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Safety Plan - 2024-073-sern-peace-fish-passage

The latest version of this pdf can be downloaded here.

The main goal of the fieldwork is baseline monitoring using electrofishing with crews from McLeod Lake. We will be at the six permitted electrofishing sites most of the time. Additionally, we may conduct fish passage (Phase 1) and habitat confirmation (Phase 2) assessments in the Carp and Crooked watershed groups as well. A summary of the potential sites for fish passage assessments, habitat confirmation assessments, and electrofishing is provided in Table 5, with kml (google earth) and gpx (garmin) files downloadable here.

Georeferenced pdf maps can be accessed and downloaded here.

New Graph Employee Information

Al Irvine
Vehicle: 2013 Toyota Tundra black w/flatdeck and yellow can-am quad
Accommodation: 3396 Rosia Road, Prince George, BC V2K 4Y5

Lucy Schick
Vehicle: 2006 Pontiac Vibe red
Accommodation: 6596 Dawson Road, Prince George, BC V2K 5Y4

Crew Members

New Graph Employees Al Irvine and Lucy Schick will be joined by crews from McLoed Lake. All crew member information and emergency contacts can be found below.

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	must be contacted by inreach first. Cannot cold call	Tara Stark	tara@newgraphenvironment.com	250-505-9854
Jillian Isadore	jillianmarie457@icloud.com	778-349-8471	–	Eugenia Isadore	–	250-644-0418
Tristan Salonas	–	–	–	–	–	–
Bianca Prince	biancaprince@hotmail.com	250-730-1480	–	Nathan Prince	–	250-617-5930
John Demont	justjohndumont@icloud.com	250-720-9700	–	Nathan Prince	–	250-617-5930
Lucy Schick	lucy@newgraphenvironment.com	604-741-2032	807-790-9843	Sa Boothroyd	saboothroyd@gmail.com	604-740-7199

Equipment Checklists

PLEASE NOTE THAT EQUIPMENT CHECKLISTS ARE PROVIDED FOR THE OVERALL TEAM AND NOT ALL CREWS ARE REQUIRED TO HAVE ALL EQUIPMENT. ALTHOUGH ENCOURAGED FOR ALL ENVIRONMENTAL SCIENCE TECHNICIANS AND MONITORS TO HAVE THE PERSONAL EQUIPMENT NEW GRAPH ENVIRONMENT WILL HAVE ALL EQUIPMENT NECESSARY TO COMPLETE THE WORK.

MINIMUM REQUIREMENTS FOR EACH CREW MEMBER INCLUDES GOOD QUALITY AND APPROPRIATELY FITTING LIGHT WEIGHT WADERS AND SEPERATE WADING BOOTS (RUBBER SOLED), HAT, WATER AND A FOOD.

MINIMUM REQUIREMENTS FOR FIELD TRUCKS INCLUDE A QUALITY RADIO APPROPRIATE FOR FOREST SERVICE ROADS, OFF-ROAD CAPABLE TIRES IN GOOD CONDITION, SPARE TIRE, JACK, AND TOOLS.

Table 2: Personal Equipment Checklist - SEE NOTE ABOVE FOR MINIMUM REQUIREMENTS

Equipment	•
GPS	water
Suncreen	food
Bugspray	gloves work
Polarized glasses	headlamp
Bear Spray	clinometer
phone/camera	field vest (surveyors)
battery pack booster for phone	note book
Hat	Extra clothes
first aid kit personal	rain gear
Waders	hand lens
Wading Boots (Rubber-soled only)	range finder
Ski poles	–

Table 3: Crew Equipment Checklist - SEE NOTE ABOVE FOR MINIMUM REQUIREMENTS

Crew Equipment Checklist	•
glasses safety	tape measure eslon
Hand saw	pilon x 2
Linesman Gloves x 3	Measuring board
Backroads Mapbook	Scale
Locational maps	Permits
Background Documents	Fish ID book

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

Table 4: Truck Equipment Checklist - SEE NOTE ABOVE FOR MINIMUM REQUIREMENTS

Equipment	•
Hand saw	truck/car jack

Equipment	•
shovel	pilon x 2
fire extinguisher backpack	Tow strap
truck tow rope	–

Nearest Hospitals

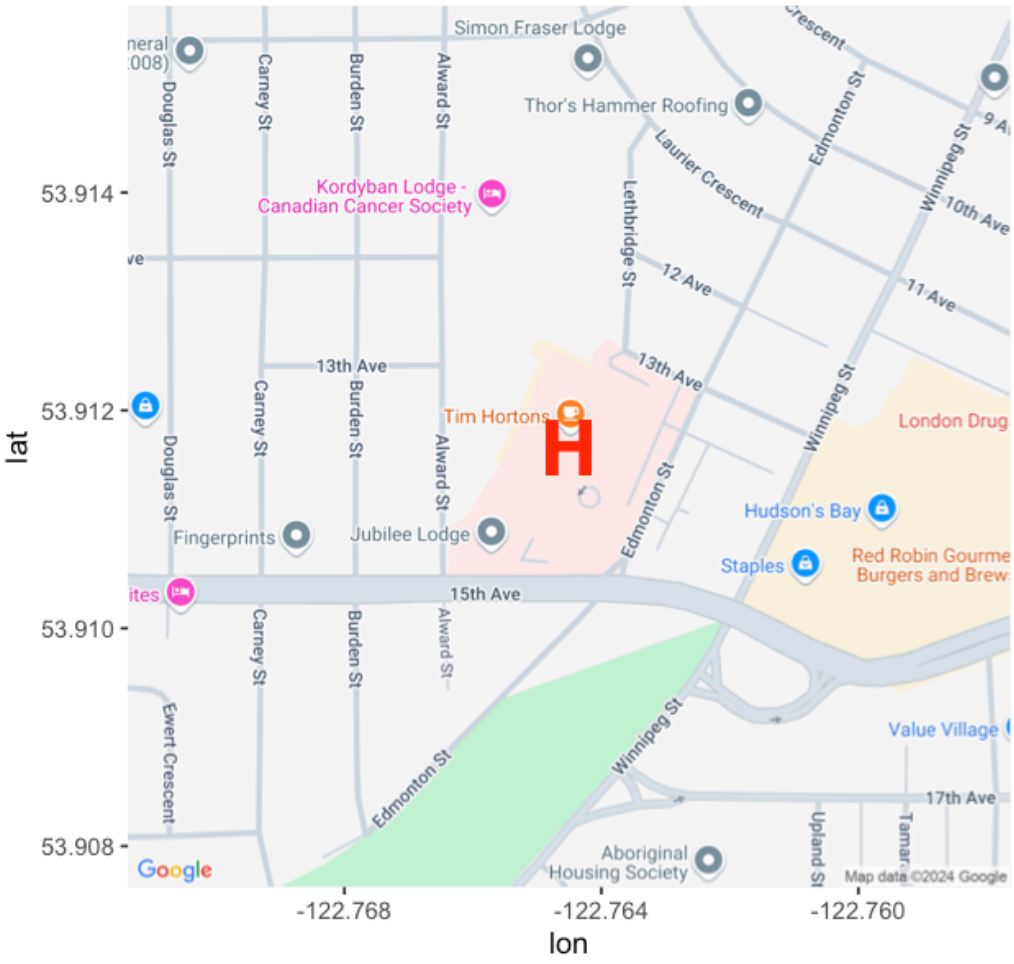

Figure 1: University Hospital of Northern British Columbia - 1475 Edmonton St., Prince George, BC V2M 1S2 - 250-565-2000

Emergency Response Plan

New Graph's detailed emergency response procedures can be found here. These procedures should be reviewed and an emergency response plan should be completed for each job site. Our Emergency Responce Plan template can be downloaded here.

Driving

We will be driving on forest service roads where it is essential to exercise caution and adhere strictly to all radio use protocols to ensure our safety. Proper communication on these roads helps prevent accidents by keeping everyone informed about vehicle movements and road conditions. Please review the resource road safety and radio use sections of our Health and Safety plan so that everyone stays safe.

Field Plan

The main goal of the fieldwork is baseline monitoring using electrofishing with crews from McLeod Lake. We will be at the 5 or 6 permitted electrofishing sites most of the time. In addition we may spend some time with fish passage assessments in areas of not only the Parsnip watershed group but also the Carp and Crooked watershed groups.

Field work methods will result in products feeding reporting formats such as here for 2022 and here for 2023. We generally follow procedures in:

- fish passage assessments (BC Ministry of Environment 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, and the Field Guide to these site cards can be found here.

We have PIT tagging equipment so we could consider tagging fish captured at electrofishing sites to help us better understand population sizes and fish movement upstream and downstream of sites over the years.

We use digital field form using a product called Mergin Maps which syncs with QGIS. Please see our Fish Passage Guidebook for instructions on how to set up Mergin Maps and use our digital field forms. Please send me your usernames and we can begin to share projects/forms.

A guide to freshwater fish id such as McPhail and Carveth (1993) can be useful and can be downloaded here.

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.

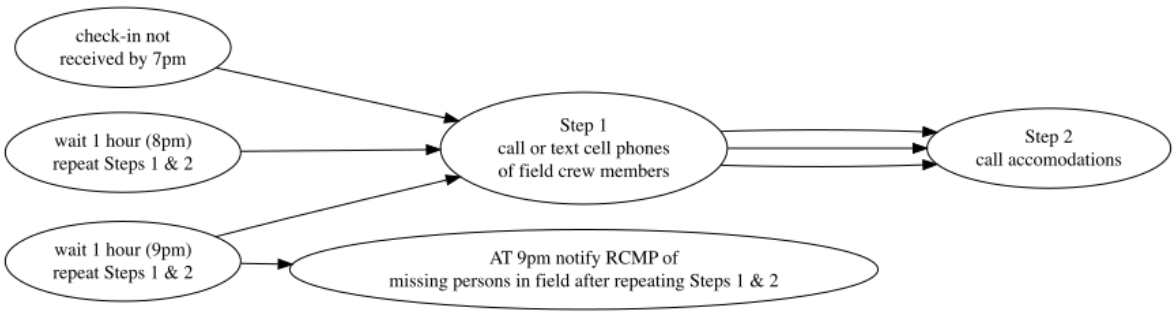

Figure 2: Procedures for failed check-in

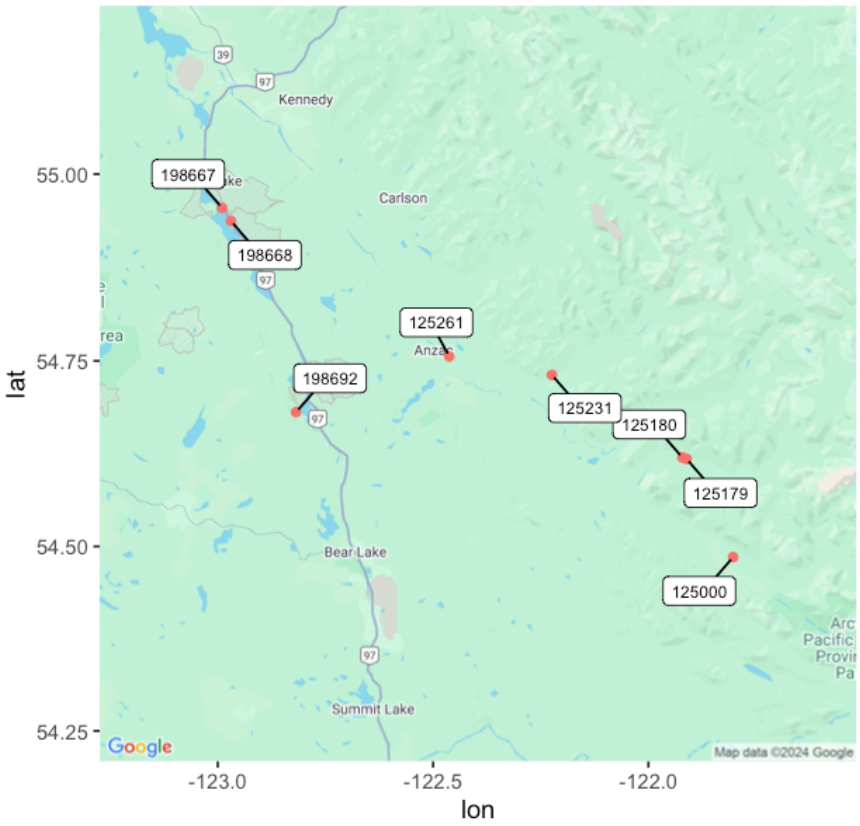

Figure 3: Map of potential sampling areas.

Table 5: Potential Phase 1 assessment, Phase 2 assessment, and Electrofishing Locations

id	stream_name	utm_zone	utm_easting	utm_northing	watershed_group_code	pscis_assessment_comment
125000	tributary to Parsnip River	10	577541	6038215	PARS	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.

id	stream_name	utm_zone	utm_easting	utm_northing	watershed_group_code	pscis_assessment_comment
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.						
125179	Unnamed tributary to Missinka River	10	570307	6052836	PARS	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	10	569664	6053048	PARS	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.
125231	tributary to Table River	10	549962	6065140	PARS	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.
125261	Fern Creek	10	534600	6067770	PARS	Two additional culverts at 0.9m diameter.

id	stream_name	utm_zone	utm_easting	utm_northing	watershed_group_code	pscis_assessment_comment
						trap on inlet. Potentially good candidate for leveler to maintain beaver activity without attempting to remove the animals. Ministry of Transportation chris_culvert_id: 1997066. 13:04:57
198668	Tributary to McLeod Lake	10	501971	6087814	CARP	Abundant gravels, suitable for spawning upstream. Although flows are minimal, the streams does still have water. Models as having over 3 km of habitat upstream below 5%. Although no fish are recorded as present upstream it seems highly likely that this would be a fish bearing stream. Outlet drop is 80cm. Steep section of pipe at the inlet recorded as inlet drop. Ministry of Transportation chris_culvert_id: 1996852. 13:40:04
198692	Tributary to Kerry Lake	10	511735	6059316	CRKD	Nice little stream with decent flow for this time of year. Pockets of gravel throughout and healthy shrub and mixed riparian. Fish presence unknown, but seems likely due to proximity to Kerry lake with low gradients. 17:14:13

References

BC Ministry of Environment. 2011. *Field Assessment for Determining Fish Passage Status of Closed Bottom Structures*. Manual. Victoria, British Columbia: BC Ministry of Environment. 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.

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.

McPhail, J. D., and R Carveth. 1993. “Field Key to the Freshwater Fishes of British Columbia.”https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/nr-laws-policy/risc/field_key_to_freshwater_fishes_of_bc_field_size_water_resistant_version.pdf.