

Al Irvine  
New Graph Environment Ltd.  
[al@newgraphenvironment](mailto:al@newgraphenvironment)  
250-777-1518  
Date: 2022-07-27

Ministry of Environment  
3726 Alfred Street  
Bag 5000 Smithers B.C. V0J 2N0

### **Re: Fish Permit Application**

This permit application can also be viewed online [at this link](#). A summary of sites to be potentially assessed is included as Table [1](#) and [2](#), details of fish species potentially encountered is presented in Table [3](#) and an overview map 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](#).

This work is a collaboration of many groups and an initiative of the Society for Ecosystem Restoration Northern BC. Al Irvine, R.P.Bio from New Graph Environment Ltd. is leading the fieldwork with field teams from the Office of Wet'suwet'en, Gitxsan Development Corporation and Nico Ridge Consulting Ltd.

Rationale for sampling is to inform fish presence/absence, species composition/density, abundance estimates, movement, growth, and survival as part of habitat confirmations and monitoring related to fish passage restoration at barrier culverts as per the [Fish Passage Technical Working Group Phase 2 protocol](#). Presence/absence of fish, species composition/abundance, distribution limits and fish movement can be useful for prioritizing which crossings are a best fit for fish passage restoration and inform follow up effectiveness monitoring.

Sampling is proposed at a maximum of 10 streams included in Tables [1](#) and [2](#) where we will be performing habitat confirmations and follow up site visits related to past habitat confirmations/fish passage remediation. The list of potential sample sites have been selected through manual review of sites from past Skeena Fisheries Commission reporting, through an assessment of the potential value of sampling of past habitat confirmation sites, a review of [bcfishpass](#) modelling outputs and (for a selection of sites in the Bulkley River watershed), from Canadian Wildlife Federation review of [bcfishpass](#) outputs.

As a maximum of 10 streams will be sampled, the current list of candidate streams will be narrowed down through the results of field assessments (ie. sample the streams with the greatest potential fish passage remediation benefits), modeling, ongoing communications with First Nations representatives; Land, Water and Resource Stewardship; Ministry of Environment, Department of Fisheries and Oceans and other partners/stakeholders. Sampling methodologies will be dependent on the site, fish species suspected, type of habitat encountered, risks to aquatic organisms potentially present and ongoing communications. Sampling methods may include minnowtrapping, electrofishing, and dipnetting upstream and downstream of barrier culvert locations.

As part of this permit application we are proposing tagging. Our study plan is (when time allows and PIT tagging is expected to increase our state of knowledge about the subject system) to electrofish sites up to 200 - 300m long both upstream and downstream of priority culvert “barrier” sites and insert biotag APT12 PIT tags into the body cavity of all fish captured over 65mm. Fish location (UTM), length and weight will also be collected. The length of sites will be determined by the number of fish captured as we have a limit number of tags total (450) and we wish to tag all fish captured within a site to facilitate abundance estimates. We will return to the sites a minimum of 1 day later to re-sample to inform an analysis of our capture efficiency.

In addition to providing information on abundance upstream and downstream of potential culvert restoration sites, the study will also provide baseline information for monitoring programs to document fish movement, growth and survival at these sites over multi-year timeframes (ie. to evaluate if 1. fish are moving into restored areas, 2. through sites where stream crossing structures (culverts) likely causing connectivity issues before any remediation is conducted and to 3. evaluate if productivity of the systems are increasing following bridge installation and/or if fish are moving upstream/downstream of where replaced/removed structures are located). As we wish to tag all fish over 65mm in each site sampled (up to 10 sites) we would like to apply for a permit allowing a maximum of 450 fish with a maximum of 150 fish/stream. Although we are requesting a maximum of

150 fish/stream, we have listed 150fish of each species per stream because we will not know the species composition of the sites until the sampling occurs.

Please note that the sampling will be completed before October 31 (end of August till mid-September however the end-date of the sampling period is listed as Dec 31 on the application to allow time outside of the busy field season for the data to be processed, QA'd and organized so that required reporting can be as informative as possible when submitted. An example of how we have been presenting results and methodologies from past assessments can be referenced [here at this link](#).

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



Al Irvine, R.P.Bio

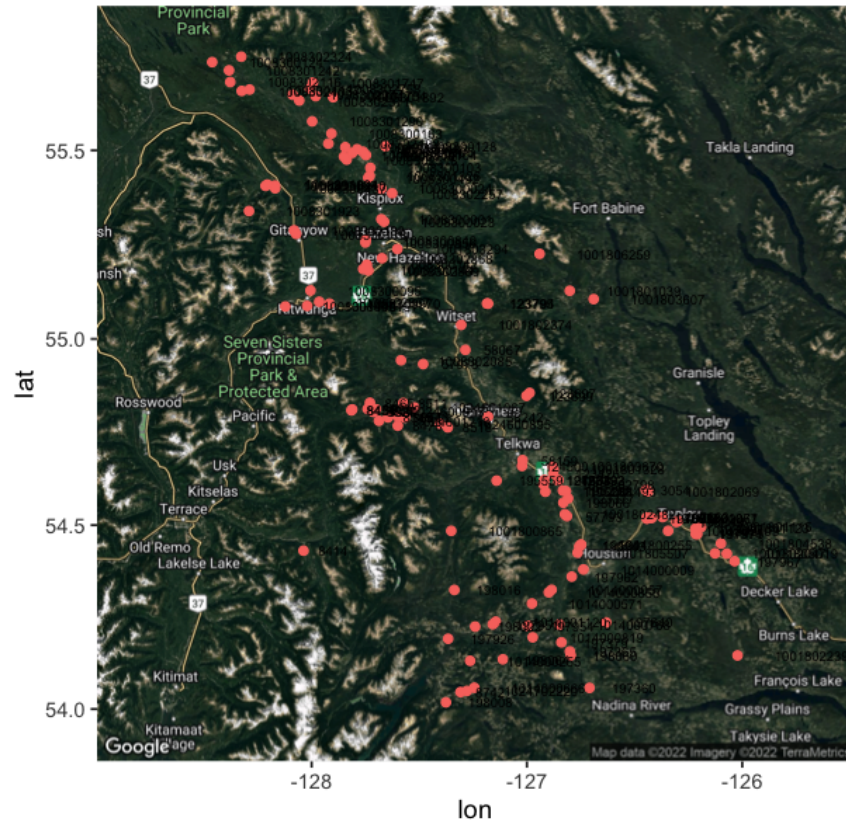


Figure 1. Location of potential sample sites.

Table 1: Potential sample locations.

id	stream_name	wsc_code	lat	long	watershed_group_code
id	stream_name	wsc_code	lat	long	watershed_group_code
3054	Johnny David Creek	460-778000-76002-00000-0000-0000-000-000-000-000-000	54.59474	-126.4478	BULK
8414	Clore	440-256900-03100-00000-0000-0000-000-000-000-000-000	54.43099	-128.0377	ZYMO
8454	Copper	—	54.80895	-127.8154	ZYMO
8455	Copper	—	54.81153	-127.8114	ZYMO
8465	Copper	440-741100-29400-00000-0000-0000-000-000-000-000-000	54.82940	-127.7293	ZYMO
8478	Copper	440-828600-00000-00000-0000-0000-000-000-000-000-000	54.76787	-127.5999	ZYMO
8511	Copper	440-891300-46600-00000-0000-0000-000-000-000-000-000	54.82840	-127.5744	ZYMO
8518	Copper	440-987100-26300-00000-0000-0000-000-000-000-000-000	54.76332	-127.3677	ZYMO
8525	Copper	440-741100-11200-00000-0000-0000-000-000-000-000-000	54.81270	-127.7396	ZYMO
8527	Copper	440-758300-45400-00000-0000-0000-000-000-000-000-000	54.80815	-127.7213	ZYMO
8530	Copper	440-767000-07400-00000-0000-0000-000-000-000-000-000	54.80518	-127.7129	ZYMO
8532	Copper	440-767000-16000-00000-0000-0000-000-000-000-000-000	54.81185	-127.7007	ZYMO
8543	Copper	440-854000-00000-00000-0000-0000-000-000-000-000-000	54.78977	-127.5671	ZYMO
8545	Copper	440-813000-00000-00000-0000-0000-000-000-000-000-000	54.79016	-127.6451	ZYMO
8547	Copper	440-847000-00000-00000-0000-0000-000-000-000-000-000	54.79309	-127.6004	ZYMO
8742	—	460-600600-63200-66200-0000-0000-000-000-000-000-000	54.04645	-127.3084	MORR
57793	Vallee Creek	460-528000-00000-00000-0000-0000-000-000-000-000-000	54.52438	-126.8141	BULK
57978	Tributary to Trout Creek	460-241300-64600-00000-0000-0000-000-000-000-000-000	54.93291	-127.4822	BULK
58067	Tributary to Gramophone Creek	460-223800-00000-00000-0000-0000-000-000-000-000-000	54.97087	-127.2858	BULK
58159	McDowell Creek	460-435300-00000-00000-0000-0000-000-000-000-000-000	54.67521	-127.0204	BULK
58242	Kathlyn Creek	460-345400-00000-00000-0000-0000-000-000-000-000-000	54.79231	-127.1811	BULK
123377	Thompson Creek	460-517700-00000-00000-0000-0000-000-000-000-000-000	54.57223	-126.8090	BULK
123392	Lemieux Creek	460-487900-11100-00000-0000-0000-000-000-000-000-000	54.62160	-126.8540	BULK
123393	Lemieux Creek	460-487900-11100-00000-0000-0000-000-000-000-000-000	54.62081	-126.8549	BULK
123426	Robin Creek	460-487900-00000-00000-0000-0000-000-000-000-000-000	54.63903	-126.8782	BULK
123697	Tributary to Driftwood Creek	460-313800-00000-00000-0000-0000-000-000-000-000-000	54.85582	-126.9875	BULK
123699	Tributary to Driftwood Creek	460-313800-00000-00000-0000-0000-000-000-000-000-000	54.84796	-127.0021	BULK
123794	Tributary to Blunt Creek	460-081700-43900-45900-6600-0000-000-000-000-000-000	55.09398	-127.1806	BULK
123795	Tributary to Blunt Creek	—	55.09473	-127.1855	BULK
124500	Helps Creek	460-437000-00000-00000-0000-0000-000-000-000-000-000	54.65954	-127.0228	BULK
124504	Coffin Creek	460-472700-00000-00000-0000-0000-000-000-000-000-000	54.62079	-126.9195	BULK

id	stream_name	wsc_code	lat	long	watershed_group_code
195288	Gibson Creek	460-496100-08700-00000-0000-0000-000-000-000-000-000	54.59190	-126.8188	BULK
195290	Gibson Creek	460-496100-08700-00000-0000-0000-000-000-000-000-000	54.59318	-126.8328	BULK
195559	Goathorn Creek	460-422700-09600-25600-0000-0000-000-000-000-000-000	54.62009	-127.1408	BULK
195943	Stock Creek	460-589500-00000-00000-0000-0000-000-000-000-000-000	54.44226	-126.7571	BULK
195944	Tributary to Stock Creek	460-589500-00000-00000-0000-0000-000-000-000-000-000	54.44676	-126.7495	BULK
197360	Riddeck Creek	—	54.05795	-126.7093	MORR
197365	Tributary to Owen Creek	460-600600-23900-32500-0000-0000-000-000-000-000-000	54.15719	-126.8005	MORR
197379	Unnamed	460-600600-23900-13000-0000-0000-000-000-000-000-000	54.18209	-126.8398	MORR
197640	Tributary to Buck Creek	460-636000-36664-00000-0000-0000-000-000-000-000-000	54.23614	-126.6322	BULK
197653	Perow Creek	460-750400-02200-00000-0000-0000-000-000-000-000-000	54.51824	-126.4428	BULK
197658	Byman Creek	460-750400-00000-00000-0000-0000-000-000-000-000-000	54.51926	-126.4210	BULK
197663	Johnny David Creek	460-778000-00000-00000-0000-0000-000-000-000-000-000	54.52177	-126.3700	BULK
197668	Coffin Creek	460-472700-00000-00000-0000-0000-000-000-000-000-000	54.62098	-126.9193	BULK
197926	Tributary to Morice River	460-600600-52400-00000-0000-0000-000-000-000-000-000	54.19188	-127.3659	MORR
197951	Tributary to Morice River	460-600600-40700-00000-0000-0000-000-000-000-000-000	54.23138	-127.1586	MORR
197954	Tributary to Morice River	460-600600-33000-00000-0000-0000-000-000-000-000-000	54.22716	-126.9966	MORR
197962	Peacock Creek	460-600600-07100-00000-0000-0000-000-000-000-000-000	54.36065	-126.7918	MORR
197967	Taman Creek	460-000000-00000-00000-0000-0000-000-000-000-000-000	54.40227	-126.0352	BULK
197974	Watson Creek	460-829700-00000-00000-0000-0000-000-000-000-000-000	54.47603	-126.2159	BULK
197975	Ailport Creek	460-829700-20600-00000-0000-0000-000-000-000-000-000	54.47578	-126.2090	BULK
198008	Tributary to Nanika River	460-600600-64400-11700-5110-0000-000-000-000-000-000	54.01832	-127.3761	MORR
198016	Tributary to Thautil River	—	54.32459	-127.3373	MORR
198022	Tributary to Tagit Creek	460-600600-44500-38900-0000-0000-000-000-000-000-000	54.22487	-127.2404	MORR
198048	Cesford Creek	460-800700-00000-00000-0000-0000-000-000-000-000-000	54.50844	-126.3062	BULK
198049	Cesford Creek	460-800700-00000-00000-0000-0000-000-000-000-000-000	54.51141	-126.2986	BULK
198060	Tributary to Owen Creek	460-600600-23900-39300-0000-0000-000-000-000-000-000	54.14676	-126.7967	MORR
198064	Tributary to Lamprey Creek	460-600600-36400-26300-0000-0000-000-000-000-000-000	54.13584	-127.1117	MORR
198065	Watson Creek	460-829700-00000-00000-0000-0000-000-000-000-000-000	54.49038	-126.2178	BULK
198066	Thompson Creek	460-517700-00000-00000-0000-0000-000-000-000-000-000	54.56060	-126.8311	BULK
1001800067	Perow Creek	460-750400-02200-00000-0000-0000-000-000-000-000-000	54.51753	-126.4427	BULK
1001800255	Stock Creek	460-589500-00000-00000-0000-0000-000-000-000-000-000	54.44729	-126.7483	BULK
1001800403	—	460-834400-00000-00000-0000-0000-000-000-000-000-000	54.48465	-126.3443	BULK
1001800670	Vandervan Creek	460-487900-37600-00000-0000-0000-000-000-000-000-000	54.65751	-126.8799	BULK

id	stream_name	wsc_code	lat	long	watershed_group_code
1001800865	—	—	54.48459	-127.3516	BULK
1001801039	—	460-081700-43900-54300-0000-0000-000-000-000-000-000	55.12847	-126.8010	BULK
1001801071	Perow Creek	460-750400-02200-00000-0000-0000-000-000-000-000-000	54.52105	-126.4438	BULK
1001801115	Watson Creek	460-829700-00000-00000-0000-0000-000-000-000-000-000	54.49465	-126.1912	BULK
1001801123	Watson Creek	460-829700-00000-00000-0000-0000-000-000-000-000-000	54.49383	-126.2046	BULK
1001801328	Robin Creek	460-487900-00000-00000-0000-0000-000-000-000-000-000	54.65013	-126.8760	BULK
1001802047	Bulkley River	460-000000-00000-00000-0000-0000-000-000-000-000-000	54.42364	-126.1262	BULK
1001802069	Johnny David Creek	460-778000-00000-00000-0000-0000-000-000-000-000-000	54.59094	-126.4370	BULK
1001802239	—	460-924300-00000-00000-0000-0000-000-000-000-000-000	54.14638	-126.0217	BULK
1001802374	Causqua Creek	460-188300-00000-00000-0000-0000-000-000-000-000-000	55.03743	-127.3052	BULK
1001802482	Vallee Creek	460-528000-00000-00000-0000-0000-000-000-000-000-000	54.52943	-126.8239	BULK
1001802798	Coffin Creek	460-472700-00000-00000-0000-0000-000-000-000-000-000	54.60968	-126.9224	BULK
1001803294	—	460-007300-39470-00000-0000-0000-000-000-000-000-000	55.23941	-127.6018	BULK
1001803607	—	460-081700-43900-61600-0000-0000-000-000-000-000-000	55.10620	-126.6900	BULK
1001804538	—	—	54.45026	-126.0988	BULK
1001805019	—	460-967000-00000-00000-0000-0000-000-000-000-000-000	54.42277	-126.0716	BULK
1001805507	Stock Creek	460-589500-00000-00000-0000-0000-000-000-000-000-000	54.42550	-126.7647	BULK
1001806259	Maish Creek	460-081700-43900-33900-0000-0000-000-000-000-000-000	55.22649	-126.9413	BULK
1008300001	—	400-448500-00000-00000-0000-0000-000-000-000-000-000	55.31842	-127.6763	KISP
1008300023	—	—	55.31161	-127.6636	KISP
1008300024	—	—	55.39932	-127.6765	KISP
1008300095	—	400-364900-10700-00000-0000-0000-000-000-000-000-000	55.12911	-128.0053	KISP
1008300103	—	—	55.45409	-127.7272	KISP
1008300104	—	470-133600-00000-00000-0000-0000-000-000-000-000-000	55.48778	-127.7475	KISP
1008300105	—	470-143700-00000-00000-0000-0000-000-000-000-000-000	55.49663	-127.7614	KISP
1008300118	—	470-155700-21300-00000-0000-0000-000-000-000-000-000	55.48371	-127.8498	KISP
1008300124	—	470-607200-11000-00000-0000-0000-000-000-000-000-000	55.73204	-128.4618	KISP
1008300128	Sterritt Creek	400-490000-00000-00000-0000-0000-000-000-000-000-000	55.51102	-127.6561	KISP
1008300142	McIntosh Landing Creek	400-417800-00000-00000-0000-0000-000-000-000-000-000	55.19779	-127.7438	KISP
1008300144	—	400-415500-00000-00000-0000-0000-000-000-000-000-000	55.18612	-127.7606	KISP
1008300157	Shandilla Creek	400-372400-00000-00000-0000-0000-000-000-000-000-000	55.08814	-128.0209	KISP
1008300161	—	—	55.49344	-127.8117	KISP
1008300162	—	470-191600-00000-00000-0000-0000-000-000-000-000-000	55.50858	-127.8436	KISP

id	stream_name	wsc_code	lat	long	watershed_group_code
1008300163	—	470-252300-20700-00000-0000-000-000-000-000-000-000	55.54445	-127.9080	KISP
1008300178	—	400-364900-43100-00000-0000-0000-000-000-000-000-000	55.27938	-128.0719	KISP
1008300188	—	—	55.28883	-128.0817	KISP
1008300437	—	400-364900-66600-00000-0000-0000-000-000-000-000-000	55.40011	-128.1692	KISP
1008300440	—	—	55.40725	-128.1704	KISP
1008300465	—	400-364900-76100-00000-0000-0000-000-000-000-000-000	55.40645	-128.2141	KISP
1008300483	—	—	55.50325	-127.7887	KISP
1008300492	Hevenor Creek	470-085600-00000-00000-0000-0000-000-000-000-000-000	55.42802	-127.7372	KISP
1008300849	Hazelton Creek	400-438400-00000-00000-0000-0000-000-000-000-000-000	55.26378	-127.7489	KISP
1008300856	—	—	55.25657	-127.7501	KISP
1008300970	—	400-383900-00000-00000-0000-0000-000-000-000-000-000	55.09411	-127.9172	KISP
1008301137	Beaverlodge Creek	—	55.66013	-128.2883	KISP
1008301242	—	470-544600-12600-00000-0000-0000-000-000-000-000-000	55.71050	-128.3837	KISP
1008301290	—	—	55.57653	-127.9975	KISP
1008301326	—	470-085600-05800-00000-0000-0000-000-000-000-000-000	55.43296	-127.7303	KISP
1008301446	—	400-359300-00000-00000-0000-0000-000-000-000-000-000	55.08659	-128.1221	KISP
1008301747	—	470-245700-54300-26397-0000-0000-000-000-000-000-000	55.67868	-127.9938	KISP
1008301754	—	—	55.64290	-127.9811	KISP
1008301892	—	470-245700-18800-62200-0000-0000-000-000-000-000-000	55.63994	-127.9002	KISP
1008301923	—	400-364900-38500-44500-4240-0000-000-000-000-000-000	55.33994	-128.2909	KISP
1008301994	—	—	55.40990	-128.2055	KISP
1008302085	—	450-660400-05400-00000-0000-0000-000-000-000-000-000	54.94306	-127.5850	KISP
1008302116	—	470-556400-00000-00000-0000-0000-000-000-000-000-000	55.67988	-128.3780	KISP
1008302257	Pinenut Creek	400-465300-00000-00000-0000-0000-000-000-000-000-000	55.38699	-127.6258	KISP
1008302324	—	470-507200-28800-00000-0000-0000-000-000-000-000-000	55.74628	-128.3269	KISP
1008302371	—	470-335400-19700-00000-0000-0000-000-000-000-000-000	55.63136	-128.0575	KISP
1008302377	—	470-335400-49000-00000-0000-0000-000-000-000-000-000	55.64649	-128.0884	KISP
1008302403	—	470-527500-00000-00000-0000-0000-000-000-000-000-000	55.65646	-128.3250	KISP
1008302422	—	—	55.51787	-127.9222	KISP
1008302518	—	470-155700-19845-00000-0000-0000-000-000-000-000-000	55.47573	-127.8371	KISP
1008302758	—	—	55.66285	-128.0083	KISP
1008302857	Andi Creek	400-378600-00000-00000-0000-0000-000-000-000-000-000	55.09927	-127.9647	KISP
1008302868	Chicago Creek	400-425900-00000-00000-0000-0000-000-000-000-000-000	55.21494	-127.6735	KISP



id	stream_name	wsc_code	lat	long	watershed_group_code
1008302869	Gershwin Creek	400-415300-00000-00000-0000-000-000-000-000-000	55.18229	-127.7363	KISP
1014000009	—	—	54.38009	-126.7377	MORR
1014000057	—	460-600600-11800-47700-0000-0000-000-000-000-000-000	54.32498	-126.8854	MORR
1014000255	—	460-600600-57600-00000-0000-0000-000-000-000-000-000	54.13167	-127.2638	MORR
1014000571	—	460-600600-17000-18900-0000-0000-000-000-000-000-000	54.28765	-126.9767	MORR
1014000666	—	460-600600-63200-00000-0000-0000-000-000-000-000-000	54.05843	-127.2445	MORR
1014000768	—	460-600600-21200-00000-0000-0000-000-000-000-000-000	54.23059	-126.8489	MORR
1014000819	—	—	54.19572	-126.9732	MORR
1014000855	—	460-600600-11800-47700-0680-0000-000-000-000-000-000	54.31800	-126.8984	MORR
1014001120	—	460-600600-40700-48100-2210-0000-000-000-000-000-000	54.23852	-127.1446	MORR
1024600895	Silvern Creek	440-955300-00000-00000-0000-0000-000-000-000-000-000	54.77358	-127.4035	ZYMO
1024600913	Sandstone Creek	440-767000-00000-00000-0000-0000-000-000-000-000-000	54.80526	-127.7130	ZYMO
1024601067	—	440-891300-22300-00000-0000-0000-000-000-000-000-000	54.81647	-127.5223	ZYMO
1024601216	—	—	54.78100	-127.6873	ZYMO
1024702220	—	460-600600-63200-75900-0000-0000-000-000-000-000-000	54.04956	-127.2789	MORR
1100001493	Coffin Creek	460-472700-00000-00000-0000-0000-000-000-000-000-000	54.59003	-126.9143	BULK

Table 2: Potential sample site details.

id	stream_name	sp_upstr	fish_tags	followup_comments
3054	Johnny David Creek	{RB}	150	Sampling could provide insight into how high salmon ascend in this watershed.
8414	Clore	—	150	Modelled 11% gradient upstream for 500m. close to Clore River so potential high values.
8454	Copper	—	150	BT and DV confirmed. Two SFC priority sites upstream too.
8455	Copper	—	150	SFC ranked as high priority. BT and DV confirmed.
8465	Copper	—	150	Fish captured downstream. Smaller potential habitat gain.
8478	Copper	{DV}	150	DV known kupstream at cascade. Small steeper habitat.
8511	Copper	—	150	Small watershed. Close to larger stream with salmon though so may have some decent hab values.
8518	Copper	{DV,RB}	150	Fish sampling already conducted but habitat confirmation may be helpful.
8525	Copper	{DV}	150	Smaller stream with DV upstream. Outlet drop.
8527	Copper	{DV}	150	DV confirmed upstream and SFC report indicates large outlet drop. Smaller stream though.
8530	Copper	—	150	Duplicate. Matched to wrong modelled crossing so corrected in bcfishpass.
8532	Copper	—	150	Habitat confirmation would be helpful. Fish confirmed here.
8543	Copper	{DV,RB}	150	Just slightly highe than steelhead model criteria. Close to McDonell Lake with fish upstream

id	stream_name	sp_upstr	fish_tags	followup_comments
8545	Copper	{RB}	150	RB confirmed upstream. SFC recommends habitat assessment
8547	Copper	–	150	CT (and potentially RB) confirmed. Small lake mapped upstream.
8742	–	{CT,DV}	150	Remediated
57793	Vallee Creek	{CAL,CT,LSU,RB}	150	–
57978	Tributary to Trout Creek	{CT,LKC}	150	–
58067	Tributary to Gramophone Creek	{RB,ST}	150	–
58159	McDowell Creek	{CO,RB}	150	Restoration likely forthcoming so sampling could inform monitoring program.
58242	Kathlyn Creek	{BB,CAS,CC,CO,CT,DV,L,LNC,LSU,MW,NSC,OS,PCC,PK,RB,RSC,SA,ST,SU,WF,WSU}	150	–
123377	Thompson Creek	{CT,DV,RB}	150	Would be good to get baseline conditions for species composition and abundance.
123392	Lemieux Creek	{CT,DV,RB,SU}	150	–
123393	Lemieux Creek	{CT,DV,LNC,NSC,RB,SU}	150	–
123426	Robin Creek	{BT,CT,RB,TR}	150	–
123697	Tributary to Driftwood Creek	{DV}	150	–
123699	Tributary to Driftwood Creek	{DV}	150	–
123794	Tributary to Blunt Creek	{DV}	150	Sampling would provide insight into salmon use but unlikely to have time.
123795	Tributary to Blunt Creek	{SA}	150	Sampling could provide insight into salmon use but time limited so unlikely to happen this year.
124500	Helps Creek	{CT,DV,LNC,LSU,RB}	150	Species composition upstream and downstream could be insightful for prioritization and baseline if Telkwa Coal helps move this one ahead.
124504	Coffin Creek	{CSU,CT,DV,LSU,MW,RB,RSC}	150	–
195288	Gibson Creek	{CT,RB}	150	–
195290	Gibson Creek	{CT,RB}	150	–
195559	Goathorn Creek	{DV,TR}	150	–
195943	Stock Creek	–	150	–
195944	Tributary to Stock			

id	stream_name	sp_upstr	fish_tags	followup_comments
Creek	–		150	–
197360	Riddeck Creek	{LSU,RB}	150	Prov engineers may want baseline monitoring data.
197365	Tributary to Owen Creek	–	150	Flow looks good in photos.
197379	Unnamed	{CO,RB}	150	Would be good to know what fish are here. Good site for tagging?
197640	Tributary to Buck Creek	{RB}	150	Design in progress so sampling could inform monitoring program. Unlikley to have time for this this year though.
197653	Perow Creek	–	150	–
197658	Byman Creek	{CO,CSU,LNC,LSU,RB,RSC,ST}	150	Not likely to get here due to timeing constraints.
197663	Johnny David Creek	{RB}	150	Backwatering was completed anumber of years ago so samping could inform long term monitoring.
197668	Coffin Creek	{CSU,CT,DV,LSU,MW,RB,RSC}	150	–
197926	Tributary to Morice River	{CO}	150	At Gidimt'en Camp. Maybe best left for another time.
197951	Tributary to Morice River	{CT,LNC}	150	Large lake headed stream with fish observed.
197954	Tributary to Morice River	{CCT,CT,LKC}	150	Fish upstream. Good flow. Ford downstream.
197962	Peacock Creek	–	150	Site remediated. Long term monitoring required but could wait another year as work was conducted late last summer and we might expect CO moving in this fall..
197967	Taman Creek	{BMC,CSU,LKC,LNC,LSU,NSC,RB,RSC}	150	Crossing remediated so samling could help inform long term monitoring.
197974	Watson Creek	{CO,RB}	150	–
197975	Ailport Creek	{CO,CT,RB}	150	Should a remediation plan come together sampling could help infrom long term monitoring. Good candidate for riparian rencing as well as culvert replacement.
198008	Tributary to Nanika River	–	150	Site should be reassessed as we surveyed the wrong upstream channel in 2021.
198016	Tributary to Thautil River	–	150	Hab con conducted. Species presence would be insightful.
198022	Tributary to Tagit Creek	{CT}	150	Small stream with likley beaver activity upstream. Fish points upstream. Upstream culvert has note sof good flow and fish present.
198048	Cesford Creek	–	150	Sampling could help build weight of evidence that no connection exists to Bulkley mainstem.
198049	Cesford Creek	–	150	Here or hwy 16 sampling could help understand downstream connectivity (or likely lack thereof) at railway. If CO get through as fry they may not get back out to mainstem.
198060	Tributary to Owen Creek	{DV,RB}	150	Was passable when assessed in 2021.
198064	Tributary to Lamprey			

id	stream_name	sp_upstr	fish_tags	followup_comments
Hab con completed. Sampling				
Creek	{DV}		150	may be enlightening but habitat not stellar.
198065	Watson Creek	{CO, RB}	150	–
198066	Thompson Creek	{CCT, CO, CRS, CT, DV, RB, SP}	150	Great candidate for channel redirection and would be good to get idea of baseline species composition/abundance.
1001800067	Perow Creek	–	150	–
1001800255	Stock Creek	–	150	–
1001800403	–	{BB, CSU, LKC, LSU, LW, MW, NSC, PCC, RB, RSC}	150	–
1001800670	Vandervan Creek	{BT, CT, RB}	150	–
1001800865	–	{CT, PCC}	150	–
1001801039	–	–	150	–
1001801071	Perow Creek	–	150	–
1001801115	Watson Creek	{RB}	150	–
1001801123	Watson Creek	{CO, RB}	150	–
1001801328	Robin Creek	{BT, CT, RB, TR}	150	–
1001802047	Bulkeley River	{CSU, RSC}	150	–
1001802069	Johnny David Creek	–	150	–
1001802239	–	{LSU, RB}	150	–
1001802374	Causqua Creek	{AF, PK, RB}	150	–
1001802482	Vallee Creek	{CAL, CT, LSU, RB}	150	–
1001802798	Coffin Creek	{CSU, CT, DV, LSU, MW, RB, RSC}	150	–
1001803294	–	{CO, DV}	150	–
1001803607	–	–	150	–
1001804538	–	{RB}	150	–
1001805019	–	{RB}	150	–
1001805507	Stock Creek	{CT, KO, LSU, RB}	150	–
1001806259	Maish Creek	{CT, DV}	150	–
1008300001	–	{CCT, CT, DV}	150	Very close to Skeena mainstem. On aerial imagery appears as though stream might be difficult to locate and not a straight forward connection.
1008300023	–	{CO}	150	Private driveway on private land. CO fry observed upstream during salvage (FISS).
1008300024	–	–	150	No fisheries information

id	stream_name	sp_upstr	fish_tags	followup_comments
1008300095	–	{CO,CRS,CT,DV,RB,ST}	150	Phase 1 required. Backwater location. Large stream with many species confirmed upstream.
1008300103	–	{CO,CT,DV,RB}	150	Coho upstream with significant amounts of lake and wetland habitat.
1008300104	–	{CO,CT}	150	CO points upstream and downstream.
1008300105	–	–	150	Coho and CT obs immediately downstream of the crossing.
1008300118	–	–	150	Access to Affleck Lake. No fish info.
1008300124	–	{CO,DV,RB,SK,ST}	150	Fish sampling completed by SFC. Confirm if this road has been deactivated.
1008300128	Sterritt Creek	–	150	Downstream gradient models at 10% with potentially tight confinement so some potential for natural barrier downstream.
1008300142	McIntosh Landing Creek	–	150	Road mapped as approaching from either side.
1008300144	–	–	150	Could be difficult surveying due to wetland type terrain.
1008300157	Shandilla Creek	{PK,RB}	150	PK noted upstream and downstream. Rock obstacles noted upstream 400 and 500m in both Shandillas
1008300161	–	{CH,CM,CT,DV,PK}	150	Private land 200m downstream and 400m upstream.
1008300162	–	{CO,CT,NSC,SU}	150	Provides access to Pentz Lake
1008300163	–	–	150	Wetlands pstream. Not far from Kispiox.
1008300178	–	–	150	Stream network looks all over the place here. May not be straight forward to find channel.
1008300188	–	–	150	Wetland/lake area upstream.
1008300437	–	–	150	Wetland type area. May be difficult to find channel
1008300440	–	–	150	Downstream of SFC Map reference 15. SFC indicate FHAP completed in 2008.
1008300465	–	–	150	SFC references FHAP in 2008. No streamline apparent above the road but SFC report mentions mapping error in map...
1008300483	–	{CT,NSC,SU}	150	Private land. Need to approach landowner about access. May be bridge but difficult to tell. Historic restoration work on this stream by AMEC and McElhanney.
1008300492	Hevenor Creek	{CO,CT,DV,RB,ST}	150	Private land. Difficult to tell if this crossing is present. Seems likely due to amount of buildings on otherside of stream from main farm yard.
1008300849	Hazelton Creek	–	150	Known PK spawning locations downstream.
1008300856	–	–	150	Wetland areas upstream. Some areas upstream look like gravels from aerial imagery. Streams are tagged as intermittent about 350m upstream.
1008300970	–	{DV}	150	SFC mod priority with cost/benefit noted as required. Surveying upstream crossing could be enlightening. Downstream is private land.
1008301137	Beaverlodge Creek	{CT,DV}	150	CO and PK points in Kispiox just downstream.
1008301242	–	{CO,CT,DV}	150	Road may be deactivated. Suspect difficult surveying due to wetland areas.

id	stream_name	sp_upstr	fish_tags	followup_comments
1008301290	–	{CSU,CT,LSU,NSC,PCC,RB,SQ,SU}	150	Private land. Road difficult to make out on aerial imagery.
1008301326	–	–	150	Very close to Hevenor Creek with numerous species downstream. PK and CM spawning locations just downstream of confluence. Private land crossing. Seventeen mile road crossing just upstream.
1008301446	–	–	150	Private land. Need to knock on door for access.
1008301747	–	–	150	SFC work conducted but no formal hab con. Smaller system
1008301754	–	–	150	FISS site notes indicate high value habitat. NFC at upper site. Suspect distribution limit is open wetland area well upstream of second crossing up.
1008301892	–	–	150	Stream may not be located where mapped. Suspect main crossing is further to the east a bit.
1008301923	–	–	150	Crossing is way up in the mountains. Although there are no sample sites I would think that forestry would have fish info for this area.
1008301994	–	–	150	SFC completed FHAP.CO and CT. Habitat models as 8% upstream.
1008302085	–	{CC,CT}	150	CO not too far downstream. CT upstream. Maybe be bridge.
1008302116	–	{CT,DV}	150	Cascade at road. Decent size lake with CT and MW.
1008302257	Pinenut Creek	–	150	No fisheries information.
1008302324	–	–	150	Small lake upstream. Road deactivated?
1008302371	–	{CT}	150	CO and PK downstream with CT upstream.
1008302377	–	{CT}	150	Falls at end of reach 3 on main trib (see FISS sites for details). CT present upstream.
1008302403	–	–	150	Numerous sample sites upstream with no fish noted. AT 1km upstream gradient noted as 17%.
1008302422	–	–	150	CT and DV downstream. Small lake upstream.
1008302518	–	–	150	Numerous wetlands upstream but stream habitat likely limited. CH spawning noted just downstream in McCully.
1008302758	–	–	150	Difficult to tell if road is there. Suspect backwatered crossing if CBS present.
1008302857	Andi Creek	–	150	Railway. Difficult access.
1008302868	Chicago Creek	{CO,CT,DV,RB}	150	No obvious access to this site.
1008302869	Gershwin Creek	{CT,DV}	150	Railway crossing. Phase 1 not completed but SFC references work from 2000, and 2015.
1014000009	–	{RB}	150	Design already completed by Steve Andrade. Plugging issues. Dry at time of photos from Steve.
1014000057	–	–	150	Large wetlands upstream and close to Morice mainstem.
1014000255	–	–	150	Phase 1 needed. Larger system with channel visible in aerial imagery.
1014000571	–	{DV,RB}	150	Heavily logged upstream and many branches upstream are classed as intermittent.
1014000666	–	{CT}	150	SFC site with fish point and lake upstream.
1014000768	–	–	150	Smaller stream with other road just upstream. Should assess but unlikely high value habitat.
1014000819	–	–	150	Needs phase 1!

id	stream_name	sp_upstr	fish_tags	followup_comments
1014000855	–	{CT,RB}	150	CT point upstream. Small split watershed with many intermittent tagged streams.
1014001120	–	–	150	Fish noted in outlet pool. Huge outlet drop. Fish points upstream.
1024600895	Silvern Creek	{CO,DV,ST}	150	Silvern Creek. Not yet assessed. Large system.
1024600913	Sandstone Creek	{CT,DV,RB}	150	Duplicate of PSCIS 8530. DV and CT confirmed. SFC recommends habitat confirmation
1024601067	–	{DV}	150	Adjacent to CO points with some lake/wetland upstream.
1024601216	–	–	150	Not associated with mapped stream. Seems unlikely to have significant amounts of high value habitat although could be crossing downstream of 8501 where there are DV known upstream.
1024702220	–	{CT}	150	SFC site with fish known upstream.
1100001493	Coffin Creek	{CSU,CT,DV,LSU,MW,RB,RSC}	150	–

Table 3: Fish species recorded.

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

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