoting their adoption**
5. **Monitoring adoption of planning products**
6. **Adapting CLC planning processes and products**

These stages are a simplified amalgamation of planning steps common to many adaptive planning and management models, including The Open Standards for Conservation[36], Strategic Habitat Conservation[37], Systematic Conservation Planning[38], and others. Organizing practice guidance in this way is not meant to imply a recommendation for the form of your basic CLC planning effort. It is simply a way to articulate common stages of CLC planning where social considerations and local stakeholder participation might be advantageous. We also do not intend to imply that CLC planning is a linear process. As we stress, CLC planning will require iterative evaluation and adaptation at various stages.

1.	Conceptualizing the landscape conservation planning effort (i.e., developing basic parameters for the CLC planning effort, including its general focus and organizational composition)	Margules & Pressey (2000): Stage 1
		NEAT (2006): Stage 1
		Pressey & Bottrill (2009): Stages 1-3
		CMP (2013): Phase 1
2.	Establishing landscape conservation goals and objectives	Margules & Pressey (2000): Stage 2-3
		NEAT (2006): Stage1
		Pressey & Bottrill (2009): Stages 4-7
		CMP (2013): Phase 2
3.	Determining and developing planning products	NEAT (2006): Stage 2
		CMP (2013): Phase 3
4.	Distributing planning products and promoting their adoption	NEAT (2006): Stage 3
		CMP (2013): Phase 3
5.	Monitoring adoption of planning products	NEAT (2006): Stage 4
		CMP (2013): Phase 5
6.	Adapting the planning processes and products	Margules & Pressey (2000): Stage 6
		NEAT (2006): Stage 5
		CMP (2013): Phase 5 - 6

Table 1. Parallels between CLC planning stages and associated phases and stages in widely used adaptive planning models. Models include Systematic Conservation Planning (Margules & Pressey, 2000; Pressey & Bottrill, 2009), Strategic Habitat Conservation (NEAT, 2006), and the Open Standards for the Practice of Conservation (CMP, 2013).

1. Conceptualize

1.1	Develop a broad planning purpose
1.2	Select inclusive, collaborative leaders
1.3	Consider social values and meanings when defining the landscape; Consider local capacity to support management
1.4	Conduct a situation assessment; Identify local stakeholders
1.5	Establish a development team, ideally including local stakeholder representatives
1.6	Communicate about the initiative early using a compelling narrative; Consider establishing a communication team
1.7	Consult local stakeholders regarding their preferences for participation
1.8	Identify and address barriers to local stakeholder participation

2. Establish Goals and Objectives

2.1	Conduct a needs assessment with end-users
2.2	Refer to situation and needs assessments when drafting conservation targets, refine targets based on consultation with local stakeholders
2.3-2.4	Use participatory mapping and scenario planning to inform conservation goal and objective development
2.5	Determine local stakeholder' role in planning
2.6	Follow-up with local stakeholder participants; Communicate progress

3. Determine and Develop Planning Products

3.1	Use needs assessments to identify planning products that address end-users' needs
3.2-3.3	Iteratively refine form and function of planning products based on feedback from end-users; Consider rapid prototyping
3.4	Develop an implementation strategy

4. Distribute Planning Products & Promote Adoption

4.1	Target local stakeholder groups when communicating availability of planning products
4.2	Acknowledge and address financial barriers to adoption
4.3	Use demonstration sites

5. Monitor Adoption

5.1	Monitor CLC product use; Solicit feedback to facilitate product refinement and planning process adaptation; Ascertain why CLC planning products are or are not being adopted
5.2	Solicit testimonials from CLC planning product end-users

6. Adapt Planning Products and Processes

6.1	Adapt planning processes and/or products based on feedback from end-users and analysis of changing social and ecological conditions
6.2	Ensure capacity for adaption over time

Table 2. Overview of best-practice guidance for stimulating local stakeholder participation at various stages of collaborative landscape conservation planning.

Relationship and Trust Building: Things to Consider Throughout CLC Planning Efforts

Our research revealed that one of the greatest challenges to moving landscape conservation aspirations into local management actions was that, in some cases, development teams viewed the creation of planning products as the ultimate objective of CLC planning. As a result, they at times lost sight of the social objectives of collaborative planning, including relationship- and trust-building. This is the practical work of social capital development that all large-scale conservation efforts fundamentally require. This work starts at the individual level.

Interpersonal bonds and a foundation of trust can be essential to maintaining partnerships and stable networks of collaborators[39]. Without these networks, coordinating management planning and implementation across expansive, heterogeneous mosaics of land use and ownership is unachievable[40].

- Development teams might therefore keep in mind that CLC planning is a process that can both generate conservation-supporting products and foster a community of practice.

Developing interpersonal relationships relies on opportunities for social learning (i.e., learning from others through personal interactions), networking, and consistent communication[41]. It requires effort and patience for relationships and trust to develop and solidify. These processes can be time-consuming[42]. However, allowing external deadlines to accelerate the pace of planning can reduce conservation partners' and local stakeholders' capacity to form relationships and build trust.

Tips for Fostering Relationships:

- Face-to-face participation in CLC planning can be an excellent way to foster personal relationships and, in some cases, reconcile historic conflicts both among development team members and between development teams and local stakeholders[43].

- Development team members, and especially leaders might also consider attending local stakeholders' meetings (such annual board meetings or monthly planning meetings) with the explicit purpose of learning about and demonstrating respect for these stakeholder groups.

1. Conceptualizing the CLC Effort

Building capacity for local stakeholders, and especially end-users, to participate in CLC planning starts when the CLC effort is being conceptualized. The conceptualizing stage involves developing basic parameters for the CLC planning effort in preparation for the planning and product development that will come later.

1.1 Defining the Planning Purpose

The overarching purpose of a landscape conservation effort is a broad statement about the fundamental reason for bringing people together through a collaborative planning effort within a defined geography. The planning purpose might be, for example, to determine shared conservation priorities within a landscape and identify areas where resource or land conservation should be a priority.

- Ideally, the initiative's purpose is broad enough to allow flexibility in defining the specific goals of the planning effort, identifying conservation targets, and determining process outcomes.

- Creating a broad planning purpose is the first step in ensuring local stakeholders' interests can be represented during CLC planning.

Example of Broad Planning Purpose

Pacific Northwest Coast Landscape Conservation Design

"The Lower Columbia River and outer coasts of Oregon and Washington are unique and important places for people, economies, and natural resources. Many organizations are working to conserve and restore the landscape and maintain working lands. Yet, there is no unified blueprint for this region that identifies shared values and considers the impacts of large-scale stressors, such as climate change. This project will develop a landscape conservation blueprint that identifies valued resources, assesses future stressors, and guides collective impact to achieve shared outcomes."

A conservation initiatives' purpose creates parameters that bound its potential scope and focus[44]. If an initiative's purpose is very narrow, the planning effort may (potentially inaccurately) be perceived as limitedly relevant to the personal and organizational priorities of some local stakeholders, and as a result these stakeholders may not choose to participate in planning efforts.

Within one LCD effort we examined urban planners we interviewed did not feel their involvement with the initiative would be fruitful, as the LCD's purpose was specific to wetland conservation and restoration. Urban coastal areas are predominantly hardened (i.e., filled with impermeable surfaces), and thus have limited potential for restoration back to wetlands. Though urban planners might be valuable local stakeholders to engage in conservation planning, real or perceived limitations created by the initiative's planning purpose reduced these stakeholders' willingness to be consistently involved.

1.2 Leadership

A development team's ability to foster participation by local stakeholders and incorporate social considerations into planning requires leadership by individuals who value, respect, and seek out diverse perspectives and different sources of knowledge during decision making[45]. Leaders with the greatest capacity to facilitate local stakeholder participation are those with the ability to:

- Design and administer opportunities for local stakeholders to participate in decision making.

- Run collaborative decision-making events in which all participants have an opportunity to participate and be shown respect.

- Mediate negotiations and decision-making processes.

- Resolve conflicts that may arise between and among development team members and local stakeholders with distinct perspectives and values.

- Guide the integration of stakeholders' feedback into decisions.

Specialists (such as professional collaborative planning facilitators) can also be retained under contract to assist process leaders with stakeholder engagement. This was the approach taken by the Green River Basin LCD, whose leadership contracted a collaborative planning specialist to help conduct its needs assessment and workshops.

CLC process leaders with the greatest legitimacy may be those that reside and work within the specified landscape. However, under some circumstances (such as when there is conflict among local stakeholders and/or development team members), it may be advantageous to bring in professional planning facilitators from outside the geography.

1.3 Selecting a Landscape

1.3.1 Identifying the Geographic Scope of the Landscape

Integral to defining the planning purpose is identifying the landscape upon which a conservation effort will focus. Depending on the purpose of the conservation effort, the landscape may be defined by the boundaries of an ecosystem or ecoregion, by species' ranges, or by the extent of an ecological threat. How the boundary of the initiative is defined and where engagement opportunities are held can, however, impact local stakeholders' willingness to participate in planning efforts. Literature from the fields of human ecology and sociology and insights derived from our inquiry indicate the following:

- Local stakeholders may be more willing to participate in planning efforts and support conservation actions if the targeted landscape has meaning and importance to them.

Place attachment, meaning the emotional bonds formed with a place as a result of the place's meaning, function, or value[46], can be an important antecedent of place-protective attitudes and engagement in pro-conservation behaviors[47]. The coordinator of the Hudson Valley Estuary program in New York State, for example, reported strong local engagement in the initiative was in part motivated by local stakeholders' emotional attachment to the landscape and their interest in sustaining its socio-ecological integrity. Studies have also found that people who have an intellectual, functional, or emotional attachment to an entire landscape may be willing to take action to protect resources throughout the landscape[48].

- Understanding local stakeholders' emotional, functional, and intellectual attachment to a landscape, or to places within the landscape, may be important for promoting their participation in CLC planning and conservation-supporting management actions.

Insights into what geographic areas have importance to local stakeholders can be ascertained through consultation or through analysis of the social and political history of a landscape.

- If ecological drivers require the targeted landscape extend beyond the boundary of areas valued by or which have meaning to local stakeholders, establishing socially meaningful sub-geographies that act as focal areas can be advantageous.

These focal areas might align with ecological defined regions (e.g., the Uintah Basin of Utah, Western Lake Erie) or politically defined areas (e.g., Franklin County in Massachusetts, Southeast Michigan) local stakeholders have an attachment to, or where they identify as being from or working in. Hosting stakeholder engagement events within and in reference to these focal areas might bolster local stakeholders' interest in participation. It might also make it easier for stakeholders to travel to in-person events because there would be more participation events to choose from and some events might be within an easier travel distance.

1.3.2 Considering Local Capacity

When determining a landscape's boundary, process leaders will want to keep in mind what types of conservation-focused initiatives are already in place.

- There may be greater capacity to implement CLC efforts in areas where local stakeholders are already working on conservation issues and where networks of conservation-focused actors already exist.

- If conservation networks or initiatives do exist, CLC development teams might work with these entities to ensure the CLC initiative does not duplicate or displace existing conservation efforts.

Members of existing networks or conservation initiatives may, for example, be invited to join development teams and participate in CLC planning.

- CLC planning efforts should not, of course, focus only on areas where conservation networks are already in place.

While it requires concerted effort, CLC initiatives can build networks of actors with the capacity to collaborate and deliver coordinated management actions[49]. The Green River Basin and Pacific Northwest Coast LCDs, for example, are in large part intended to build communities of practice. Development teams should be aware, however, that building collaborative capacity is time-consuming and requires a strong focus on process, including consensus-building and relationship-development.

1.4 Analyzing the Conservation Situation

1.4.1 Situation Analysis

Understanding current and historic social, economic, and ecological conditions within a landscape can be a critical early step in CLC planning. These insights can help development teams understand ecological threats and the sources of these threats, as well as major economic drivers and social conditions that may have to be considered during planning. This, in turn, can help development teams identify local stakeholder groups they might invite to participate in CLC planning. Insights into social, economic, and ecological conditions can be collected through **situation analysis**.

- Situation analysis is a method of systematically collecting and analyzing data about the status of physical resources and socioeconomic conditions within a defined geography.

A situation analysis involves examination of (1) the current conditions of natural resources within a defined geography, (2) threats facing the conservation and management of these resources, (3) social and political conditions and economic drivers within a landscape, (4) social and economic challenges facing local stakeholders, and (5) opportunities to combat these threats and challenges[50]. Situation analyses can be conducted through analysis of primary or secondary data.

- Primary data can be collected through consultation with key informants, such as state resource managers, economists, community development experts, and agricultural representatives familiar with social and ecological conditions within a landscape.

- Secondary data can be derived from resources such as State Wildlife Action Plans, state, county, and municipal natural resource management plans, and reports on socio-economic conditions commonly issued by government agencies and NGOs.

Drawing on insights found in state, county, or municipal government plans can be advantageous. Data found in these sources have, in many cases, already been ground-truthed, and management recommendations often reflect those that have been vetted with local stakeholders and are socio-politically feasible. Using these resources to inform CLC planning products also demonstrates respect for local government entities, which can foster relationships with these groups. For more information on situation analysis, see USDA (2005) and CMP (2013).

1.4.2 Identifying Local Stakeholders

A fundamental task for development teams is identifying local stakeholders to involve in CLC planning. All citizens are beneficiaries of natural resources managed under the Public Trust Doctrine (e.g., wildlife, navigable waterways[51]) and therefore should be considered, and preferably consulted and engaged, during CLC planning. However, given that this Guide does not focus on general public participation, those interested in the subject might refer to alternative sources of guidance[52].

- Identifying local stakeholders starts with articulating the boundary of a landscape and the range of resources a CLC initiative might focus on and seek to conserve or restore.

After these areas and resources have been identified, groups with vested interests in their use and management, and those with the power to facilitate or undercut adoption of conservation- or restoration-supporting management actions can be identified. These stakeholders can be identified through:

- Situation analysis

- Consultation with socially, economically, and environmentally knowledgeable informants

- Chain referral, where relevant stakeholders or stakeholder groups are identified by other stakeholders

Chain referrals can be captured through one-on-one interactions (where a single informant is asked to refer an investigator to other stakeholders) or in group settings. For example, during local stakeholder workshops held early in the Great Lakes Coastal Wetland LCD planning effort, workshop leaders asked attendees what relevant local stakeholders were not at the workshop. Workshop leaders noted missing stakeholder groups, with the intention of inviting them to subsequent planning events.

A particularly important local stakeholder group that development teams might focus on are **potential end-users of CLC planning products**.

Potential end-users may include, but are not limited to representatives or managers of:

- Agricultural advocacy groups (e.g., Farm Bureaus, Cattlemen's Associations)
- County Soil and Water Conservation Districts
- County- and municipal-level government offices or commissions focused on economic development
- County- and municipal-level planning commissions
- County-level Public Lands Offices (relevant to Western states)
- Cultural resource conservation agencies, offices, or groups
- Energy development companies (including coal, oil, natural gas, wind, solar, and hydropower)
- Federal public lands (including those managed by the Bureau of Land Management, U.S. Forest Service, National Park Service, and the U.S. Fish and Wildlife Service)
- Forest resource interests (e.g., forest landowners, logging and timber companies, timberland owners associations, tree and seed nurseries)
- Homeowners associations
- Land trusts
- NGOs with influence over local land and resource use and management
- Natural Resource Conservation Service Centers
- Regional planning groups (e.g., Regional Planning Commissions)
- Soil and Water Conservation Districts
- State agricultural agencies (e.g., Departments of Agriculture)
- State, county, and municipal lands (e.g., parks, forests, management areas, preserves)
- State wildlife and natural resource agencies
- Transportation commissions
- Tribal land-use and natural resource management agencies
- Trust Land Administrations (relevant to Western states)
- Water Conservation Districts (relevant to Western States)

1.4.3 Considering Non-Traditional Conservation Stakeholders

Results of our interviews indicate that providing opportunities for only those who support resource conservation efforts is not sufficient.

- Engaging with local stakeholders who mistrust or are skeptical about CLC initiatives and who may be able and inclined to undermine implementation of conservation-supporting management actions is also critical.

Providing potential detractors the opportunity to participate in CLC planning allows these stakeholders to (1) have their concerns voiced, and (2) gain insight into the true nature of CLC planning efforts. This can potentially reduce their mistrust of CLC planning initiatives and resulting planning products.

> The coordinator of one LCC, for example, reported that inviting potential detractors to participate in LCD planning had been instrumental to gaining their trust, or at least dispelling their distrust, and reducing the likelihood these stakeholders would challenge CLC-supporting management decisions.

1.5 Development Team Members

Facilitating local stakeholder participation in CLC planning can start with ensuring these stakeholders' interests and values are represented by members of CLC development teams.

1.5.1 Including Local Stakeholders on Development Teams

Especially important to include on development teams are representatives of organizations or interest groups that may be directly impacted by conservation decisions and regulations informed by CLC planning outcomes, and those who have the power to support or impede implementation of management actions that support landscape conservation goals.

- Representation of these stakeholders can be achieved by seeding development teams with individuals who can speak on behalf of organizations and informal groups with particular sets of interests. These interests might, for example, relate to outdoor recreation, species or natural areas of special significance, cultural resource conservation, agriculture, energy development, and regional transportation.

Ideally these representatives would be invited to participate at the start of CLC planning, as having a range of interests consistently represented in decision processes can foster development of socio-politically supported conservation goals. However, stakeholder representatives can also be added later in the CLC process, as long as the "rules" for development team membership are flexible.

Benefits of including local stakeholder representatives on development teams can include the following:

- Local stakeholder representatives can ensure the interests and values of members of their group or profession are incorporated, or at least considered throughout CLC planning.

- These representatives can potentially communicate with and consult their colleagues regularly, helping local stakeholders stay apprised of CLC initiatives' progress and giving local stakeholders an opportunity to participate indirectly in decision making.

- Representatives may encourage and even advocate for opportunities to engage, consult, and communicate systematically with their colleagues during decision processes.

1.5.2 Identifying Local Stakeholder Representatives

Ideally, development team members who represent local stakeholders' interests are (1) trusted and well-respected by members of their interest group or professional sector, and (2) identified through consultation with local stakeholders.

Local stakeholder representatives may be identified during situation assessments or through early consultation with local stakeholders. **Social network analysis** can also be used to identify key stakeholders who might be effective stakeholder representatives.

- Social network analysis is used to understand social structures and how individuals or entities are connected with one another. The method characterizes social linkages between individuals, and determines if and how different actors are connected with one another.

Social network analysis can be used to identify nodes, or key stakeholders who are connected to large numbers of stakeholders[53]. These key stakeholders may be good candidates to represent the interests and values of stakeholder groups. It should be noted, however, that this method has limited capacity to illuminate the underlying quality or nature of social connections, meaning whether these relationships are based on positive or negative interactions, or how these social connections were formed. As such, social network analysis might be used to identify key stakeholders in an interest group's population, but should be coupled with additional analysis to determine if certain individuals would be appropriate representatives. For more information on social network analysis, see Wasserman & Faust (1994) and Scott (2017).

1.6 Early Communication

In its early stages, when an initiative is being convened, communication can be used to raise awareness of (1) the existence of the CLC initiative, (2) its overarching purpose, and (3) by whom (i.e., what organization or agency) the initiative is being led and funded.

1.6.1 Early Communication

Early communication can help ensure local stakeholders are aware of the landscape planning efforts when opportunities for consultation and engagement arise. Early communication can also be targeted to local stakeholder groups to help demonstrate the

relevance of the conservation effort to specific stakeholder audiences, potentially priming these stakeholders' interest in participating in decision making.

- Our results indicate that local stakeholders may be more inclined to and less wary about becoming involved in CLC planning when they were aware of the planning effort prior to receiving an invitation to participate.

1.6.2 Developing a Compelling Narrative

Local stakeholders' willingness to participating in CLC planning and support associated conservation goals is partially contingent on these stakeholders being motivated by an initiative's narrative[54]. A **narrative** is a communication mechanism used to convey the organizing concept and overarching purpose of an initiative—telling the story about why the initiative exists. A narrative might, for example, explain why a CLC initiative was launched and what, in general, it seeks to achieve.

- Effective narratives that may motivate local stakeholder participation are those that (1) appeal to broad audiences, and (2) are versatile, meaning they can be communicated and interpreted a variety of ways.

Laven et al. (2010), for example, found that National Heritage Areas have garnered broad local support because they strive to conserve and celebrate "shared national heritage." This narrative is effective in part because it conveys a broad concept that can be communicated and interpreted various ways for and by different audiences. The narrative also motivates local engagement because it helps connect people and their cultural histories with places identified for conservation, restoration, and enhancement[55].

Following this model:

- Early in CLC planning, development teams might strive to create narratives that appeal to diverse audiences, not only members of the conservation community, and which motivate place-protective attitudes and behaviors.

1.6.3 Communication Teams or Networks

Crafting compelling narratives and organizing and implementing effective communication strategies require specific skills that might not be found among CLC development team members.

- Given the importance of consistent and effective communication, retaining a communication specialist to work with development teams and/or recruiting people with needed skills to be members of development teams can be advantageous.

- Convening a communication team or sub-committee can also help ensure the initiative's communication strategy and messaging approach are actively considered and developed.

- Developing a diverse communication network consisting of development team members and local stakeholders not represented on these teams can also help ensure communications from the CLC initiative reach a diversity of organizations and groups.

Ideally, a CLC initiative's communication strategy and messaging approach are considered from the start of the planning effort.

1.7 Consultation Regarding Preferences

In Chapter 3 we noted the variability observed in end-users' preferences for participation in CLC planning. In addition to communicating about the CLC initiative early in the planning effort, development teams might consult with local stakeholders about:

- How often and through what mechanisms they would prefer to participate in decision making.

- Whether they would want to participate directly or through a representative.

These questions might, for example, be posed during early consultation and engagement efforts described in the following sections.

Development team members might keep in mind that local stakeholders are susceptible to becoming fatigued if communications and requests for consultation and engagement are received too frequently.

- **Participation fatigue** can occur when stakeholders feel overwhelmed or overburdened by communications and solicitations, and therefore either ignore these efforts at outreach or actively avoid involvement with the initiative.

Participation fatigue can be avoided most directly by (1) using local stakeholders' time efficiently and effectively, and (2) only soliciting consultation and engagement when local stakeholders' contributions would meaningfully influence decision making.

1.8 Addressing Barriers to Participation

Even if local stakeholders are ultimately willing to participate in CLC planning, they may face temporal, resource-related, or logistical barriers that preclude them from doing so. These may include (1) limited time availability, (2) seasonally dependent unavailability, such as during harvest or construction seasons, (3) organizational constraints that limit travel across state borders, and (4) lack of financial capacity to travel to participation events.

- Development teams might try to identify these potential barriers early and seek to address them from the start.

As we have noted, breaking the landscape into sub-geographies in which participation events are held may help local stakeholders attend these events. Development teams might also schedule events during times of year, week, and day that are convenient for local stakeholders.

2. Establishing Goals and Objectives

While an initiative's purpose is a general statement about its reason for existing, its goals are an articulation of the conditions it seeks to create, and its objectives are specific outcomes intended to achieve its goals. (When objectives have been established, tangible methods/actions can be identified through which these objectives can be achieved). Local stakeholders are integral participants in the development of socio-politically feasible, locally supported landscape conservation goals and objectives (and eventually actions). What follows is guidance related to engaging local stakeholders in these early stages of CLC planning.

2.1 Needs Assessments

A critical first step in developing socio-politically feasible, supported conservation goals and objectives is considering the needs and interests of local stakeholders, and especially potential end-users of CLC planning products[56]. Valuable insights into local ecological, economic, and social conditions can be gleaned from situation analysis. However, this analysis may be based on secondary data or consultation with a small, non-representative group of key stakeholders, and may not necessarily reveal information about a range of stakeholders' needs, interests, and preferences related to their work or participation in CLC planning.

When determining planning goals and objectives, development teams might therefore engage a larger, more diverse array of local stakeholders in a **needs assessment**.

- Needs assessments are a systematic process that can be used to (1) determine local stakeholders'—particularly end-users'—priorities and aspirations related to social, economic, and ecological conditions within a landscape, (2) ascertain gaps between current and desired future conditions within the landscape, and (3) identify what resources (i.e., decision-support tools, financial assistance, implementation capacity) or services (i.e., technical assistance, education, outreach) would be needed to help local stakeholders in their efforts to achieve desired conditions[57].

Insights derived from needs assessments can be used to ensure landscape conservation goals and objectives reflect, or at least do not contradict, the priorities and needs of local stakeholders. These insights can also be used to develop planning products—such as decision-support tools—that will be useful to potential end-users, and thus have a greater likelihood of being used to inform management plans.

Needs assessments can be conducted through quantitative methods (e.g., surveys) or through qualitative methods (e.g., focus groups, listening sessions, or workshops). In the Appendix we offer a range of informational categories and example questions that may be used to solicit pertinent data from end-users during needs assessments. For more information on conducting needs assessments, see Neuber et al. (1980) and Witkin & Altschuld (1995).

2.2 Refining Conservation Targets

Conservation targets are the resources (e.g., sage brush) or ecozones (e.g., riparian zones) on which conservation efforts are focused. Some conservation targets (e.g., threatened or endangered species or habitats, critically degraded natural systems) might be readily apparent as important focuses of a landscape conservation initiative.

Development teams can also draw on insights gathered through situation and needs assessments when determining or refining conservation targets for a landscape. Beyond this:

- Additional stakeholder engagement (e.g., during town hall meetings or workshops) can be used to assemble lists of conservation targets that have particular relevance in local contexts and are important to local stakeholders.

- Consultation with local stakeholders can also be used to refine lists of potential targets assembled by development teams to ensure the targets have ecological and social relevance in local contexts and, to the degree possible, meet local stakeholders' needs and interests.

The Great Lakes Coastal Wetlands LCD used early workshops with local stakeholders to refine lists of ecological conservation and ecosystem services targets. Through consultation with local resource practitioners and planners, the LCD's development team was able to remove targets that were theoretically, but not pragmatically significant conservation concerns, and ensure the initiative's conservation priorities reflected ground-truthed social-ecological realities. Ensuring landscape conservation targets have relevance to local stakeholders, and especially end-users, may increase the likelihood these stakeholders will be motivated to participate in CLC planning and adopt associated planning products.

2.3 Participatory Mapping

Another way development teams can solicit insights into local stakeholders' priorities and values during conservation goal and objective development is through **participatory mapping**.

- Participatory mapping is a stakeholder engagement method used to spatially orient stakeholders' interests and values associated with resources and places within a defined area. A frequently used participatory mapping approach is value mapping. In this approach, local stakeholders use paper or computer-based maps to identify areas they value (e.g., for recreation, aesthetic qualities, ecosystem services), or to which they are emotionally attached or functionally dependent[58].

Because this method allows stakeholders to reference their values and interests geospatially, it can provide development teams with explicit information about areas where pro-conservation management actions might garner support, and where they would not. These insights can directly inform the development of conservation goals and objectives.

2.4 Scenario Planning

A diversity of local stakeholders can participate directly in landscape conservation goal and objective development through **scenario planning**.

- Scenario planning allows process facilitators and stakeholders to discuss the relative benefits and tradeoffs associated with different conservation goals and objectives. Scenarios are narratives, usually

accompanied by pictures that help describe what might happen if different conservation goals and management objectives are pursued. Scenario planning is often used to plan for and address environmental challenges under conditions of ecological uncertainty[59]. Within CLC, this method may be used to envision and articulate the potential outcomes and impacts of various landscape conservation goals under changing social and ecological conditions.

Scenario planning can help development teams and a range of local stakeholders be forward-thinking and pragmatic as they determine CLC planning goals, objectives, and associated planning products. Based on insights gathered through scenario-planning, development teams can select and pursue conservation goals and management objectives that may garner the greatest local support. As CLC planning can be an abstract process, scenario planning can also be useful for articulating and visualizing the outcomes of CLC planning efforts, making the entire effort more concrete for local stakeholders.

2.5 Establishing Local Stakeholders' Role in Decision Making

Ideally some local stakeholders would be represented on CLC development teams. Prior to creating participation opportunities for those not formally associated with CLC initiatives, development teams might consider how much influence they will permit these stakeholders to have over decision making.

- Establishing local stakeholders' role in CLC planning prior to their participation can help manage their expectations for the impact they might have on planning outcomes.

Development teams may decide that for each participatory opportunity local stakeholders' role in decision making will differ. Questions and comments posed during webinars, for example, may not have the same impact as feedback solicited during workshops. Whatever the case, if local stakeholders' role is clearly communicated and their expectations managed, these stakeholders may have a greater likelihood of being satisfied by their experiences.

2.6 Communication During Goal and Objective Development

2.6.1 Communicating After Consultation and Engagement

So far we have suggested a few ways local stakeholders may participate in CLC planning. It is important to note that:

- Following up with local stakeholders after consultation and engagement events is essential.

These communications can help (1) demonstrate respect for the time invested by local stakeholders during participation efforts, (2) provide these stakeholders with overviews of the outcome of consultation and engagement efforts, and (3) keep coordinators and development teams accountable to process participants. Follow-up communications can also give stakeholders an idea of how their contributions have and will inform CLC planning outcomes. Beyond this, post-participation communications can help keep local stakeholders who were not able to attend participation events remain apprised of planning outcomes.

In one of our LCD case studies, lack of communication about how local stakeholders' input informed decisions diminished some stakeholders' willingness to participate in future engagement opportunities hosted by the initiative. In other LCD efforts, interview respondents who felt LCD products were created in a "black box" indicated a lack of trust in these products.

2.6.2 Ensuring Conservation Goals and Objectives are Clear and Easily Communicated

Even if local stakeholders support an initiative's purpose, if (after the early planning stages) the initiative's goals and objectives are unformed or unclear, local stakeholders may have a lower likelihood of participating in CLC planning. This is because the initiative may be viewed as disorganized or lacking in direction, or that it has deficient leadership. Considering this:

- Development teams should strive to produce clearly articulated, easily communicated and understood organizational goals and objectives.

Development teams might also keep in mind that:

- If an initiative's goals are overly technical, local stakeholders may be unmotivated to participate in CLC planning.

This may be because these stakeholders do not understand the initiative's goals or because, due to misinterpretations, the goals lack relevance. Some local stakeholders we interviewed were also put off by highly technical planning products, which were viewed as exclusionary.

2.6.3 Communicating Progress

After the CLC initiative's goals and objectives have been determined, development teams might communicate this progress broadly to potential end-users.

- Keeping potential end-users informed about key decisions and progress made by development teams can help these stakeholders understand how their contributions impacted decisions.

Such efforts at outreach and engagement can (1) foster local stakeholders' enthusiasm about a CLC initiative, (2) increase the likelihood local stakeholders will continue to contribute to decision making, and (3) enhance these stakeholders' sense of ownership over planning outcomes (if they see their interests or contributions reflected in these outcomes).

3. Determining and Developing Planning Products

Achieving landscape conservation is contingent on end-users adopting CLC goals and other planning products into their management planning. Insights from the innovation adoption literature[60] and our inquiry reveal that adoption of these planning products is contingent on their (1) meeting end-users' organizational or personal goals, (2) presenting a relative advantage in comparison to tools and guidance already in use, and (3) being based on trusted data sources and developed by trusted individuals. With these considerations in mind, the importance of working with local stakeholders, and especially end-users of CLC planning products during the development and refinement of these products is clear.

3.1 Determining the Form and Function of CLC Planning Products

Needs assessments and analysis of existing management plans and decision-support tools can provide valuable insights into the types of planning products that might support potential end-users' interests and address gaps in their capacity to plan or implement resource management. Nevertheless:

- Before development teams decide on the form and function of planning products, they might consult with end-users to determine what products would be useful.

- After the form and function of potentially useful planning products have been determined, but before product development begins, development teams might again consult with end-users to verify that their ideas for planning products meet the needs and interests of end-users.

This consultation might be achieved, for example, with a focus group of diverse representatives of potential end-users. If little support is shown for proposed planning products, development teams might create opportunities to engage a broader group of end-users for purposes of refining or re-conceptualizing these products.

Effectively working with potential end-users during this stage of CLC planning requires flexibility in the form and function of planning products. Given this,

- Development teams might avoid conditions where the form and function of CLC planning products are heavily constrained by technical or logistic aspects of conservation planning, such as the models used to generate spatial analysis.

Creating constraints on the potential form and function of planning products limits the degree to which local stakeholders' insights and feedback may impact product development and refinement. This, in turn, may reduce the utility of the planning products.

Within one of our LCD case studies, the form, function, and outcome of the collaborative decision process were largely constrained by the computer model used to generate the LCD's spatial analysis. This model was designed to use a limited range of biological and ecological data. Consequently, development team members with socially and economically focused interests, and even those whose biological or ecological interests involved data outside of the model's range of consideration (i.e., rare and endangered habitats, state-level species data), were limited in how they could contribute to the LCD's development. Some stakeholders therefore felt restricted in their capacity to impact planning decisions and reported that the planning product was of limited use to them.

3.2 Refining Planning Products to Ensure Usability and Usefulness

After planning products have been developed, but before they are finalized and broadly distributed, development teams might institute a refinement period. During this period development teams could communicate about the availability of draft planning products, offer training on using the products, and request feedback from a broad audience of potential end-users. This refinement process could take place, for example, in the context of a workshop where end-users are invited to have an open dialogue about the planning products.

If end-users are given an opportunity to provide feedback at this stage of planning, development teams have to keep in mind that:

- When they solicit feedback on their products, they should be willing and able to use this feedback to refine planning products.

Our interviews revealed that one of the most frustrating experiences for local stakeholders were instances where their feedback was solicited, but not used to inform planning decisions. Development teams will therefore have to ensure there is flexibility in the form and function of planning products, even at this late stage of development. When stakeholders' feedback cannot feasibly inform the form or function of planning products, an explanation of why this is the case should be offered. Consistent consultation with end-users during the development process can help mitigate the likelihood that late refinements require major overhauls of planning products.

- After planning products have been refined and finalized, development teams might advertise the availability of these products to a broad variety of local stakeholders.

Ideally development teams would continue to provide opportunities for training on these products, and ensure technical experts are available to assist end-users as they navigate the products. Efforts should also be made to continually solicit feedback from end-users to contribute to future product refinement.

Development teams might keep in mind that:

- Unveiling partially or wholly completed CLC planning products when local stakeholders were (1) unaware of the CLC planning effort, and/or (2) were not given an opportunity to participate in planning is ill-advised.

These circumstances can lead local stakeholders to feel excluded and disrespected.

3.3 Rapid Prototyping

One way to ensure planning products are effectively adapted based on feedback from end-users is to use a **rapid prototyping** approach.

- Rapid prototyping is a process where development teams conduct an early situation and needs assessments, then based on emergent insights, quickly generate prototypes of CLC planning products. Thereafter, end-users are invited to use the planning products in their own work, and their feedback is consistently solicited and used to refine the products' form and function.

The rapid prototyping approach has been used to develop and iteratively refine the South Atlantic Conservation Blueprint. An advantage of this approach is that it provides local stakeholders a prototype to react to, as opposed to their being involved in more theoretical and abstract planning efforts. When taking this approach, one needs to avoid creating a condition inadvertently leading to biases in the form and function of planning products. This can potentially occur because a limited number of people are charged with designing these products. Rapid prototyping is also labor intensive and costly, so CLC development teams will need sufficient social and financial capital to pursue this method.

3.4 Implementation Strategies

One way development teams can ensure they are forward thinking and considering how planning products will be used in practice is to develop an **implementation strategy**.

- Implementation strategies articulate a plan for achieving conservation goals through specific local management actions.

Developing these strategies inherently requires that end-users of CLC planning products are identified and their potential role in management planning and implementation considered. Implementation strategies also push development teams to consider the theory of change for their CLC initiative, meaning what would be involved in and required for moving the CLC process from planning to implementation. Developing an implementation strategy can demonstrate to local stakeholders that a CLC planning effort is action-oriented, and is not only an intellectual or academic exercise.

4. Distributing Planning Products and Promoting Adoption

Upon completion of planning products, development teams or their partners might employ various strategies to distribute these products and foster the likelihood of product adoption.

4.1 Targeting Communications

An important strategy for promoting use of CLC planning products is targeting communications about their availability to distinct end-user groups.

- Targeted, tailored communications can highlight: (1) how CLC planning products may be relevant to disparate stakeholder groups, (2) how the products address current gaps in capacity, and (3) how the products might help potential end-users achieve their goals.

Targeted communications can potentially increase the likelihood of planning product adoption.

4.2 Acknowledging and Addressing Financial Constraints

Potential end-users may face financial constraints that limit their capacity to implement management actions informed by CLC planning products.

- Development teams might, therefore, actively consider how to help end-users gain access to financial resources.

This can be achieved a variety of ways, including:

- Direct support from the CLC initiative (e.g., through competitive grants).
- The CLC initiative partnering with funding sources that provide grants to local stakeholders.
- Raising local stakeholders' awareness of external funding opportunities.
- Providing grant proposal writing and logistical support to local stakeholders seeking funding.
- Development teams competing for funds that are, in turn, transferred to end-users.

The Great Lakes Coastal Wetlands LCD obtained funds from the Great Lakes Restoration Initiative, which they in turn granted to local stakeholders working on wetland restorations efforts.

Financial limitations were recognized as a primary barrier to attendance at stakeholder meetings for the LCD in the High Divide. The coordinators of this initiative have thus sought to provide small grants to attendees to ease the financial burden of attending these meetings.

4.3 Using Demonstration Sites

Even when a CLC initiative's narrative, goals, and objectives were clearly communicated, multiple end-users we interviewed reported that they had trouble visualizing how CLC goals and objectives might be achieved in practice. Technical language and jargon can also make concepts inherent to landscape conservation obscure.

- An approach some CLC initiatives have taken to make their planning products and processes more tangible is using pilot efforts and demonstration sites.

In the context of CLC, pilots are management planning or implementation efforts that are conducted to field-test planning products or approaches and learn from these experiences. Demonstration sites are situations where management actions that support CLC goals and objectives have been implemented, and the impact of these management efforts can be observed.

> The Natural Resources Conservation Service, for example, regularly uses demonstration sites to educate landowners about conservation programs. The South Atlantic LCC has also used demonstration sites to mitigate local stakeholders' concerns about controlled burning and foster local interest in this management practice.

5. Monitoring Adoption

Following the release of CLC planning products, development teams can monitor use of these products and continue soliciting feedback to inform further planning product and process refinement.

5.1 Monitoring CLC Planning Product Use

CLC planning products are, in many cases, open-source and free to download. However:

- One way development teams can monitor product use is by requesting or requiring contact information from end-users who download or use these products.

Development teams can then follow-up with individual end-users to assess (1) whether these stakeholders are using the planning products, (2) how they are using them, and (3) what, if any, feedback they have that might lead to product refinement or new product development.

> The South Atlantic Blueprint, for example, works closely with product users, providing both technical assistance and soliciting recommendations for product refinement. The Columbia Plateau LCD also actively monitors how its planning products are being used.

- If there is little evidence that planning products are being adopted, development teams might seek to understand why.

This can be achieved by soliciting information from end-users who downloaded or accessed planning products, but indicated they are not using the products. Development teams might also host focus groups with representatives of potential end-users groups to solicit insights into why products are not being adopted, and what planning teams might do to foster adoption. Lessons learned throughout these consultations might then be documented, shared with development teams or the broader landscape conservation community, and used to inform CLC planning product and process refinement.

5.2 Testimonials

Development teams can highlight how CLC planning products are being used by soliciting testimonials from end-users.

- Testimonials involve asking current end-users to tell a story (which can be transcribed or recorded) about (1) why they adopted CLC planning products, and (2) how the products informed their planning or management.

Testimonials are advantageous because they provide opportunities for social learning. Like demonstration sites, testimonials provide an example of how CLC planning products have been and might be used in practice.

> The Connect the Connecticut LCD effort, for example, has video recorded testimonials on their website in order to foster social learning and demonstrate the range of ways their LCD products have been used.

While each of the actions described briefly above have merit on their own, a strategy that includes several if not all of them is most likely to reach a range of stakeholders and have positive effect on eventual adoption of planning products.

6. Adapting Planning Products and Processes

Adaptive approaches to planning and management are viewed as those most effective at promoting resource conservation within complex social-ecological landscapes and under conditions of environmental uncertainty[61]. Simply put, adaptive approaches rely on the concepts of "learning by doing" and "adapting based on what is learned"[62].

6.1 Adaptation and CLC Planning

In the context of CLC planning, adaption may be necessary to ensure:

- Planning follows good governance principles.
- Planning products are useful to and usable by end-users.
- Planning products and processes reflect changing social and economic conditions within the landscape.

Considering this, along with soliciting feedback about planning products, development teams are advised to consult with end-users about how CLC planning might be adapted in the future.

6.2 Adapting Planning Products over Time

Refining planning processes and products adaptively, as is the goal of many CLC initiatives[63], requires development teams and end-users who are willing and able to participate iteratively in planning efforts.

- A strong focus on relationship- and trust-building, and the capacity to demonstrate how CLC initiatives have fostered local management implementation, are important for helping sustain these long-term relationships and promoting continued interest in CLC planning.

Adaptive planning also requires consistent access to experts with the capacity to modify these products. This may present a challenge, as in many cases these experts are contracted for finite periods.

- Development teams might therefore actively consider how planning products will be modified over time.

If no contingencies are created for modifying planning products over time, these products will likely become stagnant and outdated, and may lose their utility.

The LCD in the Great Lakes Coastal Wetlands promoted the adaptation of its planning products by drawing on in-house modelers (i.e., those already employed by development team members' agencies) and by working closely and consistently with the creators of the initiative's decision-support tool.

In this chapter we have explored a range of best practice guidance for local stakeholder participation and social data integration in CLC planning. In the following chapter we examine where development teams might find existing social data and how they might collect new social data to inform their decision processes.

Chapter 6

Guidance on Systematic Social Data Collection

Consideration of social data (produced through consultation, engagement, or research) during CLC planning can enhance the socio-cultural acceptability, political and logistic feasibility, and economic viability of landscape conservation goals. Integration of these data into planning decisions may also enhance the likelihood that landscape conservation goals and planning products will be adopted and used to inform land and resource use and management.

The following chapter provides guidance on how CLC development teams might gather primary and secondary data related to local stakeholders' values, beliefs, interests, concerns, needs, knowledge, preferences, demographic characteristics, and behavioral tendencies. We provide tips for finding existing data and collecting new data.

1. Finding Existing Social Data

Sometimes information CLC development teams would want from local stakeholders has already been captured. The following table articulates some potential sources of relevant social data and an overview of the types of data these sources may contain.

Source	Examples of Relevant Data
Plans or inventories produced by state, county, and municipal governments (such as State Wildlife Action Plans, forest management plans, wetland restoration plans, habitat conservation plans)	• Threats to ecological integrity • Ongoing resource conservation initiatives • Local economic drivers • Current and changing land-use practices and human populations dynamics • Historic management practices and their relative effectiveness at addressing management needs • Jurisdictional authority over lands and resources • Data and decision support tools used to inform management decisions • Desired future conditions of natural resources and resource management practices • Resource management objectives • Land use and ownership
Newspaper articles	• Historic and contemporary conservation efforts • Threats to ecological integrity • Legal actions related to natural resource management • Local economic drivers • Collaboration between stakeholder groups • Conflict between stakeholder groups • Local stakeholders' attitudes and behaviors

Peer-reviewed professional reports	• Historic and contemporary conservation efforts • Threats to ecological integrity • Current and changing land-use practices and human populations dynamics • Historic management practices and their relative effectiveness at addressing management needs • Local stakeholders' attitudes and behaviors
National-level surveys (produced by the Census Bureau, Bureau of Labor Statistics, Bureau of Economic Analysis, National Agricultural Statistics Service, and Department of Agriculture)	• Demographics of residents • Economic status of residents • Occupations of residents • Economic drivers • Land use and ownership
Social data aggregation and comparison tools (such as the Economic Profile System created by the non-partisan research group, Headwaters Economics)	• Comparison of land use in different localities and changes in land use over time • Incidences and locations of resource extraction • Changing demographics of residents • Urban growth

2. Methods for Collecting Social Data

If development teams feel existing data do not fulfill their information needs (e.g., regarding local stakeholders' priorities for resource conservation, areas these stakeholders value and depend on, etc.), they can obtain this data through a variety of methods. Selection of data collection methods is contingent on the kind of data sought, time available to obtain the data, funds available to pay for the inquiry, and access to expertise to implement data collection.

Social data can be collected through both **qualitative** and **quantitative** methods.

- *Qualitative methods* are used to explore and understand human behaviors, values, interests, and other social phenomena from the respondents' perspective. It emphasizes exploring why (i.e., motivations) and *how* (e.g., regarding technical details) decisions are made, and understanding social conditions and structures. Qualitative methods include, for example, focus groups and unstructured interviews.

- *Quantitative analysis* is used to gather objective measurements (e.g., when, where, how many) that can potentially be analyzed using statistical methods. Quantitative data, which includes numeric or categorical data, can be solicited using questionnaires and structured interviews.

What follows is a brief overview of a range of social data collection methods development teams might use to improve their understanding of local stakeholders. We present these methods by first identifying the categories of data that development teams might seek, and then presenting the data collection methods typically used to solicit these data. We offer additional resources that can be used to learn more about these methods and their implementation.

Type of Data	Social Data Collection Method	Description of Method	Additional Resources
In-depth information about social phenomena, including local stakeholders' interests, values, beliefs, experiences, needs, and behaviors	• Individual Interviews	• Individual interviews are one-on-one, private discussions between a researcher and a participant. Interviews can be *structured*, meaning the interview follows a strictly scripted series of questions, *semi-structured*, wherein the researcher prepares a series of questions, but there is flexibility to follow topics that emerge during the conservation, and *unstructured*, where the researcher has a clear topic and goal for the discussion, but does not necessarily adhere to a pre-determined list of questions, instead allowing the discussion to evolve organically.	Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Thousand Oaks, CA: Sage Publications. Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (Eds.). (2013). *Qualitative research practice: A guide for social science students and researchers*. Thousand Oaks, CA: Sage Publications. Seidman, I. (2013). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York, NY: Teachers College Press. Weiss, Robert. 1994. *Learning from Strangers: The Art and Method of Qualitative Interview Studies*. New York, NY: Free Press.
	• Group Interviews	• In a group interview (e.g., focus group, nominal group), a small group of participants are brought together in the same location to discuss a common topic. Depending on the purpose of the interview, the group may be very diverse or homogeneous. For CLC planning purposes, a diverse group might consist of a variety of local stakeholders with differing interests in resource use and management, and differing administrative authority over lands and resources. A homogeneous group might be comprised entirely of local land trust managers, municipal environmental planners, land developers, etc. A trained facilitator who poses questions to the group moderates the discussion and works to ensure all participants' perspectives are represented during the discussion. Based on the participants' comments and experiences, the facilitator or a third-party observer attempts to build a holistic understanding of the problem situation.	Krueger, R. A., & Casey, M. A. (2014). *Focus groups: A practical guide for applied research*. Thousand Oaks, CA.: Sage Publications. Morgan, David. 1997. *Focus Groups as Qualitative Research*. Thousand Oaks, CA: Sage Publications.

Systematically collected data related to common questions; Generalizable trends in stakeholder populations' values, beliefs, interests, concerns, needs, knowledge, preferences and behavioral tendencies; Data that may be analyzed using statistical methods	• Questionnaire	• A questionnaire is a research instrument that includes a set of pre-determined questions, and, in some cases, pre-determined response options. Mail, telephone, and web-based surveys are methods that typically employ questionnaires for data elicitation.	Salant, Priscilla and Don A. Dillman. 1994. *How to Conduct Your Own Survey*. New York, NY: Wiley. Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: the tailored design method*. Hoboken, NJ: John Wiley & Sons.
Stakeholders' perspectives and preferences regarding plausible or hypothetical outcomes of different conservation and management approaches	• Scenario planning	• Scenario planning allows process facilitators and stakeholders to discuss the relative benefits and tradeoffs created by the implementation of different planning scenarios. Scenario planning is often used to plan for and address environmental challenges under conditions of ecological uncertainty[64]. Within CLC, this method may be used to envision and articulate the potential impacts of various landscape conservation scenarios under changing social and ecological conditions.	Rowland, E. L., Cross, M. S., & Hartmann, H. (2014). *Considering multiple futures: scenario planning to address uncertainty in natural resource conservation*. US Fish and Wildlife Service, Washington, DC.
Geospatial data about: values and interests related to places or resources, land use information, boundary and ownership data, etc.	• Participatory mapping	• Participatory mapping is a stakeholder engagement methodology used to spatially orient stakeholders' interests and values associated with resources and places within a defined area. During value mapping, one participatory mapping approach, local stakeholders use paper or computer-based maps to indicate areas they value (e.g., for recreational, economic, ecosystem services values, etc.) and/or to which they are emotionally or intellectually attached or functionally dependent[65]. Resource managers have also used this methodology to solicit local stakeholders' input on resource management plans[66] and indicate areas where management options would be feasible or meet resistance from local stakeholders[67].	Di Gessa, S., Poole, P., & Bending, T. (2008). *Participatory mapping as a tool for empowerment: Experiences and lessons learned from the ILC network*. Rome, Italy: International Coalition.
Data on stakeholders' social networks; Identity of key stakeholders with high levels of social connectivity	• Social network analysis	• Social network analysis is a method used to understand social structures and how individuals or entities are connected with one another. The method uses networks and graphs theory to characterize social linkages between individuals, and determine if and how different actors are connected with one another. Within the natural resource management field, this method can be used to examine local stakeholder networks, identify where gaps in social connectivity weaken conservation networks[68], and identify key stakeholders with a high level of social connectivity[69].	Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications* (Vol. 8). Cambridge, UK: Cambridge University Press. Scott, J. *Social Network Analysis: A Handbook*. 2017. London, UK: Sage Publications.

For insights into what information might be relevant to collect from potential end-users of CLC planning products and what questions may be posed to collect these data, please refer to the Appendix.

Chapter 7

Conclusion

As stressed throughout this Guide, local stakeholder participation and consideration of social data during CLC planning can provide a range of benefits. Engagement and consultation with local stakeholders can help ensure landscape conservation aspirations are achievable, CLC planning products are useful, usable, and trustworthy, and end-users are aware of landscape conservation initiatives and resources generated by these initiatives. Including local stakeholders in conservation decisions that may impact them can increase the procedural justice of CLC planning and may enhance the likelihood landscape conservation goals are realized through aggregated management actions. Ultimately, stakeholder participation can help avoid the incidence of planning-implementation gaps, ensuring limited funds available for collaborative planning result in the conservation of species, habitats, and ecosystems.

Encouraging a social-ecological approach to CLC planning may require organizational and cultural shifts heightening valuation of local and social considerations in conservation decision making. It will require dedication of time to understand local socio-political and economic conditions, identify local stakeholders, and foster relationships and trust with these stakeholders. Beyond this, it will require investments of resources to facilitate participation opportunities and ensure development teams have access to expertise and skills critical to effective participation efforts. Yet even these challenges are themselves opportunities.

Building capacity for conservation planning within social-ecological contexts can help the conservation community plan strategically as human populations and demands on natural resources continue to grow. Investing in relationships with local stakeholders can help build partnerships and social networks instrumental to resource conservation across heterogeneous mosaics of land use and ownership and under conditions of social and ecological change. Investments of resources to facilitate local stakeholders' involvement in CLC planning demonstrates valuation of historically underrepresented stakeholders and commitment to providing them a role in decisions that may impact them.

Ultimately, promoting stakeholder engagement and social data integration in CLC planning will be instrumental to the sustainability, resilience, and success of landscape conservation endeavors. Our hope is that guidance offered in this document will help CLC development teams think strategically and critically about how they might include local stakeholders and social data in their CLC planning efforts.

Appendix

Understanding End-Users' Needs, Interests, and Values: Guidance on Social Data Collection

We found the greatest need for social data during collaborative landscape conservation (CLC) planning relates to the interests, needs, knowledge, and values of the intended end-users of CLC planning products. These data are particularly valuable to CLC development teams if gathered at the beginning of CLC planning. (Development teams consist of conservation partners formally associated with a CLC initiative and charged with developing CLC planning products).

We present categories of information that would be valuable for CLC planning and example questions that development teams might draw on to better understand potential end-users. Recognizing that the specific questions of interest to development teams will vary depending on context, we do not provide a single, generic instrument; instead we offer:

- An overview of the types of data that development teams might gather from potential end-users and a brief explanation of why this information would be valuable;
- Examples of how questions might be asked, including example response options.

Ideally, development teams would work with a social scientist to (1) help craft and administer data collection efforts, and (2) systematically analyze and interpret social data.

Important Information about Sample Questions

The sample questions we offer can be administered through *qualitative* or *quantitative* methods. This allows for flexibility in how data are collected.

We do not indicate how many response options respondents should be permitted to select. This is left to the discretion of the administrator of the inquiry who might consider what data are needed and how the data will be analyzed. If, for example, the questions are posed during a scoping period, an administrator might ask respondents to select all answers that apply in order to understand the range of possibilities (which is the purpose of scoping). If data about the relative importance of response options are needed, the study administrator might ask respondents to rank their top three (or so) responses. If, however, the administrator hopes to determine respondents' single greatest priority, interest, or concern, respondents might be asked to select a single response option that best represents their perspective.

Many sample questions offered in the following sections are adapted from previously implemented surveys, including those developed by Rosenburg & Margerum (2008), Ardoin (2014), and Ken Vance-Borland (2015, 2016, 2017).

Information Categories and Sample Questions

1. Background on Potential End-Users

The first category of information that development teams might collect is general background about end-users or their organizations. Pertinent background information relates to the goals and priorities of end-users or their organizations, where within the landscape they have influence, how they operate, from what sources they receive their political support and funding for management planning and implementation, and what, if any, interest groups they seek to support or represent. Such information can reveal (1) the range of interests to be considered during CLC planning, (2) resources over which end-users have planning- or management-related influence, and (3) geographic, financial, and social realities that might impact end-users' willingness and ability to participate in landscape conservation planning and promote management implementation.

Example questions:

1. Which of the following best describes your organization/agency/ group?

a. This might be an open-ended question or there might be a list of response options, such as:

_____ Agricultural industry
_____ Forestry industry
_____ Fisheries industry
_____ Consulting firm (please specify focus) _____
_____ Other private industry (please specify focus) _____
_____ Local conservation NGO
_____ Regional conservation NGO
_____ International conservation NGO
_____ Education NGO
_____ Other NGO (please specify focus) _____
_____ Volunteer community group
_____ Watershed organization
_____ Federal government
_____ State government
_____ Municipal government
_____ County government
_____ Council of Governments
_____ Other (please specify) _____

2. Which of the following categories best characterize the work of your organization/agency/group?

a. *This might be an open-ended question or there might be a list of response options, such as:*

_____ Land Management
_____ Land Use Planning
_____ Water Management
_____ Species Management
_____ Awareness Raising (i.e., outreach and communications)
_____ Law Enforcement and Prosecution
_____ Economic Development
_____ Cultural Preservation
_____ Conservation Designation & Planning
_____ Research and Monitoring
_____ Education and Training
_____ Other (please specify) _____

3. What are your or your organization/agency/group's goals with respect to land use and/or natural resource management?

a. *This might be an open-ended question or there might be a list of response options, such as:*

_____ Enhancing the productivity of the land
_____ Increasing profits derived from use of the land
_____ Enhancing recreational opportunities on the land
_____ Promoting the population sizes of fish and wildlife species
_____ Promoting the wellbeing of fish and wildlife species
_____ Enhancing water quality
_____ Enhancing soil quality
_____ Enhancing wildlife habitat quality
_____ Enhancing the aesthetic quality of the land
_____ Enhancing economic conditions in the area
_____ Promoting and protecting the cultural or heritage value of the area
_____ Helping conserve the environment for future generations
_____ Promoting property values
_____ Other (please specify) _____

4. What areas (i.e., town, city, state, region) does your organization/ agency/group operate within?

a. *This might be a closed question with a range of response options, open-ended, or the respondent may be asked to circle their operation boundaries on a map.*

5. **Where (i.e., from what organization, agency, group, or individual) does your organization/agency/group tend receive funding to support its planning and management efforts?**

   a. *This might be an open-ended question or there might be a list of response options, such as:*

      _____ Federal government financial assistance programs
      _____ State government financial assistance programs
      _____ County or municipal government assistance programs
      _____ Fees from organization/group members
      _____ Donations from organization/group members
      _____ Competitive grants from government agencies
      _____ Competitive grants from non-profit NGOs
      _____ Competitive grants from for-profit NGOs
      _____ Cost-sharing with partner organizations or groups
      _____ Other (please specify) _____

6. **Does your organization/agency/group represent or work on behalf of an interest group or professional sector?**

   a. *This might be a closed question with a binary (yes/no) response. option.*

      ___ Yes
      ___ No

7. **(If Yes to Question 6) What interest group or professional sector does your organization/agency/group work on behalf of or represent?**

   a. *This might be an open-ended or closed question with a variety of context-specific response options.*

8. **Does your organization/agency/group receive political support (such as lobbying) from another organization, agency, group, or individual?**

   a. *This might be a closed question with a binary (yes/no) response option.*

      ___ Yes
      ___ No

9. **Please name the organization, agency, group, or individual that your organization/agency/group turns to for political support.**

   a. *This might be an open-ended or closed question with a variety of context-specific response options. If the question is closed, the question would ask the recipient to "select" the organization "from the following list."*

2. Perspective on Social and Environmental Threats and Challenges

Landscape conservation seeks to mitigate threats to ecological and social systems within a landscape[70]. Promoting local management actions that support landscape conservation goals is contingent on mutual agreement between members of development teams and local stakeholders not included on these teams regarding the identity and sources of threats. Local stakeholders are critical to helping development teams understand what locals perceive as the most pressing social and ecological threats, and what challenges inhibit achievement of desired land-use and management outcomes. Foreknowledge about end-users' views has the potential to help development teams align their priorities with those of local stakeholders, or at least ensure CLC goals, priorities, and products address end-users' concerns. If end-users' responses do not demonstrate awareness of observed social or ecological threats that impact the landscape, it may be useful to communicate with them for the purpose of raising awareness of these issues.

Example questions:

1. **What are the primary economic drivers in the (insert name of Region or Subregion)?**

    a. This might be an open-ended question or there might be a list of response options, such as:

    _____ Administrative and waste services
    _____ Arts, entertainment, and recreation
    _____ Accommodation and food services
    _____ Agriculture
    _____ Construction
    _____ Educational services
    _____ Energy development
    _____ Finance and insurance
    _____ Government
    _____ Information
    _____ Health care and social assistance
    _____ Manufacturing
    _____ Management of companies and enterprises
    _____ Professional, scientific, and technical services
    _____ Resource extraction (timber production, fishing, mining)
    _____ Retail trade
    _____ Service industries
    _____ Transportation
    _____ Utilities
    _____ Wholesale trade
    _____ Other (please specify) _____

2. What are the primary economic drivers in the area in which your organization/agency/group operates (if different than the [insert name of Region or Subregion])?

a. This might be an open-ended question or there might be a list of response options, such as:

_____ Administrative and waste services
_____ Arts, entertainment, and recreation
_____ Accommodation and food services
_____ Agriculture
_____ Construction
_____ Educational services
_____ Energy development
_____ Finance and insurance
_____ Government
_____ Information
_____ Health care and social assistance
_____ Manufacturing
_____ Management of companies and enterprises
_____ Professional, scientific, and technical services
_____ Resource extraction (timber production, fishing, mining)
_____ Retail trade
_____ Service industries
_____ Transportation
_____ Utilities
_____ Wholesale trade
_____ Other (please specify) _____

3. Historically, what were the greatest environmental concerns in the (insert name of Region or Subregion)? These can be concerns about land, water, wildlife, air quality, etc.

a. This might be an open-ended question or there might be a list of response options, such as:

_____ Resource extraction (e.g., energy development, forestry, fishing)
_____ Invasive species control and management
_____ Pollution
_____ Human population growth/overdevelopment threatening the environment
_____ Climate change
_____ Habitat loss
_____ Habitat fragmentation
_____ Overuse of fertilizers and pesticides
_____ Water quantity (e.g., levels and flows; diversions and withdrawals)
_____ Water quality
_____ Contaminated sites (e.g., brownfield sites, active dumping sites)
_____ Other (please specify) _____

4. Currently, what are your or your organization/agency/group's greatest environmental concerns for the (insert name of Region or Subregion)? These can be concerns about land, water, wildlife, air quality, etc.

a. *This might be an open-ended question or there might be a list of response options, such as:*

_____ Resource extraction (e.g., energy development, forestry, fishing)
_____ Invasive species control and management
_____ Pollution
_____ Human population growth/overdevelopment threatening the environment
_____ Climate change
_____ Habitat loss
_____ Habitat fragmentation
_____ Overuse of fertilizers and pesticides
_____ Water quantity (e.g., levels and flows; diversions and withdrawals)
_____ Water quality
_____ Contaminated sites (e.g., brownfield sites, active dumping sites)
_____ Other (please specify) _____

5. (Following on Question 4): Has your organization/agency/group taken steps to address these environmental concerns?

a. *This might be a closed question with a binary (yes/no) response option.*

____ Yes
____ No

6. (If Yes to Question 5): What actions has your organization/agency/group taken to address these environmental concerns?

a. *This might be an open-ended question or there might be a list of response options, such as:*

_____ Developed resource management plans to address them
_____ Developed policy to address them
_____ Directly addressed them through management actions
_____ Implemented awareness raising/ education campaigns
_____ Lobbied political officials
_____ Established coalitions to address them
_____ Joined coalitions that address them
_____ Other (please specify)_____

7. (Following on Question 6): How successful were these actions at addressing the environmental concern?

a. *This might be an open-ended question or there might be a list of response options, such as:*

_____ Very successful
_____ Moderately successful
_____ Slightly successful
_____ Not at all successful

8. (If Yes to Question 5) What could enhance your organization/agency/group's ability to successfully address these environmental concerns?

a. *This might be an open-ended question or there might be a list of response options, such as:*

____ Greater access to data and knowledge (scientific, traditional, social)
____ Opportunities to develop collaborative strategies and projects
____ Greater access to technical assistance during plan development
____ Greater access to technical assistance during management implementation
____ Greater access to land where management actions may be implemented

9. (Following on Question 4) Are there currently unexplored or unrealized opportunities to address these environmental concerns?

a. *This might be a closed question with a binary (yes/no) response option.*

____ Yes
____ No

10. (If Yes to Question 9) Please describe the feasible, but currently unexplored or unrealized opportunities for addressing these environmental concerns.

a. *This might be an open-ended question to ensure flexibility in response.*

____ Funding to support conservation planning
____ Funding to support management implementation
____ More effective public or community engagement strategies
____ Improved access to policy knowledge and expertise
____ Other (please specify) _____

11. What are your or your organization/agency/group's greatest social concerns for the (insert name of Region or Subregion)? These can be concerns about cultural, socio-political, economic, or civic matters.

a. This might be an open-ended question or there might be a list of response options, such as:

_____ Human population growth
_____ Overdevelopment threatening community character
_____ Traditional lifestyles—like farming—disappearing
_____ Education / quality of the schools
_____ Too much government regulation of natural resource-based industry
_____ Not enough government regulation of natural resource-based industry
_____ Poor economy
_____ Lack of well-paying jobs
_____ Traffic / public safety
_____ Other (please specify)_____

12. (Following on Question 11): Has your organization/agency/group taken actions to address these social concerns?

a. This might be a closed question with a binary (yes/no) response option.

____ Yes
____ No

13. (If Yes to Question 12): What actions has your organization/ agency/group taken to address these social concerns?

a. This might be an open-ended question or there might be a list of response options, such as:

_____ Developed strategic plans to address them
_____ Developed policy to address them
_____ Implemented programs to address them
_____ Implemented awareness raising/education campaigns
_____ Lobbied political officials
_____ Established coalitions to address them
_____ Joined coalitions that address them
_____ Other (please specify)_____

14. (Following on Question 13): How successful were these actions at addressing the social concern?

a. This might be an open-ended question or there might be a list of response options, such as:

_____ Very successful
_____ Moderately successful
_____ Slightly successful
_____ Not at all successful

15. (Following on Question 12) What could enhance your organization/ agency/group's ability to successfully address these social concerns?

a. This might be an open-ended question or there might be a list of response options, such as:

____ Greater access to data and knowledge (scientific, traditional, social)
____ Opportunities to develop collaborative strategies and projects
____ Funding to support development of collaborative strategies and projects
____ Funding to support program implementation
____ More effective public or community engagement strategies
____ Improved access to policy knowledge and expertise
____ Other (please specify) _____

16. (Following on Question 11) Are there feasible, but currently unexplored or unrealized opportunities to address these social concerns?

a. This might be a closed question with a binary (yes/no) response option.

____ Yes
____ No

17. (If Yes to Question 16) Please describe the feasible, but currently unexplored or unrealized opportunities for addressing these social concerns.

a. This might be an open-ended question to ensure flexibility in response.

18. What are the highest priority natural resource or land use related threats that your organization/agency/group's seeks to address?

a. This might be an open-ended question or there might be a list of response options, such as:

_____ Resource extraction (e.g., energy development, forestry, fishing)
_____ Invasive species control and management
_____ Pollution
_____ Growth/overdevelopment threatening environment
_____ Climate change
_____ Habitat loss
_____ Habitat fragmentation
_____ Overuse of fertilizers and pesticides
_____ Water quantity (e.g., levels and flows; diversions and withdrawals)
_____ Water quality
_____ Contaminated sites (e.g., brownfield sites, active dumping sites)
_____ Lack of adequate environmental protection
_____ Other (please specify)_____

19. (Following on Question 18) What approaches would be most useful for mitigating these environmental threats?

a. *This might be an open-ended question or there might be a list of response options, such as:*

_____ Public awareness, education, and engagement that drives action
_____ Green economy and market transformation
_____ Stronger laws and regulatory enforcement
_____ Green infrastructure
_____ Water management
_____ Land and habitat protection
_____ Wildlife population management
_____ Connecting conservation issues to human health and well-being
_____ Better science and information (e.g., research, monitoring)
_____ Other (please specify) _____

20. (Following on Question 18): Has your organization/agency/group taken steps to address these threats?

a. *This might be a closed question with a binary (yes/no) response option.*

____ Yes
____ No

21. (If Yes to Question 20): What actions has your organization/agency/group taken to address these threats?

a. *This might be an open-ended question or there might be a list of response options, such as:*

_____ Developed resource management plans to address them
_____ Developed policy to address them
_____ Directly addressed them through management actions
_____ Implemented awareness raising/education campaigns
_____ Lobbied political officials
_____ Established coalitions to address them
_____ Joined coalitions that address them
_____ We have not taken action to address them
_____ Other (please specify) _____

22. (Following on Question 21): How successful were these actions at addressing the environmental threats?

a. *This might be an open-ended question or there might be a list of response options, such as:*

_____ Very successful
_____ Moderately successful
_____ Slightly successful
_____ Not at all successful

23. (If Yes to Question 20) Where there any social conditions (e.g., political, cultural, or economic) that impacted or informed how your organization/agency/group was able to address these threats?

a. This might be a closed question with a binary (yes/no) response option.

____ Yes
____ No

24. (If Yes to Question 23) How did these political, cultural, or economic conditions impact or inform how your organization/ agency/group addressed these environmental threats?

a. This might be an open-ended question.

25. (If Yes to Question 20) What could enhance your organization/ agency/group's ability to successfully address these environmental threats?

a. This might be an open-ended question or there might be a list of response options, such as:

____ Greater access to data and knowledge (scientific, traditional, social)
____ Opportunities to develop collaborative strategies and projects
____ Greater access to technical assistance during plan development
____ Greater access to technical assistance management implementation
____ Greater access to land where management actions may be implemented
____ Funding to support conservation planning
____ Funding to support management implementation
____ More effective public or community engagement strategies
____ Improved access to policy knowledge and expertise
____ Other (please specify) _____

26. (Following on Question 18) Are there feasible, but currently unexplored or unrealized opportunities to address these environmental threats?

a. This might be a closed question with a binary (yes/no) response option.

____ Yes
____ No

27. (If Yes to Question 26) Please describe the feasible, but currently unexplored or unrealized opportunities for addressing these environmental threats?

a. This might be an open-ended question to ensure flexibility in response.

3. Potential End-Users' Needs Related to Their Work

Developing CLC objectives and decision-support tools that local stakeholders are willing to adopt to inform their own work is critical to achieving CLC goals. Insights from the innovation-adoption literature[71] and our inquiry reveal that adoption of these planning products is contingent on the products (1) meeting end-users' organizational or personal goals, (2) presenting a relative advantage in comparison to tools and guidance already in use, and (3) being based on trusted data and developed by trusted individuals. Development teams should therefore strive to gather information about potential end-users' needs related to land and resource planning and management implementation. This would be especially advantageous early in planning to ensure CLC planning products have the greatest likelihood of adoption and integration into management plans and actions.

Example questions:

1. **What are the greatest barriers to your organization/agency/group meeting its goals related to natural resource conservation and sustainable land use?**
   a. *This might be an open-ended or closed question with a variety of context-specific response options, such as:*

      ____ Limited access to data
      ____ Limited access to funding
      ____ Limited technical assistance to develop plans or planning tools
      ____ Limited technical assistance to implement management actions
      ____ Limited access to land where management actions may be implemented
      ____ Limited opportunities to develop collaborative strategies and projects
      ____ Limited opportunities for outreach and education
      ____ Limited access to policy knowledge and expertise
      ____ Social pressure not to implement conservation or management actions
      ____ Other (please specify) _____

2. **Which of the following would help increase your organization/agency/group's impact on natural resource conservation and sustainable land use?**
   a. *This might be an open-ended question or there might be a list of response options, such as:*

      ____ Greater access to data and knowledge (scientific, traditional, social)
      ____ Opportunities to develop collaborative strategies and projects
      ____ Greater access to technical assistance during plan development
      ____ Greater access to technical assistance during management implementation
      ____ Greater access to land where management actions may be implemented
      ____ Funding to support conservation planning
      ____ Funding to support management implementation
      ____ More effective public or community engagement strategies
      ____ Improved access to policy knowledge and expertise
      ____Other (please specify) _____

3. What are the criteria that must be met before you or your organization/agency/group would be willing to use new land-use planning guidance or decision-support tools during your planning processes?

a. This might be an open-ended question or there might be a list of response options, such as:

____ The guidance or tools use data sources we trust
____ The guidance or tools were developed by agencies or organizations we trust
____ The guidance or tools are more useful than those we are currently using
____ The guidance or tools are easy to use
____ Training is available on how to interpret and use guidance and tools
____ Our participation in the development of guidance and tools (e.g., informing their form and function, contributing feedback on drafts)
____ Feedback from those that have already used the guidance or tools
____ Funding would need to be available to administer management actions informed by the guidance or tools
____ Approval would have to be given by a leader of my organization/agency/group prior to tool use or guidance adoption
____ Other (please specify) _____

4. What types of data are most important to you or your organization/agency/group when developing land-use or natural resource management plans?

a. This might be an open-ended question or a closed question with a variety of context-specific response options, such as:

____ Species inventories
____ Habitat type
____ Land cover
____ Soil quality
____ Water quality
____ Habitat quality
____ Land use
____ Projected urban growth
____ Economic conditions
____ Public needs
____ Public interests
____ Landowner needs
____ Landowner interests

5. From what source do these data tend to originate?

a. This might be an open-ended question or a closed question with a variety of context-specific response options.

____ Municipal government
____ State government
____ Federal government
____ Tribal government
____ Professional or trade association
____ Scientific association
____ Neighbors or other social acquaintances
____ NGO (please specify) _____
____ University scientist
____ University extension office
____ Soil and water conservation district
____ Websites (please specify) _____

6. From whom (i.e., what agency, organization, group, or individual) do you or your organization/agency/group trust to receive planning and/or management advice?

a. This might be an open-ended question or a closed question with a variety of context-specific response options, such as:

____ Municipal government
____ State government
____ Federal government
____ Tribal government
____ Professional or trade association
____ NGO (please specify) _____
____ University scientist
____ University extension office
____ Soil and water conservation district
____ Neighbors or other social acquaintances
____ Other (please specify) _____

7. From whom (i.e., what agency, organization, group) do you or your organization/agency/group trust to receive technical assistance during planning and management implementation?

a. This might be an open-ended question or a closed question with a variety of context-specific response options, such as:

____ Municipal government
____ State government
____ Federal government
____ Tribal government
____ Professional or trade association
____ NGO (please specify) _____
____ University scientist
____ University extension office
____ Soil and water conservation district
____ Neighbors or other social acquaintances
____ Other (please specify) _____

8. How do you or your organization/agency/group prefer to be involved in the development of conservation tools and recommendations that inform your planning or management processes?

a. This might be an open-ended question or there might be a list of response options, such as:

____ We like to engage directly in the development of these conservation tools and recommendations
____ We like to be consulted during their development, but do not choose to participate directly
____ We like to learn about these tools during their development, but do not choose to participate directly
____ We do not like to be involved in their development
____ Other (please specify) _____

4. Potential End-Users' Social Networks

Understanding who end-users do and do not collaborate with during land-use or resource management planning or implementation typically points to who these stakeholders trust and with whom they have working relationships. Since our results indicate that end-users are more likely to adopt CLC planning products developed by organizations, agencies, and individuals they trust, these insights can help CLC initiative leaders strategically recruit representatives of trusted agencies and organizations to populate development teams or participate in consultation and engagement events. Our results also indicate that drawing on existing networks can help expedite collaborative planning and ensure there is capacity to implement local management practices. Given this, development teams may benefit from learning about the members and geographic scopes of local end users' social networks.

Eample questions:

1. Please name the organizations, agencies, or groups that your organization/agency/group has partnered with in the (insert name of Region or Subregion).

a. *This might be an open-ended or closed question with a variety of context-specific response options. If the question is closed, the question would ask the recipient to "select" the organization "from the following list."*

2. Which of the organizations, agencies, or groups you selected in Question 1 does your organization/agency/group work with most frequently?

a. *This might be an open-ended or closed question with a variety of context-specific response options.*

3. Why does your organization/agency/group work with those organizations, agencies, or groups listed in Question 2 most frequently?

a. *This might be an open-ended or closed question with a variety of context-specific response options*

4. Please name the organizations, agencies, or groups that your organization/agency/group would like to, but does not currently collaborate with within the (insert name of Region or Subregion).

a. *This might be an open-ended or closed question with a variety of context-specific response options. If the question is closed, the question might ask the recipient to "select" the organization "from the following list."*

5. Are there restrictions on your organization/agency/group's capacity to collaborate with other organizations, agencies, or groups?

a. *This might be a closed question with a binary (yes/no) response option.*

___ Yes
___ No

6. (If Yes to Question 5) What restrictions exist that limit the capacity of your organization/agency/group to collaborate with others?

a. *This might be an open-ended question or there might be a list of response options, such as:*

___ We are unable to partner with federal government agencies
___ We are unable to partner with state government agencies
___ We are unable to partner with county or municipal government agencies
___ We are unable to partner with non-governmental organizations
___ We are unable to partner with informal organization
___ We are unable to partner with special interest groups
___ Other (please specify) _____

5. Potential End-Users' Interest in and Experience with Collaborative Landscape Conservation

Potential end-users of CLC planning products have a broad range of interests and priorities related to natural resource management and land use. In many cases, end-users will also likely have geographic ranges they are most interested in working within[72]. Since participation in CLC planning and adoption of associated planning products is contingent on these processes and products having relevance to end-users[73], understanding end-users' priorities and their relative interest in CLC is important. This information can help development teams more effectively target their communications and invitations for participation in planning. Development teams can also glean insights about ongoing CLC efforts in the landscape, and which end-users are currently involved in these initiatives.

It may be advantageous when asking end-users about their preferences regarding CLC to first define the term "landscape" and what is meant by "collaborative conservation." This can ensure all potential end-users are responding to questions based on common information, which can reduce the likelihood of response errors.

Example questions:

1. **How high of a priority is landscape conservation or management to your organization/agency/group?**
   a. *This might be an open-ended question or there might be a list of response options, such as:*

      ____ High priority, our organization/agency/group emphasizes landscape-level planning
      ____ High priority, our organization/agency/group emphasizes landscape-level action
      ____ Medium priority, we want to know how our work fits into the bigger picture, but lack a mandate for a landscape-level approach
      ____ Medium priority, our organization/agency/group partners with groups working at the landscape level, but we do not plan or take action at this geographic scale
      ____ Low priority, we work and focus our resources at the site-specific scales
      ____ Other (please specify) _____

2. **Which of the following best defines how your organization has implemented a landscape planning or management effort?**
   a. *This might be an open-ended question or there might be a list of response options, such as:*

      ____ We have fully implemented a landscape-level effort in our organization
      ____ We engage in CLC planning, but do not plan or implement management practices at the landscape level
      ____ We don't plan at the landscape level
      ____ Other (please specify) _____

3. **If applicable, please describe what types of landscape planning or management efforts your organization/agency/group has implemented or been involved in.**
   a. *This might be an open-ended question.*

4. **(Following on question 3) Why did your organization/agency/ group choose to implement or participate in these landscape planning or management efforts?**
   a. *This might be an open-ended question or there might be a list of response options, such as:*
      ____ The resources we seek to manage or conserve exist throughout the landscape
      ____ Achieving our goals relied on accessing the skills and resources of others organizations, agencies, or groups working in the landscape
      ____ We wanted to increase our social network across the landscape
      ____ We wanted to ensure our goals and priorities were represented during the landscape planning
      ____ We wanted to remain informed about the landscape effort
      ____ We wanted to receive funding opportunities associate with the landscape effort
      ____ We felt social or political pressure to participate
      ____ Other (please specify) _____

5. **Has your organization/agency/group implemented or been involved in a landscape planning or management effort that was successful in achieving its goals?**
   a. *This might be a closed question with a binary (yes/no) response option.*
      ____ Yes
      ____ No

6. **(If Yes to Question 5) Why was the effort successful?**
   a. *This might be an open-ended question.*

7. (Following on Question 3) What were the greatest challenges you encountered during the landscape planning or management implementation effort?

a. *This might be an open-ended question or there might be a list of response options, such as:*

____ Important stakeholders were missing from the planning process
____ We lacked funding to conduct a planning process
____ Some interest groups' interests and needs were prioritized over others during planning
____ Stakeholders' input was not effectively reflected in planning outcomes
____ There was too little communication about how and why decisions were made
____ Planning products (such as management goals and decision-support tools) did not reflect the needs and interests of local stakeholders
____ Planning products were not supported or used by local stakeholders
____ We lacked funding to implement management actions
____ It was difficult collaborating on management implementation
____ There were political challenges to management implementation
____ Other (please specify) _____

8. Have you or your organization/agency/group ever used landscape-level decision-support tools (e.g., conservation priority area maps, wildlife corridor maps) to inform your planning or management practices?

a. *This might be a closed question with a binary (yes/no) response option.*

____ Yes
____ No

9. (If Yes to Question 8) Please describe these landscape-level decision-support tools and how they were used to inform your planning or management practices.

a. *This might be open-ended.*

10. (If Yes to Question 8) What were the benefits and drawbacks of using these decision-support tools in your own work?

a. *This might be an open-ended question.*

11. Would you or your organization/agency/group consider using landscape conservation decision-support tools to inform future planning and management decisions?

a. *This might be a closed question with a binary (yes/no) response option.*

____ Yes
____ No

12. (If Yes to Question 11): Are there any requirements these tools would have to meet for you or your organization/agency/group to be willing to use them in future planning or management decisions? (For example, would they have to be developed by a certain organization or group, or would they have to be based on a certain type of data?)

a. This might be an open-ended question.

13. Are there specific people in your organization/agency/group that need to be consulted or provide approval before a new planning tools or guidance is used to inform your management or land use planning?

a. This might be a closed question with a binary (yes/no) response option.

____ Yes

____ No

6. Potential End-Users' Preferences for Participation

Developing effective opportunities for potential end-user participation in CLC planning will depend on development teams soliciting information about end-users' preferences. Accommodating these stakeholders' preferences (to the degree possible) may enhance the likelihood they will choose to be involved in CLC planning, and that they will be satisfied by their experiences. This, in turn, may enhance end-users' willingness to iteratively participating in CLC planning efforts as planning products are adapted over time.

Prior to asking potential end-users about their preferences, it may be helpful to provide information about the planning effort in which they would be asked to participate. This can ensure all potential end-users are responding to questions based on common information and can provide clarity to the concept of CLC within a specific context.

Example questions:

1. Would you or your organization/agency/group like to learn more about the ongoing landscape-level conservation initiative in the (insert name of Region or Subregion)?

a. This might be a closed question with a binary (yes/no) response option.

____ Yes

____ No

2. (If No to Question 1) Why would you or your organization/ agency/group prefer not to learn more about the landscape conservation initiative in the (insert name of Region or Subregion)?

a. *This might be an open-ended question or there might be a list of response options.*

____ We have never heard of the area
____ The area has little relevance to me or my organization
____ We do not identify as being from the area
____ We do not rely on the area in the work we do
____ We are more interested in the conservation of a different region/area
____ We do not believe the conservation effort will have an impact
____ We have other priorities for how we use our time
____ It is beyond the purview of our work to participate in landscape conservation planning
____ Other (please specify) _____

3. Would your organization/agency/group like to attend informational sessions (e.g., workshops, webinars) to learn about decisions and progress made by the landscape conservation initiative?

a. *This might be a closed question with a binary (yes/no) response option.*

____ Yes
____ No

4. (If Yes to Question 3) What types of information sessions would you or your organization/agency/group prefer to attend?

a. *This might be an open-ended or closed question with response options that reflect feasible participation opportunities.*

____ In-person information sessions hosted by the (Landscape Planning Initiative)
____ In-person information sessions hosted by a different organization or agency (please specify which organization or agency)_____
____ Remote information sessions (e.g., webinars) hosted by the (Landscape Planning Initiative)
____ Remote information sessions (e.g., webinars) hosted by a different organization or agency (please specify which organization or agency) _____
____ Other (please specify) _____

5. (If No to Question 3) Why would you or your organization/agency/ group prefer not to attend informational sessions regarding the landscape conservation initiative in the (insert name of Region or Subregion)?

a. *This might be an open-ended question or there might be a list of response options.*

6. **Would you or your organization/agency/group be interested in contributing to the development of landscape conservation goals, priorities, or strategies for the (insert name of Region or Subregion)?**

   a. *This might be a closed question with a binary (yes/no) response option.*

      ____ Yes
      ____ No

7. **(If Yes to Question 6) How often would you or your organization/ agency/group be interested in contributing to the development of landscape conservation goals, priorities, or strategies?**

   a. *This might be an open-ended or closed question with response options that reflect feasible timing options.*

      ____ Monthly
      ____ Bi-Monthly (every 2 months)
      ____ Semi-Annually (every 6 months)
      ____ Annually
      ____ Whenever major decisions have been reached or progress made
      ____ Other (please specify) _____

8. **(If No to Question 6) Why would you or your organization/agency/ group not be interested in contributing to the development of the landscape conservation goals, priorities, or strategies within the (insert name of Region or Subregion)?**

   a. *This might be an open-ended question or there might be a list of response options.*

      ____ We have never heard of the area
      ____ The area has little relevance to me or my organization
      ____ We do not identify as being from the area
      ____ We do not rely on the area in the work we do
      ____ We are more interested in the conservation of a different region/area
      ____ We do not believe the conservation effort will have an impact
      ____ We have other priorities for how we use our time
      ____ It is beyond the purview of our work to participate in landscape conservation planning
      ____ Other (please specify) _____

9. **Are there expectations or requirements that would need to be met before you or your organization/agency/group would be willing to participate in a landscape conservation planning effort in the (insert name of Region or Subregion)?**

   a. *This might be a closed question with a binary (yes/no) response option.*

      ____ Yes
      ____ No

10. (If Yes to Question 9) Please describe these expectations or requirements.

a. *This might be an open-ended question.*

11. Please provide the name of any organizations, agencies, or groups you feel would be important to engage in landscape conservation planning related to the (insert name of Region or Subregion).

a. *This might be an open-ended question.*

12. (If Yes or No to Question 9) Would you or your organization/ agency/group prefer to contribute to the development of conservation goals, priorities, or strategies for an area other than that captured within the (insert name of Region or Subregion)?

a. *This might be a closed question with a binary (yes/no) response option.*

____ Yes
____ No

13. (If Yes to Question 12) Please specify the landscape within which you or your organization/agency/group would be interested in contributing to the development of conservation goals, priorities, or strategies.

a. *This might be an open-ended question or the respondent might be asked to circle a region on a provided map.*

14. (Following on Question 13) Why did you choose the landscape you specified in the previous question?

a. *This might be an open-ended question or there might be a list of response options, such as:*

____ We identify as being from the area
____ We identify as working within the area
____ We rely on the area in the work we do
____ We value the plants and animals that live in this area
____ This place helps us feel connected to our culture
____ This is the area in which we have funding to operate
____ This is the area in which we have jurisdiction to operate
____ This is the area in which we collaborate with other groups
____ This is the area our clients/constituents rely on
____ This is the area our clients/constituents operate within
____ Other (please specify) _____

15. (If Yes or No to Question 9) Would you or your organization/ agency/group prefer to have your interests represented by others during the development of conservation goals, priorities, or strategies for the (insert name of Region or Subregion)?

b. This might be a closed question with a binary (yes/no) response option.

____ Yes
____ No

16. (If Yes to Question 15) What organization, agency, or group could effectively represent you or your organization/agency/group's interests during landscape conservation planning?

c. This might be an open-ended or closed question with a variety of context-specific response options.

17. (If No to Question 15) Why would you or your organization/agency/ group not want your interests represented by others during landscape conservation planning?

a. This might be an open-ended question or there might be a list of response options, such as:

____ The place where we work is so unique we do not feel our interests or needs can be represented by others
____ What we do is so unique we do not feel our interests or needs can be represented by others
____ We prefer to represent ourselves
____ The conservation effort has little relevance to me or my organization
____ Other (please specify) _____

7. Barriers to End-Users Participation in CLC Planning

Even if end-users express interest in participating in CLC planning, they may face barriers preventing them from doing so. These barriers may relate to logistic challenges (e.g., limited funds for travel to and lodging at in-person events) or organizational or job-related constraints (e.g., inability to travel across jurisdictional boundaries, limited availability during times of day, month, and year). Gathering information on constraints can help development teams plan opportunities for participation that accommodate and seek to circumvent these constraints. This, in turn, can potentially enhance interested end-users' ability to join in CLC planning in ways that are respectful, accommodating, and sustainable.

Example questions:

1. **How much time would you be willing and able to contribute to participating in a landscape conservation planning effort in the (insert name of Region or Subregion)?**
   a. *This might be an open-ended or closed question with a range of options, including:*

      ____ Less than one hour per month
      ____ 1-5 hours per month
      ____ 1-5 hours per week
      ____ 6-10 hours per week
      ____ More than 10 hours per week
      ____ Other (please specify) _____

2. **Would you be willing and able to travel to events to learn about or contribute to the development of landscape conservation planning efforts in the (insert name of Region or Subregion)?**
   a. *This might be a closed question with a binary (yes/no) response option.*

      ____ Yes
      ____ No

3. **(If Yes to Question 2) How far would you be willing and able to travel?**
   a. *This might be an open-ended or closed question with a range of options, including:*

      ____ 0-50 miles
      ____ 50-100 miles
      ____ 100-150 miles
      ____ Anywhere within the state
      ____ Anywhere within the (insert name of Region or Subregion)
      ____ Other (please specify) _____

4. **What would constrain your ability to travel to landscape conservation planning events?**
   a. *This might be an open-ended question or there might be a list of response options, such as:*

      ____ Logistical constrains (e.g., we don't have a mode of transportation)
      ____ Financial constrains (e.g., we don't have the funds for transportation)
      ____ Work-related availability (e.g., there are certain hours of the day, days of the week, or times of the year when I/we cannot travel)
      ____ Work-related travel constraints (e.g., we are only able to travel within our operating boundary)
      ____ Other (please specify) _____

5. **Is your organization/agency/group able to cover or reimburse you for travel expenses?**
   a. *This might be a closed question with a binary (yes/no) response option.*
      ____ Yes
      ____ No

6. **(If Yes to Question 5) Are there any logistical or temporal constraints on your travel coverage or reimbursement?**
   a. *This might be a closed question with a binary (yes/no) response option.*
      ____ Yes
      ____ No

7. **(If Yes to Question 6) Please describe the constraints to your travel coverage or reimbursement.**
   a. *This might be an open-ended or closed question with a variety of context-specific response options.*

8. **When (e.g., month, day, time of day) would it be most convenient for you or your organization/agency/group to travel to landscape conservation planning events?**
   a. *This might be an open-ended question or there might be a list of feasible response options.*

9. **If you or your organization/agency/group were willing to travel to events to learn about or contribute to the development of the conservation planning in the (insert name of Region or Subregion), would you be able and willing to attend multi-day events?**
   a. *This might be a closed question with a binary (yes/no) response option.*
      ____ Yes
      ____ No

10. **(If No to Question 9) What would constrain you ability to attend multi-day events?**
    a. *This might be an open-ended question or there might be a list of response options such as:*
       ____ Logistical constrains (e.g., we don't have a mode of transportation for multi-day events)
       ____ Temporal constraints (e.g., we cannot spend that much time at an event)
       ____ Financial constrains (e.g., we don't have the funds for lodging and meals)
       ____ Work-related availability (e.g., there are certain hours of the day, days of the week, or times of the year when travel is restricted)
       ____ Other (please specify) _____

References

Alcamo J., & Henrichs, T. (2008). Towards guidelines for environmental scenario analysis. In A. Alcamo (Ed.), Environmental futures: *The practice of environmental scenario analysis,* (pp. 13–35). Amsterdam, The Netherlands: Elsevier.

Altman, I., & Low, S. (Eds.). (1992). *Place attachment*. New York, NY: Plenum Press.

Ardoin, N. M. (2014). Exploring sense of place and environmental behavior at an ecoregional scale in three sites. *Human Ecology,* 42(3), 425–441.

Armitage, D. R., Plummer, R., Berkes, F., Arthur, R. I., Charles, A. T., Davidson-Hunt, I. J., ... Wollenberg, E. K. (2009). Adaptive co-management for social–ecological complexity. *Frontiers in Ecology and the Environment,* 7(2), 95–102.

Austen, D. J. (2011). Landscape conservation cooperatives: A science-based network in support of conservation. *Wildlife Professional,* (Fall), 32–37.

Axelrod, R. M. (2006). *The evolution of cooperation*. New York, NY: Basic Books.

Bailey, R. G. (2005). Identifying ecoregion boundaries. *Environmental Management,* 34, 14–26.

Ban, N. C., Mills, M., Tam, J., Hicks, C. C., Klain, S., Stoeckl, N., ... Chan, K. M. (2013). A social-ecological approach to conservation planning: Embedding social considerations. *Frontiers in Ecology and the Environment,* 11(4), 194–202.

Beem, B. (2007). Co-management from the top? The roles of policy entrepreneurs and distributive conflict in developing co-management arrangements. *Marine Policy,* 31(4), 540–549.

Beierle, T. C., & Cayford, J. (2002). *Democracy in practice: Public participation in environmental decisions*. Washington, D.C.: Resources for the Future.

Berkes, F. (2009). Evolution of co-management: Role of knowledge generation, bridging organizations and social learning. *Journal of Environmental Management,* 90(5), 1692–1702.

Berkes, F., Bankes, N., Marschke, M., Armitage, D., Clark, D. (2005). Cross-scale institutions and building resilience in the Canadian North. In: F. Berkes, R. Huebert, H. Fast, M. Manseau, & A. Diduck (Eds.), *Breaking Ice: Renewable Resource and Ocean Management in the Canadian North* (pp. 225-247). Calgary, Canada: University of Calgary Press.

Bernstein, S. (2005). Legitimacy in global environmental governance. *Journal of International Law and International Relations,* 1, 139–166.

Biggs, D., Abel, N., Knight, A. T., Leitch, A., Langston, A., & Ban, N. C. (2011). The implementation crisis in conservation planning: Could "mental models" help? *Conservation Letters,* 4(3), 169–183.

Bixler, R. P., Johnson, S., Emerson, K., Nabatchi, T., Reuling, M., Curtin, C., … Grove, J. M. (2016). Networks and landscapes: A framework for setting goals and evaluating performance at the large landscape scale. *Frontiers in Ecology and the Environment,* 14(3), 145–153.

Brown, G., & Donovan, S. (2013). Escaping the National Forest planning quagmire: Using public participation GIS to assess acceptable National Forest use. *Journal of Forestry,* 111(2), 115–125.

Brown, G., & Raymond, C. (2007). The relationship between place attachment and landscape values: Toward mapping place attachment. *Applied Geography,* 27(2), 89–111.

Brown, G., Raymond, C. M., & Corcoran, J. (2015). Mapping and measuring place attachment. *Applied Geography,* 57, 42–53.

Bryan, B. A., C. M. Raymond, N. D. Crossman, and D. King. (2011). Comparing spatially explicit ecological and social values for natural areas to identify effective conservation strategies. *Conservation Biology,* 25(1), 172–181.

Cash, D. W. (2006). Scale and cross-scale dynamics: Governance and information in a multilevel world. *Ecology and Society,* 11(2), 8.

Cash, D. W., & Moser, S. C. (2000). Linking global and local scales: Dynamic assessment and management processes. *Global Environmental Change,* 10, 109–120.

Conservation Measures Partnership. (2013). Open standards for the practice of conservation. Retrieved March, 2017 from http://cmp-openstandards.org/download-os/

Crosby, B., & Kiedrowski, J. (2008). Integrative leadership: Observations from a University of Minnesota seminar series. *Integral Leadership Review,* 8(3), 1-15.

Decker, D. J., Chase, L. (1997). Human dimensions of wildlife management for the 21st century. *Wildlife Society Bulletin,* 25(4), 788–795.

Decker, D. J., Forstchen, A. B., Pomeranz, E. F., Smith, C. A., Riley, S. J., Jacobson, C. A., Organ, J. & Batcheller, G. R. (2015). Stakeholder engagement in wildlife management: Does the public trust doctrine imply limits? *The Journal of Wildlife Management,* 79(2), 174-179.

Decker, D. J., Riley, S. J., & Siemer, W. F. (Eds.). (2012). *Human dimensions of wildlife management* (2nd ed.). Baltimore, MD: John's Hopkins University Press.

Doyle-Capitman, C., & Decker, D. J. (in development). Factors Supporting Successful Collaborative Landscape Conservation. For Submission to *Frontiers in Ecology and the Environment*.

Fiorino, D. J. (1990). Citizen participation and environmental risk: A survey of institutional mechanisms. *Science, Technology & Human Values,* 15(2), 226-243.

Graham, J., Amos, B., & Plumptre, T. (2003). *Governance principles for protected areas in the 21st century*. Ottawa, ON: Institute on Governance.

Gray, B. (1989). *Collaborating: Finding common ground for multiparty problems*. San Francisco, CA: Jossey-Bass.

Guerrero, A. M., McAllister, R. R. J., Corcoran, J., & Wilson, K. A. (2013). Scale mismatches, conservation planning, and the value of social-network analyses. *Conservation Biology,* 27(1), 35-44.

Hahn, T., Olsson, P., Folke, C., & Johansson, K. (2006). Trust-building, Knowledge generation and organizational innovations: The Role of a bridging organization for adaptive co-management of a wetland landscape around Kristianstad, Sweden. *Human Ecology,* 34(4), 573–592

Halpenny, E. A. (2010). Pro-environmental behaviours and park visitors: The effect of place attachment. *Journal of Environmental Psychology,* 30(4), 409–421.

Holling, C. S. (1978). *Adaptive environmental assessment and management*. London, UK: John Wiley & Sons.

Irvin, R., & Stansbury, J. (2004). Citizen Participation in Decision Making : Worth the Effort? *Public Administration Review,* 64(1), 55–65.

Jacobson, C., & Robertson, A. L. (2012). Landscape conservation cooperatives: Bridging entities to facilitate adaptive co-governance of social–ecological systems. *Human Dimensions of Wildlife,* 17(5), 333–343.

Jacobson, C. A., & Haubold, E. M. (2014). Landscape conservation cooperatives: Building a network to help fulfill public trust obligations. *Human Dimensions of Wildlife,* 19(5), 427–436.

Jorgensen, B. S., & Stedman, R. C. (2001). Sense of place as an attitude: Lakeshore owners attitudes towards their properties. *Journal of Environmental Psychology,* 21(3), 233–248

Juanillo, N. K., & Scherer, C. W. (1995). Attaining a state of informed judgments: Toward a dialectical discourse on risk. *Communication Yearbook,* 18, 278-99.

Kark, S., Tulloch, A., Gordon, A., Mazor, T., Bunnefeld, N., & Levin, N. (2015). Cross-boundary collaboration: Key to the conservation puzzle. *Current Opinion in Environmental Sustainability,* 12, 12-24.

Kato, S., & Ahern, J. (2008). 'Learning by doing': Adaptive planning as a strategy to address uncertainty in planning. *Journal of Environmental Planning and Management,* 51(4), 543-559.

Knight, A. T., Cowling, R. M., Rouget, M., Balmford, A., Lombard, A. T., & Campbell, B. M. (2008). Knowing but not doing: Selecting priority conservation areas and the research-implementation gap. *Conservation Biology,* 22(3), 610–617.

Knight, A. T., Driver, A., Cowling, R. M., Maze, K., Desmet, P. G., Lombard, A. T., … Von Hase, A. (2006). Designing systematic conservation assessments that promote effective implementation: Best practice from South Africa. *Conservation Biology,* 20(3), 739–750.

Lauber, T. B. (1999). Measuring fairness in citizen participation: A case study of moose management. *Society & Natural Resources,* 12(1), 19-37.

Lauber, T. B., Decker, D. J., & Knuth, B. A. (2008). Social networks and community-based natural resource management. *Journal of Environmental Management,* 42(4), 677-687.

Laven, D., Ventriss, C., Manning, R., & Mitchell, N. (2010). Evaluating U.S. National Heritage Areas: Theory, methods, and application. *Environmental Management,* 46(2), 195–212.

Lindenmayer, D., Hobbs, R.J., Montague-Drake, R., Alexandra, J., Bennett, A., Burgman, M., … Zavaleta, E. (2008). A checklist for ecological management of landscape for conservation. *Ecology Letters,* 11, 78–91.

Lipman-Blumen, J. (1996). *The connective edge: Leading in an interdependent world.* San Francisco, CA : Jossey-Bass.

Lockwood, M., Davidson, J., Curtis, A., Stratford, E., & Griffith, R. (2010). Governance principles for natural resource management. *Society & Natural Resources,* 23(10), 986–1001.

Margules, C. R., & Pressey, R. L. (2000). Systematic conservation planning. *Nature,* 405(6783), 243–253.

Mazmanian, D. A. and Kraft, M. E. (2009). The three epochs of the environmental movement. In Mazmanian, D. A. and Kraft, M. E. (Eds.), *Toward Sustainable Communities: Transition and Transformation in Environmental Policy*. Cambridge, MA: MIT Press.

McKinney, M., Scarlett, L., & Kemmis, D. (2010). *Large landscape conservation: A strategic framework for policy and action*. Cambridge, Massachusetts: Lincoln Institute of Land Policy.

McComas, K. A., & Scherer, C. W. (1998). Reassessing public meetings as participation in risk management decisions. *Risk,* 9, 347.

McComas, K., Besley, J. C., & Trumbo, C. W. (2006). Why citizens do and do not attend public meetings about local cancer cluster investigations. *Policy Studies Journal,* 34(4), 671–698.

McCool, S. F. & Guthrie, K. (2001). Mapping the dimensions of successful public participation in messy natural resources management situations. *Society & Natural Resources,* 14(4), 309–323.

McMullen, R. S., & Adobor, H. (2011). Bridge leadership: A case study of leadership in a bridging organization. *Leadership & Organization Development Journal,* 32*(7),* 715–735.

National Academies of Sciences, Engineering, and Medicine. (2015). *A review of the landscape conservation cooperatives*. Washington, DC: The National Academies Press.

National Ecological Assessment Team. (2006). Strategic Habitat Conservation: Final Report of the National Ecological Assessment Team. Retrieved February 2018, https://www.fws.gov/nc-es/habreg/NEAT_FinalRpt.pdf

Neuber, K., Atkins, W. T., Jacobson, J. A., & Reuterman, N. A. (1980). *Needs assessment: A model for community planning*. Newbury Park, CA: Sage Publications.

Olsson, P., Folke, C., & Galaz, V. (2007). Enhancing the Fit through Adaptive Co-management: Creating and Maintaining Bridging Functions for Matching Scales in the Kristianstads Vattenrike Biosphere Reserve, Sweden. *Ecology & Society,* 12(1).

Pannell, D. J., Marshall, G. R., Barr, N., Curtis, A., Vanclay, F., & Wilkinson, R. (2006). Understanding and promoting adoption of conservation practices by rural landholders. *Australian Journal of Experimental Agriculture,* 46(11), 1407-1424.

Peterson, G. D., Cumming, G. S., Carpenter, S. R. (2003). Scenario planning: a tool for conservation in an uncertain world. *Conservation Biology,* 17(2), 358-366.

Prell, C., Hubacek, K., & Reed, M. (2009). Stakeholder analysis and social network analysis in natural resource management. *Society & Natural Resources,* 22(6), 501-518.

Pressey, R. L., & Bottrill, M. C. (2009). Approaches to landscape- and seascape-scale conservation planning: convergence, contrasts and challenges. *Oryx,* 43(4), 464.

Raymond, C. M., Brown, G., & Weber, D. (2010). The measurement of place attachment: Personal, community, and environmental connections. *Journal of Environmental Psychology,* 30(4), 422–434.

Reed, M. S. (2008). Stakeholder participation for environmental management: A literature review. *Biological Conservation,* 141(10), 2417–2431.

Relph, E. (1976). *Place and Placelessness*. London, UK: Pion Limited.

Roberson, Q. M., Moye, N. A., & Locke, E. A. (1999). Identifying a missing link between participation and satisfaction: The mediating role of procedural justice perceptions. *Journal of Applied Psychology,* 84(4), 585-593.

Rosenberg, S., & Margerum, R. D. (2008). Landowner motivations for watershed restoration: lessons from five watersheds. *Journal of Environmental Planning and Management,* 51(4), 477-496.

Rowe, G., & Frewer, L. J. (2005). A typology of public engagement mechanisms. *Science, Technology & Human Values,* 30(2), 251–290.

Saarikoski, H., Tikkanen, J., & Leskinen, L. (2010). Public participation in practice — Assessing public participation in the preparation of regional forest programs in Northern Finland. *Forest Policy and Economics,* 12(5), 349-356.

Salant P, Dillman DA. (1994). *How to conduct your own survey*. New York, NY: Wiley.

Sax, J. L. (1970). The public trust doctrine in natural resource law: Effective judicial intervention. *Michigan Law Review,* 471-566.

Scarlett, L., & Mckinney, M. (2016). Connecting people and places: The emerging role of network governance. *Frontiers in Ecology and the Environment,* 14(3), 116–125.

Schusler, T. M., Decker, D. J., & Pfeffer, M. J. (2003). Social learning for collaborative natural resource management. *Society & Natural Resources,* 16, 309–326.

Sheng, Y. K. (2009). *What is good governance?* United Nations Economic and Social Commission for Asia and the Pacific, http://www.unescap.org/resources/what-good-governance

Stringer, L. C., Dougill, A. J., Fraser, E., Hubacek, K., Prell, C., & Reed, M. S. (2006). Unpacking "participation" in the adaptive management of social ecological systems: A critical review. *Ecology and Society,* 11(2), 22.

Susskind, L., & Cruikshank, J. (1987). *Breaking the impasse: Consensual approaches to resolving public disputes*. New York, NY: Basic Books.

U.S. Department of Agriculture. (2005). *Using a multidisciplinary approach to conduct a situational analysis*. Retrieved August 10, 2017 from https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045578.pdf

Vaske, J. J., & Kobrin, K. C. (2001). Place attachment and behavior. *The Journal of Environmental Education,* 32(4), 16–21.

Walker, G. J., & Chapman, R. (2003). Thinking like a park: The effects of sense of place, perspective-taking, and empathy on pro-environment intentions. *Journal of Park and Recreation Administration,* 21(4), 71-86.

Weber, E. P., Lovrich, N. P., & Gaffney, M. J. (2007). Assessing collaborative capacity in a multidimensional world. *Administration & Society,* 39(2), 194–220.

Weeks, D., Malone, P., & Welling, L. (2011). Climate change scenario planning: a tool for managing parks into uncertain futures. *Park Science,* 28(1), 26-33.

Weiss, T.G. (2000). Governance, good governance and global governance: Conceptual and actual challenges. *Third World Quarterly,* 21, 795–814.

Wildlife Habitat Policy Research Program. (2011). *Our nation's wildlife habitat system: Framing solutions for a more strategic approach*. Retrieved from: http://www.ncseonline.org/program/wildlife-habitat-policy-research-program

Williams, B. K., R. C. Szaro, and C. D. Shapiro. (2009). *Adaptive Management: The U.S. Department of the Interior Technical Guide*. Adaptive Management Working Group, U.S. Department of the Interior, Washington, DC.

Witkin, B. R., & Altschuld, J. W. (1995). *Planning and conducting needs assessments: A practical guide*. Thousand Oaks, CA: Sage.

Wondolleck, J. M., & Yaffee, S. L. (2000). *Making collaboration work: Lessons from innovation in natural resource management*. Washington, D.C.: Island Press.

Wyborn, C., & Bixler, R. P. (2013). Collaboration and nested environmental governance: Scale dependency, scale framing, and cross-scale interactions in collaborative conservation. *Journal of Environmental Management,* 123, 58-67.

Yaffee, S. L., & Wondolleck, J. M. (2003). Collaborative Ecosystem Planning Processes in the United States: Evolution and Change. *Environments,* 31(2), 59–72.

End Notes

[1] Berkes et al., 2005; Knight et al., 2006, 2008; Berkes, 2009; Stringer et al., 2006; Wondolleck & Yaffee, 2000; Yaffee & Wondolleck, 2003

[2] Jacobson & Robertson, 2012; Jacobson & Haubold, 2014; Kark et al., 2015

[3] Knight et al., 2008; Biggs et al., 2011

[4] Doyle-Capitman & Decker, In Development

[5] Lindenmayer et al., 2008; McKinney et al., 2010; Wildlife Habitat Policy Research Program, 2011; Jacobson & Robertson, 2012; National Academies of Sciences, Engineering, and Medicine, 2015

[6] Jacobson & Robertson, 2012; National Academies of Sciences, Engineering, and Medicine, 2015; Bixler et al., 2016

[7] Bixler et al., 2016; Scarlet & McKinney, 2016

[8] Gray, 1989; Wondolleck & Yaffee, 2000; Lockwood et al., 2010

[9] Cash & Moser, 2000; Berkes, 2005; Cash, 2006

[10] McCool and Guthrie, 2001

[11] Austen, 2011

[12] Wondolleck & Yaffee, 2000; Wyborn & Bixler, 2013; Bixler et al., 2016

[13] Beierle & Cayford, 2002, p6

[14] Beierle & Cayford, 2002; Yaffee & Wondolleck, 2003; Mazmanian & Kraft, 2009

[15] Decker et al., 2012

[16] Fiorino, 1990; McComas & Sherer, 1998; Jaunillo & Scherer, 1995; McComas et al., 2006

[17] Wondolleck & Yaffee, 2000; Mazmanian & Kraft, 2009; Ban, 2013

[18] Rowe and Frewer, 2000

[19] Lockwood et al., 2010

[20] Sallant & Dillman, 1994

[21] Gray, 1989; Wondolleck & Yaffee, 2000

[22] Schusler et al., 2003; Decker & Chase, 1997

[23] Irvin & Stansbury, 2004

[24] Saarikoski et al., 2010

[25] Sheng, 2009; Weiss, 2000; Lockwood, 2010

[26] Lauber, 1999; Roberson et al., 1999

[27] Sheng, 2009; Lockwood et al., 2010; Decker et al., 2015

[28] Berkes, 2009; Kark et al., 2015

[29] Gray, 1989

[30] Wondolleck & Yaffe, 2000

[31] Bernstein, 2005; Lockwood, 2010

[32] Sheng, 2009; Lockwood, 2010

[33] Lockwood, 2010

[34] McKinney et al., 2010; Wyborn & Bixler, 2013; Bixler et al., 2016

[35] Graham et al., 2003; Decker et al. 2015

[36] Conservation Measures Partnership, 2013

[37] National Environmental Assessment Team, 2006

[38] Margules & Pressey, 2000

[39] Wondolleck & Yaffee, 2000, 2010; Axelrod, 2006; Weber et al., 2007

[40] Wyborn & Bixler, 2013; Lauber et al., 2008

[41] Wondolleck & Yaffee, 2000; Schusler et al., 2003; Berkes, 2009

[42] Gray, 1989

[43] Schusler et al., 2003; Wondolleck & Yaffee, 2000

[44] Conservation Measures Partnership, 2013

[45] Lipman-Blumen, 1996; Crosby & Kiedrowski, 2008; McMullen & Adobor, 2011

[46] Relph, 1976; Altman & Low, 1992; Jorgensen & Stedmen, 2001

[47] Vaske & Korbin, 2001; Walker and Chapman, 2003; Halpenny, 2010

[48] Ardoin, 2014

[49] Wyborn & Bixler, 2013

[50] USDA, 2005

[51] Sax, 1970

[52] e.g., Susskind & Cruikshank, 1987; Beierle & Cayford, 2002; Decker et al., 2012

[53] Prell et al., 2009

[54] Laven et al., 2010

[55] Laven et al., 2010

[56] Knight, 2008; Kark et al., 2015

[57] Witkin & Altschuld, 1995

[58] Brown & Raymond, 2007; Raymond et. al., 2010; Bryan et al., 2011; Brown et al., 2015

[59] Peterson et al., 2003, Alcamo and Henrichs, 2008, Weeks et al., 2011

[60] e.g., Pannell et al., 2006

[61] Holling, 1978; NEAT, 2006; Kato & Ahern, 2008; Armitage et al., 2009; Conservation Measures Partnership, 2013

[62] Williams et al., p21

[63] NEAT, 2006; Jacobson & Robertson, 2012

[64] Peterson et al., 2003, Alcamo and Henrichs, 2008, Weeks et al., 2011

[65] Brown & Raymond, 2007; Raymond et. al., 2010; Bryan et al., 2011; Brown et al., 2015

[66] Lauber et al., 2008

[67] Brown & Donovan, 2013

[68] Guerrero et al., 2013; Wyborn & Bixler, 2013

[69] Prell et al., 2009

[70] McKinney et al., 2010; Kark et al., 2015

[71] e.g., Pannell et al., 2006

[72] Hahn et al., 2006; Stringer et al, 2006; Olsson et al., 2007; Berkes, 2005, 2009

[73] Pannell, 2006