

Al Irvine
New Graph Environment
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250-777-1518
Date: 2021-07-21

Re: Safety Plan

This safety plan can also be viewed online [at this link](#). A summary of sites to be potentially assessed is included as Table [1](#), details of fish species potentially encountered is presented in Table [2](#) and an overview map of displaying potential sample locations is included as Figure 1. A kml file of the sites is included as an attachment to the application and can also be downloaded [from here at this link](#).

Work will include [fish passage assessments](#) and [habitat confirmations](#). Presence/absence of fish, species composition/density and distribution limits can be useful for prioritizing which crossings are a best fit for fish passage restoration and help inform follow up monitoring so electrofishing and minnowtrapping may be conducted. Standard Fish and Fish Habitat Inventory Standard Field Form [site cards](#) are used to gather habitat data.

Please do not hesitate to contact me if you have any questions or concerns.

A handwritten signature in black ink, appearing to read "Al Irvine".

Al Irvine, R.P.Bio

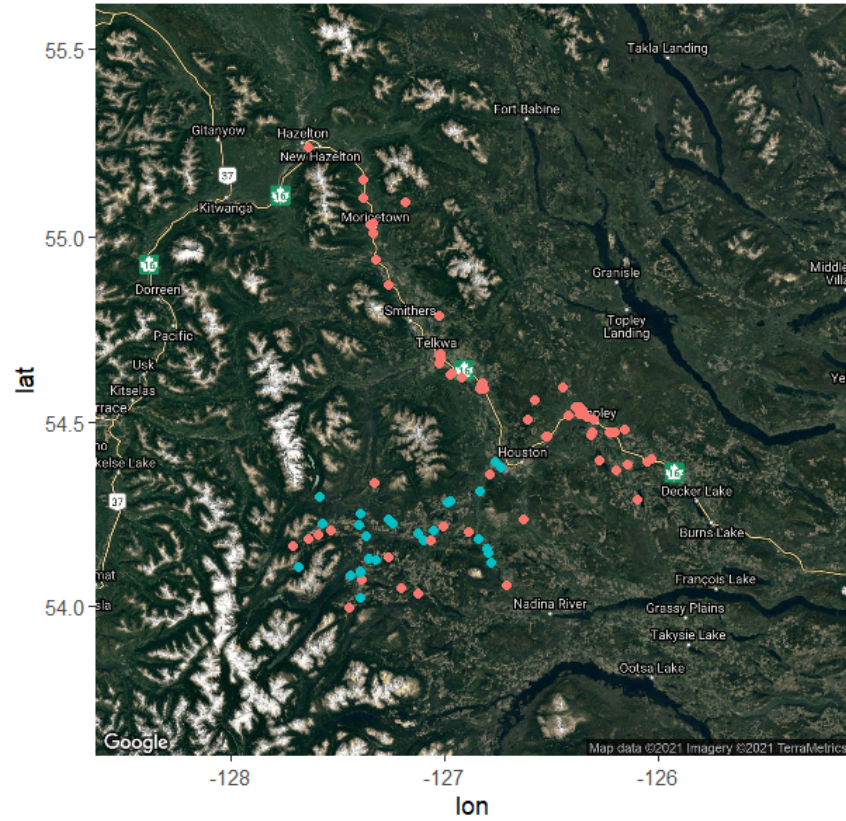


Figure 1. Map of potential sampling areas. High priority sites in red and moderate priority in green.

Table 1: Potential sample locations in the Bulkley River and Morice River watershed groups.

id	Stream	watershed_code_50k	watershed_code_20k	lat	long	sp_upstr	source
3042	Barren Creek	460-704700	400-431358-694148	54.50932	-126.6142	–	2020
3054	–	460-778000-76002	400-431358-763808-706575	54.59474	-126.4478	{RB}	2020
3139	–	460-744900-44300	400-431358-732614-408992	54.56012	-126.5773	–	2020
57944	Toboggan Creek	460-242900	400-431358-237852	54.93977	-127.3183	{CC,CH,CO,CT,DV,KO,L,LSU,MW,OS,PK,RB,SK,ST,ST}	cwf
58159	McDowell Creek	460-435300	400-431358-427289	54.67521	-127.0204	{CO,RB}	2020
123445	Tyhee Creek	460-430900	400-431358-423347	54.68440	-127.0263	{BB,C,CAS,CC,CH,CM,CO,CT,GPW,LSU,MW,N2000,PK,PW,RB,RDC,RSC,SA,S	2020
123446	Tyhee Creek	460-430900	400-431358-423347	54.68713	-127.0218	{BB,C,CAS,CC,CH,CM,CO,CT,GPW,LSU,MW,N2000,PK,PW,RB,RDC,RSC,SA,S	2020
123770	John Brown Creek	460-201500	400-431358-197707	55.01008	-127.3326	{BT,CH,CT,DV,RB}	cwf
123776	Corya Creek	460-185400	400-431358-181726	55.03681	-127.3341	{DV,RB}	cwf
123794	–	460-081700-43900-45900-6600	400-431358-079962-441999-443832-677294-095277-187251-279058	55.09398	-127.1806	{DV}	2020
123795	–	–	400-431358-079962-441999-443832-677294-095277-187251-279058-161086	55.09473	-127.1855	{SA}	2020
124420	Station Creek	460-007300	400-431358-007243	55.24045	-127.6375	{BT,CO,CT,DV,PK,RB,SP}	cwf
124487	Porphyry Creek	460-125600	400-431358-123856	55.15630	-127.3823	{DV,RB}	2020
124500	Helps Creek	460-437000	400-431358-430066	54.65954	-127.0228	{CT,DV,LNC,LSU,RB}	2020
124501	–	460-458800	400-431358-450642	54.63182	-126.9757	{DV,RB}	2020

124504	Coffin Creek	460-472700	400-431358-464077	54.62079	-126.9195	{CSU,CT,DV,LSU,MW,RB,RSC}	2020
195288	Gibson Creek	460-496100-08700	400-431358-485911-075489	54.59190	-126.8188	{CT,RB}	2020
195290	Gibson Creek	460-496100-08700	400-431358-485911-075489	54.59318	-126.8328	{CT,RB}	2020
197360	Riddeck Creek	—	400-431358-585806-266600-990817	54.05795	-126.7093	{LSU,RB}	2020
197365	—	460-600600-23900-32500	400-431358-585806-266600-360267	54.15719	-126.8005	—	morice
197378	—	460-600600-23900-59400	400-431358-585806-266600-641933	54.11705	-126.7802	{DV,LNC,MW,RB}	morice
197379	—	460-600600-23900-13000	400-431358-585806-266600-148535	54.18203	-126.8400	{CO,RB}	morice
197640	—	460-636000-36664	400-431358-623573-329057	54.23614	-126.6322	{RB}	2020
197658	Byman Creek	460-750400	400-431358-737582-024023	54.51881	-126.4222	{CO,CSU,LNC,LSU,RB,RSC,ST}	cwf
197662	Richfield Creek	460-788200	400-431358-773280	54.51552	-126.3365	{CH,CO,LKC,LNC,LSU,RB,SST,ST}	cwf
197663	Johnny David Creek	460-778000	400-431358-763808	54.52188	-126.3696	{RB}	cwf
197664	Barren Creek	460-704700	400-431358-694148	54.46354	-126.5243	{CH,CO,CT,L,RB,SST,ST}	2020
197665	—	4600	400-431358	54.46280	-126.5217	{BB,BMC,BT,CAS,CBA,CC,CH,CO,CSU,CT,DV,L2020, LNC,LSU,LT,LW,MW,NSB	
197667	—	460-458800	400-431358-450642	54.63316	-126.9690	{CT,DV,RB}	2020
197668	Coffin Creek	460-472700	400-431358-464077	54.62098	-126.9193	{CSU,CT,DV,LSU,MW,RB,RSC}	2020
1001800048	Cesford Creek	460-800700	400-431358-785328	54.50844	-126.3062	—	manual
1001800050	Bulkley River	4600	400-431358	54.40228	-126.0352	{BMC,CSU,LKC,LNC,LSU,NSC,RB,RSC}	cwf
1001800050	Bulkley River	4600	400-431358	54.40228	-126.0352	{BMC,CSU,LKC,LNC,LSU,NSC,RB,RSC}	cwf
1001800355	Ailport Creek	460-829700-20600	400-431358-815756	54.47325	-126.2121	{CO,CT,RB}	cwf

1001800356	Watson Creek	460-829700	400-431358-815756-166390	54.47603	-126.2159	{CO, RB}	manual
1001800422	Ailport Creek	460-829700	400-431358-815756	54.47269	-126.2294	{CO, CT, RB}	cwf
1001800752	—	460-834400-26900	400-431358-820938	54.39789	-126.2769	{BB, CSU, LSU, LW, NSC, PCC, RB, RSC}	cwf
1001801122	Ailport Creek	460-829700-20600	400-431358-815756	54.47578	-126.2090	{CO, CT, RB}	cwf
1001801133	—	460-834400	400-431358-820938	54.47401	-126.3094	{BB, CBA, CC, CSU, LKC, LSU, LW, MW, NSB, NSC, PCC, RB, RSC}	cwf
1001801773	Boulder Creek	460-142600	400-431358-140529	55.10651	-127.3787	{BT, DV}	cwf
1001801969	—	460-834400-26900	400-431358-820938	54.46801	-126.3181	{BB, CBA, CC, CSU, LKC, LSU, LW, MW, NSB, NSC, PCC, RB, RSC}	cwf
1001802044	Ailport Creek	460-829700-20600	400-431358-815756	54.48329	-126.1602	{CT, RB}	cwf
1001802088	Robert Hatch Creek	460-788200-05100	400-431358-773280-070140	54.54393	-126.3727	{LSU, RB}	cwf
1001802089	Johnny David Creek	460-778000	400-431358-763808	54.54204	-126.3894	{RB}	cwf
1001802106	Robert Hatch Creek	460-788200-05100	400-431358-773280-070140	54.53465	-126.3576	{LSU, RB}	cwf
1001802760	Deep Creek	460-496100	400-431358-485911	54.60713	-126.8238	{C, CT, DV, RB}	cwf
1001802820	Deep Creek	460-496100	400-431358-485911	54.60520	-126.8274	{C, CH, CM, CO, CT, DV, PK, RB, SA, SK, ST}	cwf
1001803682	Crow Creek	460-917900	400-431358-912160	54.37200	-126.1977	{CAS, LNC, RB, RSC}	cwf
1001804694	—	460-924300-43400	400-431358-918528-419839	54.29223	-126.1020	{RB}	cwf
1001805529	Bulkley River	4600	400-431358	54.39509	-126.0545	{BMC, CAS, CO, CSU, LKC, LNC, LSU, NSC, RB, RSC}	cwf
1001805529	Bulkley River	4600	400-431358	54.39509	-126.0545	{BMC, CAS, CO, CSU, LKC, LNC, LSU, NSC, RB, RSC}	cwf
1001805532	Crow Creek	460-917900	400-431358-912160	54.38684	-126.1460	{CAS, CO, LNC, PL, RB, RSC}	cwf
1001805553	Glass						

Creek	460-242900-51500	400-431358-237852- 484634	54.87356 -127.2593 {CC,CO,CT,DV,KO,LSU,MW,OS,RB,SK,ST} cwf			
1001805665	Canyon Creek	460-325400	400-431358-319200	54.78797	-127.0237	{CO,DV,RB,TR}

cwf							
1014000009	–	–	400-431358-585806-028917	54.38009	-126.7377	{RB}	morice
1014000255	Nado Creek	460-600600-57600	400-431358-585806-637722	54.13167	-127.2638	–	morice
1014000271	–	460-600600-02700	400-431358-585806-032105	54.39277	-126.7668	{EB,RB}	morice
1014000312	–	460-600600-63200-09800	400-431358-585806-700175-118208	54.08456	-127.4368	{DV}	morice
1014000379	–	460-600600-50800-20300	400-431358-585806-558169-195266	54.25210	-127.3909	–	morice
1014000507	–	460-600600-50800-00500-3900	400-431358-585806-558169-005657-383788	54.22661	-127.5698	–	morice
1014000509	–	460-600600-57600-40600	400-431358-585806-637722-297130	54.12580	-127.3180	–	morice
1014000565	–	460-600600-50800-51300	400-431358-585806-558169-493891	54.33777	-127.3300	–	morice
1014000569	–	460-600600-17000-18900-3601	400-431358-585806-190109-194271-156457	54.28134	-126.9841	–	morice
1014000571	–	460-600600-17000-18900	400-431358-585806-190109-194271	54.28765	-126.9767	{DV,RB}	morice
1014000674	–	460-600600-39700	400-431358-585806-439733	54.19924	-127.1256	–	morice
1014000683	–	460-600600-35600-07800	400-431358-585806-397552-070076	54.20767	-127.0517	–	morice
1014000718	–	460-600600-23900-39300	400-431358-585806-266600-435069	54.14672	-126.7971	{DV,RB}	morice
1014000777	–	460-600600-63200	400-431358-585806-700175-297749	54.09047	-127.3922	–	morice
1014000788	–	460-600600-63200-28000-0600	400-431358-585806-700175-279690	54.09355	-127.3954	–	morice
1014000796	Fenton Creek	460-600600-26600	400-431358-585806-299343	54.20165	-126.8913	{CC,CO,DV,RB,SP}	morice
1014000798	Peacock Creek	460-600600-07100	400-431358-585806-071935	54.36059	-126.7921	–	morice
1014000801	–	460-600600-12000	400-431358-585806-132958-039027	54.31559	-126.8358	–	morice
1014000908	–	460-600600-50800-00500-0630	400-431358-585806-558169-005657-004976	54.22097	-127.3994	–	morice
1014000912	–	460-600600-50800-00500-5730	400-431358-585806-558169-005657-566240	54.16261	-127.7088	{DV,RB}	morice

1014000931	–	–	400-431358-585806- 708951-231411-111148	53.99557	-127.4459	{CT,DV}	morice
1014000991	–	–	400-431358-585806- 416313	54.17901	-127.1012	–	morice
1014001002	–	460-600600-52400	400-431358-585806- 576683	54.19188	-127.3659	{CO}	morice
1014001029	–	460-600600-36400- 00800	400-431358-585806- 405041-009425	54.17869	-127.0657	{CT,RB}	morice
1014001080	–	460-600600-64400- 11700-4190	400-431358-585806- 708951-079969- 562197	54.02044	-127.3923	{CT}	morice
1014001161	McBride Creek	460-600600-63200	400-431358-585806- 700175	54.07139	-127.3875	{BB,CAS,CO,CSU,CT,DV,LDC,LSU,LT,LW,MW,PO,RC,RSC,WSU}	morice
1014001195	–	460-600600-57600- 18800	400-431358-585806- 637722-145083	54.12903	-127.3542	–	morice
1014001198	–	460-600600-50800- 00500-7930	400-431358-585806- 558169-005657- 776656	54.10794	-127.6851	{DV}	morice
1014001222	Lamprey Creek	460-600600-36400	400-431358-585806- 405041	54.04738	-127.2029	{CT,DV,LKC,RB,RB/CT}	morice
1014001245	–	460-600600-50800- 00500-5610	400-431358-585806- 558169-005657- 536175	54.18341	-127.6371	{CO,CT,DV,LKC,SP}	morice
1014001247	–	460-600600-50800- 00500-4290	400-431358-585806- 558169-005657- 425535	54.19550	-127.5928	{CO,CT,DV,LKC}	morice
1014001427	–	–	400-431358-585806- 494461-108341- 458581	54.23806	-127.2653	–	morice
1014001534	–	460-600600-50800- 00500-2830-4066-283	400-431358-585806- 558169-005657- 271238-385828- 175163	54.29848	-127.5862	–	morice
1014001542	–	460-600600-50800- 00500-3770	400-431358-585806- 558169-005657- 369090	54.20825	-127.5335	{CT,DV}	morice
1014001563	–	460-600600-33000	400-431358-585806- 366398	54.21925	-127.0061	{CCT,CT,LKC}	morice

1014001769 –		460-600600-44500-38900	400-431358-585806-494461-373723	54.22487	-127.2404 {CT}		morice
1024704566	Corya Creek	460-185400	400-431358-181726	55.03451	-127.3448 {DV,RB}		cwf
1024740003 –		460-600600-36400-64100	400-431358-585806-405041-630893	54.03348	-127.1239 {CAL,LKC,RB,RSC}		morice

Table 2: Fish species recorded in the Bulkley River and Morice River watershed groups.

Scientific Name	Species Name	Species Code	BC List	Provincial FRPA	COSEWIC	SARA	Bulkley	Morice
Catostomus catostomus	Longnose Sucker	LSU	Yellow	–	–	–	Yes	Yes
Catostomus commersonii	White Sucker	WSU	Yellow	–	–	–	Yes	Yes
Catostomus macrocheilus	Largescale Sucker	CSU	Yellow	–	–	–	Yes	Yes
Chrosomus eos	Northern Redbelly Dace	RDC	Yellow	–	–	–	Yes	–
Coregonus clupeaformis	Lake Whitefish	LW	Yellow	–	–	–	Yes	Yes
Cottus aleuticus	Coastrange Sculpin (formerly Aleutian Sculpin)	CAL	Yellow	–	–	–	Yes	Yes
Cottus asper	Prickly Sculpin	CAS	Yellow	–	–	–	Yes	Yes
Couesius plumbeus	Lake Chub	LKC	Yellow	–	DD	–	Yes	Yes
Entosphenus tridentatus	Pacific Lamprey	PL	Yellow	–	–	–	Yes	Yes
Hybognathus hankinsoni	Brassy Minnow	BMC	No Status	–	–	–	Yes	–
Lota lota	Burbot	BB	Yellow	–	–	–	Yes	Yes
Mylocheilus caurinus	Peamouth Chub	PCC	Yellow	–	–	–	Yes	Yes
Oncorhynchus clarkii	Cutthroat Trout	CT	No Status	–	–	–	Yes	Yes
Oncorhynchus clarkii	Cutthroat Trout (Anadromous)	ACT	No Status	–	–	–	Yes	–
Oncorhynchus clarkii clarkii	Coastal Cutthroat Trout	CCT	Blue	–	–	–	Yes	Yes

Oncorhynchus gorboscha	Pink Salmon	PK	Yellow	--	--	--	Yes	Yes
Oncorhynchus keta	Chum Salmon	CM	Yellow	--	--	--	Yes	Yes
Oncorhynchus kisutch	Coho Salmon	CO	Yellow	--	--	--	Yes	Yes
Oncorhynchus mykiss	Rainbow Trout	RB	Yellow	--	--	--	Yes	Yes
Oncorhynchus mykiss	Steelhead	ST	Yellow	--	--	--	Yes	Yes
Oncorhynchus mykiss	Steelhead (Summer-run)	SST	Yellow	--	--	--	Yes	Yes
Oncorhynchus nerka	Kokanee	KO	Yellow	--	--	--	Yes	Yes
Oncorhynchus nerka	Sockeye Salmon	SK	Yellow	--	--	--	Yes	Yes
Oncorhynchus tshawytscha	Chinook Salmon	CH	Yellow	--	--	--	Yes	Yes
Prosopium coulterii	Pygmy Whitefish	PW	Yellow	--	NAR (Nov 2016)	--	Yes	Yes
Prosopium coulterii pop. 3	Giant Pygmy Whitefish	GPW	Yellow	--	--	--	Yes	--
Prosopium williamsoni	Mountain Whitefish	MW	Yellow	--	--	--	Yes	Yes
Ptychocheilus oregonensis	Northern Pikeminnow	NSC	Yellow	--	--	--	Yes	Yes
Pungitius pungitius	Ninespine Stickleback	NSB	Unknown	--	--	--	Yes	--
Rhinichthys cataractae	Longnose Dace	LNC	Yellow	--	--	--	Yes	Yes
Rhinichthys falcatus	Leopard Dace	LDC	Yellow	--	NAR (May 1990)	--	--	Yes
Richardsonius balteatus	Redside Shiner	RSC	Yellow	--	--	--	Yes	Yes
Salvelinus confluentus pop. 26	Bull Trout	BT	Blue	--	--	--	Yes	Yes
Salvelinus fontinalis	Brook Trout	EB	Exotic	--	--	--	Yes	Yes
Salvelinus malma	Dolly Varden	DV	Yellow	--	--	--	Yes	Yes
Salvelinus namaycush	Lake Trout	LT	Yellow	--	--	--	Yes	Yes
--	Arctic Char	AC	--	--	--	--	--	Yes
--	Cutthroat/Rainbow cross	CRS	--	--	--	--	Yes	--
--	Dace (General)	DC	--	--	--	--	--	Yes
--	Lamprey (General)	L	--	--	--	--	Yes	Yes
--	Minnow (General)	C	--	--	--	--	Yes	Yes
--	Salmon (General)	SA	--	--	--	--	Yes	Yes
--	Sculpin (General)	CC	--	--	--	--	Yes	Yes
--	Sucker (General)	SU	--	--	--	--	Yes	Yes
--	Whitefish (General)	WF	--	--	--	--	Yes	Yes