



Salt Spring Island Water Preservation Society

August 2016 NEWSLETTER

A Drier Salt Spring: Planning for the Future

Both this year and last year, spring has been drier than in the past, leaving our island with less water for the summer. This drought may be temporary or the new climate change normal. Yet our island's population is growing by estimates of 1 to 1.2% a year. The CRD estimated our population in 2015 at 10,664. The recent incorporation study stated that current zoning could accommodate 17,000 residents.

Where will the water come from for this larger population? Are there new sources of water that can be developed? What would those cost? We will be asking these questions and others at our upcoming event - "Tackling Drought." (See box at the side for details.) We urge you to attend to learn more about this issue and to show your concern.

WPS Presents

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Tackling Drought

Thursday AUGUST 18

7:00 p.m. - Gospel Chapel

Yummy desserts!

Come hear speakers, ask questions and learn about possible new sources of water. Are they realistic and affordable?

- Reclaimed water from the Ganges Sewage Treatment Plant
- New water from raising the weir on St. Mary Lake
- Rainwater collection for household use

Speakers: Ministry of Forests, Lands & Natural Resource Operations, Island Health, North Salt Spring Waterworks District, SSI Watershed Protection Authority, rainwater collection installer.

GROUNDWATER: SALT SPRING ISLAND'S FRESH WATER LENS

By Peter Steager

Salt Spring Island is the largest and most mountainous of the Southern Gulf Islands and is blessed with surface water – nine small lakes – that survives our warm dry summers supply. The three largest lakes supply the freshwater needs of the majority of our population. The rest of us, about a third of the population, depend on wells tapping underground water that we know little about.

Assessing the amount of water in a lake is no great task but doing the same with an aquifer buried deep underground is another matter. What we do know is that there is a lot of water down there and that, like our surface water, the amount varies greatly depending on the season of the year. The reason is no mystery. Absolutely all of our fresh water comes from the rain that falls on our island. The lakes around us and the aquifer beneath our feet fill during the rainy winter months and then shrink through the warm, dry summer. The extravagant water use by a year-round population of over 10,000 has been added to this natural cycle. The summers appear to be growing longer and drier while the number of island residents continues to grow. It is possible that we are on the verge of straining our water resources to their limit while lacking the necessary knowledge to intelligently manage them.

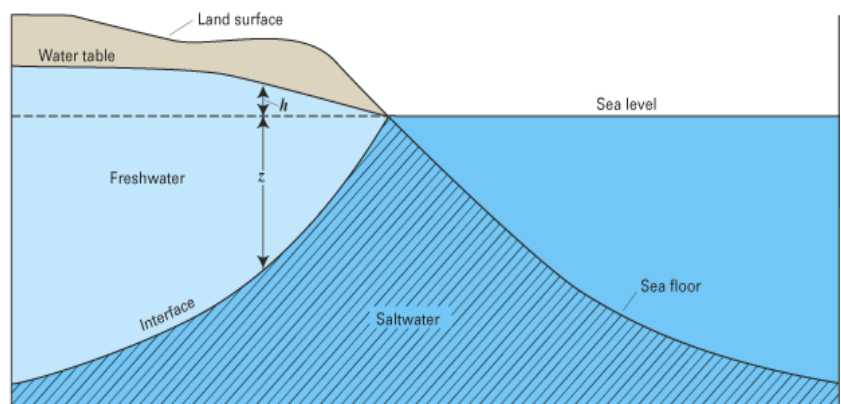


GROUNDWATER: SALT SPRING ISLAND'S FRESH WATER LENS

Once the early rainfall of a new wet season has saturated the ground and set our dry streams flowing again, pretty much all of the rain that falls for the remainder of the season, even that which initially finds its way into our lakes, runs off into the Salish Sea. We can measure how much remains as lake water, but at present, we simply have no way to do this for groundwater. How much we are pumping out of the ground on an annual basis is also anybody's guess. How much water is available at any given time is completely unknown. We do not even know how many wells are on the island, let alone how much water they extract from the aquifer. The only information we have that can tell us anything is when things go wrong such as when the summer output from many wells decreases alarmingly, when some go dry, and when a few begin to pump brackish water. Summer drought and human water use clearly take their toll, but why this toll is higher in some places than in others is still not clear.

Our island rises out of a salty ocean. If you dig a hole on a beach, you will soon hit saltwater, not freshwater. The island's base, where it meets the sea, was invaded long ago by salt water. You would think, then, that any rain water finding its way down that deep into the land mass would mix with this sea water and become brackish. Luckily, fresh water is not as dense as seawater and, if confined and not disturbed, will float on top of it. And that is exactly what happens within an island like ours. Our aquifer, fed by rainwater, floats on a bed of seawater. Mixing is confined to a narrow interface where fresh and saltwater meet, but the bulk of freshwater is unaffected. The entire mass of fresh water is roughly lens-shaped and for that reason is known as a fresh water lens.

When we hear the term 'aquifer,' we might imagine something like an underground lake, even a river, but there is no lake, as we understand it, deep beneath our feet. Our island is a solid mass of highly stratified rock in the process of being thrust upward by the same geological forces that generate our earthquakes. Riddled through with cracks, fractures and faults, it could be likened to a bucket packed tightly with rocks and aggregate to which water has been added. Even full of rocks, the bucket can hold a surprising amount of water. Enlarge the bucket to become an entire island and that becomes a tremendous amount of water. We are not accustomed to envisioning enormous amounts of water distributed in such a way, but that is how it exists in the interior of Salt Spring Island – spread around in cracks, faults, cavities, fractured shale, gravel and the like.



We are blessed with groundwater in abundance, but we also use it with great abandon and show little awareness of its limits. Last year, over 100 island families had wells that failed for some portion of the year, leaving them dependent on water delivery. Until we know as much about our aquifer as we do about our lakes, we need to treat the water we get from the ground as a resource in short supply, and plan accordingly.



Spring Rainfall: Low Again This Year

In mid-June, the two lakes that supply water to North Salt Spring Waterworks District – St. Mary and Maxwell lakes—were lower than at the same time last year, which itself was drier than the previous year. Since mid-June, rainfall has brought the lakes up to approximately the same level they were at this time last year. A provincial decision in June determined that the Waterworks increases the conservation level to 4 - the highest. This means very strict restrictions on outside water use and voluntary conservation of all water use within the Waterworks service area.

Although not all island residents are within the service area of the Waterworks, low lake levels affects everyone because the Waterworks supplies water to Ganges, the hospital and many other vital island businesses and services.

Given these events, the Waterworks and our Local Trust Committee have been gathering data to plan a response. In June 2015, the Waterworks released a study identifying its supply of water. The Waterworks then asked the Islands Trust Local Trust Committee to calculate and provide the number of homes and businesses that current zoning allows to be built within the Waterworks service area. This number is called “build-out.”

Following that request, the Local Trust Committee staff commissioned the Opus Water Demand Management Plan last winter. Rather than provide the build-out number, this study estimated growth of 1% residential and .3% industrial and commercial over the next 20 years. An open question remains as to whether the current growth rate or the build-out number should be used to estimate demand for water in the future.

Precipitation in millimetres at St. Mary Lake

	2014	2015	2016
April	56.9	31.3	11
May	42.6	5.7	16.6
June	27.0	5.2	32.8
Total	126.5	42.2	60.4

Data from the North Salt Spring Waterworks District rainfall gauge at St. Mary Lake.

Thank You to Our Contributors: Lawsuit update

The WPS Board of Directors thanks all of you who donated to the legal fund to pay for defending our ownership of the 272 acres of watershed land on the slopes west of St. Mary Lake from being lost to developers. It was extremely gratifying to receive this support from the community and many of our members.

So far, we have raised enough funds to cover our first legal bill with a bit to spare. At the first hearing of the case in Kelowna, we joined North Salt Spring Waterworks (who was also sued) in asking the judge to move the proceedings closer to Salt Spring. Unfortunately, the judge decided it was too soon to do that. This means that if there is another hearing, our lawyers may have to travel to Kelowna again.

We also asked that those bringing the lawsuit put up a cash deposit in case they lose and have to pay our costs. (It should be noted that even if we were to be awarded costs, the award is rarely more than a portion of the true costs.) The judge granted this request, and Paradigm Mortgage has given the court the cash. The next step will be up to the Paradigm Mortgage Co. and Channel Ridge Properties who brought the lawsuit. We still hold out hope that the other defendants will reach an agreement with the companies suing us, and the case against us will be dropped. But so far, there is no sign of that happening.



OUR EXECUTIVE

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CONTACT US

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COUNTRY GROCER TAPES

Please put your tapes in box #73

Request a Smile Card to donate through your purchases at Thrifty Foods.

MEMBERSHIP

Membership dues are \$15 for individuals or \$30 for a family/couple.

Additional donations are very gratefully received and help to keep WPS active, effective and hard working to protect our island waters. Tax Receipts are issued.

Please consider providing us with your email address so we can notify you of WPS events that take place between the publication of newsletters.

Current members - mail membership fee to:

Box 555, Ganges PO, SSI, BC, V8K 2W3

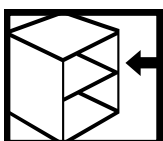
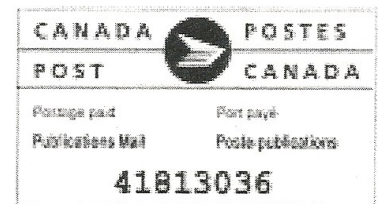
New members - request an application form to fill out and return



SSI Water Preservation Society

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COUNTRY GROCER TAPES

Please put your tapes in **Box 73**