

Table 2: Potential sampling locations.

		Table 2. Potential Samplin	UTM	UTM	UTM	Watershed Group	
Site ID	Stream Name	Watershed Code	Zone	Easting	Northing		
12200024	ı –	100-593800-03100-20600-0000-0000-000-000-000-000-000-	10	515409	5989806	LSAL	
12200170) –	100-593800-03100-00200-0000-0000-000-000-000-000-000-	10	522065	5993180	LSAL	
12200289) –	100-593800-25800-81100-0000-0000-000-000-000-000-000-	10	497107	5990162	LSAL	
12202167	· _	100-593800-25800-29500-0000-0000-000-000-000-000-	10	496209	5999657	LSAL	
126267	Stephanie Cr.	100-596500-54900-00000-0000-0000-000-000-000-000-	10	583374	5911978	WILL	
126290	Hay Creek	100-596500-03300-00000-0000-0000-000-000-000-00	10	537250	5991350	WILL	
126316	Wansa Creek	100-596500-15700-00000-0000-0000-000-000-000-000-	10	551588	5970657	WILL	
196051	Unnamed	100-574400-00000-00000-0000-0000-000-000-000-	10	526285	5978523	TABR	
196072	Cale Creek	100-553400-00000-00000-0000-0000-000-000-000-0	10	522679	5956610	TABR	
196085	Tabor Creek	100-559300-00000-00000-0000-0000-000-000-000-0	10	518502	5962002	TABR	
196151	Cale Creek	100-553400-00000-00000-0000-0000-000-000-000-0	10	524160	5957999	TABR	
196160	Tay Creek	100-615400-00000-00000-0000-0000-000-000-000-0	10	525765	6009127	TABR	
196201	Haggith Creek	100-560100-00000-00000-0000-0000-000-000-000-	10	521127	5965112	TABR	
196207	Hudson Bay Slough	100-567900-00000-00000-0000-0000-000-000-000-0	10	516996	5972733	TABR	
196264	Parkridge Creek	100-562800-00000-00000-0000-0000-000-000-000-0	10	515025	5966533	TABR	
196328	Archer Creek	100-596500-82000-00000-0000-0000-000-000-000-000	10	573972	5894796	WILL	
196340	Slough Creek	100-596500-90900-00000-0000-0000-000-000-000-00	10	590481	5882133	WILL	



Site ID Stream Name		Watershed Code	UTM	UTM	UTM	Watershed Group
			Zone	Easting	Northing	Code
196353	Williams Creek	100-596500-98000-00000-0000-0000-000-000-000-000	10	599849	5882781	WILL
19702777	-	100-535900-08600-00000-0000-0000-000-000-000-000	10	517279	5936628	TABR
19703257	Tabor Creek	100-559300-00000-00000-0000-0000-000-000-000-0	10	518845	5961982	TABR
19703286	Bittner Creek	100-572700-00000-00000-0000-0000-000-000-000-	10	521864	5976392	TABR
19703295	-	100-587900-00000-00000-0000-0000-000-000-000-0	10	526448	5985791	TABR
19703303	Bertschi Creek	100-580500-00000-00000-0000-0000-000-000-	10	522978	5980978	TABR
19703358	Trapping Creek	100-536400-00000-00000-0000-0000-000-000-000-0	10	520105	5935908	TABR
199171	Tributary To Fraser Lake	180-374000-33800-00000-0000-0000-000-000-000- 000-000	10	388945	5997015	FRAN
199172	Scotch Creek	180-374000-36600-00000-0000-0000-000-000-000- 000-000	10	388276	5996951	FRAN
199173	Tributary To Nechako River	180-364700-00000-00000-0000-0000-000-000-000- 000-000	10	398947	5996427	NECR
199174	Tributary To Nechako River	180-364700-00000-00000-0000-0000-000-000-000- 000-000	10	397158	5996575	NECR
199190	Clear Creek	180-296000-00000-00000-0000-0000-000-000-000-	10	425559	5996140	NECR
199260	Tributary To Sugarbowl Creek	100-683800-01900-12800-0000-0000-000-000-000-000-	10	587921	5972449	MORK
199267	Driscoll Creek	100-698700-00000-00000-0000-0000-000-000-000-0	10	606373	5965784	MORK
199278	Teepee Creek	100-907400-42800-00000-0000-0000-000-000-000-000-	11	344022	5862734	UFRA
199328	Scotch Creek	180-374000-36600-00000-0000-0000-000-000-000- 000-000	10	388367	5996766	FRAN
203302	Teepee Creek	100-907400-42800-00000-0000-0000-000-000-000-	11	344226	5862767	UFRA



Site ID	Stream Name	Watershed Code	UTM Zone	UTM Easting	UTM Northing	Watershed Group
24400646	Rucheon Creek	100-596500-84300-21000-0000-0000-000-000-000-000-	10	577020	5886032	WILL
24401504	Tsadestsa Creek	100-596500-10600-00000-0000-0000-000-000-000-000	10	536470	5981315	WILL
24401692	-	100-596500-11200-00000-0000-0000-000-000-000-000	10	541465	5981577	WILL
24402183	-	100-596500-11100-00000-0000-0000-000-000-000-00	10	541358	5981709	WILL
24723694	Cale Creek	100-553400-00000-00000-0000-0000-000-000-000-0	10	521645	5955176	TABR
24723695	Red Rock Creek	100-545900-00000-00000-0000-0000-000-000-000-0	10	521513	5949553	TABR
24727190	Wansa Creek	100-596500-15700-00000-0000-0000-000-000-000-000-	10	556416	5962053	WILL
4931	Crooked Creek	100-907400-42800-00000-0000-0000-000-000-000-000-	11	344710	5862865	UFRA
7622	Unn Flows Into Fraser Lake	180-374000-33800-00000-0000-0000-000-000-000-00	10	388738	5997154	FRAN



Table 3: Potential sample site details

Site ID	Stream Name	Species Upstream	# Fish Tags
12200024	_	BB;C;EB;LKC;LNC;LSU;NSC;RB;RSC	150
12200170	-	CC;CH;RB;SU	150
12200289	_	CBC;CSU;EB;KO;LSU;MW;NSC;PCC;RB;SU	150
12202167	-	-	150
126267	Stephanie Cr.	RB	150
126290	Hay Creek	BB;BMC;BT;CAS;CC;CH;CSU;DV;LDC;LKC;LSU;MW;NSC;PCC;RB;RSC;SP;SU;WSU	150
126316	Wansa Creek	CBC;CH;CT;DV;RB;RSC;SP;SU;WF	150
196051	Unnamed	-	150
196072	Cale Creek	CSU;EB;LNC;LSU;MW;NSC;PCC;RB;RSC	150
196085	Tabor Creek	BB;C;CSU;DV;EB;LKC;LSU;MW;NSC;PCC;RB;RSC;SB;SP;SU	150
196151	Cale Creek	CSU;EB;LSU;MW;NSC;PCC;RB;RSC	150
196160	Tay Creek	-	150
196201	Haggith Creek	-	150
196207	Hudson Bay Slough	LKC;RB	150
196264	Parkridge Creek	RB;SP	150
196328	Archer Creek	BT;RB	150
196340	Slough Creek	BB;CCG;LKC;RB;SP;WSU	150
196353	Williams Creek	CCG;RB	150
19702777	-	-	150
19703257	Tabor Creek	BB;C;CSU;DV;EB;LKC;LSU;MW;NSC;PCC;RB;RSC;SB;SP;SU	150
19703286	Bittner Creek	CCG;CSU;LSU;RB;RSC;SU	150
19703295	-	-	150
19703303	Bertschi Creek	-	150
19703358	Trapping Creek	RB	150
199171	Tributary To Fraser Lake	-	150
199172	Scotch Creek	-	150
199173	Tributary To Nechako River	SP	150
199174	Tributary To Nechako River	SP	150
199190	Clear Creek	LKC;LSU	150
199260	Tributary To Sugarbowl Creek	-	150
199267	Driscoll Creek	CCG;RB	150
199278	Teepee Creek	SA	150



Site ID	Stream Name	Species Upstream	# Fish Tags
199328	Scotch Creek	-	150
203302	Teepee Creek	_	150
24400646	Rucheon Creek	RB	150
24401504	Tsadestsa Creek	_	150
24401692	-	-	150
24402183	_		150
24723694	Cale Creek	CSU;EB;LNC;LSU;MW;NSC;PCC;RB;RSC	150
24723695	Red Rock Creek	RSC	150
24727190	Wansa Creek	CBC;CH;CT;DV;RB;RSC;SP;SU;WF	150
4931	Crooked Creek	_	150
7622	Unn Flows Into Fraser Lake	-	150

Table 4: Fish species recorded in the Fisheries Information Summary System within the freshwater atlas watershed group areas where the potential sample sites are located.

Scientific Name	Species Name	BC List	COSEWIC	Francois Lake	Lower Chilako	Lower Salmon	Morkill	Nechako	Tabor	Upper Fraser	Willow
Acipenser transmontanus	White Sturgeon	No Status	E/T (Nov 2012)	Yes	Yes	-	Yes	Yes	Yes	_	_
Carassius auratus	Goldfish	Exotic	_	_	Yes	_	-	-	_	_	_
Catostomus	Longnose Sucker	Yellow	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Catostomus columbianus	Bridgelip Sucker	Yellow	-	Yes	-	Yes	_	Yes	Yes	-	_
Catostomus	White Sucker	Yellow	-	Yes	Yes	Yes	Yes	Yes	Yes	_	Yes
Catostomus macrocheilus	Largescale Sucker	Yellow	_	Yes	Yes	Yes	Yes	Yes	Yes	_	Yes
Catostomus platyrhynchus	Northern Mountain Sucker	Blue	SC (Nov 2010)	_	Yes	-	-	-	_	_	_
Chrosomus neogaeus	Finescale Dace	Yellow	_	Yes	_	_	-	_	-	_	-
Coregonus clupeaformis	Lake Whitefish	Yellow	_	Yes	Yes	Yes	-	Yes	-	_	Yes
Cottus asper	Prickly Sculpin	Yellow	_	Yes	Yes	Yes	Yes	Yes	Yes	_	Yes



Scientific Name	Species Name	BC List	COSEWIC	Francois Lake	Lower Chilako	Lower Salmon	Morkill	Nechako	Tabor	Upper Fraser	Willow
Cottus cognatus	Slimy Sculpin	Yellow	_	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes
Cottus ricei	Spoonhead Sculpin	Yellow	NAR (May 1989)	Yes	-	-	-	_	_	Yes	-
Couesius plumbeus	Lake Chub	Yellow	DD	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cyprinus carpio	Carp	Exotic	_	Yes	-	_	-	_	-	-	-
Hybognathus	Brassy Minnow	No Status	-	Yes	Yes	Yes	-	Yes	Yes	_	Yes
Lota lota	Burbot	Yellow	_	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Micropterus salmoides	Largemouth Bass	Exotic	-	-	-	-	-	Yes	-	-	-
Mylocheilus caurinus	Peamouth Chub	Yellow	_	Yes	Yes	Yes	Yes	Yes	Yes	_	Yes
Oncorhynchus clarkii	Cutthroat Trout	No Status	-	Yes	-	-	-	-	-	-	Yes
Oncorhynchus gorbuscha	Pink Salmon	Yellow	-	_	Yes	Yes	_	_	_	_	Yes
Oncorhynchus kisutch	Coho Salmon	Yellow	-	Yes	Yes	-	-	Yes	-	-	Yes
Oncorhynchus mykiss	Rainbow Trout	Yellow	_	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Oncorhynchus mykiss	Steelhead	Yellow	-	_	-	_	Yes	_	_	_	-
Oncorhynchus nerka	Kokanee	Yellow	_	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Oncorhynchus nerka	Sockeye Salmon	Yellow	-	Yes	Yes	-	Yes	Yes	-	Yes	-
Oncorhynchus	Chinook Salmon	Yellow	E/T/SC (Dec 2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prosopium coulterii	Pygmy Whitefish	Yellow	NAR (Nov 2016)	-	Yes	_	-	Yes	Yes	Yes	Yes
Prosopium cylindraceum	Round Whitefish	Yellow	_	-	_	-	Yes	_	_	_	-
Prosopium williamsoni	Mountain Whitefish	Yellow	_	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ptychocheilus oregonensis	Northern Pikeminnow	Yellow	_	Yes	Yes	Yes	Yes	Yes	Yes	_	Yes
Rhinichthys cataractae	Longnose Dace	Yellow	_	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rhinichthys falcatus	Leopard Dace	Yellow	NAR (May 1990)	Yes	Yes	Yes	-	Yes	Yes	_	Yes
Richardsonius balteatus	Redside Shiner	Yellow	_	Yes	Yes	Yes	Yes	Yes	Yes	_	Yes
Salvelinus confluentus	Anadromous Bull Trout	Blue	SC (Nov 2012)	_	_	_	_	Yes	_	_	-



Scientific Name	Species Name	вс		Francois Lower	Lower	Lower				Upper	Willem
		List	COSEWIC	Lake	Chilako	Salmon	Morkill	Nechako	Tabor	Fraser	Willow
Salvelinus confluentus	Bull Trout	Blue	SC (Nov 2012)	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes
Salvelinus fontinalis	Brook Trout	Exotic	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Salvelinus malma	Dolly Varden	Yellow	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Salvelinus namaycush	Lake Trout	Yellow	_	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes
-	All Salmon	-	-	-	Yes	-	-	-	-	-	-
_	Arctic Char	-	-	_	_	-	-	-	-	_	Yes
-	Char, General	-	-	-	-	_	-	_	_	Yes	-
_	Chub (General)	-	_	Yes	Yes	Yes	-	Yes	_	_	Yes
_	Dace (General)	-	-	Yes	Yes	Yes	-	Yes	Yes	-	-
_	Lamprey (General)	-	_	_	_	Yes	_	_	_	_	-
_	Minnow (General)	-	-	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes
_	Northern Pearl Dace	-	-	Yes	_		_	_	_	_	-
_	Salmon (General)	-	-	_	Yes	_	Yes	-	-	Yes	Yes
_	Sculpin (General)	-	_	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
-	Stickleback (General)	_	-	-	-	-	_	-	Yes	-	_
-	Sucker (General)	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
-	Whitefish (General)	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

References

Fernandes, I. M., Y. F. Bastos, D. S. Barreto, L. S. Lourenço, and J. M. Penha. 2017. "The Efficacy of Clove Oil as an Anaesthetic and in Euthanasia Procedure for Small-Sized Tropical Fishes." *Brazilian Journal of Biology = Revista Brasleira De Biologia* 77 (3): 444–50. https://doi.org/10.1590/1519-6984.15015.