

RDN Drinking Water & Watershed Protection Program Technical Advisory Committee March 21, 2017



Correspondence

- Email from Anne Fiddick (Feb. 10, 2017):

*There seems to be **provincial criteria on how a drainage project is evaluated and approved** with no RDN, public or neighbourhood input with regard to the impact on lands within the drainage of these wetlands not on the developer's property.*

*Our committee heard about the mapping of wetlands. DWWP so far is viewing larger issues within the watershed; **in my opinion, big or small changes need to be identified, mapped and discussed** as the inventory progresses. The wetlands mapping will be valuable only if it includes all available current data. I would like DWWP to discuss **how to include provincial approvals and information sharing into the mapping project** and recommend to the RDN board some kind of mutual information sharing (**referral process**) so this kind of project is considered before approvals, "fait accompli" is too late.*

- Further elaboration email from Anne, Mar. 3, 2017:

*I would like to hear discussion about **what path a permit application takes and how to improve local input**, then a possible recommendation to the board.*



DRINKING WATER
WATERSHED
PROTECTION

Roundtable Updates



Agenda

Planning and Policy update	Integrating DWWP data into planning processes
Expanded Water Monitoring (Phase 2 Water Budget Update)	Implementation plan; for review and feedback
State of our Aquifers – analysis	Project scope; aquifers of interest; for feedback
Stream Assessments for 2107	Potential locations; suggestions?
Stewardship Seed Funding	Proposals to date
NRCAN-GSC Nanaimo Lowlands Groundwater Study Atlas	Hardcopy available for distribution
Outreach / Rebate Program update	Water to Earth Month, New Landscape Water Efficiency Rebate, DWWP Video Ideas

Planning & Policy update

Area H OCP – hydrogeology review, aquifer protection development permit area

Planning & Policy update

Area H OCP – *hydrogeology review, aquifer protection development permit area*

Policy B1.21 – *Groundwater requirements for rezoning of un-serviced lands*

Tiered approach based on location & documented stress/risk levels



Level 1 – Desktop assessment
Level 2 – Desktop + Field assessment



Review required volume of 3.5 m³ per day year round

Outline standard report requirements; develop a checklist

Planning & Policy update

Area H OCP – hydrogeology review, aquifer protection development permit area

Policy B1.21 – Groundwater requirements for rezoning of un-serviced lands

Referrals on water licenses

Expanded Water Monitoring

Nanoose (Area E)

Recommended Locations

Climate

Headwater of Nanoose or Bonnell Creek

- Explore partnership opportunity with Island Timberlands or TimberWest

Central Nanoose Peninsula

- Could install RDN-run station at Wastewater Treatment Plant location
- Could partner with Fairwinds GC to upgrade their existing rain gauge and share data/costs

Hydrometric

Lower Nanoose Creek

MFLNRO installed Feb. 28

Upper Nanoose Creek

Enos Creek & Enos Lake

Expanded Water Monitoring

Recommended Locations - Groundwater

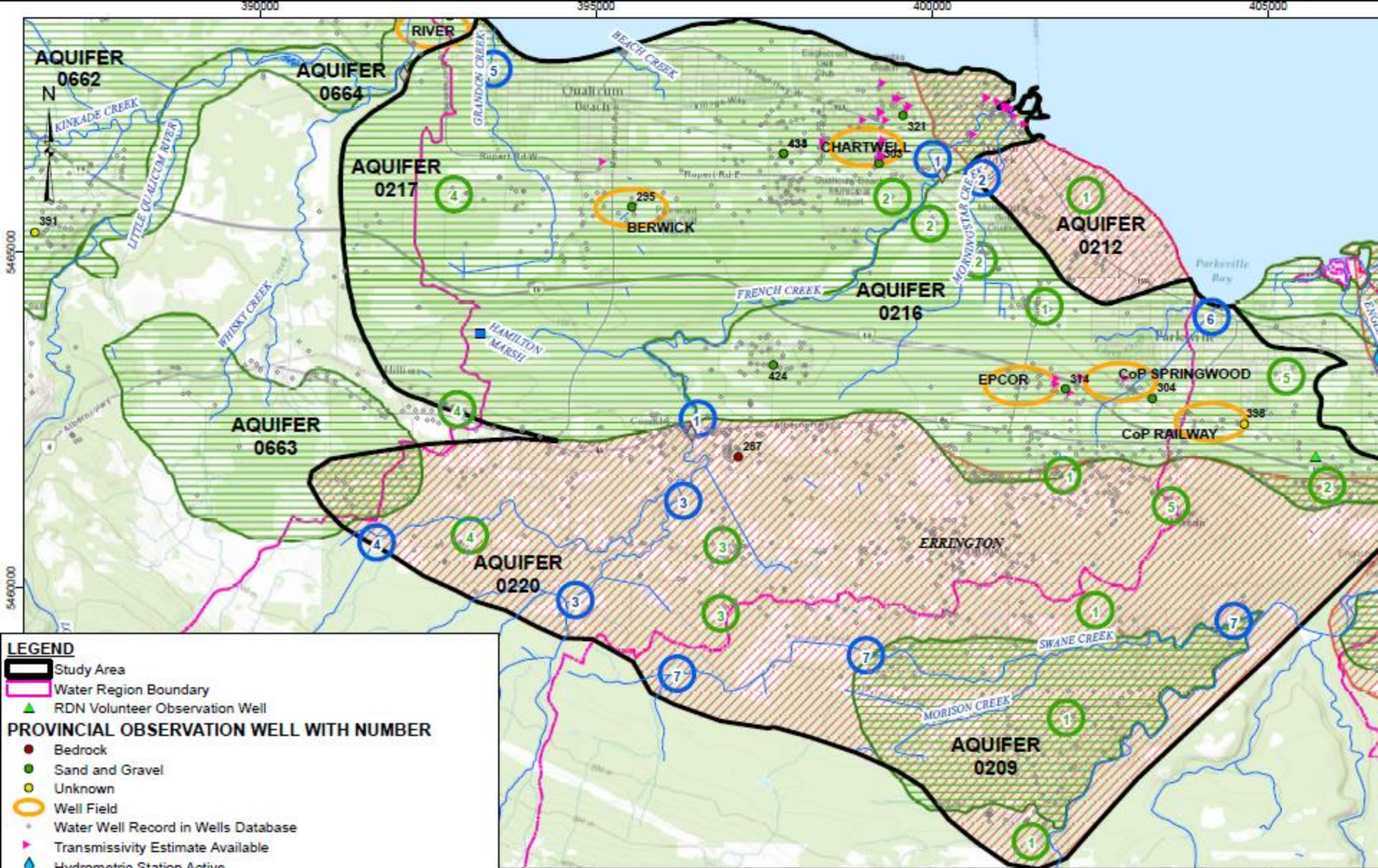


Expanded Water Monitoring

French Creek

Recommended Locations

Groundwater	Hydrometric
Aquifer 216 – up to six sites	French Creek – up to five sites
Aquifer 217 – up to three sites	Morningstar Creek
Aquifer 220 – up to 9 sites	Hamilton Marsh
	Grandon Creek
	Romney Creek
	Swane Creek
<p>Proposed Implementation 2017: one volunteer observation well in each of those Aquifers, for a total of 3</p>	<p>Proposed Implementation 2017: Install station on French Creek, explore partnership with FLNRO. Possibly also Morningstar.</p>



LEGEND

- Study Area
- Water Region Boundary
- RDN Volunteer Observation Well

PROVINCIAL OBSERVATION WELL WITH NUMBER

- Bedrock
- Sand and Gravel
- Unknown
- Well Field
- Water Well Record in Wells Database
- Transmissivity Estimate Available
- Hydrometric Station Active
- Hydrometric Station De-activated

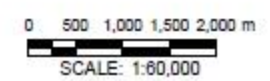
Overburden Aquifer

Bedrock Aquifer

Recommended Monitoring Sites (numbered in priority order)

- Groundwater Level
- Surface Water Flow Station

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REGIONAL DISTRICT OF NANAIMO
 SCOPING FOR PHASE 2 DATA COLLECTION
 FRENCH CREEK AND CEDAR-YELLOWPOINT



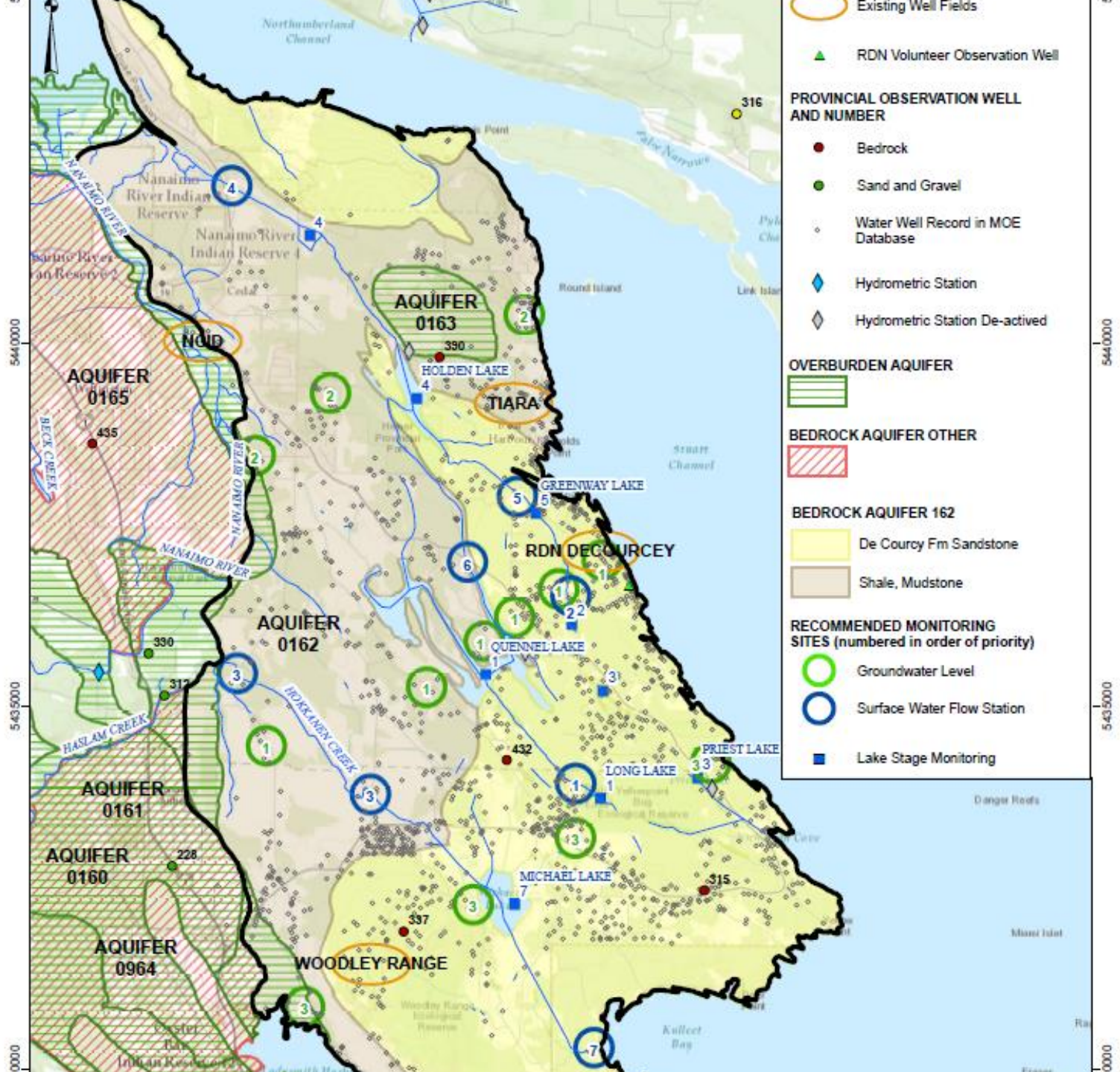
FRENCH CREEK STUDY AREA WITH
 RECOMMENDED MONITORING SITES

Expanded Water Monitoring

Cedar-Yellowpoint

Recommended Locations

Groundwater	Hydrometric
<p data-bbox="376 772 610 811">Aquifer 162</p> <p data-bbox="202 829 788 868">13 sites in three priority areas</p>	Quennell Lake
	Long Lake
	Norman Creek
	Holden Creek & Holden Lake
	Priest Lake
	Hokkanen Creek
<p data-bbox="177 1068 813 1106">Proposed implementation 2017:</p> <p data-bbox="117 1125 871 1163">3 volunteer obs wells in priority area 1</p> <p data-bbox="117 1182 871 1220">2 volunteer obs wells in priority area 2</p> <p data-bbox="166 1239 823 1335">None in priority area 3 this year – potential partnership with CVRD?</p>	<p data-bbox="962 1068 1597 1106">Proposed implementation 2017:</p> <p data-bbox="923 1125 1634 1278">Holden Creek, Holden Lake, Norman Creek and Quennell Lake – pursue first. Partnership with DFO? FLNRO?</p>



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State of our Aquifers

Select Aquifers

Based on:

- 1) available observation well data;
- 2) importance as a drinking water source;
- 3) geographical distribution across the region.

13 proposed.

State of our Aquifers

Select Aquifers	Scope for HydroG Analysis
<p>Based on:</p> <ol style="list-style-type: none">1) available observation well data;2) importance as a drinking water source;3) geographical distribution across the region. <p>13 proposed.</p>	<p>Review observation well data, climate data. Graph, interpret trends.</p> <p>Done for June.</p>

State of our Aquifers

Select Aquifers	Scope for HydroG Analysis	Report Out in Newsletter
<p>Based on:</p> <ol style="list-style-type: none">1) available observation well data;2) importance as a drinking water source;3) geographical distribution across the region. <p>13 proposed.</p>	<p>Review observation well data, climate data. Graph, interpret trends.</p> <p>Done for June.</p>	<p>Compile into easy-to-read newsletter with help from graphic designer.</p> <p>Mail out to residents; target September/October.</p>

Aquifers to Cover in State of our Aquifers Report

RDN Water Region	Aquifer	Type	Location	Obs Well	Main Water Supply	Density of wells?	
WR1 - Big Q	416	Sand and Gravel	Deep Bay	BC OW 310	Imp Dist (DB, B)	Low	
WR 2- Little Q	664	Sand and Gravel	Qualicum Beach	BC OW 389	Town of QB	Low-Mid	
WR 3 French Creek	217	Sand and Gravel	Qualicum Beach	BC OW 321	TQB & Private Wells	Low-Mid	
				BC OW 303			
				BC OW 434			
				BC OW 295			
220	Bedrock	Coombs	BC OW 287	Private Wells	High		
WR 4 - Eng R	216	Sand and Gravel	French Creek / Parksville	BC OW 424	Epcor & RDN & Parksville	High	
				BC OW 304			
				BC OW 314			
				BC OW 398			
				Volunteer Well - Fournneau			
WR 5 - Nanoose - S. Well	219	Sand and Gravel	Rivers Edge / Nanoose	BC OW 395	Private Wells & RDN	High	
				BC OW 396			
				BC OW 397			
				Parker Rd Monitoring			
	1098	Sand and Gravel	Nanoose (Dawson Rd)	BC OW 393	Private Wells	Mid	
				BC OW 392	Private Wells	Mid	
215	Sand and Gravel	Lantzville	BC OW 340	DoL & Private Wells	Mid		
			BC OW 232				
211	Bedrock	Benson Meadows	BC OW 388	Private Wells	High		
WR 6 - Nan River	161	Sand and Gravel	Cedar/ S Well / Cassidy	BC OW 312	Private Wells	V. High	
				Volunteer Monitoring Well - Hallberg			
	162	Bedrock	Yellowpoint (Woodley Range)	BC OW 337	Private Wells	V. High	
			Yellowpoint (Quennell)	BC OW 432			
			Cedar	BC OW 390			
	165	Bedrock	South Wellington	Yellowpoint (Pylades)	Volunteer Monitoring Well	Private Wells	V. High
				BC OW 435			
	160	Sand and Gravel	Cassidy	Volunteer Monitoring Well - Grandom	Private Wells	V. High	
BC OW 228							
WR 7 - Gabriola Island	709	Bedrock	Gabriola Island	BC OW 385	Private Wells	V. High	
				BC OW 393			
				BC OW 197			
				BC OW 316			
				Volunteer Monitoring Well - Descanso			
				Volunteer Monitoring Well - Mander			



Microsoft Excel
Worksheet

Stream Assessments 2017

Possible streams for this year (based on interest and wq results):

- Annie Creek
 - Mallett Creek
 - Chase River
 - Other suggestions?
-
- *New: will review areas where wastewater infrastructure overlaps streams; that may inform stream assessments or water quality monitoring locations.*

Stewardship Seed Funding

- Modest funds to support watercourse restoration works led by stewardship groups in the region.
- So far this year, we've approved funding contribution for:
 - **Plum Creek Wetland** – invasive plant removal and native planting (\$1,300)
 - **Departure Creek** – bank stabilization project (\$1,000)



NANOOSE BAY – DEEP BAY AREA, NANAIMO LOWLAND GROUNDWATER STUDY ATLAS

Regional District of Nanaimo, British Columbia



Russell, H.A.J. and Benoit, N.
(compilers)

Bednarski, J., Benoit, N., Carmichael, V.P., Crow, H.L., Cummings, D.I., Gilchrist, A., Grasby, S., Hamblin, A.P., Henderson, G., Knight, R.D., Lapcevic, P., Paradis, D., Pisani, J., Pugin, A.J-M., Russell, H.A.J., Wang, S., and Wei, M.
(contributors)



Natural Resources
Canada

Ressources naturelles
Canada



Geological Survey of Canada, OPEN FILE 7877

Water to Earth Month 2017

Nanaimo & District Celebrates



Schedule of Events

** indicates advance registration required*

Water Day Celebrations

Sunday, March 12, 11am–3pm
Parksville Community & Conference Centre

- **Wed, Mar 22:** Nanaimo River Watershed & Treatment Plant Tour *
- **Wed, Mar 22:** NALT AGM & Guest Speaker, Dave Clough on "Water Course Restoration"
- **Sat, Mar 25:** Stream Walk at Little Qualicum River*
- **Thu, Mar 30:** Nanaimo River Rafting*
- **Sat, Apr 1:** Stream Walk at Departure Creek*
- **Thu, Apr 6 & Mon, Apr 10:** Septic Smart Workshop*
- **Sat, Apr 8:** Dive-In Theatre "Finding Nemo" at Nanaimo Aquatic Centre (regular admission rates)
- **Wed, Apr 12:** Water Films Night at VIU
- **Sat, Apr 15:** Water Safety Survival Day at Nanaimo Aquatic Centre (regular admission rates)
- **Thu/Fri, Apr 20 & 21:** Wild Foods Harvest (contact NALT for details)
- **Sat/Sun, Apr 22 & 23:** Stream Keepers Workshop (contact NALT for details)
- **Sun, Apr 23:** Stream Walk at Millstone River*

Earth, Water & Wild Foods Festival

Sunday, April 23, 11am–3pm, Bowen Park

For more details on the listed events and to register:

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Coming up
this week!

WaterSmart Landscapes Rebate (NEW)



WaterSmart Landscapes Rebate

Eligible Item	Max. Rebate Amount
Smart Irrigation Controller	\$100
Rain Sensor OR Weather/Soil Sensor	\$75 OR \$125
Conversion to drip irrigation	\$200
Replace conventional spray/ rotors with matched precipitation (MP) rotators	\$50
Quality topsoil or compost	50% up to \$100
Organic mulch	
*COMPLETED BOTH Irrigation & Soil Improvements	Eligible for \$100 bonus

Max Rebate = \$575 + \$100 bonus → \$675

Approx. 15-30 rebates available. First come first served. Offered region-wide.

DWWP Video

- Purpose – to capture the essence of the DWWP program to raise awareness and promote our work.
- Approx. 5-7 min in length.
 - Why we have the program (1 min)
 - How it came to be (30 sec)
 - What we are doing (3-4 min)
 - Where we are going next (1-2 min)

Key elements:

- Interview partners
- Highlight projects
- High quality visuals
- SUGGESTIONS?



Thank You