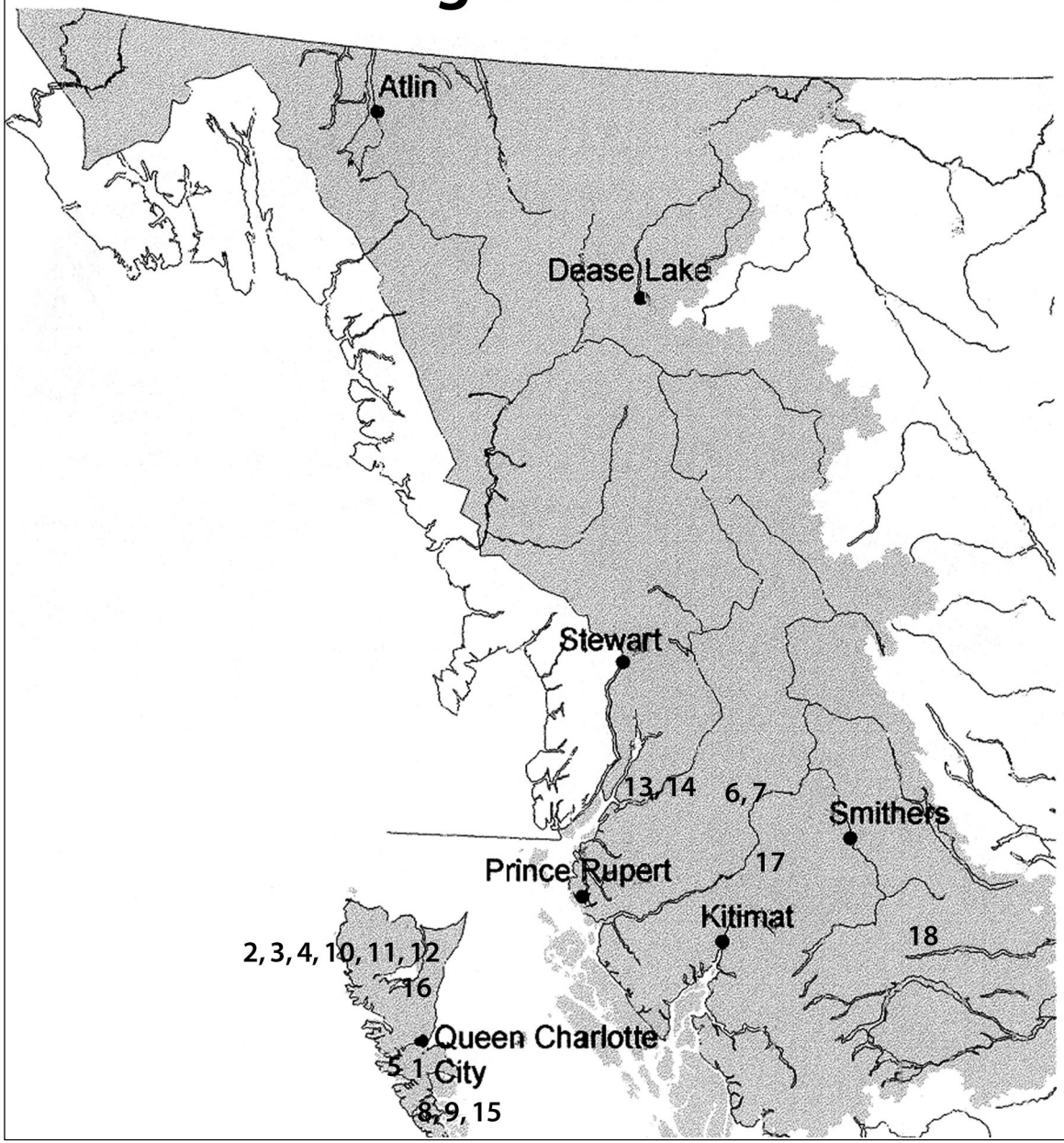
Skeena Region

Region 6. Skeena



WRP Projects

1	Copper Creek
2	15 Km Creek
3, 4	Torney Creek
5	Weeping Willy
6	Clear Creek
7	Glacier Creek
8	Clew Creek
9	Tributary 20 LB
10	Camp Creek
11, 12	Lower Naden River
13	Greenville Creek
14	Ginlulak Creek
15	Thorsen Creek
16	Clay Creek
17	Zymoetz River
18	Fenton Creek

UTM (NAD 83) zones, northings and eastings; watershed codes and waterbody identifiers for aquatic rehabilitation projects for Region 6, Skeena.

No.	Region	Watershed	WRP Projects	(NAD 83) UTM Zone	(NAD 83) UTM Northing	(NAD 83) UTM Easting	Watershed Code	Waterbody Identifier
1	Skeena	Copper Creek	Copper Creek Instream Restoration	9	5893871	312775	950–010400	00000MORI
2		Davidson Creek	15 Km Creek Slide Bioengineering	8	5980625	651944	940–661700	00000GRAI
3		Davidson Creek	Torney Creek Bar Stabilization	8	5980625	651944	940–661700	00000GRAI
4		Davidson Creek	Torney Creek Pond	8	5981000	652000	940–661700	00000GRAI
5		Deena Creek	Weeping Willy Creek Instream Restoration	8	5891558	690263	950–974300–17200	00000MORI
6		Kitsumkalum River	Clear Creek Side Channel	9	6075418	513248	430–465300	00000KLUM
7		Kitsumkalum River	Glacier Creek Fan Stabilization	9	6057514	517570	430–256600	00000KLUM
8		Mathers Creek	Clew Creek Instream Restoration	9	5877796	313760	955–018000–38300	00000MORI
9		Mathers Creek	Tributary 2.0 LB Instream Restoration	9			955–018000	00000MORI
10		Naden River	Camp Creek Instream Restoration	8	5978588	652175	940–665100	00000GRAI
11		Naden River	Lower Naden Reach 3–4 Instream Restoration	8	5978588	652175	940–665100	00000GRAI
12		Naden River	Lower Naden Reach 4–2 Instream Restoration	8	5978588	652175	940–665100	00000GRAI
13		Nass River	Greenville Creek Instream Restoration	9	6098674	463409	500–076200	00000LNAR
14		Nass River	Ginlulak Creek Instream Restoration	9	6099370	468612	500–090500	00000LNAR
15		Thorsen Creek	Thorsen Creek Off–channel and Instream Restoration	9	5862597	301569	950–105500	00000MORI
16		Yakoun River	Clay Creek Bioengineering	9			940–896100	00000GRAI
17		Zymoetz River	Zymoetz River Culvert Replacement	9	6044733	533524	440	00000ZYMO
18		Morice River	Fenton Creek Fish Access	9	6008368	637417	460–600600–26600	00000MORR

ZYMOETZ RIVER CULVERT REPLACEMENT (SITE 77)

Objectives
The objective was to re–establish juvenile fish access to a 1500 m^2 off–channel slough, used as rearing and overwintering habitat by juvenile coho, which was isolated from the river by two perched culverts in the road.

FRBC Region/MELP Region/MOF Region
Pacific/Skeena/Vancouver

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Proponent/Implementing Partners
Skeena Cellulose Inc.

Watershed/Stream
Zymoetz (Copper) River

Location
The culvert replacement occurred at 28 km on the Copper River Forest Service Mainline, approximately 45 km southeast of Terrace.

Introduction
The Copper River drains a 3000 km^2 watershed, which contains substantial fisheries values along with powerlines, pipelines, roads and forestry development. In conjunction with floodplain logging and road construction over the past 35 years, large floods caused substantial channel changes and impacted fish habitat, particularly off–channel habitat amount and fish access.

Assessments and Prescriptions
The slough at Site 77 is an isolated relic flood channel of the river, 200 m length and 7 m wide, located against the hillside and isolated from the river by the mainline road (Fig. 6–36). A small tributary and groundwater seepage maintains water levels in the slough.

The problem consisted of two culverts, perched 50 cm above the floodplain on the upstream and downstream ends, which were accessible to juvenile fish only when backwatered during river high flows (Fig. 6–37). Hundreds of juvenile coho were observed holding in the slack water below the culvert outfall during high runoff with no access to the off–channel habitat. Minnow trapping in the slough captured several coho smolts (160 to 180 mm in length) which were likely 3 years old and not able to exit the slough due to dispersed flow through the roadbed and perched culvert inlet. In addition to the metal culverts, an obstructed wooden box culvert was found during excavation, which dispersed water into the roadbed and prevented fish movement.

Rehabilitation Work
In August of 1999, we replaced the two perched culverts with a 1500 mm culvert that ensured up and downstream fish passage and removed the box culvert to maintain adequate water depth in the slough upstream (Figs. 6–38, 6–39).

The two 40 ft culverts were removed with an excavator working from the road. The roadbed was excavated an additional three feet lower to accommodate the 1500 mm baffled culvert (55 feet in length). The new pipe was installed at 1% slope and clean gravel and riprap armoring was placed around the inlet and outlets. Beaver grating will be installed.

Cost Summary

Labour	$ 5,000
Machinery and Materials	7,000
Total Cost	$12,000

Production Estimates
Overall the slough appears suitable as off–channel rearing habitat and we anticipate high use of the slough by coho fry which will be monitored. Average production is estimated at 375 smolts, using 0.25 smolts/m^2, similar to Telkwa River off–channel habitat production figures (A. Baxter, pers. comm.).

Proposed Work
Future work includes development of an outlet channel, 50 m in length, which will confine the culvert outflow across the floodplain to the river channel and ensure year–round access to the culvert exists for juvenile fish.

For Further Information

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Figure 6–36. Isolated off–channel slough located upstream of perched culverts at 28 km.

Figure 6–38. Installation of new 1500 mm culvert.

Figure 6–37. Outlet of two culverts perched 50 cm above the bed and only accessible at high flood river flows (inlet to left culvert buried).

Figure 6–39. The new culvert provides upstream access to off–channel habitat and enables downstream migration of smolts.