

# **2015 Inventory of High Priority Culverted Fish Passage Barriers in the Lower/Middle Skeena, Bulkley, Morice, and Babine River Watersheds**



Submitted to: Skeena Fisheries Commission & Fisheries & Oceans Canada

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## **1. INTRODUCTION**

This report is an interim compilation of outstanding fish passage issues at stream crossings in the Lower and Mid Skeena, Bulkley, Morice and Babine Watersheds. Fish Habitat Restoration Initiative funding was provided through Fisheries and Oceans Canada. The Gitksan Watershed Authorities (GWA) was commissioned by the Skeena Salmon Commission to start building a comprehensive list of crossing sites deemed as full or partial barriers to salmonid species. The initial scope was to look at highway and railway crossings and revisit reports produced over a decade ago by GWA for the lower and middle Skeena Watershed (Rabnett, 2006 and Rabnett & Williams, 2004). The scope was expanded into resource roads, which still requires further report compilation and review for large sections such as the Babine River Watershed. The overall aim is to bring together various government and industry stakeholders and First Nations groups to produce a priority rehabilitation plan going forward that will provide the best results outcomes for improving Skeena stocks. By continuing this compilation and revisiting the document, First Nations natural resource groups can use this report as a tool to look at fish passage concerns within their territories. The report is accompanied by an excel file for individual sorting of site factors and a digital map which can be updated upon request.

First Nations Peoples have inhabited the lands of the Skeena and Watershed for more than 1000 years and have traditional ties to specific land and water bodies. The First Nations lived off the resources found within their Traditional Territories, practicing conservation based management strategies to ensure their existence continued for generations. One of the most important resources that the First Nations relied upon was the yearly returns of salmon, which formed the staple of their diets. Fish were captured in the spring, summer and fall, eaten fresh or preserved to last them throughout the winter months until fish could be harvested the following year. However, this way of life was significantly changed in the late 19th century with the arrival of the Europeans and the establishment of the commercial canneries located at the mouths of the major fish producing rivers. Throughout the 20th Century the First Nations continued to fish for food, social and ceremonial purposes but widespread declines of fish stocks were experienced leading to the abandonment of many of their traditional fishing sites (Rabnett et al., 2001).

A maze of road networks have been created in the Skeena Watershed since the early 1900's with the building of rail and highway corridors and later when large-scale commercial logging began

in the 1950's and 1960's (Gottesfeld and Rabnett, 2008). Most of these transportation routes were built to minimal standards at stream crossings. Forestry roads by far contribute to the highest concentration of road density in the Skeena Watershed, however the implementation of the Forest Practices Code in 1995 has greatly improved stream crossing standards on newly built roads. Unfortunately, a legacy of fish passage barriers still exist along highways, railways, and logging corridors that should be restored to their natural state.

GWA prepared this list with the best available information that could be amassed in a relatively short time and limited budget within the truncated 2014/2015 funding period. Relevant reference reports and personal communications (Pers. comms.) were available at the:

- BC Ministry of Forests, Lands and Natural Resource Operations (MFLNRO; cited in this report as either MOE as MOF; Smithers BC),
- Department of Fisheries and Oceans (DFO; Smithers BC),
- BC Timber Sales (BCTS; Skeena Business Area, Terrace/Hazelton BC).

GWA acknowledges that the crossing list presented in this report is incomplete, that some of the sites may end up being low priority, and that some sites may have already been restored. The Babine Watershed was not intended to be included for this report due to time constraints. However two reports contained sites with common road networking both the Bulkley and Babine Watersheds near their adjoining headwaters: Natlin/Nichyeskwa/Cataline (BCTS Internal Files 2014) and Harold Price/Fulton watersheds (Kossman 2004) therefore a small number of Babine sites were included in this report and are by no means a complete list.

Poorly placed culverts can restrict fish movement by creating excessive water velocity within a culvert and extreme plunge falls at the outlet. Culverts can be categorized into three fish-passage scenarios:

1. Full barrier - stops all fish at all flow stages,
2. Partial barrier - stops certain fish species or individual life stages, or stops movement at certain time of the year,
3. No barrier - allows fish passage year-round.

A culvert barrier can result singularly or in combination by the following factors:

- excessive jump height at the culvert outlet,
- insufficient pool depth below the culvert,
- excessive water velocity inside the culvert,
- insufficient water depth inside the culvert.

Two assessment guidelines have been used in BC since the year 2000. The first method introduced as a standard was the Fish Passage-Culvert Inspection Procedures (FPCI; Parker 2000), which was a very thorough assessment of a crossing as described in:

[http://a100.gov.bc.ca/appsdata/acat/documents/r15715/Fish\\_Passage\\_Culvert\\_Inspection\\_1229456911028\\_60d06fb366d66d9a96f0f58ea082db1abc58c0fc1e3805cd799cd37fc0143bdb.pdf](http://a100.gov.bc.ca/appsdata/acat/documents/r15715/Fish_Passage_Culvert_Inspection_1229456911028_60d06fb366d66d9a96f0f58ea082db1abc58c0fc1e3805cd799cd37fc0143bdb.pdf)

Since about 2008, the Parker (2000) was replaced largely by a broader land-based approach as described in: <https://www.for.gov.bc.ca/hcp/fia/landbase/standards/fishpassage.htm> . Prior to the year 2000, culvert inspections were mainly based on the experience and intuition of investigators who mainly recorded outflow drop, water depth inside the culvert, fish presence/absence on either side of a crossing, and witnessing actual attempts of fish trying to ascend through the crossing.

Following peer review of the outstanding fish passage issues identified in this report, GWA will attempt to produce a more refined prioritization list that stakeholders can use to develop restoration plans. It should be noted that in most cases culvert assessments referenced in this report are considerably dated (>10 years) and would require a reassessment in some form as site conditions have likely changed.

## **2. METHODS**

Over 20 culvert assessment reports were reviewed and all noted high priority sites were summarized in table form and listed by major watershed. Tenure holders were listed alphabetically as to not put more weight on one organization over another. Information provided in the table in Appendix I include:

- Map ID #
- Crossing tenure holder

- Road name
- Stream name if known (otherwise referred to as a tributary of gazetted stream),
- Watershed Code (50,000 scale; “\*” at the end signifies that a W.C. wasn’t available but is attached directly the W.C. listed),
- UTM location,
- Fish species presence or possible presence,
- Original report recommendations,
- Current status (mostly unknown),
- Comments/completion details,
- Reference source,
- First Nation Territory,
- Estimated habitat gain if crossing is fixed.

IMap BC (<http://maps.gov.bc.ca/ess/sv/imapbc/> ) provided information for tenure holders, road and stream names, watershed codes, species presence, and UTM’s when not available in reports. The BC Fisheries Information Summary System (FISS; <http://www.env.gov.bc.ca/fish/fiss/index.html> ) also provided additional information. Non-status roads (no tenure holder) were assigned to MOF responsibility however may be incorrect in some instances and may be private land holdings.

### **3. RESULTS**

A total of 169 priority fish passage barrier sites were extracted from over 20 culvert assessment reports for the Lower Skeena (30 sites), Middle Skeena (73 sites), Bulkley (25 sites), Morice (17 sites), and Babine (24 sites). Appendix I presents an attribute list sorted alphabetically by tenure holder. Registered Tenure holders by major watersheds are as follows (listed alphabetically):

#### Lower Skeena Watershed

- BCTS – 4 sites,
- Coast Tsimshian Resources Ltd – 12 sites,
- MOF Non-Status – 2 sites
- Ministry of Transportation and Infrastructure (MOTI) – 7 sites (2 include CNR arrangements)

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- Tenure Holder Unknown – 5 sites.

Middle Skeena Watershed

- BCTS – 20 sites,
- Canadian Nation Railway (CNR) – 1 Site,
- Coast Tsimshian Resources Ltd – 2 Sites,
- District Manager Skeena Stikeen (DSS; MOF) – 40 Sites,
- Gitxsan Forest Inc. – 2 sites,
- MOF Non-status – 2 Sites,
- MOTI – 5 sites.

Bulkley Watershed

- Canadian Nation Railway (CNR) – 4 Sites,
- District Manager Nadina (DND; MOF) – 1 Site,
- District Manager Skeena Stikeen (DND; MOF) – 2 Sites,
- MOF Non-status – 1 Site,
- Ministry of Transportation and Infrastructure (MOTI) – 17 sites.

Morice Watershed

- Canadian Pacific Forest Products Ltd – 2 Sites,
- District Manager Nadina (DND; MOF) – 7 Sites,
- MOF Non-status – 2 Sites,
- MOTI – 1 site,
- Tenure Holder Unknown – 2 sites,
- West Fraser Mills Ltd. – 3 Sites.

Babine Watershed

- BC Timber Sales (BCTS; Skeena Business Area) – 17 sites,
- District Manager Skeena Stikeen (DND; MOF) – 3 Sites,
- MOF Non-status – 2 Sites,
- MOTI – 2 Sites.

Six high priority sites were referenced that did not have UTM's associated with the site (Appendix II). Original authors of the reports will need to be consulted to determine exact locations. Maps of the sites listed and isolated by tenure holder or geographical area are available upon request through Gitksan Watershed Authorities.

First Nation Territories are listed in the tables and outlined in associated report maps for Tsimshian, Gitanyow, Gitksan, Wetsuweten and Lake Babine Nations and are included in the following tables for each site location. For the purpose of this report, GWA acknowledges that there is in some cases, overlap between territories that exist. Multiple First Nations may have interests in the fish stocks of concern at a site and our aggregate involvement in these discussions is important.

#### **4. DISCUSSION AND RECOMMENDATIONS**

Culvert barrier remediation can be in the form of complete replacement with open-bottom structures (bridges, pipe-arch culverts), culvert modification (baffles), temporary “stop-gap” measures (backwater weirs), or complete crossing deactivation on non-essential roads. Culvert replacement for barrier sites located on essential roads will incur a large cost particularly those that cross Hwy 16, Hwy 37 North and South, Hwy 118, and CNR. As such, a detailed fish habitat assessment in some form is critical beforehand to measure the potential benefits of structural replacement in light of competing interests for BC Provincial funding. Culvert replacement on logging roads is the responsibility of the registered tenure holder, whether they are the BC Province (MOF, BCTS) or are private firms. In some cases, this has already been completed in the list provided above in the form of “habitat gain above crossing”.

Prioritizing these outstanding high priority sites listed in previous reports is not an easy task. The scoring system was not included in the tables due to varying field methods used. Internal reviews within each tenure holder and organization will need to take place to focus our immediate efforts. It should be noted that the number of sites broken down by tenure holder is also indicative of the reported assessments we were able to compile. A number of sites reported a decade ago have been remediated and Fisheries and Oceans habitat department in Smithers, B.C, is currently documenting those restoration projects, which is often a concerted effort between stakeholders.



Non-essential roads should be deactivated to reduce the overall road density and cumulative fish passage and sedimentation impacts. Non-essential roads are located throughout the Skeena Watershed, however they all differ in importance with respect to their proximity to fish-bearing streams. GWA recommends that the BC Province compile a list of non-essential road and deactivate accordingly.

Essential roads should be monitored on a regular basis depending on their level of use. This will allow for early detection of fish passage obstructions, maintenance problems, and sedimentation sources. It is recommended that the First Nations enter into a joint venture with agencies responsible for maintaining the various road systems to undertake regular stream crossing inspections with the aim of ensuring fisheries values are protected on an ongoing basis. Remediated sites require maintenance over time and so will this document as we work together to make sure high priority fish passage concerns are addressed. First Nations with traditional ties to Skeena fish aim to increase awareness of this process.

## **5. REFERENCES**

- Bennett, S. 2010. Lower Skeena Fish Passage: Closed Bottom Structure Assessments 2009. Report prepared for Coast Tsimshian Resources Ltd. 28pp.
- Bustard, David. 1999. Stream Inventory for Owen Creek Watershed. 1998. WSC 4460-6006-239. Unpublished report for Houston Forest Products Ltd. (in SKR 2000).
- Department of Fisheries and Oceans. 1999. Fish Value and Highway Culvert Inspection, August 1998 - Done by Federal Fisheries. Habitat and Enhancement Branch.
- Freshwater Resources. 2000. Kispiox District Fish Passage Rehabilitation: Survey and Design. Report prepared for BC Ministry of Environment, Lands and Parks. 35pp.
- Gibson, L. 1997. Toboggan Creek Watershed Restoration Project - Level 1 and 2 Detailed Assessment. Contract #CSK 3087. Nortec Consulting Report Prepared for Watershed Restoration Program, Ministry of Environment, Lands and Parks. 150pp.
- Gottesfeld, A.S. and K.A. Rabnett (2008) Skeena River Fish and Their Habitat. Skeena Fisheries Commission. Ecotrust, Oregon U.S.A.
- Grieve, G.D. and D. Webb. 1999. Kitwanga River Steelhead: Summary of Current Data and Status Review. Biolith Scientific Consultants Ltd. Report prepared for BC Ministry of Environment, Lands and Parks. Skeena Fisheries Report #SK 101. Report Prepared for BC Ministry of Transportation, Northern Region and the Department of Fisheries and Oceans. 25pp.

Kossman, R. 2004. Fish Passage Culvert Inspections - Upper Fulton River and Harold-Price Creek Watersheds. Silvicon Services Inc. Report prepared for West Fraser Mills Lt. – Pacific Inland Resources Division. FIA Activity #223008. 15pp.

McCarthy, M. 2000. Comeau Creek Fish and Fish Habitat Initiative 1999. Prepared for Fisheries Renewal B.C, Suskwa Restoration Society, and DFO.

McCarthy, M. 2007. The 2006 Kitwanga River Fish Passage-Culvert Inspection and the Stream Crossing Quality Index Project. Gitanyow Fisheries Authority report prepared for the B.C. Ministry of Forests.

McCarthy, M. 2008. The 2007 Upper Kitwanga River Stream Crossing Assessment and Stream Crossing Deactivation Project. Gitanyow Fisheries Authority report prepared for the B.C. Ministry of Forests.

McCarthy, M. 2009. The 2008 Kitwanga-Cranberry River Watershed Restoration Project. Gitanyow Fisheries Authority report prepared for B.C. Ministry of Forests and Range, Smithers, BC.

MOE. 2008. Field Assessment for Fish Passage Determination of Closed Bottom Structures, 2<sup>nd</sup> Edition. BC Ministry of Environment. 16 p.

Parker, M.A. 2000. Fish passage-culvert inspection procedures. Ministry of Environment Lands and Parks. Watershed Restoration Technical Circular No. 11. 46p.

Rabnett, K. 2006. Lower Skeena Fish Passage Assessment Highway #16, #37S, and CN Rail. Skeena Fisheries Commission Report. 66pp.

Rabnett, K. and L. Williams. 2004. Highway #16 Fish Passage Assessment in Middle Skeena Watershed. GWA Report prepared for Department of Fisheries and Oceans and the Pacific Salmon Commission. 59pp.

Rabnett, K. and T. Wilson. 2007. Fish Passage Assessment of Kispiox Forestry Roads Stream Crossings. GWA Report prepared for the Pacific Salmon Commission. 90pp.

SKR Consultants Ltd. 2000. Fish Passage - Culvert Inspections at Selected Sites in Houston Forest Products Operating Area in the Morice Forest District. Report prepared for Houston Forest Products Co. 11pp.

SKR Consultants Ltd. 2003a. Fish Passage - Culvert Inspection on Highway 16 (Yellowhead Highway) at Shandilla Creek. Contract 355CS4023. Report Prepared for BC Ministry of Transportation, Northern Region. 25pp.

SKR Consultants Ltd. 2003b. Fish Passage - Culvert Inspection on Highway 16 (Yellowhead Highway) at Andimaul Creek. Contract 355CS4023. Report Prepared for BC Ministry of Transportation, Northern Region. 20pp.

SKR Consultants Ltd. 2006b. Fish Passage - Culvert Inspection where Yellowhead Highway 16 crosses Flint Creek. Contract 356CS0561. Report prepared for BC Ministry of Transportation, Northern Region and the Department of Fisheries and Oceans. 31pp.

SKR Consultants Ltd.. 2006a. Fish Passage - Culvert Inspections where Yellowhead Highway 16 and Singlehurst Road cross Singlehurst (Swede) Creek. Report prepared for BC Ministry of Transportation, Northern Region and the Department of Fisheries and Oceans. 25pp.

Triton Environmental Services Ltd. 2000. Fish Passage Culvert Inspections in the Buck, Parott, and Morice Watersheds. Report prepared for Canadian Pacific Forest Products Ltd..18pp.

Triton Environmental Services Ltd. 2001. Kispiox Watershed Fish Passage Assessment for Cullen, Ironside, Corral, and Clifford Sub-basins. Report prepared for Ministry of Forests - Kispiox District. 15pp.

Viveiros, M. 2011. 2010 Fish Passage Evaluations for Closed Bottom Structures. Performed under FIA Contract: Project # 4031505

Viveiros, M. 2012. Excel Document on file at BCTS Terrace.

Wilson, T. and Rabnett K. 2007. Fish Passage Assessment of Highway 16 and CN Rail in the Bulkley Watershed. Skeena Fisheries Commission Report. 124pp.

Appendix I: List of out standing fish passage barrier sites in the Lower and Middle Skeena, Bulkley, Morice, and Babine Watersheds.

Map Ref. #	Tenure Holder	Major Watershed	Road Name	Stream Name	Watershed Code (50K)	Easting	Northing	Species Presence	Original Report Recommendations	Status	Comments/Completion Details	Source	First Nation Territory	Est. Habitat Gain (m)
1	BCTS	Lower Skeena	Dasque FSR	Unnamed Skeena Trib Site 377355	400-000000*	504715	6027261	Unknown	Remove bedload under bridge or replace structure	Unknown	Crossing nearly filled with sediment; fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	TBD
2	BCTS	Lower Skeena	Dasque FSR	Unnamed Skeena Trib Site DAS003	400-000000*	494130	6024073	Unknown	Maintenance or replacement	Unknown	Silt fencing blocking WBC; fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	TBD
3	BCTS	Lower Skeena	Dasque FSR	Unnamed Skeena Trib Site DAS010	400-140800	498299	6025933	Unknown	Maintenance or replacement	Unknown	Concrete structure nearly filled with sediment; fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	TBD
4	BCTS	Lower Skeena	Limonite FSR Br 550 3.5 km	Limonite Creek trib Site 4241	440-341700-39700	574873	6043119	Possible CO, CH, RB, DV	Place boulders at residual pool to eliminate outlet drop.	Unknown	Report lists this Road as Telkwa; about 100m u/s of Limonite Creek.	Viveiros 2011	Tsimshian	TBD
5	BCTS	Middle Skeena	Kitnyakwa FRS (Km 3.5)	Kitnyakwa River trib	440-314000-20400	574263	6033000	Possible CH, CO, RB, DV, BT	Complete Habitat Confirmation Ass't and fish trapping	Unknown	Adjacent to Map Ref 27; 2x900 mm RMC	BCTS 2014 - internal data files	Tsimshian	TBD
6	BCTS	Middle Skeena	Kitnyakwa FRS (Km 3.5)	Kitnyakwa River trib	440-314000-20400	574263	6033000	Possible CH, CO, RB, DV, BT	Complete Habitat Confirmation Ass't and fish trapping	Unknown	Adjacent to Map Ref 27; 700mm RMC	BCTS 2014 - internal data files	Tsimshian	TBD
7	BCTS	Middle Skeena	Limonite FRS (Km 46.5)	Kitnyakwa River trib - Site 4028	440-314000-03100*	571183	6038826	Possible CT	Embed pipe.	Unknown	No information available	Viveiros 2011	Tsimshian	TBD
8	BCTS	Middle Skeena	Limonite FRS (Km 47.5)	Kitnyakwa River trib - Site 4061	440-314000-03100*	570833	6039511	Possible CO, CT	Pipe located 100 further up road than shown on map. Embed pipe and line with gravel.	Unknown	Located near height of land with WC 440-331700; Imap BC not clear on drainage	Viveiros 2011	Tsimshian	TBD
9	BCTS	Middle Skeena	Limonite FRS (Km 57.5)	Zymoetz River trib - Site 4313	440-383400	569557	6044997	Possible CH, CO, ST, RB, CT, DV, BT	1 m drop on inlet side. Should level out inlet and fill pipe with gravel.	Unknown	No information available	BCTS 2014 - internal data files	Tsimshian	TBD

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10	BCTS	Middle Skeena	Br. 550 FSR (Km 3.5) off Limonite FRS	Limonite Creek trib - Site 4241	440-341700-39700	574873	6043119	Possible CH, CO, RB, DV, BT	Place boulders at residual pool to eliminate outlet drop.	Unknown	100 m upstream of Limonite Creek	BCTS 2014 - internal data files	Tsimshian	TBD
11	BCTS	Middle Skeena	Helen Br. 2000 FSR (Km 0.03)	Kispiox River trib - Site 5	470-309800	560518	6156771	CT, DV	Replace current RMC with Engineered c/v	Replacement scheduled in 2015	Habitat Confirmation Ass't completed in 2014	BCTS 2014 - internal data files; McCarthy 2014	Gitxsan	1,300
12	BCTS	Middle Skeena	Helen Br. 2000 FSR (Km 0.1)	Kispiox River trib - Site 6	470-309800-35900	560529	6156821	CT, DV	Replace current RMC with Engineered c/v	Replacement scheduled in 2015	Habitat Confirmation Ass't completed in 2014	BCTS 2014 - internal data files; McCarthy 2014	Gitxsan	1,050
13	BCTS	Middle Skeena	West Itzul FSR	Shegunia River trib - Site 40	400-455200-48500*	602824	6136756	Possible DV	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
14	BCTS	Middle Skeena	Itzul 6010A FSR	Shegunia River trib - Site 39	400-455200-48500*	602940	6136349	Possible DV	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
15	BCTS	Middle Skeena	Kitwancool Br. 2 Road	Chernobel Creek - Site 3	400-364900*	550305	6140693	CO, CT	Replace twin RMCs with OBS.	Unknown	FHAP completed in 2008; 3.3km from Hwy 37N jct.; velocity barrier to juveniles; shelved engineered site plan completed by McElhanney (2007); major error in IMap BC mapping (enters Kitwanga River at 9U.5506501.6141158 or 200m upstream of Weber Bridge crossing)..	McCarthy 2007, McCarthy 2009	Gitanyow	1,500+

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16	BCTS	Middle Skeena	Kitwancool Br. 2 Road	Unnamed Upper Kitwanga River trib - Site 61	400-364900-76100	549762	6140303	CT, possible CO	Remove remaining debris jam/road fill downstream using heavy machinery	Unknown	FHAP completed in 2008; possible velocity barrier to juvenile salmonids; GFA installed backwater weir at culvert outlet and partially removed debris jam/road fill downstream (2008); major error in IMap BC mapping.	McCarthy 2008, McCarthy 2009	Gitanyow	1,000
17	BCTS	Middle Skeena	Helen Br. 2100A FSR (Km 0.)	Kispiox River trib - Site 5b	470-309800	559886	6156792	CT, DV	Deactivate	Deactivation scheduled in 2015	Habitat Confirmation Ass't completed in 2014; located about 600m upstream of Site 5.	McCarthy 2014	Gitxsan	700
18	BCTS	Middle Skeena	Boundary (Coal) FSR 0.2 km.	Coal Creek trib Site 4807	440-741100*	582888	6078093	Possible CT	Fish survey required. If positive then remove culvert and replace with open bottom structure.	Unknown	230m upstream of Coal Creek confluence	Viveiros 2011	Gitxsan	TBD
19	BCTS	Middle Skeena	Boundary (Coal) FSR 0.6 km.	Coal Creek trib Site 4816	440-741100*	582819	6078454	Possible CT	Culvert is barrier. Remove culvert and replace with open bottom structure.	Unknown	100m upstream of Coal Creek confluence	Viveiros 2011	Gitxsan	1,200
20	BCTS	Middle Skeena	16.5 km Copper	Zymoetz River trib Site 3974	440*	546511	6036672	CO, RB	Recommend remove culvert and replace with open bottom structure. Beaver activity d/s (not interfering). 100-200 m of decent Coho habitat u/s.	Unknown	Located about 50m u/s of Zymoetz side channel confluence, 4 more crossing located u/s.	Viveiros 2011	Tsimshian	100-200
21	BCTS	Middle Skeena	33 km Copper	Zymoetz River trib Site 3770	440*	561267	6034546	Possible CO, ST, RB, CT	Need to add material at outlet side of pipes to create residual pool at discharge.	Unknown	Located about 50m u/s of Zymoetz side channel confluence.	Viveiros 2011	Tsimshian	TBD

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22	BCTS	Middle Skeena	Limonite Br. 550 3.6 Km	Limonite Creek trib Site 4242A	440-341700-39700	574966	6043150	Possible CO, CH, RB, DV	Pipe plugged by beavers. Road surface flooded. Install 1x2 box culvert to deter beavers.	Unknown	Located about 50m u/s of Limonite Cr. confluence, 3 more crossing located u/s.	Viveiros 2011	Tsimshian	TBD
23	BCTS	Middle Skeena	Copper-Limonite FSR 54 km	Limonite Creek trib Site 4235	440-341700*	570520	6042810	Possible DV	Embed pipe and place gravel inside.	Unknown	Multiple crossings along this stream system	Viveiros 2011	Tsimshian	TBD
24	BCTS	Middle Skeena	Limonite FSR Br 550 2.2km	Limonite Creek trib Site 4232	440-341700-32900	573643	6042862	Possible CO, CH, RB, DV	No channel above pipe. Channel is 10m up road. Need to move pipe up road 10m and drop pipe to channel bed (embed).	Unknown	Report lists this Road as Telkwa; about 100m u/s of Limonite Creek.	Viveiros 2011	Tsimshian	TBD
25	BCTS	Babine	Nichyeskwa FSR	Nichyeskwa Creek trib - Site 56	480-370100-88800-15075 or 460-081700-26500	616690	6145830	Possible CO, RB, DV, BT, WF	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Height of land b/n Natlin and Nichyeskwa watersheds, Imap BC shows as Nichyeskwa watershed; Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
26	BCTS	Babine	Nichyeskwa FSR	Nichyeskwa Creek trib - Site 57	480-370100-88800-15075 or 460-081700-26500	617171	6145932	Possible CO, RB, DV, BT, WF	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Height of land b/n Natlin and Nichyeskwa watersheds, Imap BC shows as Nichyeskwa watershed; Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD

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27	BCTS	Babine	Nichyeskwa FSR	Nichyeskwa Creek trib - Site 61	480-370100*	621404	6148650	Possible CO, RB, DV, BT, WF	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
28	BCTS	Babine	Nichyeskwa North FSR	Nichyeskwa Creek trib - Site 63	480-370100*	622209	6148402	Possible CO, RB, DV, BT, WF	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
29	BCTS	Babine	Nichyeskwa South FSR	Nichyeskwa Creek trib - Site 69	480-370100-57600	623094	6146451	Possible CO, RB, DV, BT, WF	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
30	BCTS	Babine	Nichyeskwa North FSR	Nichyeskwa Creek trib - Site 59	480-370100-78300	620582	6148220	Possible CO, RB, DV, BT, WF	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
31	BCTS	Babine	Nichyeskwa North FSR	Nichyeskwa Creek trib - Site 62	480-370100*	621909	6148575	Possible CO, RB, DV, BT, WF	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
32	BCTS	Babine	Nichyeskwa South FSR	Nichyeskwa Creek trib - Site 70	480-370100-57600-19200-4290	623904	6145918	Possible CO, RB, DV, BT, WF	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD



*2015 Inventory of High Priority Culverted Fish Passage Barriers in the Lower/Middle Skeena, Bulkley, and Morice River Watersheds*

Map Ref. #	Tenure Holder	Major Watershed	Road Name	Stream Name	Watershed Code (50K)	Easting	Northing	Species Presence	Original Report Recommendations	Status	Comments/Completion Details	Source	First Nation Territory	Est. Habitat Gain (m)
33	BCTS	Babine	Nichyeskwa South FSR	Nichyeskwa Creek trib - Site 71	480-370100*	624351	6146027	Possible CO, RB, DV, BT, WF	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
34	BCTS	Babine	Nichyeskwa South FSR	Nichyeskwa Creek trib - Site 72	480-370100*	624506	6146096	Possible CO, RB, DV, BT, WF	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
35	BCTS	Babine	Nichyeskwa South FSR	Nichyeskwa Creek trib - Site 73	480-370100*	624978	6145902	Possible CO, RB, DV, BT, WF	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted; no road at UTM.	BCTS 2014 - internal data files	Gitxsan	TBD
36	BCTS	Babine	Suskwa 5500 FSR	Cataline Creek trib - Site 47	480-167800-88300	620831	6156348	Possible RB	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted; confluence with WC 480-167800-88300 immediately upstream of crossing.	BCTS 2014 - internal data files	Gitxsan	TBD
37	BCTS	Babine	Suskwa 5500 FSR	Cataline Creek trib - Site 48	480-167800-94000	620995	6156202	Possible RB	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
38	BCTS	Babine	Suskwa 5500 FSR	Cataline Creek trib - Site 49	480-167800*	621484	6155217	Possible RB	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files		TBD

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39	BCTS	Babine	Suskwa 5500 FSR	Cataline Creek trib	480-167800*	621560	6155025	Possible RB	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
40	BCTS	Babine	Suskwa 5800 FSR	Cataline Creek trib - Site 52	480-167800-88300	620649	6158113	Possible RB	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
41	BCTS	Babine	Suskwa 5800 FSR	Cataline Creek trib - Site 53	480-167800-88300-51600	621028	6157722	Possible RB	Complete Habitat Confirmation Ass't and fish trapping	Ass't scheduled in 2015	Habitat Confirmation Ass't planned in 2014 but not completed due to blockade on Suskwa FSR Rescheduled in 2015 if access is permitted.	BCTS 2014 - internal data files	Gitxsan	TBD
42	Canadian Pacific Forest Products Ltd	Morice	Km 4 on Spur Rd HW 19	McBride Lake trib - Site 341	460-600600-63200-66200	610758	5990014	CT, DV	Replace RMC with OBS.	Unknown	Located 1,900m upstream of McBride Lake; high quality spawning and rearing habitat upstream; IMap BC shows crossing on mainline (Road ID R10644).	Triton 2000	Wetsuweten	1,800
43	Canadian Pacific Forest Products Ltd	Morice	Km 2 on Spur Rd HW 19 (Branch from Nanika Mainline at Km 2.9)	McBride Lake trib - Site 344	460-600600-63200-75900	612679	5990406	CT	Replacement	Unknown	Located 480m upstream of McBride Lake; good quality spawning and rearing habitat upstream of c/v, which is blocking McBride Lake resident trout; IMap BC shows crossing on mainline (Road ID R10644).	Triton 2000	Wetsuweten	820
44	CNR	Middle Skeena		Comeau Creek	400-415300	580465	6115805	CO, DV, CT	Install baffles in concrete box culvert and install backwater weir	Unknown	C/V barrier to all fish, engineered site plan required, major mapping error on IMap BC - See McCarthy (2000) map for correct alignment on file at DFO, Smithers	McCarthy 2000	Gitxsan	5,600

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45	CNR	Bulkley		Glass Creek Site 80	460-242900-51500-09600*	613516	6079933	RB, DV	Install new culvert at proper elevation	Unknown	Toboggan Lake/ Glacier Gulch Creek tributary. Further ass't required; stream flows mainly through agricultural land.	Gibson 1997; Wilson and Rabnett 2007	Wetsuweten	1,500
46	CNR	Bulkley		Coffin Creek Site 77	460-472700	634345	6054617	CO, BT, DV CT, RB	Establish a series of step pools up to the culvert	Unknown	1.2km W of Quick on south side of Bulkley River.	Wilson and Rabnett 2007	Wetsuweten	TBD
47	CNR	Bulkley		Moan Creek Site 30	460-458800	631022	6055956	CT, DV, BT, RB	Replace RMC with OBS	Unknown	10km E of Telkwa on south side of Bulkley River; further ass't required.	Wilson and Rabnett 2007	Wetsuweten	TBD
48	Coast Tsimshian Resources Ltd	Lower Skeena	Exstew River M/L	Exstew River Unnamed trib - Site EX004	400-137400*	494953	6031090	CO confirmed - Inferred any Exstew R. salmonid	Replace RMC with 9m OBS	Unknown	Coho sighted inside plugged culvert; high habitat value; further ass't required.	Bennett 2010	Tsimshian	3,130
49	Coast Tsimshian Resources Ltd	Lower Skeena	Exstew River M/L	Exstew River Unnamed trib Site EX007	400-137400*	496207	6030378	Unknown - Inferred any Exstew R. salmonid	Replace two RMC with 7m OBS	Unknown	Collapsing and partially plugged dual culverts; Fish trapping not done but good habitat upstream and downstream; moderate habitat value; further ass't required.	Bennett 2010	Tsimshian	163
50	Coast Tsimshian Resources Ltd	Lower Skeena	Exstew River M/L	Exstew Unnamed trib Site 377276	400-137400*	493251	6033143	Unknown - Inferred any Exstew R. salmonid	Replace RMC with 11m OBS	Unknown	Collapsed beaver stop at inlet, suspended intake; Fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	125
51	Coast Tsimshian Resources Ltd	Lower Skeena	Exstew River M/L	Exstew Unnamed Trib Site 377319	400-137400*	494731	6031153	CO confirmed - Inferred any Exstew R. salmonid	Replace RMC with 4m OBS	Unknown	Partially dry channel at time of ass't; about 30 coho fry stranded in culvert outlet pool; beaver dam 5m upstream of crossing; Fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	TBD

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52	Coast Tsimshian Resources Ltd	Lower Skeena	Exstew River M/L	Exstew Unnamed Trib Site EX005	400-137400*	495007	6031097	Unknown - Inferred any Exstew R. salmonid	Install beaver cage at culvert intake or replace RMC with 5m OBS	Unknown	Culvert sloping upwards; intake blocked by beavers; Fish trapping not done; high habitat value; further ass't required.	Bennett 2010	Tsimshian	TBD
53	Coast Tsimshian Resources Ltd	Lower Skeena	Exstew River M/L	Exstew Unnamed Trib Site EX005	400-137400*	493345	6033038	Unknown - Inferred any Exstew R. salmonid	Replace RMC with 10m OBS	Unknown	700mm culvert with 600mm culverted inserted inside; beaver cage at inlet; another secondary culvert adjacent with intake 1/2 plugged; further ass't required.	Bennett 2010	Tsimshian	TBD
54	Coast Tsimshian Resources Ltd	Lower Skeena	Whitebottom M/L	Dasque Unnamed Trib Site 377344	400-165800	511503	6029684	Unknown - Inferred DV, CT	Replace RMC with 7m OBS	Unknown	Crushed intake; intake plugged by debris jam; fish trapping not done; further ass't required	Bennett 2010	Tsimshian	420
55	Coast Tsimshian Resources Ltd	Lower Skeena	Whitebottom M/L	Unnamed Skeena Trib - Site 377339	400-163200	511373	6029291	DV	Replace collapsing bridge	Unknown	Bridge collapsing; fish trapping not done; further ass't required; appears to be same stream network as Site WB006.	Bennett 2010	Tsimshian	TBD
56	Coast Tsimshian Resources Ltd	Lower Skeena	Whitebottom M/L	Unnamed Skeena Trib Site WB006	400-163200	511440	6029358	DV	Maintenance or replacement	Unknown	WBC filled in with sediment; fish trapping not done; further ass't required; appears to be same stream network as Site 377339.	Bennett 2010	Tsimshian	TBD
57	Coast Tsimshian Resources Ltd	Lower Skeena	Erlandsen BR 511400 ML 1.2km	Erlandsen Creek trib Site 2182	400-184200-17000-16600	518953	6050114	CT	Removal; 3x450mm pipes. Pipes were 90% plugged with graded road material. Cleaned out two. Inlets need to be cleaned out with machinery as branches and rock are too heavy to be lifted manually.	Unknown	About 4km u/s of Erlandsen Cr. confluence; CT recorded at crossing, only three-spine stickleback recorded upstream on Imap BC.	Viveiros 2012	Tsimshian	TBD

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58	Coast Tsimshian Resources Ltd	Lower Skeena	Br. 500 from 4K at SB ML (Rd ID R07509) at 0.8km	Erlandsen Creek trib Site 2137	400-184200-17000*	518438	6048412	Possible CT, DV	Stream backed up by beaver dam 30m below outlet. Beaver has also plugged inlet.	Unknown	Discrepancy in road naming - Imap BC shows no road name, just ID R07509; about 1.1km u/s of Erlandsen Cr confluence.; small pond/wetland u/s.	Viveiros 2012	Tsimshian	TBD
59	Coast Tsimshian Resources Ltd	Lower Skeena	West Kalum 21km, Spur left for 1.3K (Alice Ck M/L)	Kalum River trib Site 2622	Unknown	512247	6058724	Possible CO, RB, CT	No recommendations in report; TBD	Unknown	UTM does not match a crossing, refer to project map; closest road is Alice Ck M/L	Viveiros 2012	Tsimshian	TBD
60	Coast Tsimshian Resources Ltd	Middle Skeena	2.7 km Clore	Clore Creek trib Site 3646	440-256900-03100	562427	6031902	Possible CO, CH, RB	Fish survey required. If positive install 1x3 open bottom structure.	Unknown	70m upstream of Clore Creek confluence	Viveiros 2011	Tsimshian	TBD
61	Coast Tsimshian Resources Ltd	Middle Skeena	12.1 km Clore	Clore Creek trib Site 3498	440-256900*	566171	6024603	Possible CO, RB	Fish survey required. If positive then replace pipe with 1x4 wood box culverts. Upstream values are low with series of short (50 cm) waterfalls.	Unknown	Imap BC shows road as Clore M/L Br. 636000; located about 500m u/s of Clore Cr. confluence, 4 more crossing located u/s.	Viveiros 2011	Tsimshian	TBD
62	District Manager Nadina (DND)	Bulkley	Telkwa River Road	Telkwa Ponds	460-422700*	614204	6056407	CO,	Further assessment required	Pending	Recent river shift and 2 coho rearing sites (Km11 on left bank and Km 10 on right bank) may have lost connectivity; further ass't needed. May need to abandon this site.	Jeff Laugh MOE Pers. com. March 2015; Lana Miller DFO. Pers. com. March 2015	Wetsuweten	TBD
63	District Manager Nadina (DND)	Morice	Morice/Owen FSR (Km 29.9)	Owen Creek trib Site E2	460-600600-23900-13000	640968	6005937	CO, RB, ST	Replace RMC with OBS	Unknown	Sediment entering stream from fill slope; headed by at least 2 small lakes.	SKR 2000; FISS 2015	Wetsuweten	600
64	District Manager Nadina (DND)	Morice	Morice FSR (Km 39.9)	Morice River trib Site 7	460-600600-32800-15500	629366	6007024	ST, CO, CT, DV	Replace round wood c/v with OBS	Unknown	2.1km habitat gain for coho juveniles and adults; 300m from Morice River confluence.	SKR 2000	Wetsuweten	2,100

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65	District Manager Nadina (DND)	Morice	Nanika Mainline (AKA Lamprey FSR; Km 1.5)	McBride Creek - Site 351	460-600600-63200	614907	5991448	CT	Replacement	Unknown	Located 200m upstream of McBride Lake; numerous cascades upstream of c/v may be a barrier during certain times of the year; stream headed by a lake 1.5km upstream of crossing.; further assessment required. BC Mapview shows this road as Lamprey FSR.	Triton 2000	Wetsuweten	1,590
66	District Manager Nadina (DND)	Morice	Parrott FSR (Km 44)	Buck Creek trib - Site 629	460-636000*	675369	6004480	RB	Replace RMC with OBS.	Unknown	Located 120m upstream of Buck Creek confluence; 1.65km of habitat gain; Site 629b (located 240m upstream of Site 629) should also be replaced.	Triton 2000	Wetsuweten	1,650
67	District Manager Nadina (DND)	Morice	Parrott FSR (Km 46)	Buck Creek trib - Site 370	460-636000*	677100	6003215	RB	Replace RMC with OBS.	Unknown	Located 150m upstream of Buck Creek; should be replaced along with Site 370b.	Triton 2000	Wetsuweten	1,250
68	District Manager Nadina (DND)	Morice	Morice FSR	Peacock Creek	460-600600-07100	643481	6025896	Possible CO, ST, CT, DV, BT	Replace RMC with OBS	Unknown	Concrete weir built mid-90's as retrofit, currently not functioning; further ass't required; High Priority.	Jeff Laugh MOE Pers. com. March 2015	Wetsuweten	TBD
69	District Manager Nadina (DND)	Morice	Morice FSR	Morice River Trib Site 8	460-600600*	632220	6007195	CO	Replace RMC with OBS	Unknown	Road prone to washout by upstream beaver activity; 200m upstream of Morice River confluence.	SKR 2000	Wetsuweten	4,800
70	District Manager Nadina (DND)	Middle Skeena	Kuldo FSR (Km 2.8)	Cullen Creek trib	470-245700-07200	568158	6160296	CO, ST, CT, RB, DV,	Replace RMC with OBS	Unknown	Useable habitat upstream for ST and CO.	Freshwater Resources 2000	Gitxsan	500
71	District Manager Skeena Stikeen (DSS)	Babine	Upper Fulton FSR/3000Rd	Fulton River trib -Site 13/ 1722 and Site 132a/ 1723	480-697200-76700	640512	6103133	CT	Replace twin RMCs with OBS.	Unknown	Both culverts are barriers.	Kossmann 2004	Lake Babine	3,880

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72	District Manager Skeena Stikeen (DSS)	Babine	Upper Fulton FSR/3000Rd	Nata Creek trib -Site 8/ 1666	480-697200-54400*	644046	6093900	DV	Replace RMC with OBS.	Unknown		Kossman 2004	Lake Babine	2,600
73	District Manager Skeena Stikeen (DSS)	Babine	Upper Fulton FSR/3000Rd	Fulton River trib -Site 14/ 1726	480-697200-75200	640369	6103884	CT	Replace RMC with OBS.	Unknown	Headed by a lake.	Kossman 2004	Lake Babine	1,700
74	District Manager Skeena Stikeen (DSS)	Bulkley	Upper Fulton FSR/3000Rd	Hawol Creek Sites 18/ 1750 and 18a/ 1750a	460-081700-43900-51100	638684	6109694	RB	Replace twin RMCs with OBS.	Unknown	Trib to Luhk Creek	Kossman 2004	Wetsuweten	5,520
75	District Manager Skeena Stikeen (DSS)	Bulkley	Upper Fulton FSR/3000Rd	Hawol Creek trib -Site 19/ 175926	460-081700-43900-51100-1190	637557	6111059	DV/BT	Replace RMC with OBS.	Unknown	Trib to Luhk Creek	Kossman 2004	Wetsuweten	2,160
76	District Manager Skeena Stikeen (DSS)	Middle Skeena	Kuldo FSR (Km 15.6)	Cullon Creek trib - Site 14	470-245700-54300-26397	563270	6170777	CT, DV, BT, RB	Replace damaged culvert	Unknown	Stream eroding under c/v inlet.	Triton 2001	Gitxsan	2,000
77	District Manager Skeena Stikeen (DSS)	Middle Skeena	Kuldo FSR (Km 20)	Mooluck Creek - Site 17	470-245700-69100-04200	562202	6175362	CT, possible RB	Install baffles and backwater weir	Unknown	1600mm CV provides space for baffling system.	Triton 2001	Gitxsan	5,000
78	District Manager Skeena Stikeen (DSS)	Middle Skeena	Kuldo FSR (Km 23.5)	Kuitan Creek - Site 23	470-245700-69100	562289	6177942	RB	Replace RMC with OBS.	Unknown	Habitat gain on low gradient terrain.	Triton 2001	Gitxsan	3,000
79	District Manager Skeena Stikeen (DSS)	Middle Skeena	Left spur off Caribou 0.7 km.	Copper Site 4601	Unknown	584425	6071212	Unknown	Barrier. Remove culvert and replace with open bottom structure.	Unknown	No mapped stream associated with UTM	Viveiros 2011	Wetsuweten	TBD

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80	District Manager Skeena Stikeen (DSS)	Middle Skeena	Caribou 1.2 km.	Copper Site 4583	Unknown	584577	6070657	Unknown	Culvert is not drawing standing water on inlet side. Recommend fish survey. If positive, replace pipe with open bottom structure.	Unknown	No mapped stream associated with UTM	Viveiros 2011	Wetsuweten	TBD
81	District Manager Skeena Stikeen (DSS)	Middle Skeena	Dennis West 4.7 km.	Zymoetz River trib Site 4603	440*	596053	6071584	Possible CO, ST, RB, CT, DV	Fish survey required. If positive replace structure with open bottom structure.	Unknown	Located about 1km u/s of Zymoetz River confluence.	Viveiros 2011	Wetsuweten	TBD
82	District Manager Skeena Stikeen (DSS)	Middle Skeena	Dennis West 10.1 km.	Zymoetz River trib Site 4563	440-845500	591558	6070347	DV	Fish survey required. If positive, embed pipe with 30 cm gravel and cobble to mimic streambed.	Unknown	Located about 1.5km u/s of Zymoetz River (McDonald Lake) confluence.	Viveiros 2011	Wetsuweten	TBD
83	District Manager Skeena Stikeen (DSS)	Middle Skeena	Dennis West 11.9 km.	Zymoetz River trib Site 4539	440-828600	590073	6069860	DV	Fish survey required. If positive embed pipe with 30 cm gravel and boulders to mimic streambed.	Unknown	Located about 1.7km u/s of Zymoetz River (McDonald Lake) confluence; sockeye documented at the mouth to McDonald Lake.	Viveiros 2011	Wetsuweten	TBD
84	District Manager Skeena Stikeen (DSS)	Middle Skeena	Dennis West 14.3 km	Zymoetz River trib Site 4556	440-824500	587870	6070030	Possible DV	Fish survey required. Embed pipe 30 cm to mimic streambed.	Unknown	Located about 1.5km u/s of Zymoetz River (McDonald Lake) confluence; 2 other crossings located d/s on branch roads.	Viveiros 2011	Wetsuweten	TBD
85	District Manager Skeena Stikeen (DSS)	Middle Skeena	Jackable 0.7 km	Coal Creek trib Site 4756	440-741100-23700-04300*	579659	6075567	Possible DV, CT	Needs fish survey. If positive replace pipe with 1200mm and embed. Good habitat.	Unknown	Imap BC shows this road as Cable FSR	Viveiros 2011	Gitxsan	TBD
86	District Manager Skeena Stikeen (DSS)	Middle Skeena	Louise FSR 1.6 km.	Coal Creek trib Site 4772	440-741100-29400	581624	6076547	Possible CO, ST, RB, CT, DV	Barrier. Remove culvert and replace with an open bottom structure.	Unknown	About 1km u/s of Coal Cr. confluence; another crossing d/s (Site 4763) and 2 u/s on branch roads.	Viveiros 2011	Gitxsan	TBD



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87	District Manager Skeena Stikeen (DSS)	Middle Skeena	Louise FSR Branch 15 at 01.7 km.	Coal Creek trib Site 4763	440-741100-29400	580818	6076132	Possible CO, ST, RB, CT, DV	Barrier. Remove culvert and replace with open bottom structure.	Unknown	About 300m u/s of Coal Cr. confluence; another crossing u/s (Site 4772) and 2 other further u/s on branch roads.	Viveiros 2011	Gitxsan	TBD
88	District Manager Skeena Stikeen (DSS)	Middle Skeena	Hankin branch 2.5 km.	Zymoetz River sub-trib Site 4760	440-891300-46600	590683	6076307	Possible CO, ST, RB, CT, DV	Fish survey required. If positive, replace pipe with open bottom structure.	Unknown	Imap BC shows this road as Friday Branch 13; about 1.3km u/s of trib WC 440-891300; 2 other crossings d/s.	Viveiros 2011	Gitxsan	TBD
89	District Manager Skeena Stikeen (DSS)	Middle Skeena	Hankin 5.4 km.	Zymoetz River sub-trib Site 4764	440-891300-46600	591582	6076628	Possible CO, ST, RB, CT, DV	Fish survey required. Beaver dam 15m below pipe. Embed culvert with 30% gravel.	Unknown	About 300m u/s of stream WC 440-891300; 2 other crossings u/s.	Viveiros 2011	Gitxsan	TBD
90	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell 5.7 km.	Zymoetz River trib Site 4517	440-990128	606113	6068663	DV, possible CO, SK, ST, RB, CT	Fish survey required. If positive replace with larger diameter pipe (1000 mm) and embed with 30% gravel to mimic streambed.	Unknown	About 700m u/s of lake.	Viveiros 2011	Wetsuweten	TBD
91	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 6.9 km.	White Swan Creek Site 4528	440-987100-26300	605023	6069676	RB, DV	Fish survey required. If positive replace pipe with larger diameter and embed with 30% gravel to mimic streambed.	Unknown	About 300m u/s of Henderson Cr.	Viveiros 2011	Wetsuweten	TBD
92	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 23km	McDonnell Lake trib Site 4635	440-854000	592138	6072339	RB, DV	Fish survey required. Embed pipe with 30% gravels to mimic stream channel.	Unknown	About 450m u/s of McDonnell Lake confluence; Cascade listed at crossing on Imap BC;	Viveiros 2011	Wetsuweten	TBD

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Map Ref. #	Tenure Holder	Major Watershed	Road Name	Stream Name	Watershed Code (50K)	Easting	Northing	Species Presence	Original Report Recommendations	Status	Comments/Completion Details	Source	First Nation Territory	Est. Habitat Gain (m)
93	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 23km	McDonnell Lake trib Site 4648	440-847000	589986	6072665	CT	Recommend fish survey. If positive then remove culvert and replace with open bottom structure.	Unknown	Possible SK at mouth; about 1.3km u/s of McDonnell L. confluence; another crossing near mouth.	Viveiros 2011	Gitxsan	TBD
94	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 23.8KM	McDonnell Lake trib Site 4641	440*	591418	6072533	Possible SK, RB, CT, DV	Fish survey required. Recommend open bottom structure such as 1x3 wood box culvert or arch pipe.	Unknown	About 500m u/s of McDonnell Lake confluence; actual UTM is 100 m to the east at 591521, 6072527; log jam obstacle listed 50m u/s of crossing on Imap BC.	Viveiros 2011	Gitxsan	TBD
95	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell 30.9 km.	Zymoetz River trib Site 4655	440-792700	584772	6072669	Possible SK, RB, CT, DV	Potential barrier. Recommend removing culvert and installing open bottom structure.	Unknown	About 1km u/s of Zymoetz River confluence; 1 other crossing located d/s.	Viveiros 2011	Gitxsan	TBD
96	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell 32.8 km, 0.4 km on spur north (733Rd).	Sandstone Creek trib Site 4690	440-767000-07400	583235	6073946	DV, possible ST, RB, CT	Barrier. Old spur. Remove and cross ditch road surface.	Unknown	About 500m u/s of Sandstone creek confluence; multiple other crossings on this creek.	Viveiros 2011	Gitxsan	1,000
97	District Manager Skeena Stikeen (DSS)	Middle Skeena	1.2 km on spur right off McDonnell Lake FSR 32.8 km.	Sandstone Creek trib Site 4717	440-767000-16000	583500	6074628	DV	Barrier. Remove culvert and replace with open bottom structure or cross ditch.	Unknown	About 400m u/s of Sandstone Creek confluence.	Viveiros 2011	Gitxsan	1,000
98	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 33.6 km.	Sandstone Creek Site 4687	440-767000	582733	6073872	DV, Possible ST, RB, CT	Barrier to fish. Recommend embedding material in pipe due to its size to reduce water velocity.	Unknown	About 600m u/s of Zymoetz River confluence.	Viveiros 2011	Gitxsan	TBD

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99	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 34.1 km.	Zymoetz River sub-trib Site 4701	440-758300-45400	582183	6074192	DV	Fish survey required. If positive remove culvert and replace with open bottom structure.	Unknown	About 1.7km u/s of Zymoetz River confluence.	Viveiros 2011	Gitxsan	TBD
100	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 35.3 km.	Coal Creek trib Site 4727	440-741100-11200	580998	6074677	DV	Barrier. Remove culvert and replace with open bottom structure.	Unknown	About 900m u/s of Coal Creek confluence.	Viveiros 2011	Gitxsan	500
101	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 35.9 km.	Coal Creek trib Site 4736	440-741100-16000	580632	6074948	Possible CO, ST, RB, CT, DV	Fish survey required. If positive remove culvert and replace with open bottom structure.	Unknown	About 400m u/s of Coal Creek confluence.	Viveiros 2011	Gitxsan	1,000
102	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell FSR 36.4 km.	Coal Creek trib Site 4750	440-741100-20200	580383	6075396	Possible CO, ST, RB, CT, DV	Remove culvert and replace with open bottom structure.	Unknown	About 100m u/s of Coal Creek confluence.	Viveiros 2011	Gitxsan	2,000
103	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 38.2km	Zymoetz River trib Site 4639	440-813000	587117	6072283	RB	Fish stream. Remove structure and replace with open bottom structure.	Unknown	About 500m u/s of Zymoetz R.; rock barriers listed near moth on Imap BC; multiple crossings u/s.	Viveiros 2011	Gitxsan	TBD
104	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell FSR 41.2 km.	Copper Site 4724	440-688600-25500*	576389	6074467	Possible DV	Remove culvert and replace with open bottom structure.	Unknown	Headed by small pond near height of land	Viveiros 2011	Gitxsan	1,000
105	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 41.3km, 741 Branch Road at 0.5 km	Zymoetz River sub-trib Site 4714	440-688600-25500	576134	6074175	DV	Small creek on side road. Foot access due to major road failure. Should remove culvert and cross ditch.	Unknown	Headed by small pond near height of land	Viveiros 2011	Gitxsan	TBD

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106	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 41.3 km	Zymoetz River sub-trib Site 4728	440-688600-26400	576304	6074487	Possible DV	Remove culvert and replace with open bottom structure.	Unknown	No information available	Viveiros 2011	Gitxsan	4,000
107	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell Lake FSR 69.5 km	Copper Site 4854	Unknown	565107	6000193	Unknown	Good habitat. Embed pipe gravel 30-40 cm gravel and place larger diameter stones to mimic creek bed. Good upstream habitat.	Unknown	Incorrect UTM, looks to be on mountaintop on IMap BC. Refer to report map.	Viveiros 2011	Wetsuweten	TBD
108	District Manager Skeena Stikeen (DSS)	Middle Skeena	Ripper 1.1 km	Sandstone Creek trib Site 4677	440-767000-0740	584617	6073693	Possible ST, RB, CT, DV	Barrier. Fish survey required. If positive remove culvert and replace with open bottom structure.	Unknown	About 2km u/s of Sandstone Cr. confluence; 2 more crossings downstream; Imap BC lists road name as 731 Rd.	Viveiros 2011	Gitxsan	1000-2000
109	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell South FSR 1.2km	Dennis Lake trib Site 4526	440-950000*	599520	6069389	Possible DV	Fish survey required. If positive, embed pipe with 30 cm gravel and cobble to mimic streambed.	Unknown	About 400m u/s of Dennis lake confluence; IMap BC lists CO, SK ST, RB, CT, DV in Dennis Lake	Viveiros 2011	Wetsuweten	TBD
110	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell South FSR 1.7km	Dennis Lake trib Site 4523	440-950000*	600149	6069251	Possible DV	Fish Survey required. If positive, replace with 1x3 open bottom structure	Unknown	About 900m u/s of Dennis lake confluence; IMap BC lists CO, SK ST, RB, CT, DV in Dennis Lake	Viveiros 2011	Wetsuweten	TBD
111	District Manager Skeena Stikeen (DSS)	Middle Skeena	McDonnell South FSR 8km	Dennis Lake (Silvern Creek) trib Site 4555	440-955300*	601594	6070596	Possible CO, SK ST, RB, CT, DV	Fish survey required. If positive, install larger diameter pipe (1200 mm). Embed with gravel (30%) to mimic streambed.	Unknown	About 450m u/s of Dennis Lake confluence; Road ID Error - Imap BC lists road as McDonnell FRS, not McDonnell South	Viveiros 2011	Wetsuweten	TBD

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112	District Manager Skeena Stikeen (DSS)	Middle Skeena	Copper South FSR 0.7 km.	Zymoetz River trib Site 4642	440-792700	584856	6072286	Possible DV	Barrier. Remove pipe and replace with open bottom structure. Will enhance more area than shown on map.	Unknown	About 600m u/s of Zymoetz River confluence.	Viveiros 2011	Gitxsan	TBD
113	District Manager Skeena Stikeen (DSS)	Middle Skeena	730-Copper South B74 FSR 1.4 km.	Zymoetz River trib Site 4605	440-775400	582319	6071085	Possible DV	Recommend embedding material into pipe as pipe is large enough or remove and install open bottom structure.	Unknown	About 1.4km u/s of Zymoetz R. confluence; on additional crossing d/d.	Viveiros 2011	Wetsuweten	TBD
114	District Manager Skeena Stikeen (DSS)	Middle Skeena	Copper South FSR 9.4 km.	Zymoetz River trib Site 4590	440-722000	577657	6070464	Possible DV	Fish survey required. If positive, remove pipe and replace with open bottom structure.	Unknown	About 1.7km u/s of Zymoetz River confluence.	Viveiros 2011	Tsimshian	1,500
115	Gitxsan Forest Inc.	Middle Skeena	Corral Mainline (Km 0.6)	Kispiox River trib -Site 01	470-403400	554490	6166442	No fish captured	Replace RMC with OBS; remove collapsed CV on abandoned road adjacent to and upstream of the crossing.	Unknown	More fish sampling required.	Triton 2001	Gitxsan	2,400
116	Gitxsan Forest Inc.	Middle Skeena	Corral Mainline (Km 6.4)	Ironside Creek trib - Site 12	470-335400*	554552	6170117	CT	Replace RMC with OBS.	Unknown	Further assessment required.	Triton 2001	Gitxsan	900
117	MOF Non Status	Bulkley	340H Road	Blunt Creek trib -Site 3040H3	460-081700-43900-45900-1310	633398	6112271	DV, CT	Replace RMC with OBS.	Unknown	IMap BC (2015) shows road is retired from West Frasier Mills; report lists CT, IMap BC lists DV only.	Kossman 2004	Wetsuweten	2,580

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118	MOF Non-status	Babine	306 Road	Chapman Lake trib -Site 3006-1	480-697200-49300	647555	6091249	CT	Replace RMC with OBS.	Unknown	250m upstream of Chapman Lake confluence.	Kossman 2004	Lake Babine	4,120
119	MOF Non-status	Babine	306 Road	Hagarty Creek -Site 3006-3	480-697200-52800	647338	6093826	CT/DV	Replace RMC with OBS.	Unknown	500m upstream of Fulton River confluence.	Kossman 2004	Lake Babine	4,860
120	MOF Non-Status	Lower Skeena	Unknown - 750m east of Andesite Creek/Hwy 16 crossing	Skeena River trib Site 378120	400-129400	492714	6026914	Unknown - Inferred CO	Deactivation	Unknown	Inlet completely filled with sediment; fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	TBD
121	MOF Non-status	Lower Skeena	Zymachord ML Spur at 8km	Erlandsen Creek trib Site 1895	400-184200-17000*	517769	6045399	Possible CO, ST, RB, CT, DV	Removal	Unknown	About 200m u/s of Erlandsen Cr confluence.; in Zymachord River watershed; Imap BC lists road name as Erlandsen Bypass and not Zymachord M/L.	Viveiros 2012	Tsimshian	TBD
122	MOF Non-status	Middle Skeena	23 Mile Road	Gitanyow Lake trib - Site 15	400-364900-64500	555500	6139590	CT	Deactivate	Unknown	Plugged intake, excessive velocity and outflow drop.	McCarthy 2007	Gitanyow	
123	MOF Non-Status	Middle Skeena	Kispiox Trail (Km 90)	Hodder Creek Site 100	470-607200-11000	533796	6176388	CO, ST, DV, BT, RB, CT	Replace wood stave culvert with OBS	Unknown	Current culvert resting on bedrock and backwater weir deemed infeasible; high quality spawning, rearing, and over-wintering habitat upstream in Hodder Lake and its tributaries.	Freshwater Resources 2000; Rabnett and Wilson 2007;	Gitxsan	2,300
124	MOF Non-status	Morice	Spur HP 1770 (Branch at Km 44 on Parrott FSR)	Buck Creek trib - Site 629b	460-636000*	675369	6004140	No fish captured	Deactivation or replacement	Unknown	Deactivate or replace along with Site 629; further fish sampling required.	Triton 2000	Wetsuweten	1,370
125	MOF Non-status	Morice	Spur HP 1775 (Branch at Km 46 on Parrott FSR)	Buck Creek trib - Site 370b	460-636000*	677100	6003173	No fish captured	Deactivation or replacement	Unknown	Located 50m upstream of Site 370; road is in poor repair; should deactivated or replaced along with Site 370b; further fish sampling required.	Triton 2000	Wetsuweten	1,200

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126	MOF Non-status	Morice	Poplar North Rd (Km 12)	Tagetochlain Lake - Site 5	180-374000-95200-99500-4980-3780	634378	5987999	RB, DV	Deactivate or replace with OBS	Unknown	Improve access for RB to Poplar lake upstream.	SKR 2000	Wetsuweten	Poplar Lake
127	MOTI	Lower Skeena	Kosier Rd	Alwyn Creek Trib Site 377977	400-178600-18400	519731	6035867	CO, CT	Replace RMC with 5m OBS	Unknown	Beaver cage at inlet and outlet; overflow c/v adjacent set 1m above streambed; evidence of regular beaver dam blow-outs upstream; fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	2,460
128	MOTI	Lower Skeena	Matson Rd	Alwyn Creek Trib Site 378014	400-178600-87200-26000	524369	6034855	Unknown - Inferred CO, CT	Replace dual RMC with 10m OBS	Unknown	Large stream, good habitat; fish trapping not done; beaver dam 1m upstream of dual culverts; further ass't required.	Bennett 2010	Tsimshian	4,150
129	MOTI	Lower Skeena	Matson Rd	Alwyn Creek Trib Site 378039	400-178600*	524277	6034004	Unknown - Inferred CO, CT	Replace RMC with 6m OBS	Unknown	Beaver cage lying on side of creek not installed; fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	460
130	MOTI	Lower Skeena	Shames Mountain Rd.	Shames Creek trib Site 377970	400-157500	504591	6035427	Unknown - Inferred CO, DV, CT	Replace RMC with 7m OBS	Unknown	Good habitat; no barriers in immediate area; fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	440
131	MOTI	Lower Skeena	Hwy 37S	Furlong Creek	420-929100	531423	6028130	CO, CT	Conceptual design plan that incorporates flow deflector needs to be finalized	Completed	DFO installed fishway in 2007/08 over concrete floor. Assessed in subsequent years (twice) via stream walks to confirm coho adult access upstream by Mitch Drews; some maintenance in ~2010 and again in 2012. Ongoing bio-monitoring and complete replacement with OBS recommended to remove concrete stream floor.	Rabnett 2006; Lana Miller DFO, Pers.com. March 2015	Tsimshian	TBD

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132	MOTI	Middle Skeena	Hwy 16	Singlehurst Creek	400-232100	538510	6050830	CO, PK, ST, CT, DV	Replace 30+ year old log backwater weir, need renewal; install rock to backup and strengthen logworks.	Regular Monitoring	30+-yr old SEP project to improve access still working for pink and coho; ongoing ass't and maintenance by DFO RRU (Miller 2014- Pers. Comm)	Rabnett and Williams 2004; SKR Consultants Ltd.. 2006; Lana Miller DFO. Pers. com. March 2015	Tsimshian	2,200
133	MOTI	Middle Skeena	Hwy 16	Flint Creek	400-316300	538983	6089971	PK, RB, DV, CO	Replace RMC with OBS, backwater with weirs	Pending	Further ass't required to establish cost/benefit. Currently a high priority	Rabnett and Williams 2004; SKR Consultants Ltd. 2006b; Lana Miller DFO. Pers. com. March 2015	Gitxsan	580
134	MOTI	Middle Skeena	Hwy 16	Shandilla Creek	400-372400	562494	6105037	CO, CH, PK, ST, RB, CT, DV	Replace RMC with OBS	Unknown	Further ass't required to establish cost/benefit; mostly boulder substrate upstream. Currently a low priority.	SKR Consultants Ltd. 2003a; Rabnett and Williams 2004; Lana Miller DFO. Pers. com. March 2015	Gitxsan	460



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135	MOTI	Middle Skeena	Hwy 16	Andimaul Creek	400-383900	569104	6105799	RB, ST, DV, CO	Replace RMC with OBS	Unknown	Further ass't required to establish cost/benefit. Currently a moderate priority	SKR Consultants Ltd. 2003b; Rabnett and Williams 2004; Lana Miller DFO. Pers. com. March 2015	Gitxsan	700
136	MOTI	Middle Skeena	Hwy 37N	Tea Creek	400-364900-10700	563425	6109610	ST, CO, RB, CT, DV	Replace RMC with OBS or install backwater weirs	Unknown	Backwater weir structures installed in the 1990's have fill in with bedload material and currently not functioning.	Grieve and Webb. 1999; Jeff Laugh MOE Pers. com. March 2015	Gitxsan	TBD
137	MOTI	Babine	Hwy 118	Bulkley River trib - Site C		N/A	N/A	RB	Restoration plan to be determined	Unknown	18.2km north of Hwy 16 jct./ Topley; visual inspection; c/v is barrier at low flow; uncertain of UTM.	DFO 1999	Lake Babine	TBD
138	MOTI	Babine	Hwy 118	Bulkley River trib - Site A#7		N/A	N/A	RB	Restoration plan to be determined	Unknown	21.3km north of Hwy 16 jct./ Topley; visual inspection; 0.5m c/v outflow drop; uncertain of UTM.	DFO 1999	Lake Babine	TBD
139	MOTI	Bulkley	Hwy 16	Station Creek	460-007300	586630	6122416	CO, PK, ST, CT, DV	Replace RMC with OBS, backwater if necessary	Unknown	Currently an adult trap/truck/ transfer operation from mouth to sites above culvert; Recommend replacement with OBS at an estimated cost of about \$3-5 mill. High Priority.	Rabnett and Williams 2004; SKR Consultants Ltd. 2006c; Lana Miller DFO. Pers. com. March 2015	Gitxsan	10,000

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140	MOTI	Bulkley	Hwy 16	John Brown Creek	460-201500	606629	6097181	ST, RB, PK, CT, DV	Replace RMC with OBS	Pending	500m E of Moricetown; backwater weir installed as stop-gap measure to improve ST passage, now broken down and not functional; high priority; recommend weir replacement until culvert is replace with OBS; further ass't required; 2001 report at MOE.	Jeff Laugh MOE Pers. com. March 2015; DFO 1999	Wetsuweten	TBD
141	MOTI	Bulkley	Hwy 16	Toboggan Creek Site 14	460-242900	607725	6089354	CO, ST, PK, CH	Replace RMC with OBS	In Progress	Backwater weir built to raise water level at culvert outlet in Jan 2015 to assist pink migration upstream. ass't needed during 2015 pink run.	Gibson 1997; Wilson and Rabnett 2007; Lana Miller DFO. Pers. com. March 2015	Wetsuweten	12,000
142	MOTI	Bulkley	Hwy 16	Tyhee Creek Site 36	460-430900	627204	6061450	RB, CT, CO, CU,PK	Replace RMC with OBS or install backwater weirs	Unknown	2km E of Telkwa; headed by Tyhee Lake	Wilson and Rabnett 2007	Wetsuweten	TBD
143	MOTI	Bulkley	Hwy 16	McDowell Creek Site 37	460-435300	628057	6060531	CO, RB, Suspected ST	Replace RMC with OBS or install backwater weirs	Unknown	3km E of Telkwa beside Windmere Rd; several CV's upstream and downstream; cascade barrier about 150m upstream of highway	Wilson and Rabnett 2007	Wetsuweten	TBD
144	MOTI	Bulkley	Hwy 16	Lemieux Creek - Site E	460-487900-11100	638504	6054726	RB	Restoration plan to be determined	Unknown	350m east of Quick West Rd; visual inspection; boulders below outlet may be fish barrier; further ass't required	DFO 1999	Wetsuweten	TBD
145	MOTI	Bulkley	Hwy 16	Lemieux Creek trib - Site F	460-487900-11100*	638630	6054594	No fish captured	Restoration plan to be determined	Unknown	500m east of Quick West Rd; visual inspection; c/v intake blocked by mud; possible low water barrier in c/v; further ass't required.	DFO 1999	Wetsuweten	TBD

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146	MOTI	Bulkley	Hwy 16	Deep Creek - Site B#1	460-496100	639872	6051769	CO, CH, PK, ST, RB, CT	Restoration plan to be determined	Unknown	1.8km south of Wakefield Rd; visual inspection; barrier to juvenile fish at low flow; water flowing under c/v; further ass't required; downstream c/v on Snider Frontage Rd and Gibson Creek Hwy 37 crossing should also be inspected.	DFO 1999	Wetsuweten	TBD
147	MOTI	Bulkley	Hwy 16	Bulkley River trib - Site A#1	460*	649182	6029413	SU	screen c/v to prevent fish passage into a trapped situation	Unknown	1.7km east of Pleasant Valley Bridge in town of Houston; poor connection between Hwy and CNR crossing and pond trapping fish; further ass't required.	DFO 1999	Wetsuweten	TBD
148	MOTI	Bulkley	Hwy 16	Barren Creek - Site A#6	460-704700	660453	6037917	CO, CH, ST, RB, CT	Restoration plan to be determined	Unknown	17.5km east of Pleasant Valley Bridge; visual inspection; undersized c/v; sedimentation issue; further ass't required at Hwy 37 and CNR crossing.	DFO 1999	Wetsuweten	TBD
149	MOTI	Bulkley	Hwy 16	Bymann Creek	460-750400	666925	6044357	CO, CH, ST, RB	Restoration plan to be determined	Unknown	27.2km east of Pleasant Valley Bridge; visual inspection; c/v is barrier at low flow.	DFO 1999	Wetsuweten	TBD
150	MOTI	Bulkley	Hwy 16	Johnny David Creek Site 64	460-778000	670214	6044759	CO, CH, ST, CT, RB, DV,	Establish a series of step pools up to a deep pool below the culvert	Unknown	4.5 km W of Topley; backwater weir installed as a stop-gap measure to allow ST passage; culvert suspended, excessive velocity; weir needs replacement, high priority.	Wilson and Rabnett 2007; Jeff Laugh MOE Pers. com. March 2015	Wetsuweten	TBD
151	MOTI	Bulkley	Hwy 16	Richfield Creek - Site B#4	460-788200	672336	6044162	CO, CH, ST, RB	Restoration plan to be determined	Unknown	33.2km east of Pleasant Valley Bridge; visual inspection; c/v is barrier at low flow.	DFO 1999	Wetsuweten	TBD

*2015 Inventory of High Priority Culverted Fish Passage Barriers in the Lower/Middle Skeena, Bulkley, and Morice River Watersheds*

Map Ref. #	Tenure Holder	Major Watershed	Road Name	Stream Name	Watershed Code (50K)	Easting	Northing	Species Presence	Original Report Recommendations	Status	Comments/Completion Details	Source	First Nation Territory	Est. Habitat Gain (m)
152	MOTI	Bulkley	Hwy 16	Ailport Creek - Site C	460-829700	680395	6040030	CO, RB	Restoration plan to be determined	Unknown	6.7km east of Hwy 118 jct. (Granisle Hwy); visual inspection; c/v is barrier at low flow; several rural crossings upstream and downstream of highway.	DFO 1999	Wetsuweten	TBD
153	MOTI	Bulkley	Hwy 16	Taman Creek	460-951600	692400	6032349	CO, RB	Replace RMC with OBS	Unknown	Backwater weir installed as stop-gap measure, currently not functional; recommend weir replacement until culvert is replace with OBS; further ass't required.	Jeff Laugh MOE Pers. com. March 2015	Wetsuweten	TBD
154	MOTI	Bulkley	Hwy 16	Bulkley River trib - Site E	460-734700	662918	6041432	CO, CH, ST, RB, CT, DV, BT	Restoration plan to be determined	Unknown	21km east of Pleasant Valley Bridge (200m before litter barrel); visual inspection; poor connection between CN and Hwy crossing trap fish at low flow.	DFO 1999	Wetsuweten	TBD
155	MOTI (Hwy 118)	Bulkley	460-800700	Cesford Creek - Site C	460-800700	674865	6043890	RB	Restoration plan to be determined	Unknown	0.5km north of Hwy 16 jct./ Topley; visual inspection; c/v is barrier at low flow.	DFO 1999	Wetsuweten	TBD
156	MOTI	Morice	Equity Mine Road (Km 20)	Klo Creek trib - Site 604	460-636000-72000-69300-4550	667634	6018844	RB	Replacement	Unknown	Broken section inside culvert creating 8% grade and culvert creating erosion issues at the outlet.	Triton 2000	Wetsuweten	1,480

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157	MOTI/CNR	Lower Skeena	Hwy 16/ CNR (1-1.8km E of Exchamsiks R.)	Exchamsiks Backchannel CV#35, 36, 37	400*	481576	6020886	CO, DV, CT, RB	Prepare engineered design	Mostly Completed	Skeena Back-channel habitat ~30km west of Terrace – 3 access improvement sites (2 on Hwy 16/CNR and 1 on Hays Pit Rd); one requiring maintenance; some ass't completed in Year 1 and 3 after construction; some beaver monitoring by DFO working with Kitsumkalum FN ongoing) and Hays Pit Rd site not completed; report on file at PSC.	Rabnett 2006; Lana Miller DFO, Pers.com. March 2015	Tsimshian	800
158	MOTI/CNR	Lower Skeena	Hwy 16/ CNR (22km W of Shames Rd. Jct)	Unnamed Trib (Carwash Backchannel) CV#39	400*	488015	6022059	CO	Replace RMC with OBS;	Unknown	Further ass't required to establish cost/benefit; note: report lists this site as moderate priority but score shows high priority Currently a low priority.	Rabnett 2006	Tsimshian	500
159	Tenure Holder unknown	Lower Skeena	Unknown	Skeena River trib Site 377976	400-174000	514777	6035630	Unknown	Replace structure or deactivate	Unknown	Side road adjacent to Hwy 16 just east of Amsbury Creek; possibly old Hwy 16 corridor?; collapsing wood-box c/v; intake blocked with debris and creating fish barrier; fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	TBD
160	Tenure Holder unknown	Lower Skeena	Unknown - Near BC Hydro Substation	Alwyn Creek trib Site 378054	400-178600*	523345	6033524	Unknown - Inferred CO, CT	Maintenance or replacement	Unknown	Structure needs maintenance or replacement; span nearly filled with sediment; fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	TBD

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Map Ref. #	Tenure Holder	Major Watershed	Road Name	Stream Name	Watershed Code (50K)	Easting	Northing	Species Presence	Original Report Recommendations	Status	Comments/Completion Details	Source	First Nation Territory	Est. Habitat Gain (m)
161	Tenure Holder unknown	Lower Skeena	Unknown - BC Hydro Substation Access Rd	Alwyn Creek trib Site 378044	400-178600*	523313	6033928	Unknown - Inferred CO, CT	Replace dual RMC with OBS	Unknown	Dual c/v's rusted and not functioning- most flow running under right c/v; fish trapping not done; further ass't required; Imap BC list migrating lamprey (Rescan Env. Serv, 2007) but is an error, should be unidentified species (Mike McCarthy, Pers. Comm. 2015).	Bennett 2010	Tsimshian	170
162	Tenure Holder unknown	Lower Skeena	Unknown - BC Hydro Substation Access Rd	Alwyn Creek trib Site 378019	400-178600*	520768	6034402	Unknown - Inferred CO, CT	Replace dual RMC with OBS	Unknown	Right c/v rusted exposed at road surface; plugged intakes; evidence of water running over road; fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	TBD
163	Tenure Holder unknown	Lower Skeena	Unknown - BC Hydro Substation Access Rd	Alwyn Creek Site 378021	400-178600*	522577	6034391	Unknown - Inferred CO, CT	WBC needs replacement	Unknown	Collapsing WBC; fish trapping not done; further ass't required.	Bennett 2010	Tsimshian	TBD
164	West Fraser Mills Ltd.	Morice	Rd A; R03007A (Km 3.4)	Owen Creek Trib Site 10	460-600600-23900-17200	640910	6005063	RB, DV	Replace dual RMC with OBS	Unknown	90cm outflow drop; definite barrier to RB, DV; 300m upstream of Owen Creek confluence.	SKR 2000	Wetsuweten	2,000
165	West Fraser Mills Ltd.	Morice	Road CP 376; R04075 A (Km 2.1)	Owen Creek Trib Site 13	460-600600-23900-59400	645047	5998842	RB, SH, DV	Replace steep gradient RMC with OBS	Unknown	700m upstream of Owen Creek confluence.	SKR 2000; Bustard 1999.	Wetsuweten	4,000

Appendix II: List of sites with no UTM coordinates.

Tenure Holder	Major Watershed	Road Name	Stream Name	Watershed Code (50K)	Easting	Northing	Species Presence	Original Report Recommendations	Status	Comments/Completion Details	Source	First Nation Territory	Est. Habitat Gain (m)
CNR	Bulkley		Bulkley River Oxbow 1 Site 50		N/A	N/A	Unknown, Inferred CH	Conduct Juvenile presence/absence and flow-regime survey to determine value	Unknown	Location unknown; need map.	Wilson and Rabnett 2007		
District Manager Nadina (DND)	Morice	Morice FSR	Bustard Ponds - Morice River trib	460-600600*	N/A	N/A	CO, RB	Further ass't required	Unknown	Unable to located site on IMap BC; similar to Telkwa Ponds, on Morice FSR. Recent river shift and 2 coho rearing sites constructed in the early 1990's (Km30-35) may have lost connectivity. Further ass't needed; this site may need to be abandoned as a viable coho rearing pond complex.	Jeff Laugh MOE Pers. com. March 2015; Lana Miller DFO. Pers. com. March 2015	Wetsuweten	TBD
District Manager Skeena Stikeen (DSS)	Middle Skeena	Louise FSR	Coal Creek trib Site 4820	Unknown	n/a	n/a	Possible CO, RB, CT, DV	Fish survey required. If positive culvert should be replaced with a bottomless structure.	Unknown	No UTM, unable to get info on Imap BC, likely a District Manager Skeena Stikeen (DND) road-need project map.	Viveiros 2011	Gitxsan	TBD
Unknown Tenure	Morice	1400 Rd (Km 3)	Morrison Creek trib - Site 19	N/A	N/A	N/A		Replace RMC's with OBS	Unknown	Unable to located site on IMap BC based on report map excerpt from 093M019), no UTM provided.	SKR 2000	Wetsuweten	2,000
MOTI	Babine	Hwy 118	Bulkley River trib - Site C		N/A	N/A	RB	Restoration plan to be determined	Unknown	18.2km north of Hwy 16 jct./ Topley; visual inspection; c/v is barrier at low flow; uncertain of UTM.	DFO 1999	Lake Babine	TBD
MOTI	Babine	Hwy 118	Bulkley River trib - Site A#7		N/A	N/A	RB	Restoration plan to be determined	Unknown	21.3km north of Hwy 16 jct./ Topley; visual inspection; 0.5m c/v outflow drop; uncertain of UTM.	DFO 1999	Lake Babine	TBD



**Culvert up Helen Road, Kispiox, B.C. that was assessed by BCTS, 2014.**