

From: Laurie Kremsater
Sent: April-29-10 8:28 AM
To: Living Water Smart ENV:EX
Cc: Fred Bunnell; r wells@interchange.ubc.ca
Subject: comments on modernization of Water Act
Attachments: Water Act_Wetlands Submission April 29.doc

Please find attached our comments on the modernization of the Water Act. Please let me know if there is any difficulty reading the attachment.

regards,

Laurie Kremsater

Comment on BC's *Water Act Modernization* Discussion Paper and Technical Background Report

April 29, 2010

Fred, L. Bunnell, Professor Emeritus, Conservation Biology/Forestry, UBC, Ph.D., R.P.Bio.
Fred.Bunnell@UBC.ca

Laurie Kremsater, Research Associate, Forestry, UBC, M.Sc., R.P.F., R.P.Bio.

Ralph Wells, Research Associate, Research Associate, Forestry, UBC, M.R.M., R.P.Bio
Ralph.Wells@UBC.ca

During this period when the government is embarking on modernizing the water act, we appreciate the opportunity to suggest approaches/inclusions to the content of the modernized water act. Our comments focus on emphasizing important commitments made in the 'Living water smart' document and encouraging incorporation of these into the modernized water act so that the new act is ***more inclusive of the types of waterbodies it encompasses. We note especially the importance of including wetlands.***

The primary ***function of the extant Water Act*** is to allocate and regulate the diversion, storage and use of water. The main influence of these activities recognized in the existing *Water Act* is on the quantity and timing of water flowing in streams. Another role of the *Water Act* is regulating changes in and about a stream. The Water Act Modernization discussion paper notes four key goals:

1. Protect stream health and aquatic environments
2. Improve water governance arrangements
3. Introduce more flexibility and efficiency in the water allocation system
4. Regulate groundwater extraction and use in priority areas and for large withdrawals

Goal 1 includes "aquatic environments" and therefore ***should be more inclusive*** than the streams and their riparian areas that are the current focus of discussion. Objectives discussed in the background reports of the new act include: ensuring adequate water flows are maintained for stream health; protecting habitat in and adjacent to streams; *and* reducing water quality impacts by prohibiting dumping of debris and other material into streams. Certainly, the principles and objectives for streams are useful, but waterbodies include far more than streams. Wetlands, which range from shallow lakes to bogs, are integral and significant components of water pathways.

Wetlands, across their range of sizes and characteristics, contribute disproportionately to sustaining biodiversity and other ecosystem services. The Millennium Ecosystem Assessment (2005) defines ecosystem services as "the benefits people obtain from ecosystems." The range of ecosystem services that wetlands deliver is wide, including fish and fibre, water supply, water purification, climate regulation, flood regulation, coastal protection, recreational opportunities, and, increasingly, tourism. Water, fish, and recreational opportunities are well-known services. Less commonly appreciated but well documented ones are as important. Four merit particular mention:

Water purification and detoxification of wastes

Wetlands, particularly marshes, play a major role in detoxifying a variety of waste products, including trapping heavy metals. Some wetlands have been found to reduce

the concentration of nitrate from fertilizers by more than 80%. Wetlands also bind phosphates, removing them downstream creeks and lakes.

Wetlands regulate streamflow and recharge ground water

Wetlands serve to recharge streams and groundwater with purified water. Wetlands are thus inseparable from the two types of 'water' that are the focus of current discussion regarding modernization of the *Water Act*. If wetlands are destroyed (drained or converted to another land use), groundwater levels will be reduced. Wetlands help moderate effects of droughts, flooding and erosion by storing large amounts of water.

Climate regulation

An important role of wetlands is their contribution to the regulation of global climate change through sequestering and releasing a major proportion of fixed carbon in the biosphere. For example, although covering only about 3–4% of the world's land area, peatlands are estimated to hold 540 gigatons of carbon, or about 1.5% of the total estimated global carbon storage and about 25–30% of that contained in terrestrial vegetation and soils.

Physical buffering of climate change

Climate change is already contributing to a rise in sea levels and storm surges. These increase the erosion of shores and habitat, increase the salinity of estuaries and freshwater aquifers, alter tidal ranges in rivers and bays, change sediment and nutrient transport, and increase coastal flooding. Wetlands act as a sponge, absorbing water from floods originating inland as well as at sea. Intact wetlands could play a critical role in the physical buffering of climate change impacts. Basically, wetlands are a significant buffer in natural systems, absorbing water quickly and releasing it slower and cleaner.

Wetlands also are a major habitat. For example, of the 293 bird species which breed regularly in the province, 81 use wetlands (118 use wetlands and lakes). Of the 107 native terrestrial mammal species, 12 are largely dependent on wetlands and many more species find a portion of their requirements there. The pattern does not differ greatly for other groups of organisms, and in some instances a greater portion are limited to wetlands. For example, there are about 90 species of damselflies and dragonflies in the province—most of them restricted to wetlands.

Wetlands cover almost 7% of BC's land area, but **wetlands are being destroyed rapidly**. Losses in BC include 70% of the original wetlands in the Fraser River delta, 70% of wetlands in the Victoria region, and 85% of natural wetlands in the South Okanagan (data from Ducks Unlimited; see also *Taking Nature's Pulse. The status of biodiversity in British Columbia 2008*). Historically, destruction of wetlands in BC occurred primarily as a result of large-scale agricultural drainage schemes and water diversion projects; today BC's wetlands are lost primarily to draining and filling for new subdivisions and industrial development. In addition, many wetlands are damaged or destroyed as a result of shoreline protection projects, removal of streamside vegetation, invasion by non-native species, non-point source pollution, and climate change. Currently, wetlands also are drying and disappearing as a result of global climate change,

Wetland health is integral to stream and watershed health. As such, wetland protection needs to be central to any discussion about water. **Wetlands, and in particular small wetlands, are not addressed in any comprehensive way by other legislation – the modernized Water Act must recognize the important role of wetlands in water quality and quantity.**

In Living Water Smart, the B.C. government demonstrates a commitment to the conservation and restoration of wetlands. In that document, wetlands are referred to as an important part of provincial watersheds and the need to protect the health of these vital ecosystems is emphasized. Living water smart makes some commitments that are far-reaching, among them are:

- “legislation will recognize water flow requirements for ecosystems and species”
- “Wetland and waterway function will be protected and rehabilitated”.

We encourage government to ***uphold these commitments in the modernization of the Water Act.*** Protecting wetlands is a vital part of protecting B.C.’s water resources. The new act can:

- Provide legislative and regulatory mechanism to protect and conserve wetlands, ensuring their ecological functions are maintained.
- Ensure that maintaining adequate water supply for wetland and stream health is the leading priority in regulating human demand for water. Water allocation should only be based on surplus water, after a set-aside has been made for basic environment and environmental processes. The new legislation should have the ability to adjust existing water licenses if critical ecological functions are being impacted. Undermining such functions incurs future costs.
- Provide policies that facilitate wetland restoration takes place in key areas of the province.
- Expand definitions of wetlands currently used by some legislation to include the full range of wetland classifications (MacKenzie and Moran 2004). In the existing *Water Act*, there is no mention of wetlands (only swamps).
- Require that habitat mitigation based on area and function must take place where there is loss or harm to riparian ecosystems, especially wetlands. Avoiding and minimizing impacts should be highest priority and compensation only a last resort.
- Consider the serious threats that climate change presents to wetlands and water. The impacts already are occurring and documented (Bunnell et al. 2010; Wells 2009). Provisions for how this ongoing loss will impact water quality and quantity must be made in the new Act.
- Include consideration of more than regulating flow and dumping into streams when addressing health of aquatic ecosystems.
- Increase knowledge and planning of use of groundwater.

There are many pieces of legislation that affect water and wetlands (*including the Forest and Range Practices Act, Fish Protection Act, Environmental Management Act, Environmental Assessment Act, Local Government Act, Public Health Act, and Federal Fisheries Act*): ***Legislation should be reviewed and streamlined*** to ensure maximum effectiveness and to ensure that water resources are adequately protected.

The technical background document to the modernization of the water act contains important principles and commitments which we support. Of particular note, the document states some encouraging *ecological intentions*:

“ By 2012 all land and water managers will know what makes a stream healthy, and therefore be able to help land and water users factor in new approaches to securing stream health and the full range of stream benefits. By 2012 water laws will improve the protection of ecological values. Legislation will recognize water flow requirements for ecosystems and species. Government will require all users to cut back their water use where stream health is threatened. Wetland and waterway function will be protected and rehabilitated.”

As well, the backgrounder also includes intentions regarding *planning* in this area addressed by multiple legislation and of concern and interest to many people:

“By 2012, water laws will improve the protection of ecological values, provide for more community involvement, and provide incentives to be water efficient. Government will support communities to do watershed management planning in priority areas. By 2012 new approaches to water management will address the impacts from a changing water cycle, increased drought risk and other impacts on water caused by climate change. Government will work with other provinces to share ideas and resources to improve water conservation and collectively help communities adapt to climate change. Tools to incorporate traditional ecological knowledge into information and decision making will be developed by 2015. Government will publish a report on the state of our water by 2012 and every five years after that.”

We support these commitments. British Columbia has some of the highest quality freshwater resources found anywhere. In the past we have acted as if our water will always be abundant and high quality, but growing societal demands and climate change make it imperative that we take action now to protect all parts of our watersheds, including wetlands. Society can't rely solely on voluntary protection measures if we want to protect B.C.'s aquatic environments -- we need effective and enforceable legislation and regulation.

References Cited:

- Bunnell, F.L., Wells, R., and Moy, A. 2010. Vulnerability of wetlands to climate change in the Southern Interior Ecoprovince: a preliminary assessment. Centre for Applied Conservation Research, University of British Columbia, Vancouver, B.C.
- MacKenzie, W., and Moran, J. 2004. Wetlands of British Columbia a guide to identification. BC Land Management Handbook No 52. Research Branch, B.C. Min. of Forests, Victoria, BC.
- Millennium Ecosystem Assessment. 2005. Ecosystems and human well-being: Wetlands and water synthesis. World Resources Institute, Washington, DC.
- Wells, R., Bunnell, F.L., Breault, A. 2009. Effects of Climate Change on Wetlands important to Waterfowl in the Central Interior of British Columbia: A Preliminary Assessment. Report to Canadian Wildlife Service, Delta, BC. 14 pp. plus appendices.