

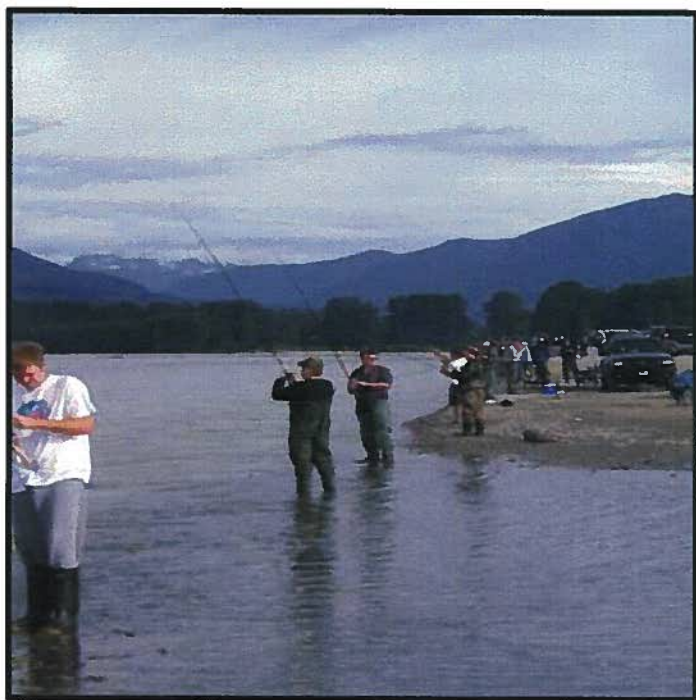


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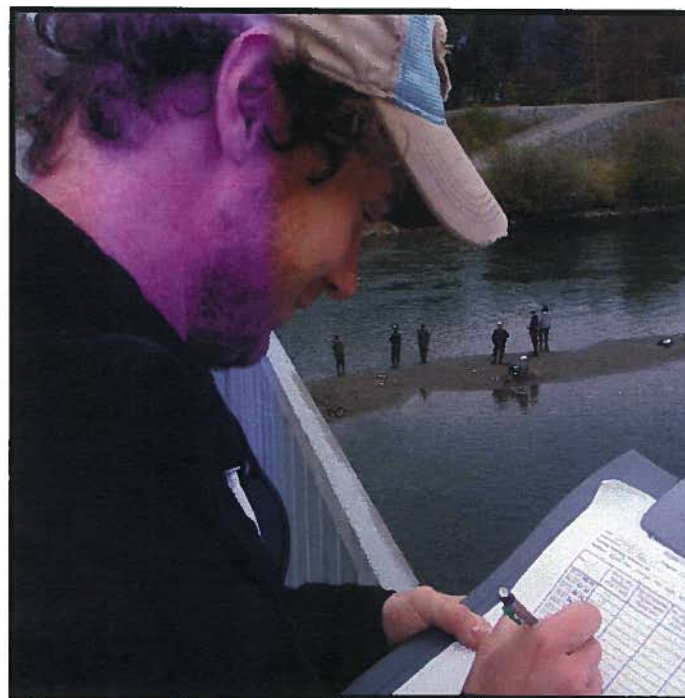
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Presented to the Cohen Commission on October 26th, 2010 in Vancouver BC

Fraser Stock Assessment Recreational Fisheries Assessments



Program Biologists:
Joe Tadey & Jason Mahoney



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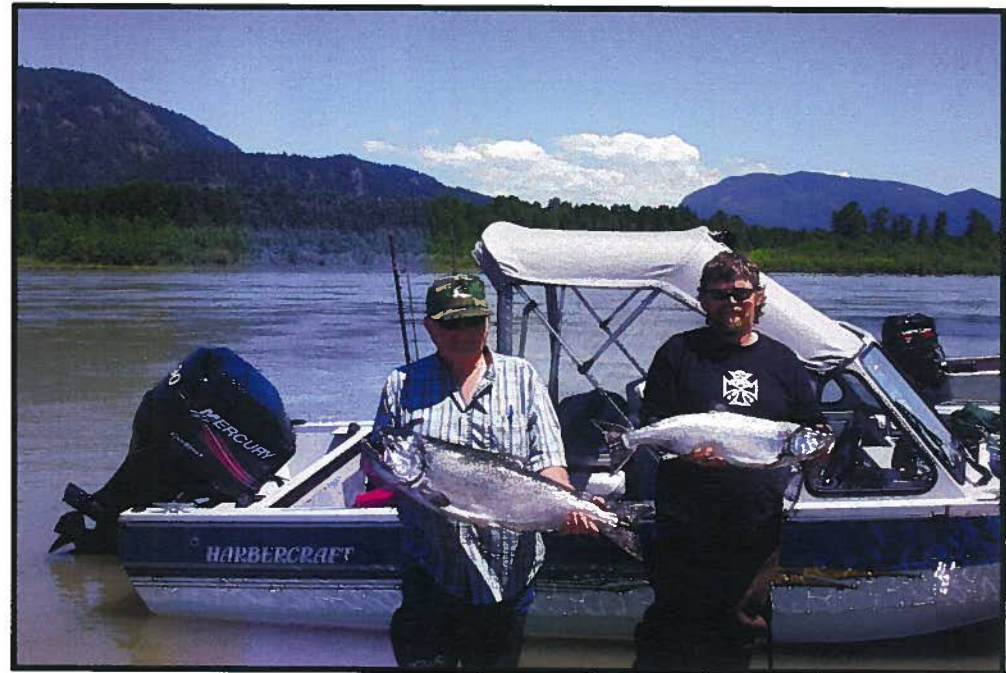
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Primary goal of our Fraser Recreational Fishery Assessments is to provide information on:

- total harvest (fish retained)





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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)





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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 (= HPUE + RPUE)





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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





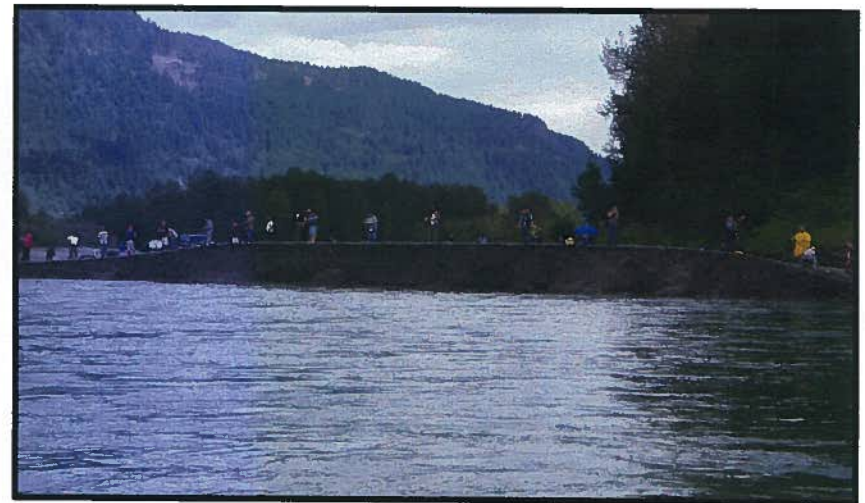
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Estimated Harvest =

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

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

Hours fished





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Harvest-Per-Unit-Effort (HPUE)

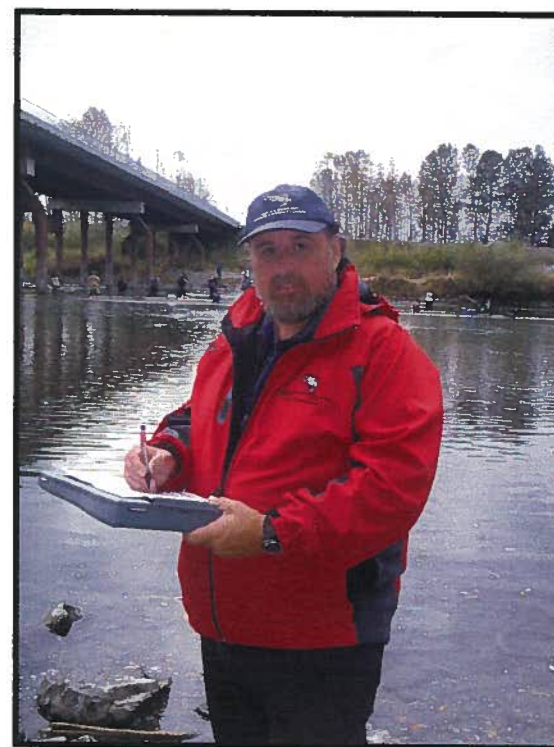
Obtained from angler interviews

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. fish harvested and time fishing





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Harvest-Per-Unit-Effort (HPUE) Calculation

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

angler 2 1 fish harvested in 5 hr

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)



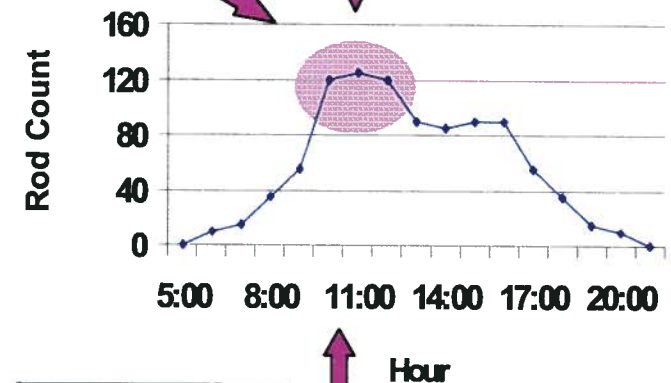


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Daily Effort

Required Data Needs

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





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Daily Effort Calculation

Daily Effort = Average Overflight Count / Proportion

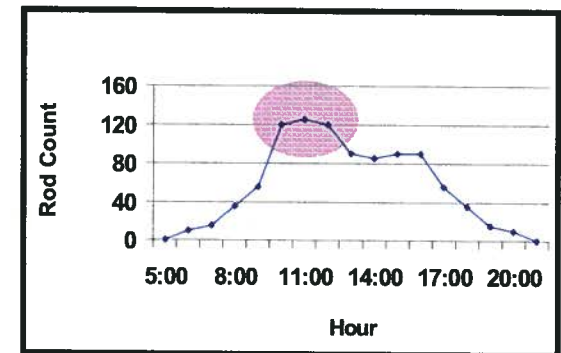


Hourly rod counts

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

Instantaneous effort (rod) counts
(overflight count)

Number of rods counted during the overflight (11:00-12:00)



Daily Effort = 120 / 0.10 (10%) = 1,200 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
= 1,200 hours/day x 10 days
= 12,000 hours





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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

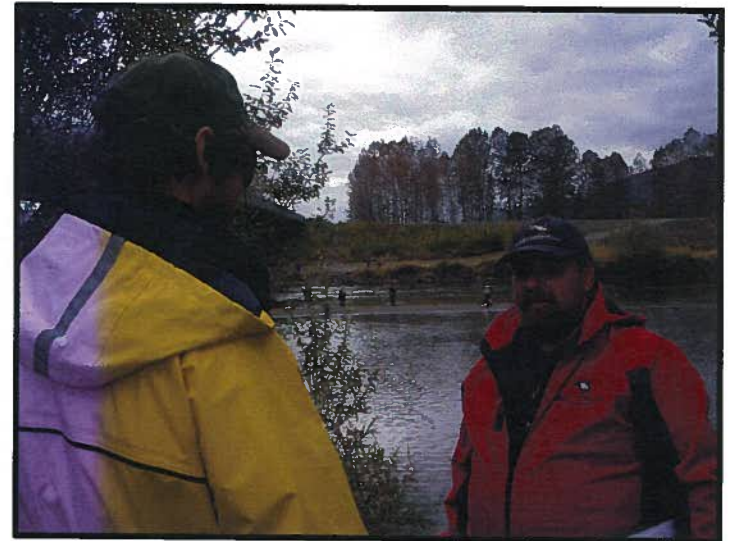




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Study Design Stratifications

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





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Fraser River Recreational Fishery Assessment Study Area

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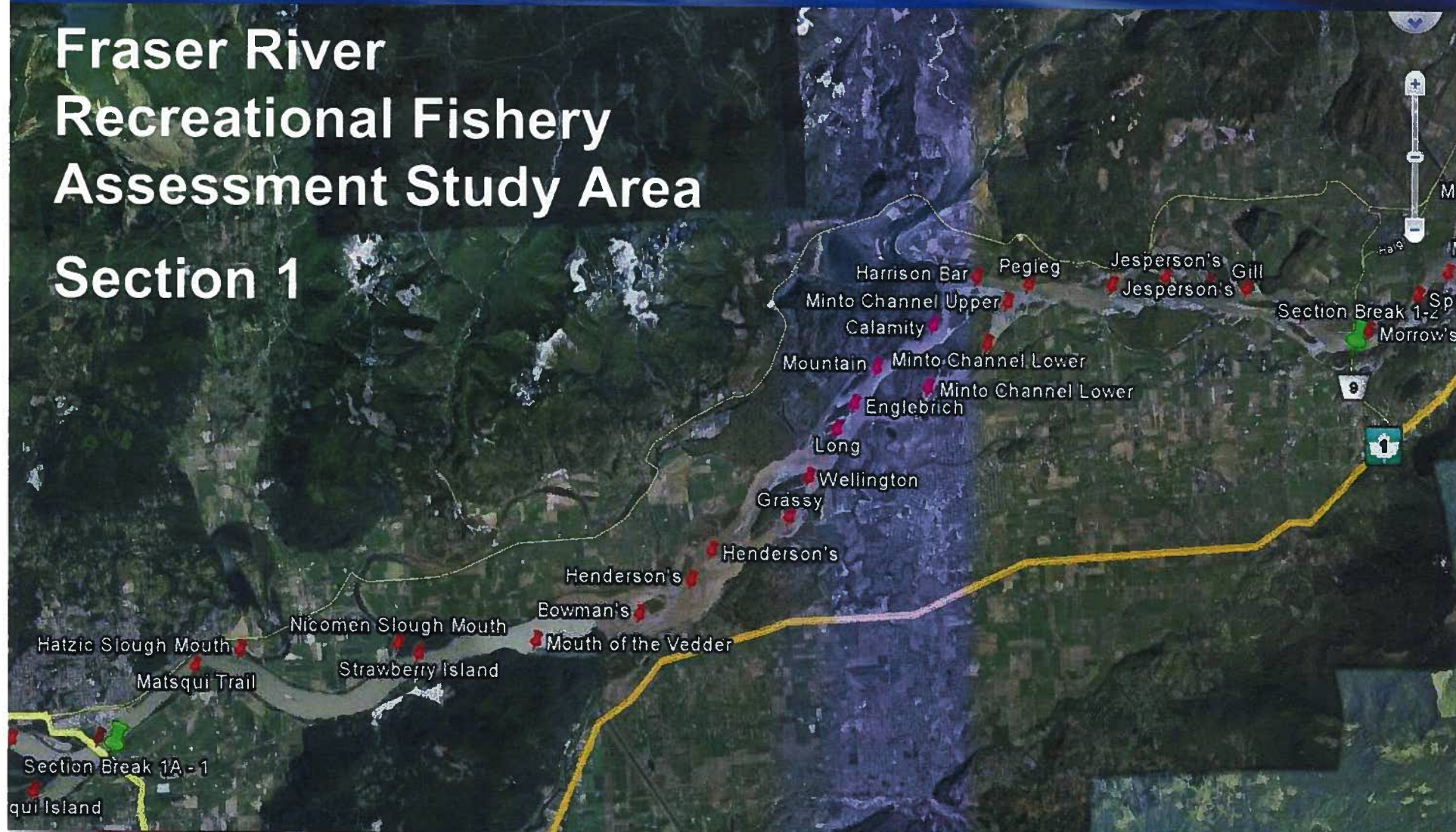
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Fraser River Recreational Fishery Assessment Study Area

Section 1



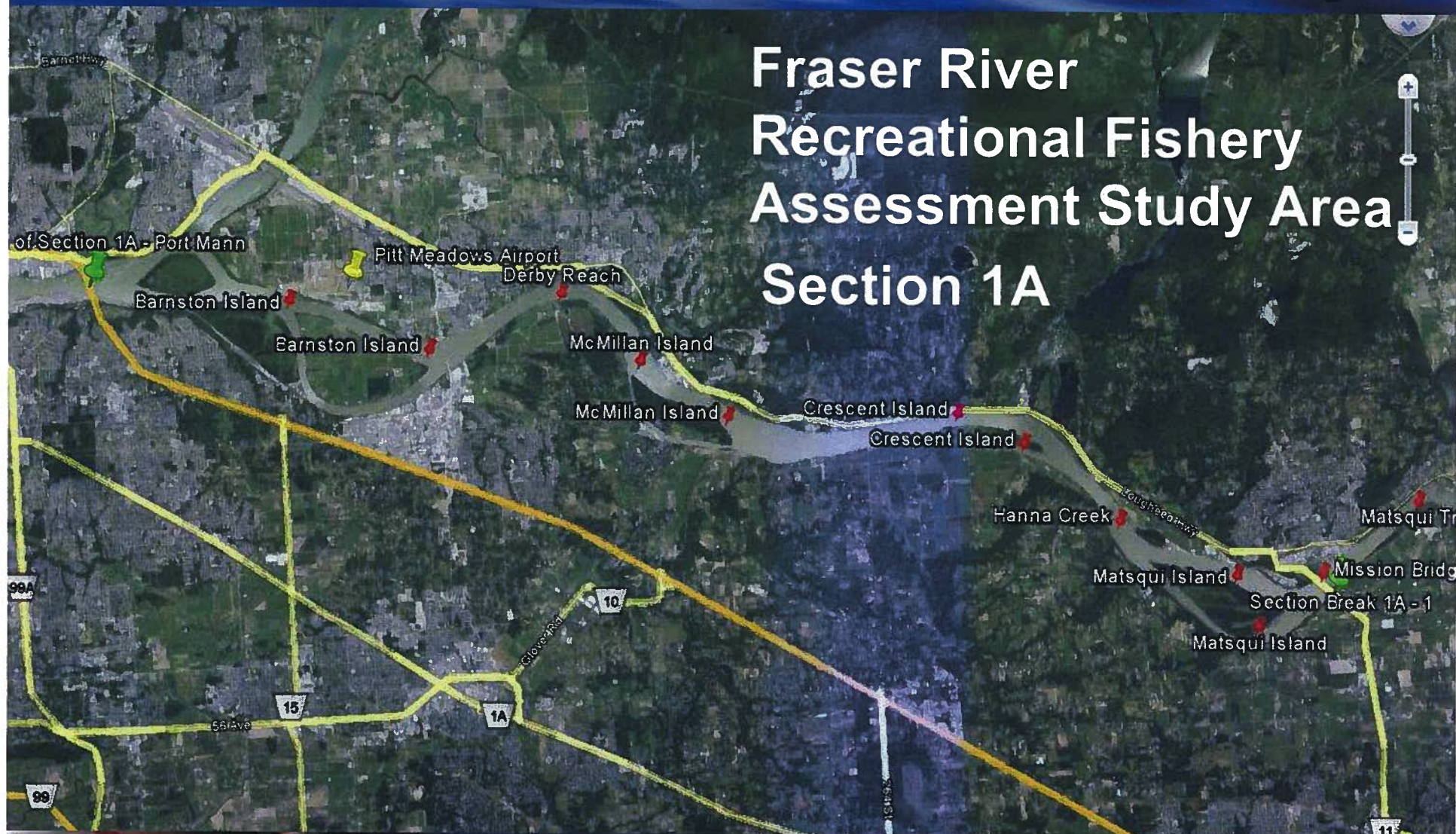
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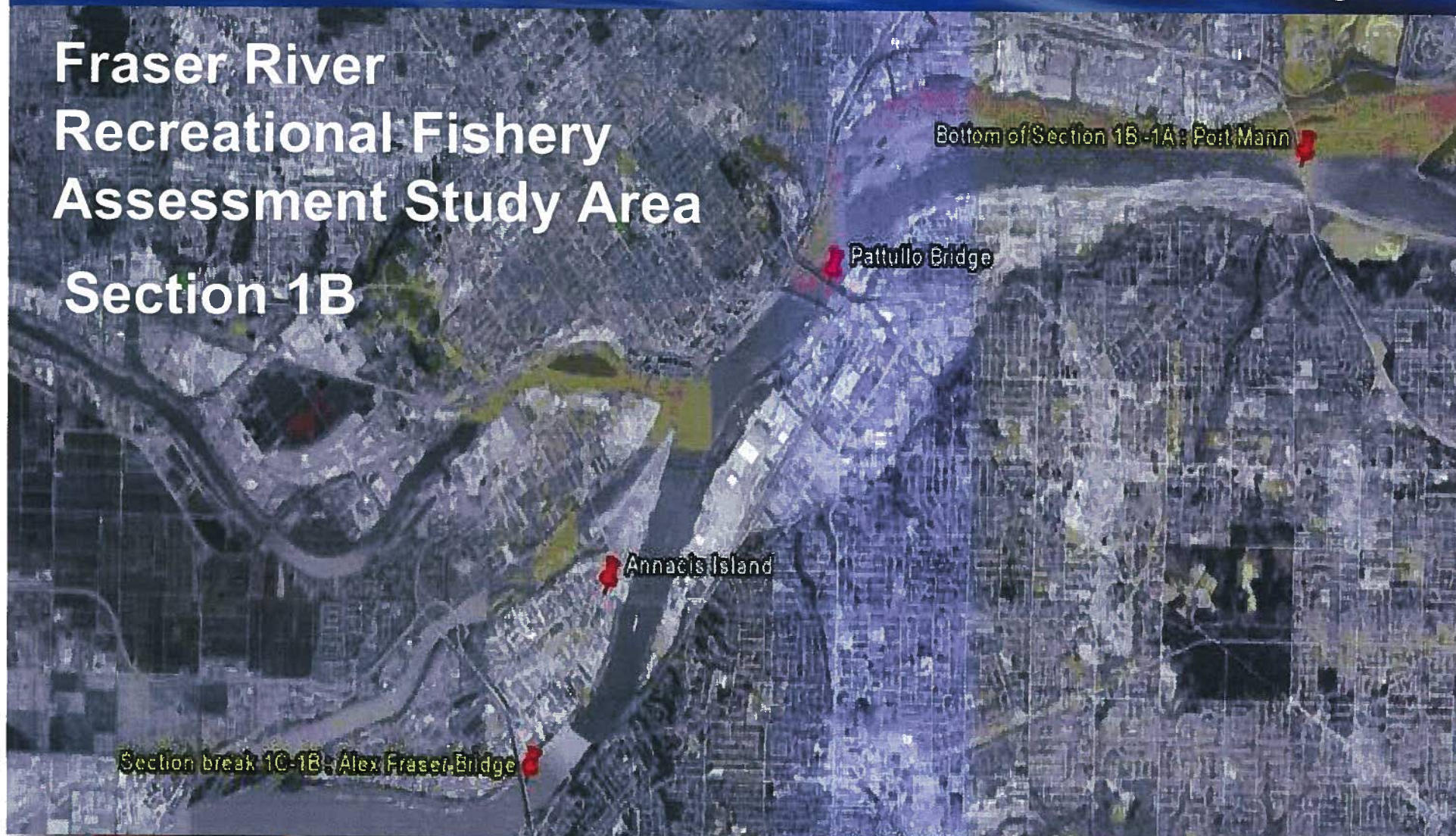


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Fraser River Recreational Fishery Assessment Study Area Section 1B



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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
SURVEY EFFORT													
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
ANGLER EFFORT													
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
ESTIMATED HARVEST (including AFC)													
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
ESTIMATED RELEASE													
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
ESTIMATED AFC HARVEST													
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



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Fraser River Mainstem Recreational Fishery Summary Table: 2004-2009

STUDY DESIGN	2004	2005	2006	2007	2008	2009
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
SURVEY EFFORT						
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
ANGLER EFFORT						
Estimated Effort (hours)	524,886	439,876	747,058	258,161	228,682	431,227
Average Overflight Count	381	341	-	145	196	-
ESTIMATED HARVEST						
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
ESTIMATED RELEASE						
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



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Creel information/estimates can be
accessed on the web at:

www.pac.dfo-mpo.gc.ca/fraserriver/recfishery.htm





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Thank you for allowing me to present

