

Shoreline Stewardship Support for Local Government

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“The short-lived third-century Emperor Marcus Aurelius Marius so loved the shimmer of morning light on the water that he had a passage cleared between his house and the coast to open up a view. In the fourth century, the Greek philosopher Plutarch thought a sail along the coast or a stroll along the shore a supreme pleasure. Next came the first zoning law for the beach. Coastal vistas were so cherished, and the competition for them was so keen, that by the sixth century the Emperor Justinian the Great was compelled to pass an ordinance barring construction within one hundred feet of the shore...” (Lencek and Bosker 1999, p.31)

Introduction

Planning of shoreline development is now managed, not by imperial decree, but by a variety of levels of government. A significant portion of the responsibility falls upon local governments. For example, in British Columbia, the new “Community Charter” and its provisions for enactment of environmental bylaws place increasing responsibility and authority at the municipal level for environmental management. The trend towards implementing performance standards, and the increasing roles played by the insurance and legal industries, require that local governments generally pay increased attention to environmental due diligence (including archaeological due diligence), and risk management matters in decision-making.

A number of other trends are significant for shorelines. The Canadian federal government is adopting a Risk Management Framework to guide decision-making under the Federal Fisheries Act. The British Columbia provincial government is implementing the Riparian Areas Regulation, under the Fish Protection Act. The 2004 Union of BC Municipalities convention adopted a resolution acknowledging the importance of shoreline stewardship (Union of BC Municipalities 2004, p.41).

Demographic trends are influencing shoreline development; baby boomers are fuelling demand for shoreline property (Royal LePage 2003). In recent years, there have been many more people looking for recreational property than there has been property available for purchase (Royal LePage 2003). This demand creates development pressure which adds to the burdens that local governments face in making decisions on shorelines. At the same time, 50% of cottage owners and potential purchasers of recreational property want “peace and tranquility” (Royal LePage 2004).

A number of studies have demonstrated that the values of shoreline property are linked to water quality; as water quality deteriorates, the relative value of shoreline property declines (for example, Krysel et al 2003).

Shorelines are susceptible to the impacts of climate change. For example, in the last century, average sea levels rose between 4 and 12 centimetres along the BC coast (Ministry of Water, Land and Air Protection 2002, p.30). Development decisions must take into account potential for storm surges and erosion.

Over the past seven years the Living by Water Project has developed a range of resources and materials relating to shorelines, and disseminated these to local governments and community-based groups through a capacity-building program for communities (the Community-based Action Program for Shorelines – “CAPS”). Many of the materials and tools used in the CAPS program have been brought together in a Shoreline Stewardship Tool Kit for local government. The Tool Kit is continually evolving, and is designed to assist local government elected officials and staff in informed decision-making, and in contacts with citizens concerning ocean and lake fronts, stream and riversides. The Tool Kit’s focus is on marine and freshwater shorelines (including estuaries) and includes information on climate change and adaptation, among a myriad of other elements.

The Tool Kit is aimed at assisting local government access the most current knowledge about shoreline stewardship;

this integrated information package will assist in informed decision-making, especially in light of needs for appropriate risk management and environmental due diligence. Adapting to the impacts of climate change poses an additional challenge to local governments.

Benefits of Healthy Shorelines

Healthy natural shorelines, characterized by extensive presence of native “**riparian**” vegetation, play critical roles in protecting private property and public infrastructure. They are one of the most productive ecological zones on earth (Environment Canada 1992, p3). The economic, social and ecological values of healthy shorelines can be substantial; healthy shorelines with adequate riparian buffer widths (see Millar et al 1997) provide many values in addition to the fisheries values noted in the Canadian Federal Fisheries Act or the BC Fish Protection Act. Many sources have documented these values (for example, Fraser River Action Plan 1996; National Research Council 2002; Wenger 1999).

- X Healthy riparian areas hold the soil together and help prevent erosion and loss of property.
- X They filter out pollutants before they reach the water and so protect water quality.
- X By protecting water quality, they help protect property values.
- X They act like a sponge to absorb water in times of flooding and thus help reduce property damage from floodwater.
- X They help protect water supplies.
- X They provide habitat for fish and other wildlife.
- X They contribute to economic values such as tourism, recreation, and fisheries.
- X Recent research has confirmed the values of marine riparian areas (Lemieux et al 2004; Stewardship Series 2003).

From a legal perspective shorelines are one of the most complex parts of the landscape. They can often represent highly valuable pieces of real estate.

Background

Over the years of developing the Living by Water Project, the co-authors have worked with many local governments, as well as shoreline residents, and with groups and agencies which influence shoreline residents. Founded in 1997, the Living by Water Project is a Canadian non-profit partnership initiative working to protect, conserve and restore marine and freshwater shorelines. It has a mission of “*working towards healthier human and wildlife habitat along the shorelines of Canada*”. Services provided have included the book *On the Living Edge, Your Handbook for Waterfront Living* (Kipp and Callaway 2002), as well as presentations, training sessions, and workshops to support local government decision-making.

In early 2004 Living by Water Project personnel conducted a scoping survey of staff of municipalities in the Georgia Basin. Through unstructured interviews, feedback from workshops and a limited email survey, a variety of land use planners and others were invited to comment on the need for the Shoreline Stewardship Tool Kit and its components.

Their needs can best be summed up in the words of one approving officer with respect to the changes at the provincial level: “Planners are not trained in all the necessary areas. I don’t know how we are going to cope.” There was virtually unanimous consent that the kit is a useful product: “I think it all sounds useful. As a small municipality we don’t have the staff time or expertise to be able to generate this information. It would be a great resource.” (Quoted by Federation of BC Naturalists, 2004).

Shoreline development issues often are complex. In addition to the many ecosystem services that healthy riparian

areas perform, shoreline areas are also attractive for a variety of human economic activities. Some of the factors that local governments need to take into account in making decisions involving shoreline development include the following:

- Poor decisions on shoreline development can have long lasting ramifications.
- Citizens' emotional attachments to shorelines can result in concern over planning and shoreline development becoming major community issues.
- Fines for damage or disturbance to shoreline environments, and ascribed legal costs, can be substantial.
- If the quality of municipal water supplies deteriorates, infrastructure costs will be incurred for water treatment.
- Human activities can exacerbate or cause many erosion problems. The costs of an eroding shoreline (whether privately or publicly owned) include the impact on water quality, the physical loss of the lands involved, and the costs to stabilize the shoreline, which can be considerable.
- Sea levels in coastal areas are forecasted to continue to rise as a result of climate change.

In response to local government needs, and the planning context for shoreline development, a Shoreline Stewardship Tool Kit has been developed by the Living by Water Project.

Tool Kit Approach and Contents

The Tool Kit is client-centred. Its development has been guided by the needs of users, and how they will benefit from, and use, the resources and materials provided. Themes that are addressed in communicating with local governments include risk management, due diligence, climate change adaptation, and helping local government make decisions from the basis of "enlightened self-interest". Resources and materials are presented in terms of how they support local governments in implementing shoreline stewardship policies. Training is offered to support local government decision-making around protecting, conserving, and restoring both freshwater and marine shorelines.

The Tool Kit provides an integrated focussed set of information summarizing current best practices in managing shorelines; it is full of resources, including ideas from outside of British Columbia. It brings together a wide range of topics that link to shoreline stewardship: demographic and related development trends (baby boomers, second home purchasers; condos); climate change implications (rising sea levels, changes in temperature and precipitation, and adaptation); case examples (including legal cases). The Tool Kit is provided initially on CD (DVD and web-based approaches are in development); it includes an annotated "User's Guide".

Information and resources are organized in a number of ways:

Trends

- Trend information affecting shoreline planning and development, such as demographic, consumer, development, and changes in provincial and federal approaches and legislation.

Shoreline Type

- Planning for coastal, lake, river/stream, wetland -- includes a variety of Best Management Practices documents available through the Canadian Stewardship Centre web portal (www.stewardshipcanada.ca) and through the BC Ministry of Water, Land and Air Protection.

Issues and themes

- A variety of resources around shoreline issues, such as climate change information and adaptation experiences, new approaches to managing onsite sewage treatment systems, Canada's Local Authorities' Guide to Boating Regulations, archaeological impact assessment and review process, implications of FireSmart guidelines and West Nile Virus for riparian areas etc.

Practice

- Case examples and case studies – lessons from other communities, legal cases, shoreline boundaries, erosion issues, development case studies, shoreline restoration “before and after” examples, soil bio-engineering in shoreline restoration, identifying conflicts in best practices (e.g. FireSmart and riparian areas), thinking outside the setback “box”, ideas from other local governments (for example, the City of Kelowna, B.C. “Living by Water Dessert Evening” for shoreline residents).
- Extracts from local government bylaws, including Official Community Plans and Development Permit Area bylaws.

Resources

- Video extracts featuring elements relevant to freshwater and marine riparian topics (DVD and web versions only).
- Living by Water Project PowerPoint presentations for various audiences (with speaker’s notes), including presentations for shoreline residents, elected officials, planners, developers, and tourism operators.
- Living by Water Project resources, including *On the Living Edge, Your Handbook for Waterfront Residents*, brochures and posters (provided separately to CD), and the Shoreline Event and Activity Manual.

Living by Water Project Products and Services Useful for Local Governments

A variety of Living by Water materials support the resources of the CD and form part of the Tool Kit. Local governments have used these materials in a variety of ways; for example, in a customized distribution to residents of a target area (for example, throughout a Development Permit Area). The book for shoreline residents has been cited as a good model of best practices for shoreline residents to follow, in a lakeshore guidelines planning document (Thompson-Nicola Regional District 2004).

- *On the Living Edge – Your Handbook for Waterfront Living* – 144 page practical manual for shoreline residents with tips and an easy to read style (used by planners, realtors, and others, as well as shoreline residents).
- Workshop-in-a-Box - a portable “do-it-yourself” kit, provided on loan from the LbyW office, to help a local community group host a Shoreline Resident Workshop; based on *On the Living Edge*.
- Customized brochures and articles – summarize the messages of shoreline stewardship for freshwater and coastal shoreline residents and other audiences.
- Shoreline Event Activity manual – outlines a range of ideas for activities to help raise awareness about the importance of shorelines. Includes activities in which local governments can partner with local community-based groups (for example, a “Shoreline Celebration” event), or a “Living by Water Dessert evening” for shoreline residents.
- Promotional products – include bookmarks with website address; posters; fridge magnets.

Living by Water Project services include a variety of training sessions, clinics and workshops:

- Shoreline Clinic for Elected Local Government Representatives - the benefits of healthy shorelines; “due diligence” issues to help local government officials with informed decision-making on shoreline development.
- Customized Shoreline Clinics for Area Planning Commission members, planners and other local government staff - information on regulations regarding shoreline development, sewage, streamside protection, and available resources – vary in length according to need.
- Open Houses, Introductory Presentations, Shoreline Forums - presentations for all citizens and/ or customized for shoreline residents; provide an opportunity for visioning and to share and focus on the role and value of community shorelines (for example, as part of a community or growth strategy planning process).

- Customized training on tools and techniques for outreach and communication.
- Support for local government by providing outreach services and training for various specialized audiences in an area, including shoreline residents, realtors, home and property inspectors, developers, contractors, and tourism operators.

Conclusion

The Shoreline Stewardship Tool Kit focuses resources, information and case examples around a single element of the landscape, in order to support informed decision-making at the local government level.

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Working towards healthier human and wildlife habitat along the shorelines of Canada

References

Environment Canada, 1992, Water, Art, and the Canadian Identity: At the Water's Edge, Freshwater Series, A-7, 16pp.

Federation of BC Naturalists, 2004, Report on Activities under a Grant through the Georgia Basin Action Plan, Shoreline Stewardship Support for Municipalities in the Georgia Basin, 7pp.

Fraser River Action Plan, 1996, Fringe Benefits: A Landowner's Guide to the Value and Stewardship of Riparian Habitat, Vancouver, B.C., 28pp.

Kipp, S. and C. Callaway, 2002, On the Living Edge – Your Handbook for Waterfront Living, Federation of British Columbia Naturalists, Vancouver, B.C., 142pp.

Krysel, C., E.M. Boyer, C. Parson and P. Welle, 2003, Lakeshore Property Values and Water Quality: Evidence from Property Sales in the Mississippi Headwaters Region, Mississippi Headwaters Board and Bemidji State University, Walker, Minnesota, 56pp.

Lemieux, J.P., J. Brennan, M. Farrell, C.D. Levings, and D. Myers, 2004, Proceedings of the DFO/PSAT Sponsored Marine Riparian Experts Workshop, Tsawwassen, BC., February 17-18, 2004, Can Manuscript Report No. 2680, 84pp.

Lencek, L. and G. Bosker, 1999, The Beach, Penguin Books, New York, 310pp.

Millar, J., N. Page, M. Farrell, B. Chilibeck, and M. Child, 1997, Establishing Fisheries Management and Reserve Zones in Settlement Areas of Coastal British Columbia, Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 2351, 60pp.

Ministry of Water, Land and Air Protection, 2002, Indicators of Climate Change for British Columbia 2002, 48pp.

National Research Council (National Academy of Sciences), 2002, Riparian Areas – Functions and Strategies for Management, National Academy Press, Washington, D.C., 428pp.

Stewardship Series, 2003, Coastal Shore Stewardship, A Guide for Planners, Developers and Builders on Canada's Pacific Coast, Province of British Columbia and Fisheries and Oceans Canada, 94pp.

Royal LePage Recreational Property Reports, 2003, Toronto, 33 pp.

Royal LePage Recreational Property Reports, 2004, Toronto, 29pp.

Thompson-Nicola Regional District, 2004, Lakeshore Development Guidelines, Kamloops, B.C. 73pp.

Union of BC Municipalities, 2004, Minutes of the 101st Annual Convention, Kelowna, B.C. September 21 – 24, 2004, 69pp.

Wenger, S., 1999, A Review of the Scientific Literature on Riparian Buffer Width, Extent and Vegetation, Office of Public Service and Outreach, Institute of Ecology, University of Georgia, Athens, Georgia, 59pp.