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Safety Plan - bulkley_2021

project_number	project_name
2021-034	hctf-bulkley-fish-passage
2021-040	cwf-bulkley-fish-passage

The latest version of this pdf can be downloaded [here](#).

A zip file which includes kml (google earth) and gpx (garmin) files of the sites to be potentially assessed can be downloaded [here](#). Georeferenced pdf maps can be accessed and downloaded for the [Bulkley here](#) and [Morice here](#).

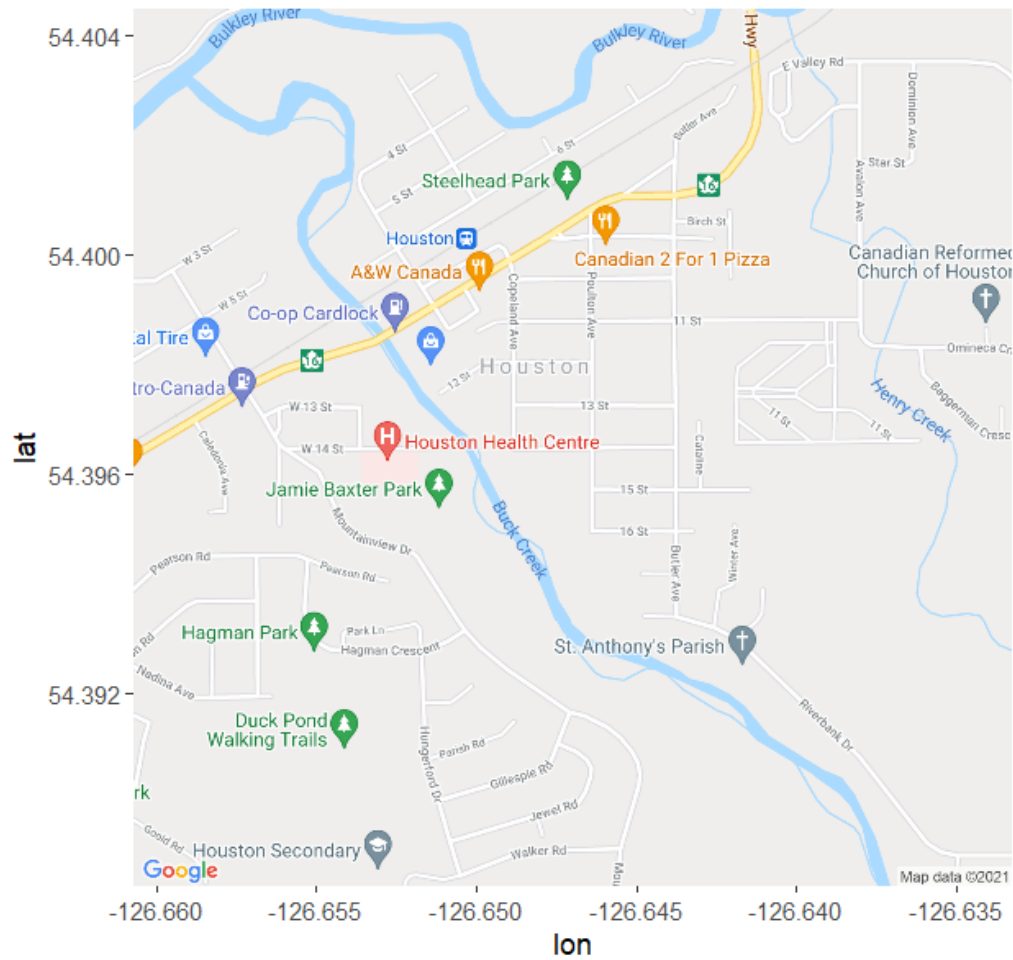
Equipment Checklists

Personal Equipment Checklist	•
GPS	Ski poles
Sunscreen	water
Bugspray	food
Polarized glasses	gloves work
Bear Spray	glasses safety
phone/camera	headlamp
battery pack booster for phone	clinometer

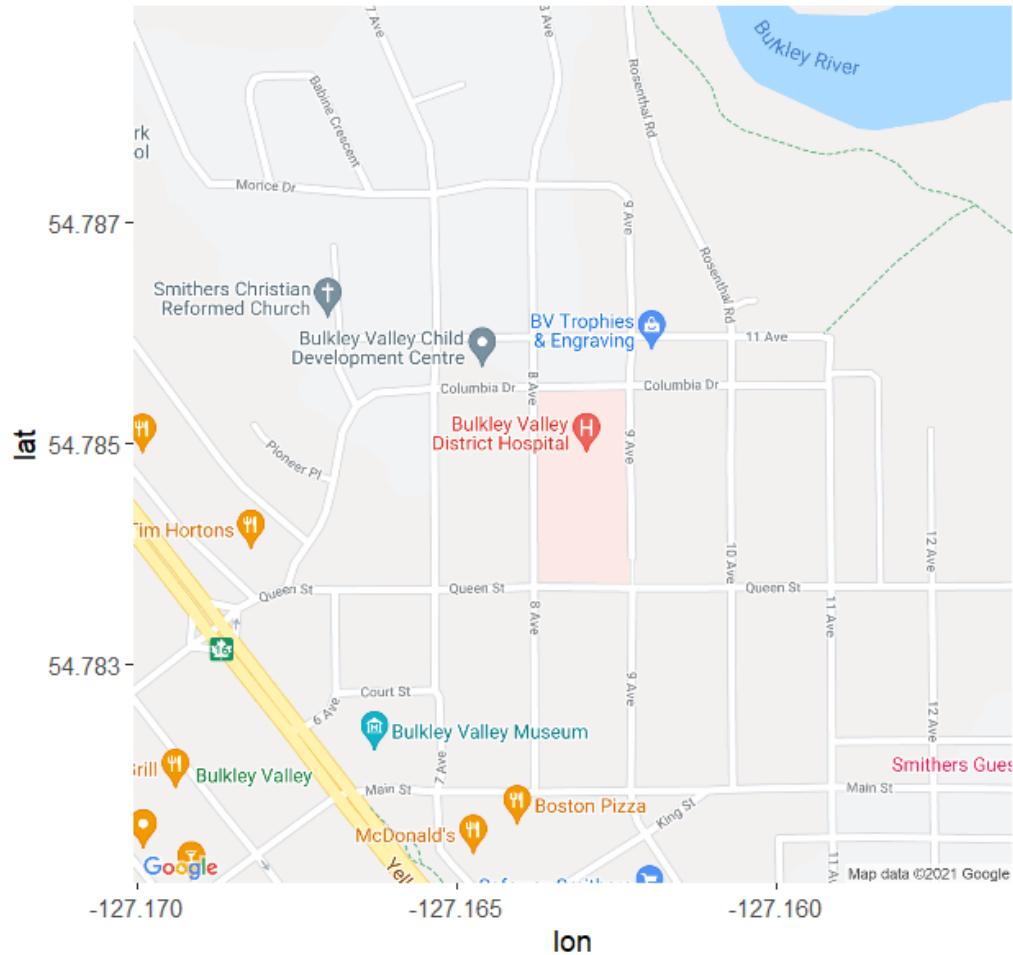
Hat	field vest
first aid kit personal	note book
Waders	Extra clothes
Boots	rain gear

Crew Equipment Checklist	•
Hand saw	Measuring board
Linesman Gloves x 3	Scale
Backroads Mapbook	Permits
Locational maps	Fish ID book
Background Documents	Site Cards / Field Guide
radio road	Minnow Traps
Inreach	Catfood
Field Safety Plan	Flagging
first aid kit level 1	Laptop w/basecamp
First Aid binder stocked	GPS cable
Throw bags	Lazer level
polaski	Assessment cards fish passage
shovel	UAV
fire extinguisher backpack	Flow meter
fire extinguisher pressurized	ATV
Oakton Multimeter	bucket rigid x 2
Backpack Electrofisher	bucket foldable
stop nets x 4	clove oil kit w/ instructions
salt blocks	gloves leather
loose salt	sharpies
dip nets x 2	hand lens
tape measure hand	ATV gas
tape measure eslon	ATV lock
pilon x 2	UAV battery charger

Nearest Hospitals



Houston Health Centre - 3202 14 St, Houston, BC V0J 1Z0 - 250-845-2294



(Smithers) Bulkley Valley District Hospital - 3950 8 Ave, Smithers, BC V0J 2N0 - 250-847-2611

Field Plan

Field work methods will result in products feeding reporting formats such as the [2020 deliverables](#) and will generally follow procedures in:

- [fish passage assessments](#)
- [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.

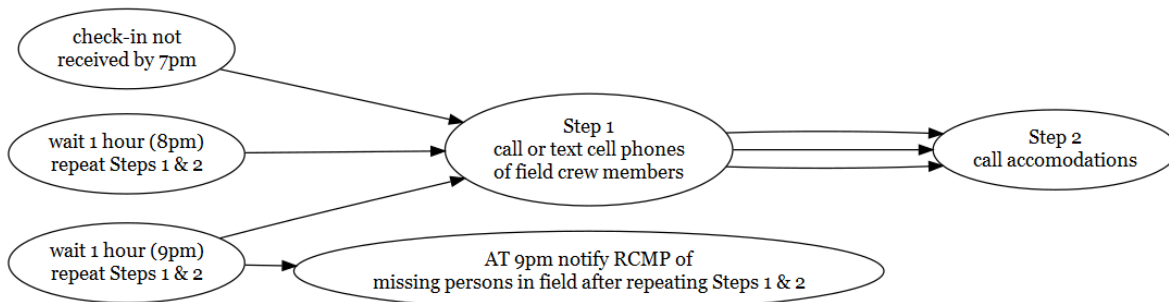
A summary of sites to be potentially assessed is included as Table [1](#) and an overview map of displaying potential sample locations is included as Figure 1.

Check In Procedures

Call, text or inreach Tara Stark (2505059854) each morning to share the plan for the day (i.e. name of roads and sites). Check in time is before 7 pm each evening although we regularly check in throughout the day (ex. at arrival to site, 1pm and 4pm) on the inreach or by text and report position/provide updates.

Procedures for Failed Check-In - for Check in person

Procedures are summarized in the following Figure. If phone call or inReach check-in is not received by 7pm send text to inreach units, call or text cell phones of field crew members. If no response please call accommodations then personal emergency contacts to see if they have heard anything. Wait 1 hour and text inreach, text or call cell phones and personal emergency contacts and accomodations again. Repeat after 2 hours (9 pm) - if no response then notify the RCMP of a missing persons in field.



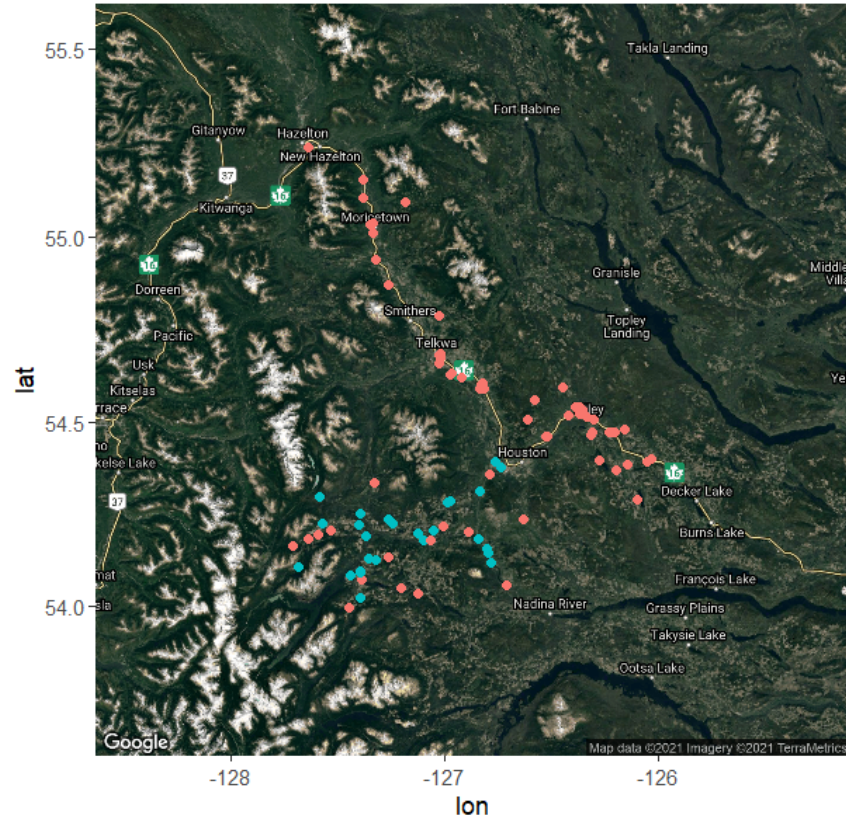


Figure 1. Map of potential sampling areas. High priority sites in red and moderate priority in green.

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

id_xing	Stream	east	north	source	id_map	comments	sp_upstr
3042	Barren Creek	654455.6	6042810	2020	093L.114	–	–
3054	–	664883.5	6052690	2020	093L.114	–	{RB}
3139	–	656650.7	6048543	2020	093L.114	–	–
57944	Toboggan Creek	607729.0	6089383	cwf	093L.122	–	{CC,CH,CO,CT,DV,KO,L,LSU,MW,OS,PK,RB,SK,SST,ST}
58159	McDowell Creek	627642.5	6060449	2020	093L.118	–	{CO,RB}
123445	Tyhee Creek	627236.1	6061461	2020	093L.118	–	{BB,C,CAS,CC,CH,CM,CO,CT,GPW,LSU,MW,NSC,PCC,PK,PW,RB,RDC,RS}
123446	Tyhee Creek	627516.1	6061772	2020	093L.118	–	{BB,C,CAS,CC,CH,CM,CO,CT,GPW,LSU,MW,NSC,PCC,PK,PW,RB,RDC,RS}
123770	John Brown Creek	606626.5	6097185	cwf	093M.102	–	{BT,CH,CT,DV,RB}
123776	Corya Creek	606462.4	6100156	cwf	093M.102	–	{DV,RB}
123794	–	616107.8	6106762	2020	093M.103	–	{DV}
123795	–	615790.5	6106837	2020	093M.103	–	{SA}
124420	Station Creek	586632.3	6122395	cwf	093M.106	–	{BT,CO,CT,DV,PK,RB,SP}
124487	Porphyry Creek	603072.9	6113379	2020	093M.102	–	{DV,RB}
124500	Helps Creek	627540.8	6058702	2020	093L.118	–	{CT,DV,LNC,LSU,RB}
124501	–	630668.1	6055705	2020	093L.118	–	{DV,RB}
124504	Coffin Creek	634329.8	6054584	2020	093L.118	–	{CSU,CT,DV,LSU,MW,RB,RSC}
195288	Gibson Creek	640930.0	6051567	2020	093L.113	–	{CT,RB}
195290	Gibson Creek	640022.2	6051682	2020	093L.113	–	{CT,RB}
197360	Riddeck Creek	649932.4	5992396	2020	093L.104	–	{LSU,RB}
197365	–	643620.5	6003246	morice	093L.103	Smaller channel width.	–
197378	–	645084.9	5998822	morice	093L.104	Large wetland complex upstream.	{DV,LNC,MW,RB}
197379	–	640960.8	6005930	morice	093L.103	Less than 1km of potential habitat but very large channel width.	{CO,RB}
197640	–	654312.0	6012383	2020	093L.109	–	{RB}
197658	Byman Creek	666846.8	6044305	cwf	093L.114	–	{CO,CSU,LNC,LSU,RB,RSC,ST}
197662	Richfield Creek	672404.3	6044146	cwf	093L.115	–	{CH,CO,LKC,LNC,LSU,RB,SST,ST}
197663	Johnny David Creek	670240.6	6044772	cwf	093L.115	–	{RB}
197664	Barren Creek	660454.7	6037919	2020	093L.114	–	{CH,CO,CT,L,RB,SST,ST}

197665	–	660628.3	6037843	2020	093L.114	–	{BB,BMC,BT,CAS,CBA,CC,CH,CO,CSU,CT,DV,L,LKC,LNC,LSU,LT,LW,MW,N
197667	–	631092.4	6055867	2020	093L.118	–	{CT,DV,RB}
197668	Coffin Creek	634342.0	6054605	2020	093L.118	–	{CSU,CT,DV,LSU,MW,RB,RSC}
1001800048	Cesford Creek	674397.1	6043433	manual	093L.115	–	–
1001800050	Bulkley River	692434.6	6032331	cwf	093L.115	–	{BMC,CSU,LKC,LNC,LSU,NSC,RB,RSC}
1001800050	Bulkley River	692434.6	6032331	cwf	093L.115	–	{BMC,CSU,LKC,LNC,LSU,NSC,RB,RSC}
1001800355	Ailport Creek	680644.8	6039756	cwf	093L.115	–	{CO,CT,RB}
1001800356	Watson Creek	680383.2	6040056	manual	093L.115	–	{CO,RB}
1001800422	Ailport Creek	679525.4	6039649	cwf	093L.115	–	{CO,CT,RB}
1001800752	–	676767.0	6031209	cwf	093L.110	–	{BB,CSU,LSU,LW,NSC,PCC,RB,RSC}
1001801122	Ailport Creek	680832.0	6040045	cwf	093L.115	–	{CO,CT,RB}
1001801133	–	674339.1	6039595	cwf	093L.115	–	{BB,CBA,CC,CSU,LKC,LSU,LW,MW,NSB,NSC,PCC,RB,RSC}
1001801773	Boulder Creek	603432.1	6107844	cwf	093M.102	–	{BT,DV}
1001801969	–	673797.1	6038906	cwf	093L.115	–	{BB,CBA,CC,CSU,LKC,LSU,LW,MW,NSB,NSC,PCC,RB,RSC}
1001802044	Ailport Creek	683959.0	6041007	cwf	093L.115	–	{CT,RB}
1001802088	Robert Hatch Creek	669947.0	6047217	cwf	093L.115	–	{LSU,RB}
1001802089	Johnny David Creek	668873.0	6046967	cwf	093L.115	–	{RB}
1001802106	Robert Hatch Creek	670963.0	6046221	cwf	093L.115	–	{LSU,RB}
1001802760	Deep Creek	640551.2	6053250	cwf	093L.118	–	{C,CT,DV,RB}
1001802820	Deep Creek	640327.1	6053029	cwf	093L.118	–	{C,CH,CM,CO,CT,DV,PK,RB,SA,SK,ST}
1001803682	Crow Creek	682026.1	6028531	cwf	093L.110	–	{CAS,LNC,RB,RSC}
1001804694	–	688604.0	6019911	cwf	093L.110	–	{RB}
1001805529	Bulkley River	691218.3	6031478	cwf	093L.110	–	{BMC,CAS,CO,CSU,LKC,LNC,LSU,NSC,RB,RSC}
1001805529	Bulkley River	691218.3	6031478	cwf	093L.110	–	{BMC,CAS,CO,CSU,LKC,LNC,LSU,NSC,RB,RSC}
1001805532	Crow Creek	685314.1	6030317	cwf	093L.110	–	{CAS,CO,LNC,PL,RB,RSC}
1001805553	Glass Creek	611695.8	6082109	cwf	093L.122	–	{CC,CO,CT,DV,KO,LSU,MW,OS,RB,SK,ST}
1001805665	Canyon Creek	627078.8	6072988	cwf	093L.118	–	{CO,DV,RB,TR}
1014000009	–	646923.3	6028170	morice	093L.109	In Houston with rail upstream. Maybe very modified.	{RB}
1014000255	Nado Creek	613441.0	5999564	morice	093L.102	CBR - 2.2m culvert.	–
1014000271	–	644993.9	6029521	morice	093L.109	Just below Klinger Lake.	

Good for coho? {EB,RB}

1014000312	–	602253.5	5994059	morice	093L.102	Smaller stream potentially suitable for upstream migrating juvenile salmon. DV upstream.	{DV}
1014000379	–	604834.9	6012766	morice	093L.107	Cascade noted adjacent to crossing but no FISS sample sites. Coho in mainstem Thautil nearby. Stream splits to two tribs just upstream.	–
1014000507	–	593237.3	6009679	morice	093L.107	Low gradient with wetlands upstream and CO,CT and others downstream.	–
1014000509	–	609917.9	5998826	morice	093L.102	Channel width 1.5 m downstream at FISS site.	–
1014000565	–	608574.3	6022389	morice	093L.107	Stealhead and bulltrout nearby	–
1014000569	–	631242.7	6016700	morice	093L.108	FISS site downstream does not mention intermittent as is FWA tag.	–
1014000571	–	631704.2	6017415	morice	093L.108	Lots of low gradient habitat but split into many tribs.	{DV,RB}
1014000674	–	622270.8	6007312	morice	093L.103	Coho downstream.	–
1014000683	–	627065.0	6008380	morice	093L.108	Top end of lake.	–
1014000718	–	643882.0	6002088	morice	093L.104	Models as over 2m wide and has fish obs upstream.	{DV,RB}
1014000777	–	605157.0	5994783	morice	093L.102	Two small tribs upstream.	–
1014000788	–	604940.0	5995120	morice	093L.102	Steeper system.	–
1014000796	Fenton Creek	637544.0	6008011	morice	093L.108	Major culvert (5m wide).	{CC,CO,DV,RB,SP}
1014000798	Peacock Creek	643460.3	6025890	morice	093L.109	Fish way noted as having issues in Smith 2018.	–
1014000801	–	640778.1	6020795	morice	093L.108	Quite steep.	–
1014000908	–	604357.3	6009291	morice	093L.107	Steelhead and coho points just downstream.	–
1014000912	–	584302.5	6002385	morice	093L.101	Good sized lake upstream. Road not visible in aerial imagery. Follow up with foresters before heading out in field.	{DV,RB}
1014000931	–	601878.2	5984146	morice	093E.122	Very close to Naninka.	{CT,DV}
1014000991	–	623923.0	6005104	morice	093L.103	Steeper stream.	–

1014001002	–	606615.0	6006104	morice	093L.102	Smaller stream with coho upstream of crossing.	{CO}
1014001029	–	626238.6	6005131	morice	093L.103	Very close to Morice mainstem.	{CT,RB}
1014001080	–	605331.0	5986992	morice	093L.102	Smaller potential high value habitat gain but Nanika in Nanika system so in high value watershed.	{CT}
1014001161	McBride Creek	605511.0	5992667	morice	093L.102	CBR indicates "major culvert" at 4.5m width.	{BB,CAS,CO,CSU,CT,DV,LDC,LSU,LT,LW,MW,PCC,RB,RSC,WSU}
1014001195	–	607542.6	5999130	morice	093L.102	Low gradient and close to mainstem but low elevation watershed.	–
1014001198	–	585968.3	5996331	morice	093L.101	Models as a bit larger of a channel with 0.75km <5% and DV upstream.	{DV}
1014001222	Lamprey Creek	617661.2	5990287	morice	093L.102	Large lake headed system.	{CT,DV,LKC,RB,RB/CT}
1014001245	–	588941.5	6004786	morice	093L.101	Coho, steelhead and other species upstream.	{CO,CT,DV,LKC,SP}
1014001247	–	591802.9	6006187	morice	093L.102	Multiple species (including CO) noted upstream with lots of modelled habitat.	{CO,CT,DV,LKC}
1014001427	–	613053.0	6011398	morice	093L.107	Potentially fish bearing according to http://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=50411 .	–
1014001534	–	592004.9	6017653	morice	093L.107	Channel models as small. Flows into lake.	–
1014001542	–	595641.5	6007685	morice	093L.107	Many fish points upstream and downstream. Low grades.	{CT,DV}
1014001563	–	630001.2	6009752	morice	093L.108	Lots of low gradient and lake upsteam.	{CCT,CT,LKC}
1014001769	–	614711.5	6009971	morice	093L.107	Appears of highest value for rearing.	{CT}
1024704566	Corya Creek	605785.6	6099884	cwf	093M.102	–	{DV,RB}

1024740003 – 622870.2 5988875 morice 093L.103 Lots of lake upstream. {CAL,LKC,RB,RSC}
