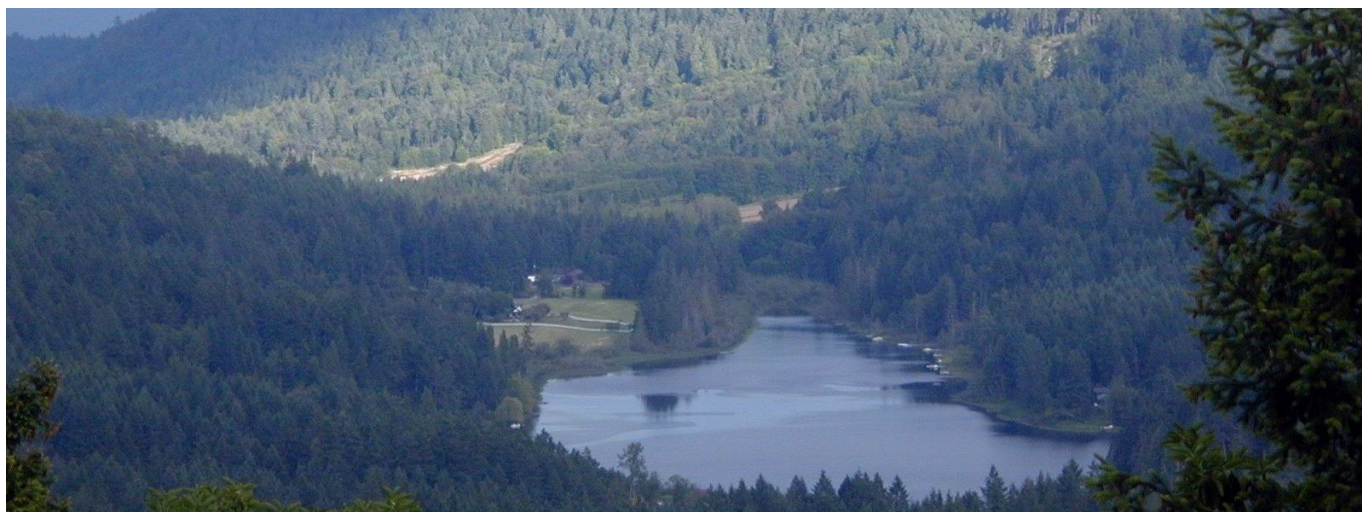




Salt Spring Island Water Preservation Society

SEPTEMBER 2018 NEWSLETTER



Attend Our Speaker Series This Fall: Two Informative Talks

The Ecohealth Concept in the Context of Watershed Preservation on Salt Spring Island

by David J. Rapport

*October 30, 2018, at the Lions Hall
Doors Open 7:00 pm | Talk Begins 7:30 pm*

David J. Rapport, PhD, FLS, FI is Principal of Eco-Health Consulting and lives on Salt Spring Island. He holds a PhD in Economics from the University of Michigan and did postdoctoral work in behavioural ecology at the University of Toronto. Dr. Rapport has pioneered the field of ecosystem health and developed methodologies for assessing the impacts of human activities on ecosystems, watersheds, and landscapes.

Preserving Groundwater Supplies on Salt Spring Island

by William Shulba

*November 27, 2018, at the Lions Hall
Doors Open 7:00 pm | Talk Begins 7:30 pm*

William Shulba, P.Geo. is the Senior Freshwater Specialist at the Islands Trust. He investigates groundwater sustainability, watershed protection, policy development, and intergovernmental research in the IT Area. He has a masters degree in hydrology from the University of Victoria and a BSc in geology from the University of Alberta.

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Water Allocation: What Is It and What Does It Mean for Us?

Water in BC—both surface and groundwater—is owned by the Province. For a lake, stream, or aquifer, a certain amount is allocated for human use. That amount attempts to account for critical environmental flows, usually to make sure that lakes, creeks, and rivers adequately support fish. Licences are issued to divert or withdraw water up to the allocation.

The amount of water available for withdrawal is limited in various ways, but profoundly by seasonal variations in rainfall. Much less is available in dry years than in average or wet years. As a result, different strategies come into play for allocating the water.

Continued on page 2



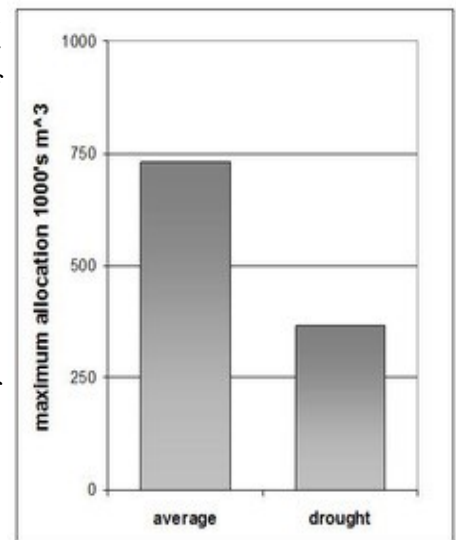
Water Allocation (continued)

The strategy used in BC by the Ministry of Forests, Lands and Natural Resources (FLNR) determines the allocation (total licensed amount) for *average* precipitation conditions, knowing that when a resource is fully licensed, water restrictions will be required during droughty years. This raises a number of issues around water rights, enforcement, and effectiveness.

Alternatively, a *worst-case drought* could be used to determine the limiting amount for allocation. Termed the safe yield, this approach is used in other jurisdictions and avoids or minimizes water restrictions. These two strategies provide very different amounts for allocation, with different consequences for consumers.

By way of an example, an average year at St. Mary Lake could provide roughly 730,000 cubic metres (m^3) during the critical June–October period. For the same period, the drought-limited supply is about one-half of that—370,000 m^3 (see graph). In our case on Salt Spring, imposing restrictions falls to the local improvement and service districts that treat and deliver drinking water. This is logical in a way because the districts are by far the largest users and have a measure of control over their consumers. Controls, and incentives, range from tiered and seasonal rates on consumption to restricted or no service.

When a resource is over-allocated, restrictions become severe and more frequent as the climate warms. The supplier then faces a number of challenges: summer revenue is reduced because less water is used and can be offset only through higher rates. This is not in the interest of either ratepayers or the service district. Restrictions can also be difficult to enforce and administratively time-consuming.



Average and drought yield for St. Mary Lake.

Finally, there is a psychological issue associated with the fear of running out of water. Forecasting rainfall for the June–October period is next to impossible. One response can be to play it safe and impose restrictions regardless of conditions in the lake, attempting to step them up as the summer unfolds. Again, this isn't really in the ratepayers' interest unless such restrictions actually are necessary (graph next page).

Current consumption for St. Mary Lake and Lake Maxwell appears to be about 85% of the drought-limited yield. This is likely to increase to more than 90% through global warming alone over the next 50 years. These resources are approaching full allocation by a "safe yield" strategy, but that limit on withdrawals is significantly below FLNR licensed total. The question is do we want to allocate more than the safe yield and deal regularly with water restrictions and higher toll rates, or cap withdrawals at around the safe yield even at the expense of more development on Salt Spring?

A similar question pertains to groundwater. As FLNR implements groundwater licences for all users, what allocation principle is desirable or will be used? Given the parallels between FLNR's approach to surface water and groundwater (allocating licences based on a gross aquifer water balance model), several questions come to mind: What recharge conditions will govern—average or drought limited? What triggers will be used to determine when an aquifer is stressed, and if stressed, will water restrictions then be imposed? Is this even possible given the complex nature of surface-groundwater interactions? This is an important issue with broad implications for people who rely on groundwater should it be over-licensed and over-exploited.

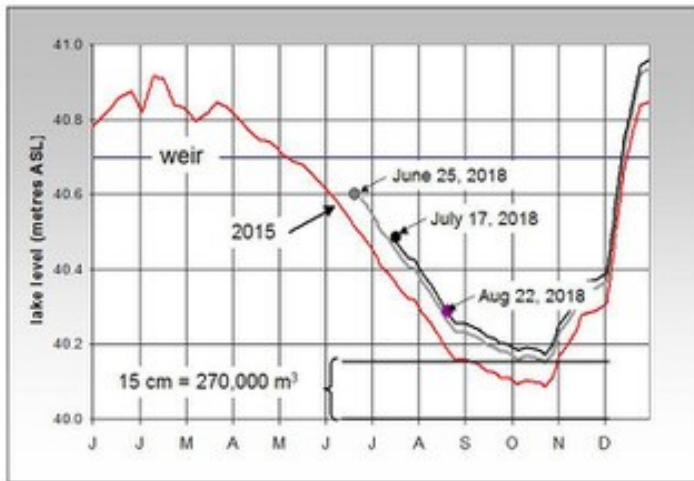
None of this argues against conserving water. Efficient water use, now and into the future, will prove to be important as our climate changes.

Note: Technical papers on this subject can be found at <http://www.ssiwaterpreservationsociety.ca/reports.html>

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Water Allocation (continued)



What if this year were as dry as 2015?

The graph shows St. Mary Lake levels starting in June and July, with subsequent draw down if inflows were as low as the drought in 2015. It predicts about 15 cm left in the lake at the third week of October, equal to a reserve of more than 270,000 m³. The total demand for Sep-Oct is, roughly, 100,000 m³. Even if the rainy season were a month late, the total demand increases to only 130,000 m³, about one-half of the available water. There is little justification for severe water restrictions in 2018. [forecast calculated with DMT]

—Donald O. Hodgins, PhD, P.Eng., AFCA

Our Fresh Water Catalogue: A News Brief

Our Fresh Water Catalogue Project (FWC) is on track with more than 15 volunteers. The FWC will raise community awareness of the island's freshwater diversity and importance; gather data on freshwater quantity, quality, and location; and use the data to guide watershed preservation and management.

Stewardship groups are making observations and gathering data in five watersheds. Other volunteers are suggesting further locations and developing computer tools to capture, store, and make our data accessible; educators are ensuring that we collect the appropriate data and use the right techniques.

We have field forms and a smart phone App for collecting data, an [online map](#) that's updated weekly, a cloud-based work storage area, and a [Facebook Group](#) for updates on activities and events.

Currently, we are focusing on the quantity of standing and surface water. If water flows throughout the summer, a component may be from groundwater. Standing water may indicate a groundwater recharge area. Both provide valuable information that can improve our understanding of the linkages between our surface and ground water. The map to the right shows where we currently have data.

Volunteers Still Needed!

We need volunteers in “field” and “office” roles and with IT, GIS, and historical research skills. If you know of a stream or wetlands that you can report on, let us know. More volunteers will provide more continuity in collecting data, grow the database more rapidly, and make our Catalogue more complete and accessible.



Contact John at JAMSSIWater@gmail.com

Full article at <http://www.ssiwaterpreservationsociety.ca/news/our-fresh-water-catalogue-a-news-brief>



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CONTACT US

E-mail ssiwps@gmail.com

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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 working hard to protect our island waters. Tax Receipts are issued.

Current members - mail membership fee to:
Box 555, Ganges PO, SSI, BC, V8K 2W3.

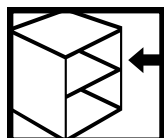
New members - request an application form to fill out and return.



SSI Water Preservation Society

Box 555, Ganges PO

Salt Spring Island, BC V8K 2W3



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