

From: George Leroux <[REDACTED]>
Sent: March 21, 2022 9:33 PM
To: Laura Patrick; Benjamin McConchie; Deb Morrison
Cc: David Marlor; Paul Brent; Dave Howe
Subject: Letter to NPLTC Re Groundwater

Dear Laura, Ben & Deb - North Pender Trustees

I am writing in regards to the new DPA – “Critical Aquifer Recharge” being proposed for North Pender. My comments are based on the GWS GW Availability Assessment Report – Oct 2021 which seems to provide the basis for the proposal.

The Groundwater Availability Assessment Report takes a very preliminary stab at estimating groundwater balances on the Southern Gulf Islands. This is useful work but it seems highly doubtful that land classification into a special new Development Permit Area can or should be based this study.

GWS put considerable effort into compiling data from a variety of sources to estimate groundwater recharge. The report relies heavily on the GWELLS database that does not include all wells, has out of date data, and does not include pumping or use information. There are very few observation wells in the study area that are regularly monitored, and none of the data from these wells is provided in the report. There is a lack of tie-in between the GWELLS data and the actual land use. Of particular note are the estimates for irrigation on agricultural land which seem wildly unreasonably based on the actual use of farmland on Pender. These qualifications of the work do not result in a high level of confidence in the outputs, which include in 190 pages of charts giving the impression of scientific rigour.

I am not a hydrogeologist. To a lay person the creation of “red zones” where use is between 10-20% of recharge seems to suggest that the groundwater recharge is more than adequate to cover the use. Yet the presentation of “red” zones gives the impression of an impending crisis. We live in a world where everything is deemed a crisis likely to try to get people to take action. However, action based on faulty or incomplete data and inadequate analysis can lead to bad decisions.

Groundwater availability, use and research is critical on our islands. It is an open question whether this should be undertaken by the Trust, but I leave that aside for the moment.

My main concern is the intent of the NPLTC to move forward “urgently” to get an 11th DPA enacted before the end of the term of the current trustees. The rationale presented for this urgency is that we are facing another “crisis” and the next trustees, if there is a change at the next election, may not be in such a hurry to create a new DPA. The sentiment expressed that it would be hard to undo it once it is done further reflects a rush to conclusion. It seems that there is a solution in search of a problem, and a preliminary study with lots of impressive diagrams and figures gives the impression of scientific rigour necessary to support the DPA.

I am not opposed to groundwater work. Recently we went through the effort required to license our well with the Ministry of Forests, Land, Natural Resource Operations and Rural Development since we are an active farm. Over time this registration will add greatly to the database of knowledge on actual groundwater use.

It is my observation, having been around and on the island for almost 50 years, that most islanders are water conscious. Many have adopted water saving ways in their day to day living. Building on this underlying ethos to develop more water awareness is far preferable than a rush to regulate. Regulation, already excessively burdensome, will only further increase costs on this island. We are faced with yet another “crisis” - workforce housing affordability. More and more regulation will not help affordability, and it is difficult, based on the groundwater work to date, to see how it will do much of anything for groundwater.

I propose that the NPLTC establish a committee of land users and retired professionals on the Pender Island comprised of people from agriculture, water districts (i.e. Magic Lake), commercial operators, and retired professionals who live here - soil scientists, agronomists and likely even the odd hydrogeologist - to work with the NPLTC to develop a thorough understanding of water use and water risks on the island. Staff from the Trust could provide important resources. Further studies may be necessary. The committee could work with the Trust to develop guidelines for further research, identify incentives for water conservation, build further awareness, and, if still felt to be necessary, help design regulations that reflect the reality on the island. Frankly, meaningful community

engagement will be far more constructive and productive than ramming more regulation down people's throats.

Sincerely,

George Leroux

Addendum - Review of GWS - Groundwater Availability Assessment – Oct 2021

The comments below are my observations of the report. I am not a water scientist. I am an agriculturalist with a lifetime of experience in farming and food production. Most of the report is likely unintelligible to the average reader. So my comments likely reflect my lack of understanding of hydrogeology.

Points of Diversion – Water volume estimates (p3 & 4)

- Coefficients based on BC Ministry of Agriculture Livestock Watering Factsheets and BC Agriculture Water Demand Model
 - It is entirely unclear how these relate to agriculture on the gulf islands; it is unclear which of the 4 irrigation Group PoDs are used in the overall modelling in agricultural areas
 - Golf course fairway is not watered on Pender
- Current licenses of Points of Diversion (figure 2, p5)
 - Very limited sites on Pender; no information provided as to the sites or the nature of water use at these sites
- Estimation of Groundwater withdrawals (p6)
 - Uses GWELLS database and then outlines the limitations:
 - Does not include all wells and does not have complete information on the existing wells
 - Does not include information on pumped volumes from wells
- Methodology (p6)
 - Estimates groundwater use by tying it to active wells on a parcel
 - In case of agriculture most irrigation, if it is in place, comes from dug ponds filled by surface runoff, not groundwater
 - The report states “it is expected parcels within the Irrigation category will overestimate water demand”
- Table 2 – Average water use estimates per parcel (p8)

- Irrigation parcels – codes 110 – 190 – show water usage of 10,000 – 24,000 l/day/parcel
 - It is unclear how variable parcel size is incorporated
 - It is unclear how limited areas on a parcel that might be irrigated are accounted
 - It is unclear how irrigation from surface filled ponds is included
- Water Use Estimate Results (p13)
 - For Pender it states that surface water use exceeds groundwater use with most water used for irrigation
 - Irrigation estimates over state actual irrigation use
 - Winter recharge is significant, with most going to run-off
- Groundwater recharge and groundwater use (p24)
 - The classification sets up use < recharge
 - <5% - green
 - 5 – 10% - yellow
 - >10% - red
 - No rationale is given for this classification – for instance does 10% cause stress to the groundwater?
 - It seems like 100 units go in and 10 units come out leaving 90 units and this is bad (i.e. red zone).
 - For Pender the estimates put a lot of use in the irrigation category, which are gross over estimates of use, so what is truly “red” zone?
 - The “red” zone seems to be based on a once in 30-50 yr water event, and then seems to assume it happens in consecutive years – a rather extreme assumption if I have captured it correctly.
- The GWS Availability Assessment study recommends:
 - Groundwater monitoring through monitoring wells;
 - Assessment of water use through “real world water use” examination;
 - Installation of hydrometric stations to monitor surface water levels and flow; and
 - Installation of climate stations to monitor temperature and precipitation.
- The Report then goes on to list 1.5 pages of limitations including:
 - Variability due to site, condition and time;

- Reliance on “good faith” in the information provided;
 - Findings and conclusions relate only to the specific project;
 - No representation “whatsoever, including those concerning the legal significance of its findings”; and
 - Conclusions and limitations are based on “information available at the time the work was completed, and within the time and budget limitations of the scope of work.”
- It seems the study, based on limited and constrained data, is useful only as a starting point for further work.