



Groundwater – Do we have enough?

In the last article, we looked at how groundwater performs vital work but very slowly. The amount of water stored in and moving through aquifers is finite. This is what ultimately limits the amount of water available for human consumption.

It would be an easy conclusion to think that this is not an issue here, because we seem to get lots of rain. Though rain might seem like a great addition to our water supply –only some of the rainfall can be used. If we use the analogy of the bank account, most of the rainfall sustains the water table and is equivalent to our “capital”. What can be used is the “interest”, or a small amount of the water that falls from the sky (i.e. rain as well). It is vital to know how much this “interest” actually is in a particular area, to monitor and collect data over time, and to base land use decisions upon that data. It is this amount that we can extract that gives us our carrying capacity, or the number of users that can take from the water supply without dipping into the capital.

Even if we think we have water for a certain number of people, what happens in those years where there are droughts, or it is dry enough that groundwater is not replenished in winter? In these cases we start behind in supply for the next year, and we may no longer have the water to sustain that number of people. We need to look at long term patterns.

Groundwater elevations are influenced by several factors which may all change simultaneously. These factors include available precipitation, percentage of impermeable surfaces (e.g. pavement), water extraction rates, and discharge to streams and groundwater receptors. Based on local information we are seeing a disruption to groundwater levels in some areas. Some research indicates that once reduced, the aquifers do not rebound following a series of “wet” years.

How do we know this, and do we know enough? By monitoring trends in groundwater levels, we can extrapolate trends into the future, or use models to predict impacts of climate change. Our next article will take a look how we monitor our groundwater.

Water Limited explores what we know and don't know about our water supply. 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.

