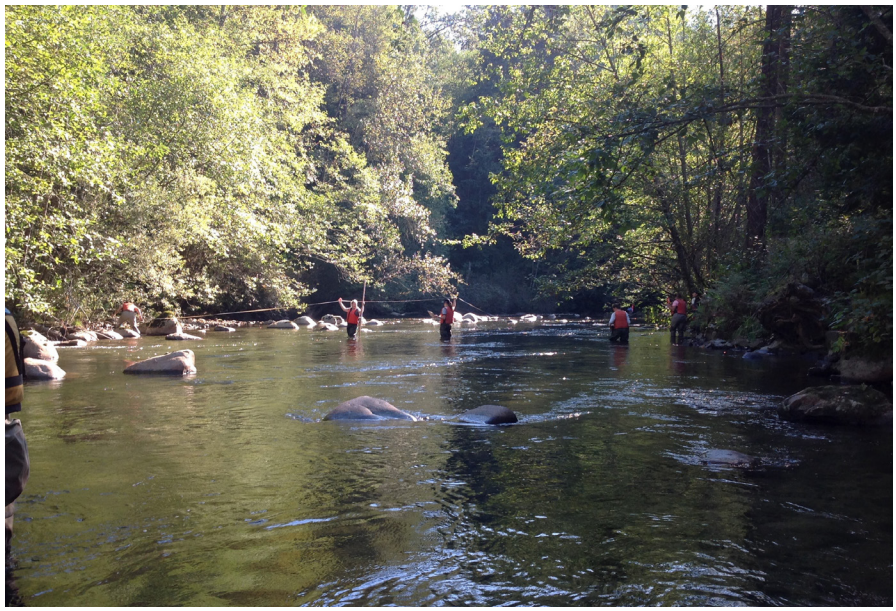
by Marni Turek and Craig Orr

Strength through Partnerships

Coquitlam River stakeholders partner to develop a new kind of watershed plan

Municipalities are constantly faced with the challenge of addressing the immediate needs of people, while sustaining a healthy environment and future wellbeing. Within this context, it is important to understand that healthy watersheds provide communities with key ecosystem services, such as clean water, flood control, climate regulation, abundant fish and wildlife, and more. These ecosystem services also provide humans with important cultural, spiritual, and health benefits that contribute to a healthy community.[1] In the Coquitlam River watershed, a new kind of watershed plan has been developed – one that recognizes the important linkages between healthy watersheds and healthy humans by endeavouring to fully integrate ecosystem services and related measures of human wellbeing into the decision-making process. This unique approach to watershed planning is the first of its kind in Canada.[2]

The cities of Coquitlam and Port Coquitlam, together with Kwikwetlem First Nation, have aligned their efforts on a watershed-wide scale, setting aside political boundaries to make progress on important watershed issues. This was made possible through their collaboration with the Coquitlam River Watershed Roundtable, whose mission is to facilitate collaborative resolution of urban growth and natural resource use pressures; inform and educate people about these matters; and promote and support conservation of a sustainable, healthy watershed. The roundtable is using proven methods of adaptive management to create a results-based watershed plan, built on the principles of partnership and collaboration, and recognizing the



Students from British Columbia Institute of Technology take part in Level 1 Fish Habitat Assessment on the lower Coquitlam River. Collaborative research initiatives like this help to fill data gaps to improve the health assessments. Being limited by data upfront is not a barrier in the open standards approach. Data can be acquired as feasible along the way.

1 F.S. Chapin III, G.P. Kofinas, and C. Folke (eds), *Principles of Ecosystem Stewardship: Resilience-based Natural Resource Management in a Changing World*, 2009, Springer Science and Business Media.

2 Abby Hook, Hook Environmental, personal communication.

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The Coquitlam River watershed is still a place of many natural features, including several species of salmon. The word Coquitlam, or Kwikwetlem, is derived from the Coast Salish language and means "red fish up the river," which refers to the red sockeye that once teemed up the Coquitlam River in thousands. While the dam, urbanization, and demands on water have decimated the iconic sockeye, many other species are rebounding. After nearly two decades on the Endangered Rivers list, the Coquitlam River was removed from the list in 2014 due to the formation of the roundtable and the commitment by the cities of Coquitlam and Port Coquitlam to progress towards developing this watershed plan.

linkages between ecosystem services and human health and wellbeing. The Lower Coquitlam River Watershed Plan (LCRWP) highlights the need to protect and restore key ecosystem services, and showcases that challenges can be overcome through creative partnerships and effective collaboration.[3]

The Coquitlam River Watershed and the Need for a Watershed Plan

The Coquitlam River watershed is a partially-urbanized watershed that drains 261 square kilometres of the North Shore Mountains in the lower mainland of British Columbia. As an important source of drinking water and hydroelectric power for the Metro Vancouver region, the upper watershed is a protected area and boasts a vast headwater wilderness, including the Coquitlam Lake Reservoir above the Coquitlam Lake Dam. Below the dam is the lower Coquitlam River watershed, which includes at least 30 watercourses. The lower Coquitlam River runs through Coquitlam and Port Coquitlam and the traditional territory and reserve lands of the Kwikwetlem First Nation. An estimated 156,700 residents live in the lower Coquitlam River watershed.

This lower watershed is heavily urbanized (over 75 percent of the lands are developed) and faces a variety of resource and land use pressures. It has been significantly impacted by human activity over the last century; yet, until now, the lower Coquitlam River watershed has lacked its own watershed plan.

Differences between commercial, industrial, real estate, recreational, and environmental interests in the watershed were rarely resolved to the satisfaction of all parties, and cooperation was elusive. There was no central forum where all parties could work together to address existing problems and proactively plan through consensus-based solutions that considered the broader interests of the parties and the watershed. Realizing that a different approach was required to improve decision making amongst the many stakeholders in the watershed, the cities of Coquitlam and Port Coquitlam and the Kwikwetlem First Nation, assisted by a multi-sector steering committee, led a stakeholder and engagement process that led to the creation of the roundtable. As a result of this deliberative and collaborative process, the roundtable has a strong foundation – with a mission statement, a common vision and values statement, guiding operating principles, and a clear governance structure.

Due to the many watershed pressures evident in the lower watershed, the roundtable recognized early in its visioning process the value of developing a watershed plan that would:

- address a comprehensive and integrated scope of issues;
- recognize and integrate the important linkages between ecological health and human wellbeing;
- characterize existing conditions and potential pressures, and identify strategies needed to ensure the future health of the watershed;
- identify measurable and achievable goals;
- complement other studies and fill information gaps;
- involve the community; and
- help track improvement in watershed health.

The challenge was how to deliver an innovative solution to advance watershed governance in a realistic and timely manner across multiple jurisdictions on a watershed-wide scale, while being respectful of capacity and resources.

Regionally, Metro Vancouver municipalities committed to undertake integrated stormwater management planning for every urban watershed by 2014; however, due to the overall percentage of undeveloped lands in the upper watershed, a plan of this nature for the Coquitlam River did not qualify. Falling outside of any legislated mandate, the roundtable needed to find a cost-effective approach and secure the necessary funding through external sources. In order to meet the needs of the partners and address these challenges, the roundtable was tasked with finding a process that could be comprehensive enough to address the complexities and interconnected nature of watershed planning, while being flexible enough to account for the areas where there was limited availability of data and few resources. Recognizing the need for a plan that was practical and affordable, the roundtable set forth with the goal of developing a cost-effective, collaborative watershed plan that could be achieved within a realistic time frame.

The Need for an Adaptive Management Approach

The partners found a cost-effective approach, proven successful in other watersheds, known as the Open Standards for the Practice of Conservation.[4] This five-step adaptive management approach seeks to integrate both ecological and human wellbeing concepts into the watershed planning process. Its key benefits include the ability to:

- better link actions to desired impacts;
- build in an evaluation framework from the beginning;

3 <www.coquitlamriverwatershed.ca/content/watershed-plan>.

4 <www.cmp-openstandards.org>.

- synthesize all different types of information;
- use an iterative process allowing for faster implementation; and
- account for ecological and human goals, which link through the provision of ecosystem services.

Traditionally, integrated stormwater management planning involves data collection, monitoring, mapping, and hydrological analyses that require significant resources. The open standards methodology uses existing resource information, community-based and traditional ecological and cultural knowledge, and local experts to fill the data gaps, thereby providing significant cost and time savings. As development of the watershed plan may guide future land use decisions, the roundtable sought funding from organizations that support healthy-living values and could influence growth in this area (Real Estate Foundation of British Columbia, Metro Vancouver, and Seattle-based Bullitt Foundation). Though the open standards approach has been used throughout the United States for conservation planning, and in the Pacific Northwest for watershed planning, this is the first application of this tool for watershed planning in Canada, and among the first applications to fully integrate both ecological and human wellbeing goals.

Watershed Planning Process

Between 2012 and 2015, the roundtable engaged over 60 partners in the municipal, provincial, regional, federal, and First Nations governments, aggregate industry, arts and culture, education, outdoor recreation, real estate development sectors, and stewardship groups to work together to create the LCRWP. The first phase of the planning process involved developing conceptual models by answering the following key questions:

- What do we care about and think is critical?
- How healthy are the things that we care about?
- What pressures are affecting the things we care about?
- Which pressures are the worst?
- What factors are contributing to the current situation?

Table 1

Healthy Watershed Components

Ecological Components	Human Wellbeing Components
• Coquitlam River System • Riparian Areas • Salmon • Natural Areas	• Liveable Communities • Human Health and Safety • Resource Industries • Recreation • Cultural and Spiritual Values • Stewardship

Guided by the vision of a healthy watershed, the roundtable began identifying key ecological and human wellbeing components that would make a healthy watershed, and conducting health assessments. Ten ecological and human wellbeing components were identified, as shown in Table 1.

A subsequent exercise identified eight key pressures as affecting or threatening the 10 healthy watershed components: development, stormwater, invasive species, water extraction, recreation, vandalism/illegal activities, mainstream cultural norms, and mining. Conceptual models were developed to describe how these key pressures affect key components, and participants summarized the contributing factors and existing strategies, or opportunities and activities that could effect change.

The second phase involved developing a strategic plan to identify priority strategies that address the root causes as to why a pressure persists, and to ensure that measurable and realistic goals are in place. This step involved deciding how to overcome critical threats and restore degraded components, identifying specific objectives that were imperative and the specific actions required to achieve those objectives. The strategic plan will be used to record goals and measures to determine success. It includes an inventory of specific strategies that the roundtable can implement, as feasible and practical, to further the goal of improved health of the watershed.

While the process to develop the watershed plan occurred over a duration of three years, the pace of work was manageable, and participants remain committed and engaged. Through 36 workshops and meetings involving 2,100 in-kind hours from 18 organizations, the watershed plan was successfully launched on Earth Day, April 22, 2015. The financial cost to develop the watershed plan was offset by external funding totaling $150,000 cash, as well as partnership in-kind contributions totaling $71,300. The Lower Coquitlam River Watershed Plan is a living document that will change with time under the principle of adaptive management.

The roundtable partners will continue to apply for grants specific to supporting the implementation of the priority strategies and the day-to-day management of the plan. Clearly identifying implementation partners and resources (funding and in-kind) will be a factor in successful implementation of the plan.

Conclusion

The collaborative partnership between the cities and Kwikwetlem, along with an adaptive planning approach, has proven effective in delivering an innovative solution to advance watershed governance in a realistic and timely manner across multiple jurisdictions, and on a watershed-wide scale. This is a significant step forward in advancing the concept and consideration of ecosystem services – including cultural and spiritual services. Incorporating resilience thinking and consideration of ecosystem services and human wellbeing holds significant promise of a new paradigm in sustainable development and watershed stewardship. As people

continue to put more and more pressure on ecosystems, it will become increasingly important to understand and promote the value of healthy watersheds to community and human wellbeing. As the roundtable and current medical and social research are showing, chances of achieving success ultimately depends on acknowledging the shared and multiple benefits of healthy watersheds, and working collectively to get there.

Collaboration between the cities of Coquitlam and Port Coquitlam and the Kwikwetlem First Nation has been an extraordinary experience, given the multi-jurisdictional nature of the Coquitlam River watershed. As the roundtable guides strategies for action through the watershed plan, it applauds its forward-thinking municipal and First Nation partners and the many watershed sectors for making the implementation of the plan a realistic possibility. This collaboration demonstrates how collective support can extend beyond the borders of political jurisdictions, ensuring physical watershed boundaries are taken into account when decisions related to water resources are made. MW

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