

A PRELIMINARY STUDY OF  
THE KWINAGEESE RIVER  
STEELHEAD TROUT

P/FR/SK/37  
SCHULTZE, G.C.  
PRELIMINARY STUDY OF THE  
KWINAGEESE RIVER STEELHEAD  
CPYI c. 1 mm SMITHERS

BY  
G.C. SCHULTZE

SKEENA FISHERIES REPORT  
BRITISH COLUMBIA FISH AND WILDLIFE BRANCH  
SMITHERS, B.C.  
1981

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## INTRODUCTION

During mid October 1981 a Fish and Wildlife crew conducted a preliminary reconnaissance of the Kwinageese River with the following objectives in mind:

1. To determine presence of steelhead trout and attempt an estimate of population size.
2. To obtain scale samples to determine the life history of Kwinageese steelhead.
3. To get an idea of the susceptibility of the steelhead to over harvesting by sports angling.

## THE STUDY AREA

The Kwinageese River flows into the Nass River at a point approximately 30 km east of Meziadin Junction (Fig. 1). A stream survey done in 1974 of the Kwinageese River drainage, describes the physical aspects of the system adequately as to Timber types, tributaries, habitat types, gradients and fish species present (Scott, 1974). Steelhead trout were not sampled during the 1974 survey. The location of our study was in the Kwinageese River mainstem downstream of the first unnamed lake below Fred Wright Lake (Fig. 2). There is 28.2 km of river between Fred Wright Lake and the Nass River; however, due to access problems, only 9.25 km of river were sampled. Because the access road crosses the Kwinageese River above Fred Wright Lake, we did get a brief look at a small section of this area.

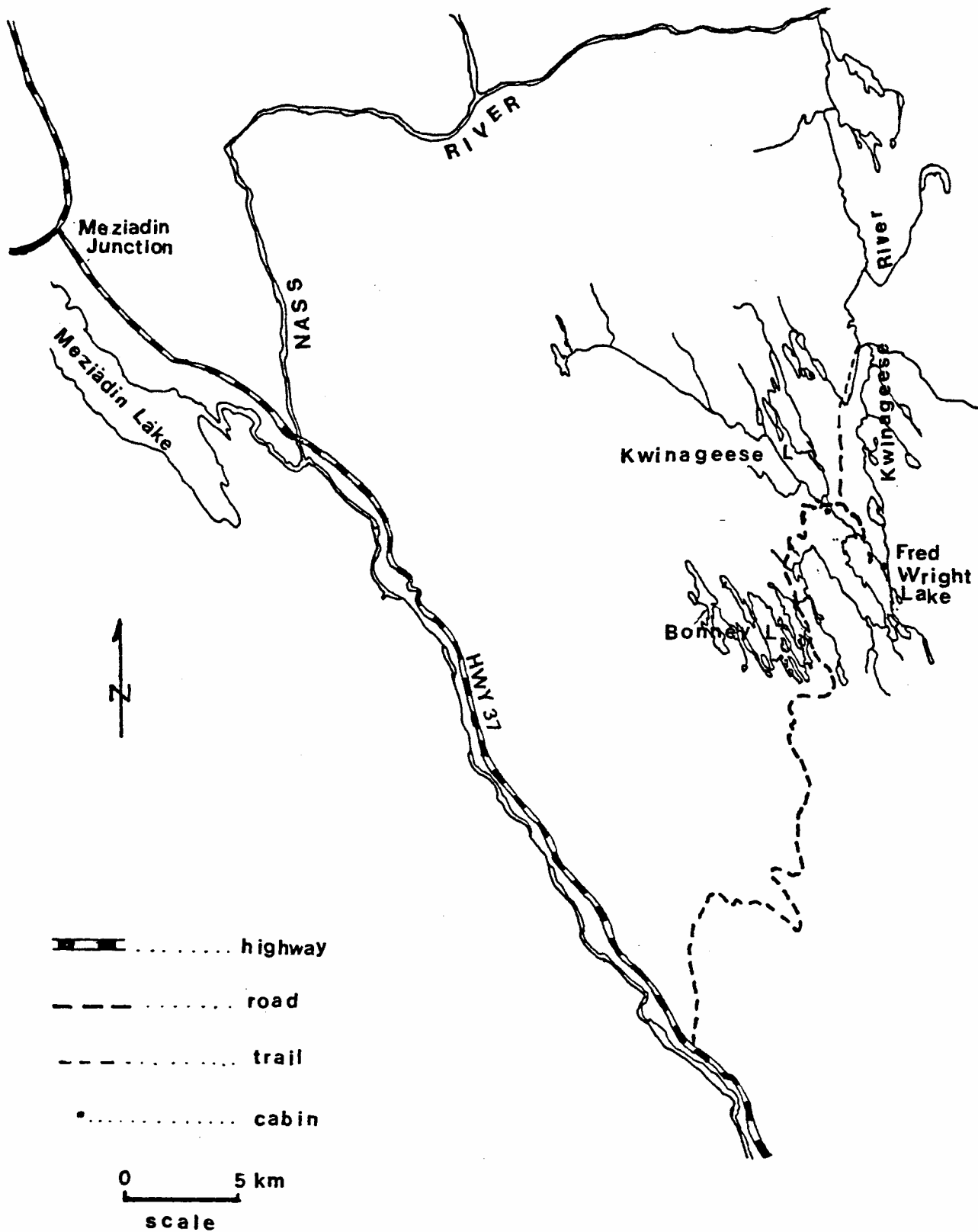


Fig. 1. Kwinageese River System.

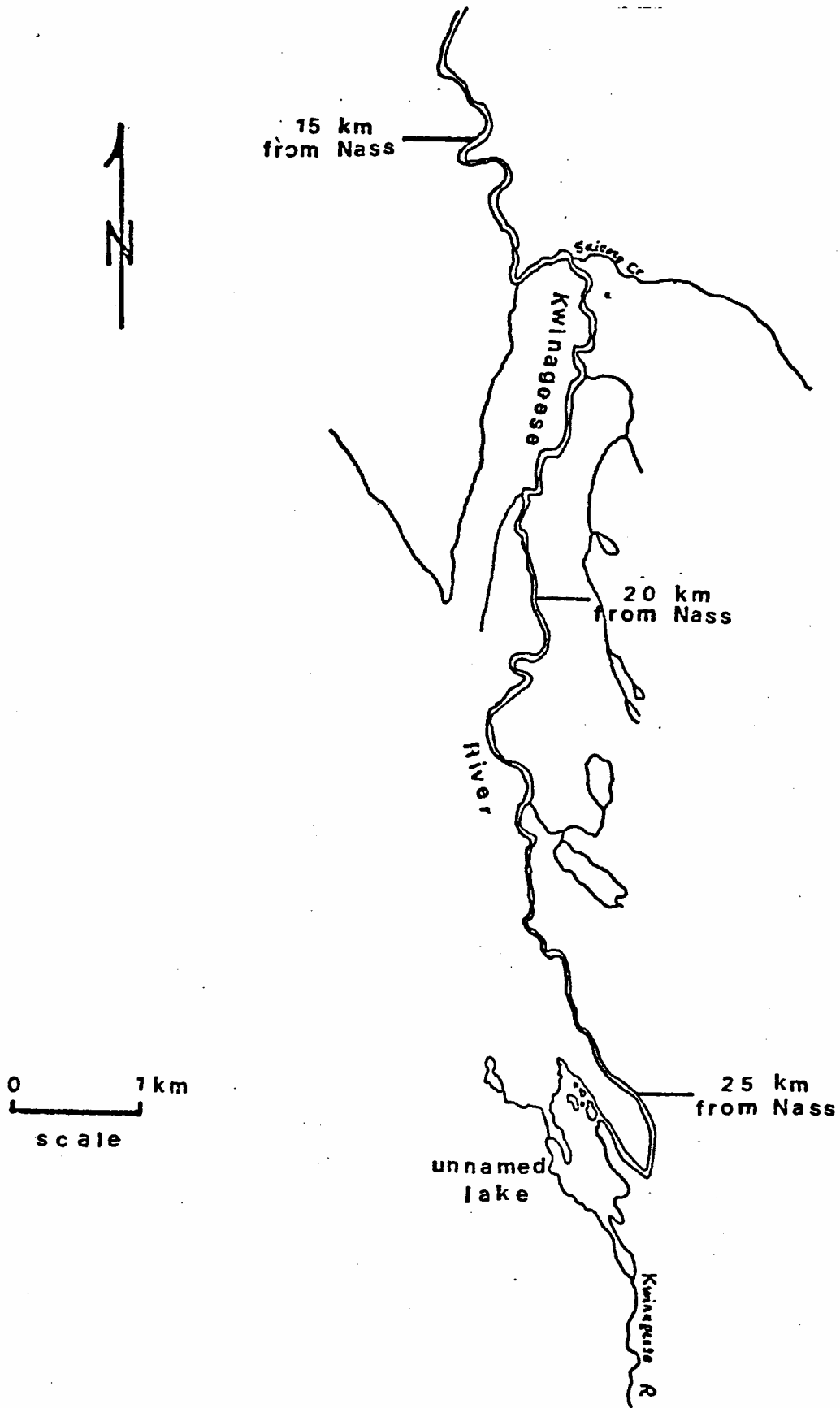


Fig. 2. Main Study Area of the Kwinageese System.

Vehicular access is possible to Fred Wright Lake but the road is impassible to the lower Kwinageese. After turning East off of Highway 37 the ungraded road winds for approximately 30 km through clear cuts and leave strips and then for another 30 km to the upper Kwinageese through mature forests. This last stretch of road is in poor condition due to brush along the road edge, washouts in the road, one washed out bridge that could be detoured, and one bridge that was in the process of collapsing but still passible. It took approximately 1 hour and 45 minutes to travel this 50 km stretch of road. Other access into the area would be by float plane or helicopter. A Beaver can land on the first unnamed lake below Fred Wright Lake (Bill Robinson, pers. comm.).

There is a fisheries cabin located at the upper Kwinageese bridge. This was used by the crew during our study with the permission of Department of Fisheries and Oceans. To get to the lower Kwinageese River took at least one hour of walking.

The area presently seems to be getting a little use by the public for hunting and trout fishing in the lakes. There was little evidence of people fishing the lower Kwinageese River.

#### METHODS

Our methods were to have two two-man crews go into the river and angle sections of river in a "leap-frog" method. Once steelhead were caught they were measured for length and scale sampled. All weights were estimated. Measurements for all non-steelhead were estimated. Recaptured steelhead were identified by the absence of scales from the

preferred

scale area and marks on the fish. As we walked the river mental notes were made on substrate and habitat types. Two water temperatures were taken, one of the lower river and one of the upper river near the cabin.

## OBSERVATIONS AND RESULTS

For identification purposes all distances in this report are kilometers of river from the Nass with the mouth of the Kwinageese River at the Nass being Kilometer "0" (Fig. 2).

### UPPER KWINAGEESE

The Kwinageese River is a fairly small river (Ca. 5.6 cms estimated flow). During our sampling time the river was low and clear. Approximately 200-300 sockeye were observed spawning which is unusual this late in the year (Ron Kadowaki pers. comm.). Most of the sockeye were observed in the upper river (above Fred Wright Lake) near the Fisheries cabin. Coho salmon, Whitefish, Dolly Varden and possibly one steelhead were also seen. Water temperature was 6°C on October 18, 1981. The upper river has a gravel bottom with good flows creating good spawning habitat.

### MIDDLE KWINAGEESE

The section of river (middle Kwinageese) between Fred Wright Lake and the lake below Fred Wright Lake was also looked at briefly. This appeared to be a fairly fast flowing section (.9-1.2mps) with white water and rapids. A few steelhead parr were observed and Dolly Varden were angled in this stretch. An obsolete fisheries wier was observed about 200 m below the outlet of Fred Wright Lake. No information is

available about the results from this fence (Ron Kadowaki, pers. comm.). A new trappers cabin is presently situated at the outflow of Fred Wright Lake.

LOWER KWINAGEESE

The unnamed lake below Fred Wright Lake was not sampled, nor were 3 km of river below this lake. The water temperature of the river in this area was 8° C on October 16, 1981.

In the section of lower river that we did sample, we did catch steelhead, confirming that summer run steelhead do exist in the Kwinageese River (Table 1). The steelhead were observed in scattered groups of one to six fish in the upper portion of the sample area where there was an even flow of water and spawning gravel. Freshwater clams were abundant in this area. Lower down in the sample area (21.5 km. and less) where there was little spawning gravel and more cobble, steelhead were found stacked in deeper holes. The two main holding holes we found were at 15.5 km. and 20.75 km.

Table 1. Lengths, weights, and numbers of fish angled on Kwinageese River, Fall 1981. (Lengths for steelhead measured, others estimated.)

SPECIES	NUMBER ANGLED	SIZE RANGE		AVERAGE SIZE mm.	SIZE kg.
		LENGTHS (m)	WEIGHTS (kg)		
Steelhead trout	53	508-965	1.1-7.7	721	3.5
Rainbow trout <sup>1</sup>	19	152-406		254	
Dolly Varden	22	178-711	.2-1.8	610	1.1
Whitefish	1	254		254	

<sup>1</sup>Juvenile steelhead and/or resident rainbow (?)



In the area that had more cobble and boulder cover, juvenile rainbow were observed. On one bend of the river (at 15.75 km) approximately 24 rainbow fry and one 1+ rainbow were observed dead in cobbles in shallow water. There was no apparent reason for this situation.

There appeared to be a concentration of Dolly Varden at 22.75 km. The Dolly Varden that were sampled here were kelts, indicating that this may be their spawning area.

FISH SAMPLES

The steelhead that were captured were fairly dark which led us to believe that they had been in the river for some time. Quite a few fish had scarred or damaged noses. This seems to indicate they were having trouble negotiating some portions of their migration route. Scale samples were taken from 53 steelhead. From these scales, eight distinct age groups were determined with 3.1+ and 4.2+ being the dominant ages (30% and 32% respectively). Six percent of the fish were repeat spawners (Table 2).

Table 2. Steelhead trout age groups, Kwinageese River, 1981 (n=53).

<u>AGE GROUP</u>	<u>NUMBER OF STEELHEAD</u>	<u>NO. MALE</u>	<u>NO. FEMALE</u>	<u>% OF TOTAL</u>
3.1+	16	13	3	30
3.2+	6	1	5	11
3.1S1+	1	1	0	2
3.3+	1	1	0	2
4.1+	8	6	2	15
4.2+	17	6	11	32
4.3+	1	1	0	2
4.1S1+	1	1	0	2
R.1S1+	1	0	1	2
R.2+	1	1	0	2
	53	31	22	100

We angled 19 rainbow trout but only took scale samples from four. Their ages were 4+, 6+, and 5S+ (Table 3).

Table 3. Rainbow size and age groups from Kwinageese 1981. (N=4).

AGE GROUP	NUMBER	AVERAGE LENGTH mm	AVERAGE WEIGHT kg
4+	2	254	
6+	1	406	.34
5S+	1	356	.34

#### STEELHEAD POPULATION

Estimating the population of steelhead in the Kwinageese was difficult because of a few unknown facts:

1. Were steelhead holding in the Nass?
2. Do steelhead hold in any of the lakes?
3. Are steelhead holding in some unsurveyed portion of the river?

The best estimate that could be given would be for the only section of river that we actually sampled. The estimate for this section would be between two and three hundred steelhead.

SPORT FISHING HISTORY AND FUTURE

Poor access and the river not being known to have good fishing combine to leave the river practically untouched. This was evidenced by our observations, and the Steelhead Harvest Analysis which showed that during the period between 1966 to 1981 only thirty anglers have been sampled who angled the Kwinageese for steelhead (Table 4).

Table 4. Angler and steelhead catch distribution for the Kwinageese River 1966 - 1981.

YEAR	<u>ANGLER DISTRIBUTION</u>		<u>STEELHEAD CATCH DISTRIBUTION</u>			
	RESIDENT	N-R Canadians	N-R	RESIDENT	N-R Canadians	N-R
66-67	-	-	-	-	-	-
67-68	4	-	-	4	-	-
68-69	11	-	-	-	-	-
69-70	-	-	-	-	-	-
70-71	-	-	-	-	-	-
71-72	6	-	-	6	-	-
72-73	1	-	-	0	-	-
73-74	-	-	-	-	-	-
74-75	-	-	-	-	-	-
75-76	-	-	-	-	-	-
76-77	1	-	-	6	-	-
77-78	4	-	-	6	-	-
78-79	1	-	-	4	-	-
79-80	1	-	-	0	-	-
80-81	1	-	-	0	-	-

Because of the small size of the Kwinageese, and the fact that steelhead were stacked in the lower part of the sample area, the fish could be easily located and angled by the survey crew. Therefore, steelhead could be easily over-harvested by the sports angler once access is improved.

#### CONCLUSIONS

There is a summer run of steelhead in the Kwinageese River. Scale samples taken from 53 steelhead indicated 8 different age groups with 3.1+ and 4.2+ being the dominant ages (30% and 32% respectively). Six percent of the fish were repeat spawners. A crude estimate of 200 to 300 steelhead was made just for the area that was sampled.

From this study there is nothing to indicate that regulation changes are required to protect the steelhead. The present inaccessibility of the system severely limits a sport fishery. If access to the river is improved, regulations such as a roe ban and reduced possession limits, should be implemented.

#### RECOMMENDATIONS

- Look at the river in the spring to try and get a population estimate and determine where steelhead spawn.
- Next time a project like this is done, use floy tags to help to determine recaptured fish.
- Do a follow up study next year and cover some of the areas missed by this study. Also look at the Nass near the mouth of the Kwinageese to determine if steelhead hold in this area.

## REFERENCES

- British Columbia Fish and Wildlife Branch, Steelhead Harvest  
Analysis 1966-67, 1967-68, 1968-69, 1969-70, 1970-71, 1971-72,  
1972-73, 1973-74. 1974-75, 1975-76, 1976-77, 1977-78, 1978-79,  
1979-80, 1980-81.
- Kadowaki, Ron, Fisheries Biologist, Dept. Of Fisheries and Oceans,  
Canada, in a conversation October 1981.
- Robinson Bill, Fisheries Officer, Dept. of Fisheries and Oceans,  
Canada, in a conversation October 1981.

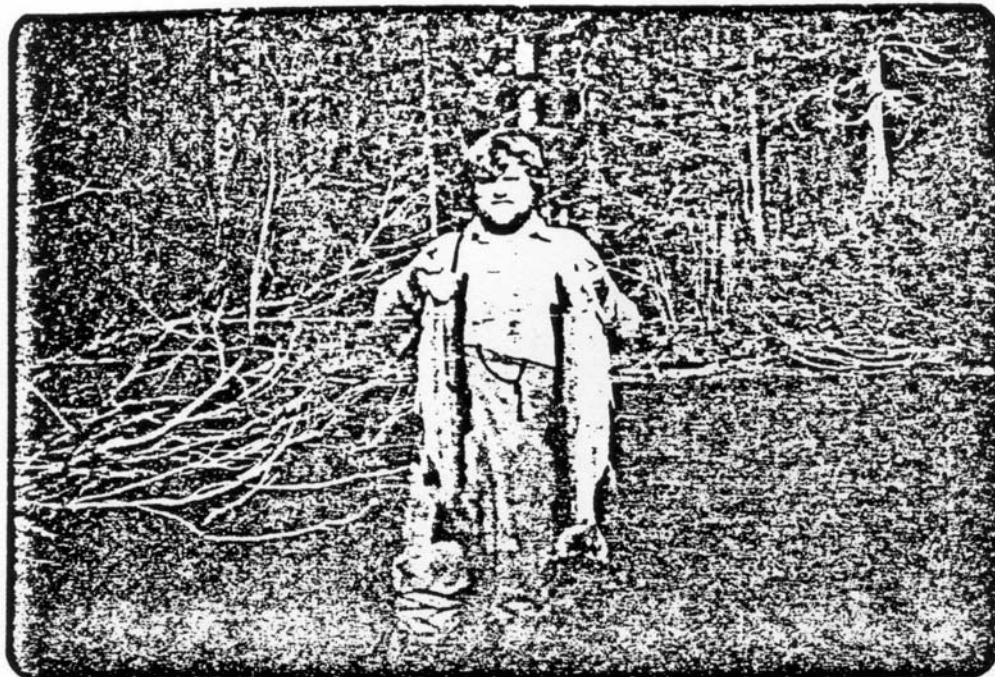
Appendix 1. Kwinageese River steelhead capture data, Fall, 1981.

DATE	LOCATION	AGE	SEX	LENGTH		WEIGHT		
				IN	MM	LB	KG	
Oct 16/81	15.5 km from Nass	3.1S1+	M	33	838	14	6.4	
		4.2+	M	30	762	10	4.6	
		4.2+	M	35	889	16	7.3	
		4.1S1+	M	30	762	10	4.6	
		3.1+	M	20	508	2.5	1.1	
		3.2+	F	30	762	10	4.6	
		3.1+	M	23	584	4	1.8	
		4.1+	M	25	635	5	2.3	
		4.1+	M	23	584	3	1.4	
		4.2+	F	28	711	8	3.6	
	19.5 km from Nass	3.2+	F	28	711	8	3.6	
		4.2+	F	30	762	10	4.6	
	16 km from Nass	4.1+	F	22	559	4.5	2.0	
		4.2+	F	30	762	10	4.6	
		4.2+	F	24	610	4	1.8	
			3.1+	F	30	762	10	4.6
	12 Recaptures							
	Oct 17/81	16 km from Nass	4.3+	M	38	965	17	7.7
			3.1+	M	22	559	4	1.8
			3.2+	F	28	711	7	3.2
15.5 km from Nass		4.2+	M	33	838	12	5.4	
		4.1+	F	22	559	4	1.8	
		3.1+	M	22	559	5	2.3	
14 km from Nass		4.2+	F	29	737	8	3.6	
20.25 km from Nass		3.2+	F	29	737	9	4.1	
20.75 km from Nass		4.2+	F	30	762	10	4.6	
		4.2+	M	34	864	14	6.4	
		4.2+	F	28	711	8	3.6	
		3.1+	M	23	584	4	1.8	
		4.1+	M	26	660	6	2.7	
		4.2+	F	30	762	10	4.6	
		4.2+	M	31	787	11	5.0	
		3.1+	M	24	610	4	1.8	
		3.1+	M	23	584	4	1.8	
		3.2+	F	26	660	7	3.2	
		3.1+	F	22	559	3	1.4	
		4.1+	M	24	610	5	2.3	
		R.1S1+	F	35	889	15	6.8	
		4.1+	M	24	610	4	1.8	
4.2+		M	32	813	12	5.4		
R.2+		M	33	838	13	5.9		
3.3+		M	37	940	17	7.7		
3.1+		M	22	559	4	1.8		
3.2+		M	32	813	12	5.4		
4.2+		F	30	762	10	4.6		
3.1+		M	24	610	4	1.8		

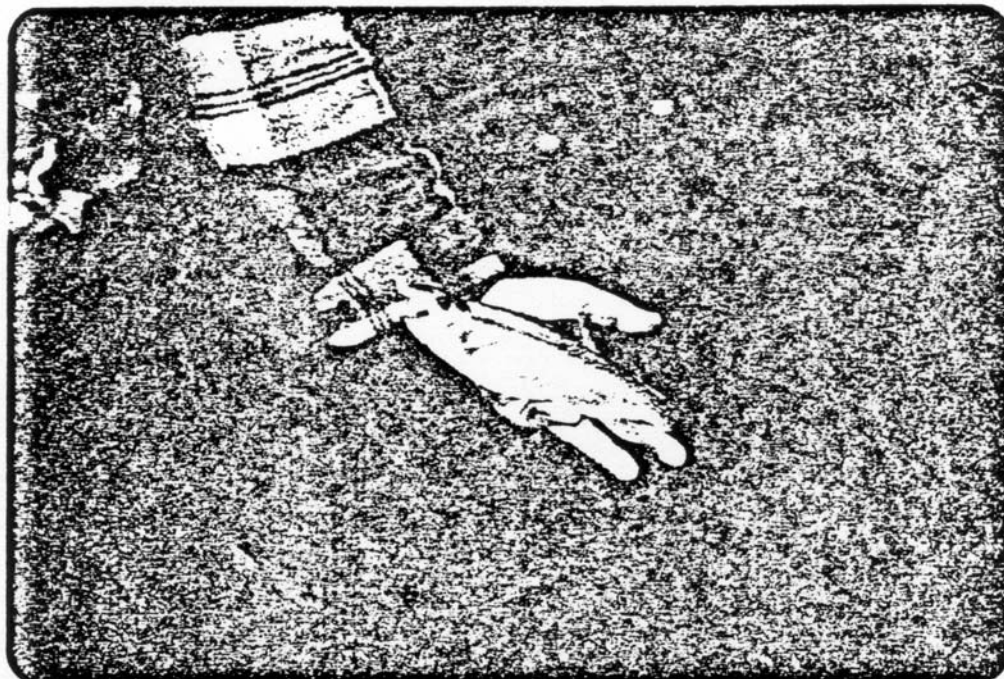
Appendix 1. Kwinageese River steelhead capture data Fall 1981.  
Continued.

DATE	LOCATION	AGE	SEX	LENGTH		WEIGHT	
				IN	MM	LB	KG
Oct 7/81	21.5 km from Nass	3.1+	M	24	610	4	1.8
19 Recaptures							
Oct 18/81	20.75 km from Nass	3.1+	M	23	584	3.5	1.6
		4.2+	F	29	737	9	4.1
	22.0 km from Nass	3.1+	M	24	610	4	1.8
		3.1+	F	21	533	3	1.4
	22.5 km from Nass	3.1+	M	24.5	622	4.5	2.0
		4.2+	F	29	737	9	4.1
	23.25 km from Nass	4.1+	M	24	610	4	1.8
2 Recaptures							

Appendix 2.



Kwinageese River Steelhead



Kwinageese River Rainbow (4+)