BABINE LAKE CREEL SURVEY

AT FULTON AND PINKUT CREEKS,

MAY – JUNE, 1990

by
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ABSTRACT

de Leeuw, A.D. 1990. Babine Lake creel survey at Fulton and Pinkut Creeks, May - June 1990. Skeena Fisheries Report No. SK—78:6p.

Total angler effort and rainbow trout catch at Fulton and Pinkut Creeks in Babine Lake was estimated from May 1 to June 9, 1990 to document the catch of mature or spawner size fish. At Fulton, anglers fished for 313 days (average length = 2.39 h) and caught 269 rainbow trout none of which were considered mature. At Pinkut, anglers fished for 735 days (average length = 2.73 h) and caught 261 rainbow trout, 123 of which were in the mature size range (many fish were cleaned prior to survey). This catch was considered insignificant (2.7%) compared to the estimated total Babine Lake sport harvest of fish this size (3,000 - 6,000 fish) during 1985 and 1986. Based on the information collected during this survey, site specific restrictions such as complete closures at Fulton and Pinkut will not significantly reduce the catch of spawner sized rainbow trout in Babine Lake as a whole.

ACKNOWLEDGEMENTS

Mr. R. Leamont, Department of Fisheries and Oceans, Pinkut Creek Hatchery Manager, provided both the instantaneous rod and boat counts as well as our accommodation during the survey. His help was invaluable. Mark Beere, Sig Hatlevik, Jeff Lough and Ron Tetreau, fisheries staff, B.C. Environment, Smithers, assisted in interviewing anglers and sampling fish, while Dave Tredger, B.C. Environment, Victoria, accomplished virtually all required calculations. Their efforts are also appreciated. Editorial comments were provided by Bob Hooton and Colin Spence, also B.C. Environment, Smithers, while the report was typed by Anne Malo.

INTRODUCTION

Rainbow trout are the most important game fish in Babine Lake and comprise about 70% of the total sports catch (Bustard, 1987). Tagging studies have documented concentrations of large pre—spawning Sutherland River bound rainbow trout at the outlet of Pinkut Creek (Bustard, 1990). The Sutherland River spawning population, estimated at approximately 500 fish, supports an estimated 60 to 80% of the entire juvenile rainbow trout recruitment to Babine Lake (Bustard, 1989). Adult trout, some of which are known to be destined for the Sutherland, concentrate at the mouth of Pinkut Creek and possibly also Fulton River coincident with the emigration of sockeye salmon fry from enhancement facilities.

Increased activity from anglers targeting specifically on trout concentrations could seriously impact on rainbow trout stocks generally and the Sutherland spawning population in particular. The objective of this survey was to quantify angler effort and harvest during the flourishing spring fisheries which now occur near both Fulton and Pinkut Creeks.

METHODS

Shore and boat anglers within designated areas at Pinkut and Fulton Creeks (Fig. 1) were enumerated twice within a morning (0600 - 1400 hrs) and afternoon (1400 - 2200 hrs) period daily (note Appendix 1). Instantaneous counts were made from May 1 to June 9 on Pinkut (40 days) and from May 1 to 15 at Fulton (13 days). Counts and subsequent calculated effort (active rod hours and angler days) were grouped into morning and afternoon, and weekday and weekend strata. Average catch/h was established by interviewing angling parties (note Appendix 2) during seven week and three weekend days at Pinkut, and 2 week and 2 weekend days at Fulton. Catch/h was then multiplied by effort (hours) to estimate total catch. Calculations were accomplished through the “SLIM jacknife” creel census program (Tredger, 1990).

To calculate effort and catch for the unsampled May 16 to June 9th period at Fulton, the ratio of effort and catch between Pinkut and Fulton during the May 1 to 15th period was used. Fulton totals were calculated by multiplying the estimate at Fulton during the sample period (May 1 - 15) by the ratio of the total Pinkut estimate to the Pinkut estimate during May 1 - 15 only. The totals are slightly different from the sums of the various strata types e.g. weekend and weekdays or mornings and afternoons, since the average within each strata type was used to calculate the estimate.

Where possible, fish were measured and with rainbow, maturity recorded.

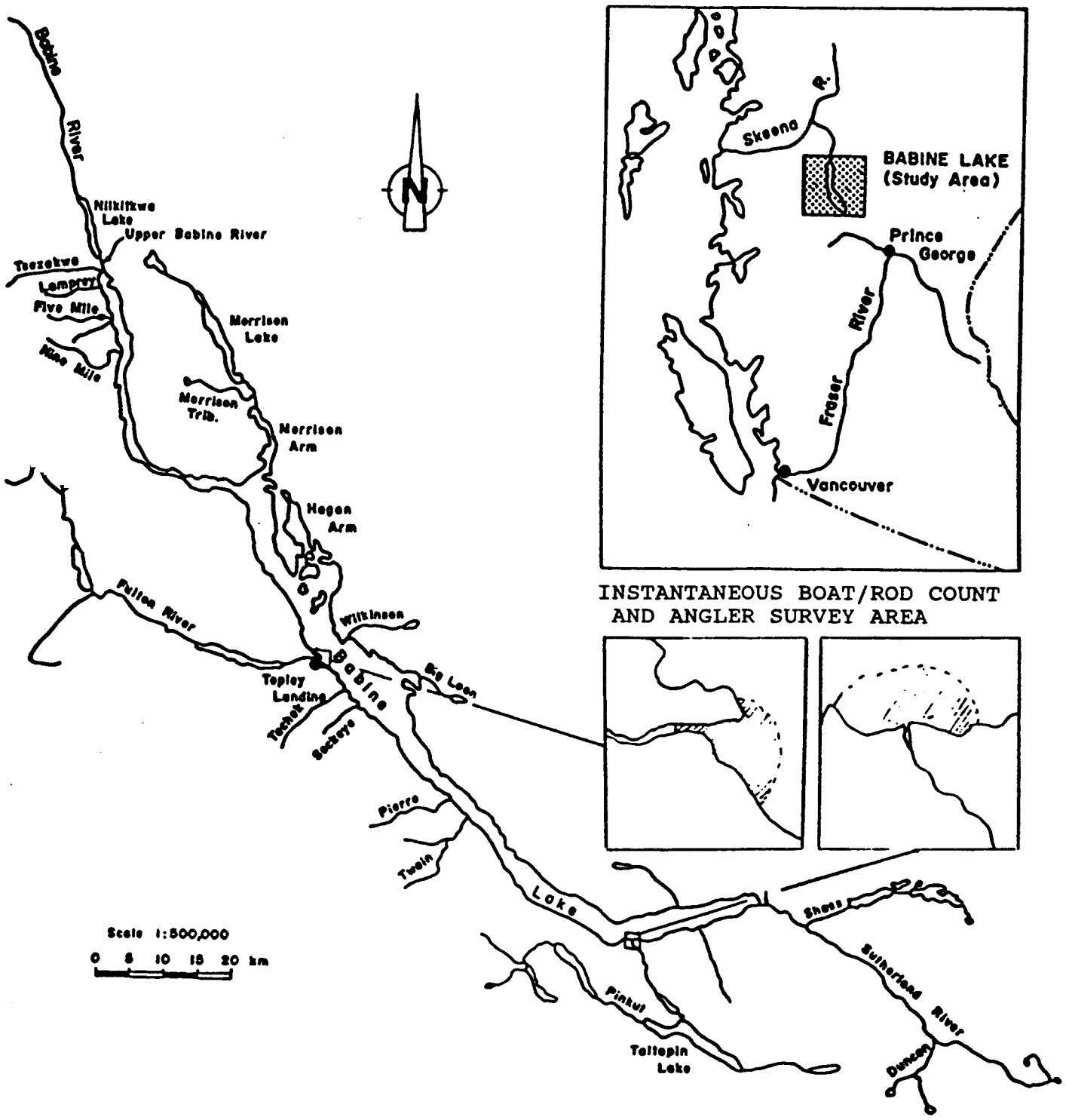

Figure 1. Babine Lake, Fulton and Pinkut Study Areas.

RESULTS AND DISCUSSION

Catch/angler hour at Fulton and Pinkut was 0.36 and 0.18 rainbow trout respectively. Success rate of all species combined was 0.48/h for Fulton and 0.24/h for Pinkut. In addition to rainbow trout which comprised 75% of the catch, other species taken included minor numbers of cutthroat trout, whitefish and lake trout (Table 1). During the 1985 and 1986 fisheries, rainbow trout made up 61.4 and 76.6% of the total catch at 0.25 and 0.16 fish per angler hour respectively (Bustard, 1987). Success rates at both Fulton and Pinkut were therefore not appreciably different from the previous surveys for Babine Lake as a whole. Total harvest of rainbow trout during the present study at Fulton and Pinkut was estimated at 269 and 261 fish respectively (Table 2).

Table 1. Catch and kill per hour, by species and total, at Fulton and Pinkut Creeks in Babine Lake during May and June, 1990.

	Cutthroat		Rainbow		Whitefish		Lake Trout		Total	
	Catch	Kill	Catch	Kill	Catch	Kill	Catch	Kill	Catch	Kill
Fulton	.01	.01	.36	.36	.10	.09	———	——	.48	.46
Pinkut	———	———	.18	.13	.04	.03	.02	.01	.24	.18

Table 2. Total estimated angler effort and kill of rainbow trout in Babine Lake at Fulton and Pinkut Creeks from May 1 to June 9, 1990.

	Angler Days	Hour/ Anglers Day	Total Hours	Rainbow Kill Per Hour	Total Kill
Fulton	313	2.39	748	.36	269
Pinkut	735	2.73	2007	.13	261

Length and percent frequency of the Fulton and Pinkut rainbow trout catch were compared to the 1986 Babine Lake sports catch as a whole, and the 1989 Sutherland River sampled spawning population (Table 3). Ninety-nine percent of the Sutherland fish were larger than 46 cm. None of the Fulton and 47 percent of the Pinkut catch were within this range.

Table 3. Fork length and percent frequency of Sutherland River spawning, Babine Lake, Fulton and Pinkut Creek sports caught rainbow trout.

Fork Length	Sutherland River[1]		Babine Lake[2]		Fulton Creek[3]		Pinkut Creek[3]	
(cm)	N	%	N	%	N	%	N	%
21—25			5	2.2				
26—30			44	19.5			1	2.8
31—35			61	27.0	1	3.7	4	11.1
36—40			41	18.1	18	66.7	5	13.9
41—45	1	0.9	50	22.1	8	29.6	9	25.0
46—50	16	14.3	25	11.1			13	36.0
51—55	28	25.0	20	8.8			4	11.1
56—60	25	22.3	15	6.6				
61—65	14	12.5	2	0.9				
66—70	13	11.6	2	0.9				
71—75	9	8.0	1	0.4				
76—80	2	1.8						
81—85	4	3.6						
Total	112		266		27		36	

1 adapted from Bustard, 1990.
2 adapted from Bustard, 1987.
3 present study.

All fish measured at Fulton (27) were immature, while only a single fish was a ripe female of those sampled for maturity (10) at Pinkut. However, the majority of fish at Pinkut were either immature or had been cleaned prior to time of angler interview. Conclusions regarding maturity at Pinkut were therefore not possible based on internal examination, but may be possible based on size.

At Pinkut, an estimated 123 (47%) of the 261 angled rainbow trout were of spawner size. During the 1985 and 1986 Babine Lake creel surveys, catches of mature rainbow trout were approximately 6000 and 3000 respectively (29%). Based on these earlier studies, the catch of spawner sized fish at Pinkut contributed less than three percent (2.7%) of the average total annual estimated Babine

Lake catch within this length category [123/ (6000/2 + 3000/2)]. Although survey results were not strictly comparable since these were conducted during different years, the estimated catch of spawner sized fish at Pinkut during the present study was likely a minor component of fish this size within the Babine Lake rainbow sports catch as a whole.

At Fulton and Pinkut Rivers, 27 and 75 parties were interviewed comprising 57 and 160 anglers respectively. Total expended and expected hours spent fishing established from the interviews were 99 and 136 h respectively for Fulton and 430 and 436 respectively for Pinkut. Average length of an angler day was 2.39 h for Fulton and 2.73 h for Pinkut (Table 4). The slightly longer average angler day at Pinkut is possibly the result of anglers camping at this location.

Table 4. Number of parties interviewed, active anglers, total expended and expected hours spent fishing and average length of an angler day surveyed at Fulton and Pinkut River at Babine lake during May and June, 1990.

	# of Parties Interviewed	# of Active Anglers	Time Spent Fishing (h)	Total Trip Hours	Avg. Length of Day (h)
Fulton	27	57	99	136	2.39
Pinkut	75	160	430	436	2.73

Instantaneous rod counts were made for 15 days at Fulton and for the full 40 days at Pinkut. considerably more effort was expended during weekdays and in the afternoon than was during the weekends or mornings. The survey, however, only encompassed 12 weekend and 28 week days. Total estimated effort for Fulton and Pinkut was 313 and 735 angler days respectively (Table 5).

Table 5. Estimated number of weekend and weekday angler days in morning and afternoon strata surveyed at Fulton (May 1 – 15) and Pinkut (May 1 - June 9) Rivers on Babine Lake, 1990.

	Days		Time		
	Weekend	Weekday	Morning	Afternoon	Total
Fulton	10	91	36	67	103(313)
Pinkut	235	436	304	431	735

RECOMMENDATIONS

Regulations to reduce the harvest of rainbow trout at Pinkut and Fulton are not required at this time.

REFERENCES CITED

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Tredger, D., 1990. Pers. comm. memo dated Nov. 5, 1990 file #:0340, Victoria Ministry of Environment, Fisheries Branch. re Babine Lake (Fulton/Pinkut) creel surveys.

LIST OF APPENDICES

APPENDIX I

INSTANTANEOUS BOAT AND ROD COUNTS, EXAMPLE FORM.

BABINE LAKE
PINKUT RIVER SPORTS FISHERY SURVEY
MAY—JUNE, 1990

INSTANTANEOUS BOAT AND ROD COUNTS

DATE

MONTH (--) DAY (--)

MORNING SESSION 0600-1400 HRS.

	TIME		BOAT COUNTS		SHORE COUNTS	
	HRS.	MIN.	NO.OF BOATS	NO.OF RODS	NO. OF ANGLERS	NO.OF RODS
COUNT #1 early morning						
COUNT #2 mid noon						
COUNT #3 optional						

AFTERNOON SESSION 1400 - 2200 MRS.

	TIME		BOAT COUNTS		SHORE COUNTS	
	HRS.	MIN.	NO.OF BOATS	NO.OF RODS	NO. OF ANGLERS	NO.OF RODS
COUNT #1 early morning						
COUNT #2 mid noon						
COUNT #3 optional						

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APPENDIX II

ANGLER INTERVIEW, EXAMPLE FORM.

BABINE LAKE
PINKUT RIVER SPORTS FISHERY SURVEY
MAY—JUNE, 1990

ANGLER INTERVIEWS

DATE

MONTH (--) DAY (--)

Party ID	Repeat Check	Time	No. Anglers in party	No. of rods	Hrs. fished	Species captured	Kept	Released	Trip Hrs.	Tackle	Res

APPENDIX III

FISH SAMPLE RECORDS, EXAMPLE FORM.

BABINE LAKE
PINKUT RIVER SPORTS FISHERY SURVEY
MAY—JUNE, 1990

FISH SAMPLE RECORDS

DATE

MONTH (--) DAY (--)

Species	Capture method	Length (mm)	Weight (g)	Sex	Mat.	Scale Sample No.	Mark		Age	Comments
							grit colur	fin		