

Wild water is also tap water



Bob Hrasko, manager of the Black Mountain Irrigation District, by Mission Creek, where the utility's intake is located.

Doug Farrow/contributor

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There are still people who don't realize that very often the water rushing by in an upland stream or lapping the shore of a fishing lake is the same water that comes out of their tap into a glass for drinking.

Certainly the renters who piled 12 truckloads of horse manure within a few metres of Mission Creek last winter either didn't know or didn't care.

Staff from the Black Mountain Irrigation District had to move in with a backhoe to load up the steaming mass of e-coli-laden excrement and remove it before spring brought millions of gallons of snowmelt

running off high elevations, raising the level of Mission Creek and washing those piles into the roiling water—just above the BMID intake.

“We treat the water, but the higher the loading (of contaminants) the more risk there is of challenging our disinfection,” explains Bob Hrasko, manager of BMID.

“Most people are responsible along Mission Creek, but any activity near the creek is of concern to us, and the more activities, the more we’re concerned,” he says.

What he’d like to see are wider buffer zones along the creek—particularly above domestic water intakes and around reservoir lakes.

Mission Creek is the largest single tributary to Okanagan Lake—itsself a reservoir lake with numerous domestic water intakes serving thousands of valley residents.

On private land, Hrasko says the regional district has good land use controls on corridor buffers along the creek, but there is no such control on Crown-owned land.

Aquatic biologist Heather Larratt monitors water quality in the watersheds of a number of local water utilities, including BMID and she did a North American literature review last year that showed an 85-metre buffer zone around storage reservoirs and transmission creeks is considered to be the standard today for optimum source water protection.

Ideally, the buffer zone would be a no build, no disturb and no machine zone.

That’s not an exclusionary buffer, but one within which activities must be managed to protect water quality, notes Hrasko.

For instance, rather than no logging within that space, there should be better canopy management and removal of stems within that zone; rather than no trail construction, they should be built away from the water’s edge and with care and sensitivity for water quality downstream, he explains.

It’s important to manage nutrients and waste, including nitrogen and phosphorus, so agricultural concerns such as growing crops and raising animals are of concern.

Mission Creek is one of the largest intakes for the city of Kelowna in the long term, so riparian protection zones in the upper watershed are key to future water quality.

“Such a buffer is a broad scale solution to many watershed problems,” he comments.

Currently, under the Forest and Range Practices Act, in the Forest Planning and Practices Regulation, buffer zones requirements vary.

Solvej Patschke, source water protection hydrologist with the Forest, Land and Natural Resource Operations Ministry, says stream riparian management areas are divided into classes by stream width,

but the management area can vary from 20 metres to 100 metres, while the reserve area within it can vary from none to 50 metres—depending on the site and activity.

That applies to forestry activities, but there is a different regulation for range use, based on objectives for water quality.

Mining setbacks come under different legislation, and Best Management Practices are being developed for recreational trails.

Patschke says it would be difficult to apply a blanket 85-metre riparian reserve over an entire watershed; that to have site specific flexibility would be better. Creation of a new reserve also wouldn't impact existing activities in riparian areas.

The FLNRO ministry is currently putting together legislation that would gather bits of regulation from a number of different acts together in a new one governing resource roads in the province.

The Natural Resource Road Act proposal has been criticized by water utilities for not mentioning the importance of considering source water protection plans in designing and locating such roads.

However, Patschke says the act is still in the early stages of development, but the goal is for it to reflect the riparian values already contained in the FRPA.

“The intent is for roads to be managed to mitigate unacceptable environmental impacts ranging from geophysical (siltation of streams, landslides, loss of productive land) to biophysical (invasive plants, fish passage, species at risk and ungulate winter range),” she explains.

The Water Supply Association of B.C. has endorsed the proposal to create a default 85-metre vegetated protection zone around reservoir lakes and their transmission creeks, and has also responded to the proposed new resource road legislation.

Larratt admits that waterfront is attractive for recreation, particularly in a dry landscape such as the Okanagan, but she says it's important to spend the effort, time and money to protect such areas, “or, we'll spend a lot more for treatment of drinking water.

“Incremental damage is still damage,” she notes.

She's done considerable work tracing creek plumes in Okanagan Lake, where streams carry water from high elevations through the watershed and into the big lake. It's clear that whatever activities are happening in the watershed and how they are managed, impacts Okanagan Lake as well as smaller upland lakes and reservoirs.

“You may not see the impact but just because it's invisible, doesn't mean it's not there,” she says.

She says forestry is a major player in the watershed, as is mining, but the roads built to access such resources also open up access to recreation.

However, Larratt says it's encouraging that users having fun in our watersheds are being more conscientious than they used to be.

"It's a community trust. We all have to share the watershed."

The Okanagan is the third-largest urban area in the province, after Vancouver and Victoria, both of which have protected watersheds, where virtually no human activity is permitted.

On the other hand, the Okanagan basin's watershed is multi-use, with everything from ranging cattle to forestry; outdoor recreation to mining taking place.

As a result, the provincial health ministry requires that water utilities conduct an assessment of their water sources to identify potential threats and risks to water quality.

Mike Adams is environmental health team leader for this area for Interior Health and says it's only one of many areas of potential risk, but water suppliers should develop a plan to address the risks outlined in the assessment, then bring the stakeholders together to discuss the issues and resolve them.

Although some suppliers complain they are concerned about activities in their watersheds, yet their hands are tied when it comes to having the authority to deal with those issues, Adams says all the stakeholders have a responsibility to operate in such a way that they reduce any risk to water supplies.

Having assessments done and preparing a plan to deal with the issues identified is only part of a multi-barrier approach to protection of drinking water, he notes.

Most important is treatment of water. "That far outweighs protection at the source or in the distribution system," comments Adams.

As well, he says chlorination is ineffective against cryptosporidium so filtration or treatment with ultra-violet light are also needed. If the latter treatment is chosen over filtration, then all organics must be first removed because clear water is needed for UV to be effective.

However, utilities say filtration would have a hefty price tag that would necessitate charging residents considerably more for water, whether it's for drinking or irrigating.

To date, source assessments have been completed by the District of Lake Country, South East Kelowna Irrigation District, Glenmore Ellison Improvement District, City of Kelowna, West Kelowna and Peachland.

In each, some common risks have been identified, including:

- *range use and the potential for contamination of water by cattle;
- *logging and the potential for sedimentation of creeks;
- *resource roads and their runoff and the watershed access they provide;

- *the Mountain Pine Beetle leaving dead timber and its risk of wildfire;
- *mining and aggregate extraction and the potential for sedimentation;
- *outdoor recreational use and backcountry sanitation as well as creation of trails; and
- *bacteriological contamination from wildlife.

A couple of the assessment reports expressed concern about increasing use of unused backcountry roads—or off actual roads—by off-road vehicles and the increased sediment loading this is causing in nearby bodies of water.

Also identified in some of the assessments were the risk of gas or oil spills from boat motors, sewage leaching or spilling from boats or lakeshore cabins and dumping of garbage in the watershed. On Okanagan Lake, storm water outfalls were also listed as a concern, along with the inflow from upland creeks.

Some of the recommendations—other than better management of the risks listed above—included:

- *that human and livestock access should be eliminated from the lower watershed;
- *that there be more enforcement;
- *that utilities be referred on permit applications for watershed use;
- *that a permit program should be created for recreational access;
- *that cattle be fenced out of riparian areas and range riders hired;
- *that culverts be maintained and road runoff directed away from streams;
- *that recreational users be better educated, perhaps with a brochure;
- *that the province pass OHV licensing legislation to facilitate enforcement; and
- *that an Okanagan Lake protection bylaw be created.

The Okanagan Water Stewardship Council, the technical advisory council to the valley-wide Okanagan Basin Water Board, is currently preparing a primer on Source Water Protection in the Okanagan for the OBWB.

It will include a series of recommendations for better protection for domestic water supplies at their source and then it will be up to the valley's politicians to decide how they deal with the issue and how they perceive public concerns about water safety.

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