

## Lakes can be used to store water for rivers

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The impacts of climate change are being felt and are expected to continue and get worse. For the east coast of Vancouver Island, this means increased summer droughts and winter flooding.

Even with all of this change and unknown future, one thing is certain. Water is required for the ongoing survival of all interests in our watersheds, not just for drinking water. This includes forestry, tourism, manufacturing, and all other industries. It also includes maintenance of ongoing ecosystem services, which include buffering from the increased storms and floods, sustainability of fish populations and many forms of human recreation.

"Water is a common currency," says Craig Wightman, Senior Fisheries Biologist with the BC Conservation Foundation. He points out that, "we will not have the same water supply with the coming of climate change and we have to accept that."

We also have to accept that we have one water source, that we can't separate groundwater and surface water. Our rivers are not a straight flow of water as many picture them. Water moves into the river and out of the river, back and forth between aquifers and the surface. This means that in certain areas it is possible for the rivers and streams to experience a severe reduction in water flows, or even dry up completely. This can severely impact the survival of our riparian areas, and all the insects, fish, birds and others associated with these plant and forest communities.

The South Englishman is one of those waterways that can dry up. It is one of the reasons that the Englishman River Watershed Recovery Plan states the need to "maintain/improve adequate flows during the summer rearing period... (which is) the highest priority, after reducing exploitation." Because of this, the BC Conservation Foundation is looking at small water storage projects to help increase water flows for the fish.

One small lake, Shelton Lake, feeds into the South Englishman River and is being reviewed for possible small storage facilities. The concept is to create a small dam that will hold back some of the water collected in this lake, during the winter storms. The water can then be released as needed into the river to provide water at key times for the fish. This does not mean another Arrowsmith Dam, but rather something that is sized to "support potential storage within the natural range of lake level fluctuations." This is very similar to what now exists on Cameron Lake, which feeds into the Little Qualicum River, the only river in this region this year that maintained a healthy flow of water.

Some questions do exist around the development. Backing up waters in a lake may impact the types of plants that can grow along the edges or in the lake itself. It can also impact the invertebrates which support several food chains, amphibians, birds and the actual hydrology of the lake systems. Shelton Lake is connected to Healy Lake and so special care is needed to ensure that what is done on one lake does not impact the other.

Environmental impact assessments have gathered much of this information, and describe how to mitigate impacts to the system.

Some of the impact of climate change will have to be addressed by measures like small water storage projects but, as Project Manager James Craig points out, "Small-scale storage is being considered in the South Englishman River to improve rearing conditions for juvenile steelhead and coho in that tributary. The project is not intended to solve future domestic water supply issues."

We cannot create new water. We live within a contained system of water supply. This involves precipitation, transpiration, evaporation and condensation. In between those stages, the water is used to keep our ecosystems functioning, keep us hydrated, and other uses we demand of it.

Ultimately, we need to alter our actions that are causing climate change and use our water more conservatively. Changing some behaviours can be a cheaper alternative to more infrastructure like water storage. Planning for less water may be an even more positive step to ensure that the supply continues.

*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.*

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