

Updates from the Field: Salish Sucker and Longnose Dace



Pearson Ecological
Consulting for Conservation

Mike Pearson PhD, RPBio

Salish Sucker

Catostomus sp. cf catostomus

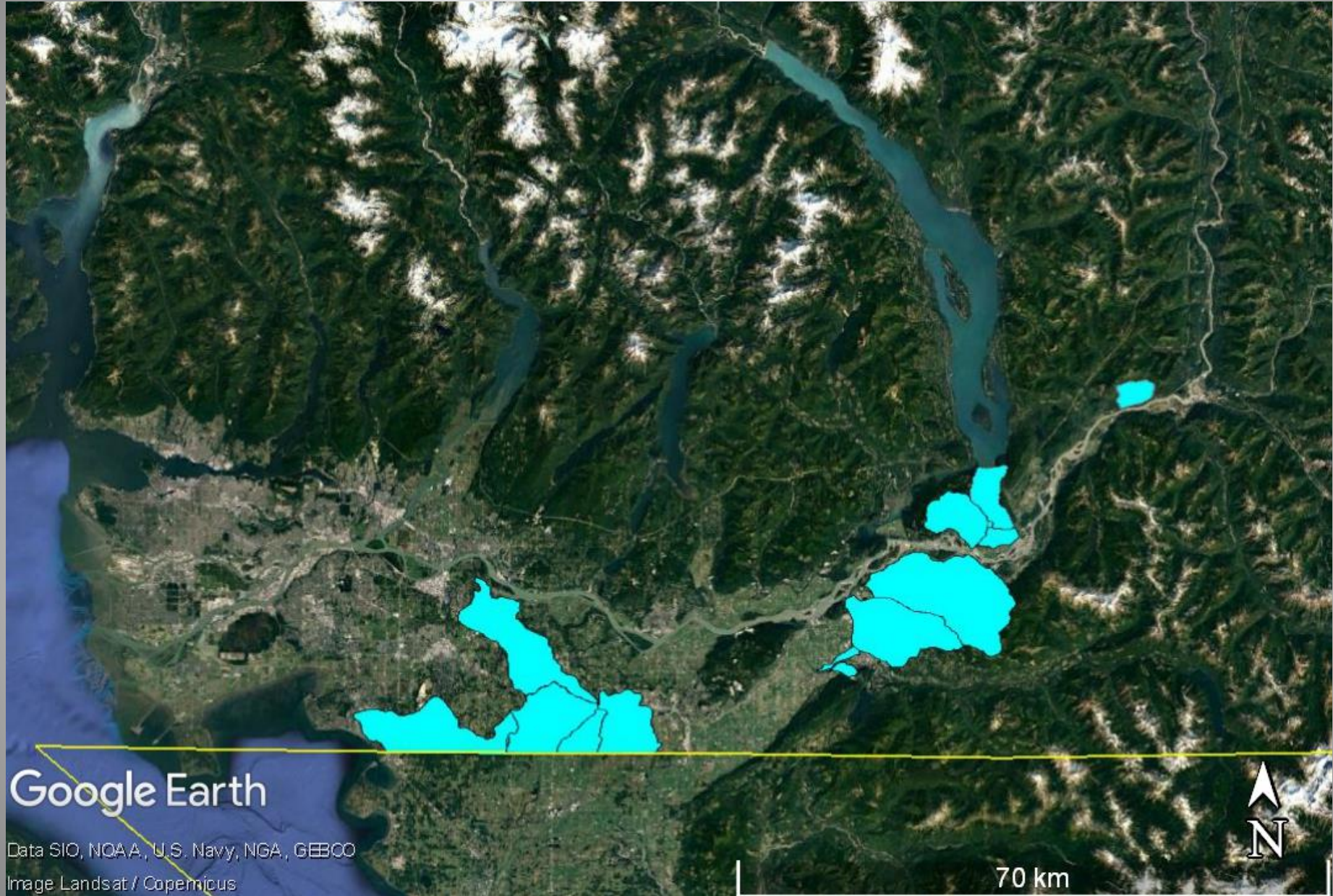


- Dwarfed form of Longnose sucker
- SARA Endangered (2003)
- Downlisted to Threatened (2012)

Global Distribution



Current Canadian Distribution



Habitat by Life Stage



Headwater Stream Specialist

- Small body size
- Early sexual maturity (2 years)
- Short life span (5-6 yrs)
- Protracted spawning period



Primary Threats



Nutrient Pollution (Hypoxia)

- Major concern in 11 of 12 occupied watersheds



Habitat Destruction

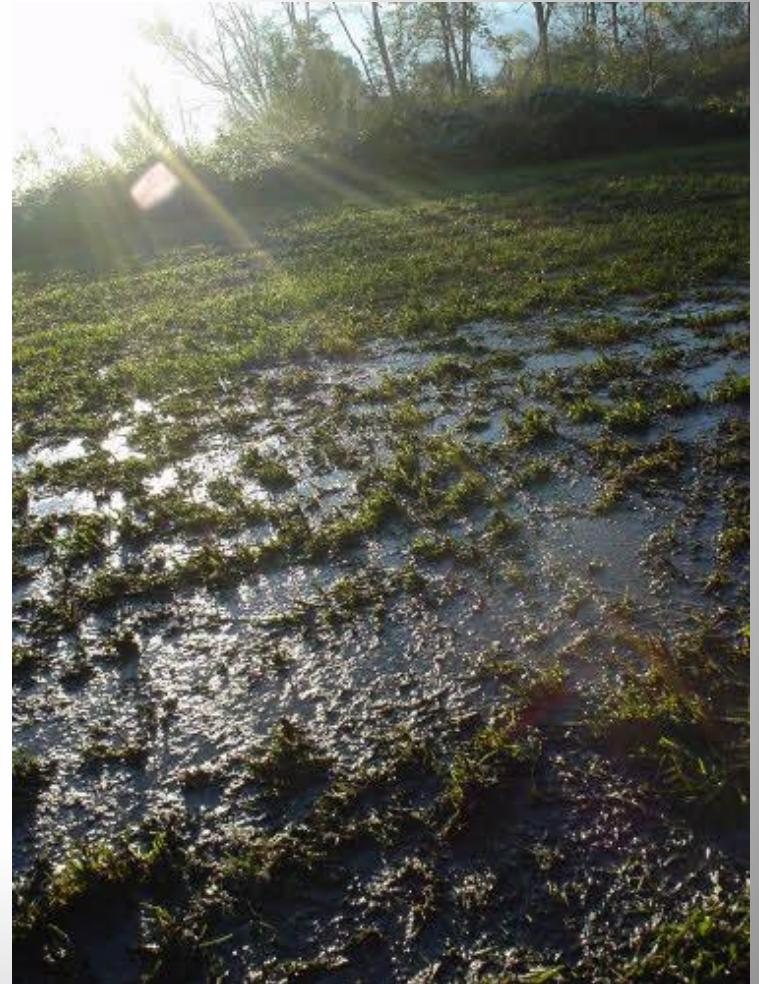
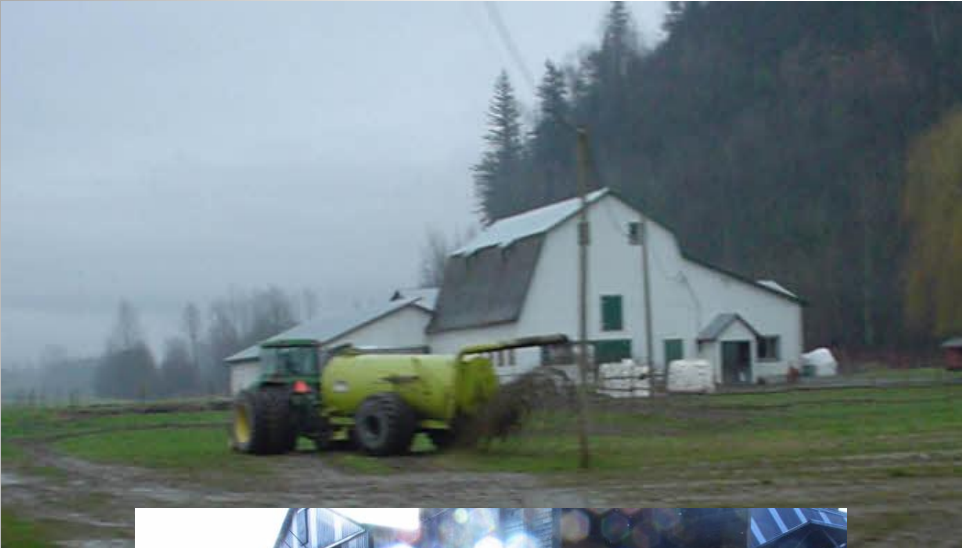
- Major historical losses
- Ongoing issues



Climate Change (Heat/Drought)

Hypoxia

Nutrient Loading

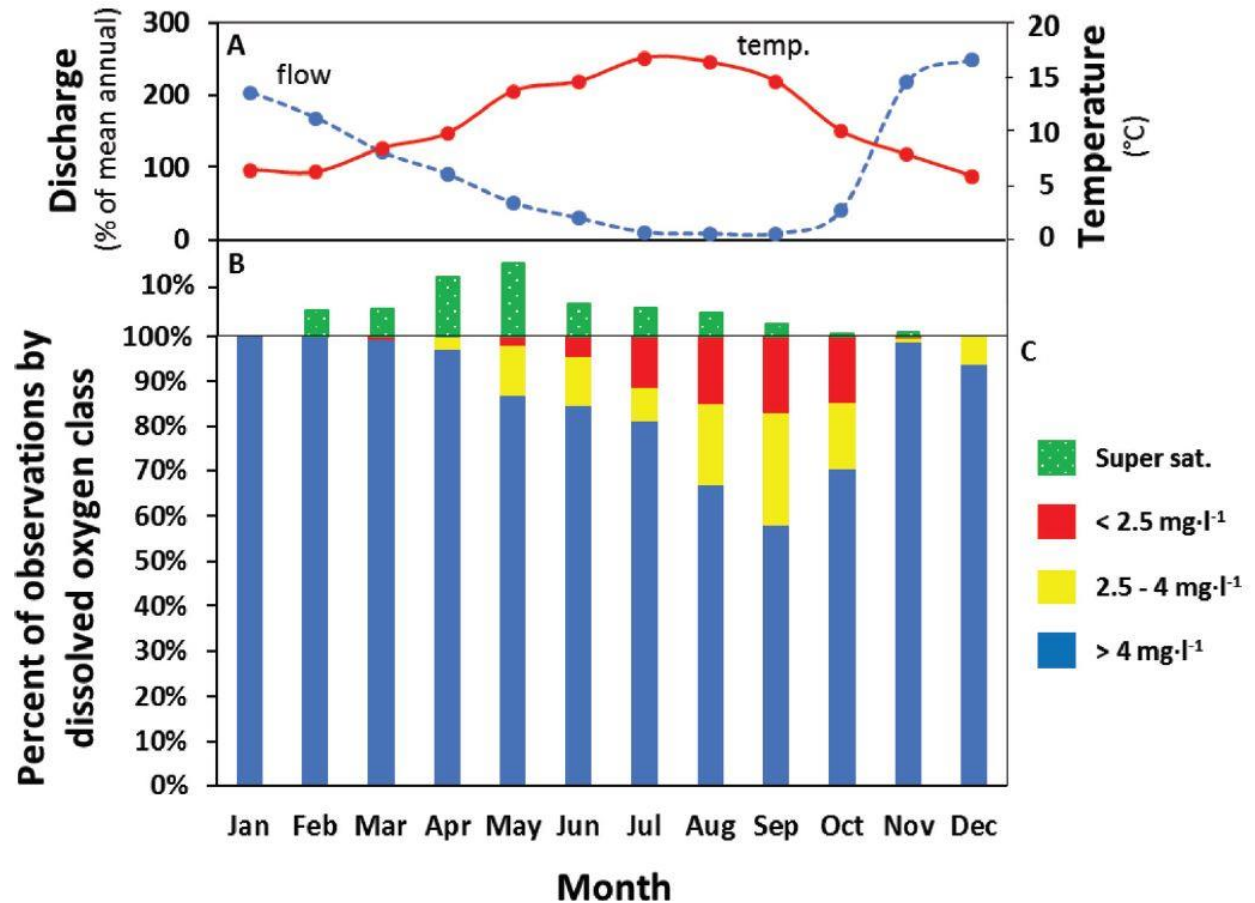


Hypoxia

Loss of Riparian Vegetation



Seasonal Patterns in Flow, Temperature and Oxygen



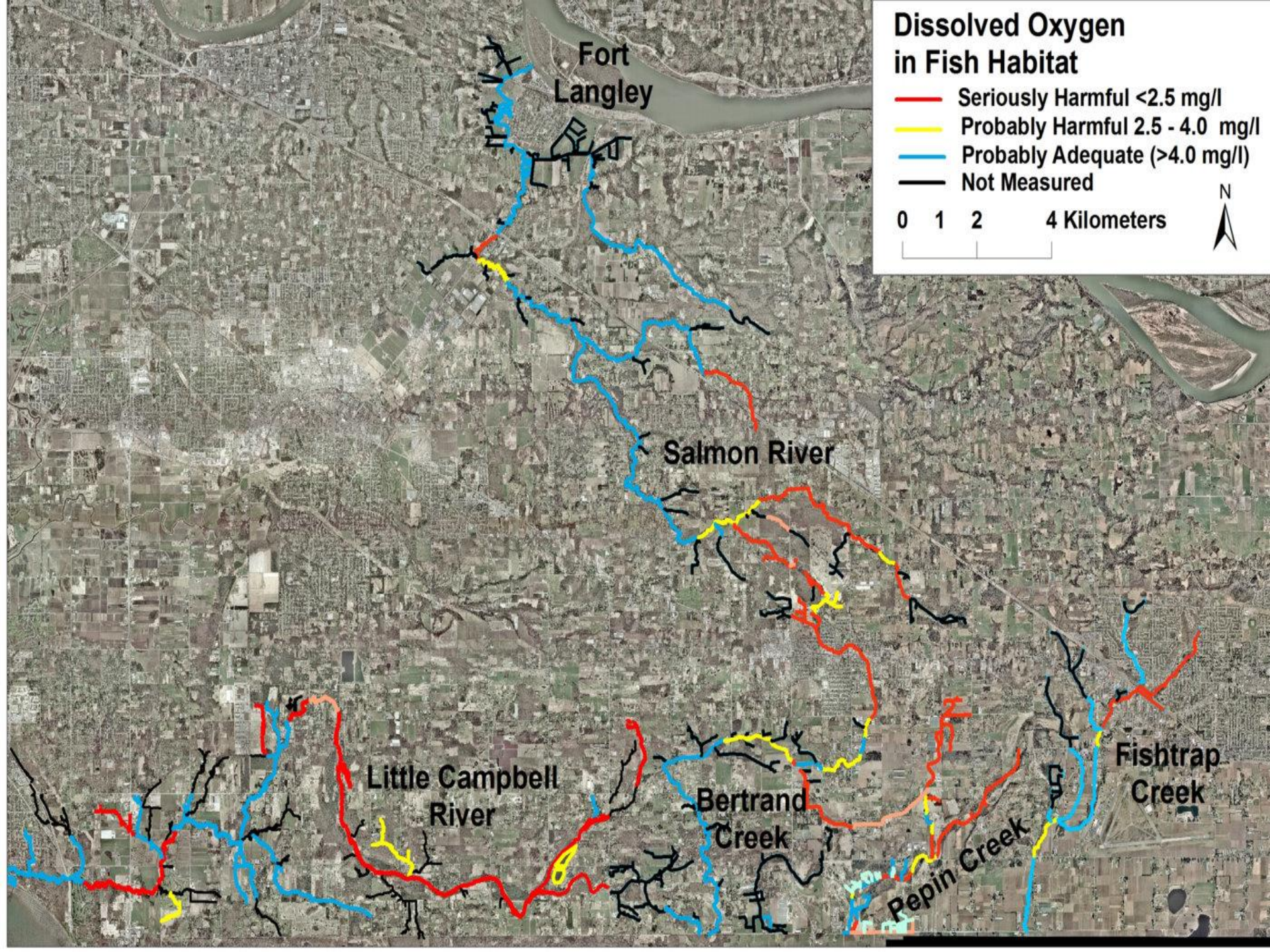
16 years
7473 traps
2779 sites
238 reaches
180 km of habitat
8583 Salish sucker captures

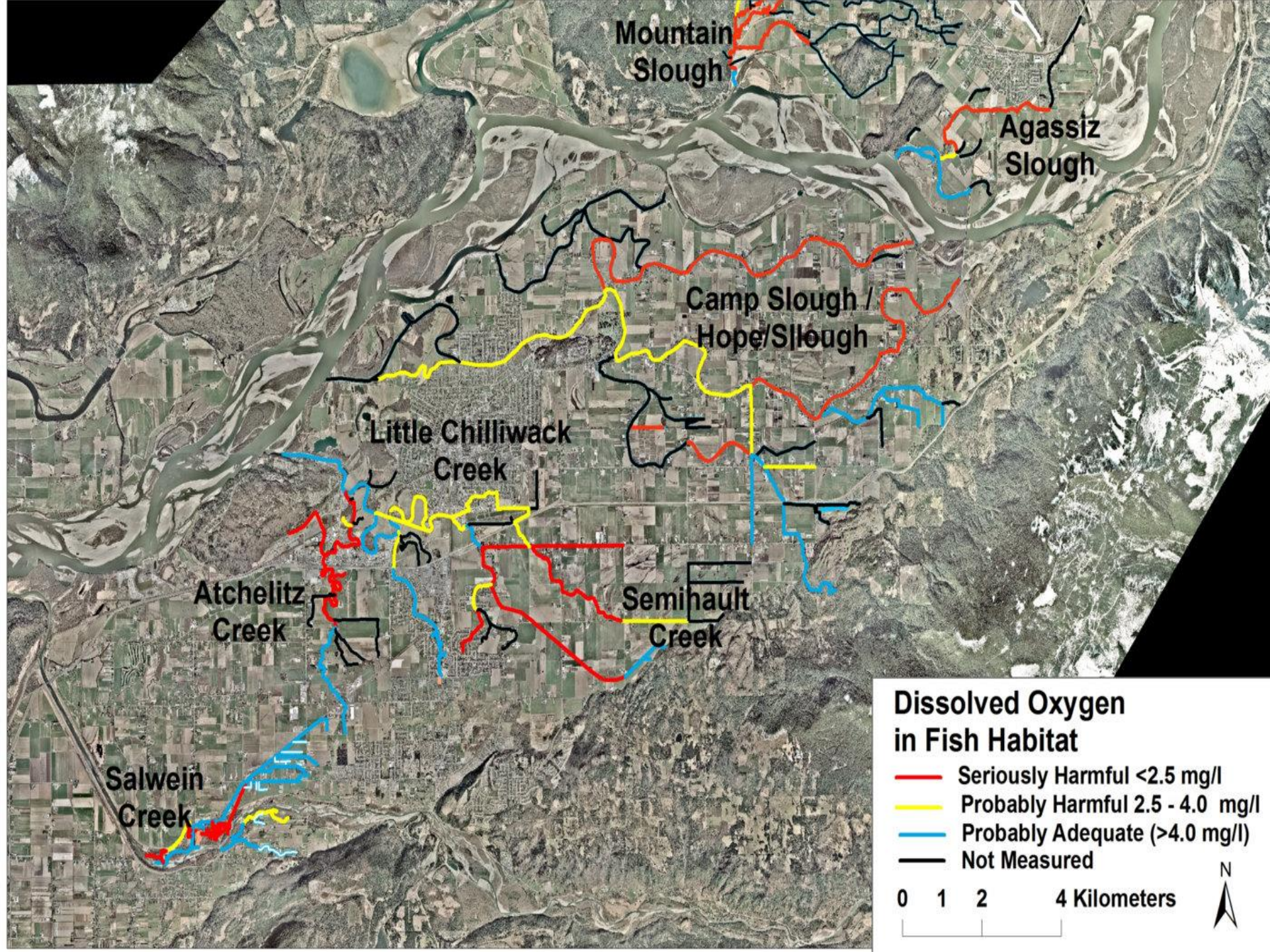
Rosenfeld, Pearson, Miners, and Zinn. 2021.
CJFAS 78: 1219

Dissolved Oxygen in Fish Habitat

- Seriously Harmful <2.5 mg/l
- Probably Harmful 2.5 - 4.0 mg/l
- Probably Adequate (>4.0 mg/l)
- Not Measured

0 1 2 4 Kilometers

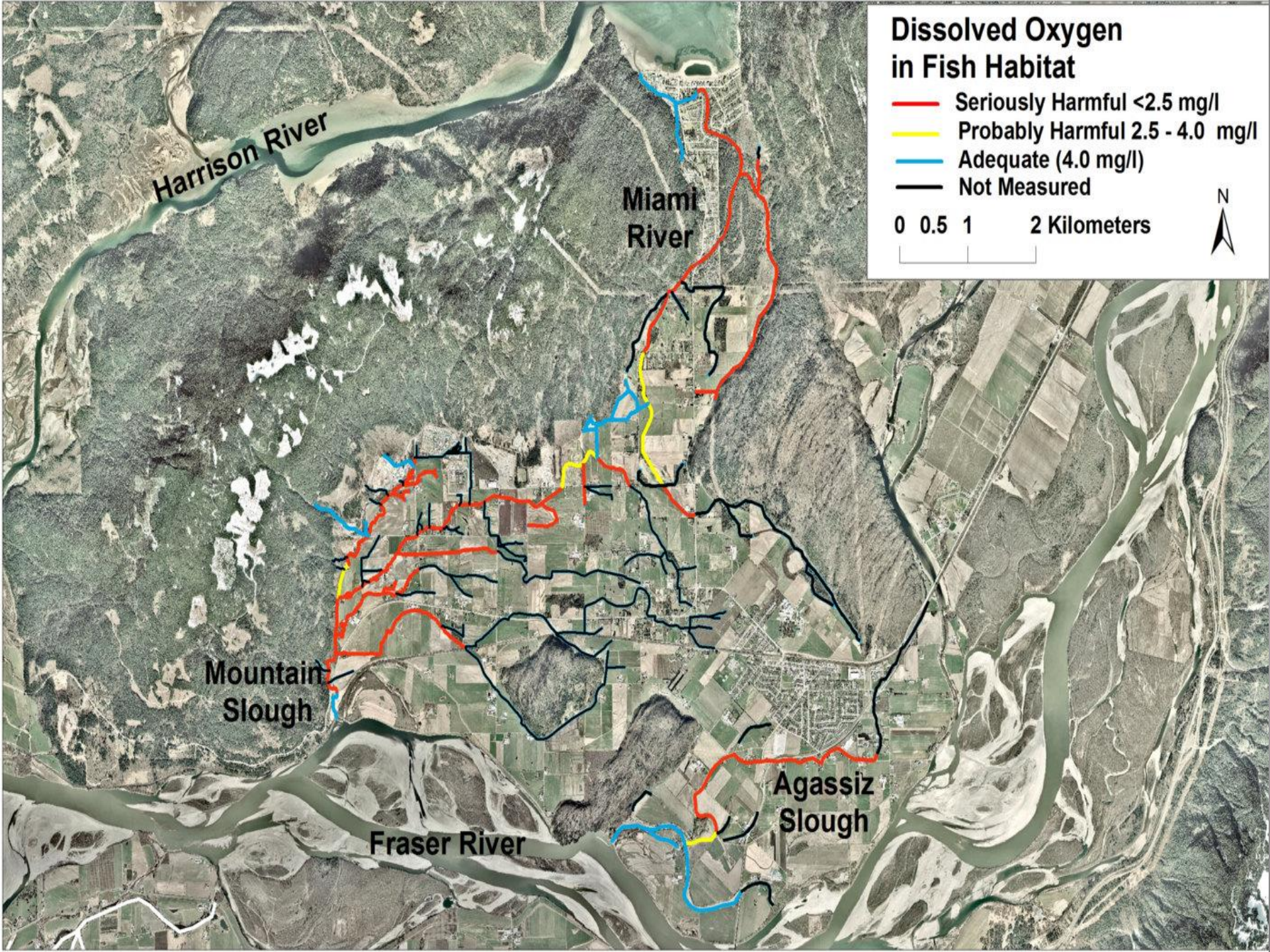




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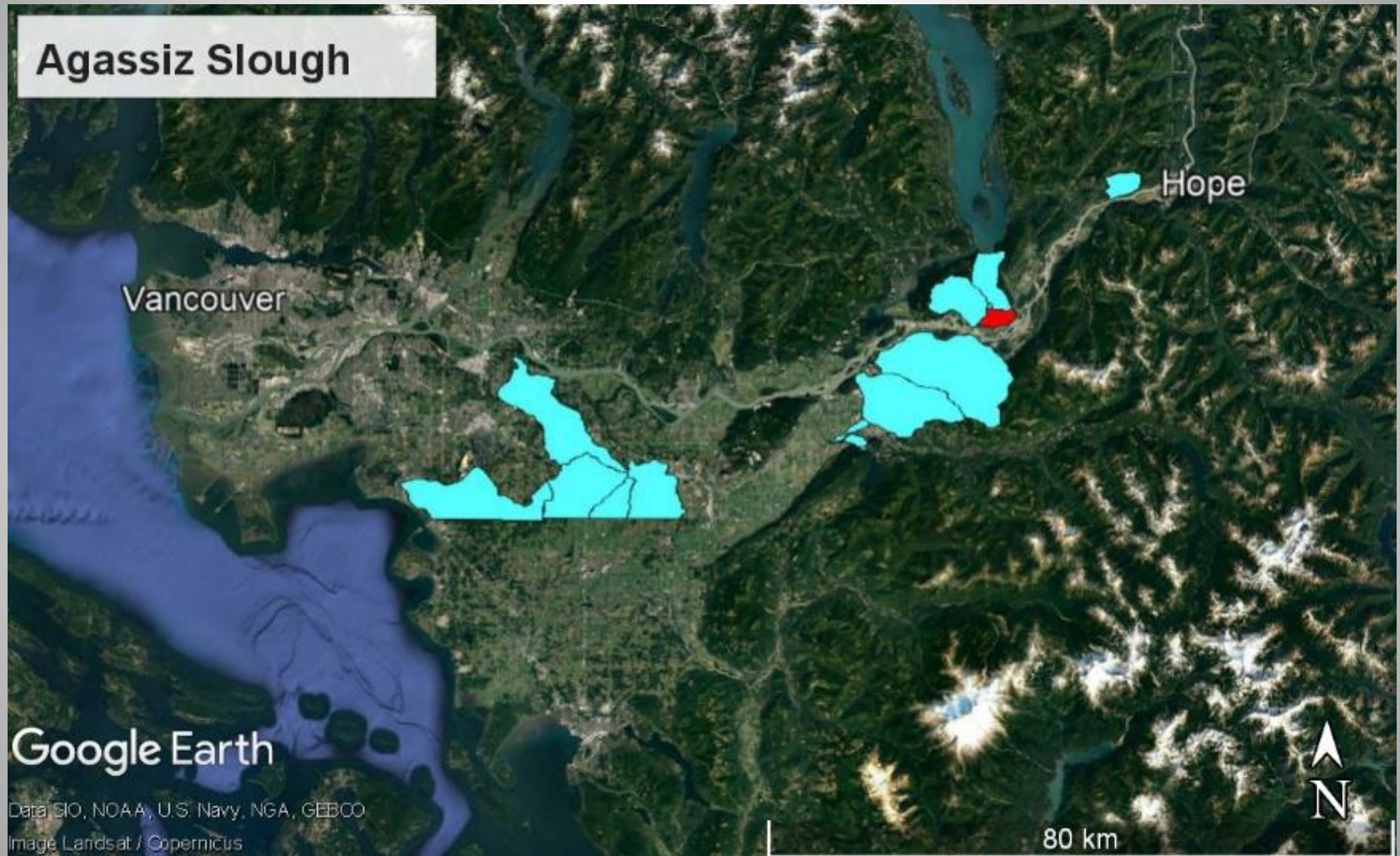
0 0.5 1 2 Kilometers



Abundance Estimates: Reach Scale Mark Recapture



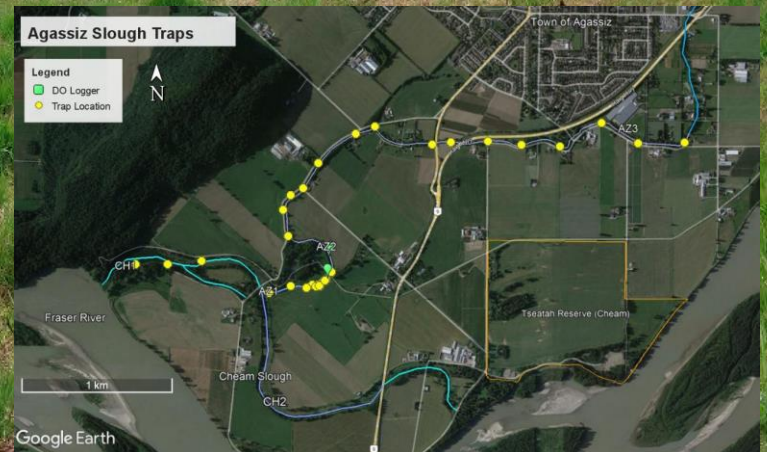
Agassiz Slough



Agassiz Slough

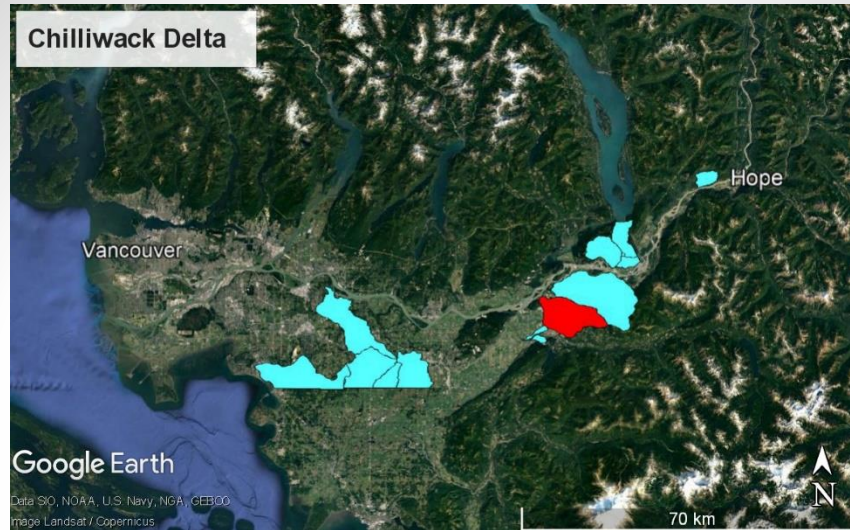
Extirpated ?

- 253 (203 - 354) in 2012
- Trapped 7 times in past 3 field seasons
- None found



Chilliwack Delta

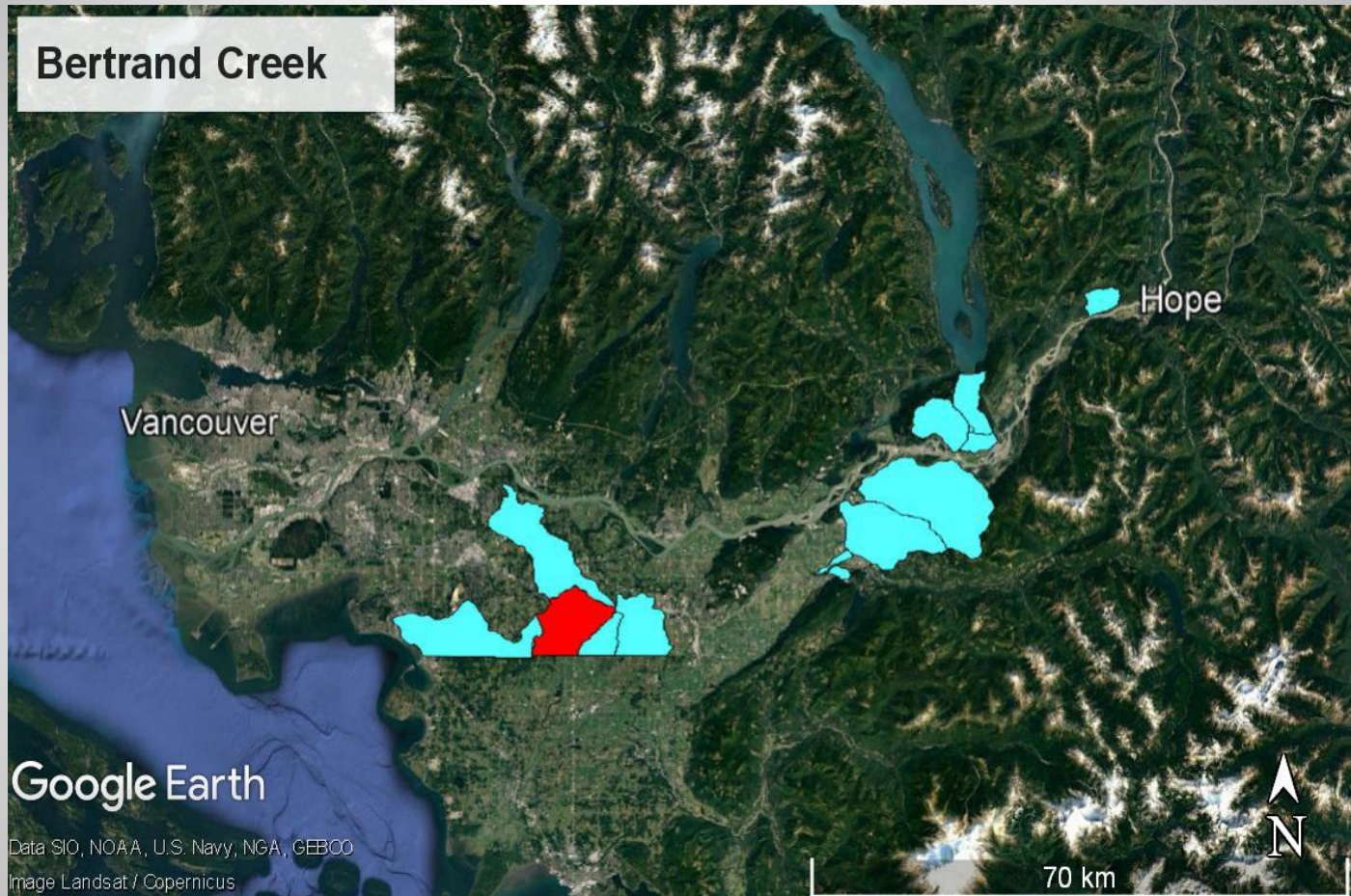
- Largest population



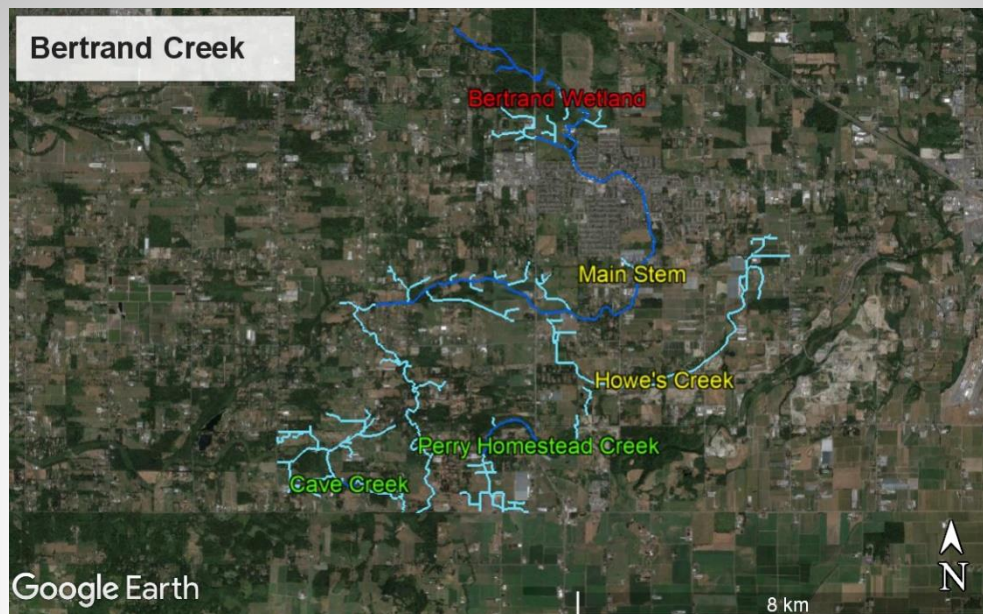
2012	1980 (870-4537)
2015	2254 (1480-3015)

	2015	2022-2023
Atchelitz	239 (212-280)	579 (490-796)
Luckakuck Creek (Manuel Pond)	378 (345-416)	811 (596-1305)
Little Chilliwack Creek	351 (280-496)	209 (103-1023)
Interception Ditch	739 (315-794)	<50
Semmihaul Creek	547 (327-1029)	Not completed
Total	2254 (1480-3015)	1650+Semmihaul

Bertrand Creek

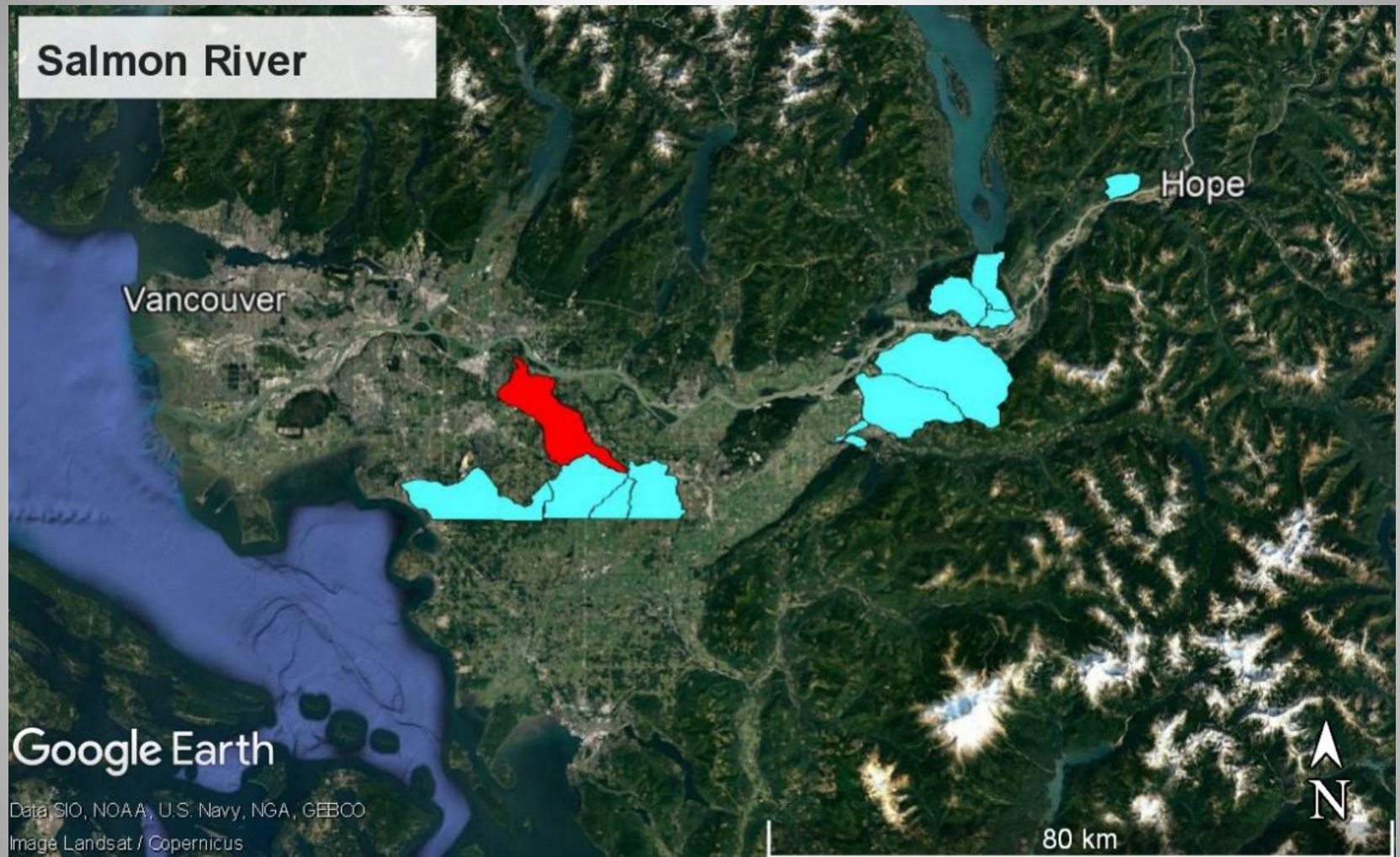


Bertrand Creek

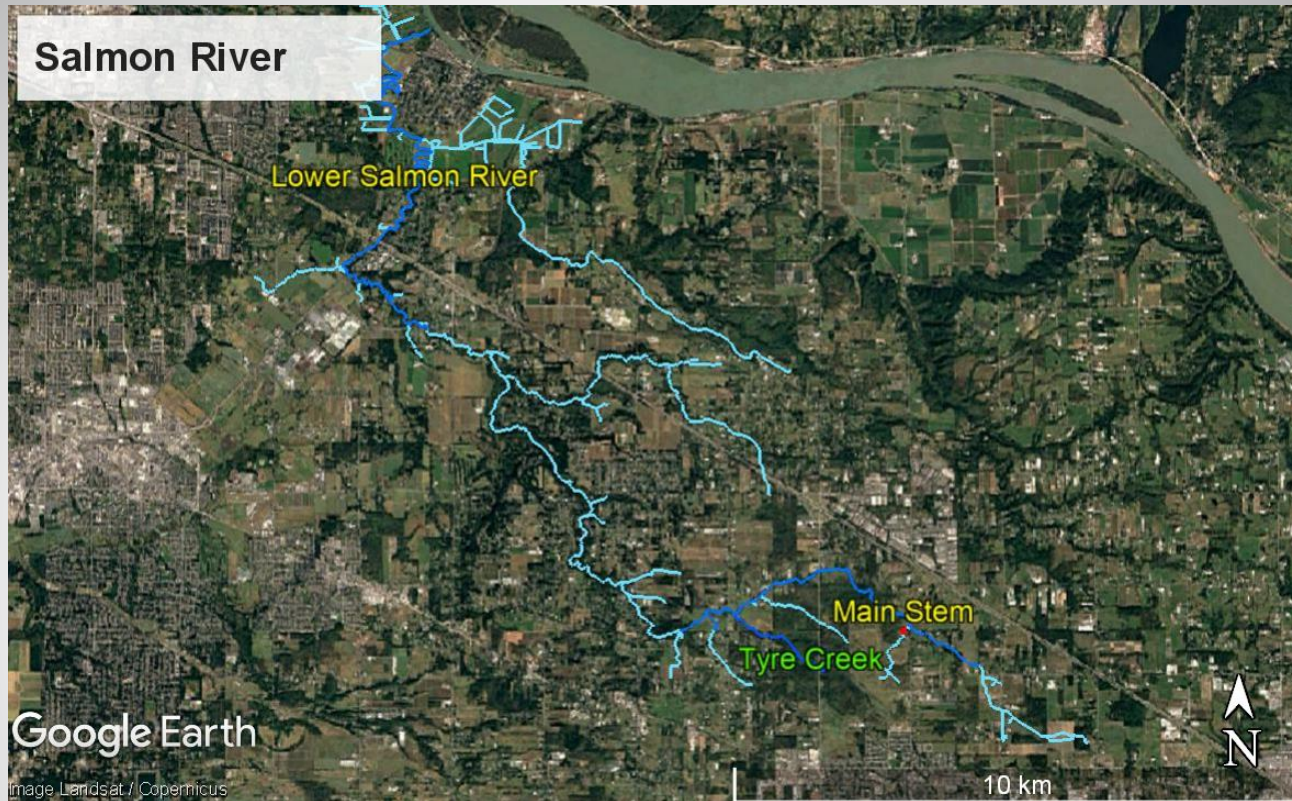


Subpopulation	Year	Estimate
Main Stem	2013	735 (628-862)
	2020	3
Bertrand Wetlands	2013	244 (210-310)
	2017	42 (25-110)
	2021	0
Cave Creek	2019	315 (260-400)
Perry Homestead Creek	2017	570 (341-1082)
Howe's Creek	2013	329 (206-711)
	2020	8

Salmon River

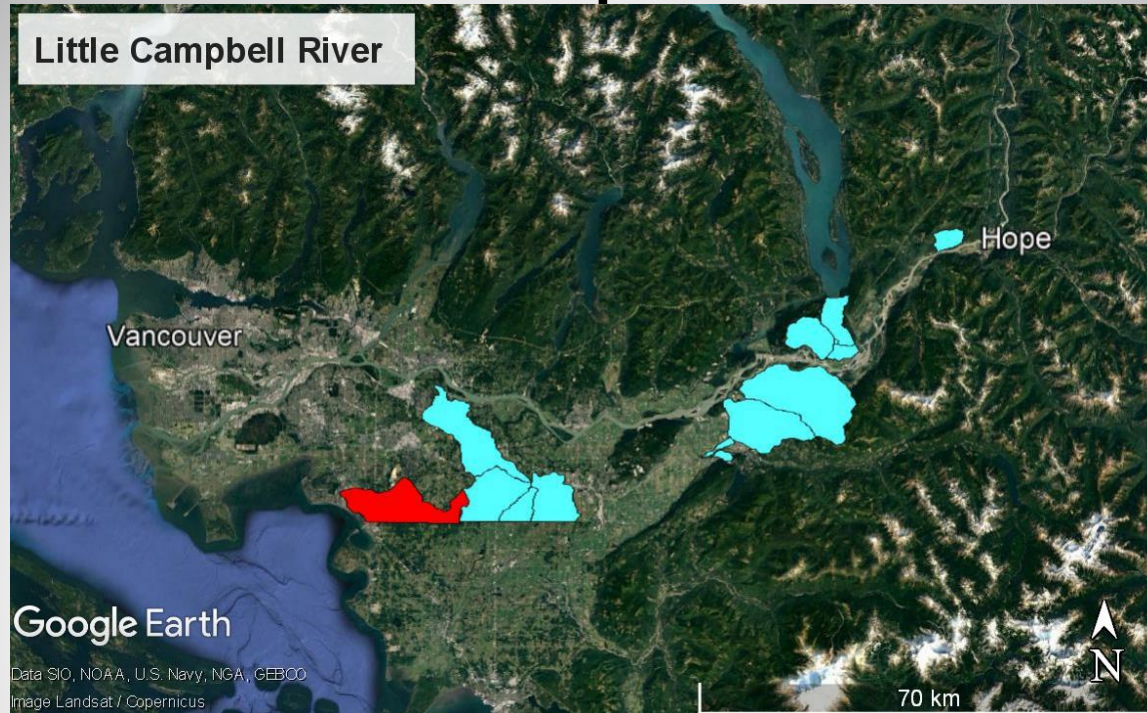


Salmon River



Subpopulation	Year	Estimate
Main Stem	2013	751 (649-915)
	2019	46
Tyre Creek	2013	510 (420-648)
	2017	178 (160-214)
	2022	383 (245-900)

Little Campbell River



- Believed extirpated 1976-2011
- A Rocha has located remnant populations in 2 areas
- Threatened by recently approved development

Location	Year	Abundance Estimate
224-232 St	2017	231 (223-239)
	2018	179 (148-248)
	2019	175 (116-366)
	2020	128 (59-1600)
192 St Trib	2020	70 (43-300)

Chawathil



2019 CMR Estimate: 64 (47-93)

Chawathil

August 2023

38 Salish Sucker salvaged in 2023; almost all juveniles



Watershed	Location/Area	Year A	Abundance A	Year B	Abundance B	% Change
Agassiz	Agassiz Slough	2012	807	2021	0	-100
Bertrand	Mainstem	2013	703	2021	7	-99
	Howe's Creek	2013	329	2020	31	-91
	Cave Creek	2019	315	2022	<u>315</u>	?
	Perry Homestead Creek	2017	570	2022	<u>570</u>	?
Chilliwack	Atchelitz	2015	239	2022	579	142
	Little Chilliwack	2015	351	2022	209	-40
	Interception Ditch	2015	739	2022	<u>739</u>	?
	Luckakuck	2014	378	2022	<u>378</u>	?
	Semmihault	2015	547	2022	<u>547</u>	?
Fishtrap	Fishtrap Creek	2013	Unknown	2015	Unknown	0
Hope	Hope Slough/Elk Creek	2015	Unknown	2018	Unknown	0
Hopedale	Hopedale Slough	2012	469	2022	<u>469</u>	0
Little Campbell	224Street -232 Street	2017	231	2020	128	-45
Miami	Miami Creek	2012	102	2022	<u>102</u>	?
Mountain	Mountain Slough	2014	68	2016	10	-85
Pepin	Pepin Marsh	2002	1711	2022	264	-85
	Lower Salish Creek	2003	62	2022	341	450
	Upper Salish Creek	2012	1754	2021	474	-73
	Gordon's Brook	2010	Unknown	2020	Unknown	-91
Salmon	Upper mainstem	2013	751	2021	105	-86
	Tyre Creek	2013	510	2022	383	-25
	Tyre Creek	2016	178	2022	383	115
Salwein	Salwein Creek	2012	288	2020	188	-35
Sqemélwelh	Sqemélwelh Creek	2019	64	2022	3	-95
All	All		11360		6155	-46

Nooksack Dace

(*Rhinichthys cataractae* ssp.)



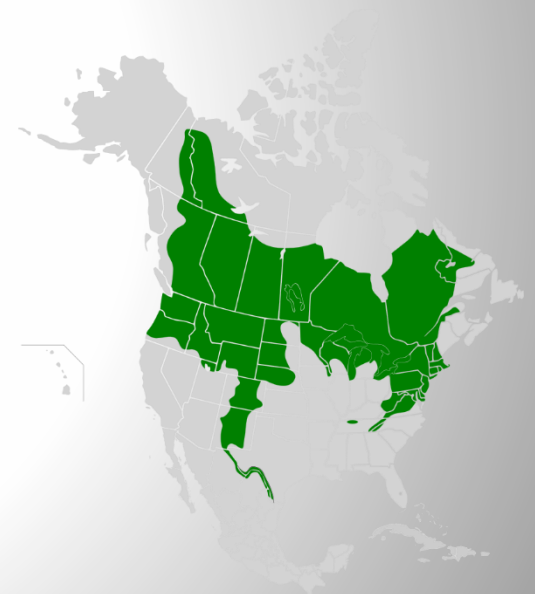
What is a Nooksack Dace?



‘Form’ or ‘Lineage’ of
Longnose Dace, *Rhinichthys cataractae*

R. Cataractae have largest geographic range
of any cyprinid (minnow family) in North America

Two other lineages in BC and many others across range



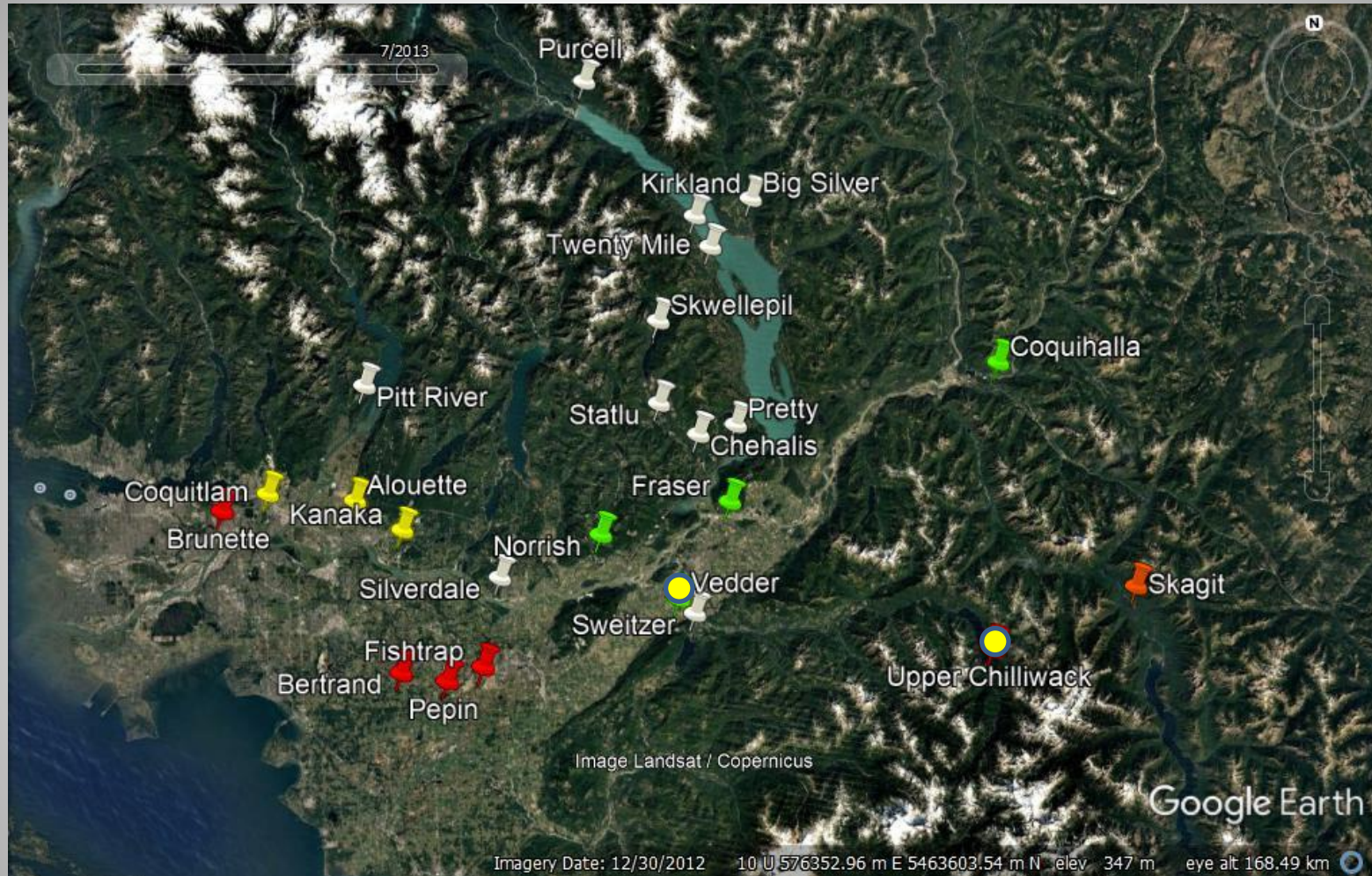
Longnose Dace Habitat



Prefer riffles with fast water and large substrate.

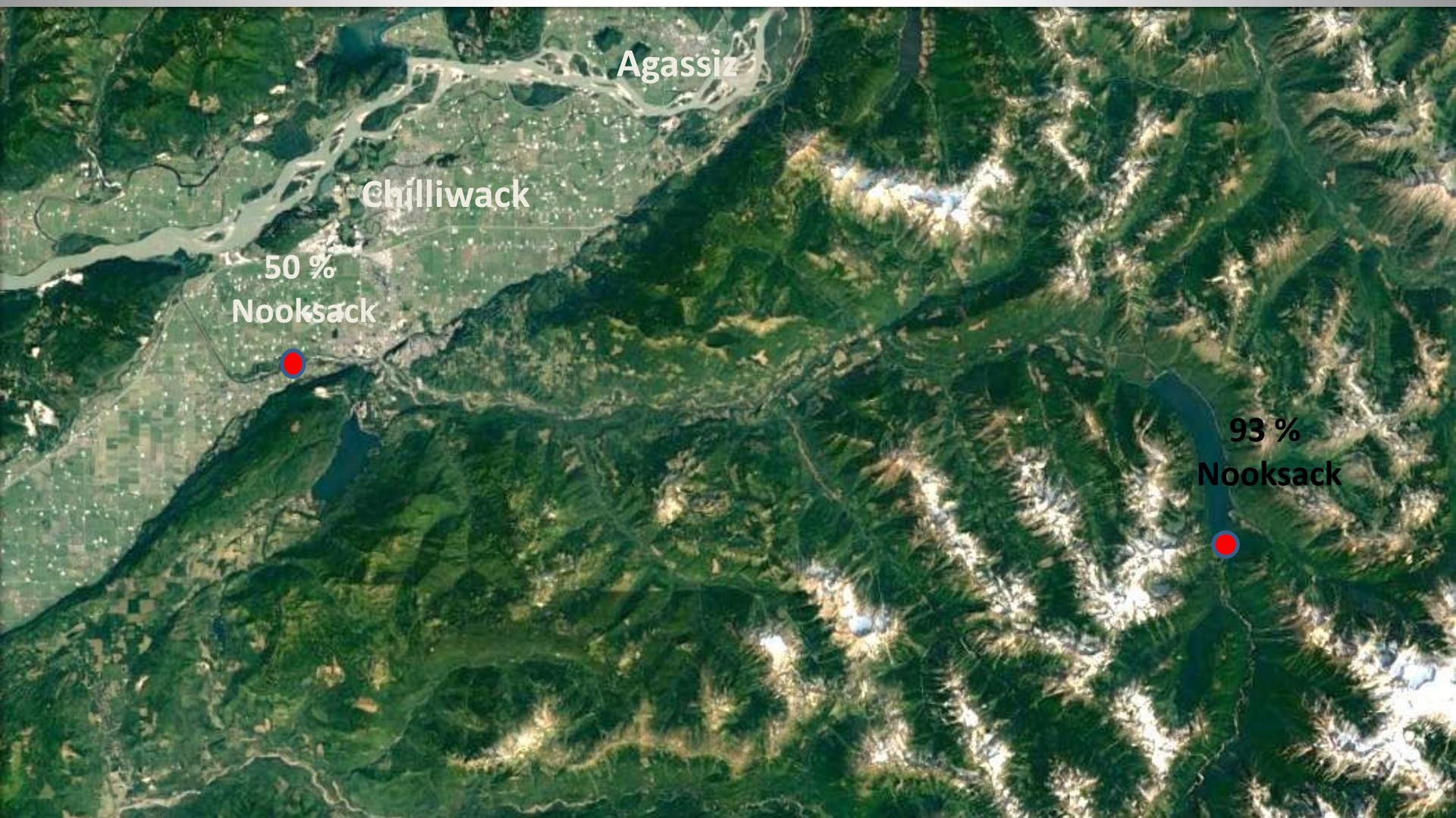


Distribution Sampling



- Nooksack dace
- Columbia form
- Admixed form
- Unknown form
- Not Found

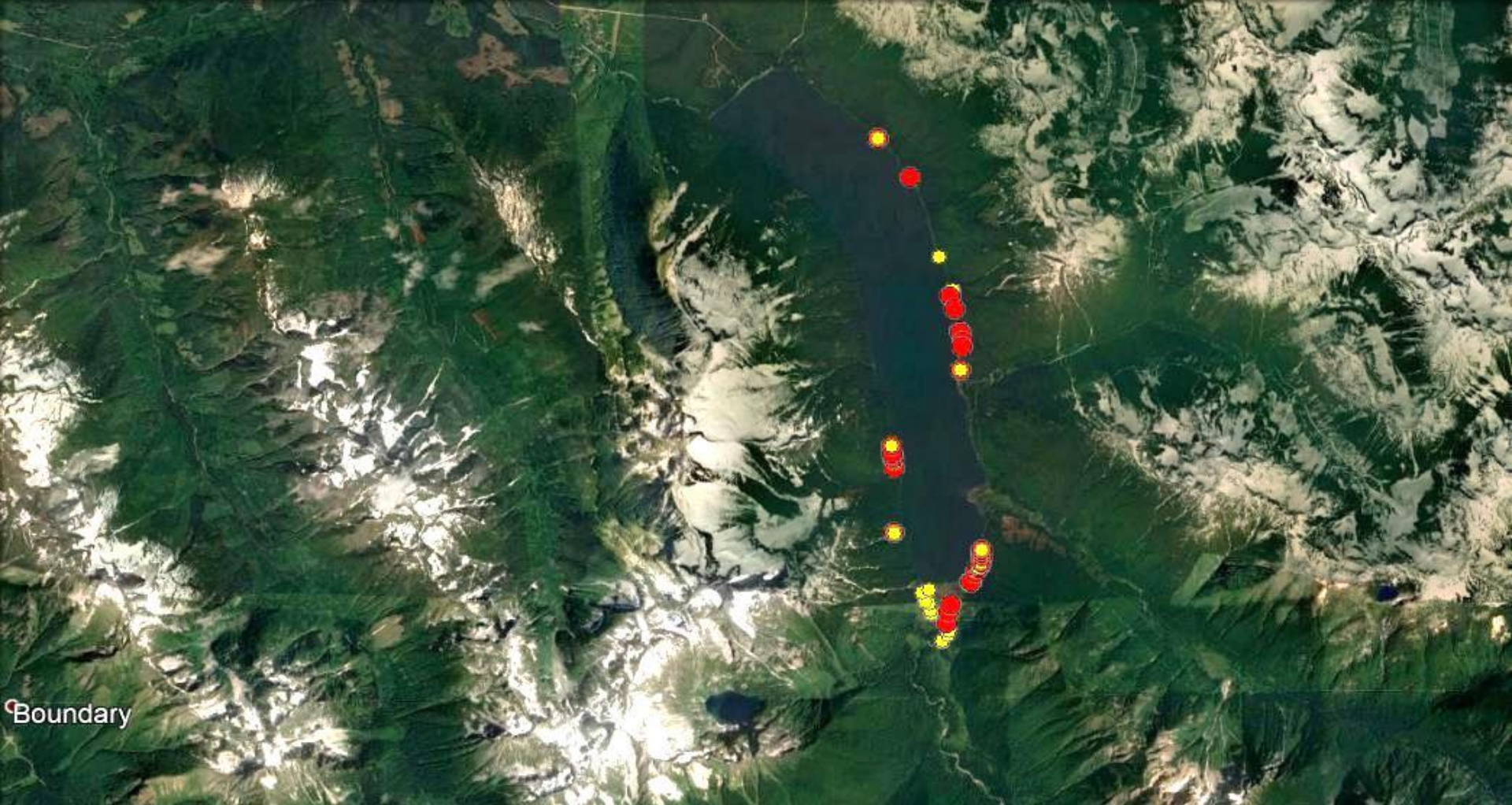
Chilliwack/Vedder Watershed



River Dace

107 seine hauls > 12 dace





- Lake Dwelling Longnose Dace





Chehalis Lake Dace



Chehalis Lake (Sept. 2021)

- 124 in 21 Gee traps
- 30 collected for morphological/genetic assessment

Chehalis River (Sept. 2023)

- 30 collected from Chehalis River and Statlu Creek downstream of Lake



Thank you!

Fisheries and Oceans Canada

BC Ministry of Environment

Habitat Stewardship Program for Species at Risk

Aboriginal Fund for Species at Risk