

Appendix - Phase 1 Fish Passage Assessment Data and Photos

Location and Stream Data		Crossing Characteristics –	
Date	2020-09-01	Crossing Sub Type	Oval Culvert
PSCIS ID	3067	Diameter (m)	4
External ID	–	Length (m)	25
Crew	KP, AI	Embedded	No
UTM Zone	9	Depth Embedded (m)	–
Easting	662522	Resemble Channel	No
Northing	6052094	Backwatered	No
Stream	Byman Creek	Percent Backwatered	–
Road	North Road	Fill Depth (m)	2
Road Tenure	FLNR Nadina 7543	Outlet Drop (m)	0.5
Channel Width (m)	9	Outlet Pool Depth (m)	1
Stream Slope (%)	5	Inlet Drop	No
Beaver Activity	No	Slope (%)	2
Habitat Value	High	Valley Fill	Deep Fill
Final score	34	Barrier Result	Barrier
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	13

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 3067. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: No habitat confirmation conducted in 2020. Fins 2009 reports 60% gradient for 50m located 200m downstream of crossing. Stream measurement estimated.

Location and Stream Data		Crossing Characteristics	
Date	2020-09-03	Crossing Sub Type	Round Culvert
PSCIS ID	58158	Diameter (m)	2.5
External ID	–	Length (m)	53
Crew	AI, KP	Embedded	Yes
UTM Zone	9	Depth Embedded (m)	0.5
Easting	628044	Resemble Channel	Yes
Northing	6060527	Backwatered	No
Stream	McDowell Creek	Percent Backwatered	–
Road	Highway 16	Fill Depth (m)	4
Road Tenure	MoTi highway	Outlet Drop (m)	0.36
Channel Width (m)	2.5	Outlet Pool Depth (m)	0.45
Stream Slope (%)	3	Inlet Drop	Yes
Beaver Activity	No	Slope (%)	5.5
Habitat Value	High	Valley Fill	Deep Fill
Final score	34	Barrier Result	Barrier
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	13

Appendix - Phase 1 Fish Passage As...



Comments: New culvert horizontally drilled under highway in 2017. Structure has baffles made of oured concrete and boulders. Often deep pools up to 50cm before baffles. Baffles seem sharp and have potential to injure fish ascending?

Location and Stream Data		Crossing Characteristics	
	•		-
Date	2020-08-29	Crossing Sub Type	Round Culvert
PSCIS ID	123463	Diameter (m)	0.6
External ID	-	Length (m)	18
Crew	AI, KP	Embedded	No
UTM Zone	9	Depth Embedded (m)	-
Easting	627570	Resemble Channel	No
Northing	6064562	Backwatered	Yes
Stream	Victor Creek	Percent Backwatered	30
Road	Tyee Lake Road	Fill Depth (m)	1
Road Tenure	MoTi local	Outlet Drop (m)	0
Channel Width (m)	1.8	Outlet Pool Depth (m)	0.3
Stream Slope (%)	1	Inlet Drop	No
Beaver Activity	No	Slope (%)	3
Habitat Value	Medium	Valley Fill	Deep Fill
Final score	29	Barrier Result	Barrier
Fix type	Replace Structure with Streambed Simulation CBS	Fix Span / Diameter	5

Appendix - Phase 1 Fish Passage As...



Comments: No habitat confirmation conducted in 2020. Newly replaced crossing. ID# 8 21 18 01 .

Location and Stream Data		Crossing Characteristics	
Date	2020-08-31	Crossing Sub Type	Round Culvert
PSCIS ID	124502	Diameter (m)	0.8
External ID	–	Length (m)	21
Crew	KP, AI	Embedded	No
UTM Zone	9	Depth Embedded (m)	–
Easting	632070	Resemble Channel	No
Northing	6054348	Backwatered	No
Stream	Tributary to Bulkley River	Percent Backwatered	–
Road	Lawson Road	Fill Depth (m)	2
Road Tenure	MoTi local	Outlet Drop (m)	1.2
Channel Width (m)	3.2	Outlet Pool Depth (m)	0.45
Stream Slope (%)	3.5	Inlet Drop	Yes
Beaver Activity	No	Slope (%)	5
Habitat Value	Medium	Valley Fill	Deep Fill
Final score	39	Barrier Result	Barrier
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	10

Appendix - Phase 1 Fish Passage As...



Comments: No habitat confirmation conducted in 2020. Good flow. Adjacent land owner reports that this stream consistently flows year round and that the culvert under the railway has large outlet drop. This crossing and the crossing under the railway should be followed up in the future.

Location and Stream Data		.	Crossing Characteristics –	
Date	2020-09-04	Crossing Sub Type	Oval Culvert	
PSCIS ID	195289	Diameter (m)	4	
External ID	–	Length (m)	2	
Crew	AI, KP	Embedded	Yes	
UTM Zone	9	Depth Embedded (m)	0.55	
Easting	639869	Resemble Channel	No	
Northing	6051747	Backwatered	No	
Stream	Deep Creek	Percent Backwatered	–	
Road	Highway 16	Fill Depth (m)	1.5	
Road Tenure	MoTi highway	Outlet Drop (m)	0	
Channel Width (m)	14	Outlet Pool Depth (m)	0.3	
Stream Slope (%)	2	Inlet Drop	No	
Beaver Activity	No	Slope (%)	0.5	
Habitat Value	High	Valley Fill	Deep Fill	
Final score	11	Barrier Result	Passable	
Fix type	–	Fix Span / Diameter	–	

Appendix - Phase 1 Fish Passage As...



Comments: No habitat confirmation in 2020. Culvert is now embedded where as it was not in 2014 surveys. Passable structure with no issues.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-26	Crossing Sub Type	Round Culvert
PSCIS ID	197640	Diameter (m)	1.5
External ID	1800092	Length (m)	12
Crew	AI, KP	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	654312	Resemble Channel	No
Northing	6012383	Backwatered	No
Stream	Tributary to Buck Creek	Percent Backwatered	—
Road	Buck Flats FSR	Fill Depth (m)	1
Road Tenure	MoTi local	Outlet Drop (m)	0.4
Channel Width (m)	5.1	Outlet Pool Depth (m)	1.2
Stream Slope (%)	3	Inlet Drop	No
Beaver Activity	No	Slope (%)	1.5
Habitat Value	High	Valley Fill	Deep Fill
Final score	31	Barrier Result	Barrier
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	—

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1800060. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Large tributary on section of tributary connected to salmon bearing Buck Creek. Fish rising in outlet pool (estimated 130mm). Some cattle access points downstream. Habitat confirmation conducted at this site.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-26	Crossing Sub Type	Pipe Arch
PSCIS ID	197641	Diameter (m)	4.5
External ID	1805182	Length (m)	18
Crew	KP, AI	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	675368.2	Resemble Channel	–
Northing	6004484	Backwatered	–
Stream	Tributary to Buck Creek	Percent Backwatered	–
Road	Parrot FSR	Fill Depth (m)	–
Road Tenure	FLNR Nadina 9772	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	3	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...



Comments: Newly constructed passable structure.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-26	Crossing Sub Type	Ford
PSCIS ID	197642	Diameter (m)	–
External ID	1805455	Length (m)	–
Crew	AI, KP	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	675328.8	Resemble Channel	–
Northing	6004247	Backwatered	–
Stream	Tributary to Buck Creek	Percent Backwatered	–
Road	Spur off Parrot FSR	Fill Depth (m)	–
Road Tenure	–	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	0	Barrier Result	Unknown
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...



Comments: Ford. No issues.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-26	Crossing Sub Type	Bridge
PSCIS ID	197643	Diameter (m)	4.7
External ID	1805183	Length (m)	16
Crew	KP, AI	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	677098.7	Resemble Channel	–
Northing	6003221	Backwatered	–
Stream	Buck Creek	Percent Backwatered	–
Road	Goosley North Rd	Fill Depth (m)	–
Road Tenure	FLNR Nadina 9772	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	3	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...



Comments: Bridge.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-26	Crossing Sub Type	Ford
PSCIS ID	197644	Diameter (m)	–
External ID	1803661	Length (m)	–
Crew	AI, KP	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	677101.1	Resemble Channel	–
Northing	6003177	Backwatered	–
Stream	Tributary to Buck Creek	Percent Backwatered	–
Road	Spur off Parrot FSR	Fill Depth (m)	–
Road Tenure	Canfor R10460	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	0	Barrier Result	Unknown
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...

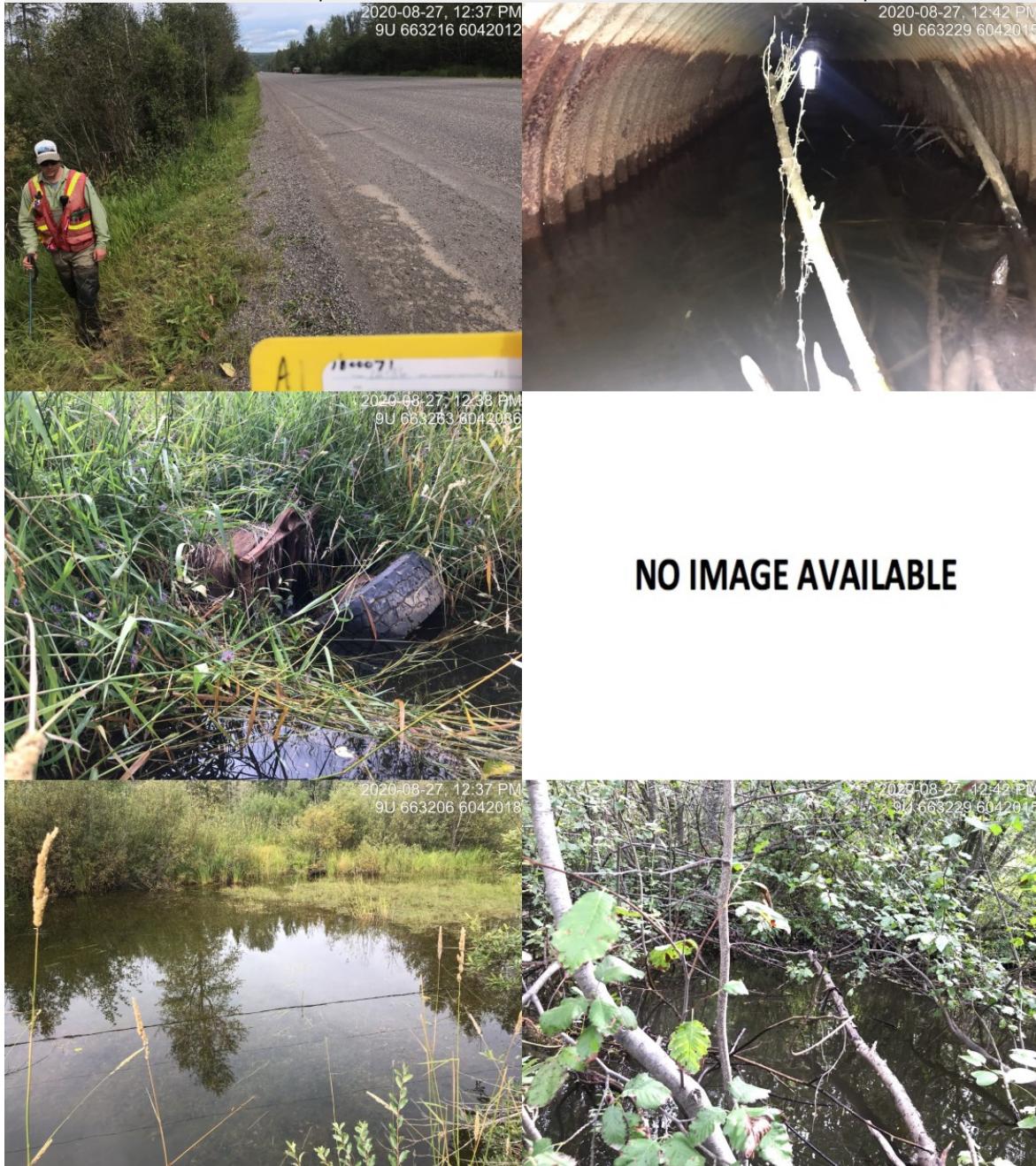


Comments: Ford. No issues.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-26	Crossing Sub Type	Pipe Arch
PSCIS ID	197645	Diameter (m)	7
External ID	1800472	Length (m)	21
Crew	KP, AI	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	678411	Resemble Channel	–
Northing	6002821	Backwatered	–
Stream	Tributary to Buck Creek	Percent Backwatered	–
Road	Parrot FSR	Fill Depth (m)	–
Road Tenure	MoTi unclassified	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	3	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1800071. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Newly constructed passable structure.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-26	Crossing Sub Type	Round Culvert
PSCIS ID	197646	Diameter (m)	1
External ID	1802520	Length (m)	10
Crew	AI, KP	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	672023	Resemble Channel	No
Northing	6005200	Backwatered	No
Stream	Tributary to Buck Creek	Percent Backwatered	—
Road	Spur off Parrot FSR	Fill Depth (m)	1.2
Road Tenure	R216960010	Outlet Drop (m)	0
Channel Width (m)	1.4	Outlet Pool Depth (m)	0.42
Stream Slope (%)	5	Inlet Drop	No
Beaver Activity	Yes	Slope (%)	1
Habitat Value	Medium	Valley Fill	Deep Fill
Final score	21	Barrier Result	Barrier
Fix type	Replace Structure with Streambed Simulation CBS	Fix Span / Diameter	3

Appendix - Phase 1 Fish Passage As...



Comments: Stream drains Sam Lake. Old log bridge type structure that is collapsing with round culvert inserted. Pipe contains beaver debris. Wetland habitat upstream.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-26	Crossing Sub Type	Round Culvert
PSCIS ID	197647	Diameter (m)	1
External ID	1804986	Length (m)	16
Crew	KP, AI	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	651263.5	Resemble Channel	No
Northing	6012508	Backwatered	No
Stream	Tributary to Buck Creek	Percent Backwatered	—
Road	Carrier FSR	Fill Depth (m)	1.8
Road Tenure	FLNR Nadina 9772	Outlet Drop (m)	0.3
Channel Width (m)	1.5	Outlet Pool Depth (m)	0
Stream Slope (%)	2	Inlet Drop	No
Beaver Activity	No	Slope (%)	1.5
Habitat Value	Low	Valley Fill	Deep Fill
Final score	34	Barrier Result	Barrier
Fix type	Replace Structure with Streambed Simulation CBS	Fix Span / Diameter	3

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1800076. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.

2020-08-28, 4:41 PM
9U 660611 6037830

NO IMAGE AVAILABLE



Comments: Suspect no fish. Multiple fish survey sites located downstream. Dry at time of survey.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-26	Crossing Sub Type	Bridge
PSCIS ID	197648	Diameter (m)	5
External ID	1804153	Length (m)	9
Crew	KP, AI	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	653554	Resemble Channel	–
Northing	6015856	Backwatered	–
Stream	Tributary to Buck Creek	Percent Backwatered	–
Road	Balsam FSR	Fill Depth (m)	–
Road Tenure	FLNR Nadina 9486	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	0	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1800077. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Bridge. No issues.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-26	Crossing Sub Type	Bridge
PSCIS ID	197649	Diameter (m)	5.5
External ID	1804151	Length (m)	12
Crew	KP, AI	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	652876.1	Resemble Channel	–
Northing	6017367	Backwatered	–
Stream	Tributary to Buck Creek	Percent Backwatered	–
Road	Balsam FSR	Fill Depth (m)	–
Road Tenure	FLNR Nadina 9486	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	0	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1800092. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



NO IMAGE AVAILABLE



NO IMAGE AVAILABLE



Comments: Bridge. No issues.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-26	Crossing Sub Type	Bridge
PSCIS ID	197650	Diameter (m)	4.8
External ID	1804851	Length (m)	13
Crew	KP, AI	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	654032.4	Resemble Channel	–
Northing	6020242	Backwatered	–
Stream	Bob Creek	Percent Backwatered	–
Road	Bob Creek FSR	Fill Depth (m)	–
Road Tenure	FLNR Nadina 10157	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	0	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...



Comments: Bridge. No issues.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-26	Crossing Sub Type	Ford
PSCIS ID	197651	Diameter (m)	–
External ID	1800868	Length (m)	–
Crew	AI, KP	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	672888	Resemble Channel	–
Northing	6005375	Backwatered	–
Stream	Tributary to Goosly Lake	Percent Backwatered	–
Road	Spur off Parrot FSR	Fill Depth (m)	–
Road Tenure	MoTi unclassified	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	0	Barrier Result	Unknown
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1800472. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Ford. No issues.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-27	Crossing Sub Type	Ford
PSCIS ID	197652	Diameter (m)	–
External ID	1800077	Length (m)	–
Crew	KP, AI	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	661696	Resemble Channel	–
Northing	6039603	Backwatered	–
Stream	McInnes Creek	Percent Backwatered	–
Road	Unnamed	Fill Depth (m)	–
Road Tenure	MoTi unclassified	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	0	Barrier Result	Unknown
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1800868. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Ford. No issues.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-27	Crossing Sub Type	Round Culvert
PSCIS ID	197653	Diameter (m)	2
External ID	1800068	Length (m)	32
Crew	KP, AI	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	665518.1	Resemble Channel	No
Northing	6044192	Backwatered	No
Stream	Perow Creek	Percent Backwatered	—
Road	Perow Loop Rd	Fill Depth (m)	1
Road Tenure	MoTi local	Outlet Drop (m)	0.33
Channel Width (m)	2.5	Outlet Pool Depth (m)	0.26
Stream Slope (%)	3	Inlet Drop	No
Beaver Activity	Yes	Slope (%)	2.5
Habitat Value	Medium	Valley Fill	Deep Fill
Final score	34	Barrier Result	Barrier
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	10

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1801069. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Private land. Channelized downstream with concrete slab riprap in place. Private driveway is crossing 1801071 upstream.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-26	Crossing Sub Type	Round Culvert
PSCIS ID	197654	Diameter (m)	1
External ID	1804152	Length (m)	20
Crew	AI, KP	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	652746.5	Resemble Channel	No
Northing	6018036	Backwatered	No
Stream	Tributary to Buck Creek	Percent Backwatered	—
Road	Balsam FSR	Fill Depth (m)	2
Road Tenure	FLNR Nadina 9486	Outlet Drop (m)	0.27
Channel Width (m)	1.5	Outlet Pool Depth (m)	0.12
Stream Slope (%)	5	Inlet Drop	Yes
Beaver Activity	No	Slope (%)	4
Habitat Value	Medium	Valley Fill	Deep Fill
Final score	34	Barrier Result	Barrier
Fix type	Replace Structure with Streambed Simulation CBS	Fix Span / Diameter	3

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1802520. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Good flow. Stream likely has inventory information. Should check with Canfor.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-27	Crossing Sub Type	Round Culvert
PSCIS ID	197655	Diameter (m)	0.9
External ID	1800073	Length (m)	25
Crew	AI, KP	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	661765.5	Resemble Channel	No
Northing	6039490	Backwatered	Yes
Stream	McInnes Creek	Percent Backwatered	100
Road	Highway 16	Fill Depth (m)	2
Road Tenure	MoTi highway	Outlet Drop (m)	0
Channel Width (m)	1	Outlet Pool Depth (m)	0.7
Stream Slope (%)	0	Inlet Drop	No
Beaver Activity	No	Slope (%)	0
Habitat Value	Low	Valley Fill	Deep Fill
Final score	16	Barrier Result	Potential
Fix type	Replace Structure with Streambed Simulation CBS	Fix Span / Diameter	3

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1803661. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Small ditch likely modified due to adjacent agriculture. Culvert fully passable at the time of the survey because backwatered 100%. Grasses around inlet and outlet make locating the culvert challenging.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-27	Crossing Sub Type	Round Culvert
PSCIS ID	197656	Diameter (m)	0.8
External ID	1800071	Length (m)	25
Crew	AI, KP	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	663216	Resemble Channel	No
Northing	6042012	Backwatered	Yes
Stream	Tributary to Bulkley River	Percent Backwatered	100
Road	Highway 16	Fill Depth (m)	1.8
Road Tenure	MoTi highway	Outlet Drop (m)	0
Channel Width (m)	5	Outlet Pool Depth (m)	0.5
Stream Slope (%)	0	Inlet Drop	Yes
Beaver Activity	Yes	Slope (%)	0
Habitat Value	Low	Valley Fill	Deep Fill
Final score	19	Barrier Result	Potential
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	10

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1804151. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Possible value for coho rearing. Downstream CNRail crossing could not be located at time of assessment.
Tire at inlet.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-27	Crossing Sub Type	Round Culvert
PSCIS ID	197657	Diameter (m)	2.5
External ID	1800064	Length (m)	14
Crew	AI, KP	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	665609	Resemble Channel	Yes
Northing	6044135	Backwatered	No
Stream	Perow Creek	Percent Backwatered	—
Road	Highway 16	Fill Depth (m)	1
Road Tenure	MoTi highway	Outlet Drop (m)	0
Channel Width (m)	3.2	Outlet Pool Depth (m)	0.2
Stream Slope (%)	1.5	Inlet Drop	No
Beaver Activity	No	Slope (%)	2.5
Habitat Value	High	Valley Fill	Deep Fill
Final score	18	Barrier Result	Potential
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	10

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1804152. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Culvert is likely as passable as natural channel for all species and life stages at most flows.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-27	Crossing Sub Type	Oval Culvert
PSCIS ID	197658	Diameter (m)	4
External ID	1800062	Length (m)	24
Crew	AI, KP	Embedded	No
UTM Zone	9	Depth Embedded (m)	–
Easting	666847.2	Resemble Channel	No
Northing	6044305	Backwatered	No
Stream	Byman Creek	Percent Backwatered	–
Road	Highway 16	Fill Depth (m)	1.6
Road Tenure	MoTi highway	Outlet Drop (m)	2
Channel Width (m)	11.1	Outlet Pool Depth (m)	3.8
Stream Slope (%)	1.2	Inlet Drop	Yes
Beaver Activity	No	Slope (%)	4
Habitat Value	High	Valley Fill	Deep Fill
Final score	39	Barrier Result	Barrier
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	15.1

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1804153. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Culvert is likely as passable for most species and life stages at most non-peak and non-lowest flows. Streamkeepers have observed fry moving through culvert in overwintering studies.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-27	Crossing Sub Type	Concrete Box
PSCIS ID	197659	Diameter (m)	3.2
External ID	1800066	Length (m)	8
Crew	AI, KP	Embedded	Yes
UTM Zone	9	Depth Embedded (m)	1
Easting	665586.4	Resemble Channel	Yes
Northing	6043993	Backwatered	No
Stream	Perow Creek	Percent Backwatered	–
Road	CN Railway	Fill Depth (m)	0
Road Tenure	Canadian National	Outlet Drop (m)	0
Channel Width (m)	3.2	Outlet Pool Depth (m)	0
Stream Slope (%)	2	Inlet Drop	No
Beaver Activity	No	Slope (%)	0
Habitat Value	High	Valley Fill	Deep Fill
Final score	3	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1804851. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Appears passable. No concerns.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-27	Crossing Sub Type	Bridge
PSCIS ID	197660	Diameter (m)	5
External ID	1805595	Length (m)	18
Crew	AI, KP	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	665623.6	Resemble Channel	–
Northing	6044045	Backwatered	–
Stream	Byman Creek	Percent Backwatered	–
Road	CN Railway	Fill Depth (m)	–
Road Tenure	Canadian National	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	3	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1804986. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Appears passable. No concerns.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-27	Crossing Sub Type	Bridge
PSCIS ID	197661	Diameter (m)	4
External ID	2020082701	Length (m)	10
Crew	KP, AI	Embedded	–
UTM Zone	9	Depth Embedded (m)	–
Easting	665574	Resemble Channel	–
Northing	6043989	Backwatered	–
Stream	Perow Creek	Percent Backwatered	–
Road	Perow Station Rd	Fill Depth (m)	–
Road Tenure	MoTi local	Outlet Drop (m)	–
Channel Width (m)	–	Outlet Pool Depth (m)	–
Stream Slope (%)	–	Inlet Drop	–
Beaver Activity	No	Slope (%)	–
Habitat Value	–	Valley Fill	–
Final score	0	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1805182. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Private bridge approximately 30 upstream of confluence with Byman Creek.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-28	Crossing Sub Type	Round Culvert
PSCIS ID	197662	Diameter (m)	4.2
External ID	1800060	Length (m)	24
Crew	KP, AI	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	672404.7	Resemble Channel	No
Northing	6044146	Backwatered	No
Stream	Richfield Creek	Percent Backwatered	—
Road	Highway 16	Fill Depth (m)	1
Road Tenure	MoTi highway	Outlet Drop (m)	0.2
Channel Width (m)	12.5	Outlet Pool Depth (m)	1
Stream Slope (%)	1.5	Inlet Drop	No
Beaver Activity	No	Slope (%)	2
Habitat Value	High	Valley Fill	Deep Fill
Final score	29	Barrier Result	Barrier
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	16.5

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1805183. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Habitat confirmation and minnowtrapping completed.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-28	Crossing Sub Type	Round Culvert
PSCIS ID	197663	Diameter (m)	1.75
External ID	1800213	Length (m)	25
Crew	KP, AI	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	670240.8	Resemble Channel	No
Northing	6044772	Backwatered	No
Stream	Johnny David Creek	Percent Backwatered	—
Road	Highway 16	Fill Depth (m)	3
Road Tenure	MoTi highway	Outlet Drop (m)	0
Channel Width (m)	6.3	Outlet Pool Depth (m)	1.35
Stream Slope (%)	5.5	Inlet Drop	Yes
Beaver Activity	No	Slope (%)	2
Habitat Value	High	Valley Fill	Deep Fill
Final score	24	Barrier Result	Barrier
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	10.3

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1805455. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.

NO IMAGE AVAILABLE



Comments: Habitat confirmation and sampling completed.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-28	Crossing Sub Type	Round Culvert
PSCIS ID	197664	Diameter (m)	2.5
External ID	1801069	Length (m)	15
Crew	KP, AI	Embedded	Yes
UTM Zone	9	Depth Embedded (m)	1.9
Easting	660454.3	Resemble Channel	Yes
Northing	6037919	Backwatered	No
Stream	Barren Creek	Percent Backwatered	–
Road	Highway 16	Fill Depth (m)	1
Road Tenure	MoTi highway	Outlet Drop (m)	0
Channel Width (m)	4.7	Outlet Pool Depth (m)	0
Stream Slope (%)	1.8	Inlet Drop	No
Beaver Activity	Yes	Slope (%)	2
Habitat Value	High	Valley Fill	Deep Fill
Final score	14	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...



Comments: Habitat confirmation completed.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-28	Crossing Sub Type	Round Culvert
PSCIS ID	197665	Diameter (m)	0.9
External ID	1800076	Length (m)	25
Crew	AI, KP	Embedded	Yes
UTM Zone	9	Depth Embedded (m)	0.3
Easting	660627	Resemble Channel	Yes
Northing	6037843	Backwatered	Yes
Stream	Barren Creek	Percent Backwatered	10
Road	CN Railway	Fill Depth (m)	2
Road Tenure	Canadian National	Outlet Drop (m)	0
Channel Width (m)	3.5	Outlet Pool Depth (m)	0.4
Stream Slope (%)	3	Inlet Drop	No
Beaver Activity	No	Slope (%)	1
Habitat Value	High	Valley Fill	Deep Fill
Final score	14	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1805606. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.

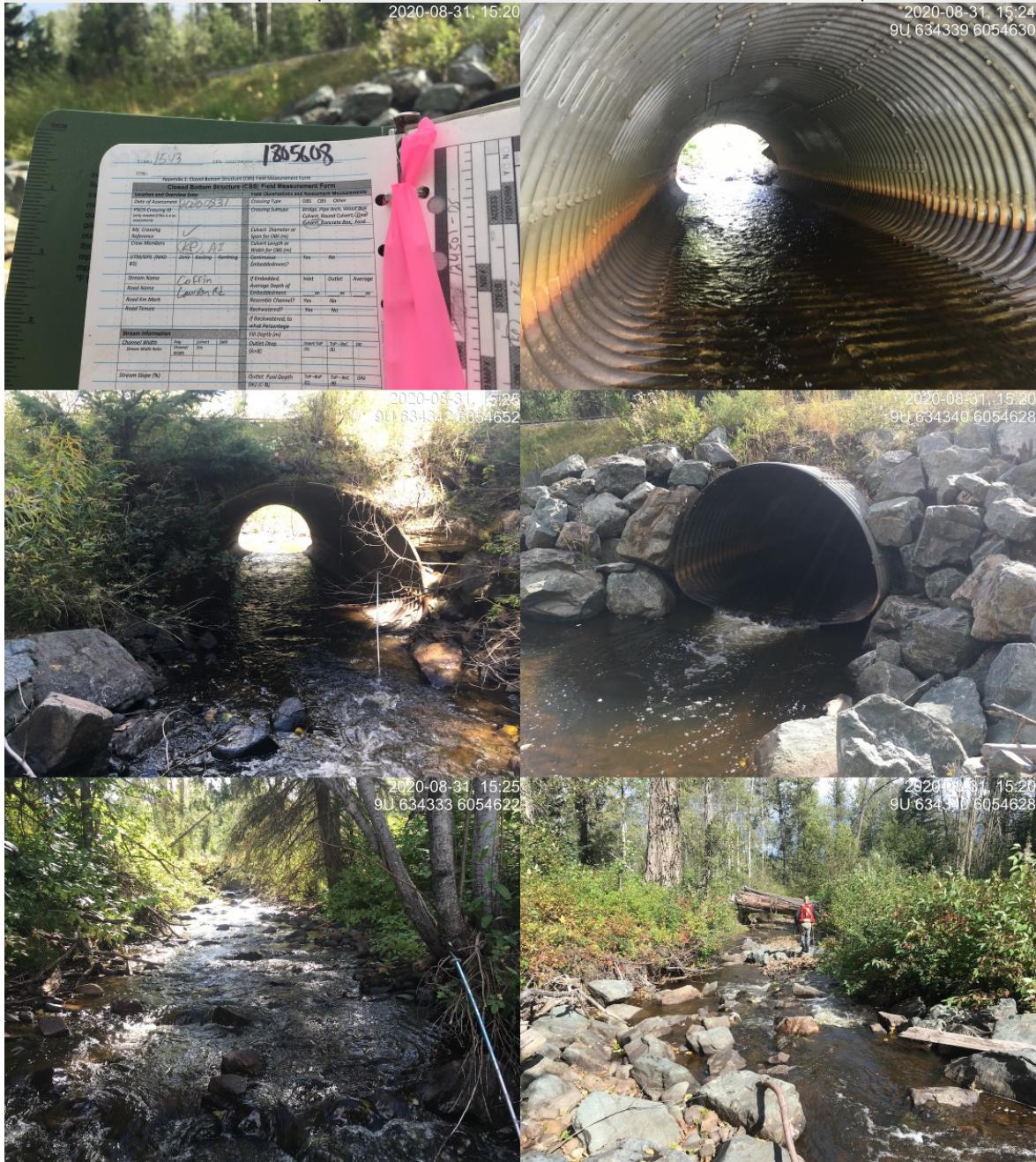


Comments: Date on structure is 1934. Two pipes present but only one of two pipes functional at time of survey. Functional pipe is apparently collapsing. Oxidized ooze at outlet of eastern dewatered pipe.

Location and Stream Data		Crossing Characteristics –	
Date	2020-08-29	Crossing Sub Type	Round Culvert
PSCIS ID	197666	Diameter (m)	2
External ID	2020083101	Length (m)	22
Crew	AI, KP	Embedded	Yes
UTM Zone	9	Depth Embedded (m)	0.15
Easting	628108	Resemble Channel	Yes
Northing	6059632	Backwatered	Yes
Stream	Helps Creek	Percent Backwatered	100
Road	CN Railway	Fill Depth (m)	1
Road Tenure	Canadian National	Outlet Drop (m)	0
Channel Width (m)	6	Outlet Pool Depth (m)	0.3
Stream Slope (%)	0	Inlet Drop	No
Beaver Activity	Yes	Slope (%)	0
Habitat Value	High	Valley Fill	Deep Fill
Final score	14	Barrier Result	Passable
Fix type	–	Fix Span / Diameter	–

Appendix - Phase 1 Fish Passage As...

Photos: PSCIS ID 1805608. From top left clockwise: Road/Site Card, Barrel, Outlet, Downstream, Upstream, Inlet.



Comments: Passable and fully backwatered structure. Landowner reports that lamprey (~40cm x 20) at crossing inside of the culvert in the past.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-31	Crossing Sub Type	Round Culvert
PSCIS ID	197667	Diameter (m)	2.5
External ID	1805606	Length (m)	17
Crew	KP, AI	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	631092	Resemble Channel	No
Northing	6055866	Backwatered	No
Stream	Moan Creek	Percent Backwatered	—
Road	CN Railway	Fill Depth (m)	0.8
Road Tenure	Canadian National	Outlet Drop (m)	0.58
Channel Width (m)	3.8	Outlet Pool Depth (m)	0.57
Stream Slope (%)	4.5	Inlet Drop	No
Beaver Activity	No	Slope (%)	4
Habitat Value	High	Valley Fill	Deep Fill
Final score	39	Barrier Result	Barrier
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	10

Appendix - Phase 1 Fish Passage As...



Comments: Approximately 17m from the outlet to the Bulkley River.

Location and Stream Data		Crossing Characteristics	
Date	2020-08-31	Crossing Sub Type	Round Culvert
PSCIS ID	197668	Diameter (m)	3
External ID	1805608	Length (m)	15
Crew	KP, AI	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	634336	Resemble Channel	No
Northing	6054609	Backwatered	No
Stream	Coffin Creek	Percent Backwatered	—
Road	CN Railway	Fill Depth (m)	0.8
Road Tenure	Canadian National	Outlet Drop (m)	0.27
Channel Width (m)	5.3	Outlet Pool Depth (m)	0.47
Stream Slope (%)	2	Inlet Drop	No
Beaver Activity	No	Slope (%)	2
Habitat Value	High	Valley Fill	Deep Fill
Final score	29	Barrier Result	Barrier
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	10

Appendix - Phase 1 Fish Passage As...



Comments: CN crossing has had Newbury riffles constructed to decrease the size of the outlet drop but drop still present. Abundant gravels suitable for spawning chinook and coho present. Some deep pools available for fry/parr overwintering.

Location and Stream Data		Crossing Characteristics	
Date	2020-09-05	Crossing Sub Type	Round Culvert
PSCIS ID	197669	Diameter (m)	1.25
External ID	14000079	Length (m)	6
Crew	AI, KP	Embedded	No
UTM Zone	9	Depth Embedded (m)	—
Easting	650567	Resemble Channel	No
Northing	5993274	Backwatered	No
Stream	Riddeck Creek	Percent Backwatered	—
Road	Private	Fill Depth (m)	0.3
Road Tenure	unclassified	Outlet Drop (m)	0.45
Channel Width (m)	2.6	Outlet Pool Depth (m)	0.7
Stream Slope (%)	4	Inlet Drop	No
Beaver Activity	No	Slope (%)	2
Habitat Value	High	Valley Fill	Deep Fill
Final score	31	Barrier Result	Barrier
Fix type	Replace with New Open Bottom Structure	Fix Span / Diameter	10

Appendix - Phase 1 Fish Passage As...



Comments: Extensive rearing habitat and gravels suitable for spawning. Stream eventually flows into top end of Owen Lake.

