

**DROUGHT
UPDATE >**

PULLOUT INSIDE

WATER REGION 4

State ^{OF OUR} Streams 2015

WATER QUALITY EDITION



Englishman River

The Drinking Water & Watershed Protection (DWWP) Program has been working with community partners, including provincial & local government, environmental stewardship organizations, private forest companies and volunteers to monitor water quality across our region since 2011 with the Community Watershed Monitoring Network. **For more information, please visit: www.dwwp.ca**



**DRINKING WATER
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The Community Watershed Monitoring Network

Program 2 under the Drinking Water and Watershed Protection Action Plan outlines the goal to improve information about the region's water resources in terms of quantity and quality. The Community Watershed Monitoring Network (CWMN) furthers this program action, by collecting water quality data to track stream health. Partnership between local stewardship group volunteers, BC Ministry of Environment, the RDN DWWP program and Island Timberlands has enabled this expansion of monitoring in our region.

Water quality is sampled in 17 watersheds and 51 sites across the region.

- 5 samples in the low flow (Aug - Sept)
- 5 samples in the fall flush (Oct - Nov)

water quality indicators

TURBIDITY

suspended particles in water; linked to higher levels of contaminants

DISSOLVED OXYGEN

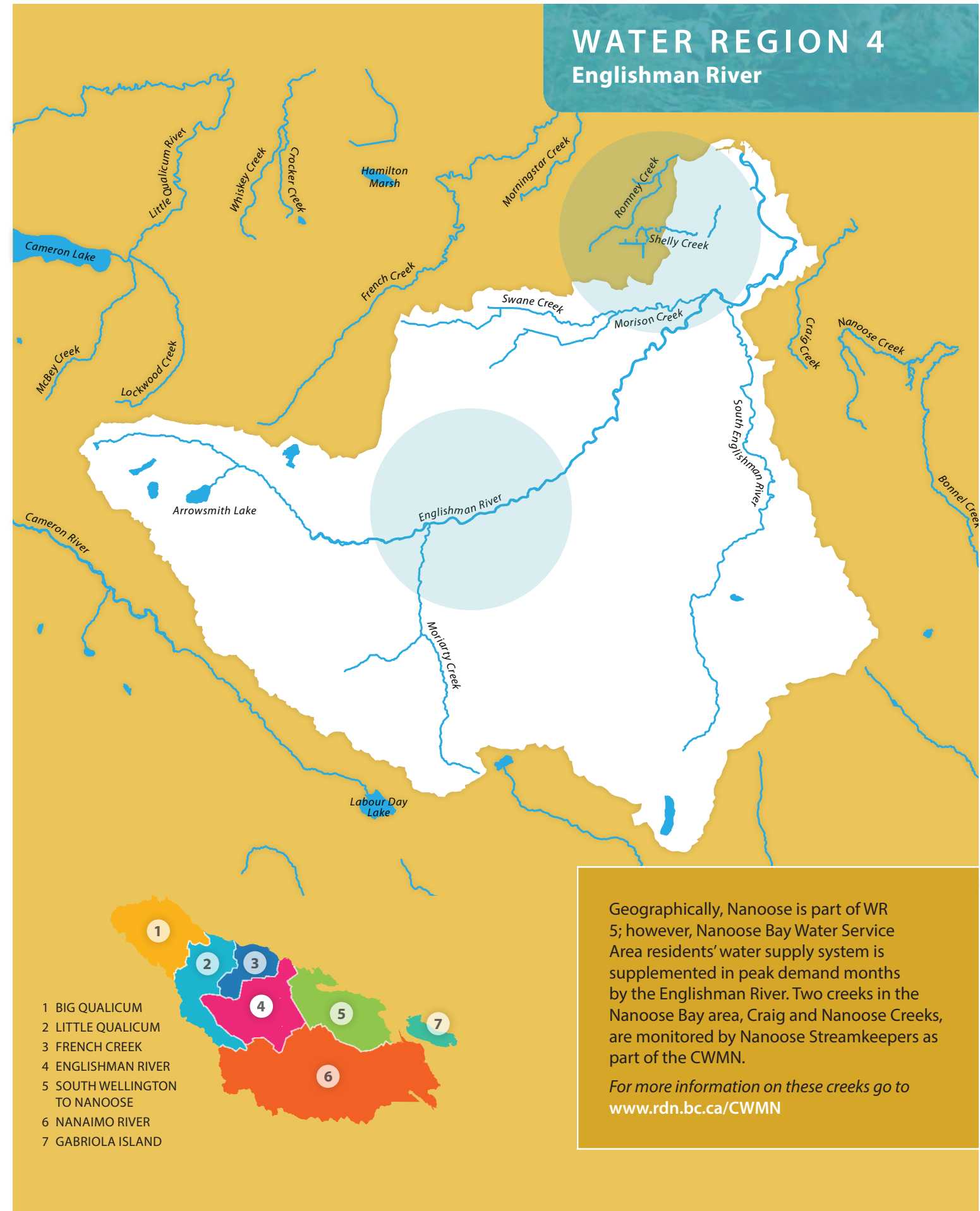
oxygen dissolved in water supports aquatic life; lower when stream flow is reduced

TEMPERATURE

affects processes in water and in aquatic life

This DWWP program is linked to Indicator 5 of our Regional Growth Strategy (RGS) monitoring program which measures progress towards achieving Goal 2 of the RGS: to "protect and enhance the environment and minimize ecological damage related to growth and development". With regard to fresh water, the RGS identifies a strategy to meet this goal, of "protecting the quality and quantity of ground water and surface water". The RGS seeks to maintain the long term sustainability of these water resources. Please see the Monitoring the RGS website at www.rdn.bc.ca/rgsmonitoring for more information.

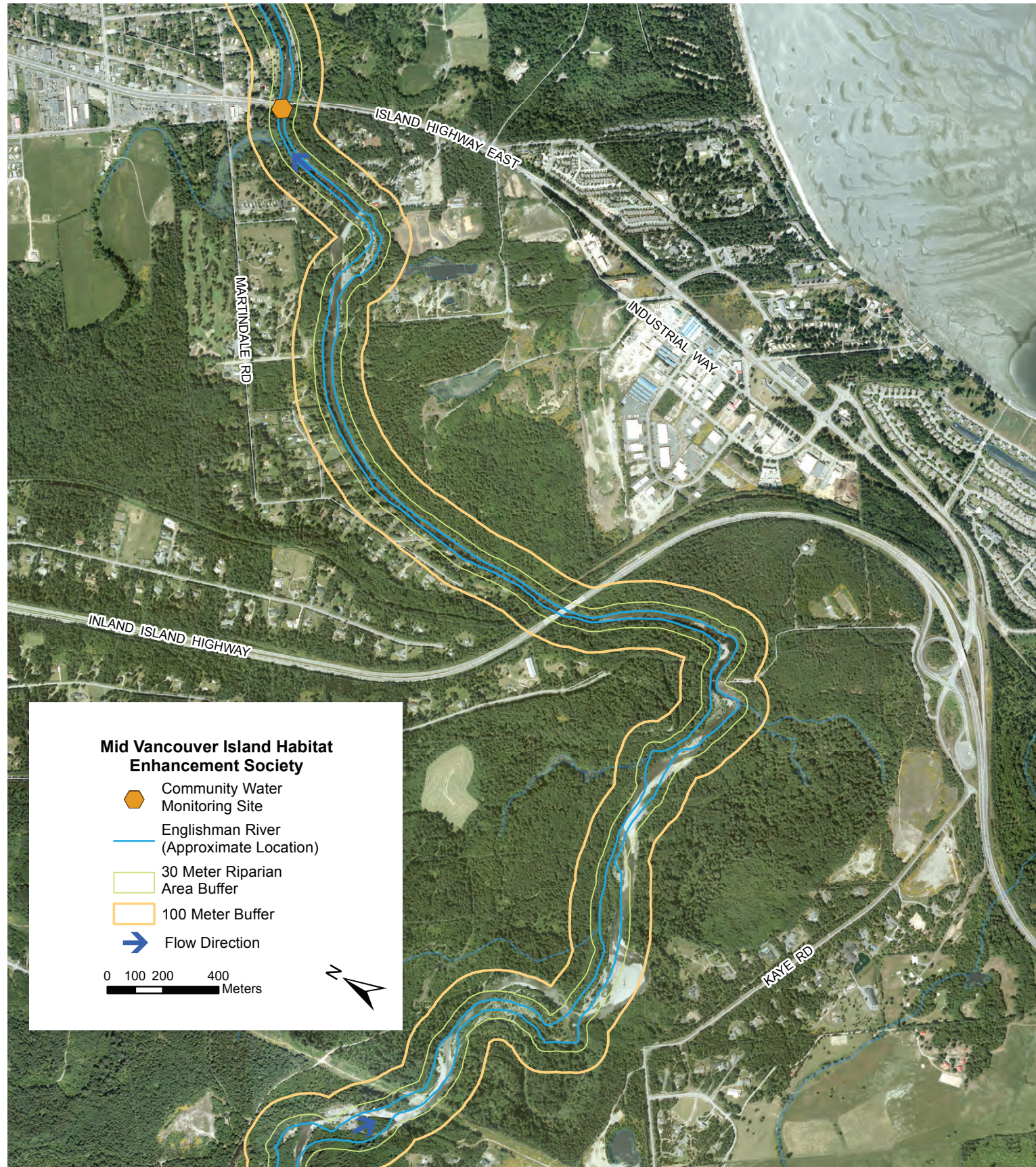
WATER REGION 4 Englishman River



Geographically, Nanoose is part of WR 5; however, Nanoose Bay Water Service Area residents' water supply system is supplemented in peak demand months by the Englishman River. Two creeks in the Nanoose Bay area, Craig and Nanoose Creeks, are monitored by Nanoose Streamkeepers as part of the CWMN.

For more information on these creeks go to www.rdn.bc.ca/CWMN

ENGLISHMAN RIVER



Challenges

From 2011 to 2014, the two CWMN sample sites on the lower reaches of the Englishman River had the potential to exceed the Provincial Drinking Water Quality Guidelines (WQG) for temperature in the summer sample period. Also in the summer of 2014, both of these sites displayed decreased dissolved oxygen, most likely due to low flows even though the Arrowsmith Dam ensures a minimum environmental flow in times of drought. The 2001 Englishman River Watershed Recovery Plan (ERWRP) characterizes the main stem of this river as unstable rearing habitat due to the extreme high winter flows. Historic large floods created pronounced alterations to the stream channel, creating an infill of pools with fine sediments and destabilization of channel banks.



Details

The Englishman River watershed is within traditional territories of the Snaw naw as (Nanooze) and Qualicum First Nations; it is the second largest Water Region within the Regional District of Nanaimo. Inclusive of all tributaries (e.g. South Englishman River, Centre, Morison and Shelly Creeks) Englishman River has a drainage area of 316 square kilometers. At the headwaters of this river, Arrowsmith Lake Dam provides storage of water for the summer low-flow period. Water from the dam is released throughout the dry season to ensure adequate flows for aquatic species and to meet water demands of the City of Parksville and Nanooze Bay Water Service Area.

Under the federal Fisheries Protection Act the Ministry of Environment has designated this river as a 'Sensitive Stream' because of risk to fish populations from inadequate water flows and other habitat concerns. Englishman River is extremely important for many fish species, including chum, coho, chinook, pink and sockeye salmon, steelhead, cutthroat and rainbow trout. Private forestry lands surround most of this watershed from the headwaters down the majority of the reaches; the lower reaches feature the Englishman River Falls Provincial Park and large residential parcels.

Opportunities

Studies completed on the Englishman River have shown significant groundwater contribution to the river flow; however, the extent of this interaction is still being researched by hydrogeologists. Some residents have volunteered their wells for monitoring, so that supplemental data can be added and a broader understanding of ground-surface water interactions can be discerned. The volunteers of Mid-Vancouver Island Habitat Enhancement Society (MVIHES) are very active in their local community, completing stream and bank restoration, storm drain marking, salmon friendly yard sign campaigns, creation of rain gardens, hosting Junior Streamkeeper Activity Day and maintaining photo point records. In addition to their community events, workshops, outreach and education they monitor the Englishman River for water quality, fish and invasive species. To get involved with MVIHES email info@mvihes.ca.

SHELLY CREEK



Challenges

The 1999 assessment found that Shelly Creek's low summer flow conditions were a limiting factor for fish populations, with the impacts on the creek mainly due to anthropogenic activities in the drainage basin. Comparison between the 1999 and 2014 USHP assessments was completed to discern the impacts on the condition of the habitat over the past 15 years. Results indicated a 50% decrease in pools within the creek, lower amounts of large woody debris and spawning gravel, and significant increases in fine sediments, bank erosion and obstructions to fish passage. Data collected through the CWMN program found water quality exceedences of temperature and dissolved oxygen in the summer of 2012, 2013 and 2014. Turbidity values also exceeded guidelines in both summer and fall sample periods of 2013 and 2014 for Shelly Creek sample site(s).



Details

Shelly Creek has a total length of 6.5 kilometers and a drainage area of about five square kilometers; the headwaters of the creek are located in Errington at the base of Little Mountain. Entering Englishman River just above Highway 19A on the river-left side, Shelly Creek is the lowest tributary to the river. Just over 200 meters upstream from this confluence the Shelly Creek Smolt Trap was first installed in 2011. Records from the Smolt Trap have confirmed the presence of coho salmon, cutthroat and rainbow trout. In 2012 a sample site in the lower reaches (Blower Road) was added to the CWMN, in the upper reaches the addition of a second site at Hamilton Road began being monitored in 2014. Land use in the drainage area is primarily for agriculture, with lands adjacent to the creek mostly owned by private residents. Two physical assessments of Shelly Creek have been completed in 1999 and 2014 using the Urban Salmon Habitat Program (USHP) methodology. This creek provides important fish refuge for salmonids and other fish during winter high flows on the Englishman River.

Opportunities

Continued monitoring of Shelly Creek has taken stock of the value of the creek and documented the impacts of human activities on this waterway over the past 15 years. With the data collected MVIHES has been able to steer restoration work to increase the health of the creek and ensure viable habitat for fish species. The installation of the Smolt Trap each spring helps to keep record of the thousands of young fish that find refuge in this small creek. Restoration efforts are on-going and have included decreasing stream bank erosion through armoring of the banks, installing spawning gravel, constructing weirs to create pools and creating a copious settling pond to stop fine sediment from filling in spawning areas. This fall native vegetation will be planted alongside the creek to aid in bank stabilization, if you would like to volunteer your time to maintain this valuable coho habitat contact info@mvihes.ca.

WORKING TOGETHER



ACTIONS

- ✓ Keep stream banks naturally vegetated
- ✓ Refrain from chemical use in landscape maintenance
- ✓ Pick up after your dog, ensure dog waste and poop bags stay out of waterways
- ✓ Minimize impervious surfaces – deal with rainwater on site to limit what runs-off into the stream, potentially carrying contaminants, contributing to erosion and flash flooding



ACTIVITIES

- ✓ Continuous monitoring in local waterways helps to promote watershed health awareness in our communities
- ✓ Environmental stewards are trained every year how to monitor our watersheds and collect data to provincial standards
- ✓ Trend reports created from the first three years of data determine which sites would benefit from additional monitoring
- ✓ CWMN results continue to highlight areas for improved watershed management, physical stream assessments, outreach and education

GET INVOLVED

Departure Creek Streamkeepers
operates under auspices of NALT
volunteer@nalt.bc.ca

Lantzville-Nanosee Streamkeepers
nanoseesteamkeepers.blogspot.ca
cpollak@shaw.ca

Nile Creek Enhancement Society
www.nilecreek.org | Nile.creek@shaw.ca

Friends of French Creek Conservation Society
www.ffccs.ca | communications@ffccs.ca

Mid-Vancouver Island Habitat Enhancement Society
www.mvihes.bc.ca | info@mvihes.ca

Qualicum Beach Streamkeepers
www.qbstreamkeepers.ca
info@qbstreamkeepers.ca

Island Waters Fly Fishers
www.iwff1.ca | rschiefke@shaw.ca

Nanaimo & Area Land Trust
www.nalt.bc.ca | volunteer@nalt.bc.ca

VIU - Fisheries & Aquaculture Department
www2.viu.ca/fisheries | daniel.fox@viu.ca

For trend reports, monitoring sites and program outline please visit www.rdn.bc.ca/CWMN



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