

Estuaries, swamps provide valuable services

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In our last article we looked at the slow movement of groundwater and the connection between surface water and groundwater. We also considered two of the five goals for groundwater sustainability set by the Council of Canadian Academies' Expert Panel on Water.

The last three goals of groundwater sustainability identified by the panel include healthy ecosystems, contributions to the economic and social-well being of the community, and effective governance of groundwater.

Our ecosystems need to have enough ground and surface water to function and provide habitat for plants and animals, moderate drought, assimilate waste and transport nutrients. Many connections between groundwater and our ecosystems have yet to be properly explored.

We know for example, that our rivers in this area at some points are more groundwater and at others are more surface water, but we don't know where those transitions happen. This means we don't know the full impact of taking out large amounts of water at any one point.

The contribution of groundwater to the economic and social well-being of the community is also important. Healthy water levels, stream baseflow rates and wetlands all provide direct economic benefits. There are also cultural, spiritual and aesthetic values to water. Unlike other countries, Canada has done little work to put a dollar value on our water sources.

One study was done in B.C. to assign the dollar values to some sample ecosystems. The dollar values indicate what it might cost humans to create and provide ourselves with the services we get from these ecosystems for free. The value is in U.S. dollars per hectare per year. Rivers were valued at \$8,498/ha/year. Estuaries were valued at \$22,382/ha/year, and swamps/floodplains came in at \$19,580/ha/year. The study rated these latter two categories as the most valuable ecosystem types in the world. Other types of wetlands were not assigned a value in the study. They were

however described as invaluable for the ability to filter toxins, the ability to hold the water table, the cycling of nutrients, and the absorption of flooding impacts.

The final goal for groundwater sustainability is the effective governance of water (not the management of water that people usually discuss). Good governance is about both quality and quantity of water. The Panel stresses the need for a transparent decision-making process, including informed public participation, and with "full account taken of ecosystem needs, intergenerational equity and the precautionary principle."

Dr. Gilles Wendling, a groundwater specialist familiar with this region, pointed out in a recent presentation that we need to "better define our aquifers, increase our monitoring and understand the river-aquifer interactions. Most of all," he said, "we need to use the precautionary principle and look at our water supply first, and land-use decisions next."

Good advice for our water future.

Water Limited explores issues of water management in the community. It is funded by the Georgia Basin Living Rivers Program and Mid Vancouver Island Habitat Enhancement Society. MVIHES coordinates the Englishman River Watershed Recovery Plan, and conducts education, restoration and monitoring projects. It also works to support healthy watersheds and shorelines, and continuity of biodiversity as a way to help protect and conserve salmon habitat.

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