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UPPER SKEENA RIVER CREEL SURVEY

Prepared by : Mike O'Neill, Manager
Toboggan Creek Salmon Enhancement Society

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* APPENDIX OF ACTUAL DAILY CREEL DATA IS PROVIDED SEPERATELY.

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Introduction

The Toboggan Creek Hatchery, near Smithers, British Columbia (Fig. 1), has been enhancing coho salmon stocks from the Bulkley-Morice watershed for the past 11 years. Good returns of enhanced coho, especially in the vicinity of the Toboggan Creek/Bulkley River confluence, have allowed for a targetted sportfishery to harvest a portion of this enhanced stock. The opportunity first became a reality in 1993 when adipose clips were targetted for harvest, this opportunity was repeated for 1994, and in 1995 unmarked coho were opened for harvest.

As a prerequisite to getting this harvest-oriented fishery approved the Toboggan Creek Enhancement Society committed to carrying out a creel survey of the fishery to identify how many coded-wire tagged, hatchery coho were being removed at this location. The initial survey, in 1993, was conducted by Toboggan Creek Hatchery as part of their normal operations.

Given the success of the first opening, the same opportunity was repeated in 1994. The Toboggan Creek Enhancement Society carried out a second creel survey during this fishery, having funding provided through the Skeena Green Plan. This second study documented a huge rate of angler participation and very low rate of harvest. As such, the opportunity to harvest both marked and unmarked coho was approved for 1995. This report documents the results of the 1995 survey of this fishery.

Methods

The "1995 UPPER SKEENA CREEL SURVEY" was closely tailored to initial surveys of 1993 and 1994 to allow for a continuity of information, and because the base line data collected during those years was accurate enough for the intended purpose of estimating harvest of marked and unmarked coho at this site.

Creel survey technicians sampled the site, defined as that section of the Bulkley River approximately 1/4 mile upstream and downstream of Toboggan Creek confluence (Fig. 2), each day from August 15 through October 16, 1995. Each stint was randomly selected, with one 2 hour stint on weekdays and one 3 hour stint on weekend days. This creel effort was downsized from the two stints per day the previous year, due to funding constraints. It was assumed that by reducing the creel effort by one half we would also be observing approximately one half of the 37.5 % catch and effort documented during the previous studies. As well, a variety of data such as gear type, angler origin and expected daily effort were collected (Fig. 3).

The 37.5 % observation factor was identified during the first study, in 1993, at which time the turning in of heads of any adipose-clipped coho harvested was mandatory. The coho kill observed was 6 fish, as compared to 16 heads submitted to the head depots. Compliance was identified as being 100% in 1993.

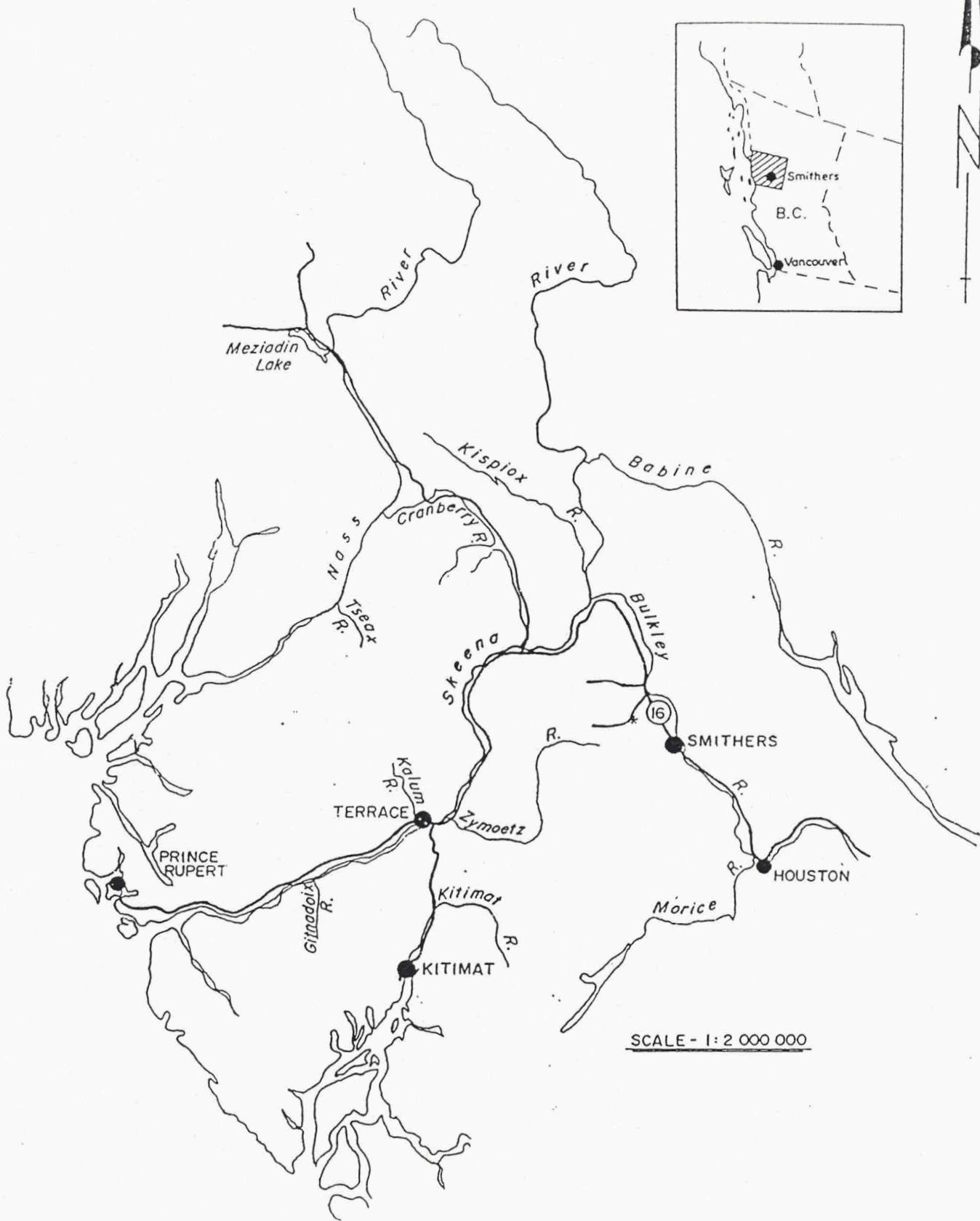


Fig.1 Location of Toboggan Creek Hatchery near Smithers, B.C. *



Fig. 2. Creel Survey Location at the Toboggan Creek Confluence with the Bulkley River, and a Successful Angling Participant



Fig. 3. 1995 Upper Skeena Creel Survey Form

Date / Time :

Angler Origin :

Gear Type :

Time Angling :

Est. Daily Effort :

Landed Catch :

Released

Killed

Wild Steelhead

Hatchery Steelhead

Wild Coho

Hatchery Coho

Pink

Other

Effort/Catch Observed During Stint :

Angler Hours -

Landed Catch -

* tagged fish (record tag type and number)

Results & Discussion

A total of 450 angler interviews were conducted during the 63 daily creel survey stints conducted from August 15 and ending on October 16, 1995.

The total observed effort during the creel survey was 716.5 angler-hours, with peak effort evident from the week ending September 4th through the week ending September 18 (Table I). This period encompassed only 33.3 % of the sampling effort but accounted for over 51.7 % of the anglers, and over 55.6 % of the effort, observed during the entire creel survey. This peak is somewhat earlier than documented in 1994 (Table II).

Catches of coho salmon peaked the week ending September 11th through to the week of September 18th while steelhead catches were consistently low throughout the study period. The timing of coho was similar to 1994. Catch per unit effort averaged 0.054 coho per hour and 0.022 steelhead per hour during creel sampling in 1995, as compared to 0.060 for coho and 0.043 for steelhead during the 1994 study. Coho catches were extremely similar to those seen last year while the steelhead catch was down 40 to 50 percent.

Adipose-clipped coho were most evident in the catch from the week ending September 11th through to October 2nd. No obvious peaks were seen in catches of hatchery coho, as was evidenced by the 1994 data. Of the seven hatchery coho landed, during the creel stints, two were killed and five were released.

Clipped hatchery coho made up 17.9 % of the coho observed to have been landed during the creel survey. Interestingly, this proportion is very similar to our fence count of coho salmon which entered Toboggan Creek to spawn in 1995; of 717 coho handled 127 (17.7 %) were adipose-clipped hatchery fish. This is consistent with the findings of the 1994 study and suggest the overwhelming preponderance of Toboggan coho in the catch at the location of the creel site on the Bulkley River.

An estimated total of 1,057 anglers fished at the confluence of Toboggan Creek and the Bulkley River during the 1995 creel survey (Table III). These anglers spent an estimated total of 3,869.0 angler-hours pursuing coho salmon and steelhead trout at this site. Total estimated catch during the creel survey included 173 wild coho salmon, 38 coded-wire tagged coho, and 86 steelhead. Of the 38 adipose clipped hatchery coho landed 11 (29.0 %) were killed while the remaining 27 were released. Of the 173 unmarked coho landed 81 (47.0 %) were killed. Coho harvest overall was 92 fish (43.6 %), out of 211 coho landed. The proportion of adipose clips killed, as compared to wild coho killed, is thought to be a reflection of circumstance as opposed to anglers targetting wild fish.

Table I. Angler Effort and Catch Observed, by week, in 1995.

<u>WEEK ENDING</u>	<u>ANGLERS</u>	<u>OBSERVED EFFORT</u>	<u>OBSERVED CATCH</u>
Aug. 21	19	21.5	
Aug. 28	35	53.5	2 wild coho 1 wild stld
Sep. 04	86	169.0	3 wild coho 1 wild stld
Sep. 11	80	128.5	11 wild coho 2 cwt coho 4 wild stld
Sep. 18	67	101.0	10 wild coho 2 cwt coho 2 wild stld
Sep. 25	58	86.5	1 cwt coho 3 wild stld
Oct. 02	44	69.5	5 wild coho 2 cwt coho 3 wild stld
Oct. 09	37	52.0	1 wild stld
Oct. 16	24	35.0	1 wild coho 1 wild stld
<hr/>			
Totals	450 ANGLERS	716.5 HOURS	32 wild coho 7 cwt coho 16 wild stld

Table II. Angler Effort and Catch Observed, by week, in 1994.

<u>WEEK ENDING</u>	<u>ANGLERS</u>	<u>OBSERVED EFFORT</u>	<u>OBSERVED CATCH</u>
Aug. 21	48	65.0	3 wild coho 1 cwt coho 1 wild stld
Aug. 28	66	88.0	5 wild coho 4 wild stld
Sep. 04	114	156.0	12 wild coho 1 cwt coho 7 wild stld 1 cwt stld
Sep. 11	146	206.0	11 wild coho 3 cwt coho 2 wild stld
Sep. 18	131	228.0	8 wild coho 7 cwt coho 5 wild stld
Sep. 25	136	168.0	5 wild coho 3 cwt coho 13 wild stld
Oct. 02	102	159.0	4 wild coho 3 cwt coho 8 wild stld
Oct. 09	64	105.0	5 wild coho 1 cwt coho 6 wild stld
Oct. 16	44	81.0	3 wild coho 1 cwt coho 7 wild stld
Totals	851 ANGLERS	1,256.0 HOURS	56 wild coho 20 cwt coho 53 wild stld 1 cwt stld

Table III. Estimated Total Effort & Catch, by week, in 1995.

<u>WEEK ENDING</u>	<u>EST. ANGLERS</u>	<u>EST. EFFORT</u>	<u>EST. CATCH</u>
Aug. 21	64	116.0	0 wild coho 0 cwt coho 0 wild stld
Aug. 28	88	289.0	11 wild coho 11 0 cwt coho 5 wild stld
Sep. 04	261	913.0	16 wild coho 16 0 cwt coho 5 wild stld
Sep. 11	169	694.0	60 wild coho 11 cwt coho 71 23 wild stld 23
Sep. 18	151	545.0	54 wild coho 65 11 cwt coho 11 wild stld 11
Sep. 25	111	467.0	0 wild coho 5 cwt coho 5 16 wild stld 16
Oct. 02	89	375.0	27 wild coho 11 cwt coho 38 16 wild stld 16
Oct. 09	80	281.0	0 wild coho 0 cwt coho 5 wild stld 5
Oct. 16	44	189.0	5 wild coho 0 cwt coho 5 wild stld
<hr/>			
Totals	1,057 ANGLERS	3,869.0 HOURS	173 wild coho 38 cwt coho 86 wild stld

In addition to the primary sport species caught, a total of 713 pink salmon are estimated to have been landed during the creel survey. Of these, 140 (20.0 %) were killed and 573 were released.

The total number of anglers participating in the coho fishery in 1995 was up 11.0 % from 1994 (Table IV), from 937 anglers for the same time period in 1994 to 1,057 in 1995. Similarly, the total hours fished were up 13.0 %, from 3,349 in 1994 to 3,869 hours of effort in 1995. This is an extremely popular angling opportunity for many fishermen on the upper Skeena.

Angler observations of hours fished per day, tackle type and residency provided for some interesting trends at this site (Table V). On average, a rod day of fishing in the creel area constituted 3.7 hours of effort overall, ranging from a low of 1.8 hours per rod day during mid August to the high of 4.3 hours in mid October. Lure fishermen dominated the effort in the creel area, with over 77.0 % of the fishermen observed preferring to use lures. As seen in 1994 there was a shift in tackle preference, from lure to fly, beginning in the middle of September and continuing through to the end of the season. During the last five weeks of the creel survey fly fishermen made up over 33.0 % of the anglers, as compared to less than 12.0 % during the first four weeks of the fishery.

Local anglers made up over 57.5 % of the anglers interviewed in 1995, other B.C. residents made up 21.7 %, Canadians from outside of B.C. made up 7.8 %, and non-Canadians were 13.0 % of the total. Local anglers were predominant early on in the fishery while non-locals made up the majority of creel effort during three of the last four weeks of the survey.

Summary

As in 1994, fishermen were overwhelmingly supportive of the continuation, and increase, of harvest opportunities for both steelhead and coho, with only a handful of anglers opposed to the idea. Cooperation with creel technicians, and compliance with angling regulations were both excellent.

The estimate of adipose clipped coho harvested in 1995, as a result of extrapolation of the creel survey data, was 11 coho salmon. This is very consistent with the 1995 head depot data which indicates that 8 heads were submitted by anglers during the same period. Similarly, estimates of unmarked coho landed and harvested, and steelhead released, should be as accurate.

A total of 1,057 anglers spent 3,869 hours to land 211 coho salmon and 86 steelhead trout. A total of 92 coho salmon were harvested during the fishery in 1995. Catch per unit effort for coho in 1995 was within 10% of 1994 data, while steelhead catch success was barely half that documented in 1994.

Table IV. Estimated Total Effort & Catch, by week, in 1994.

<u>WEEK ENDING</u>	<u>EST. ANGLERS</u>	<u>EST. EFFORT</u>	<u>EST. CATCH</u>
Aug. 21	69	173.0	8 wild coho 3 cwt coho 3 wild stld
Aug. 28	67	235.0	13 wild coho 11 wild stld
Sep. 04	116	416.0	32 wild coho 3 cwt coho 19 wild stld 3 cwt stld
Sep. 11	172	549.0	29 wild coho 8 cwt coho 5 wild stld
Sep. 18	160	608.0	21 wild coho 19 cwt coho 13 wild stld
Sep. 25	136	448.0	13 wild coho 8 cwt coho 35 wild stld
Oct. 02	109	424.0	11 wild coho 8 cwt coho 21 wild stld
Oct. 09	64	280.0	13 wild coho 3 cwt coho 16 wild stld
Oct. 16	44	216.0	8 wild coho 3 cwt coho 19 wild stld
Totals	937 ANGLERS	3,349.0 HOURS	148 wild coho 55 cwt coho 142 wild stld 3 cwt stld

Table V. Angler-Hours per Day, Tackle Preference and Angler Residency, by week, in 1995.

<u>WEEK ENDING</u>	<u>ANGLER-HOURS</u>	<u>TACKLE TYPE</u>	<u>RESIDENCY</u>
Aug. 21	1.8	17 LURE 2 FLY	15 LOCAL <u>4 NON-B.C.</u>
Aug. 28	3.3	34 LURE 1 FLY	24 LOCAL 6 B.C. 3 NON-B.C. <u>2 NON-CAN</u>
Sep. 04	3.5	73 LURE 13 FLY	57 LOCAL 22 B.C. 1 NON-B.C. <u>6 NON-CAN</u>
Sep. 11	4.1	71 LURE 9 FLY	50 LOCAL 15 B.C. 6 NON-B.C. <u>9 NON-CAN</u>
Sep. 18	3.6	54 LURE 13 FLY	44 LOCAL 16 B.C. 2 NON-B.C. <u>5 NON-CAN</u>
Sep. 25	4.2	37 LURE 21 FLY	24 LOCAL 12 B.C. 13 NON-B.C. <u>9 NON-CAN</u>
Oct. 02	4.2	22 LURE 22 FLY	21 LOCAL 4 B.C. <u>19 NON-CAN</u>
Oct. 09	3.5	25 LURE 12 FLY	11 LOCAL 16 B.C. 6 NON-B.C. <u>4 NON-CAN</u>
Oct. 16	4.3	15 LURE 9 FLY	13 LOCAL 7 B.C. <u>4 NON-CAN</u>
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Totals	3.74 HOURS ON AVERAGE	348 LURE 102 FLY	259 LOCAL 98 B.C. 35 NON-B.C. <u>58 NON-CAN</u>

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