

Summary and Recommendations

Community Planning Tools and Approaches for Protecting Freshwater Shorelines in the Thompson – Nicola – Shuswap Region of the BC Interior in Response to Climate Change

The Living by Water Project
An initiative of BC Nature (Federation of BC Naturalists)
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Summary

Project background. This is a summary of the final report¹ for a research project carried out between October 2005 and September 30, 2006 by The Living by Water Project (LbyW)² of BC Nature (Federation of British Columbia Naturalists). The project integrated community-based research with a review of planning policy, and input from the scientific literature on potential impacts of climate change in the study area (the Thompson – Nicola – Shuswap area of the BC interior). Funding was provided by the Climate Change Impacts and Adaptation Program of the Government of Canada, BC Ministry of Environment, Real Estate Foundation of BC, City of Kamloops, as well as substantial in-kind contributions.

Although the project terminated on September 30, 2006, community interest continued after this date, with other activities continuing to take place, carried on by local groups with in-kind support from LbyW.

LbyW is one of the principal initiatives of BC Nature. Since its founding in 1998, LbyW has worked with community groups, local governments and professional organizations on a range of activities associated with shoreline education and outreach. These activities have included workshops and seminars for audiences of local government officials, realtors, land use professionals, those involved in the development industry, and many community-based groups of volunteers who work with shoreline residents.

The LbyW mission is “working towards healthier human and wildlife habitat along the shorelines of Canada”. Through publications such as a highly successful and well received book *On the Living Edge – Your Handbook for Waterfront Living*, workshops,

¹ The full report will be available later this spring on the website of the CCIAP program, in its “project database”. Refer to http://adaptation.nrcan.gc.ca/index_e.php

² The Living by Water Project (www.livingbywater.ca) was founded in 1997 by Sarah Weaver Kipp and Clive Callaway in British Columbia, under the auspices of BC Nature. The project is now coordinated nationally by Nature Canada, with BC Nature responsible for the program in BC.

seminars and other services, LbyW has helped increase understanding of the many values of healthy riparian areas along both freshwater and marine shorelines.

In developing a Shoreline Stewardship Tool Kit for Local Government, and as a result of feedback from various BC communities, LbyW project staff identified a need to explore the impacts of climate change on shorelines, and the kinds of tools which communities might explore to assist in adapting to these impacts. This led to the development of this climate change project, with a particular focus on freshwater shorelines and their associated water bodies.

The value of riparian areas. The planning decisions we make today will influence the resiliency of our communities to adapt to future climate change impacts. How we handle development along shorelines is of particular interest due to the potential impacts of climate change projections. These include increased frequency of floods with higher magnitudes than previously experienced, and more intense precipitation events, with associated runoff. If we protect shorelines from development, we may be able to reduce some of the risks for damages associated with floods, runoff and erosion, and also protect water quality.

Naturally vegetated riparian areas have many values which have tended to be underplayed with the focus on their role in contributing to habitat for fish, through the Federal Fisheries Act, the Fish Protection Act of BC and associated Riparian Areas Regulations. Their value as an asset under a changing climate needs to be recognized. They can reduce the impacts of floods, help filter polluting runoff to protect water quality, and help hold soil together to prevent erosion.

Study approach. This project employed a community-based consultative process to explore some of the questions around climate change adaptation in the Thompson – Nicola – Shuswap area of the British Columbia interior. The focus of the project was on shorelines and water resources, and the range of tools available to help communities adapt to climate change and protect their natural capital assets.

The approach used in the project included a variety of tools, including a literature review, analysis of selected Official Community Plans from the region, interviews with community representatives, community focus groups and a highly successful (as rated by many participants) community forum in September 2006, “If We Snooze, Do We Lose? A Forum on Adapting to the Impacts of Climate Change”. This forum used a unique approach to balance science presentations with opportunities for community dialogue, built on the model from a workshop held earlier in 2006 in Prince George, British Columbia. Interest in the forum was so great that a spin-off forum on climate change adaptation was held in Salmon Arm in November 2006.

Vulnerabilities identified. Several vulnerabilities were identified during the process related to potential climate change impacts. Two principal ones were the potential for

impacts associated with storm events, and the concern for water supply availability at particular times of the year. The question of the impact of the Mountain Pine beetle was also a topic raised frequently during the project. The beetle is killing massive areas of trees in the British Columbia interior. As well as impacting the area's forest ecosystems, and community economies, it will also have a direct impact on hydrology and runoff flows. Another potential impact raised during the project was that of the spectre of "eco-refugee" migration into the area as a result of climate change impacts elsewhere, and the need to consider this possibility in long range planning and identification of potential growth areas.

An underlying premise of this project is that because impacts are felt locally, solutions and programs to adapt to climate change also need to be developed at the community level.

Perceptions of study participants. A number of themes emerged from an interpretation of the input from community representatives, focus group participants, and those who discussed climate change at the forum. A brief summary of these perceptions follows:

Nature of climate change. There was a perception among some participants that climate change is something in the future, and that it will occur slowly and incrementally. This slow rate of change will give communities adequate time to develop capacity to respond.

Others do not feel adequately prepared for the degree of challenges which could be posed by climate change. While they have learned from events such as recent forest fires in various parts of the study area, they still feel vulnerable. There is also some concern that a sense of complacency may be developing to think "that it won't happen again".

A sense of disconnect from the decision-making processes – that decisions being made at local and provincial levels do not reflect their views, and that their input is not heard. At the same time, a frequently mentioned theme, from both local government and citizen perspective, was that the "push" of citizens calling on local governments for action is a force that is listened to.

Need for significant changes in attitudes and behaviour. Part of climate change adaptation, and mitigation, will involve significant changes in attitudes and behaviour around lifestyles. In particular, our consumption-oriented society needs significant changes towards a more conservation-oriented society.

The link to natural systems. In responding to climate change and developing ways of dealing with it, the complexity of ecosystems needs to be understood before reacting; "integrated ecosystems need integrated approaches".

Data needs. Adapting to climate change requires scientific data to monitor the nature and degree of that change. There was concern expressed that some of the sources of this data are being cut back for cost-savings purposes, at the very time when such data is critical.

Education. The need for education and communication materials and strategies were common themes, aimed at various target audiences.

Limits on capacity of local governments and communities. The capacities of both local governments and community-based organizations are currently (2006) stretched; this will be an added challenge in developing strategies to adapt to climate change.

Role of professional interest organizations. Community-based groups and local government representatives are looking to their professional organizations for some of the leadership that is required for climate change adaptation.

The costs of adapting to climate change. The economic costs associated with adding climate change adaptation to building and development standards was noted; however, the cost of not doing anything was also noted, and the risks associated with such a course of “non-action”.

Need for a “proactive” approach. With climate change, they suggest that a “proactive” approach is required. The support of “early adopters” or champions would help gain political profile.

Political will and leadership, roles and responsibilities. The need for leadership and political “will” was identified, or phrased, in a variety of ways. One participant phrased it as “we know what we should be doing; however, we have never set a precedent to say ‘no’ to developing in vulnerable areas like floodplain or close to shorelines.”

Decision-making in the face of uncertainty. Community decision-makers may feel uncomfortable with the level of uncertainty that decision-making in the face of unknown changes to climate requires.

Need for climate change round tables and partnerships. Dialogue amongst community regional representatives, across all sectors of the region, is the way to move forward on adapting to climate change. The main requirement now is for communities to take action and identify centres of responsibility within each community for climate change adaptation. One of the topics to be discussed will be that of who will take the leadership role for moving climate change adaptation forward in this region? With the release of this final report, it is anticipated that community groups will continue the dialogue carried out during the project and

explore ways to work together to deal with climate change impacts and develop necessary adaptive measures.

Questions explored during this project included what tools are available to minimize risks from climate change impacts on shorelines and water resources, what role community planning plays in implementing these tools, how planners can incorporate the potential impacts of potential climate change into planning practice, and, are there “no regrets” actions – measures worth doing anyway. The focus of the project was on adapting to climate change impacts (as distinct from actions to mitigate, or reduce, greenhouse gas emissions.)

A limited review of selected planning documents from the study area (specifically with reference to shorelines and water resources) identified a number of existing policies with climate change adaptation implications. Some of these policies could be strengthened; others need reviewing. In addition, although communities are not using climate change adaptation terminology, and are not driven primarily by climate change adaptation, there are nonetheless a number of efforts underway in the study area that will likely have a climate change adaptation benefit.

Recommendations have been developed for senior and local governments, and the community. Key recommendations relate to: principles to recognize with respect to climate change adaptation (such as the adaptation values of natural ecosystems, the importance of diversity, replicating the natural “water balance” in carrying out storm water management planning); actions for local governments to take with respect to incorporating climate change adaptation into the decision matrix; and ways that senior governments can support local governments. Other recommendations relate to education, and the need for further information to support climate change adaptation planning.

Preliminary Recommendations

A range of actions have been identified which flow from the conclusions of the project. Recognizing that many of these actions are preliminary in nature and need more development as the climate change adaptation process strengthens, recommendations are stated in point form only.

All levels of government and community

Acknowledge and recognize the following key principles with respect to climate change adaptation:

- The climate change adaptation value of natural ecosystems – benefits of riparian areas and wetlands
- Principle of resiliency through diversity
- Integrated stormwater management planning – principle of water balance

- Watershed planning and importance of links between groundwater and surface water
- Building and site design to minimize vulnerability to flood risks etc.

Senior governments

Provide climate change adaptation support for local communities, including:

- A planning decision matrix tool, listing a range of possible adaptation techniques, and the criteria or conditions under when each could be considered, the conditions under which a given tool would give the “biggest bang for the buck”, and conditions when its use would not be helpful.
- “Packaged” guidelines for Official Community Plans and other documents for local governments with respect to climate change adaptation.
- Expand the province’s climate change adaptation program with additional personnel or contractors who would be tasked with providing direct support to local governments.

General actions

Undertake education programs for various audiences within the general public with respect to:

- Climate change adaptation initiatives on private property to increase resiliency of communities – for example, encouragement of individuals to increase natural areas, protect and restore riparian buffers, take action to improve the “stormwater friendliness” of their properties, and carry out water conservation activities
- Tools for individuals to increase their own resiliency to adapt to climate change

Information requirements: Meet needs of local communities with respect to information needs identified during the project

Support tools such as community mapping.

Local governments

Planning for future population growth: Identify and protect potential higher elevation future water sources and storage for long range development and growth (working where necessary with senior governments for Crown land protection).

Review planning and operations documents and develop climate change adaptation statements for each document (planning, engineering, architecture, public works, recreation and parks, etc.)

Implement “no regrets” actions – measures worth doing anyway, for example:

- “Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia”
- “Smart Growth” principles and tools, including alternative development standards in communities to shift the traditional pattern of stormwater drainage
- Avoiding development in risk-prone areas – on flood-plains, in areas potentially subject to landslip, or inside setback areas beside streams and lakes.

For communities in the Thompson – Nicola – Shuswap

Continue dialogue / explore ways of developing partnerships re climate change adaptation

Create centres of responsibility within local government for developing climate change adaptation strategies

Professional organizations

Professional development and training with respect to adaptation (engineering, planning etc.)

LbyW

Disseminate project results

Provide support for a Thompson – Nicola – Shuswap series of Climate Change Impacts and Adaptation Round Table discussions, with potential to lead to a climate change adaptation partnership in the area

Explore potential for a chapter on climate change and climate change impacts and adaptation in the next edition of *On the Living Edge*

Help facilitate a process of prioritizing information needs and securing access to information required for climate change adaptation

Definitions

Mitigation. A human intervention to reduce the sources or enhance the sinks of green house gases.³

Adaptation. An adjustment in natural or human systems in response to actual or expected climatic changes, which moderates harm or exploits beneficial opportunities.⁴ Adaptation is a necessary strategy at all scales to complement climate change mitigation efforts.

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³ Mehdi, B. (ed.) (2006). Adapting to climate change – An introduction for Canadian municipalities.. McGill University Bruce Centre for Water Resources / C-CIARN, p. 31.

⁴ Lemmen, D. S., and Warren, F.J. (eds.). (2004). Climate change impacts and adaptation: A Canadian perspective. Climate Change Impacts and Adaptation Directorate. Natural Resources Canada. Ottawa, p.9.