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2007 Chilliwack River Recreational Fishery Assessment

Final Results – September 15th to November 15th, 2007

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REGULATIONS

The fishing boundary for the Chilliwack River is from the mouth of Slesse Creek downstream to the boundary signs near its confluence with the Fraser River. The recreational fishery is closed at night, from one hour after sunset to one hour before sunrise.

Species	Retention Open	Limits	Notes
Coho	July 1 to March 31	4 hatchery fish per day	
Chinook	July 1 to December 31	4 per day	only 1 over 62cm
Chum	July 1 to March 31	1 per day	
Sockeye	No Openings	0	
Pink	July 1 to March 31	4 per day	
All Species	All Dates	Total of 4 per day	

A complete listing of regulations can be viewed at the Fisheries and Oceans Canada Pacific Region Recreational Fishery webpage: http://www.pac.dfo-mpo.gc.ca/recfish/default_e.htm
All Fisheries and Oceans fishery notices can be viewed at:
http://ops.info.pac.dfo.ca/fishman/fnotice/fnotice.htm

STUDY AREA

The 2007 Chilliwack River recreational fishery assessment study area was bounded by the confluence with the Fraser River (downstream boundary) and Slesse Creek (upstream boundary). The survey covered the entire area open for angling. The survey was separated into two regions. Region 1 being from the mouth of the Chilliwack River, upstream to the Vedder-Crossing Bridge and region 2 being from the Vedder-Crossing Bridge, upstream to the confluence with Slesse Creek.

SURVEY METHODS

The Chilliwack River recreational fishery survey began on September 15th, 2007. Surveyors worked all weekends and holidays with rotating days off during the week. Surveyors worked one of two shifts (morning or afternoon) that spanned the entire daylight period. These shifts were randomly assigned to each survey day.

Surveyors conducted angler interviews at their survey sites to obtain the following information: where the angler was fishing, length of angling trip, how much longer they intended to fish, target species, gear used, total catch retained (marked and unmarked), total catch released. If permitted by the angler, the surveyor inspected the catch to determine whether the angler's species identification was correct and to check the catch for mark status (adipose fin-clipped). If preferred by the angler, all heads from fish with adipose fins missing were retained by surveyors due to the possibility of CWT (coded-wire-tag) presence. If there was any doubt that an adipose might have been clipped for a particular fish, for example if the adipose fin was partially regenerated or malformed, the fish was classified as AFC. The angler always retained the option of turning the head into a local depot themselves. Interviews were used to determine harvest-per-unit effort (HPUE), release-per-unit effort (RPUE), and to summarize the angler characteristics listed above.

Daily effort was calculated using a combination of interview data, hourly rod counts conducted at the access survey site, and overflight rod counts of the survey area (conducted twice per week: one weekend and one weekday overflight). Using total effort, HPUE and RPUE is expanded to determine catch and release numbers by species for the entire study area. Such analyses are documented in several DFO publications (Schubert 1992; Schubert 1995).

Three surveyors assessed the Chilliwack River recreational fishery. Two surveyors conducted a roving "bus-route" survey of the upper and lower regions of the river with no overlap in their respective ranges. These two surveyors conducted interviews of anglers in the process of fishing. The sites surveyed were pre-selected for a bi-weekly period based on angler distribution observed on previous roving surveys and overflights of the river. The survey start point and direction of travel (upstream or downstream) was randomized each survey day to ensure that the entire survey area was assessed and that each site was visited at different times of the survey day. A third surveyor was stationed at access-points. The access-point alternated between Keith Wilson Bridge and Lickman Pool during September 15th to October 22nd. For the remainder of the program (up to November 15th), they were stationed at the "Cement Slab" site, near the Chilliwack Hatchery. This surveyor conducted hourly rod counts and complete interviews from anglers that had finished fishing for the day.

DATA ANALYSIS

Data was stored and analyzed using DPA software. The data were verified in three steps. First, all field data sheets were examined for compliance with study procedures by the supervising technician and/or data technician. Second, during data entry, the data entry program performed 31 automatic error checks; including duplication detection, code validity, and range and consistency verification. Third, after data entry was complete, all data were imported into an excel file for verification with the field data sheets; all data were error checked once by the supervising

technician. For analyses, data were blocked by day type (weekend and weekday) and region (region 1: below Vedder crossing; region 2: above Vedder crossing).

RESULTS

Water Levels

In 2007, Chilliwack River water levels (Environment Canada's Chilliwack River Hydrometric Station) from September 15th to November 15th, remained fairly steady. The river peaked at 3m on October 22nd, rising from a low of 2m on September 20th.

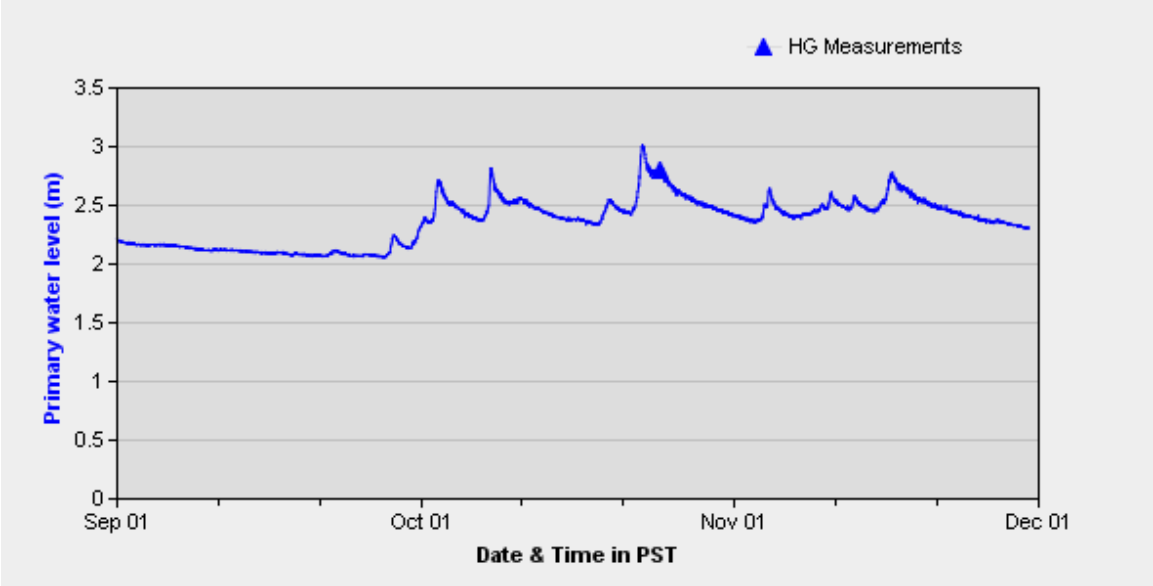

Figure 1 - Primary water levels and discharge on the Chilliwack River (at Vedder Crossing Hydrometric Station), Environment Canada Preliminary Results from September 1st to November 30th, 2007. Website: http://scitech.pyr.ec.gc.ca/waterweb/fullgraph.asp (accessed on January 30th, 2008).

Survey Effort

The study period, from September 15th to November 15th, covered 18 weekend/holidays and 42 weekday days; 100% of the weekend/holiday days and 57% of the weekday days were sampled by survey shifts. A total of 5,235 interviews were obtained from anglers. Seventeen overflights were conducted from September 15th to November 15th (9 weekday and 8 weekend/holiday).

Angler Effort

Instantaneous effort rod counts (IRCs) of actively fishing anglers were conducted by helicopter, twice weekly (one on the weekend and one during the week). During September 15th to 30th, 3 weekend and 2 weekday IRCs were conducted, ranging from 216 to 694 anglers on the weekends and from 97 to 245 anglers on the weekdays. During October, 4 weekend and 5 weekday IRCs were conducted ranging from 513 to 944 anglers and 199 to 473 anglers respectively. During November 1st to 15th, 1 weekend and 2 weekday instantaneous counts were conducted, with 224 anglers on the weekend and from 36 to 87 anglers on the weekdays.

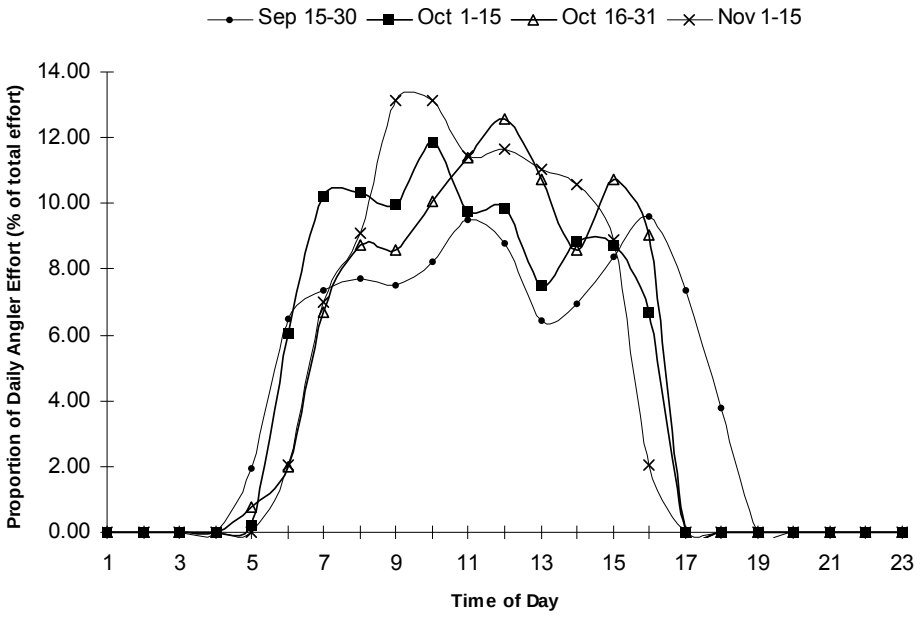

Figure 7 - Hourly angler effort profile for weekdays during the 2007 Chilliwack River Recreational Fishery Assessment.

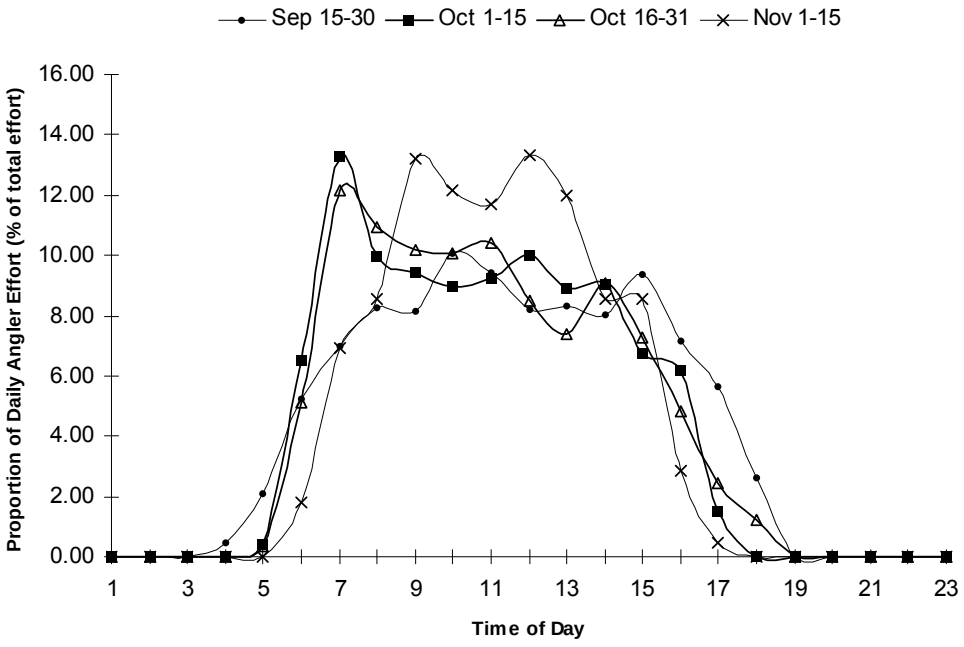

Figure 8 - Hourly angler effort profiles for weekends during the 2007 Chilliwack River Recreational Fishery Assessment.

Catch Rate

Table 1 – Average harvest-per-unit-effort (HPUE) from September 15th to November 15th, 2007, during the Chilliwack River Recreational Fishery.

HPUE	Sep 15-30	Oct 1-15	Oct 16-31	Nov 1-15
Chinook Adult	0.009	0.01	0.007	0.009
Chinook Jack	0.03	0.01	0.005	0.01
Coho Adult	0.02	0.04	0.06	0.05
Coho Jack	0.0005	0.0003	0	0.0002
Sockeye	0	0	0	0
Pink	0.08	0.01	0	0.009
Chum	0.002	0.005	0.02	0.009

Table 2 – Average release-per-unit-effort (RPUE) from September 15th to November 15th, 2007, during the Chilliwack River Recreational Fishery.

RPUE	Sep 15-30	Oct 1-15	Oct 16-31	Nov 1-15
Chinook Adult	0.01	0.01	0.02	0.02
Chinook Jack	0.03	0.02	0.01	0.01
Coho Adult	0.01	0.04	0.08	0.08
Coho Jack	0.0007	0.004	0	0
Sockeye	0	0	0	0
Pink	0.3	0.1	0.001	0.001
Chum	0.002	0.01	0.08	0.08

During September 15th to 30th, 44% of the interviewed anglers were targeting coho, 36% were targeting Chinook, 16% had no preference and 4 % were targeting pink.

During October 1st to 31st, 60% of interviewed anglers were targeting coho, 23% were targeting Chinook and 17% had no preference.

During November 1st to 15th, 75% of interviewed anglers were targeting coho, 17% had no preference, 5% were targeting Chinook and 3% targeted chum.

Catch Inspection

During September 15th to 30th, catch was inspected for 87% of the creel interviews that reported a harvest. The anglers had correctly identified the species in 100% of these inspections. In October, catch was inspected for 92% of the creel interviews with reported harvest. The anglers had correctly identified the species in 99% of these inspections. During November 1st to 15th, catch was inspected for 89% of the creel interviews with reported harvest. The anglers had correctly identified the species in 100% of these inspections.

ACKOWLEDGEMENTS

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REFERENCED MATERIALS

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Table 3 - Chilliwack River recreational fishery assessment results from September 15th-30th, 2007. Data stratified into weekend (including holidays) and weekday.

CHILLIWACK RIVER RECREATIONAL FISHERY ASSESSMENT RESULTS

(STUDY PERIOD: Sept 15-30, 2007)

	SOURCE DATA	
	Weekends	Weekdays
Open Days in Study Period	6	10
Number of Survey Shifts	6	6
Number of Interviews	848	527
Interview Hours	2,862	1,769
Number of Instantaneous Rod Counts (overflights)	3	2
Mean Rod Count (Instantaneous)	478	171
Proportion of Effort in the Instantaneous Effort Count Time Block	0.08	0.08
Estimated Total Effort (Hours)	33,497	18,999

CATCH ESTIMATES

	Weekends		Weekdays	
	Harvest	Release	Harvest	Release
Chinook Adult	274	274	224	513
marked (adipose missing)	0	—	29	—
unmarked (adipose present)	274	—	195	—
Chinook Jack	885	1,133	681	546
marked (adipose missing)	57	—	56	—
unmarked (adipose present)	828	—	625	—
Coho Adult	645	439	359	268
marked (adipose missing)	645	—	348	—
unmarked (adipose present)	0	—	11	—
Coho Jack	8	0	17	35
marked (adipose missing)	0	—	17	—
unmarked (adipose present)	8	—	0	—
Sockeye	0	0	0	0
Pink	2,669	9,850	1,508	6,976
Chum	58	48	52	70

Table 4 - Chilliwack River recreational fishery assessment results from October 1st to 15th, 2007. Data stratified into weekend (including holidays) and weekday.

CHILLIWACK RIVER RECREATIONAL FISHERY ASSESSMENT RESULTS

(STUDY PERIOD: Oct 1-15, 2007)

	SOURCE DATA	
	Weekends	Weekdays
Open Days in Study Period	5	10
Number of Survey Shifts	5	6
Number of Interviews	1,119	844
Interview Hours	3,752	2,622
Number of Instantaneous Rod Counts (overflights)	2	2
Mean Rod Count (Instantaneous)	878	362
Proportion of Effort in the Instantaneous Effort Count Time Block	0.1	0.09
Estimated Total Effort (Hours)	46,607	37,063

CATCH ESTIMATES

	Weekends		Weekdays	
	Harvest	Release	Harvest	Release
Chinook Adult	481	595	446	557
marked (adipose missing)	31	—	0	—
unmarked (adipose present)	450	—	446	—
Chinook Jack	449	951	772	1,051
marked (adipose missing)	18	—	14	—
unmarked (adipose present)	431	—	758	—
Coho Adult	1,200	1,393	2,094	1,697
marked (adipose missing)	1,177	—	2,075	—
unmarked (adipose present)	23	—	19	—
Coho Jack	0	33	24	0
marked (adipose missing)	0	—	10	—
unmarked (adipose present)	0	—	14	—
Sockeye	0	0	0	0
Pink	653	5,072	536	6,371
Chum	242	614	176	417

Table 5 - Chilliwack River recreational fishery assessment results from October 16th to 31st, 2007. Data stratified into weekend (including holidays) and weekday.

CHILLIWACK RIVER RECREATIONAL FISHERY ASSESSMENT RESULTS

(STUDY PERIOD: Oct 16-31, 2007)

	SOURCE DATA	
	Weekends	Weekdays
Open Days in Study Period	4	12
Number of Survey Shifts	4	6
Number of Interviews	592	580
Interview Hours	2,120	2,022
Number of Instantaneous Rod Counts (overflights)	2	3
Mean Rod Count (Instantaneous)	712	1,073
Proportion of Effort in the Instantaneous Effort Count Time Block	0.08	0.1
Estimated Total Effort (Hours)	24,810	24,007

CATCH ESTIMATES

	Weekends		Weekdays	
	Harvest	Release	Harvest	Release
Chinook Adult	136	320	187	655
marked (adipose missing)	10	—	0	—
unmarked (adipose present)	126	—	187	—
Chinook Jack	154	303	75	250
marked (adipose missing)	10	—	21	—
unmarked (adipose present)	144	—	54	—
Coho Adult	1,589	2,052	1,262	1,952
marked (adipose missing)	1,559	—	1,241	—
unmarked (adipose present)	30	—	21	—
Coho Jack	0	0	0	0
marked (adipose missing)	0	—	0	—
unmarked (adipose present)	0	—	0	—
Sockeye	0	0	0	0
Pink	0	44	0	15
Chum	426	1,954	322	2,142

Table 6 - Chilliwack River recreational fishery assessment results from November 1st to 15th, 2007. Data stratified into weekend (including holidays) and weekday.

CHILLIWACK RIVER RECREATIONAL FISHERY ASSESSMENT RESULTS

(STUDY PERIOD: Nov 1-15, 2007)

	SOURCE DATA	
	Weekends	Weekdays
Open Days in Study Period	5	10
Number of Survey Shifts	5	6
Number of Interviews	416	309
Interview Hours	1,500	1,018
Number of Instantaneous Rod Counts (overflights)	1	2
Mean Rod Count (Instantaneous)	224	123
Proportion of Effort in the Instantaneous Effort Count Time Block	0.1	0.1
Estimated Total Effort (Hours)	9,060	5,390

	CATCH ESTIMATES			
	Weekends		Weekdays	
	Harvest	Release	Harvest	Release
Chinook Adult	0	32	16	16
marked (adipose missing)	0	—	0	—
unmarked (adipose present)	0	—	0	—
Chinook Jack	0	9	0	22
marked (adipose missing)	0	—	0	—
unmarked (adipose present)	0	—	0	—
Coho Adult	295	274	111	121
marked (adipose missing)	288	—	86	—
unmarked (adipose present)	7	—	25	—
Coho Jack	0	0	0	0
marked (adipose missing)	0	—	0	—
unmarked (adipose present)	0	—	0	—
Sockeye	0	0	0	0
Pink	0	0	0	0
Chum	181	905	96	633

Table 7 - Chilliwack River recreational fishery assessment results from September 15th to November 15th, 2007. Total catch and release (weekend and weekday combined).

	Sept 16-30	October 1-31	November 1-15	**Totals**
Number of Interviews	1,375	3,135	725	**5,235**
Interview Hours	4,630	10,292	2,518	**17,440**
Number of Overflights	5	9	3	**17**
Average Overflight Count	355	489	116	**320**
ANGLER EFFORT				
Estimated Effort (hours)	52,496	132,487	14,450	**199,433**
ESTIMATED TOTAL HARVEST				
Chinook Adult	499	1,250	16	**1,765**
Chinook Jack	1,566	1,449	0	**3,015**
Coho Adult	1,004	6,147	406	**7,557**
Coho Jack	26	24	0	**50**
Sockeye	0	0	0	**0**
Pink	4,178	1,189	0	**5,367**
Chum	110	1,166	277	**1,553**
ESTIMATED TOTAL RELEASE				
Chinook Adult	787	2,127	48	**2,962**
Chinook Jack	1,680	2,553	31	**4,264**
Coho Adult	707	7,094	395	**8,196**
Coho Jack	35	33	0	**68**
Sockeye	0	0	0	**0**
Pink	16,826	11,502	0	**28,328**
Chum	111	5,124	1,538	**6,773**
ESTIMATED AFC HARVEST				
Chinook Adult	25	41	0	**70**
Chinook Jack	112	64	0	**176**
Coho Adult	992	6,051	374	**7,043**
Coho Jack	17	10	0	**37**
Sockeye	0	0	0	**0**
Pink	0	0	0	**0**
Chum	0	0	0	**0**