Water Law and Governance Session Summary
Okanagan Water Stewardship Council Discussion Series
For the meeting of October 12, 2006

In 2006 and 2007, the Okanagan Water Stewardship Council (Council) intends to review the major water resource issues of the Okanagan Basin. The following summary outlines presentations made to the Council, and provides a synthesis of the discussion that followed. The ideas expressed here represent a work in progress, and *do not in any way* signify policy positions of the Council, or of the Okanagan Basin Water Board.

Objective

The objective of this meeting was to provide an overview of some of the most important legislation affecting water management in the Okanagan, to identify gaps or conflicts in water policy and implementation, and to begin to develop ideas for recommendations for policy changes that will aid water management in the Okanagan.

Presenters

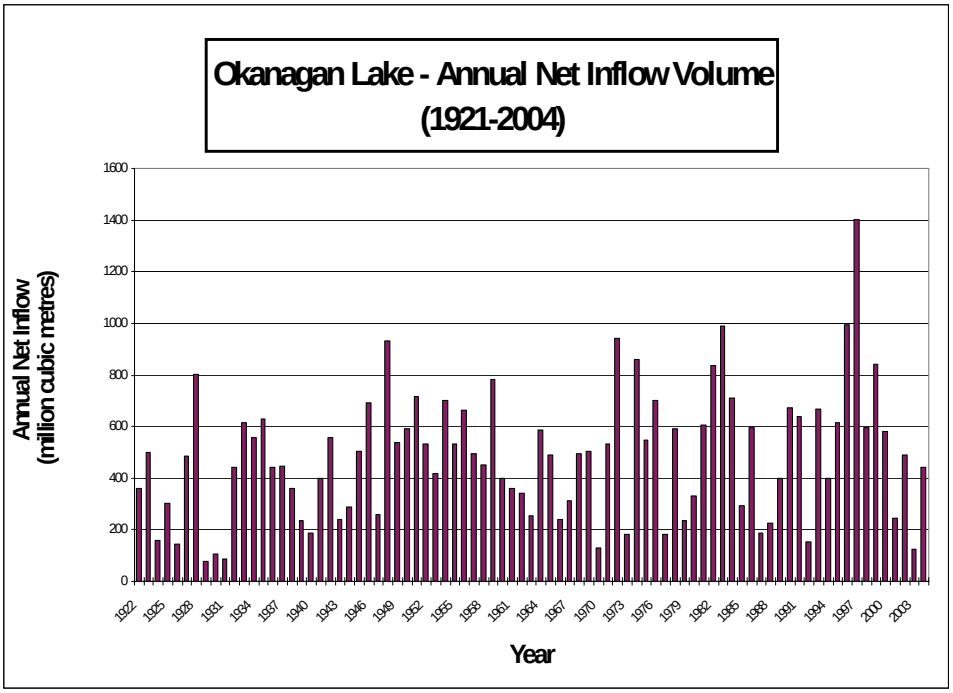
- Brian Symonds, Director, Regional Operations, Water Stewardship Division, BC Ministry of Environment
- Dean Watts, Senior Habitat Biologist, Fisheries and Oceans Canada
- Mike Adams, Senior Drinking Water Protection Officer, Interior Health Authority

Presentations

Slides of all presentations can be viewed on the Okanagan Basin Water Board website at: http://www.obwb.ca/presentations/

I. Brian Symonds: *BC Water Legislation & Governance and the Role of the Ministry of Environment*

The Water Act is the primary legal basis for water management in British Columbia. However, this act must be placed in the context of the striking variation of Okanagan water availability, illustrated by the graph of the annual net inflow volumes to Okanagan Lake. Water allocation decisions must account for both existing legal rights, and for the large and annually variable swings in lake and stream levels.



Some of the legislation most pertinent to long-term water management planning includes the following provisions:

- The Province owns rights to all water in BC – including ground and surface waters – and the right to use this water is granted through the licensing process. Annual fees for water consumption are paid by license holders to the Ministry of Finance.
- Water rights are appurtenant (tied to) the land and licensees cannot transfer allocations to other appurtenancies (i.e., land holdings) without the approval of the province.
- There is a requirement for beneficial use – as defined by the Ministry of Environment. If there are conflicting applications on the same source with the same date of precedent, the Province will seek to award the license to the applicant with the "highest and best" use.
- There are a limited number of existing "conservation" licenses – for maintaining fish flows – on streams in the Okanagan.
- Domestic users do not need to apply for a water license, but if the rights to the water are given to another user through a license, the domestic user will have no recourse.
- Priority during water shortages is based on the legal doctrine of prior appropriation, or "first in time, first in right." As a consequence, local governments cannot direct that one user group has priority over another, and drought management planning must rely on negotiation between license holders.
- The licenses are given in perpetuity, although technically they can be cancelled in whole or in part for failure to make "beneficial use" of the licenced quantity. In practice, this power has been used infrequently.
- There are prohibitions against the bulk transport of water between Basins, although water can be bottled and sold commercially.

- British Columbia has no legal obligation to deliver any set amount of water to Washington State through the Zozel dam. However, sockeye salmon require adequate flows for their migration into the Okanagan.

Water licenses: There are many misconceptions about water licenses in British Columbia. A license entitles its holder to:

- Divert and beneficially use, for the stipulated purpose and time period, the quantity of water specified in the license.
- Store water.
- Construct, maintain and operated the works (such as a dam or pumping station) authorized under the license.
- Alter or improve a stream or channel. The alterations can be for other purposes besides water supply, but any alteration or improvement requires a license. Alterations may be subject to approval by Habitat Officer, and may require additional authorization under the Fisheries Act.
- Construct fences, screens and fish or game guards across streams for the purpose of conserving fish or wildlife.

Licensed Water Use Allocations in the Okanagan

		Mainstem	Tributaries	Total
Total Use	Volume (mcm)	212	258	470
	%	45.1	54.9	100
% By Purpose	Irrigation	56.3	76	67.1
	Waterworks	42.0	23.0	31.7
	Other	1.7	1.0	1.2

Water Management Plans: Water Management Plans (WMPs) are a new tool, under development by the Province. The Minister can order a community to create a WMP to address conflicts between water users, conflicts between water users and instream flows, or risks to water quality. As the plan is prepared, it must take into consideration the existing strategic, operational and land or water use plans of the provincial and local governments. There is currently a pilot WMP underway in Langley. The Lieutenant Governor in Council can then implement the plan as a basis for statutory decisions about water licensing and place restrictions on well drilling.

Groundwater: At this time, groundwater use is not subject to license by the Province. The new groundwater protection regulations are primarily geared at protecting water quality of the aquifer, and increasing the capacity of the Province to track groundwater use. Before these regulations were put in place, there were incomplete records of where wells were located, or how many existed. Poorly designed or constructed wells can be vulnerable to intrusion by polluted surface waters that can contaminate large portions of the aquifer. The regulations apply to all wells – from domestic wells to monitoring wells, both open and closed-loop geothermal wells and others. The first phase of the regulations call for certification of all well drillers, better standards for well construction, maintenance and closure, and for well identification plates and registration with the province. Later phases will have more requirements, including water analysis, and the potential for increased drilling restrictions in water management plan areas.

Source Area Protections: Source Area Protection has a direct effect on water quality, habitat protection, and the long-term hydrology of the system. Source areas that have been over-harvested in timber operations may have increased rate and volume of runoff during freshet. Erosion in the upper watershed can change the sediment loading rates downstream – leading to localized flooding, loss of capacity behind dams, and degraded fish habitat, among other impacts.

The regulations to support source area protections and environmental values are still evolving. The Riparian Areas Regulation seeks to regulate the changes that can be made in and around stream banks – requiring setbacks for development and environmental assessments prior to variances being granted. The Fish Protection Act allows for the designation of specific streams as sensitive fish habitat, and requires that impacts to fish must be considered before any new water allocations are given on these streams. However, none of the streams in the Okanagan have been given this designation. Under the Forest and Range Practices Act, the Ministry of Environment has the statutory authority to set water quality objectives, and can designate community watersheds [*define these*]. The Environmental Management Act with regulations focused on point source pollution, such as contaminated or hazardous waste sites, stock yards or organic matter composting operations. Both the Land Title Act and the Community Charter have provisions for regulating activities within floodplains. Not only do these regulations prevent loss of property to flooding, they can protect water quality by preventing polluting industries from locating in sites that are vulnerable to inundation.

II. Dean Watts: *Canada's Fish Habitat Law*

Dean Watts presented an outline of the Fisheries Act, and the importance of water management for protecting fish habitat. The Fisheries Act describes the federal constitutional responsibilities for fisheries, and provides for fish and fish habitat protections. The act applies to all fisheries waters, including private land, and is binding on all federal and provincial governments.

The Fisheries Act defines "fish" to include all life stages of all aquatic and marine animals. The definition of fish habitat includes not only areas that they physically occupy at different life stages, but also food supply and migration areas on which they indirectly depend. The fish habitat may be dry during part of the year, and includes water, water quality, and non-aquatic areas such as streamside vegetation.

Like the provincial Fish Protection Act, Section 35 of the Fisheries Act specifically prohibits the harmful alteration, disruption or destruction of fish habitat (HADD), without authorization by the Minister. These terms are defined in the following way:

- **Habitat alteration**: any change in habitat that reduces its capacity to support one or more life processes in fish.
- **Disruption**: any change in fish habitat for a limited time period that reduces its capacity to support one or more life processes in fish.
- **Destruction**: any permanent change in fish habitat that renders it completely unsuitable for the future production of fish.

Although this regulation is strongly-worded, it is difficult to enforce – because it must be proven who is responsible for causing harm to the fish and fish habitat, and this harm must be proven beyond a reasonable doubt. Where the harm relates to physical removal of water from a stream, many users – tapping into both ground and surface waters – may be responsible. There is no regulation that says: "thou shalt not harm fish by removing water from the stream." Section 32 of the Fisheries Act, which prohibits killing fish without a license, is easier to enforce, although the fish must be dead for this regulation to come into effect. Section 30 of the Act requires screens or barriers on intakes or diversions, where the Ministry deems necessary.

In practice, DFO mostly takes jurisdiction on anadromous (sea-going) salmon, and on significant fish streams, where they seek to maintain ecological conditions and flow regimes that are optimal for salmonid survival and reproduction. DFO is the only agency that can authorize a HADD. The Fisheries Act has provisions (Section 20) requiring – where the Minister deems necessary – sufficient instream flows for movement of migratory fish, and for the safety of fish and eggs downstream. Salmon and trout are very sensitive to high water temperatures, which are often associated with shallow-water conditions. Fish are adapted to variation in stream flow, and high water levels are not always the best condition for fish. Whenever possible on regulated streams, the DFO prefers water managers to mimic the peaks and valleys of natural Okanagan hydrographs. The Department recommends that water managers work with communities to develop Water Use Plans, which take into consideration the needs of fish and different user groups. General instream flow guidelines are being developed by the Province to aid in this process.

MacIntyre Dam creates the northern-most barrier to sockeye reintroduction in Skaha Lake. Because of DFO's interest in salmon stocks, and in upholding the Pacific Salmon Treaty, they are the lead agency for much of the fisheries regulation downstream of the Dam. The Ministry of Environment is the lead agency for kokanee protection and recovery in the mainstem lakes above MacIntyre Dam.

III. Mike Adams: *Drinking Water Protection Act & Interior Health Water Program*

Mike Adams presented an overview of the Drinking Water Protection Act (DWPA), its scope and potential applications with respect to water management. The Act intends to provide a comprehensive legal framework for water quality protection in British Columbia. The DWPA places oversight of potable water quality with the Ministry of Health, and through them, the Interior Health Authority. An interagency Memorandum of Understanding on Drinking Water is being prepared to establish agreements with other Ministries whose activities may affect water quality – such as Ministry of Forests, Ministry of Environment, and Ministry of Agriculture and Lands.

Within the DWPA, the Drinking Water Officer (DWO) is the statutory decision-maker, subject to the directives of the Minister. The Act requires that all purveyors provide potable-quality water for domestic use. This water must be safe for human consumption, and purveyors need a permit for operation of the water supply system by a qualified operator. The supplier, often an improvement district, is responsible for meeting water quality and operation requirements, including monitoring.

The goal of the Ministry and Health Authorities is to have a multi-barrier approach to protecting water quality. The source area – whether a surface water reservoir or groundwater

aquifer – must be protected from unnecessary contamination. Before it reaches the end user, he water must also be disinfected to kill any pathogens. If there are high levels of suspended solids, the Interior Health Authority requires water to be filtered – because these particles can inhibit the disinfection process. The drinking water objectives, based on the *Canadian Drinking Water Guidelines* are:

- **4** log (99.99%) inactivation of viruses
- **3** log (99.9%) inactivation or removal of Giardia and Cryptosporidium
- **2** treatment processes for surface water (typically, disinfection and filtration)
- **1** for < 1 NTU of turbidity (with a target of 0.1 NTU)
- **0** fecal coliform and E. coli

If there are chronic problems with drinking water quality, or if they are specifically requested to make an investigation, the DWO can order a Water Source Assessment. The purpose of these assessments is to evaluate the source area, the entire water supply system, and any threats to water quality that are present – from industry, contamination from septic systems, animals defecating in the water ways, or other sources. The officers have the power to order corrections, and can take action to alleviate the problem at the owner's expense.

Like the Ministry of Environment, and the Department of Fisheries and Oceans, the Ministry of Health has a provision for the development of locally-driven Drinking Water Protection Plans that can be used to establish regulatory priorities. Public health officers can recommend that the Minister designate an area for developing a drinking water protection plan, and the Minister establishes the process and terms of reference for the plan. Plans are required to consider existing land use planning of local and provincial governments, but place public health above other uses. Before they are made official, the plan must be reviewed by the public health officer, and approved by Cabinet. The Plans must also be made public. To implement the plan, Cabinet can take a range of actions:

- Require decision-makers under other acts consider the plan
- Place restrictions on licensing under other acts
- Restrict exercise of power under other acts
- Require local and provincial planning processes be considered and consistent with the plan
- Restrict well drilling
- Establish source protection standards and prohibit anyone from doing anything that results in standards not being met.

Drinking Water Protection Plans have the potential to be very powerful and effective, but there would have to be significant impairments to trigger a planning effort by the Ministry of Health or IHA.

One of the most controversial portions of the DWPA, as it is implemented in the Okanagan, is the requirement for water quality notifications when the DWO perceives a threat to public health. Because Okanagan water suppliers are so dependent on surface water sources, it has been difficult to meet turbidity standards, especially during the spring freshet. The Health Authority has established a turbidity index, of good-fair-poor (based on NTU), that triggers a different "boil water" notifications – delivered through the media. Water suppliers have

expressed concern that this policy will lead to "message fatigue," when low-levels of persistent turbidity trigger long-term notifications. If a very serious health threat emerged, the public might not take it as seriously. Small-scale suppliers have difficulty financing upgrades to remove turbidity from water in their systems, and difficulty supporting the cost of continual notifications. The Health Authority is working on a small systems strategy to address some of the latter concerns. One alternative would be to have point-of-entry or point-of-use devices for water systems. With this method, high-risk water users could have higher levels of water treatment than low-risk users.

IV. Staff Synthesis of Discussion

The following section is a synthesis of the discussion that followed the water governance presentations. It reflects the opinions put forth at the meeting, but does not represent consensus ideas, or the last word of the Council on these items. This synthesis was developed by OBWB staff using notes taken during the discussion, rather than verbatim minutes.

Water governance in B.C. does not require more legislation, but better implementation of existing laws. There is a tendency at all levels of government to under-staff regulatory functions – so that it is sometimes difficult to get timely or adequate response when need arises, for example, in monitoring compliance to pollution discharge standards. The Ministry of Environment, Interior Health Authority and Department of Fisheries and Oceans are placing more emphasis and reliance on resource and land-use planning efforts by local government and stakeholder groups for defining regulatory priorities. Local communities must provide the funding to undertake these planning efforts, and there is potential for the moneyed interests in the community to dominate the process. For such an approach to work there must still be adequate enforcement to protect the public trust, with underlying standards for acceptable levels of environmental impacts – and an acknowledgment of the potential for cumulative effects. An over-reliance on "licensed professionals" for project evaluation – paid for by project proponents – may also undermine environmental protections. Even if these professional are adhering to strict standards of professional conduct, they may not be considering all the long-term and broad-scale impacts to the community.

Most of the licensed water (by volume) in the Okanagan is allocated to agricultural users. Agricultural water needs increase during droughts – especially in hot summer months. Global climate change and increasing climate variability means that farmers must have sufficient allocated quantities to ensure that water is available during extreme conditions. If the Province were to enforce use-it or lose-it provisions on agriculture based on the difference between licensed allocations and actual use, users would be strongly motivated to increase their use to the level of their allocation, in order to have water available for future drought years. Agricultural water conservation – through improved equipment, technology and scheduling – is valuable to farmers, because it can help insure that there will be enough water for all agricultural uses, regardless of conditions. Water metering and other forms of water use monitoring help fine-tune conservation practices, and add to the overall knowledge of water supply and demand in the valley – which will be essential for helping both the urban and agricultural communities adapt to climate change. There has been some concern on the part of the agriculture community that water purveyors may be improperly using water that has been allocated to agriculture in the

water license to increase the number of domestic water connections, reducing the amount available for buffering droughts.

There have been rumors that the Province is considering re-writing portions of the Water Act, to make it easier to re-allocate water from existing licenses, and remove the seniority provisions for water rights. Another suggestion has been to allow water rights to be traded or marketed – separating water licenses from specific property holdings. Although such alternatives could potentially increase the efficiency of water use, they should only be considered with caution and great deliberation. Without serious protections, water rights could easily be moved toward uses with short-term economic benefits (such as resort developments) and away from uses with long-term benefits to the community (such as sustainable food production). Once water is moved out of the agricultural sector – especially when it is used to support urban developments – it will be difficult or impossible to return these allocations to agriculture.

Fish, particularly kokanee, tend to need water most at the same time as many agricultural crops – in the late summer and early fall, when streams are at the lowest level. Kokanee populations can tolerate occasional dry years with high juvenile mortality, if these population losses are buffered by good years when many eggs and young survive. As a consequence, if more water can be made available for fish during non-drought years, then populations will be able to better-tolerate years with little or no water in streams. However, under the current system, water that is allocated but not used by license holders is not necessarily available for fish or other environmental needs – but may be retained in upper-elevation reservoirs. The Province (through the Basin Study and elsewhere) has recommended flow-rates to support fish in certain streams, such as Mission Creek, but recommended minimum flow-rates have not been developed for all creeks. One policy suggestion has been that Agricultural users could take their full allocation each year, then "loan" the excess for environmental flows – to be withdrawn as needed at a later date. Another suggestion was to add fish to the list of qualifying users for the purpose of obtaining water licenses.

Under the current system, layers of regulations for fisheries protection mean that there are several different agency approvals needed before any changes can be made in or around stream banks. While in theory, this redundancy can give fish extra protection, in practice it leads to confusion and delays, and potentially to a situation where no one agency is accountable. One policy suggestion has been to streamline or bundle the permitting for some activities – creating a "one-stop shop." Permit streamlining can work well for habitat restoration activities, or when there is a strong regulatory authority overseeing the process.

Urban water users are a late-comer to the table. The development community would like to know whether or not water will be available for them down the road. Businesses need to reduce uncertainty, even if they have to accommodate shortages in supply. It is essential to determine how much water is actually available in the Basin – through the Water Supply and Demand Study. The real challenge is to develop a multi-objective optimization model that leads to efficient distribution and use of water. To run this model, we need accurate data on water supplies and how they are distributed; water demands – including human and environmental uses, and other loss factors like evaporation; and future projections for land use, demographics, climate change, etc… Until that time, the Province has no firm evidence by which to cease issuing water licenses, especially on the larger lakes.

Water purveyors and local governments up and down the valley have been uncomfortable with the application of some provisions of the Drinking Water Protection Act. Although the DWPA call for a "multibarrier approach" to water quality protection, there has been criticism

that too much emphasis is place on water treatment, rather than source area protection. Water suppliers are given the responsibility (and liability) for drinking water quality, but they have no regulatory enforcement tools for influencing the quality of water as it enters their intake pipes – beyond calling for a formal water source assessment by the health officer. There are particular concerns about the water quality impacts of range cattle and the recreational use of reservoir lakes. The cost of removing increased turbidity and pathogens falls on the water supplier and their customers.

The Interior Health Authority has indicated that they would like to see both filtration and sterilization (chlorine or UV) treatment on all water systems to reduce the health risks to water customers. Water suppliers are concerned that the marginal benefits of filtration systems do not merit the high cost of installation. Point-of-use treatment systems may be more cost effective, especially in improvement districts that serve both agricultural and domestic users. However, an inspection and maintenance program must be established if such systems are applied on a large-scale.

V. Potential Actions for Future Consideration

The following actions were proposed by different Council members within the context of the discussion, and may be considered in the future as potential recommendations to be forwarded to the OBWB. These do not represent consensus ideas of the Council.

A. We need a clear description or vision of what coordinated water management in the Okanagan would look like under ideal circumstances.

B. Water Management Bylaws: There is currently very little legislation to support water use efficiency. The OWSC should develop bylaws recommended by adoption by local governments in the Okanagan. In addition to developing these bylaws, a review should be conducted to determine which communities have water conservation or water management bylaws in place.
    a. Incorporating low-flow fixture requirements into building codes.
    b. Requiring irrigation scheduling for urban users.
    c. Requiring adequate topsoil when lawns are installed in new subdivisions.
    d. Adoption of universal metering and water use monitoring.
    e. Standards for reducing sediment and pollution by better stormwater management.

C. Develop better funding channels to support infrastructure improvements by utility districts that do not have access to municipal grants.

D. Conduct a feasibility analysis for whether OBWB should take on the role of a Conservation Authority, such as is done in Ontario.

E. Develop drought management plans for all utilities in the Basin.

F. Further integrate regulation and permitting of surface and groundwater.

G. Meter withdrawls from water sources as well as water consumption by end-users.

H. Develop better mechanisms for resolving conflicts between agricultural water use and fishery needs. If fishery regulators can develop recommended flow regimes for all stream channels, then water users will have a better idea of the constraints for water-use planning.

I. Recommend that regulatory agencies assign more staff for compliance enforcement and ongoing monitoring. Good laws are not useful if they are not enforced.

Related Literature and Resources

The Water Act
http://www.qp.gov.bc.ca/statreg/stat/W/96483_01.htm

The Fisheries Act
http://198.103.98.49/en/showtdm/cs/F-14

The Drinking Water Protection Act
http://www.qp.gov.bc.ca/statreg/stat/D/01009_01.htm

British Columbia Instream Flow Guidelines
http://www.env.gov.bc.ca/wld/BMP/instreamflow_wkgdrft.html

Water Use Plan Guidelines
http://www.obwb.ca/fileadmin/docs/wup.pdf

British Columbia Guide to Watershed Law and Planning
http://www.bcwatersheds.org/issues/water/bcgwlp/m1.shtml