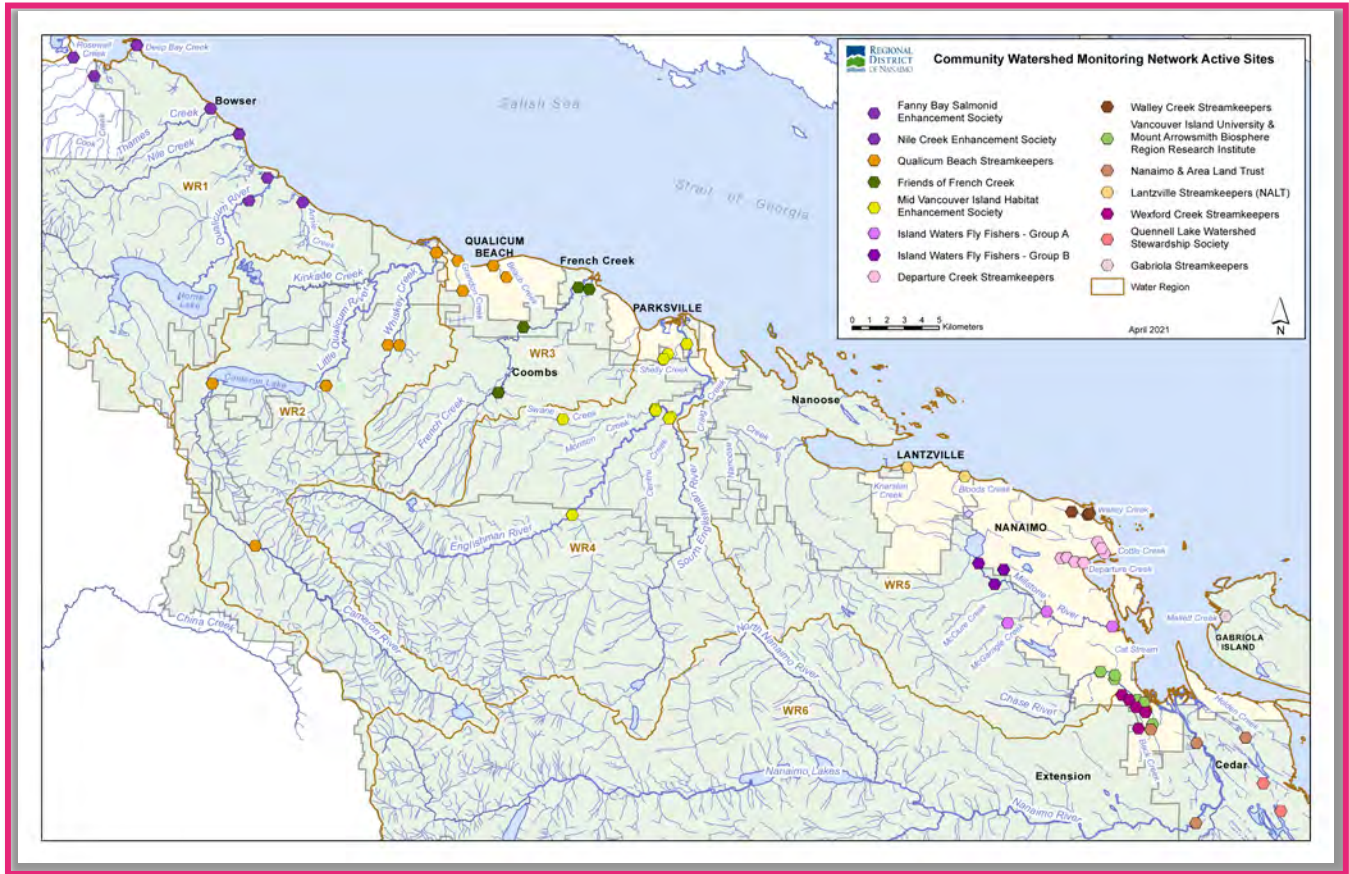


Community Watershed Monitoring Network 2020 Results by Water Region



Included in Your Water Region Package:

1. CWMN Sample Sites in Water Region (WR) 2
2. How to Interpret a Box Plot and Summer / Fall Exceedance Maps
3. Box Plot Comparison 2020 Data to Previous Years:
Graphs displayed per parameter (Temperature, Dissolved Oxygen, Turbidity, Conductivity) and per sample period (summer and fall)
4. 2011-2020 Water Quality Trend Analysis Map
5. 2011-2020 Summer Exceedance Map
6. 2011-2020 Fall Exceedance Map
7. QBS Site Map



Water Region 2
sampled by:

**Qualicum Beach
Streamkeepers
Society (QBS)**

CWMN Sample Sites in WR 2:

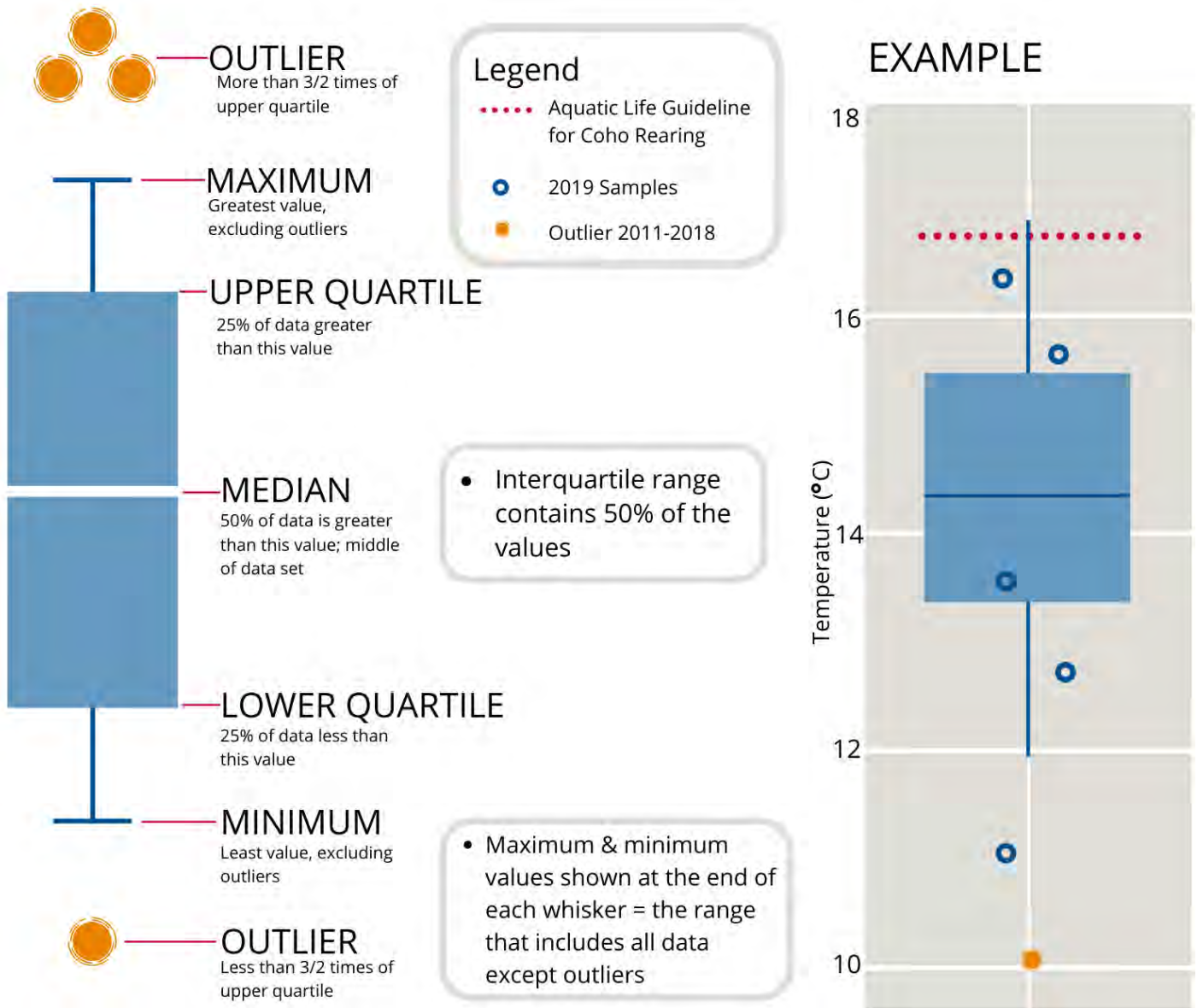
The table below shows the group and sites monitored, as well as the number of years and which years a site was sampled. The number of years is important to keep in mind when interpreting the box plots as the plot for each site may contain a slightly different temporal range.

Group	EMS ID	Geographic Description	Years Sampled*	Years Monitored
QBS	E285669	Upper Cameron River	10	2011 - present
QBS	E220635	Cameron River (near the highway, just u/s of Cathedral Grove)	10	2011 - present
QBS	E268993	Little Qualicum River 1.2 km d/s Cameron Lake	10	2011 - present
QBS	E287697	Whiskey Creek on Hwy 4, TB Ave Save on Gas	10	2011 - present
QBS	E256394	Little Qualicum River at Intake	10	2011 - present
QBS	E318150	Harris Creek on north/downstream side of Hwy 4	2	2019 - present

**The number of years sampled up to and including 2020.*

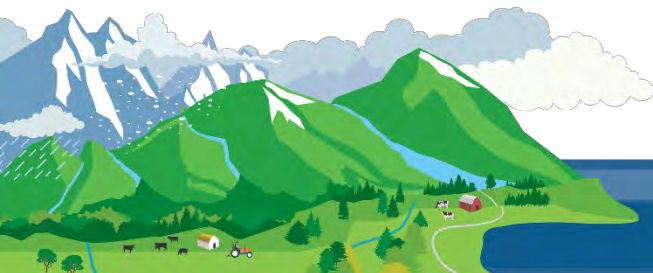


How to Interpret a Box Plot:

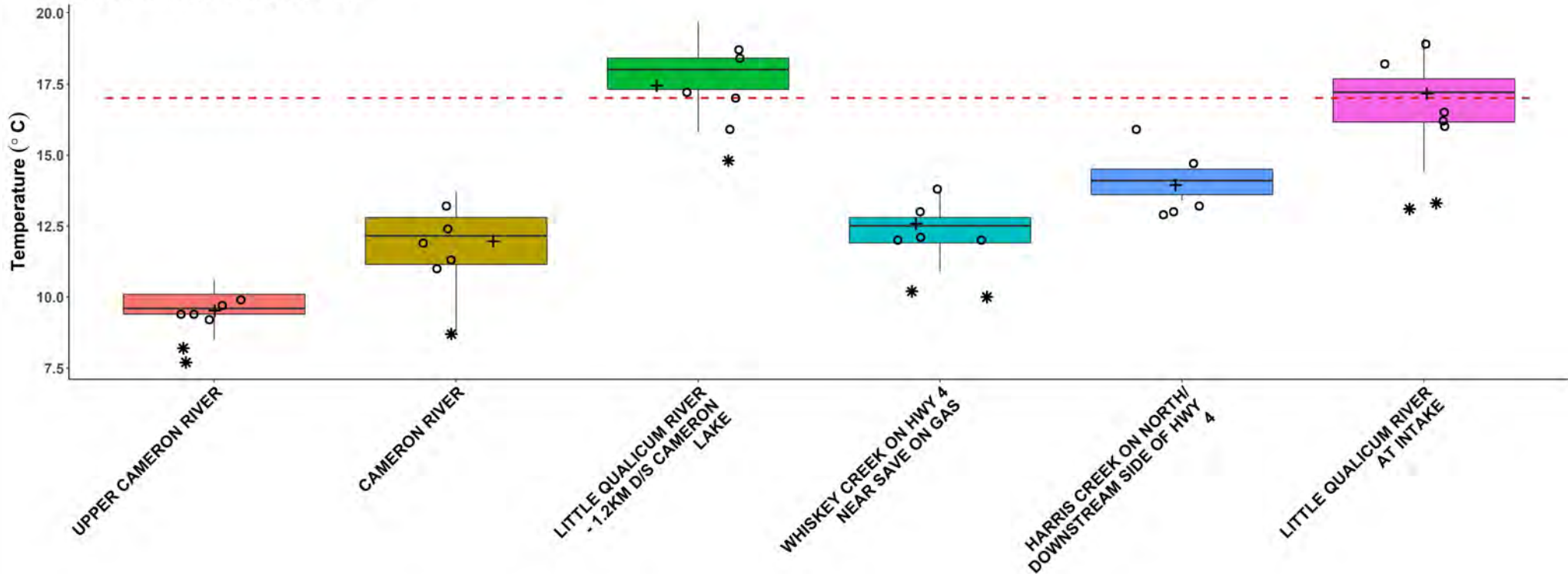


How to Interpret Summer and Fall Exceedance Maps:

The summer and fall exceedance frequency maps included in this package express the number of sample periods (summer low-flow / fall flush) with exceedances for each site. There are four frequency categories for the number of sample periods with exceedances: no exceedance recorded (0), low (1 – 2), moderate (3 – 4), and high (5 or more). The exceedance categories are for the three parameters with aquatic water quality guidelines and objectives based on the following thresholds: temperature $\geq 17^{\circ}\text{C}$, dissolved oxygen $\leq 5\text{mg/L}$, summer turbidity $\geq 2\text{NTU}$, and fall turbidity $\geq 5\text{NTU}$.



WR2 Summer Temperature

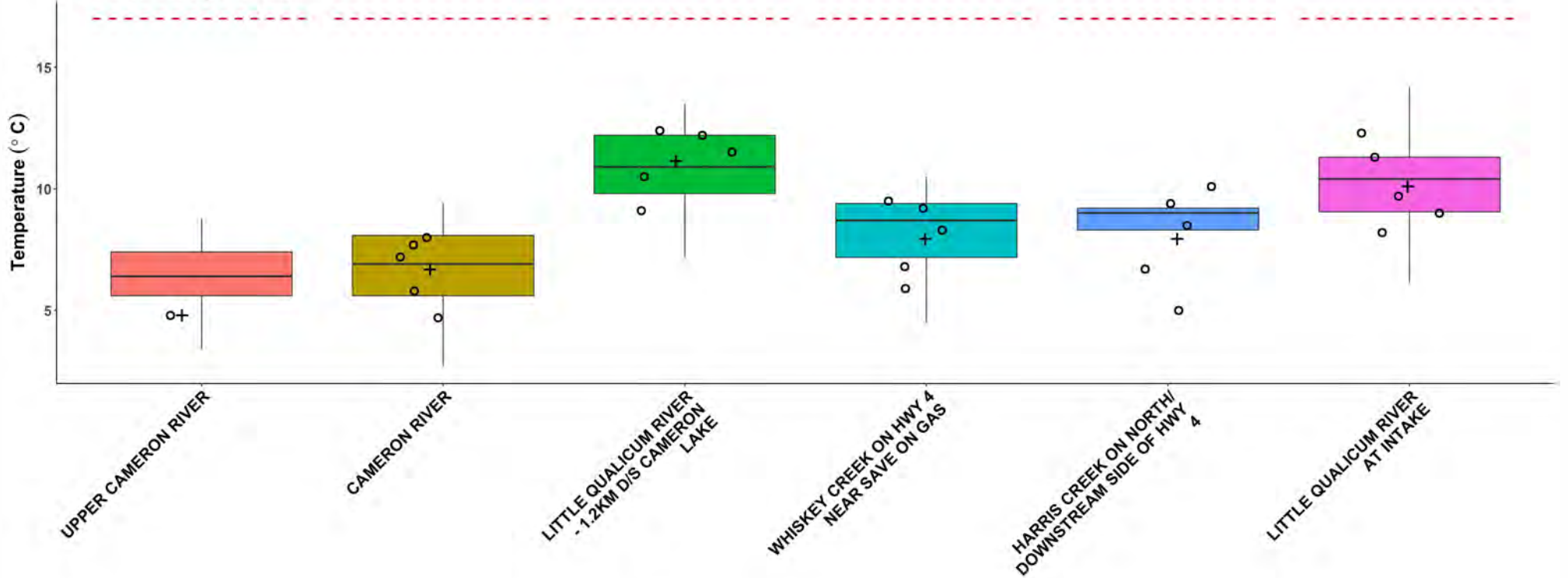


- 2020 Samples
- * Outlier 2011-2019
- + 2020 30 Day Avg

Guideline
 - - Aquatic Life Guideline for Coho Rearing (17°C)



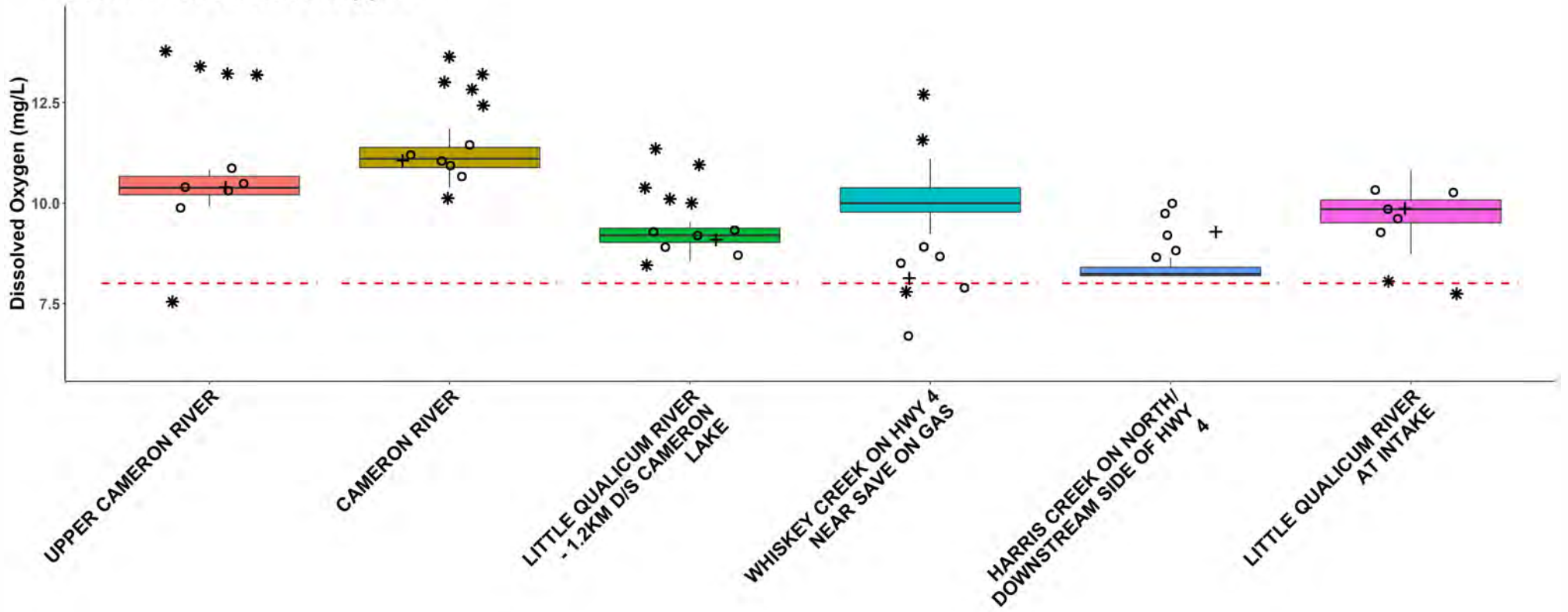
WR2 Fall Temperature



○ 2020 Samples + 2020 30 Day Avg Guideline
-- Aquatic Life Guideline for Coho Rearing (17°C)



WR2 Summer Dissolved Oxygen

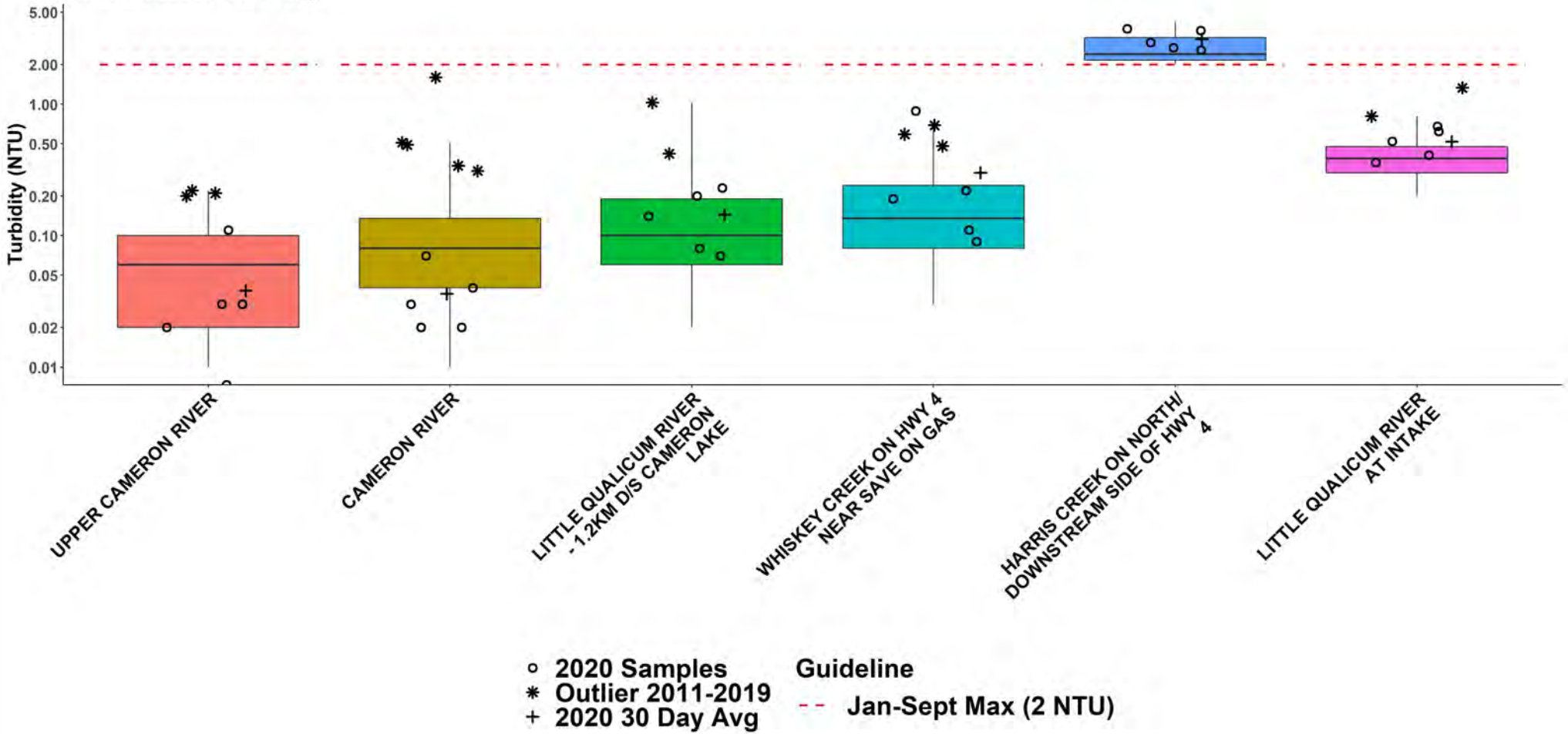


○ 2020 Samples
 * Outlier 2011-2019
 + 2020 30 Day Avg

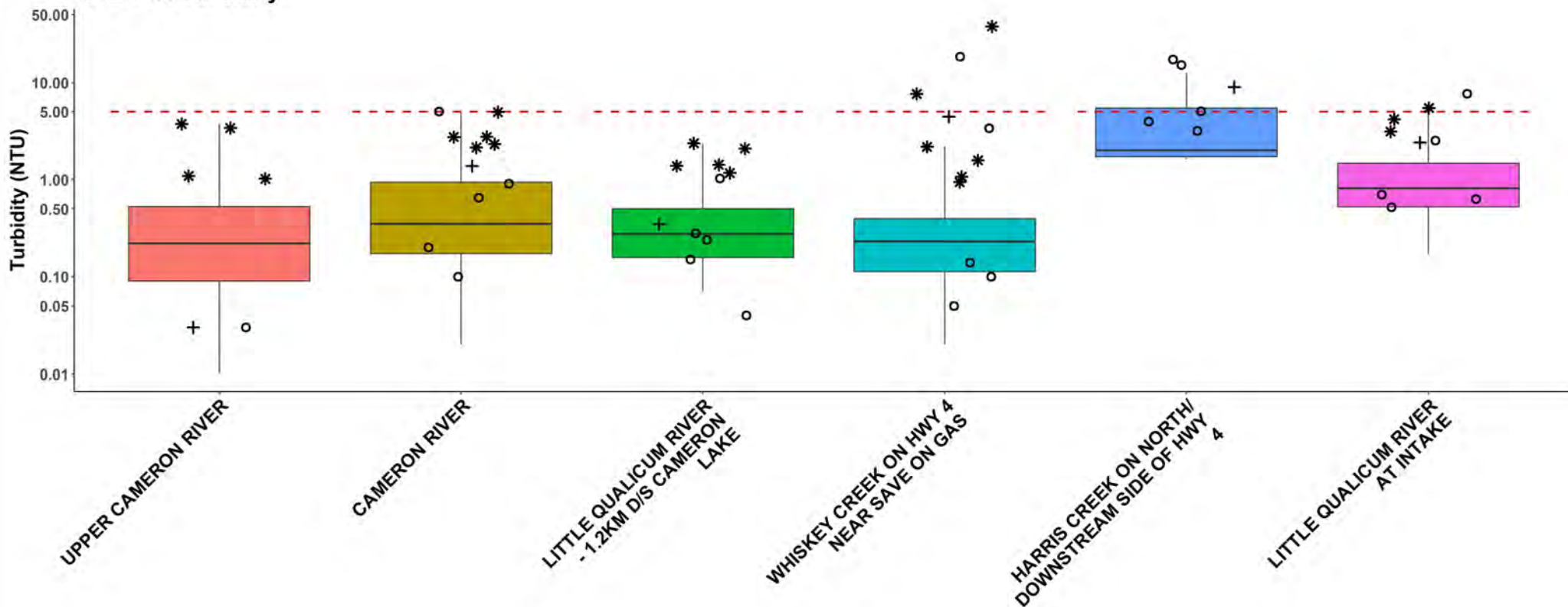
Guideline
 - - 30 Day Average (<math>< 8 \text{ mg/L}</math>)
 - - Instantaneous Minimum (<math>< 5 \text{ mg/L}</math>)



WR2 Summer Turbidity



WR2 Fall Turbidity



Guideline

-- Oct-Dec Max (5 NTU)

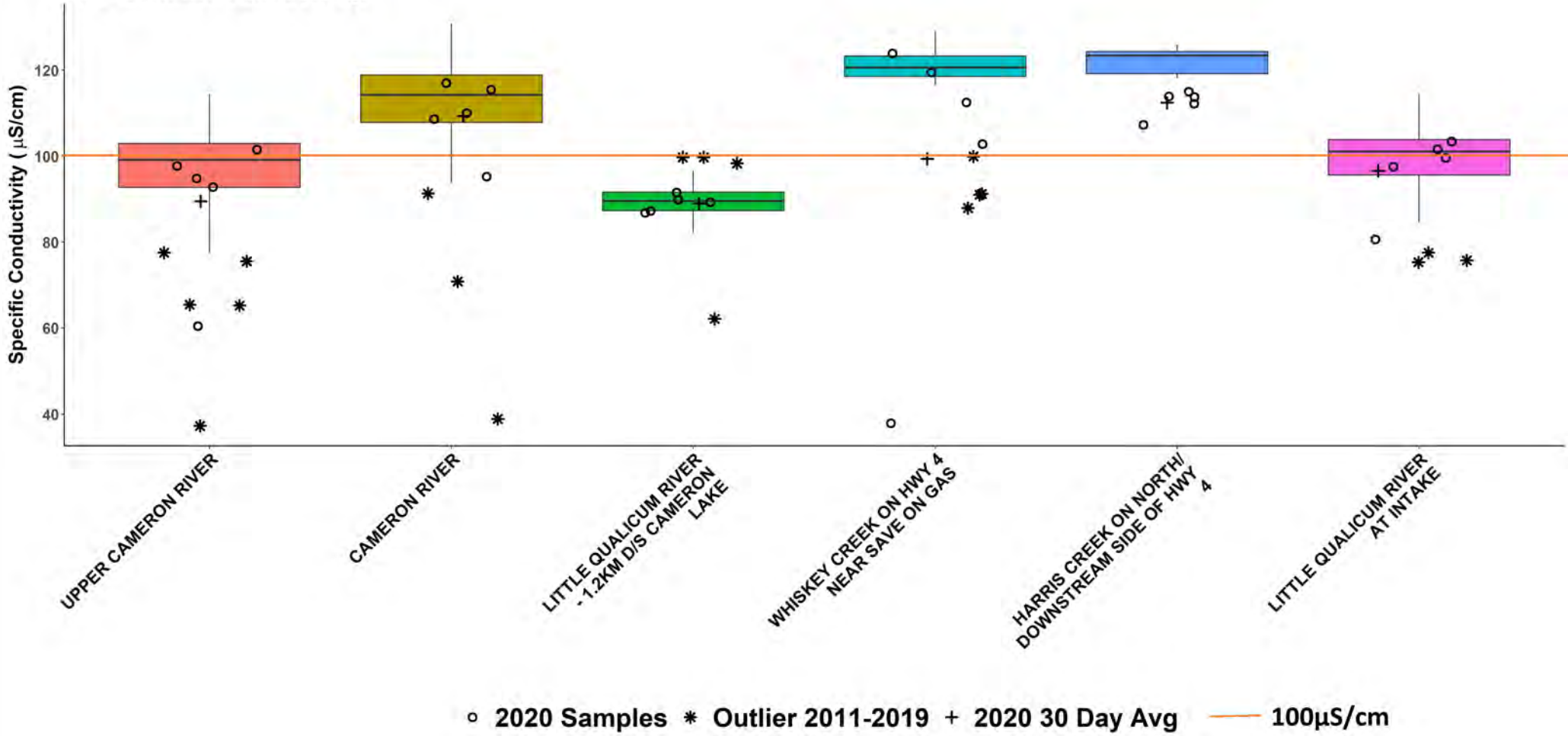
o 2020 Samples

* Outlier 2011-2019

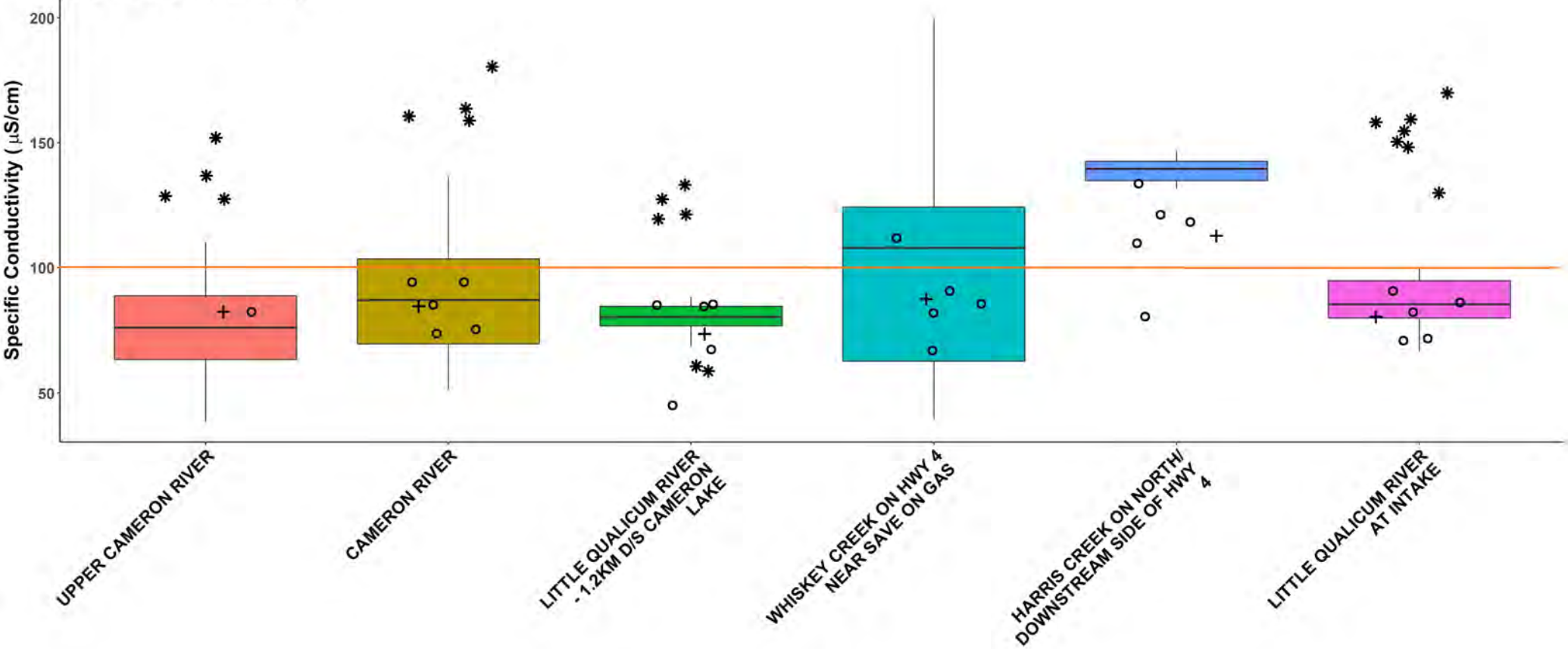
+ 2020 30 Day Avg



WR2 Summer Conductivity



WR2 Fall Conductivity



○ 2020 Samples * Outlier 2011-2019 + 2020 30 Day Avg — 100 $\mu\text{S}/\text{cm}$












Regional District of Nanaimo

CMMN Water Quality Trend Analysis 2011-2020

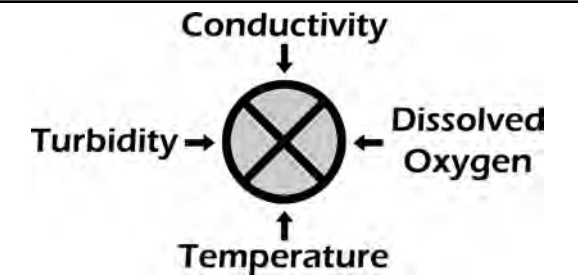
WR2: Little Qualicum

Location: Nanaimo, BC
Project No.: 21-3702
Prepared for: Regional District of Nanaimo
Prepared by: Ecoscape Environmental Consultants Ltd.
Coordinate System: NAD83-UTM Zone 10
Imagery: ESRI Canada

LEGEND

-  Sample Site - No Trend Assessed
-  Sample Site - Trend Assessed
-  Highway
-  Watershed
-  Water Region
-  Lake
- Trend Color Code**
-  Improving
-  Stable
-  Degrading

SAMPLE SITE KEY



Conductivity can be influenced by factors such as groundwater and ocean spray that are not necessarily indicative of a degrading condition. For simplicity, an increase in conductivity is categorized here as degrading.

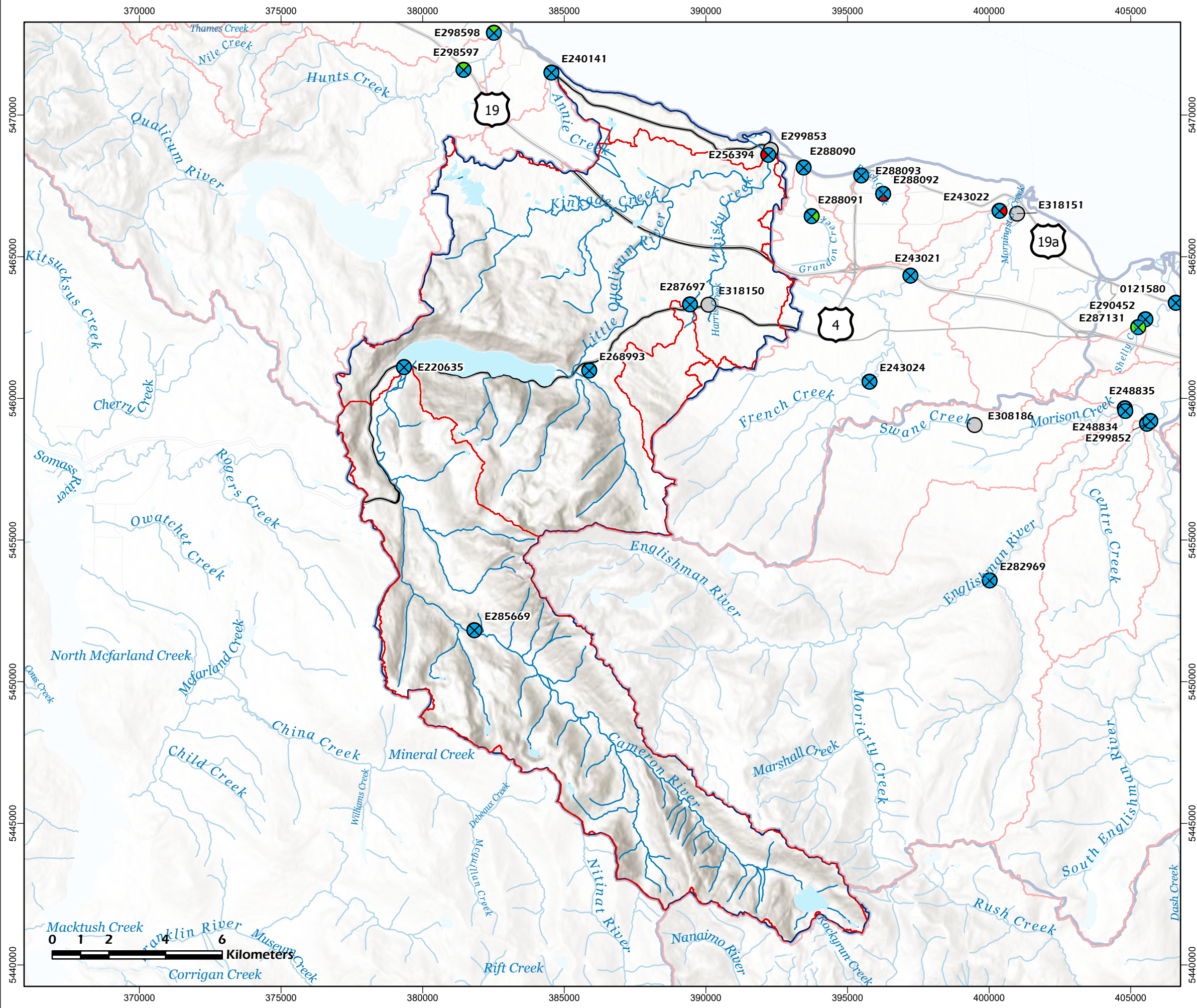
MAP INDEX

Solid blue lines indicate entire water region; extent of main view map may be scaled to better visualize sample -site-dense regions.



DISCLAIMER

The data displayed is for conceptual purposes only and should not be interpreted as a legal survey or for legal purposes. If discrepancies are found between the data portrayed in this report and that of a legal survey, the legal survey will supersede any data presented herein.









Regional District of Nanaimo

CMMN 2011-2020 Summer Exceedance Assessment





WR2: Little Qualicum

Location: Nanaimo, BC
Project No.: 21-3702
Prepared for: Regional District of Nanaimo
Prepared by: Ecoscape Environmental Consultants Ltd.
Coordinate System: NAD83-UTM Zone 10
Imagery: ESRI Canada

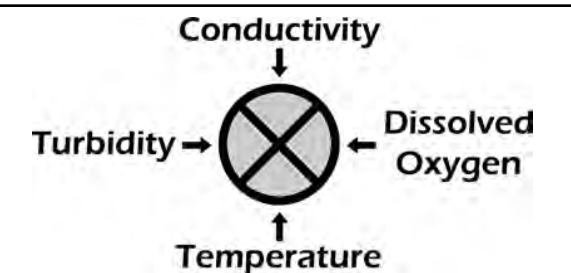
LEGEND

-  Sample Site
 -  Highway
 -  Stream
 -  Watershed
 -  Water Region
 -  Lake
- Note the exceedance frequency categories are reflective of the number of sample periods with exceedances, not the number or values of the exceedances.*

Exceedance colour key

-  No exceedance recorded
-  Low exceedance frequency
-  Moderate exceedance frequency
-  High exceedance frequency

SAMPLE SITE KEY

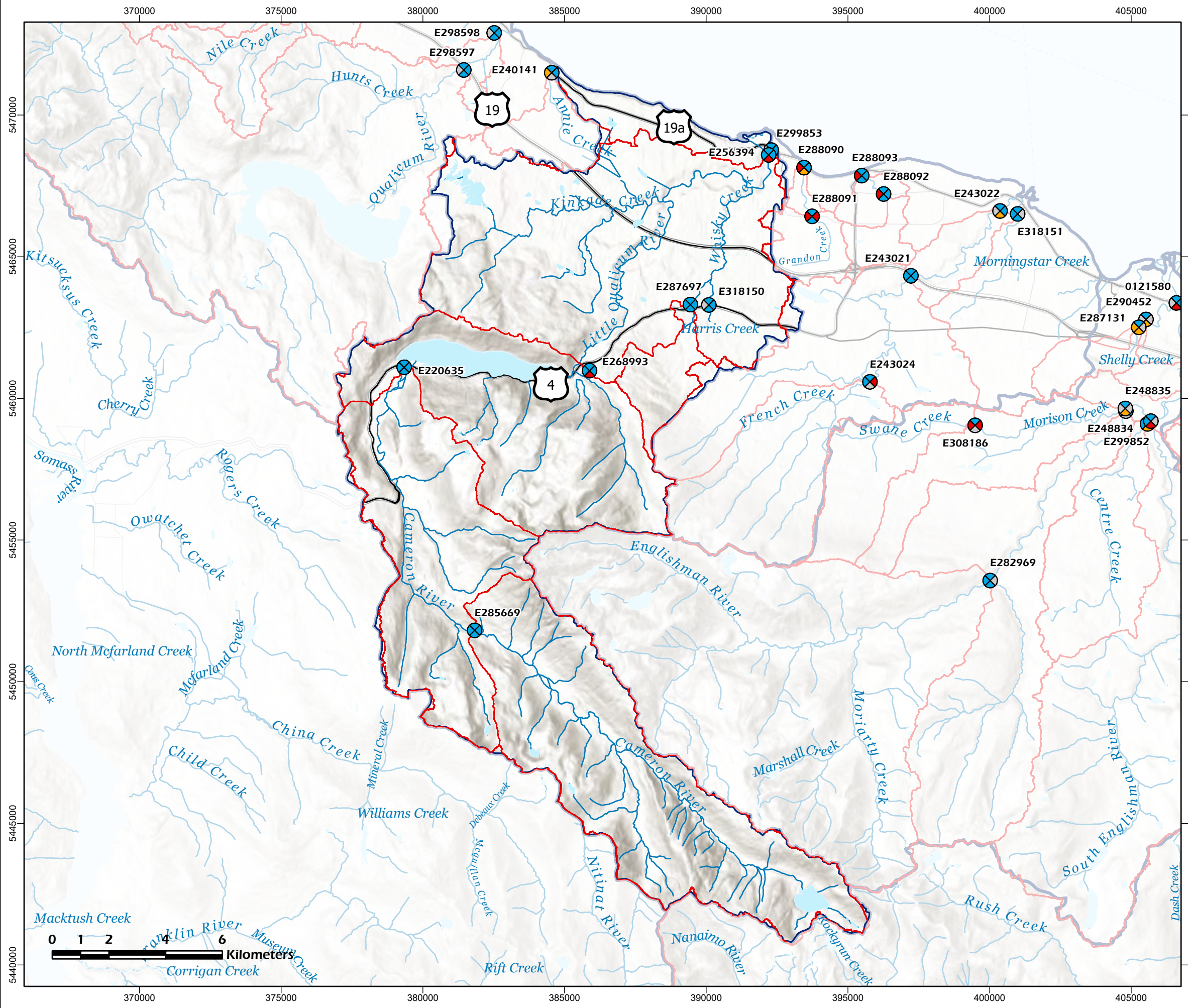


MAP INDEX



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Regional District of Nanaimo

CMMN 2011-2020 Fall Exceedance Assessment

WR2: Little Qualicum





Location: Nanaimo, BC
Project No.: 21-3702
Prepared for: Regional District of Nanaimo
Prepared by: Ecoscape Environmental Consultants Ltd.
Coordinate System: NAD83-UTM Zone 10
Imagery: ESRI Canada

LEGEND

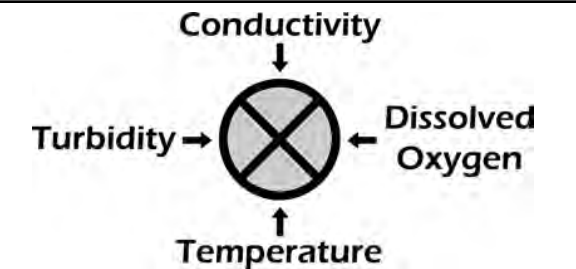
-  Sample Site
-  Stream
-  Highway
-  Watershed
-  Water Region
-  Lake

Note the exceedance frequency categories are reflective of the number of sample periods with exceedances, not the number or values of the exceedances.

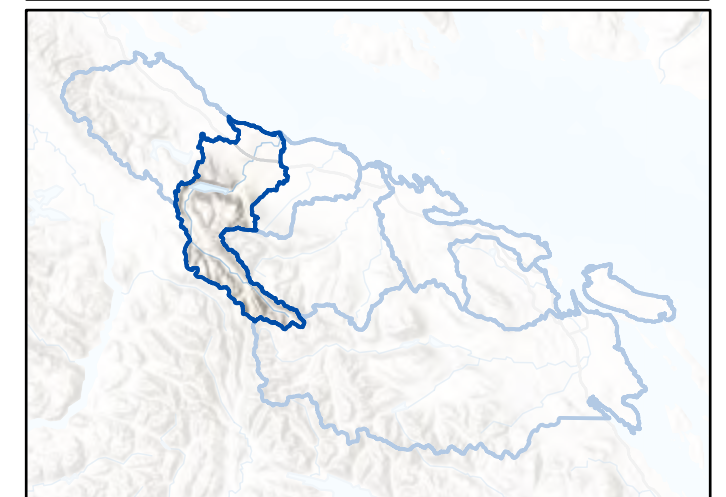
Exceedance colour key

-  No exceedance recorded
-  Low exceedance frequency
-  Moderate exceedance frequency
-  High exceedance frequency

SAMPLE SITE KEY

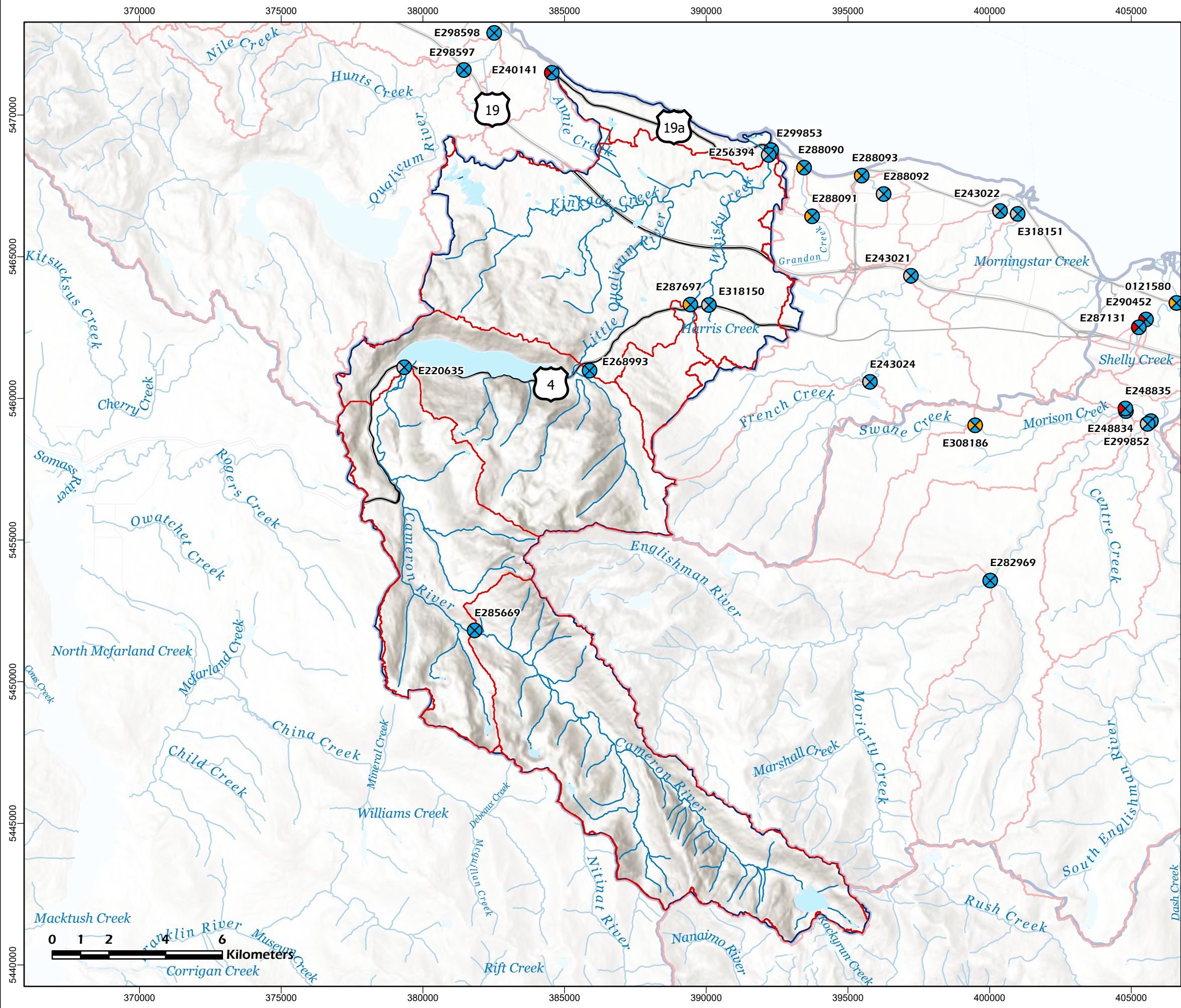


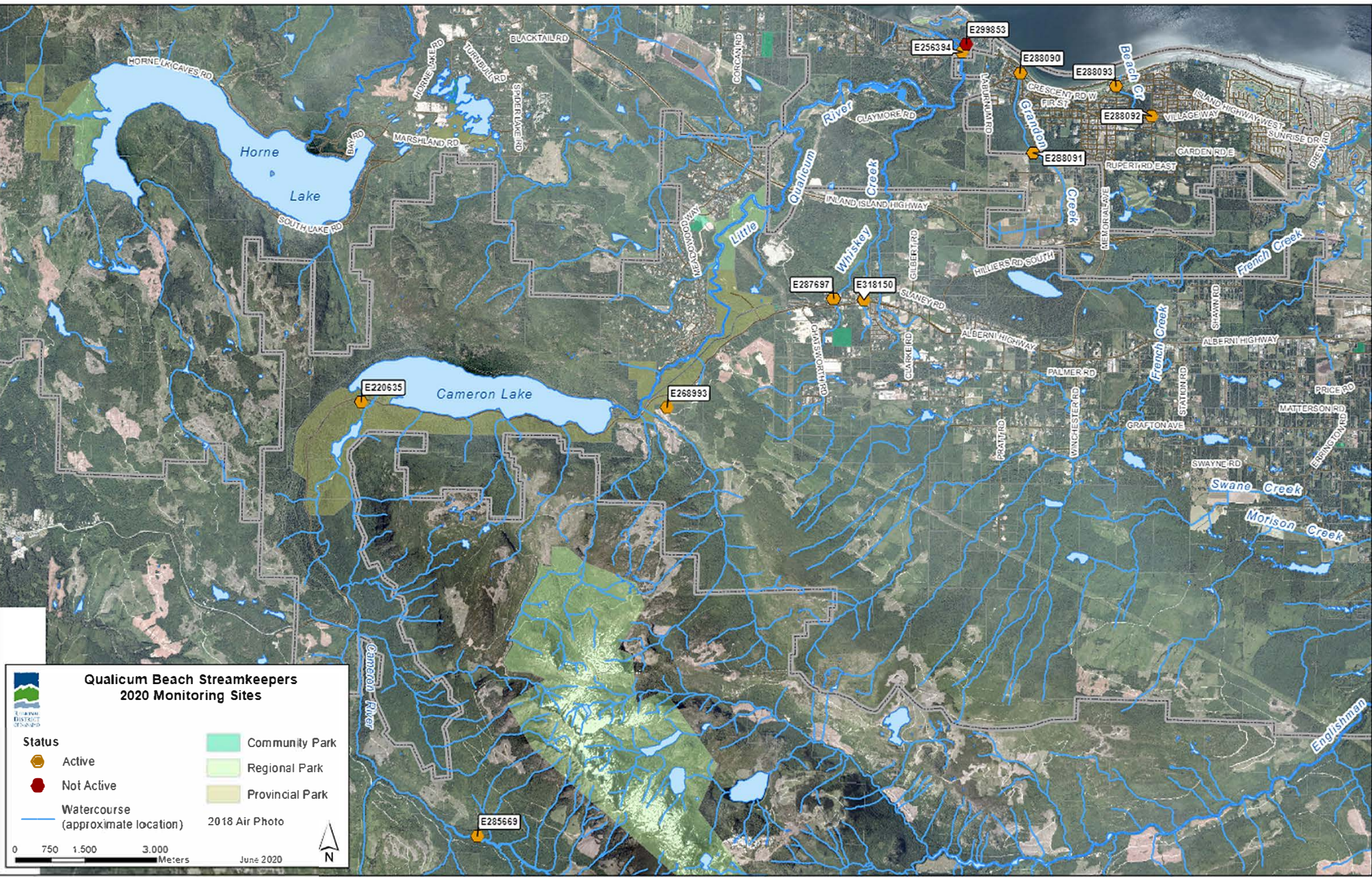
MAP INDEX



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**Qualicum Beach Streamkeepers
2020 Monitoring Sites**

Status

- Active
- Not Active

Watercourse
(approximate location)

2018 Air Photo

Community Park (light green)

Regional Park (medium green)

Provincial Park (yellow-green)

0 750 1,500 3,000 Meters

June 2020

N