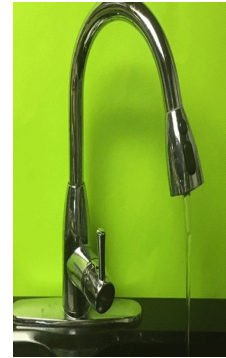


47 Fascinating Facts About Water



The Gulf Islands

- 1 Gulf Island summer water consumption is 145 - 215% higher than in winter. (2007)
- 2 Average roof, average rainfall = 20,000-23,000 gallons of runoff
- 3 Natural forests with their foliage, undergrowth and root systems hold huge quantities of water. Trees absorb, filter, and slowly release storm water run-off while preventing ground erosion.

North Pender Island

- 4 The only source of ground water is precipitation.
Precipitation on Pender (1925-1994): December 128 mm, July 20.9 mm.
- 5 The permeability of Pender sandstone makes for poor aquifers and limited storage capacity.
- 6 Pender has two groundwater monitoring stations. Port Washington shows recharge however Pirates Road shows a significant drop in the aquifer level. (2016)
- 7 Dissolved minerals: iron, chlorides, sulphides and salt water intrusion impact the quality of our North Pender well water.
- 8 North Pender has three water districts. The Razor Point system serves 31 properties. The Trincomali system services 104 parcels and the Magic Lake Estates' system has 1207 taxable properties. It currently provides water to 1010 properties.
9. On North Pender Island, four areas: Magic Lake, Buck Lake, Gardom Pond and the Hope Bay stream, are protected by provincially mandated Riparian & Aquatic Development Permit Area designation. Development is limited in order to provide buffer zones within 30 metres of streams, creeks, lakes or ponds.

Razor Point Water Improvement District

- 10 The Razor Point Water Improvement District's 200 foot deep well produces 120 Imperial gallons per minute (144 U.S.) gallons/minute.
- 11 The 31 properties each pay \$350/year for water plus a Capital Improvement levy of \$450.

Trincomali:

- 12 Trincomali Improvement District has 6 wells, between 200 and 350 feet, which pump into 2 concrete tanks which hold over ½ million Imperial gallons, about 2,270 m³.
- 13 Members conserve water by limiting their use to 272-318 litres a day for two people. Exceptional quality is reported
- 14 There were 89 connections in Trinco as of June 15, 2017. 104 parcels total. Some people own more than one parcel.
- 15 Their annual water usage is just over 1 million imperial gallons, about 4,800 m³.
- 16 They pay \$400 per year/lot for their water. This includes contingency funds to cover planned projects as well as emergencies.
- 17 Treatment consists of the raw water passing through a 1 micron filter and an ultraviolet radiation device just before it enters the distribution system. 4 header tanks totalling 150 m³ assure adequate pressure and fresh aerated water.

Magic Lake Estates Water System

18 Lakeside buffers of native vegetation:

- filter sediments from runoff
- help stop erosion
- protect wildlife habitat



Buffer of native
grasses and willows

19 Basic Magic Lake Estates' water user fees are \$520/year (\$130 x 4) plus 2 parcel taxes of \$497.81 + \$49.90 for a total of \$1,066.90 per year or \$88.40 per month. Water cost is almost \$3 per day.

20 Water for MLE is supplied 80% from Buck Lake and 20% from Magic Lake

21 The service area for MLE is approximately 390 hectares including 23 hectares of water surface in Magic and Buck lakes.

22 The water treatment plant uses pre-treatment, dissolved air flotation, filtration, chlorination and ultra violet to treat the lake water to bring it up to drinking water standards.

23 The treatment plant currently treats and delivers approximately 350,000 litres/day in the winter and 800,000 litres/day in the summer.

24 Treated water is stored in two tanks, one 165,000 Imperial gallon tank on Frigate Road and a second 75,000 gallon tank on Captains Crescent.

25 Water is delivered to approximately 1,010 properties through 27 km of distribution mains.

26 Water is provided from the lakes through the approval of six water licences with the Province of British Columbia.

27 Water is retained in Magic and Buck lakes through the use of four dams that are also regulated by the Province of British Columbia.

28 Water conservation works – there are noticeable drops in Magic Lake water usage after notices are issued in the summer.

Wells

29 A total of 2,388 residential properties exist on the Pender Islands. Of these 1,342 are on water systems. If one well was dug on each of the remaining properties, there would be 1,026 wells on the two Penders.

30 On February 29, 2016 the Water Sustainability Act was passed to protect surface and ground water and to set out guidelines for constructing and maintaining wells. A wells database was established but it is incomplete as registration for domestic wells is voluntary. Domestic well owners are encouraged to register their wells.

Pender Island Fire Rescue

31 Fire crews use as little water as possible to extinguish chimney fires in order to avoid water damage to homes.

32 A large residential fire can use up to 50,000 gallons of water.

General Facts About Water

33 There is the same amount of water on earth now as there was billions of years ago.

- 34 90% of the world's fresh water is in Antarctica.
- 35 70% of the world's fresh water goes to agriculture.
- 36 60% of Canada's water usage is used for thermo/electric power generation.
- 37 25% of the world's wetlands are in Canada.
- 38 60% of household water use may go for yard/garden upkeep.
- 39 75% of water goes down the drain.
- 40 Canadians are the SECOND HIGHEST CONSUMERS of water per capita in the world.
- 41 A toilet that runs can waste 20 - 40 litres of water per hour.

Household Use Averages:

- 42 Bathing 35%
- 43 Toilets 30%
- 44 Laundry 20%
- 45 Kitchen 10%
- 46 Cleaning 5%
- 47 A cup of coffee takes 55 gallons of water to produce.



165,000 gallon tank
on Frigate Road



Trincomali's
300,000 gallon
storage tank



Thanks to Alex Wilson (Magic Lake Estates), Mike McManus (Trincomali) and Fire Chief Charlie Boyte for their facts. Photos courtesy of Doreen Ball and Megan Ravenscroft

Compilation work courtesy of the Pender Islands Trust Protection Society with research by: Lynne Wells, Julie Roper, Kathy Curtis and Doreen Ball

For more information:

Jim Henderson's Groundwater Management in the Gulf Islands : go to North Pender Islands Trust, click "Resources" (on right side of page), then scroll down to "Water."

Water Resource Information for Islanders: www.islandstrust.bc.ca/water

Razor Point Improvement District: www.razorpointwater.org

Trincomali Improvement District: www.trincowater.org