



Groundwater sustainability – what does it look like?

More residents and businesses are using less water than a few years ago, but as our population grows is this enough?

The Expert Panel on Groundwater has reviewed the Canadian groundwater situation. They suggest a more comprehensive approach to water conservation. Their 2009 report through the Council of Canadian Academies describes significant characteristics of groundwater, and how to be sustainable in our management.

They start by addressing a common misconception that groundwater is like an underground river or lake, they describe it more like a sponge. The solid framework or skeleton of the sponge represents the soil and/or rock material. The pores or small holes of the sponge represent the areas under the surface filled with very slow moving groundwater.

Because it is significantly slower than surface water, reducing impacts to the groundwater supply from over-use can take years, and be very expensive, if possible at all.

The Panel also stressed that surface water and groundwater are not separate, as most people discuss them. They are in fact, interconnected and together provide just one source of fresh water. Changing water extraction from groundwater to surface water for example, may not solve a water supply issue, and may in some cases make it worse.

The Panel identified five goals for sustainability that provide an excellent checklist for the community to apply. The first goal is to protect the supply from drying up. This means that “withdrawals can be maintained indefinitely without creating significant long-term declines in water levels”.

The application of this goal assumes that a community knows where the groundwater is, how much there is, where it is being drawn out and at what rate. It also assumes that the community knows where the surface water and groundwater interact. In our community we don't yet have this knowledge.

There has been a study to model the vulnerability of our water supply based on flow monitoring and other information already in existence. Mid Vancouver Island Habitat Enhancement Society (MVIHES) has initiated a small groundwater mapping in the area with Ministry of Environment, Regional District of Nanaimo, Vancouver Island University and several local volunteers. But much more information is needed. We can not be certain of meeting this first goal of sustainability if we do not have the necessary information.

The second goal of the Panel is to protect our groundwater from contamination. This includes consideration of changes to septic systems and manure storage, and reductions of pesticides and fertilizers. It also means limiting the impacts of industrial or commercial activities, types of transportation and sewer-systems.

Here on the coast, we have a unique form of contamination of our fresh water. This is the intrusion of salt water from the ocean into our wells that have been drawn down too far. When the pressure from the fresh water drops, this permits the salt water to move inward from the sea.

Once contaminated, whether it is by chemicals, bacteria or salt water, groundwater is often impossible to repair, or at the very least takes an extremely long time and considerable funding to fix.

Our next article will look at the other goals for groundwater sustainability and how they apply to our community.

This edition of Water Limited will explore issues of water management in our community. It is funded by the Georgia Basin Living Rivers Program and Mid Vancouver Island Habitat Enhancement Society (MVIHES). Articles are written by Michele Deakin. MVIHES coordinates the Englishman River Watershed Recovery Plan, and conducts education, restoration and monitoring projects throughout the mid island area. MVIHES also work to support healthy watersheds and shorelines, and continuity of our biodiversity as a way to contribute to protection and conservation of salmon habitat.

