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# Fraser Stock Assessment Recreational Fisheries Assessments



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## Fraser Stock Assessment: Recreational Fisheries Assessment Program

Primary goal of our **Fraser Recreational Fishery Assessments** is to provide information on:

- total harvest (fish retained)





## Fraser Stock Assessment: Recreational Fisheries Assessment Program

Secondary goal of our **Fraser Recreational Fishery Assessments** is to provide information on:

- angler effort
- total released
- target species
- gear/method used
- biological (e.g. scales, CWT)





## Fraser Stock Assessment: Recreational Fisheries Assessment Program

Definitions used here:

**Harvest:** a kept or retained fish

**Release:** a fish released (with *intent*) after being caught

**Catch:** equals harvest + release

**HPUE:** harvest per unit effort

**RPUE:** release per unit effort

**CPUE:** catch per unit effort





## Fraser Stock Assessment: Recreational Fisheries Assessment Program

Definitions used here: continued

**Rate of Harvest:** in this case, synonymous with HPUE... same for rate of release (RPUE) & catch (CPUE)

**Effort:** many measures (units) of effort; Fraser uses Angler Hour and this can be calculated for the day (Daily Effort) or the analysis period (Total Effort)

**Creel Survey:** synonymous with Recreational Fishery Survey

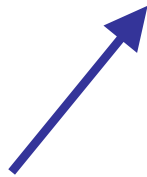




# Fraser Stock Assessment: Recreational Fisheries Assessment Program

## Estimated Harvest =

Harvest-Per-Unit-Effort (HPUE) x Effort



Number of fish  
harvested per hour  
(in the case of Fraser River  
assessments)



Hours fished





## Fraser Stock Assessment: Recreational Fisheries Assessment Program

### Harvest-Per-Unit-Effort (HPUE)

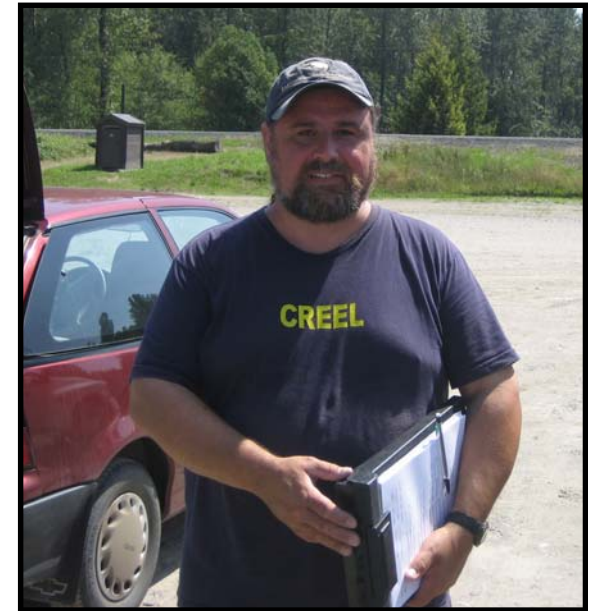
Obtained from angler interviews

### Shifts

- am/pm to cover full daylight hours
- randomly assigned to weekdays
- all weekend/holiday days worked
- days off during weekdays

### Required Data Needs

- No. harvest and time fishing





## Fraser Stock Assessment: Recreational Fisheries Assessment Program

### Harvest-Per-Unit Effort (HPUE) Calculation

e.g.) angler 1      3 fish harvested in 3 hr

angler 2      1 fish harvested in 5 hr

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Total:      4 fish harvested in 8 hr

HPUE:      0.50 fish per hour





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### Effort

- Can be calculated for the day (i.e. Daily Effort)
- Can be calculated for the entire fishery (i.e. Total Effort)



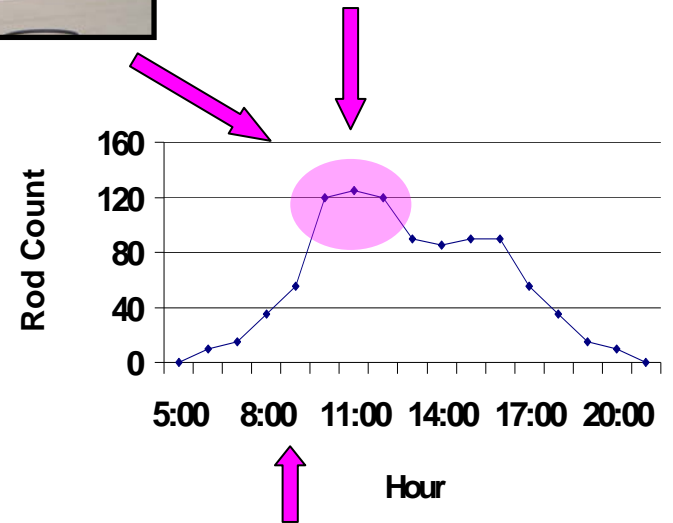


# Fraser Stock Assessment: Recreational Fisheries Assessment Program

## Daily Effort

### Required Data Needs

- hourly rod counts at interview sites (i.e. daily effort profile)
- instantaneous effort (rod) counts
  - 2 per week
  - 1 weekend and 1 weekday
  - Conducted at the same time every flight during anticipated peak effort





# Fraser Stock Assessment: Recreational Fisheries Assessment Program

## Daily Effort Calculation

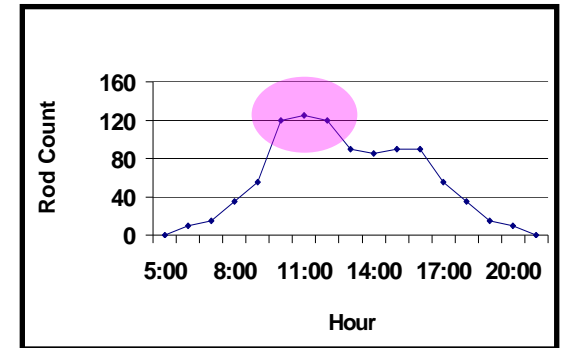
**Daily Effort = Average Overflight Count / Proportion**



Hourly rod counts

Proportion of daily effort that occurs during the overflight (e.g. 11:00-12:00)

Instantaneous rod counts  
(overflight count)  
Number of rods counted during  
the overflight (11:00-12:00)



**Daily Effort = 120 / 0.10 (10%) = 1200 hours/day**



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### Total Effort

**Total Effort** is the product of the Daily Effort and the No. of days in the fishery (or analysis period)

### Total Effort Calculation

**Total Effort** = Daily Effort x No. of days in the fishery  
= 1200 hours/day x 10 days  
= 12,000 hours





## Fraser Stock Assessment: Recreational Fisheries Assessment Program

**Bringing it all together...**

### **Estimated “Total” Harvest**

= Harvest-Per-Unit-Effort (HPUE) x Total Effort

= 0.50 fish per hour x 12,000 hours

= 6,000 fish harvested





## Fraser Stock Assessment: Recreational Fisheries Assessment Program

### Study Design Stratifications

- day type: weekend/holidays and weekdays
- monthly or bimonthly (usually) or other (e.g. at a regulation change)
- river section





# Fraser Stock Assessment: Recreational Fisheries Assessment Program



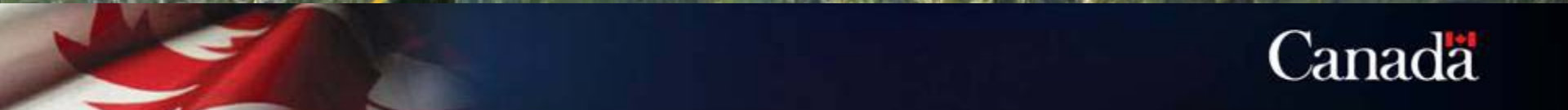
## Fraser River Recreational Fishery Assessment Study Area



# Fraser Stock Assessment: Recreational Fisheries Assessment Program



## Fraser River Recreational Fishery Assessment Study Area Section 2

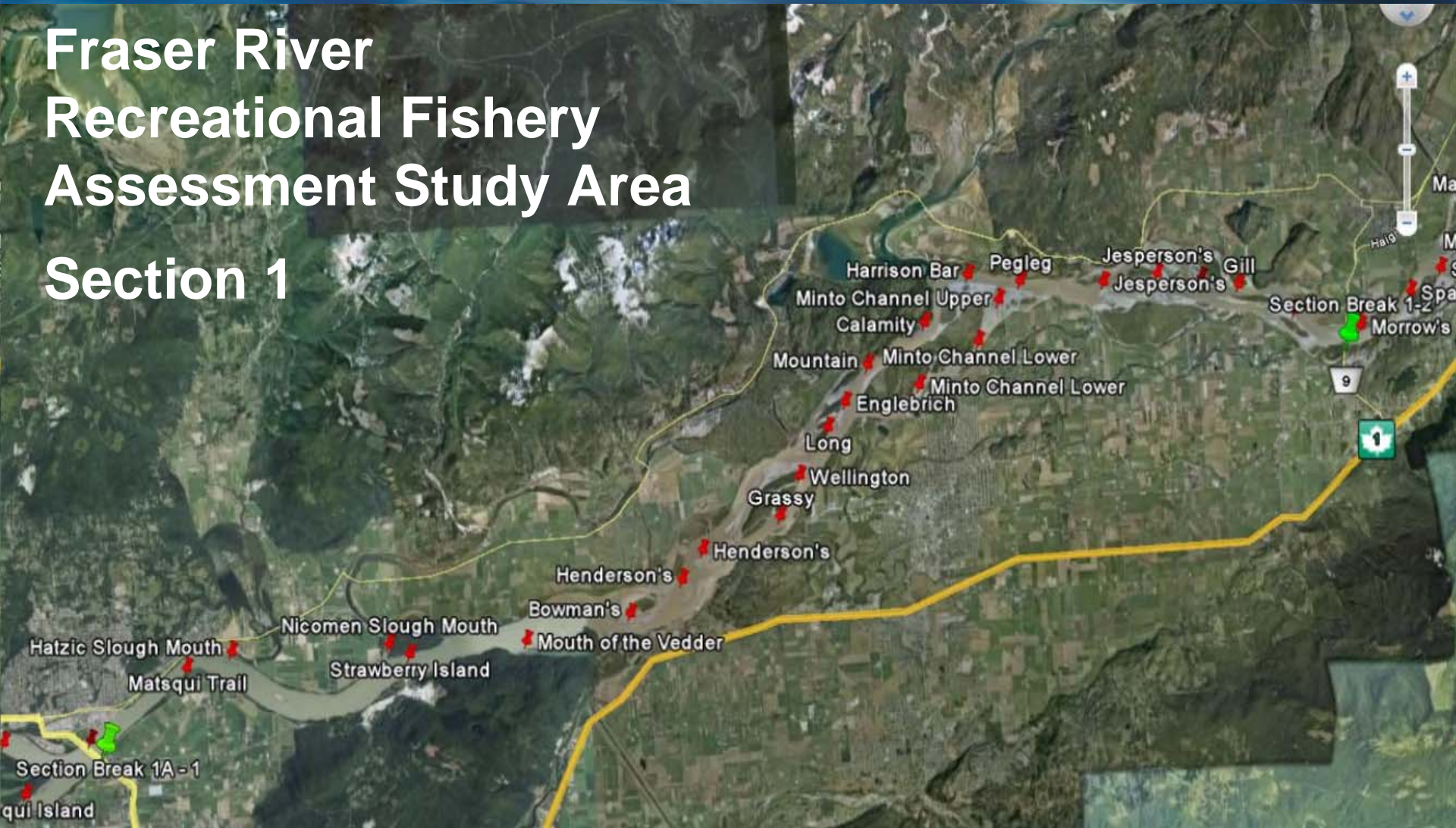




# Fraser Stock Assessment: Recreational Fisheries Assessment Program

## Fraser River Recreational Fishery Assessment Study Area

### Section 1





# Fraser River Stock Assessment: Recreational Fisheries Assessment Program

## Fraser River Recreational Fishery Assessment Study Area Section 1A





# Fraser Stock Assessment: Recreational Fisheries Assessment Program

## Fraser River Recreational Fishery Assessment Study Area Section 1B





# Fraser Stock Assessment: Recreational Fisheries Assessment Program

## 2009 Fraser River Summer Recreational Fishery Preliminary Summary Table

	MAY 1 JUN 15	JUN 16-30	JUL 1-15	JUL 16-31	JUL 1-31	AUG 1-16	AUG17 SEP 3	AUG 1 SEP 3	SEPT 4-15	SEPT 16-30	SEPT 4-30	OCT 1-15	2009 TOTALS
<b>SURVEY EFFORT</b>													
Number of Interviews	19	266	1,034	930	1,964	1,077	807	1,884	1,658	1,047	2,705	224	7,062
Interview Hours	62	1,424	5,052	4,547	9,598	5,372	4,453	9,824	7,402	4,303	11,705	817	33,429
Number of Overflights	11	5	3	5	8	7	5	12	4	4	8	3	47
<b>ANGLER EFFORT</b>													
Average Overflight Count	5	100	331	274	-	326	256	-	623	442	-	162	-
Estimated Effort (hours)	2,957	17,226	47,177	75,807	122,984	79,129	39,383	118,512	79,475	65,452	144,927	24,621	431,227
<b>ESTIMATED HARVEST (including AFC)</b>													
Chinook Adult	0	401	876	1,936	2,812	3,074	1,103	4,177	498	309	807	42	8,239
Chinook Jack	0	0	70	97	167	67	293	360	293	159	452	0	979
Coho Adult	0	0	0	0	0	0	0	0	66	8	74	117	191
Coho Jack	0	0	0	0	0	0	0	0	0	0	0	0	0
Sockeye	0	0	0	0	0	0	0	0	0	0	0	0	0
Pink	0	0	0	0	0	0	496	496	23,169	16,416	39,585	696	40,777
Chum	0	0	0	0	0	0	0	0	10	12	22	22	44
<b>ESTIMATED RELEASE</b>													
Chinook Adult	0	0	0	0	0	34	26	60	28	18	46	339	445
Chinook Jack	0	0	0	0	0	0	38	38	9	0	9	11	58
Coho Adult	0	0	0	0	0	0	28	28	151	310	461	288	777
Coho Jack	0	0	0	0	0	0	0	0	26	8	34	0	34
Sockeye	0	0	1,186	3,743	4,929	12,896	1,235	14,131	993	72	1,065	274	20,399
Pink	0	0	0	0	0	10	379	389	20,367	47,622	67,989	4,097	72,475
Chum	0	0	0	0	0	0	0	0	0	0	0	890	890
<b>ESTIMATED AFC HARVEST</b>													
Chinook Adult	0	15	15	30	45	0	0	0	9	17	26	0	86
Chinook Jack	0	0	0	0	0	0	0	0	0	0	0	0	0
Coho Adult	0	0	0	0	0	0	0	0	0	0	0	85	85
Coho Jack	0	0	0	0	0	0	0	0	0	0	0	0	0



# Fraser Stock Assessment: Recreational Fisheries Assessment Program

## Fraser River Mainstem Recreational Fishery Summary Table: 2004-2009

<b>STUDY DESIGN</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Study Type	AOH	AOH	AOH	AOH	AOH	AOH
Study Start Date	May.01	May.01	May.01	May.01	May.01	May.01
Study End Date	Sep.10	Sep.07	Oct.09	Nov.30	Oct.15	Oct.15
<b>SURVEY EFFORT</b>						
Number of Days in Study	132	129	161	213	167	167
Number of Interviews	7,446	6,823	10,235	6,175	4,599	7,062
Interview Hours	38,575	34,264	49,878	31,321	22,537	33,429
Number of Overflights	38	39	46	56	37	47
<b>ANGLER EFFORT</b>						
Estimated Effort (hours)	524,886	439,876	747,058	258,161	228,682	431,227
Average Overflight Count	381	341	-	145	196	-
<b>ESTIMATED HARVEST</b>						
Chinook Adult	10,274	13,546	14,436	7,985	10,352	8,239
Chinook Jack	335	178	707	386	690	979
Coho Adult	12	0	0	168	12	191
Coho Jack	0	0	0	66	0	0
Sockeye	50,388	42,629	134,292	11	16,344	0
Pink	0	17,390	0	18,028	0	40,777
Chum	0	39	900	3,007	760	44
<b>ESTIMATED RELEASE</b>						
Chinook Adult	587	401	399	377	856	445
Chinook Jack	24	125	151	142	97	58
Coho Adult	56	19	90	1,820	92	777
Coho Jack	0	0	2	377	0	34
Sockeye	9,619	69,814	23,643	24,264	17,131	20,399
Pink	0	38,522	0	55,578	0	72,475
Chum	12	172	7,086	10,068	2,923	890





## Fraser Stock Assessment: Recreational Fisheries Assessment Program

Web Access of Creel Information:

[www.pac.dfo-mpo.gc.ca/fraserriver/recfishery.htm](http://www.pac.dfo-mpo.gc.ca/fraserriver/recfishery.htm)





## Fraser Stock Assessment: Recreational Fisheries Assessment Program

### Current Priority Systems

- Fraser River (May to Sep)  
high angler effort; conservation (e.g. Chinook)
- Fraser River (Sep through Nov)  
angler effort; conservation (e.g. IFC)
- Chilliwack River (Sep through Nov)  
Chinook indicator system and high angler effort
- Nicomen Slough/Norrish Creek (Oct through Nov)  
coho indicator system
- Harrison River (2009 - Oct through Dec)  
last assessed in 2001; PICFI funded in 2009 Chinook  
indicator system



# Fraser Stock Assessment: Recreational Fisheries Assessment Program

## Acknowledgements

### Creel Team

Biologist: Jason Mahoney

Senior Technician: Jason Evans

Data Technician: Chris Wilmot

Field Technicians: Guy Brown, Janet Williams, Treva Peters,  
Lambert Head, Elliot Knudson,  
Shae Martinez, Jean Jang & Tod Gavel





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Thank you for your time

