new graph environment

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Safety Plan - 2022-050-sern-parsnip-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 here.

Accomodations

Al and Mateo - 5100 Nightingale Road, Prince George, BC, V2K 5V9

Table 1: Crew members details and emergency contacts

name	email	phone	satellite	emerg_name	emerg_email	emerg_phone
Allan Irvine	al@newgraphenvironment.com	250-777-1518	allanirvine75@inreach.garmin.com	Tara Stark	tara.stark@gmail.com	250-505-9854
Mateo Winterscheidt	matwint45@gmail.com	672-998-5293	807-790-7943	Felicitas Winterscheidt	fhwinterscheidt@gmail.com	519-636-5251
Nathan Prince	tlucoordinator@mlib.ca	250-617-5930	–	–	–	–
Erasn Spence	espence@mlib.ca	–	–	–	–	–

Equipment Checklists

Personal Equipment Checklist	•
GPS	food
Suncreen	gloves work
Bugspray	glasses safety
Polarized glasses	headlamp
Bear Spray	hard hat
phone/camera	steel toed boots
battery pack booster for phone	clinometer
Hat	field vest
first aid kit personal	note book
Waders	Extra clothes
Boots	rain gear
Ski poles	hand lens
water	–

Crew Equipment Checklist	•
Hand saw	pilon x 2
Linesman Gloves x 3	Measuring board
Backroads Mapbook	Scale
Locational maps	Permits
Background Documents	Fish ID book
radio road	Site Cards / Field Guide
Inreach	Minnow Traps
Field Safety Plan	Catfood
first aid kit level 1	Flagging
First Aid binder stocked	Laptop w/basecamp
Throw bags	GPS cable
polaski	Lazer level
shovel	Assessment cards fish passage
fire extinguisher backpack	UAV

Crew Equipment Checklist	•
fire extinguisher pressurized	Flow meter
Battery booster	ATV
Compressor 12V	bucket rigid x 2
Rubber boots (no-slip soles)	bucket foldable
Small BT Speaker (for bears)	clove oil kit w/ instructions
Oakton Multimeter	gloves leather
Backpack Electrofisher	sharpies
stop nets x 4	ATV gas
salt blocks	ATV lock
loose salt	UAV battery charger
dip nets x 2	wader disinfectant kit
tape measure hand	GPS batteries
tape measure eslon	ATV helmets

Nearest Hospitals

University Hospital of Northern British Columbia - 1475 Edmonton St., Prince George, BC V2M 1S2 - 250-565-2000

Field Plan

Field work methods will result in products feeding reporting formats such as the 2019 deliverables and will generally follow procedures in:

- fish passage assessments (MoE 2011)
- habitat confirmations (Fish Passage Technical Working Group 2011).

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 2 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.

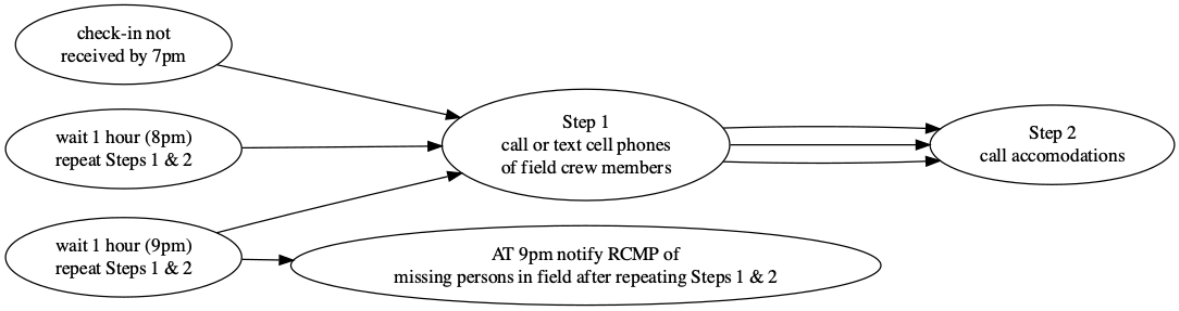

Table 2: Potential sample locations.

id	Stream	utm_easting	utm_northing	comments
6731	UNN trib of Anzac R.	532823	6072543	Failed - drop is too high - Beaver blockage in culvert - water flowing over the road
6745	UNN trib of Anzac			

id	Stream	utm_easting	utm_northing	comments
R.	533992	6076165	Fails due to slope, embedment, however width is okay, don't think this is a high priority for fixing —– downstream too bushy to photograph, lots of overhanging osier. Upstream has high banks (60cm to water surface). Culvert has scattered rocks and some silt in it.	
6746	UNN trib of Anzac R.	536670	6076366	Failed - on constriction - baffled culvert - Fish at culvert - inlet pool depth 8cm - some introduced materials downstream natural weir
6824	–	536665	6076345	Fail due to stream constriction, slope, embedment —– downstream has lots of blockages (trees down) upstream very thick/ deep silt/muck
6828	Crocker Creek	548810	6084301	Fail, SCW —– think these culverts are only here to prevent the road from washing out when river is high, appears to be a side channel from the river. Completely dry at the moment but looks like high flows come through. Is it really necessary to establish fish passage here?? 20 m upstream creek comes in and flows opposite direction back to river.
57606	Tributary to Parsnip River	520148	6084917	Road slumping at inlet, and outlet is a barrier
57620	Tributary to Tacheeda Lake	526540	6055442	Fry observed upstream, may be resident population. Fish sampling recommended to confirm barrier status
57621	Creek from Fishhook Lake to Tacheeda Lakes	526546	6057751	3 culverts.

id	Stream	utm_easting	utm_northing	comments
downstream. Rainbow trout captured upstream and burbot and rainbow trout captured downstream.				
57687	tributary to Parsnip River	522572	6083674	Good habitat. Surveyed upstream for 680 m. Culvert is under CN railway but Chuchinka-Colbourne FSR located 10 m dowstream also has barrier crossing (PSCIS 125345). Abundant gravels throughout with deep pools suitable for overwintering. No barriers. Small beaver dam located 180 m upstream of crossing.
57689	Tributary to main creek in 13045 watershed	552647	6040957	–
57690	tributary to Wichcika Creek	555035	6046150	Moderate priority for rehabilitation. Surveyed upstream for 650 m. Large stream with many deep pools suitable for overwintering and rearing. Multiple rock chutes up to 1 m high in surveyed area with 1.4 m falls at top end of site. Rainbow trout (120 mm) observed approximately 60 m upstream of culvert. Some gravels present suitable for spawning . Falls only potentially passable for adfluvial bull trout and migration to this area seems unlikely given plateau topography and wetland character present upstream (based on google earth review). Downstream surveyed to Wichcika Creek.
57695	tributary to Wichcika Creek	563248	6038802	Moderate priority for rehabilitation. Surveyed upstream for 920 m. Larger stream wth pockets of gravels, some shallow pools and some widely spaced large woody devris. No bariers observed besides debris jams of 50 - 100cm. These obstructions are non-permanent and likley navigateable at different flows and by large fish. Surveyed downstream for 520 m to beyond historic observation of bull trout.
57696	Unnamed tributary to Wichcika Creek	564169	6037942	Moderate priority for rehabilitation. Some occasional pools. Frequent steps 30 - 50 cm due to large woody debris jams. Mature spreuce forest. Cascade at top end of site not passable by any species or life stage. Good sized stream with som intermittent small paches of gravel suitable forspawning. Overall nice stream but unlikely overly important to adfluvial bull trout populations due to limited spawning habitat. Too steep for rainbow access due to rock drop below the crossing.
57701	Tributary to Parsnip River	559948	6046841	Channel is mainly fines, with lots of pools and debris for shelter

id	Stream	utm_easting	utm_northing	comments
57718	Tacheeda Creek	532021	6065509	Wide creek upstream and downstream. Fry spotted at outlet. Beaved damn inside left pipe should be removed. Backwatering and/or baffle placement recommended.
57746	Tributary to Parsnip River	527229	6077124	Culvert is damaged, and should be replaced with OBS
57751	Tributary to 13013 Creek	541116	6058803	Embed culvert if proven a barrier and fish present
124954	Tributary to Destilida Creek	534056	6079308	Beaver guards. Photos 79-83.
124963	Tributary to Parsnip River	559940	6046827	–
124998	Tributary to Parsnip River	577502	6038240	Two culverts.
125000	tributary to Parsnip River	577541	6038215	High priority candidate for restoration. Good habitat. Surveyed upstream continuosly for 350 m to beaver influenced wetland area where walking became difficult. Then stream was visited again upstream at 1.6 km upstream from crossing then again at approximately 2.5 km upstream of crossing. Undercut banks provide areas of deep cover ad Large woody debris is scattered througout. Overhanging vegetationalso provides cover througout. Pools observed were somewhat shallow but were preseetevery 20 - 30 m or so. Minnowtrapping conducted upstream and downstream of crossing. Electrofishing conducted downstream of the crossing. No fish captured upstream of the culvert. First beaver dam located approximately 330m upstream of the culvert.
125098	tributary to Parsnip River	582901	6035079	Small stream with low flows. Fish records indicate fish observed upstream.
125128	tributary to Missinka River	583455	6051820	Beaver influenced extensive wetland area located upstream for as far as visible from 50 m upstream of culvert. 5 m high cascde (10 m long at 50% gradient) is located approximately 5 m below the culvert. Below this is a rock chute for 12 m (30%). Culvert is potentially accessible

id	Stream	utm_easting	utm_northing	comments
only to adult adfluvial bull trout however it is unlikely that they would utilize this stream due to the wetland type habitat present upstream of the culvert.				
125149	Tributary to the Missinka River	572048	6050308	–
125170	Tributary to the Missinka River	573090	6051394	Km Markers are from split to the South Missinka as no road markers present. Fry observed in outlet pool. Twin culverts.
125175	Unnamed tributary to Missinka River	571792	6051993	Moderate priority for rehabilitation. Surveyed upstream for 565 m. At approximately 300m upstream of culvert stream spilts into three tributaries. Western most tributary has the most flow. Abundant gravels. Very overwintering habitat available if fish passage was restored at the crossing due to lack of large woody debris and deep pools.
125179	Unnamed tributary to Missinka River	570307	6052836	High priority candidate for restoration with habitat for rearing and overwintering upstream. Surveyed upstream for 520 m with no barriers to fish passage present. Bull trout and rainbow recorded upstream. Some deep pools for overwintering and rearing. Large woody debris and undercut banks throughout. Sections of gravel suitable for spawning. Good flow. Surveyed downstream for 360 m. No barriers observed and none likely downstream of surveyed section due to gradients. Abundant large woody debris and gravels suitable for spawning.
125180	tributary to Missinka River	569664	6053048	High priority candidate for restoration. Good habitat. Surveyed upstream of PSCIS crossing 125186 for a distance of 515 m. Good flow and abundant cover. Large woody debris and pools throughout. Frequet pockets of gravel suitable for spawning. Good candidate.
125186	tributary to Missinka River	565429	6052678	High priority candidate for restoration. Good habitat. Surveyed upstream of PSCIS crossing 125186 for a distance of 515 m. Good flow and abundant cover. Large woody debris and pools throughout. Frequet pockets of gravel suitable for spawning. Good candidate.
125194	Tributary to the			

id	Stream	utm_easting	utm_northing	comments
Missinka River	563293	6050578	High rearing habitat, moderate spawning.	
125196	Tributary to Table River	561633	6069552	Dry Bed. 2 Culverts
125206	Tributary to Table River	557237	6068504	Dry bed.
125207	Tributary to Table River	557042	6068959	–
125208	Tributary to Table River	557268	6068983	2 culverts w/ one flowing.
125231	tributary to Table River	549962	6065140	High priority candidate for restoration. Good habitat. Surveyed for 600m to new bridge (modelled crossing 16603641). Some deep pools and bounlders, udercut banks, gravels throughout. Abundant large wody debris throughout. Some debris steps from 30 - 70 cms high. No barriers. Rainbow trout known upstream (FIDQ 2020). Good candidate for rehabilitation.
125243	Tributary to Table River	547236	6063534	–
125247	tributary to Parsnip River	542924	6062804	High priority candidate for restoration. Surveyed to 700 m upstream. Good habitat to where beaver dammed area begins at 700m. Abundant undercut banks, overhanging vegetation, large woody debris and gravels. Gradients decreasing at top end of the site due to historic beaver dam. Railway culvert (modelled crossing 16603287) is located approximately 200 m upstream and is barrier (very long, unembedded and 3%).
125251	Tributary to Parsnip River	539295	6063849	Culvert completely blocked and submerged.
125252	Tributary to Parsnip River	538484	6063864	Dry bed. Erosion above culvert.
125253	tributary to			

id	Stream	utm_easting	utm_northing	comments
	Parsnip River	537736	6064729	High priority for restoration. Surveyed upstream for 800 m. Stable channel with large woody debris throughout. Railway crossing culvert (modelled ID 16603267) is located 60 m downstream of the crossing and is a barrier. Overhanging vegetation and undercut banks present for cover. Historic beaver impounded area at top of site.
125254	Tributary to Parsnip River	537225	6065150	Culvert completely submerged.
125257	Tributary to Parsnip River	536519	6065454	Dry bed.
125261	Fern Creek	534600	6067770	Two additional culverts at 0.9m diameter.
125284	Tributary to Anzac River	549043	6085540	Dry bed.
125341	Tributary to Parsnip River	527220	6077115	Outlet and inlet damaged.
125345	tributary to Parsnip River	522556	6083663	High priority candidate for restoration. Good habitat. Surveyed upstream for 680 m. Culvert is under the Chuchinka-Colbourne FSR but CN railway located 10 m upstream also has barrier crossing (PSCIS 57687). Abundant gravels throughout with deep pools suitable for overwintering. No barriers. Small beaver dam located 180 m upstream of crossing.
125353	Tributary to Parsnip River	533241	6067630	2 culverts.
125403	tributary to			

id	Stream	utm_easting	utm_northing	comments
Parsnip River	520137	6084911	Low priority for rehabilitation. Surveyed upstream for approximately 350 m. Beaver influenced wetland for first 50 m then small stream with deep polls and undercut banks, overhanging vegetation. Large wetland upstream of beaver dam located at approx. 200m from crossing. Fixing culvert provides access to plateau wetland areas and not a priority.	
125428	Tributary to Wichcika Creek	554092	6042229	NCD.
125431	Tributary to Fishhook Lake	527694	6055196	–
197482	Unnamed tributary to Parsnip River	542873	6062983	Good habitat. Surveyed downstream for 250 m to beaver dammed area on floodplain of Parsnip River.
197486	Tributary to Parsnip River	517742	6090303	Small stream. A few gravels present. Abundant small woody debris and overhanging vegetation for cover. Frog in outlet pool.
197492	Tributary to Parsnip River	537693	6064700	Habitat confirmation completed for upstream PSCIS crossing 125253. See https://newgraphenvironment.github.io/Parsnip_Fish_Passage/03_Parsnip_report_125253.html
197496	Tributary to Parsnip River	539306	6063899	Fully backwatered due to beaver dam located downstream of the FSR. Wetland located upstream.
197497	Trib to Tacheeda Lk	529545	6062716	Dry stream with no visible channel.
197500	Tributary to Parsnip River	578675	6037366	Shallow stagnant water. Fine substrate. Length of culvert estimated.

References

Fish Passage Technical Working Group. 2011. “A Checklist for Fish Habitat Confirmation Prior to the Rehabilitation Fo a Stream Crossing.”https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/land-based-investment/forests-for-tomorrow/checklist-for-fish-habitat-confirmation-201112.pdf.

MoE. 2011. “Field Assessment for Determining Fish Passage Status of Closed Bottom Structures.”BC Ministry of Environment (MoE). https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/land-based-investment/forests-for-tomorrow/field-assessment-for-determining-fish-passage-status-of-cbs.pdf.