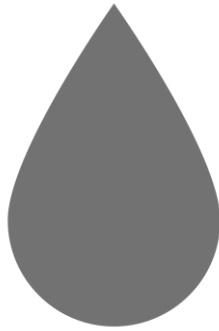




REGIONAL
DISTRICT
OF NANAIMO



2019 Drought Update

A regional summary reference

2nd Edition: July 24, 2019

To: Regional Water Purveyors and DWWP Technical Advisory Committee
Compiled by: Julie Pisani, RDN DWWP Program Coordinator

File No.: 5600-07

Table of Contents

<i>Snowpack</i>	2
River Forecast Centre Stations.....	2
<i>Streamflow</i>	3
Water Survey of Canada Stations	3
<i>Groundwater</i>	5
Provincial Observation Wells.....	5
<i>Fire Outlook</i>	6
BC Wildfire Service.....	6
<i>Provincial Drought Ranking</i>	7
BC Drought Information Portal	7
<i>Water Supply Systems</i>	8
<i>LINKS</i>	9

Snowpack

River Forecast Centre Stations

June 15th Update (last Snow Bulletin of the Season)

Snowpack only accumulated to 85% of normal this year

Warmer temperatures at elevation and low levels of precipitation in February and March meant that snowpack did not accumulate as much as in previous years. Two sites monitor snowpack in our region: Jump Creek (Upper Nanaimo River watershed) and Mt Arrowsmith (upper Englishman River Watershed). Jump Creek data is displayed in the graph below.

Snow melt has occurred early this year

The weather in May was above normal temperatures and below normal precipitation. As of June 1st, snowpack levels on Vancouver Island are at 15% of where it would normally be, and by June 15th it had dropped further to 2%. Typically, the melt would begin in May and go through until July. This year, the melt began mid-March and mid-elevation locations were snow-free by mid-May and higher elevations by end of June. This is generally 1 month ahead of usual seasonal patterns, similar to what was experienced in 2015 and 2016.

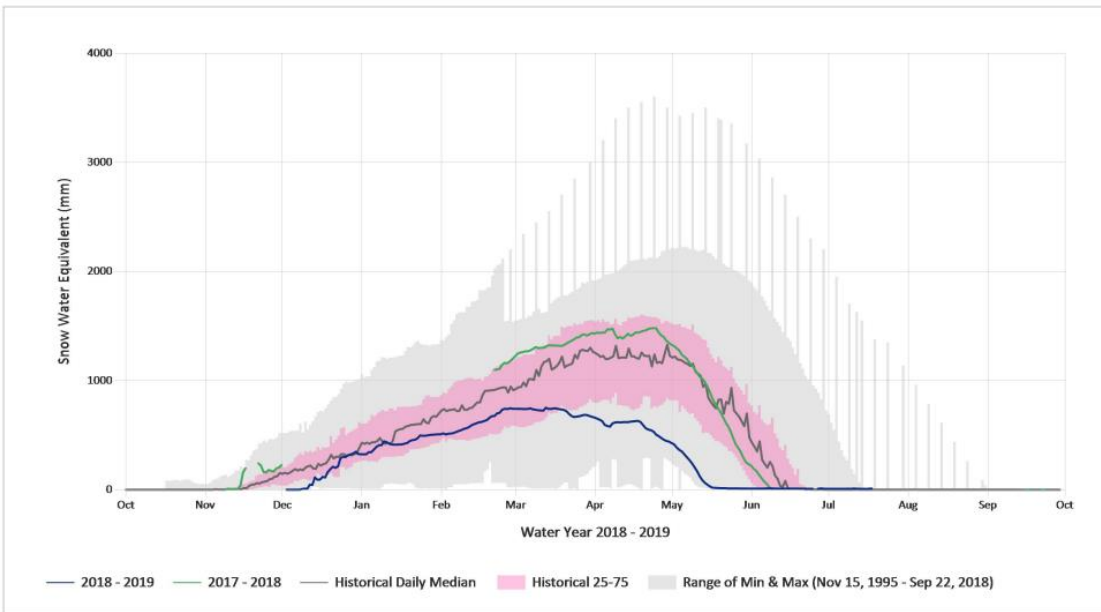


Automated Snow Weather Station Graph

Plot created: July 18, 2019 06:04

SW.Daily@3823P - Jump Creek

Latitude: 48.969505 Longitude: -124.276182 Elevation: 1160 (m)



Statistics are based on the period of record prior to the current Water Year
Statistics are only displayed for locations with at least two years of data
Automated Snow Weather Station Graph is only available for Active locations

Data last appended: July 18, 2019 11:00 UTC

Status: Active

Streamflow

Water Survey of Canada Stations

July 23rd Update

All gauged stations in our region are “Much Below Normal”

This means that based on the historical data collected at each location, the current flows are equal or less than 10 percent of the flow values recorded on this day of the year during all years the measurements were taken.

This is a reflection of low flow conditions happening earlier than in the past

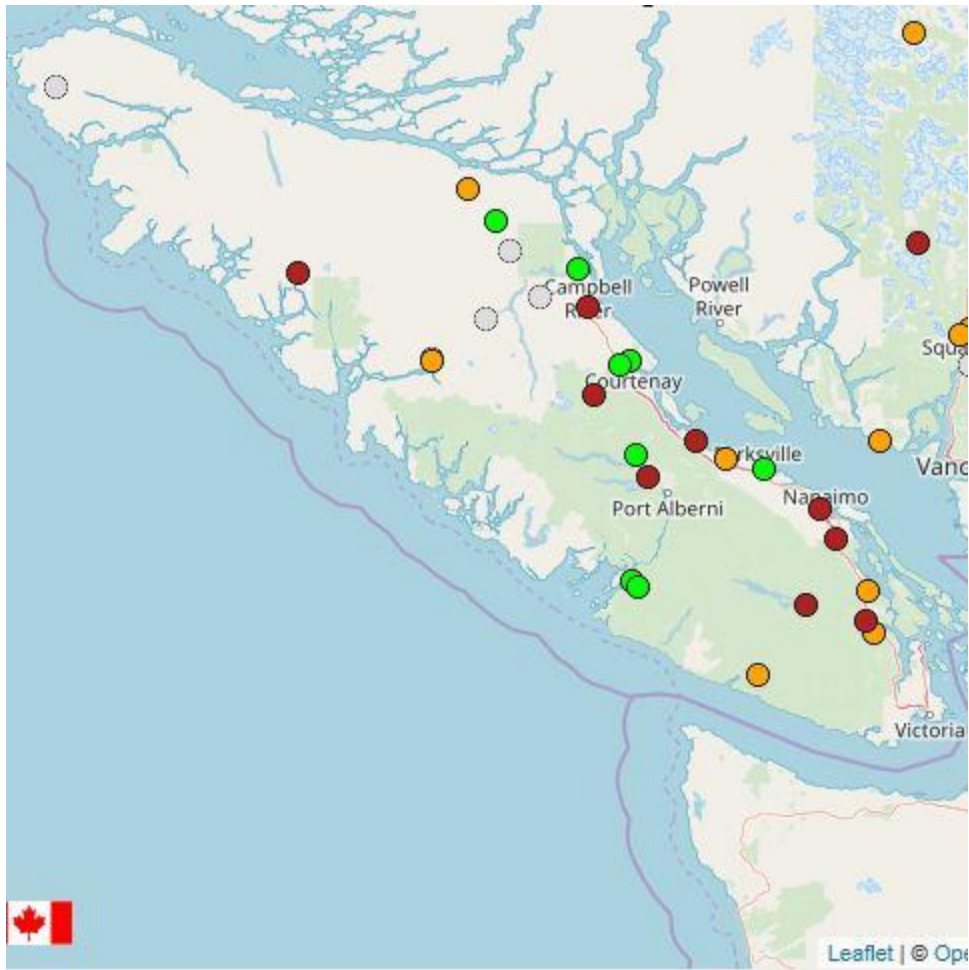
Streams are at levels that would typically be observed as later summer conditions.

The table below shows the Water Survey of Canada stations that operate within our region. Note that all locations except Nile Creek are in systems that have controlled levels by weirs or dams.

The challenge is to maintain minimum baseflows for aquatic life while managing community water supply and demand.

Location	WSC Station	Percentile Class
NILE CREEK NEAR BOWSER	08HB022	Much Below Normal
LITTLE QUALICUM RIVER NEAR QUALICUM BEACH	08HB029	Much Below Normal
MILLSTONE RIVER AT NANAIMO	08HB032	Much Below Normal
ENGLISHMAN RIVER NEAR PARKSVILLE	08HB002	Much Below Normal
NANAIMO RIVER NEAR CASSIDY	08HB034	Much Below Normal

See map of Water Survey of Canada Stations with their attributed percentile of historical flow, on the next page.



Explanation - Percentile classes						
●	●	●	●	●	●	●
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

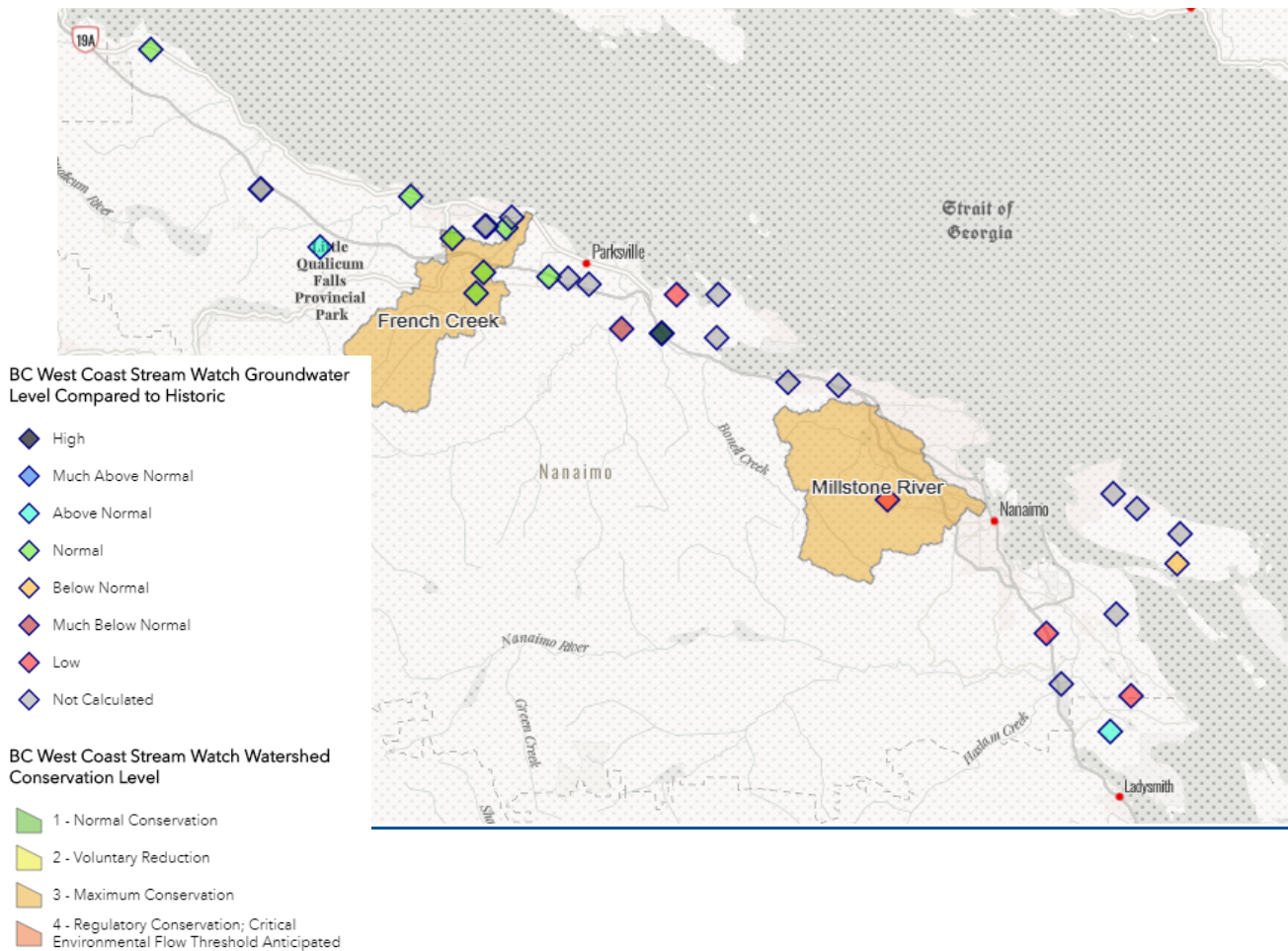
Groundwater

July 5th Update

Provincial Observation Wells

Out of the 16 observation wells in the RDN that have data recent to 30 days, 37% (6) are below normal levels for this time of year, fewer than the last update early June.

- Benson Meadows (388) – lowest on record
- Gabriola (316) – below normal
- Yellowpoint (432) – lowest on record
- South Wellington (435) – lowest on record
- Nanoose – much below normal (395) and lowest on record (396) (also have a well (392) that is High in Nanoose)

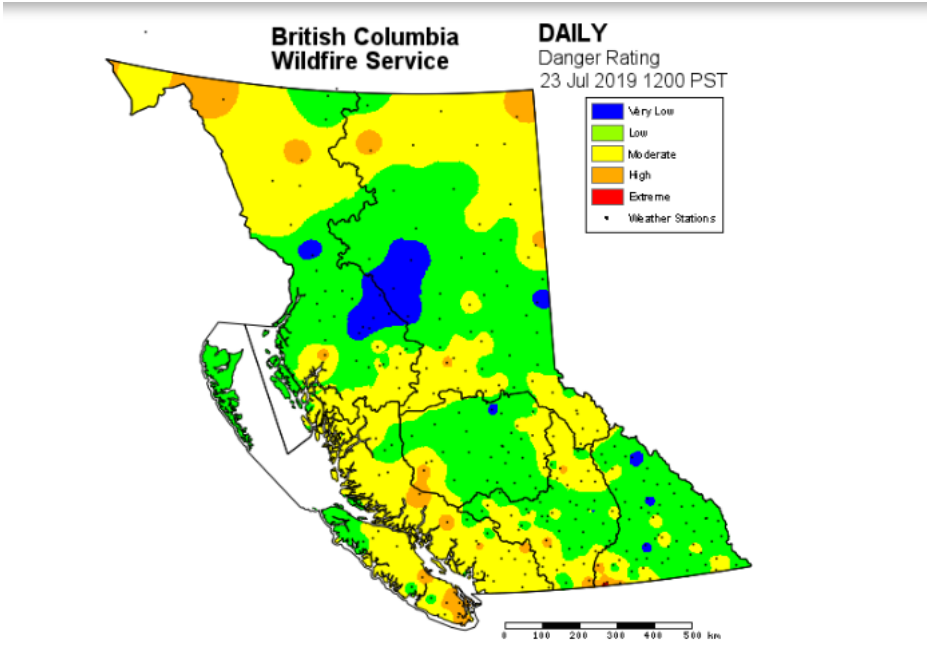


Fire Danger

July 23rd, 2019

BC Wildfire Service

Our region currently has a Moderate to High Danger Rating, meaning forest fuels are dry and at risk of surface fires.



What the danger class ratings mean

Low: Fires may start easily and spread quickly but there will be minimal involvement of deeper fuel layers or larger fuels.

Moderate: Forest fuels are drying and there is an increased risk of surface fires starting. Carry out any forest activities with caution.

High: Forest fuels are very dry and the fire risk is serious. New fires may start easily, burn vigorously, and challenge fire suppression efforts. Extreme caution must be used in any forest activities. Open burning and industrial activities may be restricted.

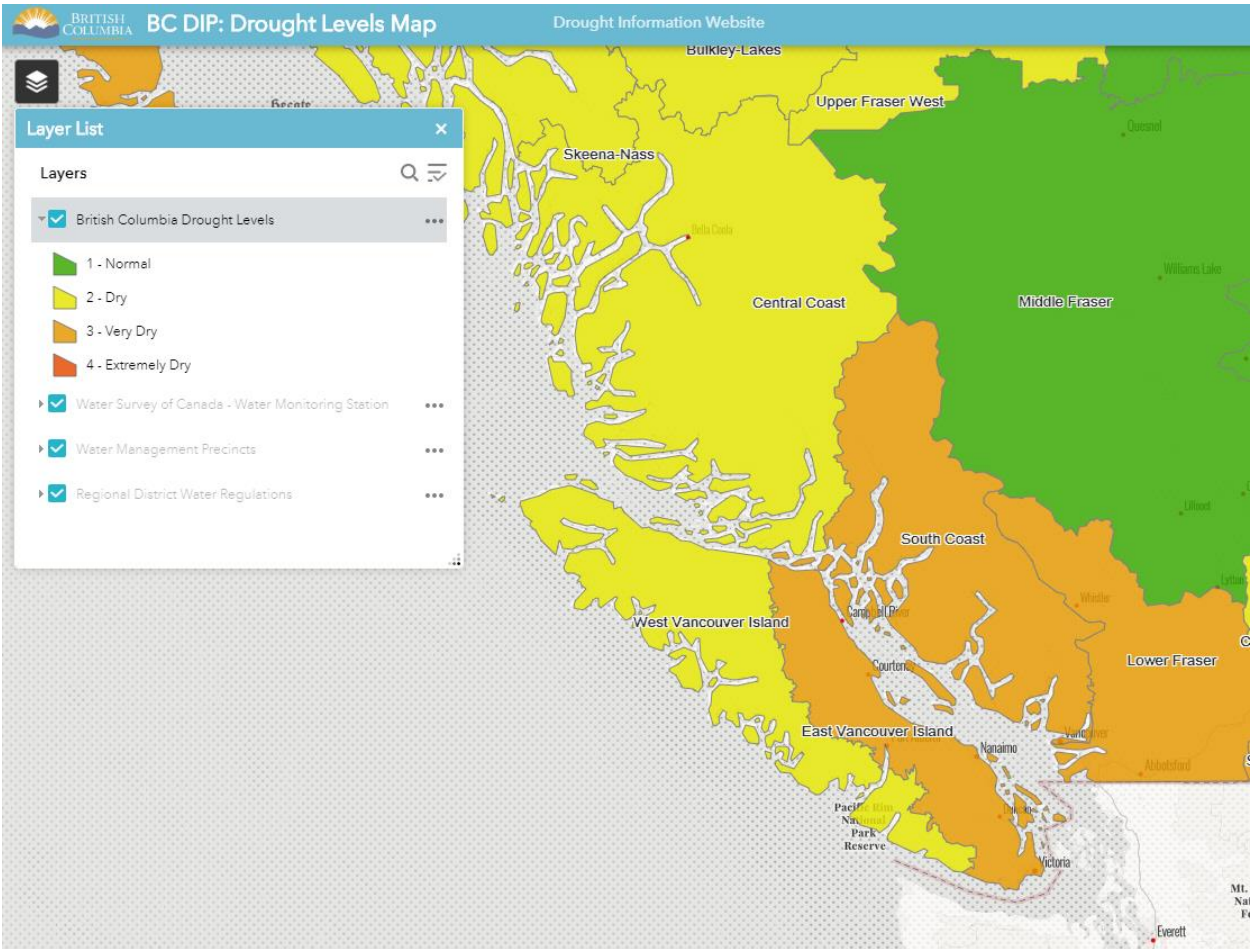
Extreme: Extremely dry forest fuels and the fire risk is very serious. New fires will start easily, spread rapidly, and challenge fire suppression efforts. General forest activities may be restricted, including open burning, industrial activities and campfires.

Provincial Drought Ranking

July 17th, 2019

BC Drought Information Portal

On June 7th, the Province announced in the media that it was escalating the drought level for East Vancouver Island to “3- Very Dry”. This calls for voluntary water-use reductions for all surface water and groundwater users including farms, industry and municipalities. This rating has been maintained for six weeks since it was issued.



In particular, the French Creek and Millstone River watersheds within our region are flagged as most susceptible to hydrological drought that could impact fish and aquatic habitat due to low streamflows. Letters have been issued by the Province informing water licensees and inferred non-domestic groundwater users that increased voluntary water use reductions are requested.

Water Systems – Supply and Demand

The cooler wetter weather we experienced mid-July and the conservation messaging coming out in June helped to curtail demand. June water supply and demand conditions were more like July / August usually is, whereas July supply and demand conditions have been more inline with what this month usually experiences.

System	Source	Status (Supply & Demand)	Restriction Stage (current to July 24)
City of Nanaimo	Jump Lake & South Fork dams, Nanaimo River (surface water)	Reservoir 94% full, slightly below historical average. Demand is between minimum and average historical.	2
North Cedar ID	Groundwater	<i>Unknown at time of report</i>	3
District of Lantzville	Groundwater	<i>Unknown at time of report</i>	2
City of Parksville / Nanoose Bay Peninsula (RDN)	Arrowsmith Dam, Englishman River + Groundwater	Normal conditions for this time of year.	3
RDN Water Systems	Groundwater	Normal conditions for this time of year.	3
EPCOR French Creek	Groundwater	Normal conditions for this time of year.	3
Town of Qualicum Beach	Groundwater	<i>Unknown at time of report</i>	1
Bowser	Groundwater	<i>Unknown at time of report</i>	2
Deep Bay	Groundwater	<i>Unknown at time of report</i>	0
Qualicum Bay Horne Lake	Groundwater	<i>Unknown at time of report</i>	0

Summary

While there has been a bit of a reprieve in July, drought conditions still persist. The precipitation received has helped to curb demand, but the groundwater and stream systems still remain in a seasonal deficit for the most part. Monitoring of conditions will continue as the summer progresses.

Another update will be provided later in August.

Links

BC Drought Information Portal

<https://governmentofbc.maps.arcgis.com/apps/MapSeries/index.html?appid=838d533d8062411c820eef50b08f7ebc>

Snow Conditions and Water Supply Bulletin

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/drought-flooding-dikes-dams/river-forecast-centre/snow-survey-water-supply-bulletin>

Groundwater Level Data Interactive Map

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/groundwater-wells-aquifers/groundwater-observation-well-network/groundwater-level-data-interactive-map>

Map of 7-Day Average Streamflow

http://bcrcfc.env.gov.bc.ca/lowflow/map_7dayflow.html

Wildfire BC Information

<https://www2.gov.bc.ca/gov/content/safety/wildfire-status/wildfire-situation/fire-danger>

Regional District of Nanaimo – Regional Watering Restrictions Map

<https://www.rdn.bc.ca/watering-restriction-map>