

**DROUGHT
UPDATE >**

PULLOUT INSIDE

WATER REGION 6

State ^{OF OUR} Streams 2015

WATER QUALITY EDITION



Haslam Creek

This publication gives a snapshot of two streams in your local water region that have been monitored for the past three years as part of the Community Watershed Monitoring Network. Made possible with community partners including provincial and local government, private forest companies, environmental stewardship organizations and volunteers, this network is coordinated through the RDN's Drinking Water and Watershed Protection (DWWP) Program to monitor water quality in 23 streams across the region.

We are excited to share what we continue to learn about our local water as we work to achieve goals outlined in the DWWP Action Plan. **For more information please visit: www.dwwp.ca**



**DRINKING WATER
WATERSHED
PROTECTION**

**REGIONAL
DISTRICT
OF NANAIMO**

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 groups, BC Ministry of Environment, Island Timberlands and the RDN DWWP program enables the expansion of monitoring in our region.

Volunteers sample water quality in 17 watersheds at 51 sites. Monitoring occurs:

- 5 consecutive weeks Aug. to Sept. (summer low flow)
- 5 consecutive weeks Oct. to Nov. (fall flush period)

water quality indicators

TURBIDITY



suspended particles in water; linked to higher levels of contaminants

DISSOLVED OXYGEN



oxygen dissolved in water supports aquatic life

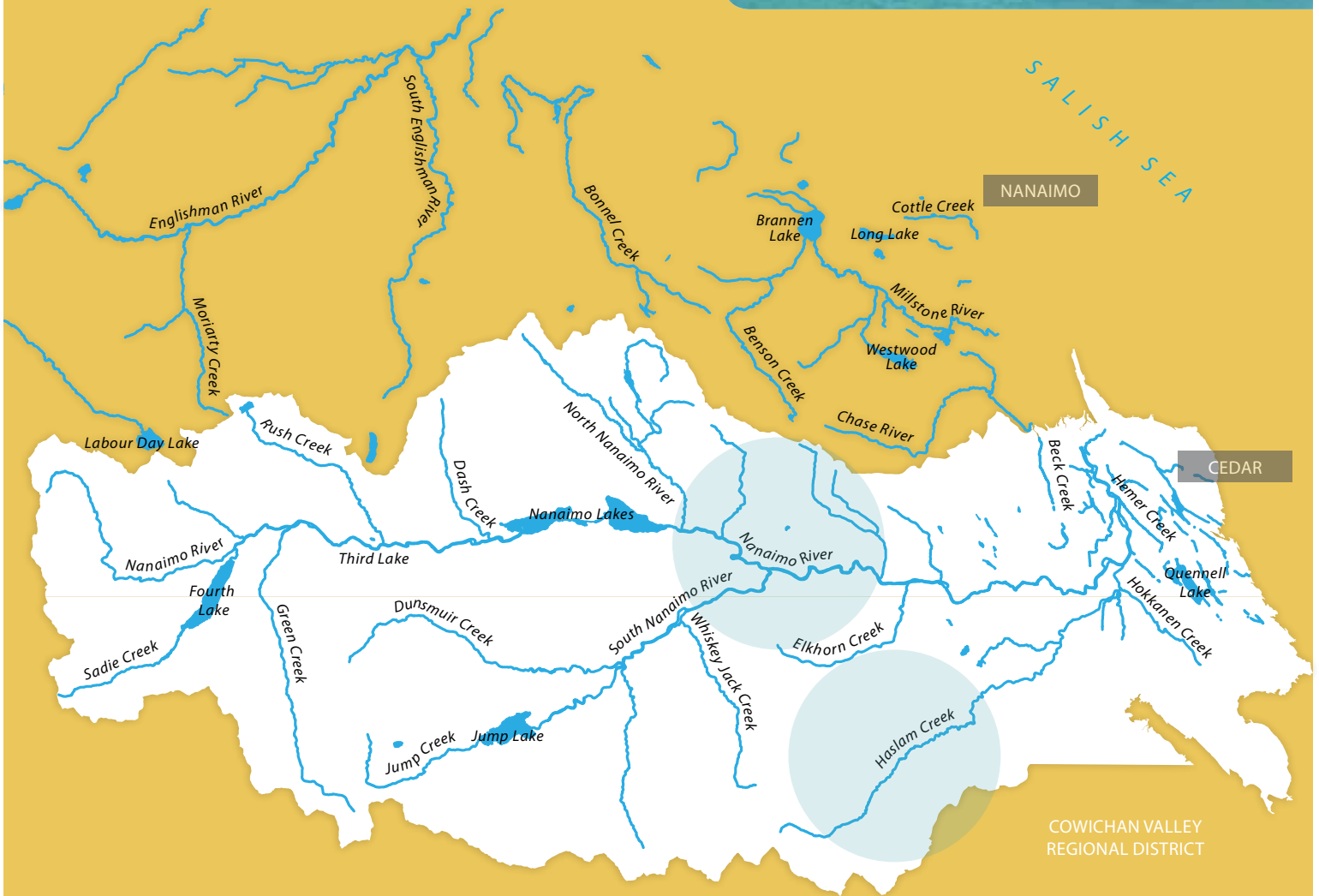
TEMPERATURE

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. For more information on 'Monitoring the RGS' please visit www.rdn.bc.ca/rgsmonitoring.

WATER REGION 6

Nanaimo River



- 1 BIG QUALICUM
- 2 LITTLE QUALICUM
- 3 FRENCH CREEK
- 4 ENGLISHMAN RIVER
- 5 NANOOSE TO SOUTH WELLINGTON
- 6 NANAIMO RIVER
- 7 GABRIOLA ISLAND

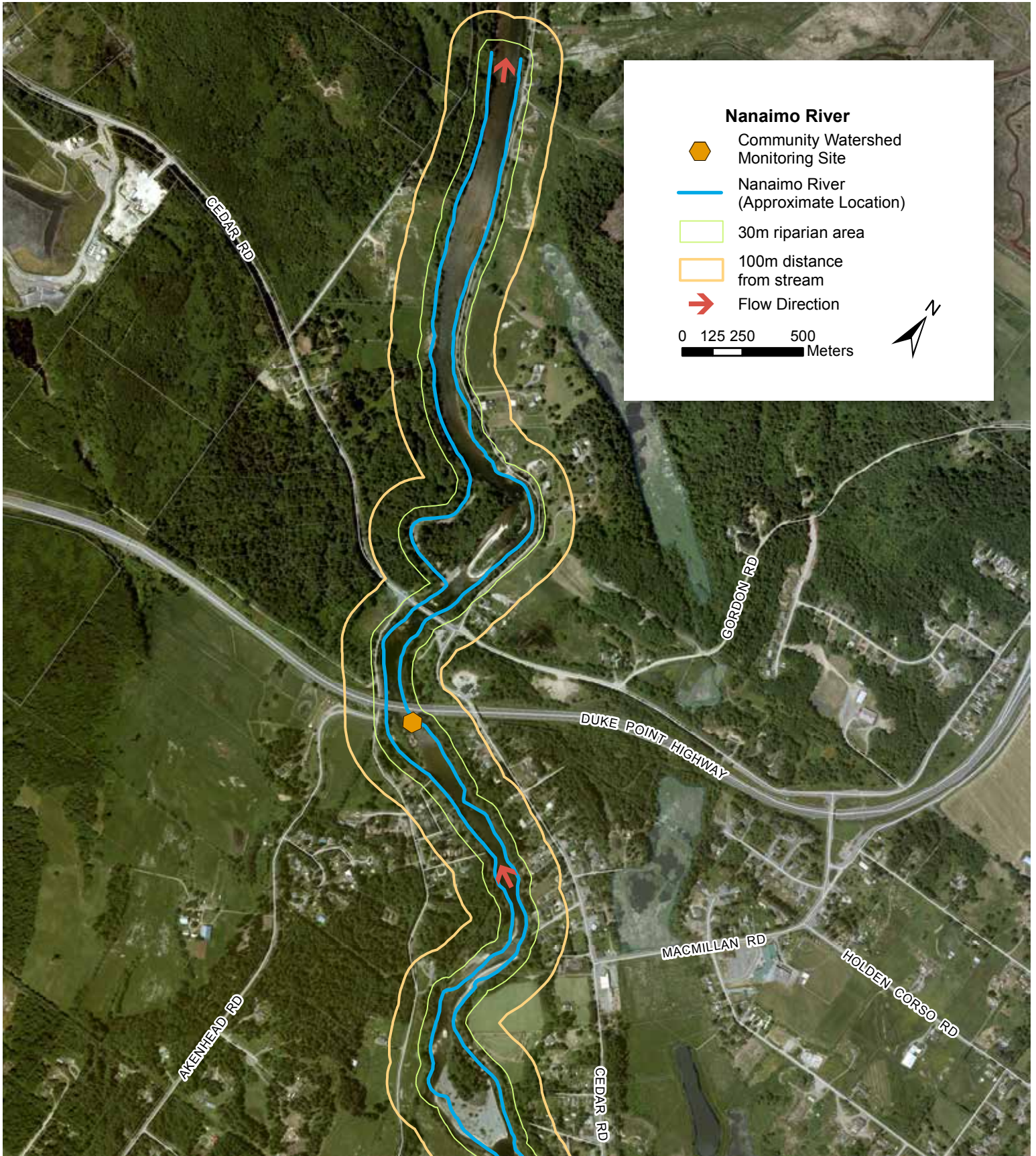
This publication highlights:

Nanaimo River & Haslam Creek

For more monitoring results and other streams in the region, go to www.rdn.bc.ca/CWMN

NANAIMO RIVER

Monitoring by the Nanaimo & Area Land Trust





Challenges

The CWMN has been monitoring Nanaimo River above the Haslam Creek confluence since 2011. Over the past four years CWMN results have found this river to have good water quality. All four summer sample periods had exceedences of the Provincial Drinking Water Quality Guideline for temperature on at least one sample date. This exceedence is typical of many East Coast Vancouver Island streams where the lower portions are wide and shallow. As long as refuges remain with lower temperatures, juvenile fish should be able to retreat to these during periods of elevated temperatures. In 2014 an additional site was added where the river underpasses the Cedar Road bridge; summer results here also showed temperature increases above the guidelines. Levels below the dissolved oxygen guideline were recorded in the summer period of 2014 at both sites.

Historic logging practices removed riparian conifers which decreased the amount of large woody debris in side channels, tributaries and the estuary, leading to erosion of stream banks, widening of channels and mounting of in-stream sediment. While current forestry practices are much improved, effects of historic practices still persist. Increasing encroachment of human development also challenges the many habitats naturally provided by the river.

Details

Within the traditional territories of the Snuneymuxw First Nation, Water Region 6 is the largest of seven water regions in the Regional District of Nanaimo. Beginning at Mount Hooper and flowing 78 kilometers to the Salish Sea, the Nanaimo River has a drainage area of 829.5 square kilometers including all its tributaries. There are several headwater lakes including Fourth Lake, Nanaimo Lakes and Jump Lake. This watershed is an important source of drinking water, supplying the Snuneymuxw First Nation, City of Nanaimo and South West Extension Improvement District with water from the Jump Lake and South Fork Dams. Fourth Lake Dam located in the upper watershed is operated by Harmac Pacific to meet water demands of the pulp mill. Managing summer low flow periods, water is released from all three dams to maintain the necessary discharge for aquatic species. The majority of lands in the watershed are owned by private forestry companies, with the Nanaimo River Hatchery, Nanaimo River Regional Park, rural residential and industrial uses surrounding the lower reaches. It supports not only all five species of Pacific salmon, rainbow and cutthroat trout but also a variety of recreational activities from bird watching to white water rafting. The southern portion of this water region extends into the Cowichan Valley Regional District.

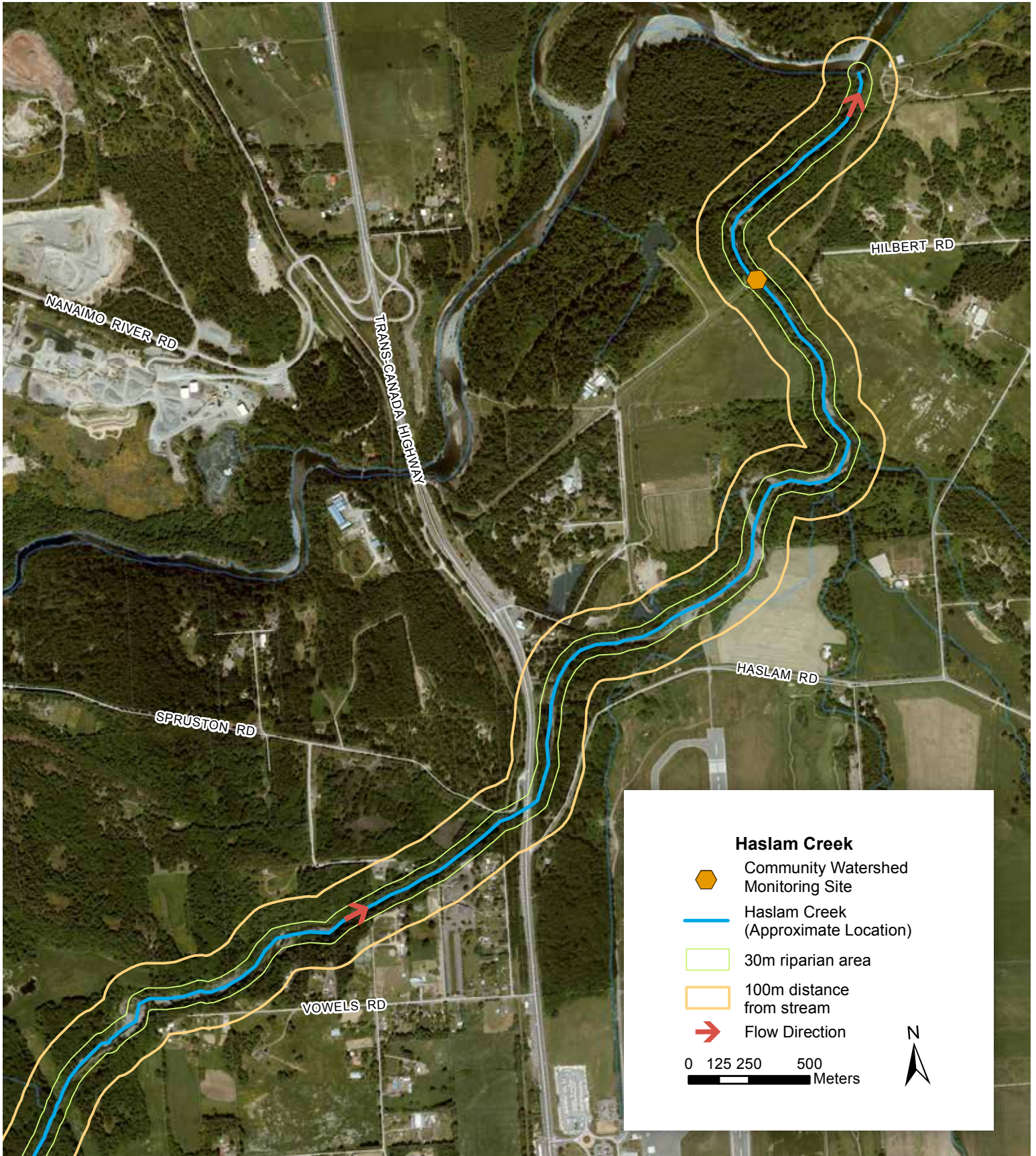
Opportunities

The lower portions of the Nanaimo River are interconnected to the aquifers below – including the Cassidy aquifer. Maintaining health and flow of this river is vital not only for aquatic habitat but also for the local groundwater source. Further research to better understand this connection has been determined a priority in this watershed since the 1993 Nanaimo River Water Management Plan.

From commissioning a Watershed Baseline Report to working on land acquisition for conservation, Nanaimo and Area Land Trust (NALT) is continuously striving to protect the river's natural values. Suggestions in a baseline report for enhancement of the rivers' values include completion of detailed rare species inventories, increasing facilities (e.g. washrooms and garbage cans) and restoration to enrich stream complexity (e.g. side channels, pools and riffles). Resulting from the 2011 Nanaimo River Symposium facilitated by NALT, the Nanaimo River Watershed Roundtable was formed. The roundtable is a multi-stakeholder group that fosters and facilitates communication, leading to the sharing of information and support for collaborative initiatives. If you would like to get involved with Nanaimo River initiatives contact NALT at volunteer@nalt.bc.ca.

HASLAM CREEK

Monitoring by the Nanaimo & Area Land Trust





Challenges

From 2011 to 2013 the CWMN monitored a sample site on Haslam Creek just upstream of its confluence with the Nanaimo River. The site exhibited exceedences of the temperature guideline each summer. However, as these temperatures are common in the lower reaches of eastern Vancouver Island streams and all other water quality parameters yielded satisfactory results, monitoring was reduced from a seasonal to a three year cycle.

Haslam Creek is prone to low flows in the summer period; this has the largest impact on fish species. A combination of activities in the watershed have the potential to decrease flows, such as agricultural draw for irrigation requirements, alteration of drainage patterns, removal of riparian vegetation and a decrease in water storage from the removal of beaver dams and infilling of wetlands. The unconfined upper Cassidy aquifer is considered highly vulnerable by the Province as it is close to the ground surface and permeable, thus susceptible to contamination.



Details

Haslam Creek is within the traditional territory of the Snuneymuxw First Nation. The 24.7 kilometer length of the creek drains an area of approximately 128.7 square kilometers. A major contributor of flow to the lower reaches of the Nanaimo River, Haslam Creek accounts for about 16.4% of the Nanaimo River watershed drainage. The headwaters begin in the slopes of McKay Peak and Mount Hayes in the southeastern quadrant of Water Region 6. Three lakes contribute flow to the creek: Michael Lake, Timberland Lake and Haslam Lake. Fish species found in Haslam Creek include coho, chum, Chinook and pink salmon, as well as steelhead, cutthroat and rainbow trout. The lower portions of Haslam Creek are in hydraulic connection with the upper Cassidy aquifer, with the aquifer contributing flow to the creek and water from the creek infiltrating to recharge the aquifer. Land uses in the Haslam watershed are primarily forestry in the upper portions and a mixture of agriculture, rural residential and industrial (e.g. gravel pit) in the lower reaches. Upper portions of the Haslam watershed are located in the Cowichan Valley Regional District.

Opportunities

The 2010 Haslam Creek Fish and Fish habitat Assessment completed for the Ministry of Environment highlights that a watershed assessment inclusive of geomorphology, silviculture, hydrology and cultural uses involving the Snuneymeuxw First Nation is a high priority for this area. Physical restoration work is recommended in the 2010 report to increase riparian vegetation and bank stabilization, diminish gravel accumulation and channel widening, and research if side channel creation would provide winter refuge for anadromous species. Continuing community outreach efforts and education about how our individual water use impacts our local waterways, as offered by the RDN's Team WaterSmart, is important in this watershed. As a whole, environmentally focused land management and development practices will ensure the continuance of good water quality in Haslam Creek. To participate in stewardship in this area contact NALT (volunteer@nalt.bc.ca).

WORKING TOGETHER



ACTIONS

- ✓ Keep stream banks naturally vegetated
- ✓ Refrain from chemical use in landscape maintenance
- ✓ Pick up after your dog to ensure dog waste stays 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 on how to monitor water quality 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-Nanoose Streamkeepers
nanoosestreamkeepers.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 additional monitoring sites, trend reports and program details please visit
www.rdn.bc.ca/CWMN



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