

Monitoring Groundwater – How Much Don't We know?

In the last article we referred to mapping, monitoring and modeling – all methods to better understand our groundwater supply. Locally not a lot of mapping has occurred and modeling is being discussed. Monitoring seems to be done mostly through the use of wells.

When we speak of wells we refer to three types. Test wells measure the amount of groundwater in a particular area. Then there are wells used by the RDN, municipalities and some private business to provide water to residents and other users. Finally there are those private wells that exist in many rural residences.

Dr. Gilles Wendling, a groundwater specialist, gave some examples of our local monitoring in his presentation last January. Between the Little Qualicum and the Englishman Rivers, there are about 60 sections where preliminary data has been collected through test wells. Most of these are in the Parksville area but the city is still low in the number of test wells needed to give a proper picture. How many do we need? In the Netherlands they have monitoring wells every 2 square kilometers. In the Regional District of Nanaimo, they are one every 100 square kilometers.

Based on the test well data available, Dr Wendling showed that, as of last January, Yambury was dropping a fair bit, Springwood was dropping significantly and Lantzville was doing fairly well. Local provincially run test wells show that the Quadra Sands aquifer has declined, and local governments are unsure if this is serious, or not. This uncertainty is a province-wide issue. In British Columbia we are the only province without groundwater licencing. Though not as tightly monitored as some would like, licencing processes in the rest of Canada allow for some tracking of groundwater quantity and quality.

An example of lack of monitoring relates to the many homes in our region that use groundwater through the third type of well, or private wells. It's only a recent requirement to file a well report when drilling new wells. As a result, limited information is available on the number or locations of these wells, and the volume of groundwater being used in this way.

In other regions, communities have taken the initiative to understand their water sources and plan for a sustainable future. In Langley, B.C., they have mapped and re-mapped their groundwater. In Chelsea, Quebec they have mapped their water, monitor it closely, and developers must prove enough new water exists before they can develop. In the Cowichan River watershed, many users have worked together to develop a water management plan.

So far we've mostly talked about monitoring. We need also to map our groundwater so we know where it flows, and where it gets recharged. We also need to model our future. Looking at history and projecting forward does not always work. Modeling what we

know and looking at expected impacts of population growth and climate change on water and biodiversity will give us a better picture for planning. Even then, the model will be limited by the quality of the baseline information we have – which takes us back to the need for mapping and monitoring.

Understanding groundwater requires a bigger picture than we currently have. We need to better define our aquifers, increase our monitoring, and do more modeling to give us more data. This information will give us more options for a sustainable future.

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.

