

NAVIGATING THE WATERS: EXPLORING THE
ROLES OF PROVINCIAL WATER NGOs IN DECISION-MAKING

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B.Sc., University of Guelph, 2005

A thesis submitted in partial fulfillment of
the requirements for the degree of

MASTER OF ARTS
In
ENVIRONMENT AND MANAGEMENT

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September 2013

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Abstract

The principles of adaptive water governance blends many of the components of adaptive and comanagement, specifically iterative and social learning to foster adaptation and collective action. While many of the principles of adaptive water governance are still evolving, organizations operating within these contexts can be positioned as boundary or bridging agents concentrating on the science-policy interface or more centrally positioned to facilitate the inclusion and consideration of the multi-stakeholder perspectives at play. This thesis uses a comparative case study combined with a modified grounded theory approach to explore organizational governance arrangements and the roles played by three major water-focused non-governmental organizations (NGOs) in decision-making in British Columbia. An understanding of the challenges and supporting conditions that enhance organizational and actor efficacy within case study NGOs will inform the broader water community of opportunities for collaboration, capacity-building and expanding the roles of NGOs through provincial water governance reform.

Acknowledgements

I would like to thank all my research participants who shared their insights, experiences and enthusiasm for water issues and volunteerism. These conversations were largely inspirational and provided meaning beyond what has been described in this study. Special acknowledgement goes to each organizational steward who diligently agreed to find obscure documents and facilitate conversations with their colleagues in a timely manner. I could not have completed this study without you. I thank my thesis supervisor, Erik Karlsen, for providing countless hours of mentorship to keep my research on track. Your wisdom is greatly appreciated. I thank my MEM colleagues with whom I shared this online experience. Many of you will remain dear friends and colleagues. To my parents, Sam, LA and Paul, thank you for providing an insurmountable amount of insight and motivation. To my friends who have been extremely patient with my absence, I'll gladly take you out for a beer! And finally, to BC's water leaders, I want to thank you for your enthusiasm and dedication to bringing visibility to the water sector. Your journey has not been without its challenges and your passion is not forgotten.

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Introduction

Canada has 7% of the world's supply of fresh water, 25% of the world's wetlands and a diversity of climates (Roy, Osborne and Venema, 2009). Despite this abundance, population growth and industrial expansion are leading to competition among users when shortages arise (Roy et al., 2009). Additionally, climate change brings uncertainties with varying regional and local impacts, many of which are beginning to appear (National Roundtable on the Economy and the Environment, 2011). Canada's water resources are faced with increasingly complex pressures making the voice of Canadian water organizations of great importance.

Water resource management has become a complex issue requiring more adaptive, collaborative management and resilience focused strategies. The increased frequency and magnitude of extreme events due to climate change have triggered renewed considerations of flood risks in local planning (Johannassen & Hahn, 2012). For example, in British Columbia (BC), significant flood risks occurred during the 2012 spring melt and in June 2013, heavy rainfall caused flooding and property damage along the Elk River (CBC.ca, 2013; CBC.ca, 2012). Furthermore, the Province of BC is undergoing consultation on the release of the *Water Sustainability Act* and the renewal of the *Columbia River Treaty*. Other pressures include drinking water supply, irrigation, ecosystem support and hydroelectric power generation issues, as well as multiple use nexus opportunities and conflicts. These pressures are reflected in the diverse community of water organizations that range from local stewardship groups to provincial chapters of national organizations and hold significant roles across all scales and uses within the water policy landscape.

Principles for Water Governance: A Review from Academia and Practice

Taking into consideration the growing number of cumulative threats to fresh water resources, communities are experimenting with new models for place-based governance arrangements that support a diversity of stakeholders and consider a broad range of issues (Morris and Brandes, 2013). The following sections will draw on academic and practice literature to define governance and explain the development of water governance arrangements with reference to management principles and supporting conditions needed to achieve organizational goals. Discussion of these subject areas lays the foundation for placing this study with other critical research to support the water NGO community and advance water planning and practice in British Columbia.

Defining Governance.

Governance arrangements provide a framework for making, implementing, monitoring, reporting on performance and reviewing decisions. An analysis of governance focuses on the formal and informal structures and actors involved in decision-making and implementing these decisions (UNESCAP, 2013, par. 4).

Proper governance enables an organization to achieve its goals and objectives (Office of the Auditor General of British Columbia, 2013, par 1). Good governance involves the use of eight principles that are central to assuring accountable and inclusive decision-making that is responsive to present and future needs of society (UNESCAP, 2013, par 8-16):

1. Participation;
2. Consensus-oriented;
3. Accountable;
4. Transparent;
5. Responsive;
6. Effective and efficient;
7. Equitable and inclusive;
8. Follows rule of law.

Governance arrangements for natural resource management, for example Australia's natural resource management (NRM) governance system, elaborate such general principles to consider the connectivity of social organizations within a linked socio-ecological system (Ryan et al., 2010), for example:

- Formal and informal relationships between organizations and across operational scales;
- Rules and strategies as the laws, regulations, mandates and other agreements that operate across scales and natural resource issues;
- Practices and behaviour as the methods for applying rules and strategies; and
- Beliefs, values and knowledge of the community.

These mechanisms improve effectiveness in NRM by addressing pre-existing issues of complexity, discontinuity, scalar fragmentation and uncertainty regarding the roles of participating people and organizations (Ryan et al., 2010). Ryan et al. (2010) also describe that a "good" NRM governance system should be judged by its natural resource outcomes arising from the interactions of the governance system with the wider socioeconomic and natural resource systems.

Another explanation of governance, in this case as applied to water resources, is defined by the UNDP:

“Water governance is defined by the political, social, economic and administrative systems that are in place and which directly affect the use, development, management and delivery of water resources at different levels of society” (UNDP, 2013, par 1).

This definition applies a systems perspective and considers the existence of multiple scales of interaction between the system components and impacts on developing, managing and delivering water resources across society.

Further definitions of terms used throughout this study are provided in a glossary in Appendix A. The preceding sources are drawn from practice (grey) literature; the following sections are drawn primarily from academic and related sources to provide a systems perspective on water governance and to explore dimensions of the organizational structures and supporting conditions for actors operating within these complex systems.

Governance of Complex Adaptive Systems.

The past 20 years of resource management science has presented principles that reflect the hierarchical structure in which systems of nature, humans and combined human-nature systems and social-ecological systems are interlinked in never-ending adaptive cycles of growth, accumulation, restructuring, and renewal (Holling, 2001). Described as “panarchy”, these transformational cycles take place in nested sets at scales combining concepts of space/time hierarchies within a concept of adaptive cycles (Holling, 2001). The understanding of these

adaptive cycles and their scales, makes it possible to identify areas where the system is capable of accepting positive change and the points where it is vulnerable (Holling, 2001).

Progressing towards concepts of modern resource management, a central theory has been the consideration of ecosystems as complex adaptive systems, which in times of uncertainty, enables resource managers to do the following (Olsson, Folke & Berkes, 2004, p.75):

1. Build knowledge and understanding of ecosystem dynamics;
2. Develop practices that interpret and respond to ecological feedback; and
3. Support flexible institutions, organizations and adaptive management processes.

As described by Olsson et al. (2004) ecological information and knowledge is best used when integrated with and evolves within institutional and organizational aspects of management. These are referred to as adaptive comanagement systems. These are flexible, community-based systems of resource management tailored to specific places and situations and supported by various organizations working at different levels. Adaptive comanagement is defined as “a process by which institutional arrangements and ecological knowledge are tested, revised in a dynamic, ongoing, self-organized process of learning-by-doing” (Olsson et al., 2004, p. 75).

In effect, adaptive comanagement is a process to operationalize adaptive governance by engaging the collaboration of a diverse set of stakeholders who are operating at different scales and within networks, including government agencies, non-governmental organizations and civil

society (Olsson et al., 2004). Furthermore, adaptive governance focuses on experimentation and learning through multi-scalar collaboration leading to collective action and conflict resolution in natural resource management through the following four interacting aspects (Folke, Hahn, Olsson, & Norberg, 2005, p. 463-464):

- Build knowledge and understanding of resource and ecosystem dynamics across all sources;
- Feed ecological knowledge through adaptive management practices including continuous monitoring and evaluation to enhance adaptive responses and foster a learning environment to evolve social norms;
- Support flexible institutions and multilevel governance systems through shared power and responsibility within institutional and organizational linkages to form polycentric agencies that support dynamic learning environments and multilevel social networks for knowledge generation and transfer; and
- Accept uncertainty and surprise as inevitable and enhance adaptive capacity of the system to deal with disturbances by building in resilience.

Research on adaptive governance of social-ecological systems also suggests that it cannot be easily planned or controlled. However, central agencies can foster self-organization of adaptive management through enabling legislation, flexible institutions, recognition of bridging organizations and the evaluation of each (Folke et al., 2005).

The following sections will consider water resources as complex adaptive systems and describe the management strategies adopted across Canada.

Adaptive Management Strategies for Complex Water Resources.

Water exists as a dynamic resource that by its essence crosses the operational and social boundaries placed upon it. Modern water management requires allocation among competing uses, dealing with extremes and climate variability that undermine technological solutions, meanwhile taking into account the pillars of social equity, economic efficiency and environmental sustainability (Pahl-Wostl, 2007). Integration and interdependence of human, physical, biological and biogeochemical factors within water management are considered central components of a “global water system” (Global Water System Project, n.d., par 1). Radical changes in water management are needed to consider the true complexity of water resources at different scales and under times of greater uncertainty as follows (Pahl-Wostl, 2007, p. 51):

- Integrating human dimension of water management with technical solutions; and
- Applying adaptive and flexible management strategies that allow for operation within fast changing socio-economic boundary conditions and climate change.

Adaptive management of water resources assumes the classification of water resources as complex adaptive systems that exist as non-linear, interactive systems with the ability to adapt to a changing environment and are characterized by self-organization and distributed control (Pahl-Wostl, 2007). Pahl-Wostl (2007) also suggests that water managers move away from a predict and control model and adopt management paradigms which include a systems perspective, governance regimes that support horizontal and vertical interplay across institution and actor networks and include information management and sharing, technological

infrastructure and risk management. She also notes that it is not easy to move from a top-down to participatory management practices without changing the whole approach to information and risk management (Pahl-Wostl, 2010).

Decentralization of water resource management is a “radical concept” and often requires political and social tradeoffs that need to be taken into account during implementation (Kemper, Blomquist, & Dinar, 2007, p. 4). River basin organizations have been established world-wide to focus on the integration of management of water resources to combine supply allocation, demand management, quality protection and ecological preservation alongside the decentralization of decision-making to the lowest level that enables use of local knowledge, greater stakeholder involvement and better management through adaptation to local conditions (Kemper et al., 2007). Water management reform takes time, even decades to emerge, and requires commitment to the creation and implementation of basin scale management alongside flexibility within institutional components as new communities of interest are identified or new possibilities arise (Blomquist, Dinar and Kemper, 2007). Similarly, a “one size fits all” model does not apply to basin scale management practices. Successful implementation requires regional specification with planning, funding and implementation responsibilities shared across water users and orders of government (Blomquist et al., 2007).

Challenges in water management are characterized as a boundary choice involving consideration of accountability, public participation and asymmetries between watersheds and “policy and problem-sheds” (Cohen & Davidson, 2011, p. 1). Cohen and Davidson (2011) further suggest that reframing of governance to the basin level should not be a de facto starting point

for governance but used as a policy tool where the best outcomes emerge when principles of good governance through defined mandates, clearly delineated powers and available resources already exist within watershed organizations (p. 8). As described by the Global Water Partnership, the art of IWRM lies in selecting, adjusting and applying the right mix of these tools for a given situation which suggests that if existing governance frameworks are weak and watershed-scale capacity is low, then re-scaling governance to the basin level will not see success and may compound problems by delegating challenges to new institutions with low capacities (Global Water Partnership, 2010, par 3; Cohen & Davidson, 2011).

In Canada, powers over the allocation and use of water are fragmented, involving federal, aboriginal, provincial, territorial and municipal orders of government. Current federal legislation applies to protecting navigable and transboundary waters, commercial fisheries and fish habitat as well as pollution prevention on federal land including First Nation communities.

Provincial and territorial governments are primarily responsible for allocating water rights, providing safe drinking water and controlling pollution. The Government of BC is undertaking a *Water Act* modernization process focusing on transforming the first in time, first in right licensing principles to further protect drinking water, wetlands and waterways, improving flood protection, setting efficiency targets and improving science and information exchange for adaptation to climate change (Government of British Columbia, 2008).

Municipalities are primarily responsible for land-use zoning, water supply and sewage and drainage infrastructure. The latter involves meeting local needs in accordance with federally and provincially regulated standards, which also depends on financial transfers from the federal

and provincial levels (senior governments) to municipalities to help pay for capital projects. This jurisdictional fragmentation has resulted in significant infrastructure deficits and decreased senior government funding has fostered gaps in scientific data, knowledge and policy as well as inconsistencies in regulations nation-wide (Sandford, 2011).

Having a diversity of actors working with and alongside formal water management organizations in Canada creates opportunities for social learning, shared responsibility and building capacity across the water community. Various decentralized governance arrangements exist nation-wide. Robins' (2007) analysis of these arrangements suggest that tensions emerge when organizations exist too closely or too far away from government, Board composition does not reflect the diversity of stakeholders, ambiguity exists within organizational mandates and there is an inability to attract and retain resources. National overarching and advocacy organizations, provincial and territorial governments could take stronger roles in research, development and dissemination in addition to supporting development of multi-scalar networks and linking First Nations Board representatives to build capacity across the water community (Robins, 2007).

Morris and Brandes' (2013) reported that respondents from BC's watershed organizations, in which some are operating within decentralized governance contexts, see a need for shared decision-making authority for provincial water resources across community-based organizations, civil society, orders of government and industry stakeholders.

In summary, water governance needs to consider the many ecological, technological and social dimensions involved, requires a flexible approach that has adaptive capacity, fosters

resilient management and policy strategies, promotes social learning amongst its actors and improves the overall capacity of the broader water community.

Structural Considerations for Collective Action

Actors within the government-based Canadian water policy landscape struggle to implement innovative policies as many local, provincial, territorial and federal governments are faced with constrained finances, risk-averse decision-makers and institutional inertia (Maas & Wolfe, 2012). In a similar vein, actors in water NGOs operate in competition with one another for funding and human resources (Robins, 2007).

With the overview of water governance arrangements in Canada in mind, the sources cited below explore multi-level interactions between formal and informal institutions and state and non-state groups within different governance regimes. The dynamics of these interactions depend on the degree of polycentricism, which is defined as “having many centres of decision-making which go beyond jurisdictions and include other modes of coordination” (Pahl-Wostl, 2009, p. 357). Newly established watershed-based organizations can be faced with problems of fit between administrative and biophysical boundaries compared with the horizontal and vertical interplay necessary for integrated resource management and adaptability to climate change (Pahl-Wostl, 2009; Plummer, Armitage & de Loë, 2013).

New approaches involve comanagement, knowledge partnerships, operational scales, knowledge epistemologies, perspectives, uncertainty and self-organization (Berkes, 2009). Governance and structure arrangements are founded in power sharing, institution and trust

building and depending on their maturity level, will include social learning and iterative problem solving (Berkes, 2009). Bridging knowledge and organizational levels are closely related to one another, they combine different kinds of knowledge (science and local), depend on worldviews and take the time required to develop mutual respect and trust (Berkes, 2009; Plummer et al., 2013).

Berkes (2009) and other researchers also caution about the use of comanagement and adaptive management as a panacea for legitimacy. They argue that it can lead to reinforcing elite localized power and strengthening state control, especially in areas of poverty and marginalization (Berkes, 2009). Legitimacy has been negatively impacted by confusion regarding roles and responsibilities. Ryan et al. (2010) address these types of concerns in their report on Australia's NRM governance system, which recommends that the role of government is to provide technical support, funding, budgeting flexibility, clear allocation of roles and responsibilities and ensuring minimal conflict between such roles.

Bridging and Boundary organizations.

Bridging together science and local knowledge can be facilitated by bridging organizations that provide "an arena for knowledge co-production, trust building, sense-making, learning and horizontal collaboration and conflict resolution" (Berkes, 2009, p. 1695). Bridging organizations are argued to advance adaptive management by creating opportunities for knowledge utilization by creating neutral space for network development, creating and using boundary objects and tools and liaising and brokering within power structures (Crona & Parker, 2012).

Boundary organizations are formal organizations designed to exist at the interface of research and policy organizations, have accountabilities to both, and act as agents by facilitating communication and collaboration between them (Crona & Parker, 2012). Boundary organizations differ from bridging organizations through their “narrow focus on the science-policy interface and their clearly defined organizational arrangements such as structures and accountabilities” (Crona & Parker, 2012, p. 31).

The higher degree of formalization through structures and accountabilities in boundary and bridging organizations differentiates them from informal networks working to promote learning. However, having such organizations in place to provide more information is not always a solution. Maas and Wolfe (2012) describe methods for improving knowledge transfer and utilization for water practitioners, which include capacity building through training-based internships, mentorship, career development and training.

Maas and Wolfe (2012) also identify elements that support innovation: (1) addressing the influence of experiential knowledge on practitioner’s willingness to adopt change, (2) retaining innovative practitioners’ tacit knowledge and transferring that knowledge to other practitioners who are seeking to innovate and (3) providing support for innovators to persevere against institutional inertia (p. 4).

Supporting Conditions for Actors Engaged in Adaptive Water Governance Networks

Adaptive comanagement prescribes iterative cycles of learning and adaptation by doing, linking science and management through horizontal and vertical linkages and across multiple

organizational levels and networks, and focusing on capacity building for all partners (Berkes, 2009). Social learning is at the center of this process. Maas and Wolfe (2012) describe the need to form social-professional networks that emphasize “learning by doing” to tackle the “messy” challenges possessing high levels of uncertainty to build a resilient and resourceful community of water practitioners (p. 4).

Networks exist in many forms. They may be informal or formal. They may focus on knowledge, policy, and integrating practice through communities of practice or may focus on a specific interest. They may be inclusive and provide open access and encourage broad participation or may cater to a group, such as young professionals and students.

Actors within NRM are best supported when learning networks focus on building capacity and sharing knowledge as well as including membership diversity for advancing planning and practice. Newman and Dale (2005) describe social capital as the combination of bonding, bridging and linking ties found in an actor network, each taking a different role in community resilience through building diverse, inclusive and strategically influential connections. Another component of network capacity building is agency, which Dale and Sparkes (2011) describe as an a priori condition based on self-efficacy and worldviews (personal norms) of individuals who take advantage of opportunities to act, and apply creativity to overcome adversity. Further support for collective action is provided by the legal and social structures in place to empower and inform groups to act collectively (Dale & Sparkes, 2011).

The principles of adaptive water governance blends many of the components of adaptive and comanagement with a specific focus on learning in an iterative and social manner to foster

adaptation and collective action. While many of the principles of adaptive water governance are still evolving, NGOs operating within these contexts can be positioned as boundary or bridging agents focusing on the science-policy interface or more centrally positioned to facilitate the inclusion and consideration of the multi-stakeholder perspectives at play. Supporting conditions for NGO actors consist of knowledge and capacity building through strong social networks and formal communities of practice, fostering social capital and strengthening the agency of organizational leaders. Further support can be provided through internships, mentorship, career development training and building young professional networks (Maas & Wolfe, 2012).

Research Questions and Significance

The overarching goals of this thesis are to understand the roles played by and influences on water-based non-governmental organizations' (NGOs) participation in water decision-making and to make recommendations to improve the effectiveness of case study NGOs and the broader BC water community.

With specific reference to selected case study NGOs, the main research questions are (1) *How are water-based NGOs meeting their goals and objectives?* and (2) *How are these water NGOs advancing water management, planning and practice in British Columbia?* As a starting point, taking into consideration to points from the preceding chapters, the formal inclusion of water organizations in policy development is necessary as principle of "good governance."

The following sections will outline the research methodology and summarize the qualitative results, followed by a discussion of themes emerging from the data, which support recommendations and conclusions, including suggested next steps.

Methodology

The methodology for this study originates from a combination of qualitative methods focusing on exploratory and descriptive findings. The primary approach consists of a comparative case study of governance of three provincial water NGOs. A literature review is used to develop a theoretical framework for reviewing organizational documents and carrying out semi-structured interviews. Qualitative data analysis of organizational documents and interview transcripts involve a modified grounded theory methodology using open and axial coding alongside memos for tracking emerging themes within the data.

Analytical strategy

A case study appropriately addresses the exploratory and descriptive nature of “how?” and “what?” questions and is useful when the investigator has little control over behaviours and when the events are contemporary (Tellis, 1997, par 28). Case studies also have the advantage of being triangulated, multi-perspectival analyses, allowing for the inclusion of the many perspectives from the relevant groups of actors and their interactions (Tellis, 1997, par 7). The case study method makes use of a positivist theoretical framework based on literature findings that focus on water policy and operational contexts of NGOs.

Scale.

Multiple scalar analyses of organizational documents and interviews provide both broad and focused understandings of the impacts of the multi-jurisdictional policy and organization-specific operational contexts and their influence on the activities and achievements of case study NGOs. The policy context includes international, national, provincial, regional and local jurisdictional considerations. The operational context includes:

- Organizational governance arrangements;
- Organizational structure and foundations for collaboration;
- Internal actors;
- Organizational activities & achievements.

Participating organizations and selection criteria.

With reference to Table 1, the water NGOs chosen for case study focus primarily on the BC water governance landscape crossing all activities from policy development to planning and practice. Taken together they have ties crossing international jurisdictions, nation-wide accountabilities to a national parent organization and they engage in partnerships with affiliated or independent community-based water organizations.

Table 1:

Selection criteria for determining participating water NGOs

Criteria Questions	BC Water and Waste Association (BCWWA)	Canadian Water Resources Association (CWRA)	Fraser Basin Council (FBC)
1. Does your organization have a primary focus on water?	Yes: BCWWA focuses on water delivery and wastewater treatment.	Yes: CWRA focuses on all water sources.	No: FBC utilizes a sustainability context with watershed issues being a priority area for the organization.
2. Is your organization active in British Columbia?	Yes: This organization has partnerships with national and international organizations.	Yes: This organization operates in BC as a chapter within a national organization.	Yes: This organization has several offices across the province and also participates in research nation-wide.
3. What is the operational scale of your organization?	BCWWA operates at local and provincial scales and has national and international partners.	CWRA operates at local, provincial and national scales and has international partners.	FBC operates at a regional scale in partnership with community-based organizations. FBC recently expanded their mission to consider the advancement of sustainability province-wide.

Organization biographies.

Organizational biographies outline governance and organizational structures focusing on Boards of Directors, missions and mandates as well as summaries of organizational stakeholders. These biographies and summaries are provided in Appendix B.

Theoretical framework.

Academic and practice literature sources on water governance were used to develop a theoretically based organizational framework comprised of thematic classification categories and related code development.

This approach focuses on the following:

- Considerations for governance arrangements;
- Structure of organizations working within a complex system;
- Conditions that best assist actors; and
- Emergence of activities from the within organization.

This framework will be applied as thematic codes through the analysis of organizational documents and interview transcripts. Key terms were developed for each thematic category as outlined in Table 2 and a glossary found in Appendix A was prepared to facilitate consistent use of definitions.

Table 2:

Framework for code development determined from academic literature on organizational management, water governance and policy development

Thematic Category	Key Terms	Supporting Literature
Governance arrangements within complex systems		
Adaptive capacity	Anticipative, adaptive, collaborative governance, complex adaptive systems, transformative, resilient, sustainable.	Berkes & Folke 1998, Folke et al. 2002, Folke et al. 2005, Pahl-Wostl et al. 2010, Plummer et al. 2013.
Accountable	Legitimate, supportable/supported, inclusive, engaged, open, transparent, responsive, and reflective.	(E. Karlsen, personal communication, March 9, 2013), adapted from Pal 2006, and Ryan et al. 2010.
Decision-making framework	Structure for making strategic and operational decisions.	
Performance-based	Metrics, indicators and standards.	
Organizational structure considerations for facilitating collective action and innovation		
Collaboration	Peer-to-peer, parent-child, community of practice, boundary and bridging organizations.	Pahl-Wostl 2009, Berkes, 2009, Parker & Crona 2012, Plummer et al. 2013.
Legitimacy	Having authority, being in compliance with the law.	Ryan et al. 2010, Plummer et al. 2013.
Resources	Funding, people, creativity, technology, support.	n/a
Structure	Hierarchical, polycentric.	Pahl-Wostl 2009, Bodin & Crona 2009, Berkes 2009, Plummer et al. 2013.
Supporting conditions for actors		
Agency	Having self-efficacy and worldviews.	Newman & Dale 2005, Dale & Sparkes 2011
Capacity (organizational)	Knowledge, skills, attitudes, designing & developing organizational processes and infrastructure.	Armitage 2005, Berkes 2009
Knowledge exchange & learning	Developing and sharing knowledge. Single through to triple loop learning, learning in social setting.	Armitage 2005, Berkes 2009, Pahl-Wostl 2009, Johannassen & Hahn 2012, Maas & Wolfe 2012, Plummer et al. 2013.
Social Capital	Bonding and bridging.	Newman & Dale 2005, Bodin & Crona 2008.
Technology	Website, communication technology, social media.	n/a
Organizational activities and outcomes		
Events and programs	Networking events, seminars, conferences, educational tours etc.	n/a
Fostering collective action	Agency, heterogeneity, problem externalization, multi-tiered learning.	Swallow et al. 2006, Bodin & Crona 2009, Dale & Sparkes, 2011.
Innovation	Innovation, transformation, resilience.	Pahl-Wostl 2009, Berkes 2009.

Data analysis.

Data analysis consisted of a qualitative review of organizational documents and interview transcripts. To assist with the analysis of 35 documents and 9 interview transcripts, the social science analysis software Dedoose[®] was used for tracking codes and memos applied to excerpts. Data analysis consisted of a modified coding method consisting of open and axial coding, a process that is rooted in grounded theory. The modification made to the grounded theory method consisted of developing a theoretical framework based on literature findings. While this contravenes true grounded theory methodology as the researcher no longer has the blank slate required for code selection, doing so is appropriate to streamline the analysis of governance arrangements within case study NGOs as they relate to complex adaptive systems.

Simultaneously, new codes were applied for material that did not fit with the framework bringing forward new concepts for consideration. Code application occurred as an iterative process with the final codebook expanding to include a diversity of codes and themes complimentary to the theoretical framework. As new codes were created, older content was not revisited (Borgatti, n.d., par 15). Memos were also used to identify areas that required further evaluation where bias may exist and to provide context for the emerging themes. An outline of the data analysis process is shown in Appendix C.

Researcher bias and limitations.

Using a comparative case study approach allows the researcher to identify cases and data sources that provide triangulation and represent a specific phenomenon (Tellis, 1997, par 7).

This study utilizes organizational documents and interview content to provide evidence of the governance arrangements, organizational structure and activities of case study NGOs.

Several limitations exist as a function of the study design, which include the use of a single researcher and applying a purposive-snowballing sampling approach for organizational documents and interview participants. A single researcher was necessary given time and budget constraints as well as the reflective and interpretive nature of the methodology. Additionally, the purposive-snowball sampling approach applied for acquiring organizational documents and interview participants utilized in this study does not represent all perspectives but does provide insight from Boards of Directors and senior staff members who are presumed to have the best knowledge of internal governance procedures. In particular, this could be an issue for Fraser Basin Council as the investigation focused primarily on the watershed program and as a result, only one participant was interviewed.

Primary issues of bias focus on the reflective nature of the methodology, existing relationships with some interview participants, interview questions being asked in a leading fashion and creating conditions where participants may have a pre-existing understanding of the study. Existing sources of bias are outlined in Table 3, which describes the potential impact resulting from the bias as well as the methods used to maintain data quality.

Table 3:

Sources of bias arising from the study design and interview process and the mitigation measures applied to reduce any data quality impacts.

Source of Bias	Potential impacts on data quality	Mitigation methods applied
Reflective nature of the methodology.	Limitations in one's memory can create assumptions and simplifications of the events being discussed.	Considered within the interview guide design to use chronological order of events and to complement current operations.
Existing relationships exist with some research participants.	Potential negative impacts on interview responses or questions being asked.	Discretion was applied during the interview process. Used memos during data analysis to identify any potential sources of bias.
Semi-structured interview questions being asked in a leading manner.	Some questions were asked in a leading manner, which may have influenced the participant's answers.	Used memos during data analysis to identify any potential sources of bias.
Pre-existing ideas of the nature of the study.	Assumptions on the study may influence how interview questions are answered.	Used memos during data analysis to identify any potential sources of bias.

Document analysis

Documentation plays an explicit role in case study research by providing corroboration on information provided by other sources and inferences on subjects that require exploration (Yin, 2003). Vice versa, during an evaluation of an organization's documents, as a matter of methodological rigor, these documents should be subject to critical analysis of the document's intended audience, purpose and use (Yin, 2003).

A total of 35 documents were compiled from each participating organization for the period of 2010 – 2013. These were chosen based on their focus on organizational governance,

structure, mission statements and the organization's activities, audience, purpose and use should be considered during the evaluation (Yin, 2003). Primary sources of documents include:

- Governance and operational policies;
- Strategic plans;
- Website content;
- Reference documents such as conference proceedings and research papers.

Analyses of the organizational documents focus primarily on the impacts of the organization's structure and governance arrangements on the ability to meet its goals and objectives. Analysis of the organizational documents also identifies areas for improvement across the organization and the provincial water network.

Interviews

Interviews are an essential source of case study evidence because most case studies are about human affairs (Yin, 2003). A semi-structured approach allows the researcher to capture specific facts about a matter and opinions on events while remaining open and conversational (Yin, 2003). Focusing the interview on corroborating facts from other components of the case study forces the researcher to avoid leading questions, to be critical of the results, to apply discretion while in conversation and to remain impartial on the opinions shared (Yin, 2003).

A total of nine semi-structured interviews were conducted across three organizations to validate data obtained from the document analysis and to provide an opportunity for participants to share a broader narrative from their experiences with these water organizations.

Design.

The interview design reflected findings from the document analysis and the theoretical framework. The interviews were presented in a semi-focused manner using an interview guide with slight variations taking place from interview to interview. This guide is presented as Appendix D.

Interview records were created using a combination of field notes, voice recordings and transcripts and were securely kept for privacy. As outlined in the ethical review, each field note and interview transcript was tracked and assigned a number to maintain anonymity. These files will be retained in confidence for a period of one year, or after all study reports are completed, whichever is shorter, and then destroyed. This form is presented as Appendix E.

Sampling method.

The interview process used a purposive-snowball sampling approach, which involves selecting participants based on defined criteria and further inquiring for similar participants (Morgan, 2008). The case study focus on internal governance arrangements required informants who had the best knowledge of the history and operations of the organization, which included Board of Directors and senior staff members as well as representation from young professional committees.

Results

Qualitative data analysis of organizational documents and interview transcripts consisted of code applications based on the theoretical framework developed from academic and practice literature. The emerging themes from the modified grounded theory approach were compiled to compliment the theoretical concepts and will be used to assess how case study NGOs are meeting their goals and objectives and carrying out their roles in advancing water planning and practice in BC.

The following sections place the codes originating from the modified grounded theory method alongside the theoretical framework. Excerpts are provided to demonstrate due diligence in the applied logic during coding and to provide a richer perspective of the narrative within the case study NGOs. A combined list of opportunities (supporting conditions) and operational challenges (barriers) for all case study NGOs is presented for actor and organization levels. These findings provide the necessary background for discussing how case study NGOs are meeting their goals and objectives, including their roles in advancing water planning and practice in BC.

Themes derived from qualitative data analysis

As described, themes emerging from the literature review were compiled into the theoretical organizational framework used for code application during data analysis. Table 4 summarizes the number of code applications for the theoretical framework from Table 2.

Table 4:

Summary of the number of codes applied based on the theoretical organizational framework

Thematic Category	Statement of the theme	Number of code applications
Governance arrangements within complex systems		
Accountability	Explicit	296
Adaptive capacity	Implied	113
Decision-making framework	Implied	21
Performance-based	Explicit	116
Organizational structure considerations for facilitating collective action and innovation		
Collaboration	Explicit	196
Legitimacy	Implied	119
Resources	Explicit	228
Structure	Explicit	55
Supporting conditions for actors		
Agency	Implied	35
Capacity (organizational)	Implied	115
Knowledge exchange & learning	Explicit	237
Social Capital	Implied	67
Technology	Explicit	31
Organizational activities and outcomes		
Events and programs	Explicit	130
Fostering collective action	Implied	57
Innovation	Implied	23
Total		1839

Table 4 presents code totals for both explicit and implied outcomes. Explicit outcome codes are more obviously stated in the documents and interviews. This is reflected in the higher totals for “accountability”, “collaboration”, “resources” and “knowledge exchange and

learning”. Although open to subjectivity challenges inherent in the method, lower totals for implied, conceptually defined, supporting condition outcomes such as “agency”, “capacity”, “social capital”, “fostering collective action” and “innovation” provide a broader perspective on the alignment of the activities and outcomes with missions and mandates.

In conjunction with the application of theoretical framework codes, the modified grounded theory approach captured themes that were not considered in the framework thereby enabling a richer perspective of the governance arrangements, organizational structures and activities and outcomes. This provided the bulk of the codes created during data analysis and these were loosely categorized based on the focus areas related to the research questions. Subsequent tiers of codes emerged from the focus areas and were used to provide operational definitions of the primary categories as demonstrated in Table 5. Classification codes were explicitly created to identify the types of actors and roles of the case study NGOs as determined from organizational documents and interview content.

Table 5:

Code categorization based on an analysis of organizational documents and interviews.

Thematic Category	Summary of concept based on supporting coded material
Actors within the organization	
Board of Directors	n/a
CEO/ Executive	n/a
Staff	n/a
Volunteers	n/a
Roles of the organization	
Educators	n/a
Facilitators	n/a
Influencer	n/a
Service provider	n/a
Activities conducted by the organization	
Events and programs	Forum for information and knowledge exchange, facilitating respectful debate, relationship building, stewardship, mentorship, and technical reviews, networking.
Management of the organization	Communication, reporting, managing resources, operational boundaries, standard practices and policies, organizational status.
Strategic planning	Risk management, business planning, performance planning and evaluation, remaining current and relevant, robust and science-based decision-making.
Operational challenges (barriers)	
For the organization	Operational challenges (resource limitations, competition for funding, unclear expectations, organizational inefficiencies, methods for sourcing work, volunteer management), organizational voice and position.
For actors	Communication and choice of language, stress and time management.
Supporting conditions (opportunities)	
For the organization	Effective governance: accessibility, coordination, diversity, equity, flexibility, inclusivity, transparency and continuous improvement; Collaboration: aligned goals and initiatives.
For actors	Capacity building: accommodating and flexible policies and procedures, creativity, long tenures, hosting knowledge exchange and networking events; Contributing to meaningful work: having fun.
Emerging outcomes	
For the organization	Advancing the organization: seeking new opportunities, adding value, building a reputation for excellence, engaging others, efficacy to meet goals and objectives; respectfully managing culture change.
For actors	Building awareness: understanding water issues and expanding paradigms, fostering inspiration, pride in the organization; building and maintaining trust.

Challenges for case study NGOs

Challenges that influenced the ability of case study NGOs to meet their goals and objectives as well as organizational activities include operational challenges, communication and choice of language, organizational voice and position. The following sections provide further clarification of the role these barriers play in influencing the operations and actors within case study NGOs.

Operational Challenges: Insufficient resources and competition.

As reported by Morris and Brandes (2013), operational challenges are widespread throughout the BC watershed NGO community and in particular they identified the need for sustainable funding mechanisms to improve NGO capacity to support the work of watershed-based organizations in BC.

More specifically, case study NGOs described operational challenges as resource limitations, competition for funding, unclear expectations, organizational inefficiencies, methods for sourcing and conducting work and volunteer management. Resources defined as financial, human and technological are essential for daily operations and competition for these have impacts on what can and cannot be done. Organizational documents and interviews highlight restrictions in the economy, rising costs and insufficient resources for operations resulting in decreased response time to requests, operational inefficiencies and data gaps. One strategic document outlined the need to recruit additional staff to assist with administration and several funding opportunities were discussed to identify the option that presented the best

value for the organization. An interview participant discussed limitations within the organization to offer formal training programs for their staff and again, financial resources were stated as a limitation to ensuring the recruitment and retaining of quality personnel. Additionally, competition for resources and attention extends beyond internal operations to influence the broader water community. For example,

“Challenges that have always been there, you know, members of our association, members of our community, are in competition with one another in many important, significant ways and so some knowledge will always be deemed to be proprietary. And I think, you know, there's always a balancing act there...” (Interview participant C).

Organizational inefficiencies and unclear expectations.

Policies and procedures lay out the framework in which organizational governance and management exists yet resources are required to ensure these guiding policies remain current and relevant. Robins (2007) describes where the mandates of many decentralized Canadian water organizations are “unclear or changing in some instances where organizations, knowingly or unknowingly, stray beyond their stated mandates” (p. 21). Morris and Brandes (2013) indicated that strong organizational capacity in the form of accounting, legal advice, Board management and human resources was considered less of a priority than organizational activities such as influencing decision-makers, community engagement and sourcing funding options. Case study NGOs reported that limited resources often inhibit the revision and development of internal policies resulting in inefficiencies in the organization and unclear expectations of volunteers and

staff. Both interviews and document analysis for the majority of participating organizations indicate that reviewing and revising governance policies and procedures is often delayed or not done at all. For example,

“Our existing communications plan needs to be refreshed and reviewed. Its content called for a renewal and revision every two years and the existing plan is now five years old. This is a document that needs to be reviewed in detail, and I would suggest the appointment of a subcommittee of the communications committee to start the review now” (2011 AGM meeting minutes).

However, policies and procedures were described by one organization as operational boundaries and these documents are founded on principles that focus on separating governance from management. The following excerpt describes the state of governance within one case study organization:

“It's the bar that the board sets and says "You can't go here" or "You can't cross this line," and those would be things like financial policies and human resource policies and so on and so forth, and those are the boundaries within which the CEO needs to operate” (Interview participant D).

Case study NGOs recognize the connection between these policies and the expectations of volunteers and staff. The recent addition of a media relations staff member to one organization has been valuable but there is still more work to be done:

“And we are still in our infancy in how to deal with the media but that would be the goal, to get more and more media attention. We are pretty small still for this to happen but we are cognizant that we have to have something to say and we need to be ready, if they call. By bringing in this media relations role, it has been a huge help...we have media lines we are working on and have primarily left it for our CEO to be the spokesperson...it's in its infancy but I think it will grow over time. The challenge is that we are not a large organization with lots of resources to take it to a much higher level.” (Interview participant C).

Another organization recognizes the limits in their organizational policies but strives to find new opportunities to better support committee volunteers:

“There are some but I think there definitely could be more [policies and procedures that assist volunteers with hosting events]. The really successful group in BC has a discussion happening every second month, at the same time and location. They have a coordinator for it and all they have to do is get someone to come talk each time. So, I think if we build off that model, I think we could do more to help these committees, either telling them the date and location etc. There are a lot of ideas but the issue is getting them into action” (Interview participant G).

Governance and management policies and procedures are intended to guide staff and volunteers through the organization’s decision-making processes but as case study NGOs have described, the development and review of these documents extends beyond the resources available within most organizations. The capacity to conduct governance reviews is a considerable barrier for case study NGOs.

Methods for sourcing and conducting work.

Document analysis indicated the majority of the work done by case study NGOs consists of education and training such as hosting seminars, workshops or conferences. When sourcing work, all case study NGOs utilize a similar approach where ideas are presented through technical committees and brought forward to the Board of Directors for review against strategic directives. All organizations identified that financial restrictions impacted attendance at events and there are insufficient resources to get ideas off the ground. The following is an example of an organization speaking in reference to hosting their annual conference:

“The attendance was lower than we would’ve liked but the thing was that we knew we would be losing a 1/3 of the attendance [from] government because of budget restrictions. I mean, I couldn’t send many people from my department and the conference was [local]. The restrictions in the economy are challenging and we did ok and I think the people that were there found it to have a lot of value” (Interview participant G).

Case study NGOs have recognized the need to look at how events are run and identify methods in which operations could be streamlined to maintain the same level and quality of outreach and education activities but with modifications for improved accessibility and reduced cost. For example,

“...The people on the Board of Directors have been there for quite a long time and remember the days when you could go for an afternoon from work and that was supported and now, people can’t do that anymore so I am hoping for our branch to do some strategic thinking on how can we meet the needs of today: what do people want? How can people attend? How do they want to get this kind of information?

And what do expect to hear from these discussions?

It’s really about getting people to say what forms of access they need. Is it going to be all webinars and you can sit at your desk so we are going to try to a bit more of that? Do you want webpages updated – and this is something we can’t do easily because we don’t have the staff to do it? Is it before work or lunchtime events? Are there regional groups that need to be formed? I would like to have more regional representation. Also, it seems like free events are more viable versus paying \$100 for an all-day event. So maybe it’s having a higher frequency of smaller events and hoping that people can come” (Interview participant G).

Collaboration has been identified as an opportunity to share resources and co-host events that have aligned priorities. Case study NGOs indicated that collaboration does occur but in an informal and opportunistic manner. These informalities have caused tensions within the water community as similar events have been hosted by other water organizations resulting in

competition for attendees. Also, accessibility to events is considered to be a high priority for case study NGOs and in order to make these events more accessible, web-streaming technology and tiered payment systems have been used to assist with attracting province-wide attendees including students and young professionals.

Volunteer management.

Volunteers within case study NGOs hold positions as elected members of the Board of Directors within administrative and technical committees and are essential resources that assist these organizations to meet their goals and objectives. Managing volunteer burnout is a considerable operational challenge for case study NGOs as described by Robins (2007), “care and feeding of Boards is not an insignificant activity and they have to have meaningful involvement” (p. 22). One interviewee described the following,

“In 2004, I started on the Board. At that time, it was a large Board that operated in a similar manner to other organizations and they already had been looking at succession planning and volunteer burnout. There had been a lot of organizational growth in the 90s, and volunteers were starting to burnout after a decade of high activity levels. So the board started looking at how they could address this issue” (Interview participant D).

Volunteer recruitment has been cited as being central to supporting the capacity and sustainability of local organizations (Morris & Brandes, 2013). One thesis case study organization describes the existence of policies and procedures that were not sufficient to assist volunteers with hosting big events such as a conference and the organization is looking into other options to improve these processes. For example,

“And I think we do have, even for the seminars, instructions and guidance but it’s still a lot of work to figure out a date, venue, confirm speakers etc. And I have found that after this conference, it just burns people out and I have some people saying that they are not going to stay on the board because they are done. And so it’s important to figure out a way to not burn people out when they contribute a lot to the organization” (Interview participant G).

Another organization recognized the need for a shift in their governance arrangements to allow the Board to focus solely on strategic directives. This organization cites this as a significant step in retaining members and growing interest in technical committees. For example,

“In the old system, the volunteers were doing a lot of the administrative components on top of everything else. In our new model, we are making good use of these people’s subject matter expertise. They provide input into position statements, writing technical articles for our magazine and it’s a direct link to their profession. So that’s the difference. Providing subject matter expert support is of much more interest to them than doing administrative functions” (Interview participant F).

Stress and time management were also identified as sources of volunteer burnout. Robins (2007) describes that many Board members often enter into a demanding position. Interviews cited volunteer burnout as common across each organization with some participants identifying an opportunity for training on time management. The following excerpt identifies this opportunity and the potential positive impact presented from the commitment of volunteers,

“I think it is something we need to look into as we head into these big events on how do people manage their time and energy? How can they draw on others to help them? Maybe we need to do some training on balancing priorities. It does amaze me to see what people are able to bring even after a heavy workload at work and that’s what keeps me going” (Interview participant G).

Organizational actors and volunteers are the face of the civil society organizations and in order to attract and retain qualified personnel and volunteers, processes need to be streamlined to provide as much value as possible (Robins, 2007). Case study NGOs have presented opportunities through training and shifts in organizational governance that can add value to volunteer-based processes and support the recruitment and retention of qualified personnel.

Communication and choice of language.

Communication plays a central role in how case study NGOs meet their goals and objectives. Whether the organization is communicating to their membership or providing a forum for knowledge and information exchange to broader constituencies, case study NGOs play an important role in supporting and engaging the provincial water community. Watershed-based organizations in British Columbia identified the need for effective communication as an important area for capacity support (Morris & Brandes, 2013). All case study NGOs have a policy that outlines the roles and responsibilities within the communication platform from which they operate such as internal memos, meetings, minutes and print media. Guidelines are established that indicate the frequency and format for communicating with the Board of Directors in addition to external stakeholders and the media. Further communication options were discussed and all organizations identified the need to reach a broader audience effectively and inexpensively with social media being identified as a good opportunity for some organizations.

From an operations perspective, case study NGOs identified that maintaining current web content is a challenge despite having a communication plan in place or staff dedicated to maintain it. Common examples of challenges related to web development were time, cost and insufficient staff. However, all case study NGOs considered websites to be a primary communication tool with two of three organizations having redeveloped their website in the past 6 months. The following excerpt identifies how one organization is trying to streamline their communication processes as well as identify new opportunities to reach their constituencies:

“...I am working with a few people on the BOD to work on the communications strategy: updating it, added some improvements on how can we communicate with our members and making that job easier, maintaining the distribution lists, broadening our use of tools ... Also, we have revamped the newsletter which we used to pay an outside contractor quite a bit of money to develop but now we are sending it out electronically. We have a volunteer who spends about half a day and she sends it out. So basically, just trying to make things more efficient. And we can't afford to spend \$5000 to put out a newsletter and now we can do it for free and actually bring in some revenue from advertising” (Interview participant G).

Case study NGOs have also recognized the importance in the choice of language when communicating. As educators and facilitators regarding water management, planning and practice in BC, actors within case study organizations recognize the importance of understanding the intended audience and catering the language accordingly. One interviewee described this type of communication as “translation” in relation to the organization’s outreach capacities:

“...the model basically then is that the knowledge is available in our community already and our job is effectively one of communicating, organizing, what's the best word, translating, I guess, across functional lines, across disciplines. And in

terms of evidence that we've been successful there: I mean, I guess I'd hold up just our annual conference and the fact that we've got people from all walks attending the conference, that there are sessions that are delivered effectively by academics, by operators, by lawyers and policy people, by engineers, sort of by professional communicators, and that those same sessions are attended by people in all those different kinds of disciplines" (Interview participant F).

Actors within case study NGOs recognize that it is essential to effectively communicate their messages across a diversity of jurisdictions. Further, case study documents and interviews identified that communication exists in many forms and accessibility is key to ensuring the message gets out. The use of social media alongside traditional media is seen as a communications opportunity for many case study NGOs. In addition, actors recognize the need to consider the choice of language used when hosting a knowledge-sharing event and to ensure the correct fit for the intended audience.

Organizational position.

Organizational position within the water policy landscape is an important consideration when exploring the roles of NGOs in decision-making and policy development. Organizational position considers the boundaries within which an organization operates in relation to its stated mandates. Boundaries are a defining characteristic of organizations and boundary roles "link organizational structure to its environment whether by buffering, moderating or influencing the environment" (Aldrich & Herker, 1977, p. 218). Interviews explored the concept of organizational position to provide insight on how case study NGOs are positioned in relation to formal decision-makers. Acting outside the government realm, NGOs can operate in many ways

in relation to their mandates, whether through indirect or direct influence or collaboration (Harding, Hendricks & Faruqi, 2009, p. 110).

Although the case study NGOs implied that “individuality” was important to secure their place (organizational position) within the water community, they all described similar methods to meet their stated mandates and objectives. Three NGOs host events for and provide extension services to their members. Two provide open access to their publications and resources and one applies a “membership-only” requirement for access to some documents. They all shared resources for information and knowledge exchange events, and they all conduct research and develop policy and position statements and practice guidelines for their members. Some examples of specific activities discussed in the interviews follow.

Revenue sharing options were explored at the 2013 Joint Scientific Congress co-hosted by the Canadian Meteorological and Oceanographic Society, the Canadian Geophysical Union and the CWRA. A similar event held in Vancouver in 2012 allowed the FBC to work in partnership with provincial government, funding and civil society organizations to explore solutions for collaborative water governance (Pacific Business and Law Institute, 2013, par 1). This form of collaboration identified some complications specifically around revenue and resource equity as well as accountability and legitimacy for participants. However, as one participant said, the perceived benefits of collaboration outweighed the potential costs (Participant F, personal communication, May 21, 2013).

The BCWWA describes its role as being a formal advocate for providing a “voice for water,” and its relationship with decision-makers as “influencing the influencers” (Participant D,

personal communication, May 16, 2013). Through its Drinking Water Week program, BCWWA has been working in partnership with municipalities to assist with awareness and capacity building through a grant program aimed at community groups who are doing work in the area of their organizational mandate:

“We also try to work in the realm of raising public awareness of water and this will be our 3rd year running Drinking Water Week. So that was something that we said to ourselves “how are ever going to impact the public’s view on valuing water etc.”. So we started off the first year with no resources or funding and using our own money and staff, we did we could do. What we learnt from that is that you are out there competing for public attention with the cancer foundation etc. and we realized that we needed to try a different approach. So we have taken the approach that we want to influence the influencers. So what we have done is develop a really great working relationship with local governments. So we are encouraging local government to put on events in their area such as planning watershed tours etc. In our second year, 2012, we had more than half of BC’s local governments proactively involved in activities in their communities around raising awareness of drinking water. And this year, we will have even more” (Interview participant F).

BCWWA’s relationship with local government is based on aligned priorities and initiatives and encourages government participation on issues because of the less adversarial or controversial approach (Participant D, personal communication, May 16, 2013). This collaborative relationship with government implied that BCWWA has a role that exists beyond its formal operational boundaries.

Operating as a charitable not-for-profit organization, the Fraser Basin Council utilizes collaboration to meet its goals and objectives. Adhering to its overarching Charter for Sustainability, the FBC strictly derives solutions for their projects through consensus-based project-specific approaches that provide the best solution by engaging decision-makers, First

Nations and other civil society organizations (Participant I, personal communication, July 9, 2013). While the FBC does not have legislative authority, participating directly with decision-makers and other community agents in a collaborative manner implies legitimacy in a broader context. Often confused as an advocacy organization, the FBC considers any work it conducts must fit within its broader mission for “advancing sustainability in the Fraser watershed and in BC” (Participant I, personal communication, July 9, 2013). The operational relationships that exist between FBC and formal decision-makers indicate that this organization primarily operates outside the formal operational boundaries of other case study NGOs as a bridging agency enabling many organizations to participate in a collaborative process.

Overall, there is evidence that the mandates and activities of case study organizations provide fluid organizational boundaries that support organization-focused interests as well as interactions among water organizations and with formal decision-makers. Further research on the boundary spanning roles of these organizations would be beneficial for expanding our understanding of the informal and formal roles, actions and authorities of these water organizations.

Organizational voice.

A good communication plan also fosters a voice and a message for the organization that can be shared with its stakeholders and constituents. Rogers (2003) describes organizational voice as “the configuration of mutually constructed and dynamic writing and speaking practices and products that enable, define, and re-define the individual roles and collective relationships,

tasks, goals and values of an organization” (p. 11). The use of a dynamic semi-structured approach to interviews enables participants to revisit earlier discussions for reference purposes or to elaborate or reinforce earlier answers.

The line of questioning in this case study focused on the development of organizational voice through the use of position statements and avenues for formal advocacy. Discussions on the voice of case study NGOs found different perspectives among interview participants. When asked, they agreed that the voice of the organization was an important consideration for operations however, many felt inhibited or restricted from contributing to advocacy activities. Organizational status and possible conflicts of interest were cited as the most common barriers to participation in formal advocacy by case study NGOs.

As per the *Society Act* of British Columbia, the activities of a not-for-profit organization are guided by ensuring the use of its funds and profits are for the purposes of the society itself (Government of British Columbia, n.d., par 4). The BCWWA is registered under this act as a not-for-profit. In comparison, a registered charity must meet a public benefit test to demonstrate that the organizations activities provide a tangible benefit to the public and the activities must be legal and not contrary to public policy (Canada Revenue Agency, n.d., par 2). In many ways, the charitable status of CWRA and FBC negates the ability of these organizations to participate in formal advocacy. It was not surprising to see many interviewees describe the fear that exists around advocacy and the impact it might have on their career or the careers of others by being involved. Some participants also raised concerns about professional conflicts of interest.

One participant addressed organizational status and related professional concerns as follows:

“At the end of the day we're all serving the public and of course the other sort of fundamental criteria in this is that we're doing things that are in the interest of the environment, we're doing things that are sustainable. Everything gets looked at through that lens. The other criteria that we use for developing positions and for what we're going to advocate on include making sure that our positions are balanced and reasoned and are not based on conjecture, they're not partisan in nature, if I can put it that way, there's a whole bunch of checks and balances that the association has put into place to make sure that if it's going to go out and advocate for something publicly, if it's going to take a position on something that it's a position that's on the right side of the public, it's on the right side of the environment, and it's broadly defensible, and it's not something that's going to alienate a large chunk of its constituency” (Interview participant C).

Regardless of the confident approaches taken by this participant, differing perspectives arose from discussions on the concept of advocacy, with the following interview excerpt presenting a more challenging viewpoint:

“I think we are, as an organization, we are too shy to be provocative and if there is a press release or a position statement, I think it's ok to rub a few people the wrong way and it can be done in a respectful way and within a certain boundaries.

And what would these boundaries look like?

I think it's too difficult to define but I suppose for example, the Board of Directors, amongst a group like that, you should be able to come up with a relatively powerful words on an issue but what ends up happening is that the words become so watered down to the point that they do not have much meaning. And that is a real problem for the organization to maintain relevance and it's about that balance you described between a non-lobbying organization and having a position” (Interview participant E).

These responses underline the importance of organizational voice and provide some reflections on how it is influenced by organizational status and professional conduct

considerations. Harding et al. (2009) describe that many non-governmental actors take on a number of roles simultaneously often resulting in professional dilemmas yet many have been successful in influencing decision-makers through their reputation as acting in the interest of society. Interview participants described the complex relationships between their personal civil liberties and professional conduct.

When these comments are considered in relation to what all three case study organizations are doing, the evidence suggests they address policy-related issues by placing value on being a voice for their members strategic interests through knowledge development and sharing, member education and practice training, public education, water planning and practice advocacy through the development of professionally based position statements and leadership and participation in water planning and practice.

Case study NGOs identified several barriers to meeting their goals and objectives such as operational challenges, communication, language choices and the influence of these on organizational voice and position. Each barrier identified challenges and areas of focus for case study NGOs to advance their organization as well as provide insight into the operational context of NGOs within the provincial water community. The following section provides further insight into the specific opportunities for case study NGOs to improve operations and to assist with meeting their stated mandates.

Supporting conditions for case study NGOs

Considering the operational limitations that were previously outlined, case study NGOs require assistance to meet their strategic goals and objectives. Document analysis and interview discussions focused on supporting conditions for actors and the organization including applying governance principles introduced as themes in Table 2 and sourcing opportunities for collaboration. Organizational actors are further supported through internal capacity building and being provided with opportunities to contribute to meaningful work. The following sections will further describe the emergence of these themes.

Applying governance principles.

As summarized in Table 3, documents and interviews identified the existence of supportive principles, policies and procedures and the availability of resources as the primary methods to enable case study NGOs and their actors to meet their goals and objectives. As described earlier, many operational limitations were identified which focused on limited resources within the organization. Some documents and interviews also described supportive conditions that enabled their organizations to meet their strategic goals and objectives, which include equity, accessibility, coordination, diversity, flexibility, building trust and continuous improvement. Discussing these themes together provides a loose foundation for “effective” governance principles, policies and procedures.

Accessibility was used within document analysis in relation to making programming and events available and convenient, providing access to several communication mediums or

sourcing opportunities for regional representation. Coordination was used when excerpts considered the broader policy and programming requirements within the water community such as developing partnerships to design collaborative programming or having internal resources dedicated to coordination. Case study NGOs also described that when coordination occurred, it did so informally.

Equity was used to describe occurrences when constituents were provided with equal opportunities for involvement in organizational activities, for example the FBC's consensus-based decision-making process. Diversity was applied to content that referenced representation of multiple perspectives within the Board of Directors and volunteer committees. Also, diversity was used to describe the expansion of the engagement approaches used by the organization as well as instruments for performance evaluation.

Flexibility was applied to content that represented instances where the organization was able to adapt to the situation, whether it be in response to a crisis or to pursue an unforeseen opportunity, for example forming a strategic partnership if it benefits the water community. Similarly, inclusivity was applied when case study NGOs considered the diversity of actors involved in an issue. Examples include CWRA's multidisciplinary approach to water resources and FBC's mission to establishing a good process for consensus-based participation.

Transparency was an important theme applied to content that indicated where case study NGOs made a commitment to provide open and accountable decision-making. Some case study NGOs describe transparency within their values, mission statements or guiding charters. Interview content describes instances where coordination and transparency were important

consideration within planning programming to ensure that all organizations have the ability to host events without the concern of overlap and competition for attendance. Transparency and inclusivity were also very critical to the development of BCWWA's public voice. For example,

“The idea, when you look at the broadest vision or mission for the association or desired future state of the water and waste community is that the knowledge of all practitioners in the community is enhanced. So, with that very broad view, the business model effectively needs to be as open as possible.”
(Interview participant F).

Case study NGOs also described that when issues arose, it was important that they were handled with care and respect. For example, during BCWWA's governance transition, providing clear definitions of roles and responsibilities within the organization was described as assisting with change management and maintaining relationships with Board of Director members (Participant E, personal communication, May 16, 2013). Also, coordination through good dialogue was described as being important to ensure legitimacy and to build trust across the water community as event planning took place.

Continuous improvement was described as being an important step in advancing case study NGOs. All organizations indicated the need to critically evaluate programming and processes across the organization as they relate to the strategic goals and objectives. Also, identifying process changes was described as an important consideration to improve efficiency and reduce burdens on staff and volunteers. Some approaches to continuous improvement adopted by case study NGOs include a rigorous performance evaluation and reporting program, monitoring dialogue during meetings for content and brainstorming opportunities to improve processes.

Evidence from case study documents and interviews suggests that principles of equity, accessibility, coordination, diversity, flexibility, building trust and continuous improvement are critical to building a supportive governance framework for internal processes. Documents and interviews also begin to describe the important interrelationships among these principles as being fundamental to the operation of case study NGOs as they deal with the challenges associated with the allocation and management of complex adaptive water management systems.

Sourcing opportunities for collaboration.

As described earlier, coordination within and outside case study NGOs was an important consideration for maximizing resources, ensuring inclusivity and building trust within the water community. Morris and Brandes' study (2013) identified collaboration and peer-to-peer learning as important to supporting BC's water movement. All case study organizations have formal collaborative arrangements through strategic partnerships such as parent or peer-to-peer organizations, which are mostly identified through composition of their Boards of Directors. Case study documents have also identified that collaborative event planning has taken place with a focus on sharing resources, funding and to improve programming. Some of these organizations even have operational policies outlining the criteria for developing formal working relationships. Outside these formal agreements, case study NGOs describe collaborative opportunities as mostly informal relationships that happen "as opportunities arise", occurring primarily across peer organizations. Because of the differing operational

scales, CWRA has had better success in collaborating formally with other national organizations.

Other organizations, such as BCWWA, have collaborated with other organizations to influence policy, for example, strengthening national water policy as described:

“So we have definitely identified the need [a strong voice for water], especially at the national level. There are so many great organizations that are doing great work in water resource management across Canada but it is fragmented and it makes it difficult to impact policy, at the Federal level. For example, who does government turn to when they want to have broad representation on water issues? You need coordination between provincial and federal regulatory frameworks that only provincial organizations can bring. So we are really trying very hard to strengthen the voice for water through collaboration” (Interview participant F).

Morris and Brandes (2013) support the concept that watershed organizations have an easier time collaborating across horizontal scales compared with vertical scales but there is also a need for peer-to-peer learning and sharing. Collaborative efforts from case study NGOs exist mostly through their formal relationships with parent and peer organizations. Anything beyond these existing relationships happens opportunistically. The fragmentation and competition of resources within the water community are significant limitations that may be overcome through increased coordination and collaboration province-wide. Opportunities exist for the water community to work within this realm.

Capacity building within the organization.

Harding et al. (2009) outline that many non-governmental actors are informed of current advocacy issues through their membership with professional associations and their professional work, and further describes the need to integrate knowledge through collaborative spaces and

approaches to knowledge production to include sources from a wide range of disciplines. Case study NGO documents and interviews indicate the high priority of capacity building within and outside their organizations especially in reference to issues of interest to the broader water community. For example, the following quote from a FBC document underlines the critical need for capacity to engage in creative problem solving and to work together at the community level:

“There is considerable value in regional, face-to-face gatherings on water and watersheds; to share information, to foster and strengthen relationships among individuals and organizations, to maintain momentum and to galvanize support for initiatives such as watershed planning and stewardship” (Fraser Basin Council, 2012, pg. 2).

Documents and interviews also presented a connection between the tenures of participants and the flexibility within the organization to accommodate freedom to speak about and act on issues from staff, committee volunteers and members of Boards of Directors. One participant described the support network within their organization as being critical to success as described,

“One of the things I really appreciate about the group is that because we were part of a bigger organization, it gave us a lot of liberty and more ability to make things happen. As part of the organization, I would be interested in doing something and all I have to do is ask someone and I would have an entire organization behind me to support me to make it happen. So that’s one of the things the organization is really great for; being a support for making things happen” (Interview participant B).

Case study actors indicate the importance of having supportive policies and procedures within the organization to foster creative problem solving as well as provide the liberty and freedom to act on issues of interest to the water community. Being able to provide constituents

with opportunities to gain insight on current water issues is an important priority for case study NGOs.

Providing opportunities to learn.

Case study NGOs further describe the importance of knowledge exchange, networking and mentorship activities on their ability to meet strategic goals and objectives as well as to provide a foundation for succession planning. Knowledge exchange is central to all case study NGOs mandates as it provides learning opportunities for membership and assists awareness building across the greater water community. Learning opportunities within case study NGOs exist in both formal knowledge exchange and information sharing for example through seminars, conferences and technical tours, for example,

“Providing resources to the people who engage the members and opportunities for learning. Ultimately the group exists because it provides interesting opportunities for water professionals. Why do people want to be part of this organization? They do cool things and we want to learn things from them.”
(Interview participant B).

Documents and interview participants also cited opportunities for reflective and experiential learning. The FBC indicated that having decades of knowledge, experience and continuous improvement is critical to their ability to measure and report on sustainability. Other case study NGOs described occasions where reviews took place regarding programming and provided an opportunity for reflection to improve future events.

Case study NGOs also described the value in networking and mentorship opportunities for their staff and volunteers, especially students and young professionals. The BCWWA has young

professional and student committees that focus on programming geared towards this demographic. The CWRA also supports student and young professional committees as well as a national mentorship program. The FBC has also hosted youth focused capacity building events and has a Youth Advisory committee that reports to the Board of Directors. Organizations also cited using mentorship for staff and volunteers as a softer approach to skills development. One interview participant described their experience with a young professional committee as follows:

“I remember the first committee meeting for the YP, there was a guy who was a graduate student from the same department who I worked with during my undergrad. And it was great opportunity to reconnect again and go for dinner with afterwards. And every time I attend the conference, there are opportunities for me to connect with my old supervisors or you often meet people whose names you have seen, who you are competing with on work, names that keep coming up because they are doing similar work as you. So when you go to a conference, or attend these events, you get a chance to meet these people” (Interview participant A).

Hosting learning opportunities are cited within documents and interviews as being the primary method in which case study NGOs engage with their constituents. Formal and informal knowledge exchange events exist across case study NGOs and provide avenues for experiential and reflective learning. Students and young professionals are particularly advantaged by information and knowledge sharing events and networking opportunities were cited as being valuable experiences for this demographic within the organization.

Contributing to meaningful work.

Long tenures within case study NGOs were cited as being rooted in the organization having a long history and strong reputation in the province. The CWRA described the strength of their organization was entrenched in their “multidisciplinary approach to water” while the BCWWA indicated it was their ability to “provide a neutral ground to achieve objectivity on issues”. The FBC considered their “coordinated and cooperative efforts” underpinned their ability to make traction on many community-based initiatives within the province.

Long tenures were also associated with “having fun” and seeing value in the work being done. As previously described, organizational documents provided insight on the need for policies that enable volunteers to contribute to the work that interests them. Considered as meaningful work, an executive staff member describes the priority to make good use of volunteers “subject matter expertise” within all activities conducted by the organization. When asked what their main driver was to volunteer with the organization, another participant responded:

“It’s hard to say. It’s fun. It’s a nice organization to be involved in and I like what they do. I joined as a student because people said, “I should”. And then you attend the conference, you read the magazine they put out and then you realize it’s a great organization to help and it all snowballs from there.” (Interview participant A).

Overall, evidence suggests that long tenures within case study NGOs are related to the organization’s ability to provide a space for freedom of expression and action on issues within the water community. Considered as “meaningful work”, some interview respondents indicated

that providing subject matter expertise was of more interest than performing administrative functions and “having fun” was the main driver for their volunteerism. Further support was provided by policies and procedures that presented the foundation for this freedom and liberty.

Results Summary

In their broad study of water movement organizations in BC, Morris and Brandes (2013) report that these organizations are faced with stretched budgets, limited time, volunteer burnout and increasing demands resulting in challenges for resource allocation towards capacity building and forging connections within the BC water community. These findings were reiterated by NGOs studied in this thesis. For example their challenges include resource limitations, operational inefficiencies, management of volunteers, organizational position and voice. Notwithstanding these challenges, it is also evident that by building flexible policies and procedures to support capacity building and knowledge sharing within and beyond their organizations case study NGOs were better able to work towards achieving their strategic and operational goals and objectives.

Navigating the Waters: Advancing Water Planning and Practice in BC

The adoption and use of principles of adaptive water governance is still evolving in BC. By focusing on learning in an iterative and social manner to foster adaptation and collective action, case study NGOs are well positioned individually and as boundary or bridging agents to achieve their intended outcomes to improve water management practices. The following section will describe these emerging outcomes and present recommendations for enhancing collaboration, capacity building and organizational efficacy across the BC water community.

Emerging Outcomes from Case Study NGOs

Organizational documents and interviews presented a number of intended outcomes achieved by case study NGOs. As summarized in Table 2, organizational outcomes include effectively advancing the organizations' goals and objectives by seeking new opportunities, adding value, building a reputation for excellence, engaging others, and respectfully managing culture change. Outcomes for organizational actors include awareness building to help understanding of water issues and expanding paradigms, fostering inspiration and pride in the organization as well as building and maintaining trust. Many of these outcomes are related to governance arrangements. Successful organizational programming and its significance will be further described in the following sections.

All case study NGOs have dedicated resources to both strategic planning and the performance evaluation of their governance frameworks and operations. They described how the bulk of the work done by staff and volunteers, particularly strategic planning and

performance evaluation, focuses on advancing the organization by seeking new opportunities and adding value in an effort to meet goals and objectives. While some organizations are more formalized than others, document and interview content identifies the primary outcome of these efforts is to ensure the organization adapts to the needs of its constituents and the broader water community, particularly in advancing Provincial Government water policies and practices. The following examples provide further insight regarding how individual case study NGOs support engagement and awareness to strengthen and have an informed water sector.

The BC Chapter of CWRA seeks opportunities for collaboration on event planning (Participant B, personal communication, May 2, 2013). The BCWWA has recently focused on building strong relationships with other industry associations, specifically those that are large water users in BC, with the hope it will build awareness and expand paradigms regarding water management practices within other industries (Participant E, personal communication, May 16, 2013). The FBC adopts a similar approach by providing open online access to reports and presentation summaries. Additionally, Morris and Brandes (2013) describe that shared resources and success stories would help address the need for better communication and engagement at the community and grassroots level. Their study and this one indicate that commitment to information and knowledge sharing through engagement assists in this process.

An organization's reputation is central to its ability to meet its goals and objectives and in particular, influences policy development and reform. The BCWWA and CWRA place their organizations' reputations as a high priority item for strategic planning, which they link to their role as influencers of water policy and practice, in particular when acting as boundary agents or

when focusing on the science-policy interface. The FBC's Charter for Sustainability supports consensus-based decision-making, supported by its reputation for facilitating good processes (Participant I, personal communication, July 9, 2013). This approach supports FBC's possible role as a bridging agent for governance reform at the local level.

Interviews and documents also demonstrate that pride held by organizational actors towards their organization assisted in the organization's efficacy. The CWRA described their history as a national water organization as being central to their ability to provide opportunities for members from different disciplines to participate in broader and complex water management discussions (Participant B, personal communication, May 2, 2013). Actors within BCWWA describe how much "fun" it is to volunteer and they have pride in their ability to formulate balanced and factual position statements that will be used to shape policy and regulations (Participant D, personal communication, May 10, 2013). Organizational pride proved to be an important element in ensuring organizations met their goals and objectives.

Case study NGOs also recognize the connection between program development and the desire to foster inspiration and action on water issues. The FBC's Charter for Sustainability acts as an "inspirational and enlightening guide in our collective journey to sustainability" (Fraser Basin Council, 2013). The BCWWA's focus on providing opportunities for volunteers to contribute to "meaningful work" has fostered inspiration and a sense of pride in being able to engage with water issues in a meaningful way (Participant D, personal communication, May 10, 2013). These organizations have demonstrated they are committed to building the conditions

where their organizational actors feel inspired and have pride in the work they do, which has positive implications in the organization's ability to meet its goals and objectives.

In times of transition, organizational culture change is supported by the strong values of organizational actors. Actors from BCWWA described that clarity of roles and respectful change management were central to successfully transitioning to a policy governance arrangement for their organization (Participant E, personal communication, May 16, 2013). Another tenet of an organization managing change is its ability to build and maintain trust. The BC chapter of the CWRA is seeking new opportunities for how they present their events and programs and a component of this process is for the Board of Directors to have conversations with members to identify perceptions across the organization (Participant G, personal communication, May 22, 2013). The FBC describes that trust underpins their commitment to sustainability through a consensus-based decision-making process and methods used to build trust are tailored specifically to the project (Participant I, personal communication, July 9, 2013). In times of change, commitment and alignment of values are important components to successfully navigating culture change. Case study content further suggests that building and maintaining trust within an organization is directly beneficial for building social capital and a resilient actor community and is influenced by transparency and legitimacy.

Case study NGOs focus on adapting their programming to add value and to reflect current water issues in ways that improve their reputations and by extension their influence on the development of water policies and regulations. Further, commitment to respectfully manage organizational culture change was important for organizations undergoing transitions

as there is a need to build commitment, align values and trust through transparency and legitimacy. Actors within case study NGOs also described that being able gain knowledge and experience through programming and networking and contribute to water issues fostered inspiration and pride in the organization. These findings about case study NGOs serve as the basis for the following recommendations for these and other water-focused organizations.

Recommendations for Advancing the Provincial Water Community

In general, case study NGOs and other water-focused organizations benefit from proactively applying good governance principles, supporting social learning through collaboration and expanding the roles of water NGOs. Collaborative possibilities include a water governance focused seminar series, developing communities of practice and seeking opportunities to build in legitimacy and equity within revenue-sharing mechanisms. As case study NGOs need to identify new methods of influencing decision-makers, governance reform can take place at the grassroots level by developing citizen-based science programs, communities of practice and watershed governance pilots as well as forming a coordinating provincial water agency focused on bridging capacity-building gaps across the provincial water community. Fragmentation and resource limitations hinder the development of community-based water organizations and within an era where there is the erosion of formal avenues for influencing decision-makers, water NGOs must seek innovative opportunities to develop and bring visibility the water sector.

Applying “Good Governance” Principles.

Connectivity exists between the operational challenges and emerging outcomes indicating that case study NGOs have a basic understanding of the relationship between governance and organizational goals and objectives. As described earlier, good governance involves the use of 8 principles that are central to assuring accountable and inclusive decision-making that is responsive to present and future needs of society (UNESCAP, 2013, par 8-16):

1. Participation;
2. Consensus-oriented;
3. Accountable;
4. Transparent;
5. Responsive;
6. Effective and efficient;
7. Equitable and inclusive;
8. Follows rule of law.

These principles are already being applied by case study NGOs in ways that cater to their intended goals and objectives. The FBC adopts many of these principles within their guiding Charter for Sustainability and their consensus-based decision-making platform. Similarly, the BCWWA pride themselves on their governance arrangements where accountability, transparency, responsive, equitable and inclusivity underpin its focus.

It is recommended that the case study NGOs and other water organizations develop individual governance committees to facilitate their roles in pursuing water policy and management reform.

Supporting Social Learning through Collaboration.

Fragmentation of provincial water organizations limits the cohesiveness and the ability to foster collective action on water issues across the province. Opportunities for collaboration can assist with providing accessible province-wide capacity-building events in an effort to build a strong and informed provincial water community.

It is recommended that case study NGOs continue to focus on collaborative capacity building and networking by:

- Offering water governance and water management-focused seminar series, with different provincial organizations rotating as seminar hosts;
- Developing formal communities of practice consisting of a broad stakeholder representation that can thoroughly investigate particular issues; and
- Task and resource sharing to help address limited resources within organizations.

Some potential sources of conflict include the legitimacy of participating organizations within planning and equity and fairness within revenue sharing. In order to build a provincial water network that possesses strong social capital, it will be essential to ensure the legitimacy and equity of all participating organizations.

It is recommended that:

- Revenue sharing models need to be transparently negotiated in advance to build and maintain trust within the network.

Expanding the Roles of NGOs through Water Governance Reform.

Expanding the roles of water NGOs in decision-making has been cited by many organizations as a method of bridging fragmentation and capacity-issues within government. Community-based water monitoring programs have been successful in many parts of BC with civil-society organizations conducting work based on approved sampling protocols on behalf of government agencies (Walker, 2009). Case study NGOs would be particularly useful collaborators as they broadly represent the provincial scale of water management and have expertise and knowledge.

It is recommended that the three case study NGOs and perhaps other water organizations such as the Okanagan Basin Water Board and the POLIS Project for Ecological Governance collaborate on considerations related to establishing a coordinating body as a simple method for decision-makers to engage with the water community on policy development.

Summary of Recommendations for Water-based NGOs

Outcomes from documents and interview content presented that organizations focusing on adapting their programming to add value and to reflect current water issues will improve their reputation and ability to influence development of water policy and regulations. Further, commitment to respectfully managing culture change was important for organizations undergoing transitions as there is a need to build commitment, align values and trust through transparency and legitimacy. Actors within case study NGOs also described their ability to gain

knowledge and experience and contribute to water issues fostered inspiration and pride in the organization.

Case study NGOs would benefit from more rigorously applying good governance principles, supporting social learning through collaboration and expanding the roles of water NGOs through water governance reform in an effort to support organizational capacity and satisfaction of its actors. It would be beneficial for water NGOs to develop a governance committee to focus on policy reform to focus on mitigating organizational inefficiencies, resource limitations and support volunteer engagement by building flexible policies where actors are able to focus their efforts by contributing to meaningful work.

Case study NGOs would also benefit from focusing on social learning opportunities and specifically collaboration and shared resources in planning this programming. Collaborative possibilities include water focused seminar series, developing communities of practice and seeking opportunities to build in legitimacy and equity within revenue-sharing mechanisms.

As case study NGOs identify and pursue new methods of influencing decision-makers, governance reform can take place at the grassroots level by developing citizen-based science programs, communities of practice and watershed governance pilots as well as forming a coordinating provincial water agency focused on bridging capacity-building gaps across the provincial water community. Fragmentation and resource limitations hinder the development of community-based water organizations and within an era where there is the erosion of formal avenues for influencing decision-makers, water NGOs must seek innovative opportunities to develop and bring visibility to the water sector.

Conclusion

The principles of adaptive water governance blend many of the components of adaptive management and comanagement through a specific focus on learning in an iterative and social manner to foster adaptation and collective action. While many of the principles of adaptive water governance are still evolving, organizations operating within these contexts can be positioned as boundary or bridging agents focusing on the science-policy interface or more centrally positioned to facilitate the inclusion and consideration of the multi-stakeholder perspectives at play in water decision-making.

Morris and Brandes (2013) describe that watershed organizations within BC are faced with stretched budgets, limited time, volunteer burnout and increasing demands resulting in challenges for resource allocation towards capacity building and forging connections within new areas of the water community. Case study NGOs reiterated these points as they described the impacts of operational and resource challenges on their abilities to meet strategic goals and objectives. Examples of challenges include resource limitations, operational inefficiencies, volunteer management, organizational position and voice. Supporting conditions for organizations include building flexible policies and procedures that support capacity building and knowledge sharing events within case study NGOs and beyond.

My recommendations address these points. A first step would be to have these considered by case study NGOs, other organizations in the BC water community and by government through water governance advisors and managers. Recommendations would be presented to case study NGOs and to the broader water community through a publication and

workshops with other interested stakeholders. It would be beneficial for the research outcomes and recommendations to be shared openly to build bridges across the water community in an effort to seek innovative opportunities for developing and bringing visibility to the non-government water sector.

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Appendix A - Glossary

Adaptive capacity: Ability of actors in a system to influence resilience (Berkes & Ross, 2013).

Accountable: Required or expected to justify actions or decisions; responsible (Oxford Online Dictionary, n.d.)

Actors: The individuals who are actively involved in an organization.

Agency: “actions of individuals and groups that act as individual actions, leadership and drivers of change in communities” (Dale & Sparkes, 2010). Existence of agents, leaders, influential actors who activate a potentially latent stock of social capital and use it to produce a flow of benefits (Bodin & Crona, 2008).

Bonding social capital: Connections between like-minded people within a community; it involves a high level of trust and is exemplified by the “support network”, (Dale & Sparkes, 2010).

Boundary organization: Formal organizations designed to exist at the interface of research and policy organizations, have accountabilities to both, and act as agents by facilitating communication and collaboration between them (Crona & Parker, 2012).

Bridging organizations: Organizations designed to facilitate collaboration and knowledge coproduction (Crona & Parker, 2012).

Bridging social capital: People who share broadly similar demographic characteristics – building connections between heterogeneous groups – tend to be more fragile but foster social inclusion (Dale & Sparkes, 2010).

Capacity-building: The development of knowledge, skills and attitudes in individuals and groups of people relevant in the design, development and maintenance of institutional and operational infrastructures and processes that are locally meaningful (Yamoah & Maiyo, 2013).

Collective action: Influenced by social capital and agency – structure, bonding/bridging ties, trust for conflict resolution & monitoring, knowledge, capability and perceptions from socio-demographics and linkages to resources (Bodin & Crona, 2008).

Governance: Enables an organization to meet its goals and objectives and applies 8 principles that are central to assuring accountable and inclusive decision-making that is responsive to present and future needs of society (Office of the Auditor General of British Columbia, 2013, par 1; UNESCAP, 2013, par 8-16):

1. Participation;
2. Consensus-oriented;
3. Accountable;
4. Transparent;
5. Responsive;
6. Effective and efficient;
7. Equitable and inclusive;
8. Follows rule of law.

Knowledge continuum: Supported and strengthened continuity of knowledge for future use.

Knowledge development: The creation of knowledge intended for use to build capacity.

Knowledge mobilization: Moving knowledge into active service for the broadest possible common good, where knowledge is understood to mean any or all of (1) findings from specific social sciences and humanities research, (2) the accumulated knowledge and experience of social sciences and humanities researchers, and (3) the accumulated knowledge and experience of stakeholders concerned with social, cultural, economic and related issues. (University of Toronto, n.d., par 3).

Knowledge networks: Groups of expert institutions working together on a common concern, strengthening each other's research and communication capacity, sharing knowledge bases and developing solutions that are made available for use by others outside the network (Cole et al., 2001).

Legitimacy: Having authority, being in compliance with the law (Ryan et al., 2010; Plummer et al., 2013)

Organizational voice: In communication performance, organizational voice is the configuration of mutually constructed and dynamic writing and speaking practices and products that enable, define, and re-define the individual roles and collective relationships, tasks, goals and values of an organization. (Rogers, 2003)

Performance effective: Strategic through to program and project focused performance planning and management using evidence-based metrics and indicators where available and conflict resolution practices where value-based determinations where appropriate (Susskind, 2010).

Polycentric systems: A system with many centres of decision-making that go beyond jurisdictions (Pahl-Wostl, 2009).

Resilience: Generalized: The flexibility of a community or a system to cope with a wide range of crises (Berkes & Ross, 2013). Specified: Specific risks that impact the ability of a system to cope with a wide range of crises (Berkes & Ross, 2013).

Self-efficacy: Our belief in our ability to succeed in specific situations (Dale & Sparkes, 2010).

Social learning: An exploratory, multi-loop learning process where actors experiment with innovation until constraints are met and new boundaries are formed (Berkes, 2009).

Structure: Organizational structure.

Water governance: Defined by the political, social, economic and administrative systems that are in place and which directly affect the use, development, management and delivery of water resources at different levels of society" (UNDP, 2013, par 1).

Appendix B – Organizational Biographies

British Columbia Water and Waste Association

Operating as a non-for-profit organization with a mission to protect public health and the environment, the BCWWA primarily serves the needs of industry and local governments on matters related to water and wastewater. On behalf of the water and wastewater community, the BCWWA provides a voice through strategic linkages with government and other national and international organizations (Participant D, personal communication, May 16, 2013). With 4700 members and 28 committees focusing on a diversity of issues including governance, young professionals and water sustainability, there are many opportunities to mobilize knowledge and action within this organization (British Columbia Water and Waste Association, n.d.a, par 4).

From modest beginnings in the 1970s, a small group of practitioners convened to provide the emerging provincial water and wastewater industry adequate representation and access to a local technical organization called the BCWWA (British Columbia Water and Waste Association, n.d.e, par 1). Considered an independent organization within the American Water Works Association and the Water Environment Federation, BCWWA has evolved significantly to support BC and Yukon water professionals by providing training, education, technical knowledge transfer and networking opportunities (British Columbia Water and Waste Association, n.d.e, par 3).

Presently, the BCWWA is governed by an elected Board of Directors, which includes non-voting representation from the parent organizations and the Canadian Water and Waste Association (British Columbia Water and Waste Association, n.d.d, par 1). The BCWWA meets its objectives by utilizing the leadership of a CEO and 10 paid office staff and facilitates networking and knowledge sharing for water delivery and wastewater industry professionals in BC and the Yukon (Participant D, personal communication, May 16, 2013). Acting as trustees on behalf of its membership, the Board is committed to focusing on leadership, governance and ensuring stewardship of the association against its strategic “Ends” policies (British Columbia Water and Wastewater Association, 2012a). Board of Director elections occur annually with rotating positions being offered to allow for continuity. Newly elected Board members are given orientation on their role on the board and are eligible for continuing professional development opportunities to enhance their governance capabilities (British Columbia Water and Waste Association, 2012b).

Governance of the Board is based on the Carver governance model, as described on the organization’s website with 14 policies covering areas such as the principles of the governance model, job descriptions, roles and responsibilities and code of conduct (British Columbia Water and Waste Association, 2013, par 1). Terms of reference exist for the Leadership Council and committees focusing on nominations, elections, governance review and Board expenses. The Board of Directors meets on a quarterly basis and may delegate activities to Committees, Task

Forces or the Chief Executive Officer but cannot delegate responsibility (British Columbia Water and Waste Association, 2012a).

The Leadership Council is comprised of committee chairs and directors from parent and partnering organizations (Participant C, personal communication, May 9, 2013). The Council meets twice per year and submits an annual report to the Board discussing current issues and trends within the water and wastewater community in BC and the Yukon.

A central component of the success of BCWWA has been its ability to provide technical knowledge exchange across its membership. Over 20 technical and advisory committees exist within BCWWA focusing on a broad range of issues from administration, climate change to young professionals. Members of these committees are volunteers. The committees operate with their own terms of reference and receive assistance from BCWWA staff. The committees host local seminars and workshops, draft issue analysis papers and assist the organization to achieve its goals and objectives (British Columbia Water and Waste Association, n.d.b, par 4). Furthermore, members from these committees assist with the planning of the annual conference and Annual General Meeting by providing input on theme selection, technical analysis of abstract submissions and organizing events (Participant A, personal communication, April 10, 2013).

Another primary component of the organization's activities is the cross connection control examination and operator training program, which allows the BCWWA to design accessible and affordable courses, provide training to new and certified operators, set industry

standards and to adhere to its mission of “safeguarding public health and the environment...” (British Columbia Water and Waste Association, n.d.a, par 1). In 2011, the organization celebrated its 50th year as an operator training provider in BC and the Yukon.

In an effort to broadly disseminate information across the water and waste community, BCWWA maintains a resource library that houses all publications, conference proceedings, legislation, best practices and archived Watermark magazine issues. This open access library houses resources available to those interested, regardless of membership status and demonstrates the organization’s commitment to transparent knowledge and information sharing (Participant D, personal communication, May 10, 2013).

A primary role of the BCWWA is to be the voice for water and waste community. As a registered non-profit organization, the BCWWA has recently taken on an advocacy role through its linkages with government, public awareness campaigns and position statements. Its Drinking Water Week (DWW) program began in 2010 and primary goals include raising public awareness of the value of our drinking water, providing education on sources of our water resources, developing confidence in the water systems and developing understanding of behaviours that enhance conservation (British Columbia Water and Waste Association, 2013). The DWW program’s profile has increased since its inception in 2010 and in 2013, the BCWWA was able to offer a community grants program aimed at supporting community programs that aligned with the goals of the DWW program (British Columbia Water and Waste Association, 2013). Over

these three years, the number of participating regional municipalities conducting initiatives in their communities has increased (Participant E, personal communication, May 16, 2013).

The BC Water and Waste Association has come a long way since its inception and will continue to play an important role in education and training for practitioners as well as increasing public awareness of the importance of our water delivery and treatment infrastructure.

Canadian Water Resources Association

“Promoting effective water management” is the mission of this not-for-profit organization whose vision works to achieve environmental, economic and socially sustainable outcomes through water management (Canadian Water Resources Association, n.d.c, par 1). Serving the scientific and technical community across Canada and internationally, CWRA’s primary objectives are to raise awareness and understanding of Canada’s water resources, recognize the high priority and value of water, provide a forum for the exchange of information and opinion relating to water management and participate with appropriate agencies in international water management activities (Canadian Water Resources Association, n.d.c, par 3).

Founded in 1947, this organization has its roots in Western Canada with a focus on the promotion, development, control, conservation and utilization of water resources in Western Canada (Canadian Water Resources Association, n.d.b, par 1). In the late 1960s, the

organization broadened its objectives and became a national organization. CWRA publishes quarterly newsletters and an academic journal (Canadian Water Resources Association, n.d.b, par 2).

Over time, the CWRA obtained charitable non-profit status and has formed a number of national partners who have specific interests in irrigation, drainage and the hydrological sciences (Participant G, personal communication, May 22, 2013). Additionally, specialized projects are focused on water education; scholarships and student and young professional affiliates are supported by this organization.

Primary operating policies and principles for the CWRA were established through consultation with provincial branches and the organization supports their use for all water management initiatives in Canada and abroad (Canadian Water Resources Association, n.d.d, par 1). These policies and principles concentrate on water sustainability through the adoption of a sustainability ethic stating that wise management of water resources encompasses a commitment to (a) ecological integrity and biological diversity to ensure a healthy environment, (b) a dynamic economy, and (c) social equity for present and future generations (Canadian Water Resources Association, n.d.d, par 3).

Principles for water management based on this sustainability ethic consist of the following (Canadian Water Resources Association, n.d.d, par 4):

1. Practice integrated water resource management.
2. Encourage water conservation and the protection of water quality.
3. Resolve water management issues.

The CWRA aims for the adoption of these operating principles as code of practice for government, professional, industrial, community and other organizations involved in water management and it identifies the need for re-evaluation of these principles in light of experience (Canadian Water Resources Association, n.d.d, par 5).

Organizational governance is directed primarily from a National Executive including a representative from the Membership Office, the Executive Director, Provincial and Territorial Branch presidents and Affiliates. The Board of Directors has 30 members from 10 provinces and one territory and typically includes the branch president with several other branch executives (Participant F, personal communication, May 21, 2013). Primarily run as a volunteer-based organization, the CWRA has a single half-paid staff Executive Director and is recruiting for an intern to provide assistance with administration (Participant F, personal communication, May 21, 2013). With a membership of approximately 1500 consisting of private and public sector water professionals nation-wide, the CWRA provides opportunities for members to discuss local and regional issues and participate in national programs and initiatives (Canadian Water Resources Association, n.d.a, par 1). Members have access to the organizational corporate procedures and policies handbook, a resource library that includes archived journals, national newsletters, research publications and technical presentations.

The CWRA currently supports 11 branch opportunities within Canada's provinces and territories. The northern territories currently do not have formal branches and the executive is interested in further advancing the presence of the organization within these regions. The

British Columbia (BC) branch was officially incorporated in 1994 and currently has a very active membership of over 200 members residing in the Lower Mainland, on Vancouver Island and in the Interior (Participant F, personal communication, May 23, 2013). The branch publishes its own newsletter “Runoff” and regularly engages the water community through an annual conference, seminars, workshops as well as policy reviews of provincial and federal issues. The BC branch highly values collaboration and throughout 2012, the branch coordinated an event on planning with several international and provincial organizations such as Engineers without Borders, the Okanagan Basin Water Board and the BCWWA.

Fraser Basin Council

The Fraser Basin Council (FBC) is a charitable non-profit society working towards advancing sustainability in the Fraser Basin and across British Columbia (Fraser Basin Council, 2013). Working in collaboration with four orders of government, the private sector and civil society, the FBC is dedicated to finding solutions to issues through a commitment to social, economic and environmental dimensions (Fraser Basin Council, 2013). Operating on a sustainability platform, the FBC focuses on three priority areas (Fraser Basin Council, 2013):

- Climate Change and Air Quality;
- Watersheds and Water Resources;
- Community and Regional Sustainability.

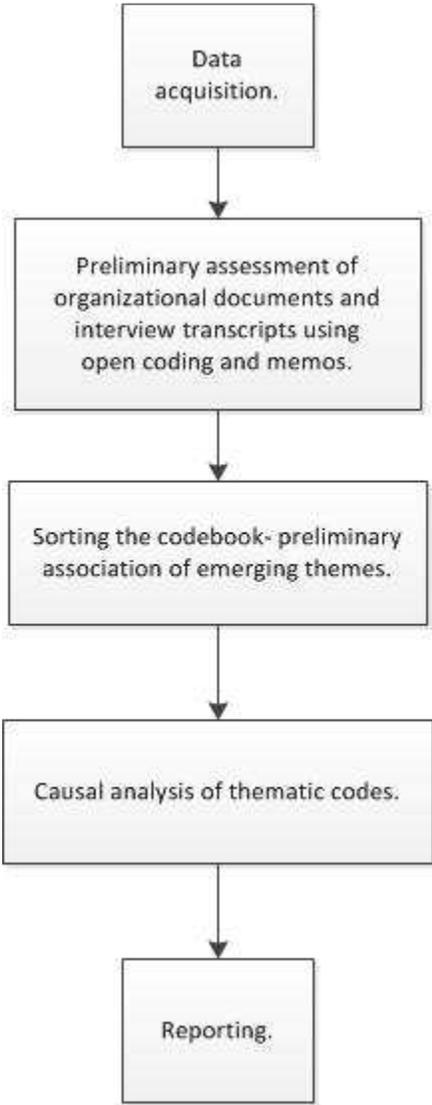
The Fraser Basin Management Board, the predecessor of the FBC, operated with a mandate to create a long and short-term plan for the Fraser Basin (Fraser Basin Council, 2013). In 1997, the Fraser Basin Management Board created the Charter for Sustainability in collaboration with government, First Nations, aboriginal people and civil society (Fraser Basin Council, 2013). At that time the Charter defined a new era of stewardship for the Fraser Basin and in order to assist with implementation, the Charter stated that the FBC will be the successor and will continue to reinforce partnerships for the advancement of this sustainability initiative (Fraser Basin Council, 2013). The Charter defines sustainability as “Living and managing activities in a way that balances social, economic, environmental, and institutional considerations to meet our needs and those of future generations” and is central to strategic planning and the projects undertaken by the organization (Fraser Basin Council, 2013). The FBC regularly partners with senior government and communities on a range of issues: sustainable watershed management, flood hazard management, sustainable fisheries, youth watershed stewardship and climate change adaptation for communities and resource sectors (Fraser Basin Council, n.d.a, par 3).

Governed by a diverse Board of Directors with 37 members from across the province including aboriginal, government, private sector and civil society representatives (Fraser Basin Council, n.d.b, par 1). The Council is guided by its Charter for Sustainability, strategic plan, as well as internal governance policies and procedures. It has eight committees focusing on its three priority areas plus governance, finance, operations, Sustainability and a youth advisory committee. In addition to these standing committees, there are others focusing on regional

activities across the Fraser Basin. All committees are guided by Terms of Reference and membership generally consists of Directors while some committees have invited senior government officials and civil society to participate (Participant I, personal communication, July 9, 2013). It is the responsibility of the committees to discuss issues and with assistance from staff members, source project work, host events and programs that are aligned to the strategic plan (Participant I, personal communication, July 9, 2013).

The FBC has 26 staff members in five regions across the province and primarily operates as an educator and impartial facilitator for a consensus-based decision-making process (Fraser Basin Council, n.d.b, par 1; Participant I, personal communication, July 9, 2013). Much of the work done by the FBC is in collaboration with many other organizations and agencies where stakeholders are brought together to discuss governance and management solutions to the issues at hand (Participant I, personal communication, July 9, 2013). Operating as a charitable non-profit society and as an impartial facilitator, the FBC does not engage in formal advocacy.

Appendix C – Data Analysis Process



Appendix D – Interview Guide

Interview Guide

Overview:

I am researching governance of water NGOs and their roles in generating and mobilizing knowledge for the advancement of water management, planning and practice in BC. Completion of this study will contribute to the requirements for a Master's of Arts degree in Environment and Management from Royal Roads University.

- A. Do you have any questions before we begin? _____
- B. Do you mind if I record our conversation? _____
- C. Do you wish for your organization to remain confidential in my study? _____
- C. Participant has signed confidentiality waiver. _____

Participant's background

1. Please provide us with a brief overview of your history with this organization.

Goals and Objectives (RQ2)

2. How would you describe your organization's priorities?
3. What are the primary roles of your organization? How have these roles evolved with time?
4. How would you describe your organization's achievements? Provide an example.
5. How does your organization address barriers to meeting its goals and objectives?

Relationship Management (RQ2)

6. How does your organization influence those it wants to influence such as governments, or industries or the general public or individuals? Please use an example of activities or actions taken to achieve success that you noted above.
7. What do you see as constraints to your organization's ability to influence those it wants to influence? Please pick some examples of these constraints and how these could be alleviated.

Knowledge development (RQ3)

8. How does your organization develop and/or mobilize knowledge?
9. Are there concerns with how this knowledge is utilized?
10. What gaps in organizational knowledge exist?

Experiences:

11. Can you describe the impact the organization's community or culture has had on you?
12. How would you describe your organization's future?

Closing remarks:

13. Is there anything else you would like to add that you feel I should know about your organization that I didn't ask?
14. Is there anything you said in your answers that you would like to return to for correction or clarification?

Appendix E – Research Consent Form

My name is Heather Armstrong and I would like to invite you to be part of a research project that I am conducting. This project is part of the requirement for a Master's Degree in Environment and Management at Royal Roads University (RRU).

This document constitutes as consent to participate in my research project, the objective of which is to strengthen the provincial water network by exploring the roles and nature of water NGOs in developing and mobilizing knowledge for the advancement of water management, planning and practice in British Columbia.

The research will consist of a comparative case study combined with in-person interviews, which are foreseen to last about an hour. The questions will refer to organizational structure as well as tools, resources and actions of the participating water organizations.

Your name was chosen as a prospective participant because of your involvement in a BC-based water NGO and understanding of the organization's governance, structure and actions.

Information will be recorded in hand-written and audio-recorded formats and summarized in anonymous format in the body of the final report. At no time will any specific comments be attributed to any individual or organization unless available on the public record or specific agreement has been obtained beforehand. All unpublished documentation will be kept strictly confidential. Research records will be retained for a period of 2 years, at which point they will be destroyed.

In addition to submitting my final report to RRU in partial fulfillment for a Master's of Arts, I will also be sharing a briefing summary of my research findings with participants and possibly as part of a conference or for publication. A retrievable copy of the thesis will be electronically archived on RRU's Digital Archive, ProQuest, and Library and Archives Canada.

You are not compelled to participate in this research project. If you do choose to participate, you are free to withdraw at any time without prejudice. Similarly, if you choose not to participate in this research project, this information will also be maintained in confidence.

By signing this letter, you give free and informed consent to participate in this project.

Name: (Please Print): _____

Signed: _____

Date: _____