Understanding leadership in a world of shared problems: advancing network governance in large landscape conservation

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Conservation of large landscapes requires three interconnected types of leadership: collaborative leadership, in which network members share leadership functions at different points in time; distributive leadership, in which network processes provide local opportunities for members to act proactively for the benefit of the network; and architectural leadership, in which the structure of the network is intentionally designed to allow network processes to occur. In network governance, each leadership approach is necessary to achieve sustained, successful outcomes. We discuss each of these approaches to leadership and offer specific practices for leaders of networks, including: shaping the network's identity and vision, attracting members, instilling leadership skills in members, and advancing common interests. These practices are then illustrated in case studies.

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The human world is fragmented. Boundaries divide regions, jurisdictions, organizations, and land owners. Yet the challenges and opportunities of large landscape conservation frequently do not conform to these neat lines, and rarely correspond to the political boundaries used to manage human impacts on ecological systems. The capacity to address conservation problems is therefore often widely dispersed across policies and programs, both within and outside of government, so that it is rare to find a problem that a few actors can solve by themselves (Mandel 1989; Bressers *et al.* 1995). The complexity and interconnectedness of the modern world necessitates networked approaches to addressing societal problems. Networks are interdependent structures, involving a number of "nodes" – that is, actors (typically agencies and organizations) – with multiple linkages or "ties", the interactions between nodes. "Knowledge" to address complex natural resource challenges is no longer only available through the scientific process (Fortmann 2008). This creates opportunities for governmental and non-governmental actors to use network governance approaches to address shared problems (Imperial 1999, 2005a; see Scarlett and McKinney 2016 for a discussion on network governance, and specifically Panel 1 therein). Leadership is critical to develop and sustain network governance long enough to successfully work across political and organizational boundaries to achieve shared goals (Huxham and Vangen 2000; Ansell and Gash 2008). However, because networks are fundamentally different from bureaucracies, the traditional leadership structure – that of an individual leader at the head of a hierarchy – is not only insufficient but also inappropriate in such cases.

Governance systems and resource users are components of a larger, interconnected social–ecological system (Ostrom 2009). Governance refers to the institutions used to direct and coordinate individuals (and organizations) that possess varying degrees of autonomy to advance joint objectives (Frederickson 1996; Lynn *et al.* 2000; Provan and Kennis 2008). Governance involves more than the configuration of governmental and non-governmental

In a nutshell:

- Network governance requires leadership that advances the shared interests of the network, in contrast to simply gathering leaders of organizations that seem to have similar objectives
- Members of large-scale landscape conservation networks are a source of leadership, with roles continually shifting to match the challenges addressed by the network
- Explicit acknowledgement and communication about leadership approach is necessary to develop collaborative architecture (ie rules, incentives, and norms)
- When recruiting new network members and staff, it is important to search for leaders with a collaborative mindset who are willing to share leadership (in addition to being able to offer substantive and technical skills)

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Panel 1. Collaborative leadership: The Land and Water Forum in New Zealand

In New Zealand, The Land and Water Forum, which was initiated by a group of concerned grassroots environmental advocates inspired by collaborative processes in Scandinavia, brings together a range of industry groups, environmental and recreational non-governmental organizations, native Maori, scientists, and other organizations with a stake in freshwater and land management. In an innovative collaborative arrangement, the Forum's members take turns leading studies, projects, and committees, in collaboration with active observers from local and central governments. The Forum's objective is to develop a shared vision and a common way forward among all those with an interest in water quality, through a stakeholder-led collaborative process. A group of representatives from 21 organizations meets on a monthly basis and reports to a larger plenary group, which has a membership of 62 organizations. The forum has been successful in working with farmers to lessen nitrate loads and has been instrumental in shaping national legislation concerning water standards. Sources: www.landandwater.org.nz/Site/default.aspx; O'Leary (2014).

organizations; it also includes how the collection of enabling statutes, organizational and financial resources, programmatic structures, administrative rules, and routines shape interactions among these organizations. Network governance is inherently political and involves facilitation, collaborative problem solving, conflict management, local customization, mutual learning, negotiation, and joint action (Scarlett and McKinney 2016).

Thus, it should not be a surprise to find that "leadership" is often cited as being a critical factor in the success of many large landscape conservation efforts. For example, Leach and Pelkey's (2001) review of 37 watershed studies revealed that participation by an effective leader, coordinator, or facilitator was one of the two most frequently cited keys to success. Moreover, the presence of respected and/or entrepreneurial leaders can enhance the likelihood that self-organized collaborative networks will emerge (Wade 1994; Baland and Platteau 2000; Ostrom 2009).

Here, we address leadership approaches associated with network governance – that is, the work of leaders who advance the shared interests of network members, in contrast to those who only feel responsible for advancing the interests of their own organization within the network. We are interested in leadership both as something enacted by individuals and as a property of the network. Our approach to leadership draws from contemporary relational leadership theories that are based on the view that the consequences of good leadership can emerge from many possible parts of a social system, with only one of those being a positional leader (Drath *et al.* 2008; Uhl-Bien and Ospina 2012; Ospina and Foldy 2015). After first discussing the leadership literature, we explore three new ways of thinking about leadership in networks, moving from the individual to the collective: *collaborative leadership*, *distributive leadership*, and *architectural leadership*. We conclude with a discussion of the implications of these three models for natural resource managers.

Leadership of networks

The work of "leadership" in network settings is often quite different from that in hierarchical structures. The traditional view of a leader who works to influence or transform an organization or individuals within an organization (ie followers) is problematic in networks. Organizations in networks are relatively autonomous and there typically is no consensus on who needs to be influenced (Huxham and Vangen 2000; Phillips *et al.* 2000; Saz-Carranza 2012). Networks can also be self-governed in instances where no single actor is in charge (Mandell and Keast 2007). The network's structure and processes are based on shared rules and norms, and typically depend on participatory processes to make collective decisions based on communication, relationships (personal and organizational), and mutual interests (Powell 1990; Wood and Gray 1991; Milward and Provan 2000; Imperial 2005a; Emerson *et al.* 2011). Because each network member brings a different combination of goals, constraints, and resources (Connelly *et al.* 2008), agreement on network objectives is often difficult to achieve. Network processes differ from advocacy coalitions, in which members share a belief system and learn from the process of policy implementation (Sabatier and Jenkins-Smith 1993, 1999; Weible and Sabatier 2009). Instead, networks have to account for "power differentials" that exist among organizations when they craft processes that view members on more equal terms (for instance, inside the network, input from two members may be weighted equally; outside of the network, however, one member may report or answer to another due to funding, bureaucratic structure, etc).

Network governance represents an excellent context for understanding the shared responsibility for leadership (Uhl-Bien 2006; Denis *et al.* 2012). Current leadership theories acknowledge the limitations of conceptualizing leadership as something that resides exclusively in the individual (often "heroic") leader. Theodore Roosevelt, who during his presidency protected 93 million hectares (230 million acres) of public land, is a good example of a heroic leader. The leadership qualities of Roosevelt are thought to reside within his own persona. Other theories also challenge the traditional characteristics of leadership as being narrowly defined around the leader–follower–shared-goals triad (Drath *et al.* 2008). These "post-heroic" theories (named so because they move beyond leadership qualities residing solely in one person) are based on the view that leadership is a relational process. They broaden the focus from formal leaders and their

influence on followers to the dynamic processes of group leadership in an organization or network (Uhl-Bien and Ospina 2012). Here, leadership is seen as an emergent property and the visible leader is a manifestation of leadership but only represents one of many possible forms (Drath *et al.* 2008; Ospina and Foldy 2015).

There are several ways to understand these post-heroic theories of leadership, or "leadership in the plural" (Denis *et al.* 2012). First, certain theories recognize the group as a source of leadership, acknowledging not only the sequential or recurrent emergence of formal and informal leaders but also leadership roles distributed among participants at different moments, all with the capacity to exercise leadership given the proper conditions (Spillane *et al.* 2004; Pearce and Manz 2005; Fitzsimons *et al.* 2011). Second, structures and processes themselves are theorized to be sources of leadership, separate from the formal or visible leader. Creating situations where group members interact provides the appropriate conditions for group members to engage in successful joint action (Lichtenstein *et al.* 2006; Fairhurst and Grant 2010). Finally, social network theory focuses on the structural properties of the system and centers attention on factors that facilitate and constrain action, which in turn help shed light on leader effectiveness (Balkindi and Kilduff 2005; Friendrich *et al.* 2009).

Understanding network governance requires understanding two perspectives: leadership *in* networks and leadership *of* networks. The former focuses on the roles and behaviors of organizational leaders who are part of a network (eg Friendrich *et al.* 2009; Silvia and McGuire 2010), whereas the latter involves the joint action *at the network level* that produces collective outcomes (Ospina and Saz-Carranza 2010). For example, the organizations and agencies involved in the Crown Managers Partnership have embarked on collectively developing metrics of ecological change across the landscape. This effort was not the result of a single leader, but rather joint action at the network level.

Collaborative leadership

Network governance does not emerge spontaneously to advance large landscape conservation; someone has to call the initial meeting and decide whom to invite. The group then needs to decide what it will do, figure out how to organize the work, perhaps seek out new members, and most importantly find resources to sustain its efforts, even if those resources are as simple as procuring a meeting space and the permission to use staff time to attend the network-associated meetings. Participating in a network may carry risks and certainly imposes costs on participants – network members may not embrace the idea of surrendering autonomy, may be reluctant to subsume their own goals to that of the network's, and may view collaboration as riskier or costlier than going it alone. Network governance also requires a requisite amount of *collaborative leadership* on behalf of the entire network to initiate processes that inspire, support, and facilitate communication and involvement by members (individuals and organizations) in governance processes. In many ways, collaborative leadership differs from the form of "leadership" typically used to advance organizational goals (Table 1).

While traditional leaders work to inspire and convince followers (eg staff, volunteers, institution members) to enact their vision, collaborative leaders find themselves in both the position of leader and follower. Rather than possess or consolidate power, collaborative leaders share and disperse power throughout the network and build capacity by broadening participation. Instead of defining problems and solutions, collaborative leaders emphasize dialogue, build relationships, value and respect diverse viewpoints, and work to find common ground among competing sets of values. Moreover, rather than one individual providing leadership in the network, different individuals (or organizations) will often step forward at

Table 1. Traditional (bureaucratic) versus collaborative leadership

Traditional leadership	*Collaborative leadership*
Vision is possessed and articulated by the leader	Helps craft collective vision
Leader frames the problem and solution for followers	Helps others frame a collective definition of the problem and appropriate solutions
Leader has to have followers to lead	Leader is simultaneously a follower
Unilateral decision making based on hierarchy, formal position, or legal authority	Shared decisions and values
Communication within a single organization or homogenous group with shared interests or values	Communication across diverse groups with competing interests and values
Working within boundaries (eg program, organization, jurisdiction)	Working across boundaries
Focus on certainty	Tolerates and embraces ambiguity and complexity
Leader directs action	Leader facilitates and coordinates shared action
More closely aligned with transactional theories of leadership	More closely aligned with charismatic or transformational theories of leadership

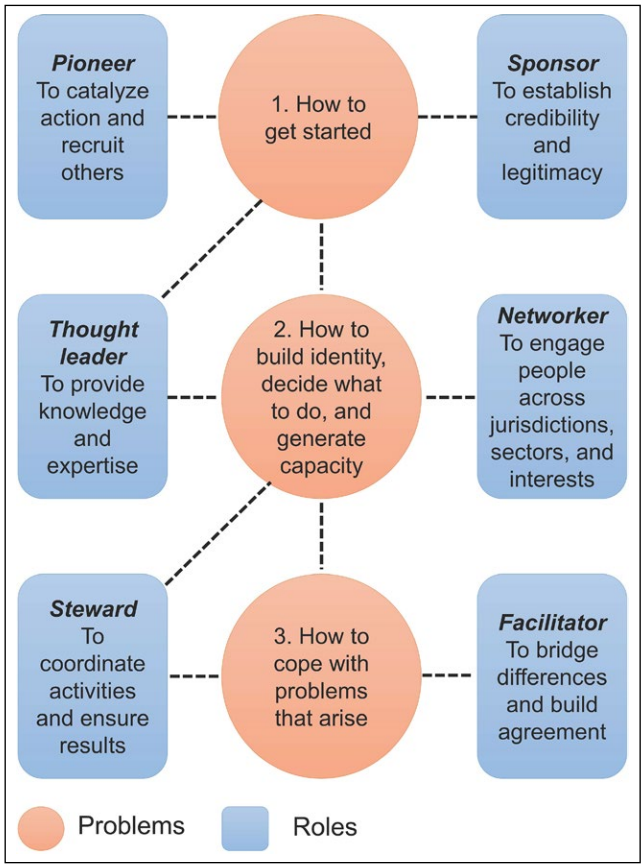

Figure 1. *Various collaborative leadership roles develop as the network governance system evolves. Modified from McKinney and Johnson (2009).*

different times to fulfill different leadership roles as the network governance system evolves (Figure 1).

Some individuals will be *pioneers* who catalyze action and recruit members, whereas others may act as *sponsors*, bringing credibility and legitimacy to the network through their own participation or as *thought leaders* by offering their expertise to advance governance efforts. *Networkers* help engage people across jurisdictions, *stewards* focus on coordinating activities and ensuring results, and *facilitators* or *brokers* focus on bridging differences and forging agreements that advance network processes. Finally, *champions* are needed to promote the network governance process throughout its development (Imperial 2005b; McKinney and Johnson 2009). Panels 1 and 2 illustrate how collaborative leadership is "decentered", with roles for leaders distributed widely across the network (Huxham and Vangen 2000; Crosby and Bryson 2005).

Distributive and architectural leadership

Although collaborative leadership draws attention to how leadership behavior changes in networks, the concept fails to capture two other important forms of leadership that can best be understood by considering a flock of birds (Figure 2). Hundreds of individual birds move seemingly in unison through the air with no discernable leader, yet the emergent behaviors serve the greater needs of the flock in securing food and evading predators. Research suggests this flocking behavior can often be explained using a few relatively simple rules that govern individual behavior, leading to self-organization: separation rules to avoid crowding neighbors, alignment rules to keep the flock flying in the right heading, and cohesion rules that guide steering and direction shifts.

Leadership of a network is also achieved collectively, as a result of shared processes and structures, so that direction (common purpose) is realized without having a formal network "leader" or "coordinator". For instance, Ostrom (2009) argued that governance systems that allow users to establish rules reduce the costs associated with bargaining, group participation, and monitoring and enforcing agreements. Even when an individual has the title of "network coordinator" or a network administrative organization is created to "manage" the network, this individual or organization still acts on behalf of and is accountable to the network. We refer to these processes as *distributive leadership* and the rules that provide structure as *architectural leadership*.

Distributive leadership

Distributive leadership explains the behavior of organizations that seemingly "flock", as they appear to

Panel 2. Collaborative leadership: the Crown Managers Partnership

The Crown Managers Partnership (CMP) offers an example of collaborative leadership in a large-scale landscape conservation network that transcends the boundaries of Canada and the US. The CMP was formed in 2001 as an organization focused on the collaboration of state, federal, and provincial agencies in the Crown of the Continent region that encompasses parts of Alberta, British Columbia, and Montana. Since its inception, the CMP has called itself a "coalition of the willing". Leadership responsibilities are shared among members of its steering committee, with different members stepping into leadership roles depending on the needs of the organization and the strengths of the individual; for instance, some members have been leaders for their conceptual and visionary skills, whereas others have used their technical skills to lead a specific project. Although the group eventually created a chair position, this individual acted more as a facilitator and meeting planner, while actual leadership remained distributed among the CMP's members. The CMP highlights the importance of recruiting the right members to ensure that the organization has an adequate and diverse skill set to lead the CMP's efforts. Source: http://crownmanagers.org/.

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Figure 2. *Birds flock without specific leaders and coordinate without specified coordinators.*

be working in unison (see Panel 3 for an example from Lake Tahoe). Distributive leadership recognizes that work is done on behalf of and to advance the collective interest of the network rather than only individual (or organizational) network members (Ospina and Saz-Carranza 2010). It also views leadership as a relational process whereby network members interact in an effort to achieve a collective purpose (Foldy *et al.* 2008; Ospina and Saz-Carranza 2010).

While traditional leadership assumes there is a single individual who leads, distributive leadership assumes there will be multiple opportunities for individuals within the network to lead, as well as influence and support, the network process. For example, in many self-governed resource systems, the individual responsible for monitoring resource allocations rotates periodically (Anderies *et al.* 2004). A defining characteristic of networks is the degree of agreement among actor perceptions with overall network objectives (Koppenjan and Klijn 2004). The task of a distributive leader is to manage diverse perspectives within the network, to allow for both shared and divergent viewpoints. Instead of assuming that shared values and decisions drive the network, leaders emphasize diversity and the network's resilience to external and internal shocks.

Architectural leadership: the invisible hand of network governance

Much like the distribution of flocking birds, architectural structures within network governance are the rules of self-organization that enable the flocking behavior of organizations to occur. "Structure" here refers to the social architecture crafted for network governance that includes the complex configuration of rules that shape the values, attitudes, and behaviors among network members (Mandell and Keast 2007). This includes formal rules (eg bylaws, agreements, legislation, plans) as well as the informal rules (eg social norms) and the sanctions (eg peer pressure) used to shape and govern behavior among network members (Ostrom 1990). Actors outside of the network (eg funders, government agencies) may also impose all or part of this structure. Rules can be crafted deliberately or emerge based on practical realities to find ways to achieve objectives; they can also encourage productive interactions or become obstacles (Mandell and Steelman 2003). Thus, "structure" influences how decisions are made and how other network governance processes occur (Mandell and Keast 2007).

We use the term *architectural leadership* to highlight that leaders can and should make calculated decisions about how these structures develop and adapt as network processes originate and change. For most participants in the network, these structures exist but are hidden, in the sense that network members do not often give much conscious thought to the rules that influence and guide their behavior, in the same way that people give little thought to how their house is designed and constructed until it is time to make a structural change. Rule structures play an important leadership role because they specify such things as who can shape the network agenda, who has power to act on the network members' behalf, and what resources should be deployed to advance the network's agenda (Huxham and Vangen 2000; Huxham 2003; Vangen and Huxham 2003). Examples of structural characteristics identified include: interdependence, autonomy, coordinating mechanisms, levels of cooperation, types of cooperation, numbers of entities, breadth of goals and purposes, and the duration of agreements (Powell 1990; Mandell and Steelman 2003; Keast *et al.* 2004; Mandell and Keast 2008).

As with a collaborative leader, an architectural leader will attempt to create shared perspectives within the network, but the approach used by collaborative leaders generally targets values, perspectives, and other cognitive factors. In comparison, architectural leaders focus on the design of goals, functions, processes, services, and participation. Just as structural aspects of home design (eg are

Panel 3. Distributive leadership: Lake Tahoe, California and Nevada

Network governance in Lake Tahoe provides an illustration of distributive leadership. Work was done on behalf and to advance the collective interest of the "network" rather than any individual (or organizational) network member. An essential feature of this network was allowing members to participate in the framing, and reframing, of problems and solutions, beginning as early as 1959.

Lake Tahoe is a deep alpine lake, noted for its exceptional water quality and unique natural resources, such as Emerald Bay, a National Natural Landmark (Figure 3). By the 1970s, the clarity of the lake had been slowly declining for decades. Early efforts identified the main cause of the problem in terms of septic systems, and the solution involved building sewage treatment infrastructure to pump sewage out of the basin. Although successful, this also opened up marginal areas along steep slopes to increased development, which led to continued declines in lake clarity due to erosion and stormwater runoff, along with development in sensitive areas (eg wetlands) located along shoreline areas. During the 1970s and 1980s, the cause of declining water clarity was reframed as being due to impacts from new development activities within the basin, and the solution was consequently reframed in terms of the need to develop stringent regulations to restrict new development. The "new" problem and solution generated considerable conflict and development, and led to some important interests exiting network governance processes. By the early 1990s, as lake clarity continued to decline, the problem was reframed yet again in terms of poor land-use decisions made during the 1960s to the early 1980s. This led to a new set of policy solutions that focused on redevelopment and achieving win–win solutions to the problems. This expanded the network and brought development, casino, transportation, and other governmental and non-governmental actors into the network. The result was the development of a $908 million Environmental Improvement Program in 1998, which provided funding for more than 1000 collaborative projects that are being undertaken by various combinations of network members, for the express purpose of improving lake clarity. Sources: Imperial and Kauneckis (2003); Kauneckis and Imperial (2007).

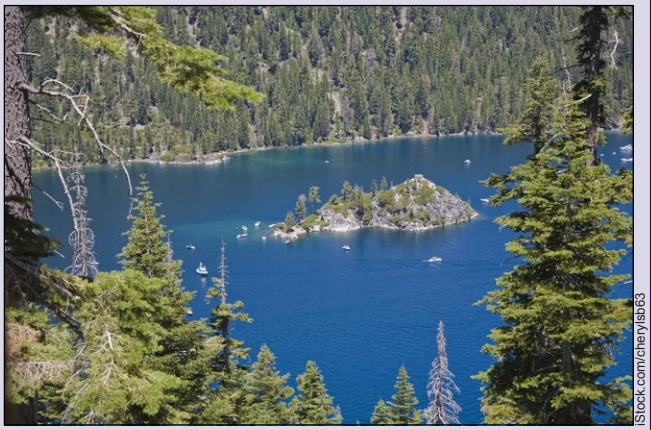

Figure 3. *Emerald Bay, Lake Tahoe.*

windows and doors insulated, are safety devices installed, are energy efficient appliances used?) influence the condition and safety of a home, the structural design of a network will influence the condition of the collaboration through the strength of actor connections, network resilience, and, ultimately, collaborative outcomes.

Architecture provides a useful metaphor in other ways as well. In the same way that an architect begins with concepts and rough sketches, the early stages of network governance can be fluid, as different designs are considered. Similarly, network members consider different configurations of members, goals, functions, processes, and/or services. Eventually, guiding principles emerge and more details are incorporated into the final plans used to construct the structure. The details are important, given that the function of a structure is profoundly influenced by its form. Similarly, once the decision is made to alter the structure's function, it may be very costly to change its form; for instance, it is often cheaper to buy a new structure that better accommodates needed functions than to engage in expensive renovations.

While network members may have the opportunity to design network governance structures from the ground up, others have to live and work within structures designed by some external actor (eg funder or government agency) (Huxham and Vangen 2000; Huxham 2003). For instance, natural resource managers of estuaries included within the National Estuary Program (NEP) transitioned from collaborative planning – based on a structure required by the US Environmental Protection Agency – to recognizing that a new structure was needed to facilitate plan implementation (Panel 4). Similarly, Imperial *et al.* (2016) describe how governance efforts must make periodic changes over the course of their life cycles in order to sustain their useful life. Understanding the many different ways that collaboration may be influenced improves our ability to intentionally harness its potential.

Implications for leadership practice

Individuals (and organizations) perform various types of collaborative leadership at different points in time to advance shared network interests. In practice, network members are often selected to represent their organization because they are viewed as leaders within those organizations. However, network governance requires and rewards a more diverse set of leadership behaviors, and may require different skill sets. Collaborative governance shifts the emphasis from the control of large bureaucratic organizations and the bureaucratic way of leading and managing to enablement skills (Salamon 2002), which are used to engage partners as equals and to bring multiple, interdependent collaborators together for a common end. Head (2008) argued that network participants must possess bridging skills (linking to external resources), mobilizing skills (making the best

Panel 4. Changing social architecture to match changing functions: the National Estuary Program

The National Estuary Program (NEP) is administered by the US Environmental Protection Agency and was established by the 1987 amendments to the Clean Water Act. The program includes 28 estuaries of national importance. Each estuary program received funding to develop a Comprehensive Conservation and Management Plan (CCMP) using a similar "management conference" process based on consensus decision making. However, partners were given flexibility in terms of the issues they addressed, the configuration and membership of their committee structures, and the scope and content of the resulting CCMP. Near the end of the collaborative planning process, it became clear that a new "structure" was necessary to facilitate the collaboration needed to implement the CCMP recommendations and enhance network governance. Three examples from Tampa Bay, Delaware Inland Bays, and Tillamook Bay illustrate the different ways that estuary programs chose to design their new "structures".

After much negotiation, in 1998, the partners in Tampa Bay signed an Interlocal Agreement that committed the local governments to achieving the CCMP's goals, with the regulatory partners agreeing to increase flexibility and streamline their regulatory programs. It also created a network administrative organization known as the Tampa Bay Estuary Program, which was formed as an independent alliance of government entities.

The partners in the Delaware Inland Bays chose a different path. After exploring several options, in 1994 the Delaware General Assembly created the Center for the Inland Bays (CIB) as a state-chartered Section 501(c)(3) and formed a Board of Directors composed of various state and local partners, as well as two county residents. The CIB is designed to serve as a neutral forum to oversee the implementation of the CCMP and report annually on these activities.

In Oregon's Tillamook Bay, the partners initially formed the Tillamook County Performance Partnership (TCPP) in July 1998, through a resolution of the Tillamook County Board of Commissioners. This was a collaborative organization that featured a two-tiered administrative structure and a staff composed of former Tillamook Bay NEP employees, who were county employees. The TCPP had a broad membership and included numerous federal, state, and local government representatives, as well as representatives from industry, non-governmental organizations, and the public. However, the partners reconfigured the structure in 2006 to sustain the health of the partnership, and the Tillamook Estuary Partnership was then incorporated as a Section 501(c)(3). Source: Imperial and Hennessey (1996, 2000).

use of existing assets), persuasive skills (selling and marketing the benefits and strategic opportunities), and adaptive skills (capacity to deal with changing contexts and challenges). Similarly, Ansell and Gash (2012) identified three facilitative roles for collaborative leaders: steward, mediator, and catalyst.

Having a collaborative mindset is arguably the most important attribute for those who seek to lead in a world of shared problems (Linden 2002; O'Leary *et al.* 2012; O'Leary 2015). Research points to the need for network members to be adept at managing group processes, including facilitation and conflict management. There is growing acceptance that interest-based, collaborative problem solving has to be mastered by those who strive to be competent collaborative leaders. An effective collaborator will also be a strategic leader, often leading even when he/she is not in charge and empowering others to lead when he/she could be in charge. Being able to create a vision with others, to see and communicate "the big picture", and to work with the group to develop goals is also important. Clearly, selecting the right participants to represent organizations in network processes is crucial, as is the need to provide training to develop this collaborative leadership skill set.

Despite its importance, leadership should not be viewed as a magic bullet that can solve every problem associated with governance. Crafting network structures and collectively developing network processes is difficult, so a critical aspect of leadership is to determine which forms of collaborative and distributive leadership are needed, given the conditions associated with a specific large-scale landscape conservation system. The search for "best leadership strategies" that work in all network settings is likely to fail for the same reasons that it is highly improbable an architect could design a single structure that optimally served all functions. Nevertheless, when contemplating the leadership of large landscape conservation networks, practitioners should consider several factors (WebPanel 1). We encourage practitioners to carefully consider the qualities and characteristics of leadership that best suit each new collaborative initiative.

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