

Water Governance Challenges and Opportunities: Lake Windermere, British Columbia



Water
Policy and
Governance
Group

January, 2012

Preface

This report was prepared as part of the project: *Governance for Source Water Protection in Canada: A National Assessment*. It was written to stimulate discussion and to encourage local, context-sensitive, consideration of the challenges and opportunities presented by collaborative approaches to water governance.

Project Principal Investigator:

Rob de Loë, PhD
University Research Chair in Water Policy and Governance
University of Waterloo
Waterloo, ON

Report Lead Researchers and Authors

Natalya Melnychuk and Dan Murray
Water Policy and Governance Group
University of Waterloo
Waterloo, ON

Rob de Loë
University of Waterloo
Waterloo, ON

We would like to thank the Canadian Water Network for its financial support of this work.



We would also like to thank all community and organizational members who took the time to provide input into this document, particularly members of the Lake Windermere Ambassador Board and Wildsight.

This document should be cited as follows:

Melnychuk, N., Murray, D., and de Loë, R. 2012. *Water Governance Challenges and Opportunities: Lake Windermere, British Columbia*. Water Policy and Governance Group, University of Waterloo: Waterloo, ON.

Copies of this report are available from the project web site (www.governanceforwater.ca) and from the Water Policy and Governance Group web site (www.wpgg.ca).

Executive Summary

During the past two decades in Canada, a shift has been taking place in the way water resources are governed. Governments have– and will continue to have – critical responsibilities for dealing with water problems, but other actors (e.g., community based organizations) increasingly are playing key roles relating to planning, monitoring, management and other functions. Collaborative approaches, where people and organizations come together to jointly define and solve problems, are becoming more common.

New approaches to water governance present both challenges and opportunities. The Water Policy and Governance Group (WPGG), in its recent report titled *Challenges for Water Governance in Canada: A Discussion Paper*, identified ten water governance challenges that are common across many locations in Canada. These relate to the following broad, interrelated themes:

- **Leadership and Commitment**
- **Resources and Capacity**
- **Legitimacy**
- **Accountability**
- **Actors, Roles and Relationships**
- **Learning**
- **Knowledge**
- **Adaptation**
- **Integrating Institutions**
- **Evaluation**

Specific governance challenges relating to these themes vary from place-to-place. This report is the product of a cooperative project between the WPGG and the Lake Windermere Ambassadors (LWA). It explores the concept of water governance, focusing on experiences specific to the East Kootenay Region of British Columbia (BC). By combining knowledge of local, context-specific challenges facing the LWA and insights from previous WPGG research, this report provides insights regarding the specific challenges faced by the various people and organizations involved in water governance in the region, and suggestions for how they could be addressed.

British Columbia's ongoing *Water Act* reform process is an opportunity to establish a new policy framework that recognizes the key roles played by organizations such as the LWA, provides more certainty regarding long term responsibilities, and establishes more secure funding arrangements. For the LWA, this report identifies a number of opportunities to build on its strengths, and to find an appropriate role in the new water governance regime that is emerging in British Columbia. The LWA already has undertaken a number of key actions to strengthen its ability to participate in governance for water. In particular the organization has taken steps to build better relationships with community and government stakeholders. These efforts are important and should help the LWA in its efforts to address the integration, capacity and legitimacy challenges that face most water governance organizations.

Looking forward, the LWA is expected to face the difficult challenge of taking on new roles in water governance while remaining a community-based organization separate from formal decision-making processes. An expanded

role in governance for water, especially one with more formal responsibilities, will involve different expectations and responsibilities. To address this concern, the LWA should develop a clear strategic plan with well-defined organizational goals. Undertaking evaluations of projects and programs and demonstrating accountability by providing rationales for decisions are key challenges for community-based organizations that are often pressed for time and resources. However, these actions are important for building legitimacy and for strengthening adaptive management capabilities.

Finally, it is important to acknowledge that this report reflects the conditions and context that existed as of the time of writing (November, 2011). For the LWA, much may already have changed since that time. Nonetheless, this report provides an enduring example of how the ten governance challenges raised in *Challenges for Water Governance in Canada: A Discussion Paper* can be linked to local circumstances in specific places.

Table of Contents

Preface	iii
Executive Summary	iv
Table of Contents	vi
List of Tables.....	vii
List of Figures.....	vii
List of Boxes.....	vii
1. Introduction	1
1.1. Water Governance: Evolving Approaches, Emerging Challenges	1
2. Turning Governance Challenges into Opportunities	4
2.1. External Opportunities: Creating the right context for success.....	4
2.2. Internal Opportunities: Building Strength From Within	5
2.3. Learning from Others: Some Caveats	5
3. Challenges and Opportunities for the LWA.....	6
3.1. Resources and Capacity	6
3.2. Legitimacy.....	9
3.3. Accountability	10
3.4. Leadership and Commitment.....	11
3.5. Actors, Roles and Relationships.....	14
3.6. Learning.....	14
3.7. Knowledge	15
3.8. Adaptation	16
3.9. Integrating Institutions.....	17
3.10. Evaluation	19
4. Concluding Remarks	21
5. Selected Additional Resources	22
6. References Cited	23

List of Tables

Table 1: Example Evaluation Criteria..... 20

List of Figures

Figure 1: A spectrum of governance options for BC..... 5

List of Boxes

Box 1: Funding Arrangements for Watershed-Based Organizations..... 8
Box 2: The Experience of the Oregon Watershed Councils 12
Box 3: Two Approaches to Integration..... 18



Photo Credit: Finley Spiegl

1. Introduction

The objective of this report is to provide the Lake Windermere Ambassadors (LWA) with a resource that explores the concept of water governance relative to circumstances in the East Kootenay Region of British Columbia (BC). It is the product of a partnership between the LWA and the Water Policy and Governance Group (WPGG).

This is the second document produced for the LWA. The first document, *Identifying the Key Challenges Facing the Lake Windermere Ambassadors* (prepared in 2011), is a discussion paper that identified major governance challenges facing the organization. This report builds on the previous discussion paper. Specific goals in this report are (1) to situate the LWA's challenges in the broader literature on water governance and in the context of other organizations facing similar challenges, and (2) to identify opportunities to address the challenges facing the LWA.

To address these goals, this report brings together theory from the governance literature, practical examples from around the world, and contextual knowledge of water governance in the East Kootenay Region developed through field visits and discussions with key organizational members in 2010 and 2011. Much may have changed for the LWA since the field work was completed. Nonetheless, this report remains a useful tool for helping the members of the LWA to clarify the governance challenges they face. At the same time, it provides an enduring example of how the issues raised in a previous report prepared by the Water Policy and Governance Group, *Challenges for Water Governance in Canada: A Discussion Paper*^[39], can be linked to local circumstances in specific places.

We begin by positioning the LWA within the water governance context in BC. We then turn to the governance challenges that were previously identified in *Identifying the Key Challenges Facing the Lake Windermere Ambassadors* (2011). The challenges are contextualized using the governance literature and explored by examining the experiences of other civil society groups that are facing similar challenges.

The report also includes a list of useful resources, and an extensive list of references to relevant reports, books and articles. Citations to these documents are shown in square brackets. The number inside the brackets refers to a numbered document in the Reference List at the back of the report.

1.1. Water Governance: Evolving Approaches, Emerging Challenges

The term “water governance” means different things to different people. In this report, we use the term to refer to the ways in which societies make decisions and take actions that affect water. Of particular concern are the people and organizations who are involved in making those decisions, the roles they play, and the structures and processes through which they make decisions. Contemporary water governance processes are diverse and include traditional regulatory approaches, collaborative processes, market-based processes – and combinations of all of these.

Governance has traditionally been the responsibility of governments, especially with respect to water resources. This is changing in Canada, and in other countries around the world. Threats to water quality and quantity in Canada are growing, and effective strategies are needed to address the resulting challenges. Across Canada,

recognition is growing that governments, acting on their own and using conventional command and control policy tools, will not be able to solve the complex water challenges we face^[41]. Therefore, alternative approaches to governance are being pursued. These can be thought of as experiments in new ways of sharing responsibilities for water-related decisions. How these governance approaches are developed and implemented, and how they evolve over time, is a key concern for the future of Canadian water resources.

Governments have– and will continue to have – critical responsibilities for dealing with water problems, but non-traditional actors (e.g., community based organizations) increasingly are playing key roles relating to planning, monitoring, management and other functions. Collaborative approaches, where people and organizations come together to jointly define and solve problems, are becoming more common.

These changes are a product of a shift in the view of government’s role, awareness of the enormous expertise that exists outside of governments, acknowledgement of the need to include a wider range of views in water management, growing concern for pressure on water resources, and increasing appreciation by water managers that water resources are not isolated from other relevant interests concerns^[31].

New approaches to water governance present both challenges and opportunities. The WPGG, in its 2010 report titled *Challenges for Water Governance in Canada: A Discussion Paper*^[39], identified water governance challenges that are common across Canada. Challenges related to the following broad, interrelated themes:

- **Leadership and Commitment:** A critical foundation for governance is leadership from people and organizations that can champion a project and be dedicated to its successful implementation over the long term.
- **Resources and Capacity:** Securing financial, technical and human resources from year to year in order to meet objectives within water governance programs is a persistent and recurring challenge for people involved in water governance.
- **Legitimacy:** Legitimacy exists when there is genuine approval of institutions or actors by those subject to its actions. In governance processes, legitimacy must be established and maintained continuously.
- **Accountability:** Accountability rests on clearly defined roles and responsibilities among actors, the presence of consequences that are linked to outcomes and performance, and responsiveness on the part of decision makers.
- **Actors, Roles and Relationships:** Many people and organizations have a stake in the management of water. Establishing governance processes that recognize and accommodate diverse and often conflicting perspectives is an ongoing challenge.
- **Learning:** Many governance approaches require that participants are aware of, and open to, learning opportunities. Different types of learning are needed to support governance (including organizational, experiential, progressive, and emotional learning).

- **Knowledge:** Many different kinds of knowledge are important in governance for water, including scientific knowledge, local knowledge and Indigenous knowledge. Drawing on different types of knowledge in governance processes is challenging.
- **Adaptation:** Adaptive approaches to water governance recognize uncertainty and complexity, and allow for changes in light of new or better information. Adaptive approaches involve consistent monitoring and active data collection, the assessment of feedback, and use of techniques to incorporate feedback and learning.
- **Integrating Institutions:** Integration refers to the need to coordinate decision making activities and actions at spatial and temporal scales that are appropriate to biophysical, social, economic and political systems. Integration also requires the consideration of water management decisions in the broad context of other activities such as energy production, agriculture, urban development and forestry.
- **Evaluation:** Evaluation of governance approaches and outcomes, grounded in appropriate criteria and indicators, allows problems to be addressed and successes to be highlighted.

Due to the unique characteristics of every place where water governance occurs, these challenges take many different forms. By combining knowledge of local, context specific challenges facing the LWA and insights from previous WPGG research, this report provides suggestions on how these challenges may manifest for the LWA, and suggests ways in which they can be addressed.

2. Turning Governance Challenges into Opportunities

2.1. External Opportunities: Creating the right context for success

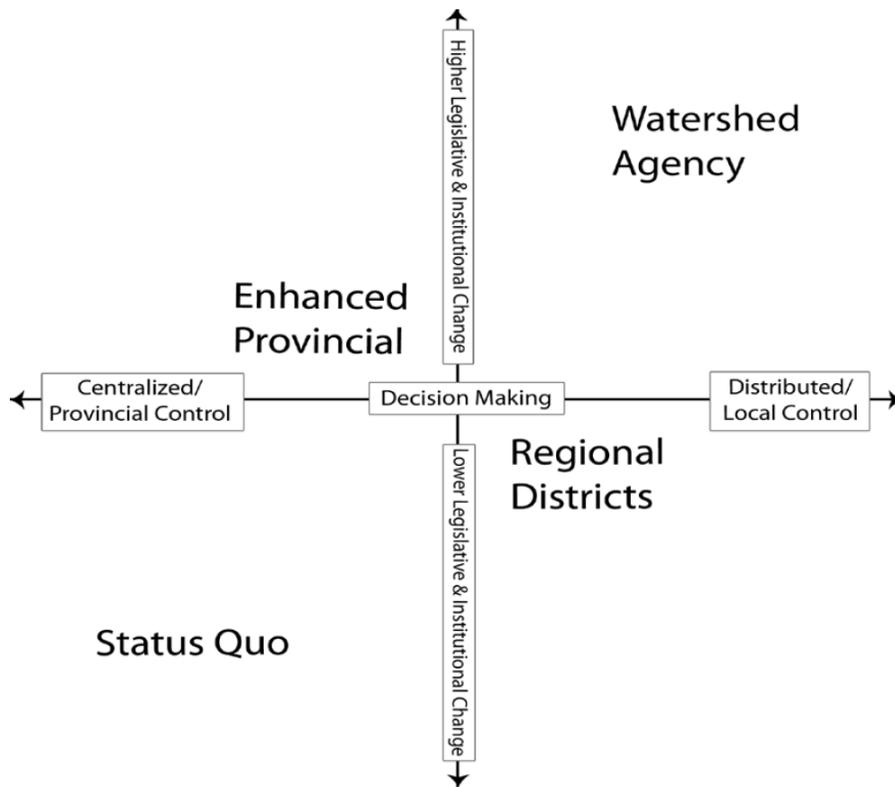
In Canada, provinces have the constitutional power to decide how to govern water within their jurisdictions. In BC, a consensus does currently not exist regarding the levels at which numerous key governance functions should occur, let alone the boundaries for decision making among the various organizations involved. Analysts have suggested that the result of this ambiguity is fragmented and *ad hoc* water governance throughout the province^[7]. Adding to this problem, changes in population and the trend toward the devolution of government responsibility are stressing the current water governance system in BC. The BC government recognizes these challenges. In 2009 it committed to a modernization process to update the provincial *Water Act*. At the time of writing, this process was still in progress and a new framework had not yet been determined.

Decisions made through the modernization process will shape the future roles and responsibilities of the people and organizations involved in governance for water in BC. Therefore, the *Water Act* modernization process represents an opportunity for organizations such as the LWA to formalize their role in water governance. Many different ways of governing water exist around the world. A recent report produced by the POLIS Project on Ecological Governance^[7] suggests three potential water governance models for BC that could be adapted by the government:

1. *Enhanced Provincial Management* – well-resourced centralized provincial government decision making and control.
2. *Watershed Agency* – decision-making at the watershed-or regional-scale based on both local and provincial priorities and decisions.
3. *Regional District Leadership* – increased active local and shared decision-making within BC's current existing institutional and legal water framework.

The current BC water policy reform process is an important opportunity for community-based organizations such as the LWA to advocate for a formally defined role in BC's water governance framework. Put another way, how the LWA will fit into water governance is dependent on the governance model decided by the BC government. Throughout this report, we identify key areas where changes to the current framework could affect the ability of the LWA to participate in governance for water.

Figure 1: A spectrum of governance options for BC



Source: *Setting a New Course in British Columbia - Water Governance Reform Options and Opportunities*.^[7]

2.2. Internal Opportunities: Building Strength From Within

In addition to the opportunities afforded by the *Water Act* reform process, numerous opportunities exist to address governance challenges by making changes within an organization. These opportunities may include building capacity, defining clear objectives, strategic planning and incorporating concepts such as evaluation, monitoring, and adaptation into governance actions. In this report, we identify opportunities that the LWA may wish to consider as the organization evolves.

2.3. Learning from Others: Some Caveats

One of the goals in this report is to highlight the experiences of other organizations from across Canada and around the world that are facing similar challenges. Numerous lessons can be learned from such experiences. However, in learning from these experiences it is important to remember that there are no one-size fits all solutions. Context is tremendously important. What works for one organization or area may not work for another. As such, it is extremely important to think carefully about what can be learned from others. We explore the challenges of learning lessons in another WPGG report: *Exploring the Role of Policy Transfer in Water Governance*^[42].

3. Challenges and Opportunities for the LWA

In Section 1.1, we identified 10 commonplace governance challenges that may exist in any jurisdiction. Through our research in support of this study, and through discussions with people involved in governance for water in the East Kootenays in 2011, we identified a subset of challenges that are of particular concern. These are discussed here. It is important to reinforce that this report reflects circumstances that existed as of the time of writing (November 2011).

3.1. Resources and Capacity

One of the most commonly noted challenges identified by community-based water stewardship and monitoring groups is the persistent and re-occurring issue of securing resources from year-to-year in order to meet objectives. Financial, human, and information resources are often inconsistently available^[9] This can hinder the capacity of organizations to plan or implement programs and achieve objectives. In addition, an organization's capacity can directly affect the ability of the group to acquire and effectively use resources to govern over water resources.

In the context of the LWA's capacity, notable strengths included the following:

- The origins of the LWA as a project of an established organization, Wildsight. This relationship helped the LWA to become established through accessing the staff, information and financial resources of Wildsight.
- The evolving positive relationships of the LWA with all levels of government and with Columbia Basin Trust.

Despite these strengths, members of the LWA identified resource stability as a challenge that affects the capacity of the LWA to meet its goals and objectives. Two notable areas regarding this security include the following:

- Uncertain long-term funding. While the LWA was applying for project grants during the study period, there was limited security for future funds, which creates uncertainty regarding planning and the ability to undertake long-term projects.
- The need for 'core funding' for administrative/governance purposes. Limited assurance of secure administrative funding for hired staff can create capacity problems for volunteer-based groups.

Discussion of the strategies for building organizational capacity and building a more secure funding platform that are relevant for organizations such as the LWA follows in the next sub-sections.

Building Organizational Capacity

Capacity building involves understanding the obstacles that inhibit governance and the achievement of desired results, while simultaneously identifying opportunities to overcome them^[20]. One viable option for enhancing the ability to achieve desired results is sharing or pooling skills and knowledge across organizations. Developing high levels of co-operation, reciprocity and trust among individuals, organizations and the wider community allows an organization to do more with limited financial resources and can lead to mutual learning and capacity building. Strategies to develop a co-operative approach may include altering organizational structures and practices,

developing technical expertise through educational training for staff and volunteers, sharing knowledge with other organizations and actively encouraging participation of community members in the business of the organization^[11].

As the LWA move to establish itself as an organization independent from Wildsight, experiences from around the world demonstrate that it will be important to build and maintain inter-organizational relationships. The LWA has been able to draw strengths from its origins as a project of Wildsight, which culminated in the LWA developing the capacity to become an independent organization. Over time the relationship between these organizations has changed, and will continue to evolve. However, an ongoing relationship between the organizations offers many benefits. Sharing staff resources, training, workshop attendance, research, and monitoring results are ways to pool resources and to achieve joint goals more effectively.

Funding Security

Generally, three ways to fund watershed-based governance activities exist:

- Generating resources from the community through donations and fundraising.
- Securing grants from funders such as government and charitable foundations.
- Formalizing the role of the organization and creating a secure and stable funding base to support this role through, for example, regular levies.

Only the third of these options provides the long-term stability that allows organizations to focus on achieving their objectives. The *Water Act* modernization process represents an opportunity to formalize the role of community-based groups in BC involved in governance for water, and to provide secure funding arrangements for these groups. Such arrangements have been implemented elsewhere, with some success (see Box 1). Experiences from other jurisdictions highlight the value of establishing user-pay approaches to support water stewardship and management^[29]. Through the user-pay approach, water users are linked to the cost of running an organization that safeguards and provides stewardship over the water resource. The benefit of such an approach can be found in the flexibility to apply funds raised to non-project-oriented objectives (e.g., funding a coordinator). A strong argument for more secure arrangements can be made as the LWA becomes more established and increasingly connected to helping deliver the Lake Windermere Management Plan in partnership with local governments.

As described in Box 1, organizations such as the Grand River Conservation Authority (GRCA) and the Okanagan Basin Water Board (OBWB) receive their core funding through tax revenue from residents within their watershed or through the planning and management services they provide. This core funding allows them to develop the capacity and skill sets required to gain grants from government to implement planning and management actions such as flood management/mitigation and water quality. Should the LWA wish to adopt a more formal role in watershed governance, similar funding arrangements may be necessary. It must be remembered, however, that both the GRCA and the OBWB are based in legislation. The GRCA, in particular, is part of a province-wide system of conservation authorities that have deep and long-standing relations with the municipalities that provide a considerable portion of their funding.

Box 1: Funding Arrangements for Watershed-Based Organizations

Conservation Authorities in Ontario

Conservation Authorities are non-profit organizations, each with its own Board of Directors comprising members appointed by local municipalities. The majority of Board representatives are elected municipal officials. Conservation Authorities are legislated by the *Conservation Authorities Act* (1946). Funding for Conservation Authorities is derived from a variety of sources, but on average 42% comes from self-generated revenues; 33% is provided through municipal levies; 23% comes from provincial grants and special projects and 2% is provided by federal grants or contracts. This arrangement ensures that municipalities, who are critical partners and funders, have a deeply vested interest in the success of their conservation authorities.

The Grand River Conservation Authority (GRCA) is well known beyond Ontario. In 2011, the GRCA's budget called for expenditures of \$33.6 million. Of this amount, the GRCA received \$9.47 million (or 28 per cent of its budget) from residents of the watershed who paid either through their local property taxes or through their municipal water bills. This amounts to approximately \$9.90 per person. The GRCA generated \$13.3 million (40 per cent of its budget) from fees charged for services ranging from camping to planning. The GRCA also raises revenue from land rentals, hydroelectricity generation and payments from school boards for outdoor education programs. Government grants, mostly from the provincial government, amounted to \$8.3 million in 2011 (25 per cent of the GRCA's budget); these funds are used to deliver services such as the development of source water protection plans under the *Clean Water Act*. Other government grants cover part of the cost of core programs such as flood warning and dam maintenance.^[15]

The Okanagan Basin

The Okanagan Basin Water Board (OBWB) was created in 1970 through a collaboration among the three Okanagan regional districts in BC to provide leadership on water issues that span the entire Okanagan valley. The OBWB works as a bridge between the levels of government, water stakeholders and citizens to find collective solutions for public water resource concerns. The OBWB is unique in the province for its vertical integration structure. The Board was mandated under the *Municipalities Enabling and Validating Act* and has the power to make decisions regarding water management within its jurisdiction, and to collect taxes to carry out various programs and partnerships to protect, maintain, and restore the watershed.

The Board's financial structure is a key determinant of its success. The OBWB's structure allows the regional districts to pool resources and direct them to shared problems. In 2010, the OBWB generated approximately \$3.4 million (roughly 80 per cent of its revenues discounting interest from investments) from levies from member regional districts, \$821 thousand from Government grants and contracts (approximately 19 per cent of revenues) and \$3 thousand from non-government grants and contracts (approximately 1 per cent of revenues)^[32].

3.2. Legitimacy

Organizations are considered legitimate when others believe that what they do is desirable, proper and appropriate^[8]. Three different factors should be taken into consideration when examining organizational legitimacy. First, legitimacy is a function not only of processes (how the organization operates), but also of outcomes (what it achieves). In other words, it is necessary to pay attention to both the ends and the means. Second, both processes and outcomes must be consistent with accepted social norms, standards and values. People have to believe that what the organization does, and how it does it, is acceptable and desirable^[8]. This is particularly important when learning lessons from the experiences of others. For example, a practice that may be quite acceptable in one part of the country, or in one context, may be completely unacceptable in another. Third, the members of the organization must see their own work as being legitimate. This makes it important for organizations such as the LWA to build legitimacy by listening to the community, while simultaneously playing a leadership role.

For the LWA, legitimacy depends on the perspectives of the community and government at the local, regional, and provincial levels. How key government agencies or community groups perceive the legitimacy of the LWA influences how other agencies will view the legitimacy of the LWA. This perception shapes the ability of the LWA to secure funding and support for its goals and projects. Understanding the factors that contribute to different perceptions of an organization's legitimacy, and learning ways to actively create legitimacy, is essential for building a positive reputation, increasing community involvement, creating diversity, building respect, and increasing trust in decision-making and actions.

Some notable assets of the LWA that contribute to its legitimacy within the community include the following:

- The diversity of actors within the LWA.
- The degree to which the LWA is embedded within the community.
- The support of both the Regional District of the East Kootenay and the District of Invermere for the LWA.
- The International Living Lakes Network's acknowledgement of the Lake Windermere Project (LWP) as a national example for community-based water stewardship and water quality monitoring.

An area of focus for the LWA should be creating and maintaining legitimacy with both government and community actors. As the LWA matures and takes on new responsibilities, opportunities exist for the organization to adopt a more formal role. This is an important opportunity and would reflect recognition of the value that the LWA contributes to decision-making. However, it also presents challenges. As the roles and responsibilities of the organization evolve, so too does the way the organization is perceived by the community and government. This change will be especially dramatic if the LWA seeks and receives a more formal role in governance for water.

Formalization of the LWA's roles and responsibilities would likely reflect an increase in perceived legitimacy on the part of governments, especially local governments. However, this formalization could be matched with a shift

in attitude among community actors. Changing community perceptions of the LWA's legitimacy could be fuelled by questions regarding the right of an unelected body (the LWA) to represent the community in watershed decision-making processes. LWA is taking action to address this challenge. The organization is increasing its representation (both in numbers and in diversity of interests) on the Board of Directors. Furthermore, LWA has broadened its role to include more consultative activities. Both actions are constructive and enhance legitimacy.

Experiences from other places highlight that effective communication strategies are another key tool for developing organizational legitimacy. An effective communication strategy can help an organization such as LWA to become more legitimate in the eyes of stakeholders through defining its mission, advertising its successes and generally promoting its activities^[8]. The media have a vital role as the transmitters of messages, thus providing the link between organizational context and public perception. In the case of the LWA, communication strategies can promote the goals, objectives, processes, and people of the LWA to the wider community. This can build public trust in the organization of its competency and ability to function as an organization separate from Wildsight. To pursue such an approach the LWA should develop a clear idea of the organizational image it wishes to promote. However, in so doing it is important to remember that public trust is built on cumulative evidence of legitimacy through actions rather than just through promotion. Therefore, it will take time to develop legitimacy within the wider community.

3.3. Accountability

In terms of accountability, a key strength is the perception from within the organization that the LWA Board is accountable for the responsibilities laid out within its Terms of Reference. Areas where the LWA should focus so that accountability issues can be managed include the following:

- Building agreement at the organizational level around what tasks and long-term goals should be undertaken.
- Ensuring that decision-making takes into consideration and scrutinizes the full range of water management perspectives in the community.

Accountability requires clearly-defined responsibility for actions and decisions for both personal and organizational performance. Individual accountability requires people to be answerable for their roles and associated responsibilities. At the organizational level, accountability can be used to demonstrate to the public an organization's value^[40].

For an organization, accountability can be achieved by fulfilling the clearly defined roles and responsibilities established for the organization. Failure to fulfill these roles and responsibilities typically has negative consequences^[17]. These consequences can be both formal (e.g., legal, financial) and informal (e.g. reputation, public support).

At present, the policy framework within which the LWA operates does not clearly articulate the roles and responsibilities of the organization. Without clear roles and responsibilities, other organizations, and community members, will perceive the accountability of the LWA based on what *they think* the LWA should be achieving. The involvement of the LWA in the Lake Management Plan may provide clarity regarding the roles and

responsibilities of the LWA. Further discussion with the regional and municipal governments as to the LWA's future responsibilities for water management can also help ensure accountability.

The process of defining roles and responsibilities involves achieving goals and setting organizational capacity boundaries. Setting specific objectives increases the likelihood that implementation plans will target high impact outcomes, and will help to provide a benchmark for the LWA, and others, to determine success and accountability. Box 2 outlines one example of a strategic planning process designed to introduce accountability for community-based watershed organizations in Oregon. Under the existing policy framework in BC, such a networked approach to strategic planning may need to be adjusted for it to be practical for the LWA.

The Oregon example highlights another important point. Accountability is not simply a product of meeting objectives; the way decisions are made is also important. An organization is accountable to the community it represents. Decisions made by the organization should reflect the attitudes of the community. Engagement with community members through decision-making processes will facilitate this objective. Opportunities to enhance accountability include strengthening leadership, vision, trust, social networks and the incorporation of local and technical knowledge into decision-making^[41]. Collectively these assets can facilitate accountability by creating a culture where there is openness and transparency in decision-making as well as reliability, congruence, and acceptance of others^[13]. Developing these assets will in turn help engage the community in organizational processes and can contribute to the creation of a sense of ownership for the work of the organization. While these assets require time to develop, acknowledging their importance in creating a culture of accountability and integrating their development into strategic planning and programming can create an organization that is responsible for its actions and representative of a community.

3.4. Leadership and Commitment

A critical foundation for governance is leadership, typically from people and organizations that can sustainably champion a project and take responsibility for its successful implementation. Recognizing that water related decisions can be lengthy, time consuming processes, it can be challenging to identify leaders who can motivate, guide and support the creation of a collaborative governance approach^[43]. It can also be a challenge to sustain commitment to the objectives set out in a management strategy because achievement of these objectives usually will require long-term financial resources and ongoing commitment from skilled individuals who (in many cases) participate voluntarily in the implementation of such strategies^[27].

Box 2: The Experience of the Oregon Watershed Councils

In 1995, the State of Oregon passed legislation that provided guidance on the establishment of watershed councils. Oregon House Bill 3441 specifies that:

- the formation of the councils is a local government decision;
- no state approval is required; and,
- councils must represent the interests in the basin and balance their makeup.

The result of the bill has been the development of watershed councils that are locally organized, voluntary, non-regulatory groups that aim to improve the conditions of local watersheds in their area. The councils also act as a forum to bring local, state and federal government actors and plans together with local residents and landowners. They also provide local people with the opportunity to participate in water management. The council operates with the goal of collaborating to identify issues, promoting cooperative solutions, focusing resources, agreeing on goals for watershed protection and enhancement, and fostering communication among all watershed interests.

Each watershed council is a part of a broader structure called the Network of Oregon Watershed Councils. New councils are expected to complete an assessment using a manual produced by the Oregon Watershed Enhancement Board (OWEB) as part of their network accountability structure. These assessments are used to identify specific issues within the watershed, to describe the history and physical features of the watershed, and to evaluate resources available within the watershed^[33]. After completing the assessment, councils are expected to develop action plans derived from the assessment to help align the needs of the watershed with their decisions and actions. This process is designed by the OWEB to help ensure the councils are aligning their processes with the community, thus assisting with external accountability^[41].

In the case of the LWA the leadership and commitment strengths of the organization can be summarized on two levels:

- At the community level, the LWA benefits from commitment and support from local businesses; municipal, regional, provincial and federal agencies; First Nations; civil society, and permanent and seasonal residents. The origin of the LWA as a product of Wildsight has assisted in embedding the LWA as a leading organization for water stewardship and monitoring. However, some within the community do not recognize the value of the work of Wildsight and extend this sentiment toward the LWA without recognizing that the two organizations are distinct.
- At the individual level, the LWA Board benefits from strong leaders who have helped establish the LWA. These leaders are integral members of the community and play a role in promoting the goals and purpose of the LWA, therefore generating further support and leadership within the group. The LWA Board has further

demonstrated commitment to the community by expanding the number of positions on the board to encompass different voices within the community and by creating a communication committee to frame the position of the LWA.

To continue to capitalize on the leadership and commitment strengths of the LWA, it is important that the organization focus on two key challenges:

- **Recruitment:** Motivating community members to join the LWA is an ongoing need. This requires identification of proper incentives to foster commitment from the broad range of interest groups within the Lake Windermere community.
- **Retention:** After recruiting members the next step involves securing their commitment and developing their leadership potential within the LWA. Avoiding volunteer burnout requires identifying the appropriate mix of responsibilities and tasks among members.

Volunteers are the backbone of community-based water stewardship organizations. Developing a recruitment and retention strategy largely involves understanding volunteer motivations for joining and their limitations (such as available time and knowledge of the organization)^{[12][14]}. Cultivating volunteer commitment leads to the development of organizational leaders.

Numerous strategies for volunteer motivation have been used by other organizations. These include the following:

- Creating a variety of activities and types of volunteer work relating to a range of topics caters to the interests of members^[35].
- Ensuring positive opportunities for social interaction helps volunteers to form bonds that make them want to return. This notion is particularly important for new members as engagement and follow-up will help them understand their own motivations.
- Being clear and consistent regarding tasks and expectations is essential.
- Ensuring that meaningful roles are created for volunteers, and recognizing and thanking people for their time and commitment, should be a priority.
- Connecting volunteer interests and skills to their responsibilities in the organization is an important way to help them thrive and remain committed^[35].

In addition to these strategies, there are some important constraints:

- People have limited time to commit to volunteerism. Therefore, failing to provide volunteers with options for how they can be engaged is important^[12]. At the same time, an ongoing and active recruitment strategy is needed to maintain the volunteer base because the amount of time that volunteers can commit often changes.
- Volunteers typically only have partial knowledge of the governance aspects of an organization^[14]. As a result, engaging them in core administrative tasks is difficult. The Government of PEI^[14] recommends that certain

tasks, such as preparation of funding applications, should be left to staff members of a community organization. Instead of asking them to undertake core administrative tasks, volunteers should be the ‘face’ of the organization – which can be accomplished by engaging them in ‘on the ground’ program delivery. This has the added benefits of enhancing the learning experience for volunteers and strengthening their commitment to the organization.

The development of membership strategies that consider these aspects of volunteering may help the LWA to encourage more participation and ownership from within the community, and simultaneously to encourage future leaders to join and advance the organization in the long-term.

3.5. Actors, Roles and Relationships

The emergence of more collaborative approaches governance has encouraged many people and organizations with a stake in water management to become more involved in water governance. Establishing a governance process that recognizes and accommodates diverse and often conflicting perspectives is a difficult and continuously evolving task^[18]. Thus, while the construction of clear relationships among multiple actors is important^[36], it can be challenging to achieve a balance between inclusivity and the efficiency of a process^[4].

A major strength for the LWA in regards to its actors and their relationships is the fact that within the organization, people trust that their viewpoints are being valued. This contributes significantly to the achievement of objectives.

An area where the LWA should focus is clarification of the roles of specific LWA members. As previously mentioned, the establishment of clearer roles and responsibilities can help to create legitimacy and resilience in the face of change within an organization, while also helping to build accountability.

Volunteers and employees should have a clear understanding regarding their tasks and how their work relates to the objectives and purpose of the organization. However, a balanced approach is required as rigid role descriptions can stifle creativity and innovation^[25]. One suggestion for the LWA to enhance role clarity includes the collective development of written descriptions for volunteer positions. These “volunteer job descriptions” can better prepare organizations to provide opportunities for volunteers to contribute challenging and rewarding tasks^[30]. However, flexibility should be maintained in role descriptions to permit some fluidity as roles evolve over time, especially as new people fill various positions^[28].

3.6. Learning

Many different types of learning can go on within water governance processes. Often, in the context of water resource challenges, decision-making processes demand social learning, e.g., working to understand the interests of others and developing trusting relationships. They also require individual learning, such as improving interactive skills (e.g., negotiation) or interpreting current scientific information (e.g., the state of groundwater resources). Social learning and individual learning are critical to effective governance processes because they assist group cohesion and capacity building for future decision-making.

The LWA Board did not see social and organizational learning as a significant challenge for two reasons:

- As a group the LWA tries to foster an environment of openness and willingness to continually have dialogue and debate on matters brought to the LWA; and,
- For individuals within the LWA, learning is thought to be something that can be developed informally, through ongoing participation, and formally, through planned workshops for members on technical and scientific matters.

Nonetheless, we suggest that continuing to build and foster a learning environment will be an ongoing challenge especially as new members join LWA with new perspectives. Forging relationships between actors can encourage the exchange of information, ideas, and concerns among members that are necessary for learning. Thus, the critical roles of social and individual learning should not be ignored.

3.7. Knowledge

There are many forms of knowledge and numerous ways of knowing that are informed by diverse experiences and values^[44]. Balancing multiple forms of knowledge remains a challenging component of water governance as many water worldviews exist, sometimes in opposition to one another (e.g., sacred water vs. water as an input for industrial processes)^[24]. Different forms of knowledge are linked to different degrees of legitimacy and power. Traditional, experiential or cultural knowledge is often difficult to legitimize, especially in a society that has high expectations for evidence or proof. The most trustworthy and reliable sources are often perceived to be technical, scientific knowledge produced by experts, but it is impossible to assume perfect understanding of complex water systems. Creating opportunities for different knowledge types to be discussed and considered in the context of water governance is a significant challenge, but necessary to encourage decision-making that reflects a holistic awareness of the different ways that water has value.

For the LWA, there are many different opinions on how Lake Windermere *should* be managed that reflect a variety of uses for the lake such as recreation, drinking water and ecosystem resilience. Both scientific and value-based knowledge have the potential to guide decision-making. Based on the experiences of other Canadian communities involved in water governance, acceptance and acknowledgement of the full diversity of knowledge is a challenge the LWA will experience.

One opportunity to overcome this challenge is to merge value-based knowledge with scientific knowledge. Issues may arise when knowledge from cultural, spiritual, and recreational understandings of water is forced to include measures of aquatic health, and human impacts. Fostering a connection between these two forms of knowledge can help create more meaningful objectives and goals. This challenge can be addressed in two ways:

- Consider power imbalances when trying to integrate both value-based and scientific knowledge.
- Explore different perspectives when conflict emerges.

Regarding power imbalances, in the context of natural resource management, scientific knowledge is strongly associated with authority and credibility in comparison to that of local value-based knowledge^[5]. Natural resource management has a history of rational-scientific reasoning as its guiding knowledge base^[23]. In the shift to more collaborative approaches to governance, scientific reasoning remains essential, but collaborative governance also requires a process for deliberation about the relevance and interpretation of other forms of knowledge^{[16][21]}.

By reflecting on how different forms of knowledge are incorporated into decision-making, the LWA can determine whether or not there is a power-imbalance between science and value-based knowledge. Value based knowledge should not be treated simply as rhetoric, but should be meaningfully included in discussion and negotiation. This is particularly relevant for the Indigenous knowledge of First Nations peoples. Value-based knowledge can represent a key way that individuals understand their landscape and represent the foundations for individual decision-making. If value-based knowledge does not appear in the construction and adaptation of a decision, then an opportunity to engage and communicate with community members may be lost. Taking advantage of this kind of knowledge requires the creation of space for its promotion, acceptance, and encouragement. Importantly, this does not have to be at the expense of scientific knowledge.

Different ways of knowing in water governance can easily create conflict and hinder action. When conflict arises between two different perspectives, it is important to explore the attitudes/reasons underpinning these perspectives. Acknowledging and discussing different ways of knowing can help members to become aware of their own knowledge dispositions, as well as those of others. This helps to facilitate negotiations between different ways of knowledge when planning and making decisions, and to identify common ground. Even if common ground is not found, discussing conflicting ways of knowing allows stakeholders to feel that they have been heard and understood, which may reduce conflict and permit continued progress.

3.8. Adaptation

Adaptive approaches to governance for water recognize uncertainty and complexity, and allow for changes in light of new or better information. They require consistent monitoring and active data collection, the assessment of feedback, and ways to effectively incorporate feedback and learning. Adaptation also involves modification to business processes and programs as changes become necessary. Implementation of adaptive approaches to water governance is challenging. For instance, consistently collecting data and transmitting feedback can be a challenge due to resource restrictions. Even when good feedback is available, there can be resistance to change and barriers to learning^[2]. A key barrier to adaptive governance is the fact that environmental change can happen quickly – but in many cases changes to water governance processes are slow.

Adaptation was identified as an organizational strength by members of the LWA Board; they suggested that an adaptive style has allowed the LWA to establishing itself as a community water stewardship and water quality monitoring organization. Maintenance of a flexible management strategy is a goal of the LWA. Achievement of this goal is more likely if the LWA can increase its capacity for evaluation (see Section 3.10). Ongoing evaluation will help to systematically indicate where and when adaptation is necessary.

3.9. Integrating Institutions

Integration is achieved when institutions create linkages among themselves, and across scales^[34]. These linkages can be vertical (e.g., between local organizations and national umbrella organizations) or horizontal (e.g., between community organizations such as LWA and the municipalities within their areas of activity). Horizontal integration encourages sharing resources and capacity across organizations operating at the same scale to help achieve goals^[37]. Horizontal integration can also increase economic efficiency and create democratic legitimacy through increased representation of interest groups from other non-profits^[3].

Integration of water institutions (both horizontal and vertical) requires coordinating activities at spatial and temporal scales^[38]. Integration also requires the consideration of water management decisions in the broad context of other activities such as energy production, agriculture, urban development and forestry^[19].

Integration strengths of the LWA include the following:

- Vertical integration – Formal recognition of LWA by municipal and regional governments is evident as the LWA is being written into the terms of reference for the Regional District’s Lake Windermere Management Plan as an appropriate body to implement scientific monitoring and educational components of the plan.
- Horizontal integration – The LWA is connected with other local groups in the area, most notably through membership with the Columbia Basin Watershed Network, the Columbia Wetland Stewardship Partners, BC Lake Stewardship Society and Columbia Basin Water Monitoring Group. These connections are based on information sharing and overlap of members involved with the different organizations.

Areas where LWA could focus to improve integration include the following:

- Vertical integration – working towards a greater sharing of power and authority through recognition of the LWA by all levels of government. While the LWA is taking steps to formalize a relationship with the municipal and regional levels of government, there remains an opportunity for the LWA to work towards receiving a transfer of power or authority, particularly from the provincial government, through the BC Water Act reform process. Such recognition could provide formal roles and responsibilities for the LWA, might improve the resources and capacity of the LWA, and could contribute to better integration of the organization with provincial government agencies. Whether these benefits are achieved, however, depends on the nature of the roles that are defined, and the resources that are provided.
- Horizontal integration – opportunity exists to forge partnerships with other organizations and to network with local community associations; both measures can increase harmony and efficiency in programming.

The Okanagan Basin Water Board (OBWB) is widely acknowledged to be an organization that is highly integrated with other organizations, through its Water Stewardship Council. Box 3 details this experience. The OBWB example highlights how integration can be achieved through formal recognition and through detailed attention to the structure, membership and decision-making processes within an organization. However, there are other paths to achieving integration and its associated benefits. Box 3 highlights the experience of the non-profit

organization Ecospark, a group that has had success working towards recognition and development of an integrated approach to environmental education and monitoring.

Box 3: Two Approaches to Integration

The Okanagan Water Basin Board and the Okanagan Water Stewardship Council

The OBWB was introduced in Box 1. Embedded within the Board is the volunteer-based Okanagan Water Stewardship Council. Formed in 2006, the Council acts in an advisory role to the board and holds a voting position as a member of the Board. The goal in forming the Council was to utilize local water management expertise to improve long-term decision making in a changing human and natural resource environment^[32].

The nested organizational structure of the OBWB and its embedded Stewardship Council represents one potential model for watershed governance organizations. The advantage of this type of structure is that the OBWB maintains clear links with the community, municipal government, and the provincial government.

Ecospark

Ecospark (formerly the Citizen's Environment Watch) is a Toronto-based, grassroots, non-profit organization that focuses on environmental education and monitoring across Ontario. It formed as a response to severe cutbacks in provincial government spending for environmental monitoring in 1996. Since its inception, the organization has worked with over 6000 community volunteers, to monitor air and water quality in over 10 watersheds^[37].

In terms of integration, the organization brings together academic expertise, government, community and student groups, as well as other environmental agencies to work in different partnerships to safeguard and enhance Ontario's natural environment. Their ability to forge and engage in partnerships with a wide range of different types of interest groups has been recognized as a major contributor to its profile and credibility^[37]. By partnering with different types of groups across the province to support monitoring initiatives, Ecospark has gained a broad understanding of the monitoring issues as they are perceived by different interest groups.

This knowledge development has contributed to Ecospark's evolving relationship with provincial government, as the Ontario Ministry of Environment has collaboratively engaged Ecospark in projects such as developing air quality monitoring protocols for the province and to assist them in building a database on environmental quality. The dialogue developed from these projects between Ecospark and the province has helped to define the organization's role in environmental management and has provided Ecospark with provincial recognition and support for its monitoring programs across the province.

The OBWB and Ecospark examples show different approaches to integration. The OBWB experience highlights how formal recognition of a problem by all levels of government and the community has led to the development of a well-integrated organization. The Ecospark experience demonstrates how to build an integrated approach when there is limited widespread recognition of the problem. The community-led approach to problem identification and problem solving has, over time, gained recognition and support from the provincial government. These examples highlight that there are different paths to achieving an integrated approach and that opportunities for the LWA to develop horizontal and vertical integration exist both formally, through the BC water reform process, and informally, through ongoing relationship building efforts.

3.10. Evaluation

Evaluation is an important prerequisite for project success^[10]. In the context of water governance, determining what to measure, and how measurement should occur, is a complex task that requires clear definitions of desired outputs and outcomes^[26].

The LWA have two key strengths that support evaluation of governance:

- A history of program evaluation for the Lake Windermere Project. Over the past five years there has been continual program evaluation (focused particularly on outputs and outcomes).
- Peer-appraised evaluation by other NGOs and acknowledgement by the Canadian Environmental Assessment Agency.

An area where the LWA could focus attention to strengthen evaluation capacity is formalizing evaluation criteria. For the LWA, making decisions about who should be conducting evaluations, the aim of evaluations, and indicators that are to be used can help to guide the group in future decision-making.

Evaluation is helpful for keeping up to date on watershed plans and activities, understanding goal achievements and how to improve efforts^[14]. It is not necessary that evaluations be conducted by third-party evaluators as self-evaluation can be a valuable experience that leads to a greater understanding of the processes, history and context^[45]. Even with limited resources and time, undertaking self-evaluation can promote success to members, funding bodies, surrounding community and to government, while also helping to identify governance challenges.

While there are different approaches to evaluation^[10] it is possible to identify common criteria applied to evaluate the success of natural resource management intervention (Table 1). This list of evaluative criteria provides ideas on how organizations can evaluate (and report) project and organizational successes. Defining criteria that are relevant to the LWA, rather than simply adopting the ones in Table 1, is essential.

Table 1: Example Evaluation Criteria

Type of Criteria	Examples
<i>Process criteria</i>	• Did all participants hold a broadly shared vision for the project?
	• Were clear, feasible goals established?
	• Was there diverse, inclusive participation?
	• Was there participation by local government?
	• Were there linkages to individuals and groups beyond primary participants?
	• Did decision-making take place through open, accessible, and transparent processes?
	• Was a clear, written plan developed?
	• Were decisions regarded as just by participants? By the wider community?
	• Were decisions consistent with existing laws and policies?
<i>Environmental outcome criteria</i>	• Has the project led to Improved habitat?
	• How much threatened land has been protected from development?
	• Has the project led to improved water quality?
	• Has the project changed land management practices?
	• Has biological diversity been preserved?
	• Have soil and water resources been conserved?
<i>Socioeconomic outcome criteria</i>	• Were relationships built or strengthened between individuals? Organizations?
	• Has the project led to increased trust?
	• Have participants gained increased knowledge and understanding?
	• Has the project created any employment opportunities?
	• Has the project improved capacity for dispute resolution?
	• Has the project resulted in changes in existing institutions or creation of new institutions?

Source: Compiled from multiple sources (see^{[6][10][22]})

4. Concluding Remarks

Addressing water governance challenges requires ongoing commitment. Continuous reflection on governance processes and outcomes can help community-based organizations stay true to their long-term objectives. This is particularly relevant for the LWA because of the potential for major changes to provincial policy as a result of water reforms. Existing challenges evolve. New challenges emerge. As such, this report provides a snapshot of the governance challenges faced by the LWA at a particular point in time.

Key opportunities exist to identify and address challenges facing organizations engaged in water governance. For the LWA this report identified a number of opportunities for building on existing strengths. Additional opportunities exist for the LWA to encourage, support and advocate for its needs as a water stewardship organization through the ongoing *Water Act* modernization process. Participating in this important provincial debate can support the establishment of new provincial legislation that may provide more certainty regarding long term roles, responsibilities and funding arrangements.

This report identifies actions that the LWA can take to help overcome governance challenges it faces. Through project evaluation, adaptive approaches to management, integration with other organizations and strategic planning, organizations such as the LWA can demonstrate to other water governance stakeholders – including the wider community – that they are accountable, transparent, and legitimate. The LWA already has undertaken a number of these actions. In particular the LWA has taken key steps to build better relationships with community and government stakeholders. These efforts are important and should help the LWA in its efforts to address the integration, capacity and legitimacy challenges it faces.

Looking forward, the LWA is expected to face the difficult challenge of balancing the adoption of an enhanced role in water governance in BC with the goal of remaining a community-based organization. This position in the governance system creates specific expectations and responsibilities. In making decisions about the roles it will play in governance for water in BC, a clear strategic plan for the LWA, with well-defined organizational goals, is essential.

Finally, regular evaluation of projects and programs, and ongoing efforts to demonstrate accountability through providing clear rationales for decisions, are key challenge for community-based organizations that often are pressed for time and resources. However, these actions are important for building legitimacy and adaptive management capabilities – two key determinants of long-term success for organizations such as the LWA.

5. Selected Additional Resources

Leadership

- <http://www.icl.org/> - Institute for Conservation Leadership – a US web resource focusing on leadership development
- <http://volunteer.ca/topics-and-resources/volunteer-management/resources> – Volunteer Canada resources on volunteer management
- The Volunteer Recruitment Book, Susan J Ellis, Energize Inc., 2002 – Volunteer management and recruitment considerations

Resources

- <http://www.sustainabilitynetwork.ca> – A network dedicated to building local sustainability capacity
- <http://www.afpnet.org/> – A professional network for organizations that fundraise
- <http://www.imaginecanada.ca> - Imagine Canada working to ensure resources for charitable organizations
- <http://www.trec.org/> – Training Resources for the Environmental Community – capacity building information

Accountability

- <http://oregonwatersheds.org/> – Website of the Network of Oregon Watershed Councils

Integrating Institutions

- <http://www.obwb.ca/wsc/> - Webpage for the Okanagan Basin Water Board's Water Stewardship Council
- <http://www.ecospark.ca/> - Homepage of the Toronto-based ENGO, Ecospark

Evaluation

- http://library.imaginecanada.ca/files/nonprofitscan/en/csc/projectguide_final.pdf - A step by step for non-profit organizations looking to conduct self-evaluation

6. References Cited

- 1 Ansell, C. and Gash, A. 2007. Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory*, 18 (4), 543-571.
- 2 Armitage, D., Marschke, M., and Plummer, R. 2008. Adaptive co-management and the paradox of learning. *Global Environmental Change*, 18 (1), 86-98.
- 3 Benson, D. and Jordan, A. 2007. Exploring the scale dimensions of water governance: a comparative federalism perspective on EU policy-making. In *International Conference on Adaptive and Integrated Water Management: Coping with Complexity and Uncertainty*. 2007.
- 4 Blackstock, K. L. 2009. Between a rock and a hard place: incompatible objectives at the heart of river basin planning? *Water Science and Technology*, 59 (3), 425-431.
- 5 Blaikie, P., Brown, K., Stocking, M., Tang, L., Dixon, P., and Sillitoe, P. 1997. Knowledge in action: local knowledge as a development resource and barriers to its incorporation in natural resource management and development. *Agricultural Systems*, 55 (2), 217-237.
- 6 Born, S. M. and Genskow, K. D. 2000. *The Watershed Approach: An Empirical Assessment of Innovation in Environmental Management* Washington, DC: National Academy of Public Administration.
- 7 Brandes, O. M. and Curran, D. 2009. *Setting a New Course in British Columbia - Water Governance Reform Options and Opportunities* Victoria, BC: The Polis Project.
- 8 Brinkerhoff, D. W. 2005. Organizational legitimacy, capacity, and capacity development. In *Public Management Research Association 8th Research Conference*. 9-29-2005. University of Southern California.
- 9 Canadian Water Resources Association. 1999. *Valuing Our Watersheds: Towards Sustainable Financing for Watershed Management*. Conference Synopsis series Cambridge, ON: Canadian Water Resources Association.
- 10 Conley, A. and Moote, M. A. 2003. Evaluating collaborative natural resource management. *Society and Natural Resources*, 16 (5), 371-386.
- 11 Crisp, B. R., Swerissen, H., and Duckett, S. J. 2000. Four approaches to capacity building in health: consequences for measurement and accountability. *Health Promotion International*, 15 (2), 99-107.
- 12 Curtis, A., Shindler, B., and Wright, A. 2002. Sustaining watershed initiatives: lessons from landcare and watershed councils. *Journal of the American Water Resources Association*, 38 (5), 1207-1216.
- 13 Doyle, T and McEachern, D. 2008. *Environment and Politics*, 3rd Edition New York: Routledge.
- 14 Government of Prince Edward Island. 2006. *A Guide to Watershed Planning on Prince Edward Island* Charlottetown, PEI
- 15 Grand River Conservation Authority. 2011. *2011 Budget* Cambridge, Ontario: Grand River Conservation Authority.

- 16 Gregory, R., Failing, L., Ohlson, D., and McDaniels, T. L. 2006. Some pitfalls of an overemphasis on science in environmental risk management decisions. *Journal of Risk Research*, 9 (7), 717-735.
- 17 Heinrich, C. J. 2002. Outcomes-based performance management in the public sector: implications for government accountability and effectiveness. *Public Administration Review*, 62 (6), 712-725.
- 18 Hermans, L. M. 2008. Exploring the promise of actor analysis for environmental policy analysis: lessons from four cases in water resources management. *Ecology and Society*, 13 (1), Online.
- 19 Herron, N., Davis, R., and Jones, R. 2002. The effects of large-scale afforestation and climate change on water allocation in the Macquarie River catchment, NSW, Australia. *Journal of Environmental Management*, 65 (4), 369-381.
- 20 Himmelman, A. T. 2001. On coalitions and the transformation of power relations: collaborative betterment and collaborative empowerment. *American Journal of Community Psychology*, 29 (2), 277-284.
- 21 Innes, J. 1995. Planning theory's emerging paradigm. *Journal of Planning Education and Research*, 14 (3), 128-135.
- 22 Innes, J. E. and Booher, D. E. 1999. Consensus building and complex adaptive systems: a framework for evaluating collaborative planning. *Journal of the American Planning Association*, 65 (4), 412-422.
- 23 Kroon, F. J., Robinson, C. J., and Dale, A. P. 2009. Integrating knowledge to inform water quality planning in the Tully–Murray basin, Australia. *Marine and Freshwater Research*, 60 (11), 1183-1188.
- 24 Linton, J. 2010. *What Is Water? The History of a Modern Abstraction* The University of British Columbia Press: Vancouver, BC.
- 25 Lyons, T. F. 1971. Role clarity, need for clarity, satisfaction, tension, and withdrawal. *Organizational Behavior and Human Performance*, 6 (1), 99-110.
- 26 Mandarano, L. A. 2008. Evaluating collaborative environmental planning outputs and outcomes: testing and protecting habitat and the New York-New Jersey Harbor Estuary Program. *Journal of Planning Education and Research*, 27 (4), 456-468.
- 27 Margerum, R. D. 2001. Organizational commitment to integrated and collaborative management: matching strategies to constraints. *Environmental Management*, 28 (4), 421-431.
- 28 McCurley, S and Lynch, R. 1998. *Essential Volunteer Management*, 2nd Edition London: Directory of Social Change.
- 29 Meek, S. and Worte, C. 1998. Toward a user-pay approach to watershed management. In *Groundwater in a Watershed Context*. 12-2-1998. Burlington, ON: Canadian Water Resources Association.
- 30 Merrill, M. V. 2005. Understanding Volunteer Motivations. Available online: <http://merrillassociates.com/topic/2002/12/understanding-volunteer-motivations/>.

- 31 Nowlan, L. and Bakker, K. 2010. *Practising Shared Water Governance in Canada: A Primer* Vancouver, BC: UBC Program on Water Governance.
- 32 Okanagan Basin Water Board. 2010. *2010 Annual Report* British Columbia: Okanagan Basin Water Board.
- 33 Oregon Watershed Enhancement Board. 2000. *Oregon Watershed Assessment Manual*. Available online: http://www.oregon.gov/OWEB/docs/pubs/OR_wsassess_manuals.html:
- 34 Paavola, J., Gouldson, A., and Kmetic, A. 2009. Interplay of actors, scales, frameworks and regimes in the governance of biodiversity. *Environmental Policy and Governance*, 19 (3), 148-158.
- 35 Parker, K. D., Margerum, R. D., Dedrick, D. C., and Dedrick, J. P. 2010. Sustaining watershed collaboratives: the issue of coordinator–board relationships. *Society and Natural Resources*, 23 (5), 469-484.
- 36 Patrick, R., Kreutzwiser, R., and de Loë, R. 2008. Factors facilitating and constraining source water protection in the Okanagan valley, British Columbia. *Canadian Water Resources Journal*, 33 (1), 39-54.
- 37 Savan, B., Gore, C., and Morgan, A. J. 2004. Shifts in environmental governance in Canada: how are citizen environment groups to respond? *Environment and Planning C: Government and Policy*, 22 (4), 605-619.
- 38 Savenije, H. H. G. and van der Zaag, P. 2008. Integrated water resources management: Concepts and issues. *Physics and Chemistry of the Earth*, 33 (5), 290-297.
- 39 Simms, G and de Loë, R. 2010. *Challenges for Water Governance in Canada: A Discussion Paper* Waterloo, ON: Water Policy and Governance Group.
- 40 Sinclair, J. A. and Diduck, A. 1995. Public education: an undervalued component of the environmental assessment public involvement process. *Environmental Impact Assessment Review*, 15, 219-240.
- 41 Smith, C. L. and Gilden, J. 2002. Assets to move from watershed councils from assessment to action. *Journal of the American Water Resources Association*, 38 (3), 653-662.
- 42 Swainson, R. and de Loë, R. 2010. *Exploring the Role of Policy Transfer in Water Governance: A Discussion Paper* Waterloo: Water Policy and Governance Group.
- 43 Termeer, C. J. A. M. 2009. Water Professionals and Public Leadership. *Irrigation and Drainage*, 58 (Special Issue Supplement 2), 212-216.
- 44 Van Buuren, A. 2009. Knowledge for governance, governance of knowledge: inclusive knowledge management in collaborative governance processes. *International Public Management Journal*, 12 (2), 208-235.
- 45 Varady, R. G., Moote, M. A., and Merideth, R. 2000. Water management options for the Upper San Pedro Basin: assessing the social and institutional landscape. *Natural Resources Journal*, 40 (2), 223-235.

Water Policy and Governance Group: About Us

The Water Policy and Governance Group (www.wpgg.ca) is a multi-university research collaborative. Our focus is water governance and water policy, primarily – but not exclusively – in Canada. Major themes in our research program include water security, source-water protection, water allocation, and adaptation to climate change. We conduct practical, policy-relevant research that contributes solutions to these problems.

Our success is grounded in our network of researchers and partners across Canada and around the world.

Graduate training is a central part of our mission. We accomplish our goals in large part because of the excellence of our graduate students, post-doctoral fellows, and research associates.

For more information about the WPGG, see www.wpgg.ca

