

**2010 Summer Mark-Selective Recreational Chinook Fisheries  
In Marine Areas 5, 6, 9, 10, 11, and 13**

**Post-season Report**

**REVISED DRAFT**

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## INTRODUCTION

In recent years, abundant runs of hatchery Chinook salmon (*Oncorhynchus tshawytscha*) have been mixed with depressed runs of wild Chinook salmon in the marine environments of the Puget Sound and Strait of Juan de Fuca. Providing recreational anglers with opportunities to harvest abundant hatchery stocks while simultaneously protecting weaker, wild stocks has proven to be a significant conservation and management challenge. The combination of large-scale hatchery marking (i.e., fin clipping) programs and mark-selective harvest regulations makes it possible for anglers to pursue and harvest hatchery Chinook salmon while minimally impacting wild salmon populations. In such “mark-selective fisheries” (MSFs), anglers are generally allowed to retain adipose-fin clipped (“marked”) hatchery fish and are required to release unharmed any unclipped (“unmarked”, predominantly wild) salmon encountered<sup>1</sup>.

Since the Washington Department of Fish and Wildlife (WDFW) implemented the first marine mark-selective Chinook fishery in Marine Catch Areas 5 and 6 (Strait of Juan de Fuca) in 2003 based on state-tribal agreements (WDFW 2008a), mark-selective Chinook salmon fishing regulations have been implemented on a pilot basis in multiple Puget Sound Marine Catch Areas during both summer and winter seasons. As of the close of summer 2010 fishing season, pilot *summer* selective Chinook seasons have occurred in Areas 5 and 6 for eight years (2003-2010; Thiesfeld and Hagen-Breaux 2005a, Thiesfeld and Hagen-Breaux 2005b, WDFW 2008a, WDFW 2009a, and WDFW 2010g) and in Areas 9, 10, 11, and 13 for four years (2007-2010; WDFW 2007a and 2007b, WDFW 2009b and 2009c, WDFW 2010e and 2010f). Pilot *winter* selective Chinook fisheries have occurred in Areas 8-1 and 8-2 for five complete seasons (2005-06, 2006-07, 2007-08, 2009, and 2009-10; WDFW 2008b, WDFW 2009d, WDFW 2010b), Areas 9 and 10 for three winter seasons (2008, 2008-09, and 2009-10; WDFW 2010c, WDFW 2010d), Area 7 for three winter seasons (2008, 2009, and 2009-10; WDFW 2009e, WDFW 2010a), and in Areas 11 and 12 for one winter season from February 1 through April 30, 2010.

WDFW implemented seven pilot mark-selective Chinook fisheries during the 2010 summer season (i.e., May through September 2010 period) in Puget Sound, in Areas 5, 6, 9, 10, 11, and 13. The 2010 summer Chinook MSF seasons in each of the areas were as follows:

- Areas 5 and 6 from July 1 through August 15, 2010;
- Areas 9 and 10 from July 16 through August 31, 2010;
- Area 11 from June 1 through September 30, 2010; and
- Area 13 from May 1 through September 30, 2010.

Consistent with the 2004 Puget Sound Chinook Harvest Management Plan (Puget Sound Indian Tribes and WDFW 2004) and the intent of previous mark-selective Chinook fisheries, the primary goal for these pilot fisheries was to provide meaningful opportunity to the recreational angling public while minimally impacting ESA-listed Puget Sound Chinook salmon.

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<sup>1</sup>The regulations specific to summer mark-selective fisheries in Puget Sound Marine Catch Areas allowed for the retention of up to two legal-sized ( $\geq 22$  inches [56 cm]) marked Chinook salmon per day and required the immediate release of all unmarked or sublegal Chinook. Additionally, anglers were: *i*) required to use single-point, barbless hooks while fishing for salmon, *ii*) held to a combined (all salmon species) two-fish daily limit, and *iii*) held to a handling rule that prevented them from bringing unmarked and/or sublegal Chinook aboard their vessels.

### Comprehensive Sampling and Monitoring Program

Given the pilot nature of the mark-selective Chinook fisheries in Areas 5, 6, 9, 10, 11, and 13, WDFW's Puget Sound Sampling Unit (PSSU) was tasked with implementing a comprehensive sampling and monitoring program to collect the data needed to evaluate each pilot mark-selective Chinook fishery and its impact on unmarked salmon. As per state-tribal agreement (e.g., WDFW and NWIFC 2010), we developed area-specific sampling plans consisting of several comprehensive and complementary sampling components, including dockside creel sampling, test fishing, on-the-water effort surveys, and angler-completed voluntary trip reports (VTRs). We tailored area-specific sampling plans so that we could reliably estimate the following critical parameters needed for evaluating mark-selective fisheries: *i*) the mark rate of the targeted Chinook population, *ii*) the total number of Chinook salmon harvested (by size [legal or sublegal] and mark-status [marked or unmarked] group), *iii*) the total number of Chinook salmon released (by size and mark-status group), *iv*) the coded-wire tag- (CWT) and/or DNA-based stock composition of marked and unmarked Chinook mortalities<sup>2</sup>, and *v*) the total mortality of marked and unmarked double index tag (DIT) CWT stocks. In addition, we acquired and analyzed relevant data characterizing other aspects of the pilot fisheries, including descriptors of fishing effort, fishing success (catch [landed Chinook] per unit effort), the length and age composition of encountered Chinook, and the overall intensity of our sampling efforts.

### Reporting Efficiencies

In July 2010, technical staffs from the WDFW Puget Sound Sampling Unit, Northwest Indian Fisheries Commission (NWIFC), and Puget Sound Treaty Tribes met to discuss potential reporting efficiencies in WDFW's mark-selective Chinook fishery post-season reports. NWIFC and tribal representatives had initiated the idea for such a meeting, considering that we at WDFW had been submitting a separate post-season report for each area and season (since 2003) to the co-managers, resulting in redundancies between individual reports, particularly in the Methods section. Also, over the years we kept adding sections to the selective fishery annual reports, in response to individual tribal co-manager requests, and sustained those additions in each future report, resulting in ever-lengthening post-season reports. From both the WDFW and tribal technical perspectives, we needed to prioritize the most essential reporting elements and achieve efficiencies to streamline the selective fishery reporting work load.

Thus, at the July 2010 meeting the WDFW and tribal staffs worked on prioritizing the most essential elements (i.e., tables, figures, and appendices) needed in WDFW's annual post-season selective fishery reports in an effort to define reporting efficiencies. Based on these decisions (details available in a WDFW memo dated August 16, 2010 summarizing the July 2010 meeting), we began implementing reporting efficiencies starting with the 2009-10 winter mark-selective Chinook fisheries post-season report (WDFW 2011b).

At the July 2010 meeting we also agreed that a key efficiency in the annual reporting process would be for WDFW staff to produce a centralized Methods Report. The Methods Report would be a stand-alone document that includes the details of each area's Chinook MSF study design (for both winter and summer fisheries), sampling procedures, data analysis methods, and all equations used to generate estimates and variances. Thus, we refer the reader to our Methods Report (WDFW 2011a) for detailed

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<sup>2</sup> Though the necessary tissue samples have been collected, DNA-based estimates of stock composition are presently unavailable for Puget Sound/Strait of Juan de Fuca mark-selective fisheries. In the present report, methods for producing CWT-based (unexpanded) estimates of the stock composition of marked Chinook harvest are provided.

descriptions of the diverse study designs and protocols used to monitor and evaluate the selective Chinook fisheries in Areas 5, 6, 9, 10, 11, and 13 during summer 2010.

In the following pages, we report the results generated through our monitoring activities during the summer 2010 Areas 5, 6, 9, 10, 11, and 13 mark-selective Chinook fisheries. We report results based on our new, more efficient reporting format agreed-to recently between state and tribal technical representatives, in which we focus on presenting data tables and figures rather than interpretive text (unless text is needed to specify noteworthy in-season adjustments or other circumstances unique to the particular season). We present 2010 summer Chinook MSF results in separate chapters (1 through 5) by area, and within each chapter the data are presented in a series of tables and figures generally according to the following sequence: *i*) estimates of fishery characteristics obtained from the dockside creel survey data, including catch and effort estimates, Chinook length-frequency data, and CWT recovery results; *ii*) results from our recreational test fishery (where applicable); *iii*) results from our VTR collection efforts; *iv*) total mortality estimates of marked and unmarked DIT CWT stocks by hatchery and brood year; *v*) total fishery Chinook encounters and impacts—estimated based on creel survey and test fishery or VTR data—which we compare with pre-season expectations (i.e., based on Fishery Regulation Assessment Model [FRAM] predictions); *vi*) sample rate information based on dockside sampling of harvested Chinook; and *vii*) historical Chinook encounters estimates for each area’s summer mark-selective Chinook fishery.

## RESULTS

### 1) Marine Area 5 Summer 2010 Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a mark-selective Chinook fishery (MSF) in Marine Area 5 for the eighth summer season from July 1 through August 15, 2010. WDFW's Puget Sound Sampling Unit (PSSU) implemented a comprehensive monitoring program in Area 5 throughout the season in order to collect the data needed to estimate key parameters characterizing the fishery and its impacts on unmarked salmon. Sampling activities in Area 5 included dockside creel sampling (with in-season catch and effort estimates), on-the-water effort surveys (boat surveys), and intensive efforts to distribute and collect voluntary trip reports (VTRs) from the angling public. **Table 1** summarizes the parameters estimated and the sampling activities associated with each parameter. Specific procedures used for collecting these data and estimating critical data parameters are presented in detail in our separate Methods Report (WDFW 2011a).

During summer 2010 in Area 5 we once again (each season since 2008) focused considerable effort on our enhanced VTR program to obtain estimates of Chinook encounter rates by size class (legal or sublegal) and mark status (ad-marked or unmarked). For the enhanced VTR program, an additional WDFW technician was hired to work exclusively on distributing and collecting VTRs from the angling public in Area 5. Additionally, the VTR technician and dockside samplers educated anglers about the VTR program and salmon species identification in a focused effort to increase the sample size of VTR-based encounters data.

In the following section we present results from our monitoring activities during the July 1 - August 15, 2010 Area 5 summer selective Chinook fishery season. To generate the estimates of Chinook encounters and mortalities by size/mark group, we used the VTR-based estimates of Chinook encounter rates by size/mark group (legal size-marked [LM], legal size-unmarked [LU], sublegal size-marked [SM], and sublegal size-unmarked [SU]) and applied Conrad and McHugh's (2008) bias-corrected method (see WDFW 2011a, Appendix B).

**Table 1.** Sampling/estimation details on target parameters associated with the overall Area 5 mark-selective fishery monitoring program.

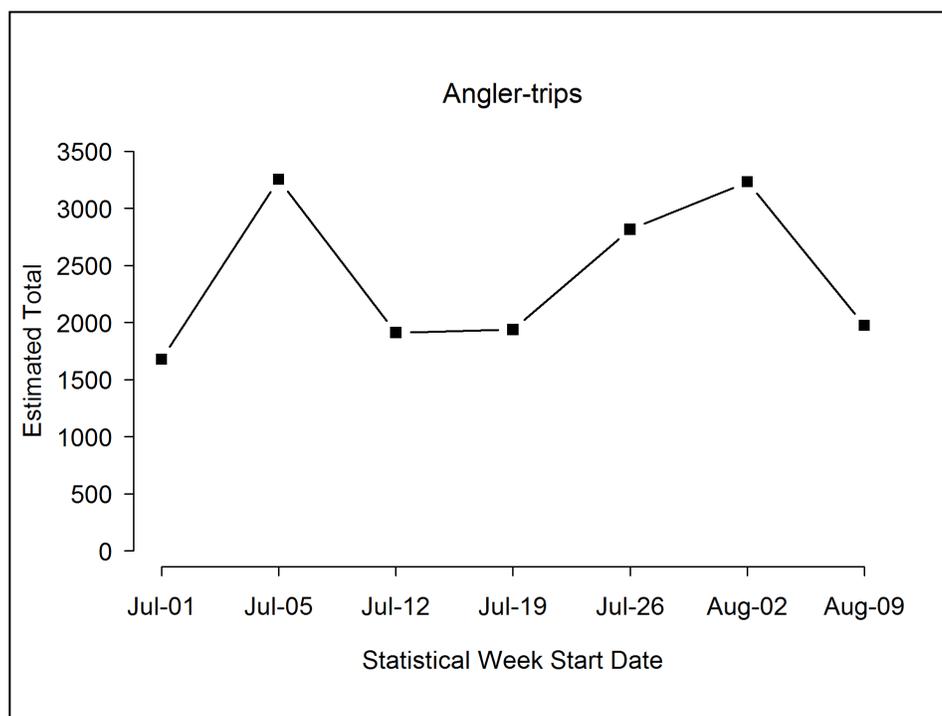
Activity	Focal Parameter(s)	Secondary Parameter(s)	Sample Unit(s)	Finest Estimation Time Step	Comments
Dockside Creel Sampling	Fishing effort (boat & angler trips); kept and released fish <sup>1</sup>	Catch rates (CPUE); length, age, and CWT composition of harvest <sup>2</sup> ; collection of angler fishing methods.	Angler trip; kept fish; reported fish release	Two weeks <sup>1</sup>	Creel estimates were produced for two-week estimation periods and stratified into “weekday” (Mon.-Thurs.) and “weekend” (Fri.-Sun.) day-type strata within weeks. For the weekday stratum, we sampled $n=2$ days out of $N=8$ available weekdays per two-week period. For the weekend stratum, we sampled $n=2$ days out of $N=3$ available weekend days per week <sup>1</sup> .
On-the-water Surveys (Boat Surveys)	Proportion of total angler effort accessing fishery via sample-frame sites (i.e., site “size measures”) versus out-of-frame sites. Size measures were used to select sites for dockside creel surveys using a probability proportional to size (PPS) site selection process, and to produce total-fishery creel estimates (see WDFW 2011a).	Data on spatial distribution of recreational fishing boats in the area.	Boats ( $n=161$ total contacted on the water over the season), with a total of 382 anglers on-board.	Month	Two boat surveys were conducted during July 2010 (one weekday and one weekend day) to verify that 2009 site size measures had not changed significantly; these 2010 data were used for July 2010 PPS-based site selections and creel estimates. Due to little change in 2010 site size measures compared to 2009 data, we elected to use boat survey data from August 2009 as a proxy for August 2010 site size measures.
Voluntary Trip Reports (VTRs)	Size (legal/sublegal) and mark-status composition (marked, unmarked) of encountered Chinook	Encounter data for non-Chinook species (e.g., coho) that the angler may record on the VTR form	Fish encounter	Season (46 days)	VTR data were used in the estimation of total Chinook encounters by size/mark group (LM=33.4%, LU=26.5%, SM=18.1%, SU=22.0%; <b>Table 6</b> ) and associated impacts.
Overall Fishery Impacts Estimation	Total Chinook encounters and mortalities, by size/mark-status group	Ratios of encounters and mortalities per kept Chinook	N/A	Season (46 days)	Estimated on a monthly time step but considered at the season-total level.
Coded-wire tag (CWT) Impacts Estimation	Marked/unmarked double-index tag (DIT) encounters and mortalities	N/A	N/A	Season (46 days)	The temporal resolution of DIT impacts is constrained by the total number of tags recovered.

<sup>1</sup> To generate weekly catch and effort estimates, the four-day “weekday stratum” estimate was added to the three-day “weekend stratum” estimate for the particular week. The eight-day weekday estimates for each two-week period were split evenly between individual weeks in the two-week block to enable weekly estimates, with variances computed using the  $n=2$  days sampled out of  $N=8$  available weekdays in the appropriate variance equation (see WDFW 2011 a).

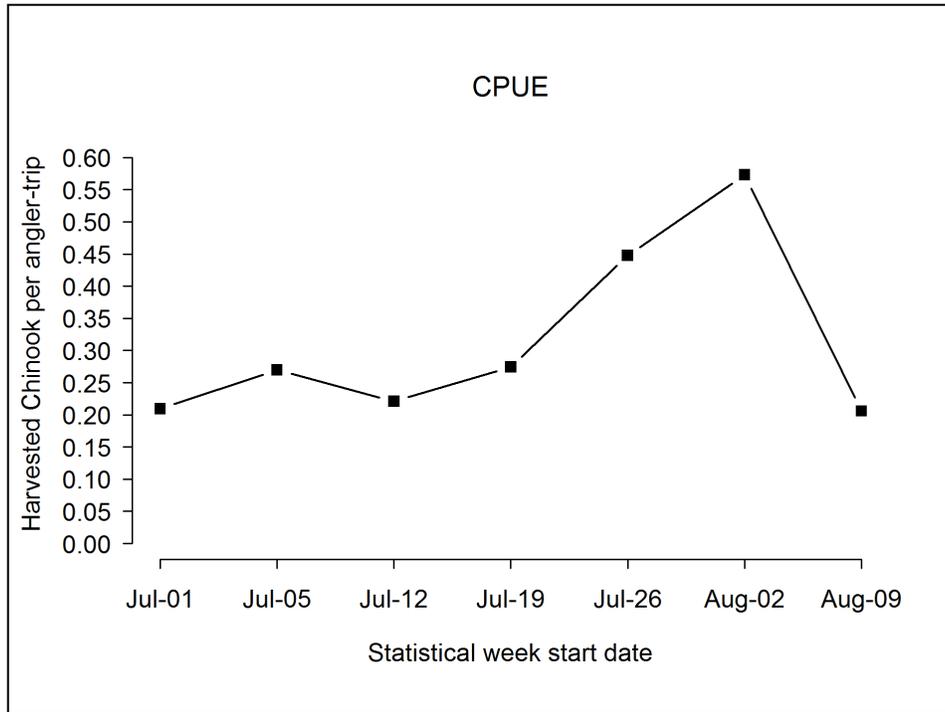
<sup>2</sup> The length and CWT composition of landed catch was assessed on a season-wide basis for impact estimation.

**Table 2.** Estimates of total fishing effort and total salmon catch (harvest and releases) during the July 1 through August 15, 2010 Area 5 selective Chinook fishery. Values may not add exactly due to rounding error. AD = marked (i.e., adipose-clipped), UM = unmarked. The lower 95% confidence interval for the estimated AD released Chinook is the actual number reported in the dockside creel.

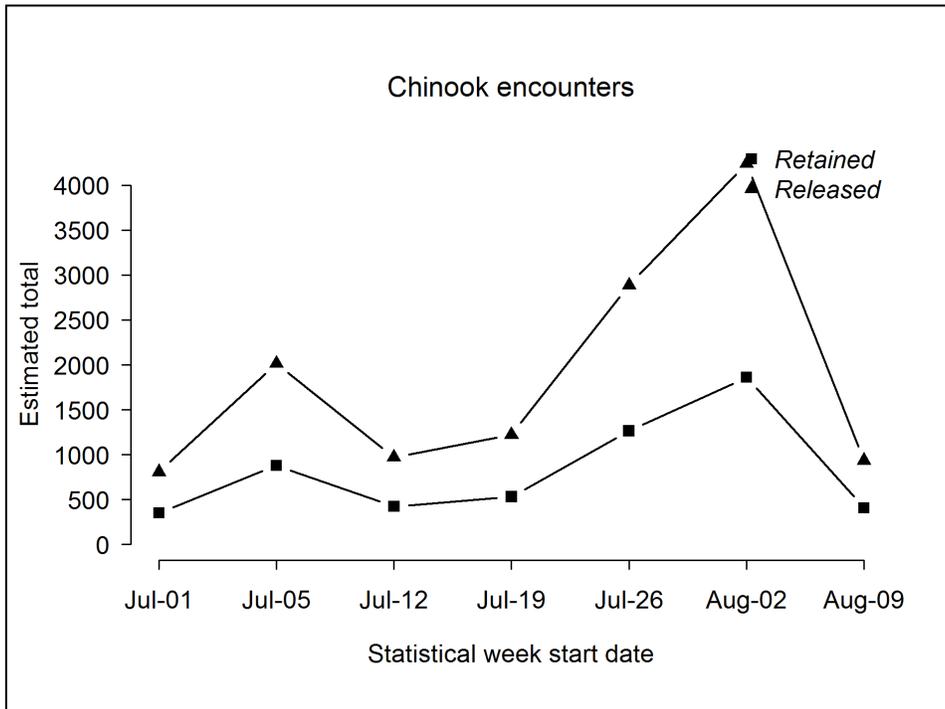
Month	Stat Week	Start Date	End Date	Est. Effort		Est. Retained Chinook		Est. Released Chinook		Est. Total Chinook Encounters
				Boats	Anglers	AD	UM	AD	UM	
July	27	Jul-01	Jul-04	724	1,678	351	0	245	562	1,158
	28	Jul-05	Jul-11	1,496	3,255	878	0	613	1,403	2,893
	29	Jul-12	Jul-18	899	1,912	423	0	295	675	1,393
	30	Jul-19	Jul-25	953	1,938	532	0	371	850	1,754
	31	Jul-26	Aug-01	1,131	2,815	1,260	4	879	2,009	4,153
August	32	Aug-02	Aug-08	1,339	3,232	1,852	9	1,292	2,950	6,103
	33	Aug-09	Aug-15	861	1,976	407	0	284	651	1,342
<b>Season Total:</b>				<b>7,403</b>	<b>16,806</b>	<b>5,703</b>	<b>14</b>	<b>3,979</b>	<b>9,101</b>	<b>18,796</b>
<b>Variance:</b>				185,197	729,595	320,718	79	1,211,249	790,056	4,747,080
<b>Standard Error:</b>				430	854	566	9	1101	889	2179
<b>CV (%):</b>				6%	5%	10%	65%	28%	10%	12%
<b>95% CI:</b>				6,559-8,246	15,132-18,480	4,593-6,813	4-31	1,822-6,136	7,358-10,843	14,526-23,066



**Figure 1.** Temporal patterns in weekly fishing effort during the Area 5 mark-selective Chinook fishery from July 1 through August 15, 2010.



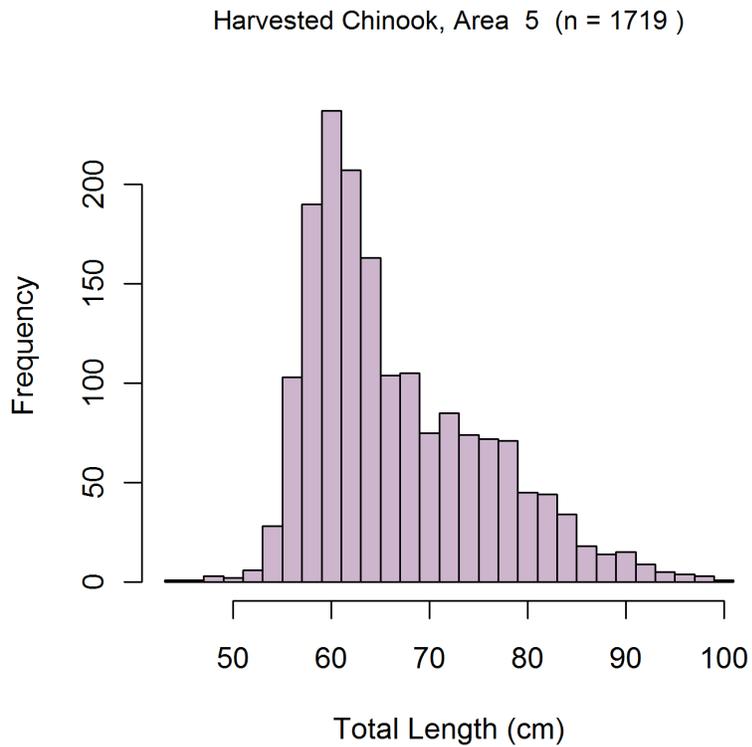
**Figure 2.** Temporal patterns in CPUE (landed Chinook per angler trip) during the Area 5 mark-selective Chinook fishery from July 1 through August 15, 2010.



**Figure 3.** Temporal patterns in Chinook encounters (retained and released) during the Area 5 mark-selective Chinook fishery from July 1 through August 15, 2010.

**Table 3.** Summary of total length samples collected from retained Chinook during dockside angler interviews during the Area 5 mark-selective Chinook fishery from July 1 through August 15, 2010.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	1,646	73	1,719
Unmarked	2	0	2
<b>Total</b>	<b>1,648</b>	<b>73</b>	<b>1,721</b>



**Figure 4.** Length-frequency distribution for *marked* Chinook harvested and then sampled in dockside angler interviews, during the Area 5 July 1 – August 15, 2010 mark-selective Chinook fishery.

**Table 4.** Total number of anglers intercepted in Area 5 during on-the-water surveys conducted between July 1 and August 15, 2010. Grayed sites were included in the dockside sample frame.

Site Name	Total Anglers	Season Total (unadjusted) Size Measure
COHO	5	0.013
CURLEYS	37	0.097
OLSON'S EAST	69	0.181
OLSON'S GENERAL	7	0.018
OLSON'S RAMP & DOCKS	117	0.306
OLSON'S WEST	31	0.081
SILVER KING	2	0.005
VAN RIPER'S GENERAL	4	0.010
VAN RIPER'S NORTH	18	0.047
VAN RIPER'S SOUTH	92	0.241
<b>Total Anglers<sup>1/</sup></b>	<b>382</b>	<b>1.000</b>

<sup>1/</sup> Number of boats contacted during on-the-water surveys (during two surveys total; one weekend and one weekday survey) in Area 5 totaled 161; the number of anglers occupying these boats totaled 382.

**Table 5.** Summary of coded-wire tags recovered from Chinook salmon harvested during the Area 5 July 1 – August 15, 2010 mark-selective Chinook fishery. The field “No. DITs” corresponds to the number of tags that belonged to double-index tag groups.

Release Domain	Release Region (% Contribution)	Release Site	Rearing Location	CWTs Recovered	No. DITs
Washington	Northern Washington (14.4%)	NOOKSACK R -NF 01.0120	KENDALL CR HATCHERY	3 (1.5%)	3
		FRIDAY CR 03.0017	SAMISH HATCHERY	16 (8.2%)	16
		EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	9 (4.6%)	0
		SOOES R 20.0015	MAKAH NFH ON SOOES R	2 (1%)	0
	Hood Canal (18.5%)	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	24 (12.3%)	24
		FINCH CR 16.0222	HOODSPORT HATCHERY	12 (6.2%)	0
	Northern Puget Sound (5.6%)	WHITEHORSE SPRINGS	WHITEHORSE POND	1 (0.5%)	0
		TULALIP CR 07.0001	BERNIE GOBIN HATCH	4 (2.1%)	0
		WALLACE R 07.0940	WALLACE R HATCHERY	6 (3.1%)	3
	Skagit River (2.1%)	BAKER R 03.0435		1 (0.5%)	0
		SKAGIT R 03.0176		1 (0.5%)	0
		CASCADE R 03.1411	MARBLEMOUNT HATCHERY	2 (1%)	0
	Mid Puget Sound (21.5%)	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	9 (4.6%)	9
		GROVERS CR HATCHERY	GROVERS CR HATCHERY	19 (9.7%)	19
		VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	6 (3.1%)	0
		GREEN R 09.0001		2 (1%)	0
GROVERS CR 15.0299		GROVERS CR HATCHERY	4 (2.1%)	4	
COWSKULL ACCLIM POND		COWSKULL ACCLIM POND	2 (1%)	0	

Release Domain	Release Region (% Contribution)	Release Site	Rearing Location	CWTs Recovered	No. DITs
	Southern Puget Sound (9.7%)	CHAMBERS CR 12.0007	LAKWOOD HATCHERY	1 (0.5%)	0
		CHAMBERS CR 12.0007	GARRISON HATCHERY	6 (3.1%)	0
		KALAMA CR 11.0017	KALAMA CR HATCHERY	4 (2.1%)	0
		CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	8 (4.1%)	8
Columbia River	Upper Columbia R (above McNary Dam; excludes Snake River) (2.6%)	COL R @ TURTLE ROCK	TURTLE ROCK HATCHERY	1 (0.5%)	0
		SIMILKAMEEN R 490325		2 (1%)	0
		WENATCHEE R 45.0030		1 (0.5%)	0
	Central Columbia River (Bonneville Dam to McNary Dam) (3.1%)	WENATCHEE R 45.0030	DRYDEN POND	1 (0.5%)	0
		SPRING CR 29.0159	SPRING CR NFH	3 (1.5%)	3
		UMATILLA R	UMATILLA HATCHERY	2 (1%)	0
	Lower Columbia River (mouth to Bonneville Dam) (1%)	KLICKITAT HATCHERY (YKFP)	KLICKITAT HATCHERY (YKFP)	1 (0.5%)	0
		CEDAR CR #1 (SANDY R	CLACKAMAS HATCHERY	1 (0.5%)	0
	Snake River (7.7%)	MOLALLA R	WILLAMETTE HATCHERY	1 (0.5%)	0
		CAPTAIN JOHNS PD	LYONS FERRY HATCHERY	1 (0.5%)	0
		SNAKE R @ ASOTIN	LYONS FERRY HATCHERY	5 (2.6%)	0
		SNAKE R-UPPR 35.0002	LYONS FERRY HATCHERY	2 (1%)	0
		LYONS FERRY REL.SITE	LYONS FERRY HATCHERY	1 (0.5%)	0
		SNAKE R-LOWR 33.0002	LYONS FERRY HATCHERY	3 (1.5%)	0
SNAKE@ HLLS CNYON DM		OXBOW HATCHERY	2 (1%)	0	
BIG CANYON ACCL POND	LYONS FERRY HATCHERY	1 (0.5%)	0		
Oregon	Southern Oregon Coast (0.5%)	ROCK CR (N UMPQUA R)	ROCK CR HATCHERY	1 (0.5%)	0
California	Klamath River – Trinity River (0.5%)	TRINITY R HATCHERY	TRINITY R HATCHERY	1 (0.5%)	0
	Central California Coast (1%)	SAN PABLO BAY NET PENS	FEATHER R HATCHERY	2 (1%)	0
British Columbia	Lower Frasier River (8.2%)	R-HARRISON R	H-CHEHALIS R	8 (4.1%)	0
		R-CHILLIWACK R	H-CHILLIWACK R	8 (4.1%)	8
	Thompson River Mainstem (1%)	R-NICOLA R	H-SPIUS CR	2 (1%)	0
	Georgia Strait-Vancouver Island (1.5%)	R-COWICHAN ESTUARY		1 (0.5%)	0
		R-COWICHAN R UP	H-COWICHAN R	2 (1%)	0
<b>TOTAL</b>				<b>195</b>	<b>97</b>

**Table 6.** Total Chinook encountered (retained and released) by anglers reporting their catch on voluntary trip reports (VTRs) in the Area 5 July 1-August 15, 2010 mark-selective Chinook fishery, with estimates of season-total size/mark group proportions. AD = marked (i.e., adipose-clipped), UM = unmarked. Variances associated with size/mark-status proportions are provided in parentheses.

Data Source	Effort & Sample Size	Legal		Sublegal		Total	Mark Rates	
		AD	UM	AD	UM		Overall	Legal
Private Boat VTR	129 1-trip VTRs, 305 Angler Trips	188	149	102	124	563	51.5%	55.8%
Size/Mark-status group composition:		0.334	0.265	0.181	0.220			
Variance:		(0.0004)	(0.0003)	(0.0003)	(0.0003)			

**Table 7.** Summary of season-wide fishery impact estimates for the Area 5 July 1-August 15, 2010 mark-selective Chinook fishery. Values may not add up perfectly due to rounding error.

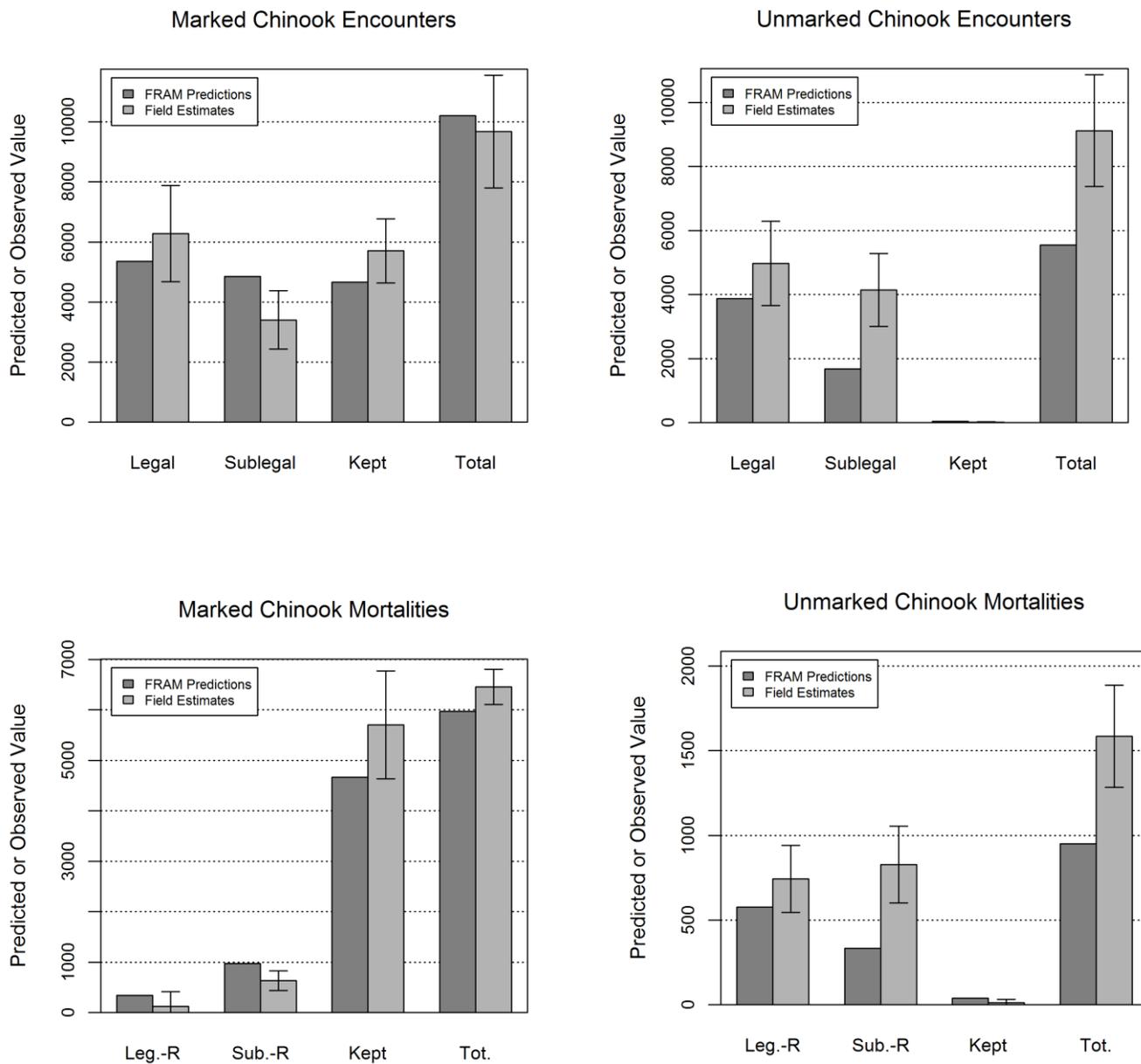
Total Encounters (E): 18,796 V(E): 4,747,080										
Size/mark group	Chinook Encounters	No. Retained	No. Rel'd	Rel. Mort. Rate	Rel. Mort.	Total Mortality	Var	SE	95% CI	CV (%)
Legal marked	6,276	5,461	816	0.15	122	5,583	316,466	563	4480 - 6686	10
Legal unmarked	4,974	14	4,961	0.15	744	758	10,277	101	559 - 956	13
Sublegal marked	3,405	242	3,163	0.20	633	875	11,307	106	666 - 1083	12
Sublegal unmarked	4,140	0	4,140	0.20	828	828	13,472	116	600 - 1055	14
All groups combined	<b>18,796</b>	<b>5,716</b>	<b>13,080</b>		<b>2,327</b>	<b>8,043</b>	<b>351,522</b>	<b>593</b>	<b>6881 - 9206</b>	<b>7</b>

**Table 8.** Comparison of modeled (i.e., using FRAM, model run 1010) and estimated total Chinook encounters for the Area 5 July 1-August 15, 2010 mark-selective Chinook fishery.

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	Unmark.	5,547	3,877	1,670	39
	Mark.	10,208	5,358	4,850	4,661
	Total	15,755	9,235	6,520	4,700
	% Mark.	65	58	74	99
Estimated (Creel) Encounters	Unmark.	9,114	4,974	4,140	14
	Mark.	9,682	6,276	3,405	5,703
	Total	18,796	11,251	7,545	5,716
	% Mark.	52	56	45	100

**Table 9.** Comparison of modeled (i.e., using FRAM, model run 1010) and estimated total Chinook mortalities for the Area 5 July 1-August 15, 2010 mark-selective Chinook fishery.

Mortality Category	FRAM Chinook Mortalities			Estimated Chinook Mortalities		
	Unmark	Mark	Total	Unmark	Mark	Total
Total (Landed + Released)	950	5,969	6,919	1,586	6,458	8,043
Released Legal	577	338	915	744	122	867
Released Sublegal	334	970	1,304	828	633	1,461
Landed Only	39	4,661	4,700	14	5,703	5,716



**Figure 5.** Comparison of modeled (i.e., using FRAM, model run 1010) and estimated total Chinook encounters (upper panel) and mortalities (lower panel) for the Area 5 July 1 – August 31, 2010 mark-selective Chinook fishery. Error bars represent approximate 95% confidence intervals for field estimates. The x-axis labels ‘Leg.’, ‘Sub.’, and ‘Tot.’ correspond to Legal, Sublegal, and Total, whereas the suffix ‘-R’ (mortality plots only) denotes Released.

**Table 10.** Summary of double-index tagged (DIT) Chinook kept by anglers, and estimated total mortality of unmarked DIT Chinook due to hook-and-release impacts resulting from the Area 5 July 1 – August 15, 2010 mark-selective Chinook fishery. AD = marked (i.e., adipose-clipped), UM = unmarked.

Hatchery	Brood Year	DITs Obs'd	AD DIT Harvest		UM DIT Enc.	UM DIT Mortality		
			Est.	var(Est.)		Est.	var(Est.)	SE(Est.)
Clear Cr. Hatchery	2007	8	27	64.4	26.8	2.7	0.6	2.3
George Adams Hatchery	2005	1	3.2	7.2	3.2	0.3	0.1	0.3
	2006	1	3.5	8.6	3.8	0.4	0.1	0.3
	2007	22	73.2	170.4	73.8	7.4	1.7	6.2
Grovers Cr. Hatchery	2005	1	3.2	7.2	4.2	0.4	0.1	0.3
	2006	3	9.9	22.9	9.9	1	0.2	0.8
	2007	19	62.3	141.9	62.4	6.2	1.4	5.2
H-Chilliwack R	2007	8	27	64.4	27.1	2.7	0.6	2.3
Kendall Cr. Hatchery	2007	3	9.9	22.9	10	1	0.2	0.8
Samish Hatchery	2006	1	3.5	8.6	3.5	0.3	0.1	0.3
	2007	15	49.6	114.6	50.8	5.1	1.2	4.2
Soos Cr. Hatchery	2006	1	3.2	7.2	3.2	0.3	0.1	0.3
	2007	8	27	64.4	27	2.7	0.6	2.3
Spring Cr. NFH	2007	3	9.9	22.9	9.9	1	0.2	0.8
Wallace R. Hatchery	2006	2	6.4	14.3	6.5	0.7	0.1	0.5
	2007	1	3.5	8.6	3.5	0.3	0.1	0.3
<b>Total</b>		<b>97</b>	<b>322.4</b>	<b>750.4</b>	<b>325.6</b>	<b>32.6</b>	<b>7.7</b>	<b>27.2</b>

**Table 11.** Monthly sample rates (Total retained Chinook sampled <sup>1/</sup> / Estimated retained Chinook) in the summer 2010 Area 5 mark-selective Chinook fishery, July 1 – August 15, 2010.

Time Period			Estimated Retained Chinook			Number of Retained Chinook Sampled			Sample Rate
Month	Stat. Weeks	Dates	Marked	Un-marked	Total	Marked	Un-marked	Total	
July	27-31	July 1 - Aug. 1	3,444	4	3,448	1,068	2	1,070	31.0%
August	32-33	Aug. 2-15	2,259	10	2,269	651	0	651	28.7%
<b>Season Total</b>			<b>5,703</b>	<b>14</b>	<b>5,717</b>	<b>1,719</b>	<b>2</b>	<b>1,721</b>	<b>30.1%</b>

<sup>1/</sup> Number of retained Chinook sampled includes all retained Chinook inspected for CWT's, from all sites sampled during the summer 2010 Area 5 selective Chinook fishery (i.e., creel estimate and baseline sampling sites).

**Table 12.** Fishery-total estimates of retained and released salmon (other than Chinook salmon) for the Area 5 July 1 – August 15, 2010 mark-selective Chinook fishery. Values may not add up perfectly due to rounding error.

Month	Stat. Week	Start Date	End Date	Effort		Other Species Kept			Other Sp. Released				
				Boats	Anglers	AD Coho	UM Coho	Pink	AD Coho	UM Coho	Unk Coho	Pink	Unk Salmon
July	27	01-Jul	04-Jul	724	1,678	15	0	0	0	16	5	0	0
	28	05-Jul	11-Jul	1,496	3,255	19	0	0	0	28	11	0	4
	29	12-Jul	18-Jul	899	1,912	26	0	4	0	24	0	0	2
	30	19-Jul	25-Jul	953	1,938	100	0	4	0	103	0	0	47
	31	26-Jul	01-Aug	1,131	2,815	85	0	4	8	130	7	2	193
August	32	02-Aug	08-Aug	1,339	3,232	40	3	4	3	67	0	0	125
	33	09-Aug	15-Aug	861	1,976	47	2	3	86	119	67	0	158
<b>Season Total:</b>				<b>7,403</b>	<b>16,806</b>	<b>332</b>	<b>5</b>	<b>19</b>	<b>97</b>	<b>488</b>	<b>91</b>	<b>2</b>	<b>529</b>
<b>Variance:</b>				188,564	728,858	4,800	8	113	1,458	11,155	576	3	25,172
<b>Standard Error:</b>				434	854	69	3	11	38	106	24	2	159
<b>CV (%):</b>				6%	5%	21%	55%	56%	39%	22%	26%	76%	30%
<b>95% CI:</b>				6,552-8,254	15,133-18,479	196-468	4-10	3-40	22-172	281-695	1,438-7,326	2-6	218-840

**Table 13.** Season-total estimates of Chinook encounters by size/mark status, and total estimates of angler effort, summarized for all seasons to date of the Area 5 summer mark-selective Chinook fishery.

Area	Season Dates	Effort (Angler Trips)	Retained Chinook				Released Chinook				Total Encounters
			LM	LU	SM	SU	LM	LU	SM	SU	
5	July 5 - August 3, 2003	19,398	2,251	53	225	0	336	3,435	1,656	5,174	13,131
5	July 1 - August 10, 2004	25,174	2,706	0	194	0	404	4,017	1,167	2,462	10,950
5	July 1 - August 10, 2005	30,115	1,520	23	100	26	227	1,418	1,210	1,459	5,984
5	July 1 - August 14, 18-21, 2006	23,177	3,105	10	196	7	464	3,125	1,010	2,212	10,129
5	July 1 - August 9, 2007	18,830	2,969	23	280	94	444	2,509	1,371	1,118	8,808
5	July 1 - August 10, 2008	13,004	2,773	0	45	0	414	1,869	65	330	5,496
5	July 1 - August 6, 2009	23,662	4,843	78	1,115	362	724	6,210	9,823	14,309	37,463
5	July 1 - August 15, 2010	16,806	5,461	14	242	0	816	4,961	3,163	4,140	18,796

## 2) Marine Area 6 Summer 2010 Mark-selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a mark-selective Chinook fishery (MSF) in Marine Area 6 for the eighth summer season from July 1 through August 15, 2010. WDFW's Puget Sound Sampling Unit (PSSU) implemented a comprehensive sampling program consisting of dockside angler interviews with catch sampling ("Baseline Sampling" approach; see WDFW 2011a for details) along with intensive efforts to distribute and collect voluntary trip reports (VTRs) from the angling public. While the Baseline Sampling approach did not provide a means for generating in- or immediately post-season estimates of fishery total catch and effort, the observed catch per angler trip and species composition data obtained from baseline sampling will ultimately be combined with Catch Record Card (CRC) data to produce the fishery-total estimates at a later time (approximately one year following the fishery). **Table 14** summarizes the parameters estimated and the sampling activities associated with each parameter. Specific procedures used for collecting these data and estimating critical data parameters are presented in detail in our separate Methods Report (WDFW 2011a).

During summer 2010 in Area 6 we once again (each season since 2008) focused considerable effort on our enhanced VTR program to obtain estimates of Chinook encounter rates by size class (legal or sublegal) and mark status (ad-marked or unmarked). For the enhanced VTR program, a WDFW technician was assigned to work exclusively on distributing and collecting VTRs from the angling public in Area 6. Additionally, the VTR technician and dockside samplers educated anglers about the VTR program and salmon species identification in a focused effort to increase the sample size of VTR-based encounters data.

In the following section we present results from our monitoring activities during the July 1 - August 15, 2010 Area 6 summer selective Chinook fishery season. Note that we will generate estimates of fishery-total Chinook encounters and mortalities by size/mark group for the Area 6 Chinook MSF at a later date, when post-season CRC-based retained Chinook estimates become available for the 2010 Area 6 Chinook MSF season (approximately one year after the fishery). We will then apply the proportion of legal-marked Chinook obtained from VTRs in the 2010 Area 6 Chinook MSF to the CRC-based retained Chinook estimate, enabling an estimate of total Chinook encounters and associated mortalities using Conrad and McHugh's (2008) bias-corrected method (see WDFW 2011a, Appendix B).

**Table 14.** Sampling/estimation details on target parameters associated with the overall Area 6 mark-selective fishery monitoring program.

Activity	Focal Parameter(s)	Secondary Parameter(s)	Sample Unit(s)	Finest Estimation Time Step	Comments
Dockside Angler Interviews (Baseline Sampling)	Observed (in-sample) fishing effort (boat & angler trips); kept and released fish.	Catch rates (CPUE); length, age, and CWT composition of harvest <sup>1</sup> ; collection of angler fishing methods.	Angler trip; kept fish; reported fish release	Week	Observed catch per angler trip and species composition data obtained from baseline sampling will ultimately be combined with Catch Record Card (CRC) data to produce fishery-total estimates at a later time (approximately one year following the fishery).
Voluntary Trip Reports (VTRs)	Size (legal/sublegal) and mark-status composition (marked, unmarked) of encountered Chinook	Encounter data for non-Chinook species (e.g., coho) that the angler may record on the VTR form	Fish encounter	Season (46 days)	VTR data will be used in the estimation of total Chinook encounters by size/mark group (LM=72.2%, LU=24.6%, SM=2.0%, SU=1.2%; <b>Table 19</b> ) and associated impacts, once CRC-based retained Chinook estimates become available, using Conrad and McHugh's (2008) bias-corrected method.
Overall Fishery Impacts Estimation	Total Chinook encounters and mortalities, by size/mark-status group	Ratios of encounters and mortalities per kept Chinook	N/A	Season (46 days)	Will be estimated at a later date, when post-season CRC-based retained Chinook estimates become available (approximately one year after the fishery). We will then apply the proportion of legal-marked Chinook obtained from VTRs to the CRC-based retained Chinook estimate, enabling an estimate of total Chinook encounters and associated mortalities by size/mark group using Conrad and McHugh's (2008) bias-corrected method (see WDFW 2011a, Appendix B).
Coded-wire tag (CWT) Impacts Estimation	Marked/unmarked double-index tag (DIT) encounters and mortalities	N/A	N/A	Season (46 days)	Will be estimated at a later date, when CRC-based fishery total estimates become available (approximately one year after the fishery). The temporal resolution of DIT impacts is constrained by the total number of tags recovered.

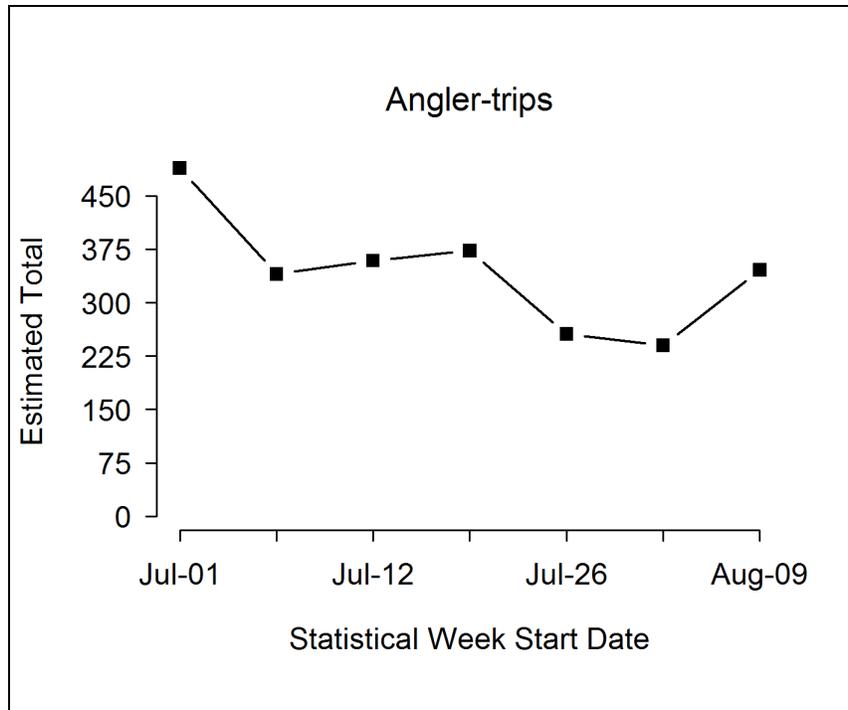
<sup>1</sup> Length data and CWT composition data for landed catch consisted of observed (in-sample) data only –i.e., not expanded to fishery totals.

**Table 15.** List of sites sampled, with the number and proportion of site-days sampled during the Area 6 July 1-August 15, 2010 mark-selective Chinook fishery.

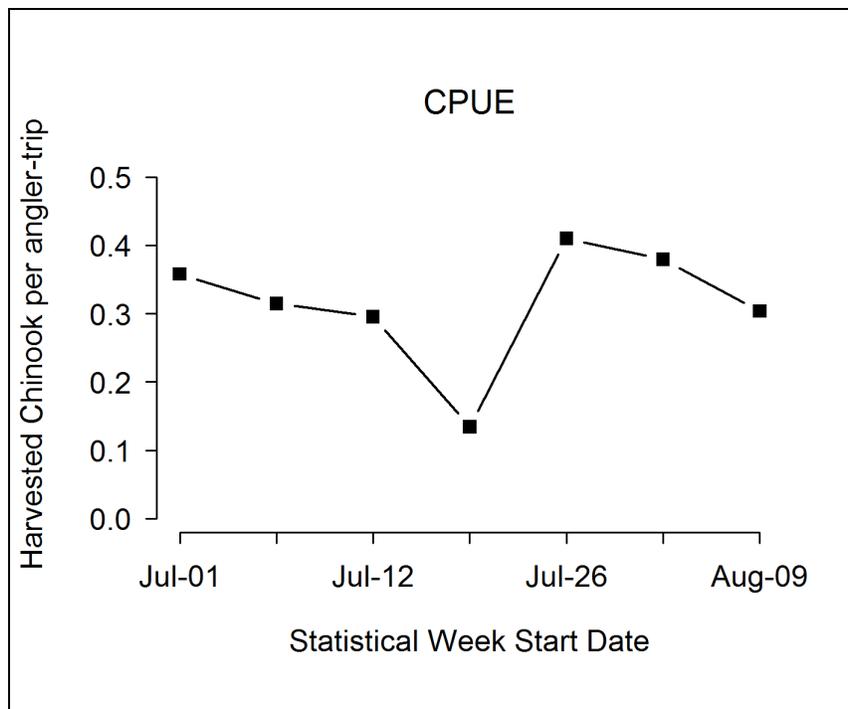
Area 6 Dockside Sample Sites	Sample days per month		Sample Days (Jul. 1 – Aug. 15)	% of Total
	July (1-31)	Aug. (1-15)		
Freshwater Bay Ramp	11	4	15	18.1%
Port Angeles Public Ramp - Ediz Hook	23	10	33	39.8%
Port Angeles West Ramp	16	3	19	22.9%
Cornet Bay Public Ramp	10	6	16	19.3%
<b>TOTAL</b>	<b>60</b>	<b>23</b>	<b>83</b>	<b>100.0%</b>

**Table 16.** Observations of fishing effort, salmon harvest, and reported salmon releases, by week, for the Area 6 July 1-August 15, 2010 mark-selective Chinook fishery. Note: displayed values are sample observations (i.e., summed across sampled sites) and not fishery-total estimates. AD = marked (i.e., adipose-clipped), UM = unmarked; UNK = unknown mark status.

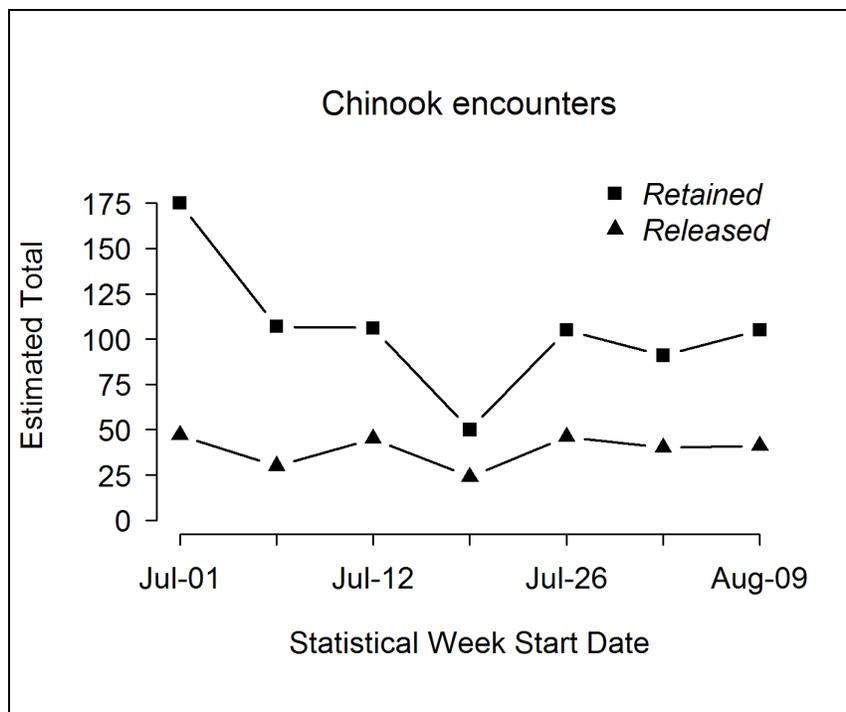
Month	Stat Week	Effort		RETAINED					RELEASED						
		Boats	Anglers	AD Chin	UM Chin	AD Coho	UM Coho	Sockeye	AD Chin	UM Chin	UNK Chin	AD Coho	UM Coho	UNK Coho	Unid Salmon
July	27	249	489	175	0	0	0	0	41	6	0	0	0	0	0
	28	173	340	105	2	0	0	0	26	4	0	0	0	0	0
	29	190	359	106	0	0	0	0	35	7	3	0	0	0	0
	30	195	373	50	0	0	0	0	23	0	1	1	0	0	2
	31	137	256	105	0	0	0	1	42	4	0	1	0	0	0
Aug.	32	135	240	91	0	2	0	0	22	14	4	0	0	0	0
	33	191	346	104	1	0	0	0	39	1	1	1	0	1	2
<b>Grand Total:</b>		<b>1270</b>	<b>2403</b>	<b>736</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>228</b>	<b>36</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>4</b>



**Figure 6.** Temporal patterns in fishing effort (angler trips) during the Area 6 July 1-August 15, 2010 mark-selective Chinook fishery. Note: displayed values are sample observations (i.e., summed across sampled sites) and not fishery-total estimates.



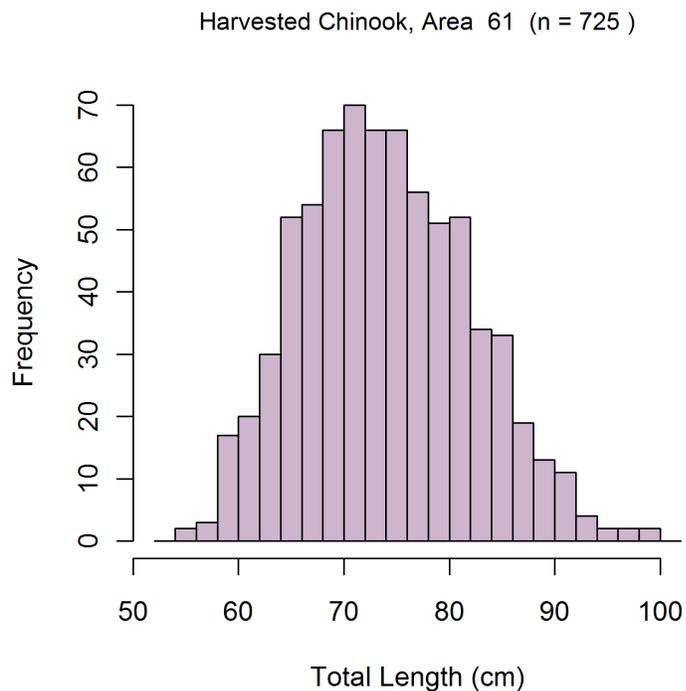
**Figure 7.** Temporal patterns in CPUE (landed Chinook per angler trip) during the Area 6 July 1-August 15, 2010 mark-selective Chinook fishery.



**Figure 8.** Temporal patterns (by statistical week) in Chinook encounters (retained and released) during the Area 6 July 1-August 15, 2010 mark-selective Chinook fishery. Note: displayed values are sample observations (i.e., summed across sampled sites) and not fishery-total estimates.

**Table 17.** Summary of length samples collected from retained Chinook salmon during dockside angler interviews, Area 6 July 1 – August 15, 2010 mark-selective Chinook fishery.

Mark Type	Number Sampled		Total
	Legal-size	Sublegal-size	
Marked	723	2	725
Unmarked	1	0	1
<b>Total</b>	<b>724</b>	<b>2</b>	<b>726</b>



**Figure 9.** Length-frequency distributions of retained marked Chinook sampled at dockside during the Area 6 July 1-August 15, 2010 mark-selective Chinook fishery.

**Table 18.** Summary of coded-wire tags recovered from Chinook salmon harvested during the Area 6 July 1-August 15, 2010 mark-selective Chinook fishery. The field “No. DITs” corresponds to the number of tags that belonged to double-index tag groups.

Release Domain	Release Region (% Contribution)	Release Site	Rearing Location	CWTs Recovered	No. DITs
Washington	Northern Washington (18.9%)	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	2 (5.4%)	0
		FRIDAY CR 03.0017	SAMISH HATCHERY	5 (13.5%)	5
	Hood Canal (24.3%)	FINCH CR 16.0222	HOODSPORT HATCHERY	1 (2.7%)	0
		PURDY CR 16.0005	GEORGE ADAMS HATCHRY	8 (21.6%)	8
	Skagit River (2.7%)	BAKER R 03.0435	N/A	1 (2.7%)	0
	Mid Puget Sound (21.6%)	GREEN R 09.0001	N/A	1 (2.7%)	0
		GROVERS CR 15.0299	GROVERS CR HATCHERY	2 (5.4%)	2
		BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	2 (5.4%)	2
		GROVERS CR HATCHERY	GROVERS CR HATCHERY	3 (8.1%)	3
		Southern Puget Sound (8.1%)	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	2 (5.4%)
CHAMBERS CR 12.0007	GARRISON HATCHERY		1 (2.7%)	0	
Columbia River	Central Columbia River (Bonneville Dam to McNary Dam) (8.1%)	SPRING CR 29.0159	SPRING CR NFH	3 (8.1%)	3
	Lower Columbia River (Mouth to Bonneville Dam) (2.7%)	BIG CR (LWR COL R)	BIG CR HATCHERY	1 (2.7%)	1
British Columbia	Lower Fraser River (8.1%)	R-CHILLIWACK R	H-CHILLIWACK R	2 (5.4%)	2
		R-HARRISON R	H-CHEHALIS R	1 (2.7%)	0
	Georgia Strait / Vancouver Island (5.4%)	R-COWICHAN ESTUARY	N/A	1 (2.7%)	0
		R-COWICHAN R	H-COWICHAN R	1 (2.7%)	0
<b>Total</b>				<b>37</b>	<b>28</b>

**Table 19.** Total Chinook encountered (retained and released) by anglers reporting their catch on voluntary trip reports (VTRs) in the Area 6 July 1-August 15, 2010 mark-selective Chinook fishery, with estimates of season-total size/mark group proportions. AD = marked (i.e., adipose-clipped), UM = unmarked. Variances associated with size/mark-status proportions are provided in parentheses.

Data source	Effort & Sample Size	Legal		Sublegal		Total	Mark Rates	
		AD	UM	AD	UM		Overall	Legal
Private Boat VTR	115 1-trip VTRs, 305 Angler Trips	179	61	5	3	248	74.2%	74.6%
Size/mark-status comp:		0.722	0.246	0.020	0.012			
Variance:		(0.00081)	(0.00075)	(0.00008)	(0.00005)			

### 3) Marine Areas 9 and 10 Summer 2010 Mark-selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a mark-selective Chinook fishery (MSF) in Marine Areas 9 and 10 for the fourth summer season from July 16 through August 31, 2010. WDFW's Puget Sound Sampling Unit (PSSU) implemented a comprehensive monitoring program in both areas throughout the season in order to collect the data needed to estimate key parameters characterizing the fishery in each area and associated impacts on unmarked salmon. Sampling activities included intensive dockside creel sampling (with in-season catch and effort estimates), on-the-water effort surveys (boat surveys), test fishing, as well as distributing and collecting voluntary trip reports (VTRs) from the angling public. **Table 20** summarizes the parameters estimated and the sampling activities associated with each parameter. Specific procedures used for collecting these data and estimating critical data parameters are presented in detail in our separate Methods Report (WDFW 2011a).

In the following section we present results from our monitoring activities during the July 16 - August 31, 2010 Areas 9 and 10 summer selective Chinook fishery season. To generate the estimates of Chinook encounters and mortalities by size/mark group in each area, we used each area's test fishery-based estimates of Chinook encounter rates by size/mark group (legal size-marked [LM], legal size-unmarked [LU], sublegal size-marked [SM], and sublegal size-unmarked [SU]), as detailed below, and applied Conrad and McHugh's (2008) bias-corrected encounters estimation approach (see WDFW 2011a, Appendix B).

**Table 20.** Sampling/estimation details on target parameters associated with the overall summer Areas 9 and 10 mark-selective fishery monitoring program.

Activity	Focal Parameter(s)	Secondary Parameter(s)	Sample Unit(s)	Finest Estimation Time Step	Comments
Dockside Creel Sampling	Fishing effort (boat & angler trips); kept and released fish <sup>1</sup>	Catch rates (CPUE); length, age, and CWT composition of harvest <sup>2</sup> ; collection of angler fishing methods.	Angler trip; kept fish; reported fish release	Week <sup>1</sup>	Within weeks, estimates were also produced by day type strata (weekday/weekend). Each week, we sampled every Friday, Saturday, and Sunday, and we randomly selected $n=2$ out of $N=4$ weekday days (Monday-Thursday) for sampling.
On-the-water Surveys (Boat Surveys)	Proportion of total angler effort accessing fishery via sample-frame sites (i.e., site "size measures") versus out-of-frame sites. Size measures were used to select sites for dockside creel surveys using a probability proportional to size (PPS) site selection process, and to produce total-fishery creel estimates (see WDFW 2011a).	Data on spatial distribution of recreational fishing boats in the area.	Boats and anglers;	Month	<b>Area 9:</b> A total of 5 boat surveys (3 weekend and 2 weekday) were conducted during the 1.5 month fishery. <b>Area 10:</b> A total of 5 boat surveys (3 weekend and 2 weekday) were conducted during the 1.5 month fishery.
Test Fishing	Size (legal/sublegal) and mark-status composition (marked, unmarked) of encountered Chinook	Chinook length, age, and DNA-based <sup>3</sup> stock composition; species composition of non-Chinook encounters	Fish encounter	Season	In each area, season-total test fishery data were used in the estimation of total Chinook encounters by size/mark group and associated impacts; <b>Area 9:</b> LM = 65.2%, LU = 23.2%, SM = 8.7%, SU = 2.9%. <b>Area 10:</b> LM=47.1%, LU=14.7%, SM=14.7%, SU=23.5%). Also see row below and <b>Table 28</b> .
Voluntary Trip Reports (VTRs)	Size (legal/sublegal) and mark-status composition (marked, unmarked) of encountered Chinook	Encounter data for non-Chinook species (e.g., coho) that the angler may record on the VTR form	Fish encounter	Season	In each area, we compared test fishery and VTR data sets using Fisher's Exact test; results were: <b>Area 9:</b> $\chi^2 = 7.4672$ , 3 df; $P = 0.0584$ <b>Area 10:</b> $\chi^2 = 2.1994$ , 3 df; $P = 0.532$ Test fishery only data were used (rather than test fishery and VTR data combined) for subsequent encounters estimation steps (see <b>Table 28</b> and text following the table for full explanation).
Overall Fishery Impacts Estimation	Total Chinook encounters and mortalities, by size/mark-status group	Ratios of encounters and mortalities per kept Chinook	N/A	Season	Estimated on a monthly time step but considered at the season-total level.
Coded-wire tag (CWT) Impacts Estimation	Marked/unmarked double-index tag (DIT) encounters and mortalities	N/A	N/A	Season	The temporal resolution of DIT impacts is constrained by the total number of tags recovered.

<sup>1</sup> Under the "bias-corrected Method-2" approach (Conrad and McHugh 2008), Chinook releases can be estimated only as finely as test fishery data allow.

<sup>2</sup> The length and CWT composition of landed catch was assessed on a season-wide basis for impact estimation.

<sup>3</sup> Though samples were collected, DNA-based estimates of stock composition are not yet available for this fishery.

**Table 21.** Estimates of total fishing effort and total salmon catch (harvest and reported releases) for the private (non-charter) fleet and charter boats during the July 16 – August 31, 2010 Area 9 mark-selective fishery. Values may not add exactly due to rounding error. AD = marked (i.e., adipose-clipped), UM = unmarked.

Month	Stat. Week	Start Date	End Date	Est. Effort <sup>1/</sup>		Est. Retained Chinook <sup>1/</sup>		Est. Released Chinook <sup>2/</sup>		Est. Total Chinook Encounters
				Boats	Anglers	AD	UM	AD	UM	
July	29	16-Jul	18-Jul	1,918	4,198	1,311	0	394	602	2,307
	30	19-Jul	25-Jul	2,559	5,514	839	0	252	385	1,475
	31	26-Jul	1-Aug	2,783	5,995	957	0	287	439	1,683
August	32	2-Aug	8-Aug	1,880	4,195	558	16	168	241	982
	33	9-Aug	15-Aug	1,965	4,147	602	13	181	264	1,060
	34	16-Aug	22-Aug	1,539	3,216	423	8	127	186	744
	35	23-Aug	29-Aug	1,443	3,139	242	3	73	108	426
	36	30-Aug	31-Aug	220	409	5	0	2	2	9
<b>Total Private Fleet Estimates:</b>				14,306	30,812	4,938	39	1,482	2,227	8,685
<b>Total from Charter Boats <sup>1/2/</sup>:</b>				92	388	354	0	8	147	509
<b>Grand Total:</b>				<b>14,398</b>	<b>31,200</b>	<b>5,292</b>	<b>39</b>	<b>1,490</b>	<b>2,374</b>	<b>9,194</b>
<b>Variance:</b>				692,441	3,264,007	129,758	309	894,524	280,319	993,233
<b>Standard Error:</b>				832	1807	360	18	946	529	997
<b>CV (%):</b>				6%	6%	7%	45%	64%	24%	12%
<b>95% CI:</b>				12,675-15,937	27,271-34,353	4,231-5,644	5-73	-372-3,336	1,189-3,264	6,732-10,639

<sup>1/</sup> For the private (non-charter) fleet, we estimated boats, anglers, and retained Chinook catch via the Murthy estimator method (see WDFW 2011a), whereas we obtained a full count (census) of these data from charter vessels over the season.

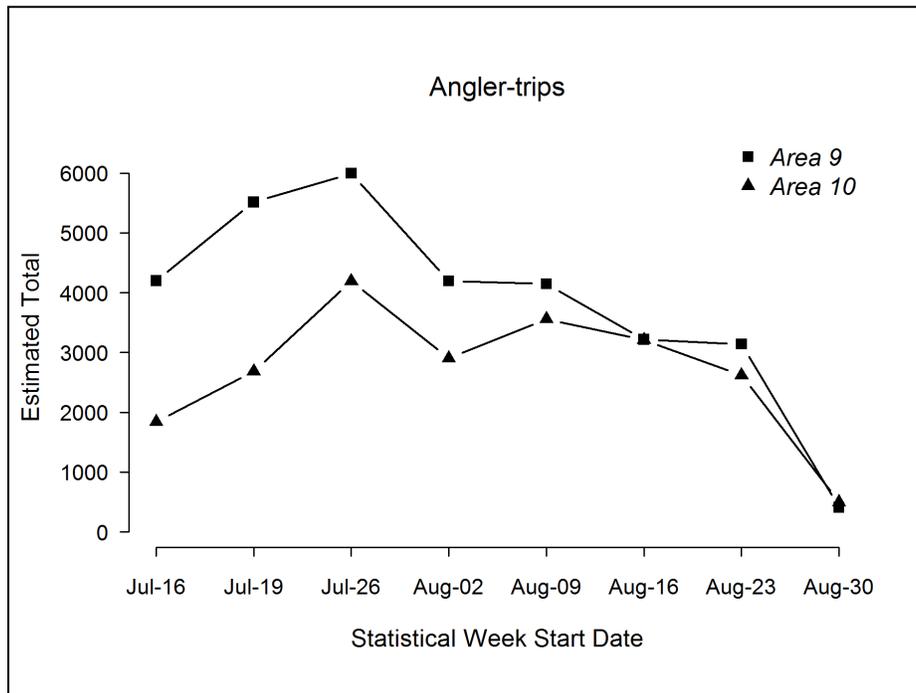
<sup>2/</sup> For both the private fleet and charter boats, we estimated released Chinook as the difference between total Chinook encounters generated using a bias-corrected "Method 2" estimator (see WDFW 2011a and Conrad and McHugh [2008] for additional details) and the creel-estimated (or censused, for charter boats) number of retained Chinook.

**Table 22.** Estimates of total fishing effort and total salmon catch (harvest and reported releases) for the private (non-charter) fleet and charter boats during the July 16 – August 31, 2010 Area 10 mark-selective fishery. Values may not add exactly due to rounding error. AD = marked (i.e., adipose-clipped), UM = unmarked.

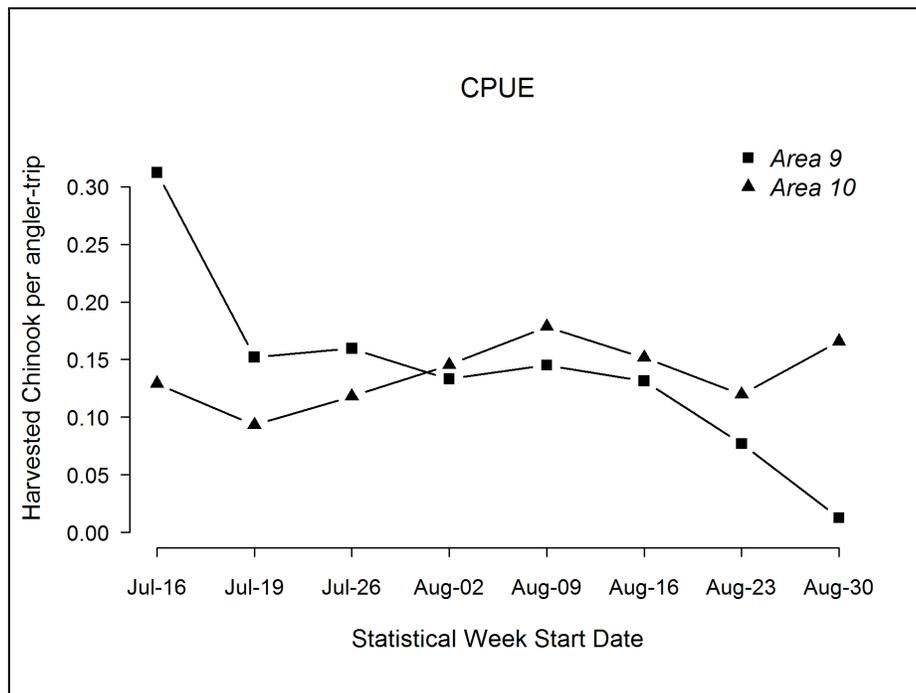
Month	Stat. Week	Start Date	End Date	Est. Effort		Est. Retained Chinook <sup>1/</sup>		Est. Released Chinook <sup>2/</sup>		Est. Total Chinook Encounters
				Boats	Anglers	AD	UM	AD	UM	
July	29	16-Jul	18-Jul	860	1,839	238	0	116	219	573
	30	19-Jul	25-Jul	1,371	2,685	251	3	123	228	604
	31	26-Jul	1-Aug	2,140	4,194	496	0	243	457	1,195
August	32	2-Aug	8-Aug	1,533	2,904	422	6	207	383	1,018
	33	9-Aug	15-Aug	1,762	3,559	636	9	311	577	1,532
	34	16-Aug	22-Aug	1,637	3,211	487	19	238	430	1,173
	35	23-Aug	29-Aug	1,360	2,616	313	5	153	284	755
	36	30-Aug	31-Aug	302	497	82	0	40	76	199
<b>Total Private Fleet Estimates:</b>				10,965	21,504	2,924	42	1,431	2,654	7,050
<b>Total from Charter Boats <sup>1/2/</sup>:</b>				30	132	64	0	26	38	128
<b>Grand Total:</b>				<b>10,995</b>	<b>21,636</b>	<b>2,988</b>	<b>42</b>	<b>1,457</b>	<b>2,692</b>	<b>7,178</b>
<b>Variance:</b>				221,515	932,445	29,807	221	1,026,311	586,653	1,868,243
<b>Standard Error:</b>				471	966	173	15	1,013	766	1,367
<b>CV (%):</b>				4%	5%	6%	35%	71%	29%	19%
<b>95% CI:</b>				10,042-11,887	19,612-23,397	2,585-3,262	13-71	-555-3,416	1,152-4,155	4,371-9,729

<sup>1/</sup> For the private (non-charter) fleet, we estimated boats, anglers, and retained Chinook catch via the Murthy estimator method (see WDFW 2011a), whereas we obtained a full count (census) of these data from charter vessels over the season.

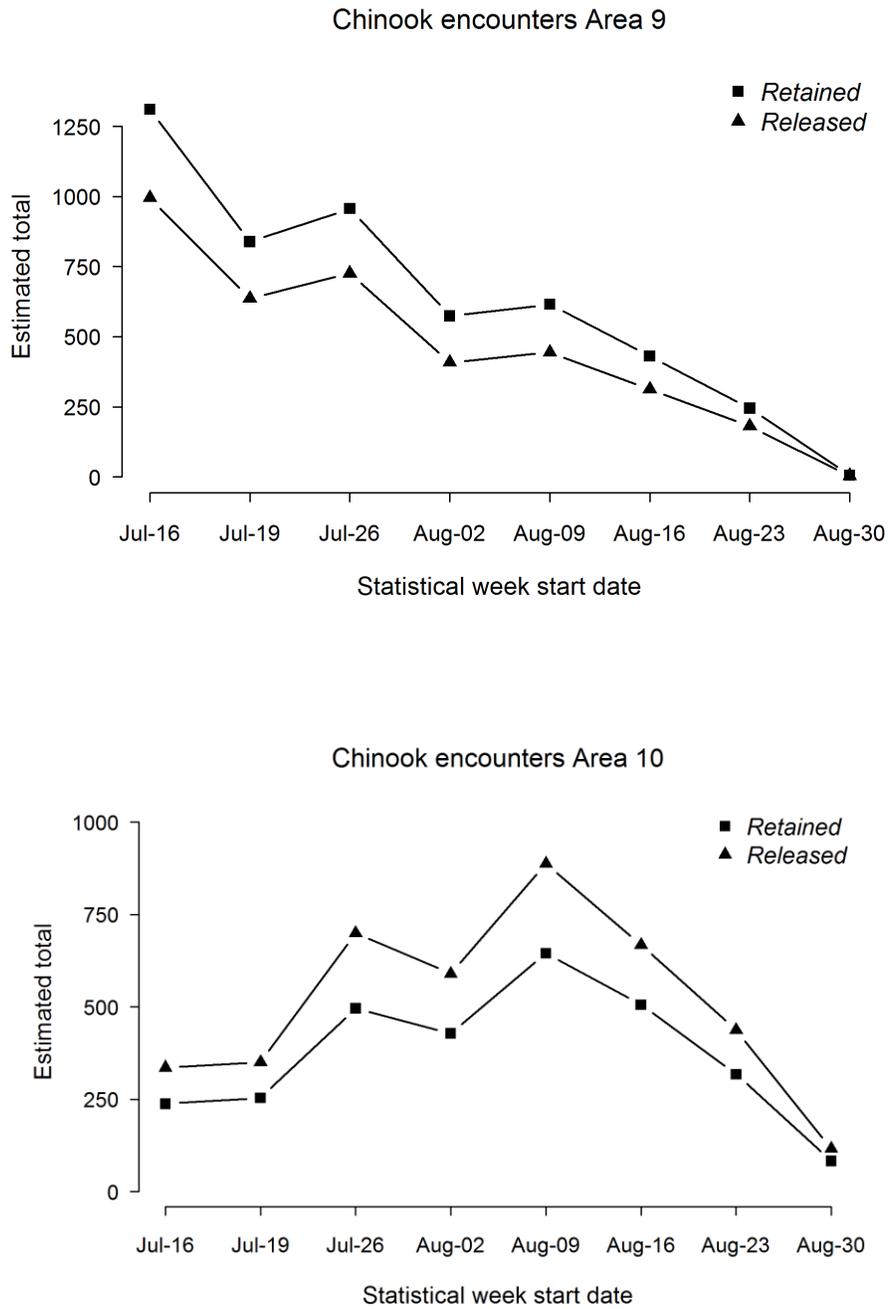
<sup>2/</sup> For both the private fleet and charter boats, we estimated released Chinook as the difference between total Chinook encounters generated using a bias-corrected "Method 2" estimator (see WDFW 2011a and Conrad and McHugh [2008] for additional details) and the creel-estimated (or censused, for charter boats) number of retained Chinook.



**Figure 10.** Temporal patterns in fishing effort for the recreational private boat fleet (i.e., excluding charter boat effort) during the July 16 – August 31, 2010 Areas 9 and 10 mark-selective Chinook fisheries.



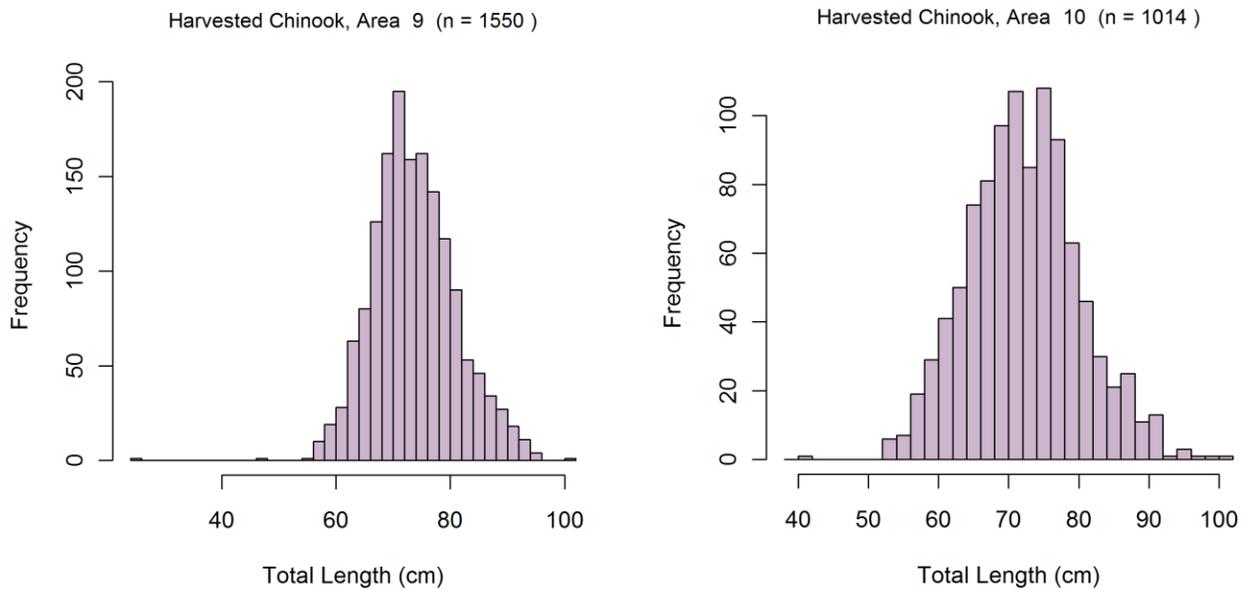
**Figure 11.** Temporal patterns in CPUE (landed Chinook per angler trip) during the July 16 – August 31, 2010 Areas 9 and 10 mark-selective Chinook fisheries.



**Figure 12.** Temporal patterns in total estimated Chinook harvest and releases during the Areas 9 (*upper panel*) and 10 (*lower panel*), July 16-August 31, 2010, mark-selective Chinook fisheries.

**Table 23.** Summary of length samples collected from retained Chinook salmon during dockside angler interviews, Areas 9 and 10 mark selective Chinook fisheries, July 16-August 31, 2010.

Area	Mark Type	Number Sampled		
		Legal-size	Sublegal-size	Total
Area 9	Marked	1,547	3	1,550
	Unmarked	6	1	7
	<b>Total</b>	<b>1,553</b>	<b>4</b>	<b>1,557</b>
Area 10	Marked	1,001	13	1,014
	Unmarked	7	2	9
	<b>Total</b>	<b>1,008</b>	<b>15</b>	<b>1,023</b>



**Figure 13.** Length-frequency distributions of retained marked Chinook sampled at dockside during the Areas 9 (*left panel*) and 10 (*right panel*), July 16 - August 31, 2010, mark-selective Chinook fisheries.

**Table 24.** Summary of coded-wire tags recovered from Chinook salmon harvested during the **Area 9** July 16 – August 31, 2010 mark-selective Chinook fishery. The field “No. DITs” corresponds to the number of tags that belonged to double-index tag groups.

Release Domain	Release Region (% Contribution)	Release Site	Rearing Location	CWTs Recovered	No. DITs
Washington	Northern Washington (9.9%)	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	4 (3.6%)	0
		FRIDAY CR 03.0017	SAMISH HATCHERY	7 (6.3%)	7
	Hood Canal (21.6%)	FINCH CR 16.0222	HOODSPORT HATCHERY	7 (6.3%)	0
		PURDY CR 16.0005	GEORGE ADAMS HATCHRY	15 (13.5%)	15
		JOHN CR 16.0253	RFEG 6 HOOD CANAL	2 (1.8%)	0
	Northern Puget Sound (3.6%)	TULALIP CR 07.0001	BERNIE GOBIN HATCH	1 (0.9%)	0
		WALLACE R 07.0940		1 (0.9%)	0
		WALLACE R 07.0940	WALLACE R HATCHERY	2 (1.8%)	0
	Skagit River (2.7%)	CASCADE R 03.1411	MARBLEMOUNT HATCHERY	2 (1.8%)	1
		BAKER R 03.0435	N/A	1 (0.9%)	0
	Mid Puget Sound (37.8%)	GROVERS CR 15.0299	GROVERS CR HATCHERY	1 (0.9%)	1
		COWSKULL ACCLIM POND	COWSKULL ACCLIM POND	1 (0.9%)	0
		GROVERS CR HATCHERY	GROVERS CR HATCHERY	22 (19.8%)	22
		BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	4 (3.6%)	4
		GREEN R 09.0001		9 (8.1%)	0
		VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	5 (4.5%)	0
	Southern Puget Sound (17.1%)	CHAMBERS CR 12.0007	GARRISON HATCHERY	9 (8.1%)	0
		LAKWOOD HATCHERY	LAKWOOD HATCHERY	1 (0.9%)	0
		CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	8 (7.2%)	8
KALAMA CR 11.0017		KALAMA CR HATCHERY	1 (0.9%)	0	
Columbia River	Upper Columbia R (above McNary Dam; excludes Snake River) (0.9%)	CHIWAWA R 45.0759	N/A	1 (0.9%)	0
British Columbia	Lower Fraser River (6.3%)	R-CHILLIWACK R	H-CHILLIWACK R	5 (4.5%)	5
		R-HARRISON R	H-CHEHALIS R	2 (1.8%)	0
<b>TOTAL</b>				<b>111</b>	<b>63</b>

**Table 25.** Summary of coded-wire tags recovered from Chinook salmon harvested during the **Area 10** July 16 – August 31, 2010 mark-selective Chinook fishery. The field “No. DITs” corresponds to the number of tags that belonged to double-index tag groups.

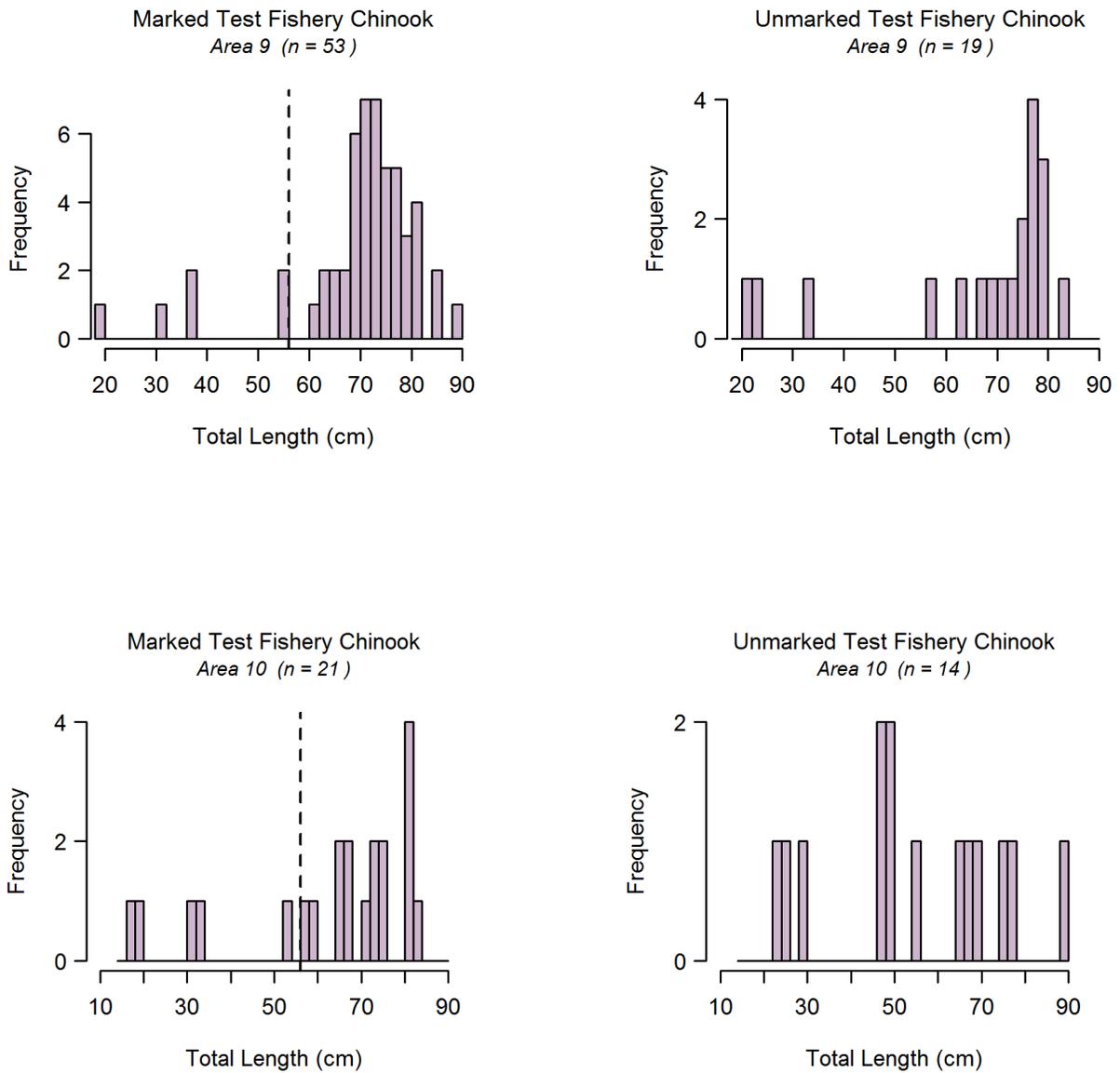
Release Domain	Release Region (% Contribution)	Release Site	Rearing Location	CWTs Recovered	No. DITs
Washington	Strait of Juan De Fuca (1.8%)	ELWHA R 18.0272	N/A	1 (1.8%)	0
	Hood Canal (19.3%)	FINCH CR 16.0222	HOODSPORT HATCHERY	8 (14%)	0
		JOHN CR 16.0253	RFEG 6 HOOD CANAL	1 (1.8%)	0
		PURDY CR 16.0005	GEORGE ADAMS HATCHRY	1 (1.8%)	1
		SKOKOMISH R 16.0001	RICKS PD (LLTK)	1 (1.8%)	0
	Mid Puget Sound (26.3%)	GREEN R 09.0001	ICY CR HATCHERY	1 (1.8%)	0
		GREEN R 09.0001	N/A	1 (1.8%)	0
		WHITE R 10.0031	WHITE RIVER HATCHERY	1 (1.8%)	0
		GROVERS CR HATCHERY	GROVERS CR HATCHERY	5 (8.8%)	5
		BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	7 (12.3%)	7
	Southern Puget Sound (38.6%)	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	9 (15.8%)	9
		CHAMBERS CR 12.0007	GARRISON HATCHERY	6 (10.5%)	0
		LAKWOOD HATCHERY	LAKWOOD HATCHERY	3 (5.3%)	0
		MINTER CR 15.0048	MINTER HATCHERY	1 (1.8%)	0
		KALAMA CR 11.0017	KALAMA CR HATCHERY	3 (5.3%)	0
British Columbia	Lower Fraser River (12.2%)	R-CHILLIWACK R	H-CHILLIWACK R	6 (10.5%)	6
		R-HARRISON R	H-CHEHALIS R	1 (1.8%)	0
	Fraser River/Thompson River (1.8%)	R-NICOLA R	H-SPIUS CR	1 (1.8%)	0
<b>TOTAL</b>				<b>57</b>	<b>28</b>

**Table 26.** Composition of test fishery Chinook encounters and associated mark-rate and size/mark-status proportion estimates for the July 16 – August 31, 2010 **Area 9** mark-selective Chinook fishery. Variances associated with size/mark-status proportions and mark rates are provided in parentheses.

Stat Week	Fishing Effort		Legal		Sublegal		Total
	Days	Hours Fished	AD	UM	AD	UM	
29	1	6.5	4	0	0	0	4
30	5	27.4	6	2	4	0	12
31	5	26.5	10	5	0	1	16
32	4	25.7	3	1	1	0	5
33	5	24.9	4	6	0	0	10
34	5	22.3	6	2	0	0	8
35	5	24.8	11	0	1	1	13
36	2	7.5	1	0	0	0	1
<b>Total</b>	<b>32</b>	<b>165.6</b>	<b>45</b>	<b>16</b>	<b>6</b>	<b>2</b>	<b>69</b>
<b>Size/mark-status composition:</b> 0.652 (0.00334)    0.232 (0.00262)    0.087 (0.00117)    0.029 (0.00041) <b>Legal size mark rate:</b> 0.74 (0.00322) <b>Overall mark rate:</b> 0.74 (0.00284)							

**Table 27.** Composition of test fishery Chinook encounters and associated mark-rate and size/mark-status proportion estimates for the July 16 – August 31, 2010 **Area 10** mark-selective Chinook fishery. Variances associated with size/mark-status proportions and mark rates are provided in parentheses.

Stat Week	Fishing Effort		Legal		Sublegal		Total
	Days	Hours Fished	AD	UM	AD	UM	
29	1	5.0	1	0	0	0	1
30	5	22.0	1	0	0	0	1
31	5	28.0	3	1	1	1	6
32	4	23.0	1	1	4	3	9
33	5	27.5	3	1	0	0	4
34	5	25.8	3	0	0	1	4
35	5	28.0	4	2	0	1	7
36	2	7.0	0	0	0	2	2
<b>Total</b>	<b>32</b>	<b>166.3</b>	<b>16</b>	<b>5</b>	<b>5</b>	<b>8</b>	<b>34</b>
<b>Size/mark-status composition:</b> 0.471 (0.00755)    0.147 (0.00380)    0.147 (0.00380)    0.235 (0.00545) <b>Legal size mark rate:</b> 0.76 (0.00907) <b>Overall mark rate:</b> 0.62 (0.00716)							



**Figure 14.** Length-frequency distributions of marked (*left panel*) and unmarked (*right panel*) Chinook encountered by test fishers during the Areas 9 (*upper panel*) and 10 (*lower panel*) mark-selective Chinook fisheries, July 16-August 31, 2010. Note that the vertical dashed line in the left panel corresponds to the legal size limit (22 inches or 56 cm.).

**Table 28.** Total Chinook encountered (retained and released) by anglers reporting their catch on voluntary trip reports (VTRs), compared to test fishing encounter data and pooled results (VTRs + test fishery data), in the July 16-August 31, 2010 Areas 9 and 10 mark-selective Chinook fisheries, with estimates of legal, sublegal, and overall mark rates. AD = marked (i.e., adipose-clipped), UM = unmarked.

Marine Area	Data Source		VTRs (n)	Angler Trips	Chinook Encounters by Size/mark status					Legal Mark Rate	Overall Mark Rate	
					LM Kept	LM Rel'd	LU	SM	SU			TOTAL
Area 9	Private Boat VTRs	Season Total Number	45	96	44	1	27	4	11	87	62.5%	56.3%
		Encounter Rates (LM, LU, SM, SU)			51.7%		31.0%	4.6%	12.6%	100.0%		
	Test Fishing	Season Total Number	32	64	45	0	16	6	2	69	73.8%	73.9%
Encounter Rates (LM, LU, SM, SU)				65.2%		23.2%	8.7%	2.9%	100.0%			
Pooled (VTR + TF)	Pooled Total, Area 9	74	56	89	1	43	10	13	156	67.7%	64.1%	
	Pooled Encounter Rates (LM, LU, SM, SU)			57.7%		27.6%	6.4%	8.3%	100.0%			
Area 10	Private Boat VTRs	Season Total Number	29	56	32	1	7	7	7	54	82.5%	74.1%
		Encounter Rates (LM, LU, SM, SU)			61.1%		13.0%	13.0%	13.0%	100.0%		
	Test Fishing	Season Total Number	32	64	16	0	5	5	8	34	76.2%	61.8%
Encounter Rates (LM, LU, SM, SU)				47.1%		14.7%	14.7%	23.5%	100.0%			
Pooled (VTR + TF)	Pooled Total, Area 10	64	128	48	1	12	12	15	88	80.3%	69.3%	
	Pooled Encounter Rates (LM, LU, SM, SU)			55.7%		13.6%	13.6%	17.0%	100.0%			

Pearson’s chi-square test was used to compare the size/mark status proportions of the test fishery data to the VTR data in Areas 9 and 10. In Area 9, the  $\chi^2$  statistic was not significant ( $\chi^2 = 7.4672$ , 3 df;  $P = 0.0584$ ), indicating no significant difference between the two samples (although,  $P$  was only slightly above the  $P=0.05$  level for determining a significant difference). Even though differences between Area 9 VTR and test fishery data were not statistically significant, we elected not to pool the two data sets due to the generally higher-quality data collected in the test fishery, and because the Area 9 test fishery sample size (n=69) was sufficient to produce a coefficient of variation (CV) of 9% (indicating an acceptable precision level, below our default of 20%) for the test fishery-based estimate of the proportion of legal-marked Chinook encountered in the fishery. Therefore, only the test fishery data were used to estimate the size/mark status proportions needed to produce the Area 9 fishery-total encounter estimates.

Similarly, in Area 10, the  $\chi^2$  statistic was not significant ( $\chi^2 = 2.1994$ , 3 df;  $P = 0.532$ ), indicating no significant difference between the VTR and test fishery samples. However, we decided not to pool the two data sets due to a sufficient sample size in the Area 10 test fishery (n=34) to produce a CV of 19 % (just under our acceptable precision threshold of less than 20%) for the estimated proportion

of legal-marked Chinook encountered in Area 10. Thus, we used only the test fishery data to estimate the size/mark status proportions needed to produce the Area 10 fishery-total encounter estimates.

**Table 29.** Summary of season-wide fishery impact estimates for the Area 9 mark-selective Chinook fishery, July 16-August 31, 2010. Values may not add up perfectly due to rounding error.

<b>Total Encounters (E): 9,194</b> <b>V(E): 993,233</b>										
Size/mark group	Chinook Encounters	No. Retained	No. Rel'd	Rel. Mort. Rate	Rel. Mort.	Total Mortality	Var	SE	95% CI	CV (%)
Legal marked	6,022	5,282	740	0.15	111	5,393	147,288	384	4641 - 6145	7
Legal unmarked	2,158	33	2,125	0.15	319	352	5,846	76	202 - 502	22
Sublegal marked	759	10	750	0.20	150	159	3,809	62	39 - 280	39
Sublegal unmarked	255	6	249	0.20	50	55	1,298	36	15 - 126	65
All groups combined	<b>9,194</b>	<b>5,331</b>	<b>3,864</b>		<b>630</b>	<b>5,960</b>	<b>158,241</b>	<b>398</b>	<b>5180 - 6740</b>	<b>7</b>

**Table 30.** Summary of season-wide fishery impact estimates for the Area 10 mark-selective Chinook fishery, July 16-August 31, 2010. Values may not add up perfectly due to rounding error.

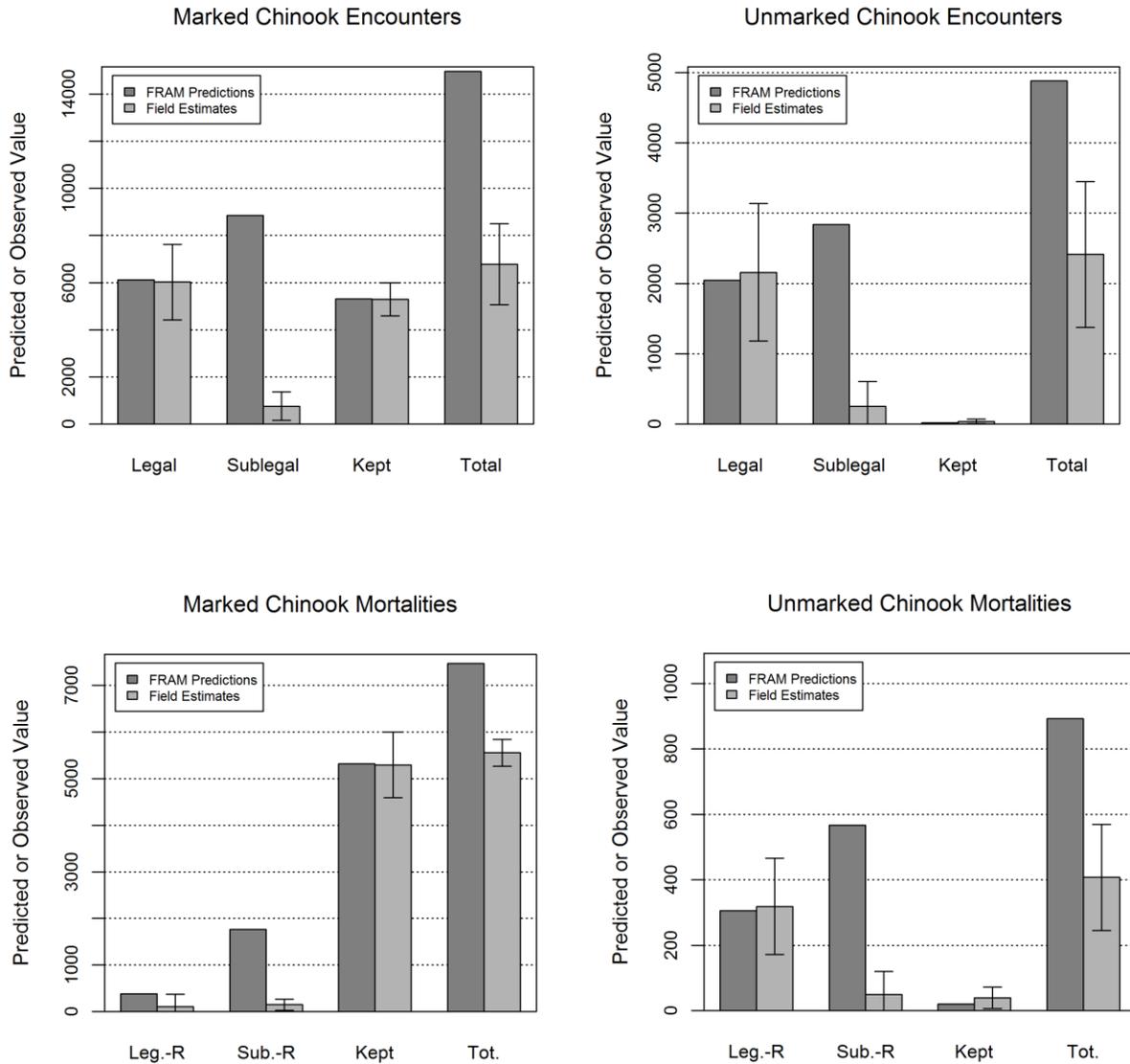
<b>Total Encounters (E): 7,178</b> <b>V(E): 1,868,243</b>										
Size/mark group	Chinook Encounters	No. Retained	No. Rel'd	Rel. Mort. Rate	Rel. Mort.	Total Mortality	Var	SE	95% CI	CV (%)
Legal marked	3,383	2,950	432	0.15	65	3,015	47,244	217	2589 - 3441	7
Legal unmarked	1,059	33	1,026	0.15	154	187	5,170	72	46 - 327	39
Sublegal marked	1,062	37	1,024	0.20	205	242	9,004	95	56 - 428	39
Sublegal unmarked	1,675	9	1,665	0.20	333	342	14,615	121	105 - 579	35
All groups combined	<b>7,178</b>	<b>3,030</b>	<b>4,148</b>		<b>757</b>	<b>3,786</b>	<b>76,033</b>	<b>276</b>	<b>3246 - 4327</b>	<b>7</b>

**Table 31.** Comparison of modeled (i.e., using FRAM, model run 1010) and estimated total Chinook encounters for the Areas 9 and 10 July 16-August 31, 2010 mark-selective Chinook fisheries.

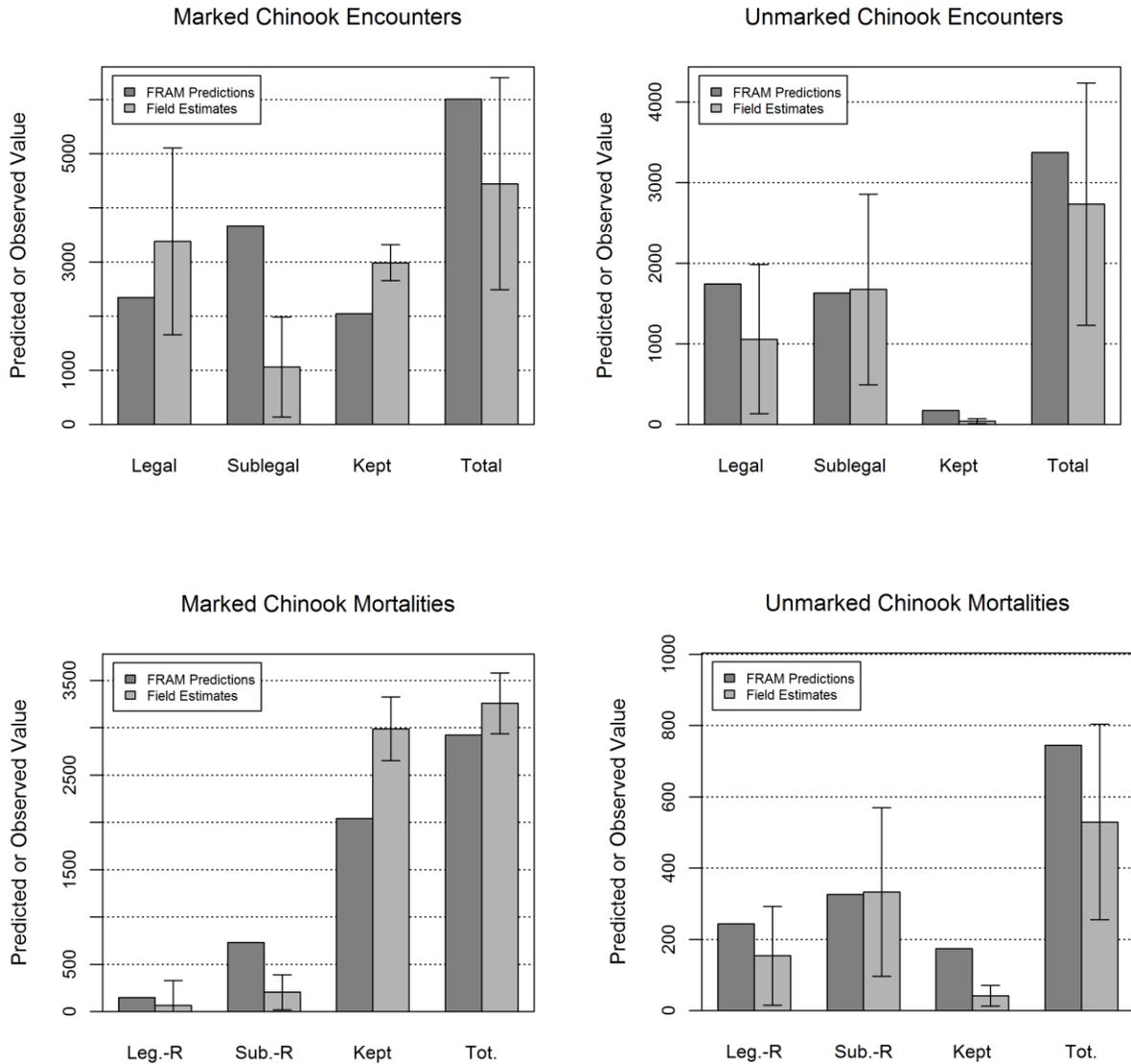
Marine Area	Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
9	FRAM Encounters	Unmark.	4,882	2,047	2,835	20
		Mark.	14,953	6,108	8,845	5,314
		Total	19,835	8,155	11,680	5,334
		% Mark.	75	75	76	100
	Estimated (Creel) Encounters	Unmark.	2,413	2,158	255	39
		Mark.	6,782	6,022	759	5,292
		Total	9,194	8,180	1,014	5,331
		% Mark.	74	74	75	99
10	FRAM Encounters	Unmark.	3,374	1,744	1,630	174
		Mark.	6,007	2,347	3,660	2,042
		Total	9,381	4,091	5,290	2,216
		% Mark.	64	57	69	92
	Estimated (Creel) Encounters	Unmark.	2,734	1,059	1,675	42
		Mark.	4,444	3,383	1,062	2,988
		Total	7,178	4,441	2,737	3,030
		% Mark.	62	76	39	99

**Table 32.** Comparison of modeled (i.e., using FRAM, model run 1010) and estimated total Chinook mortalities for the Areas 9 and 10 July 16-August 31, 2010 mark-selective Chinook fisheries.

Marine Area	Mortality Category	FRAM Chinook Mortalities			Estimated Chinook Mortalities		
		Unmark	Mark	Total	Unmark	Mark	Total
9	Total (Landed + Released)	892	7,467	8,359	408	5,552	5,960
	Released Legal	305	384	689	319	111	430
	Released Sublegal	567	1,769	2,336	50	150	200
	Landed Only	20	5,314	5,334	39	5,292	5,331
10	Total (Landed + Released)	744	2,922	3,666	529	3,257	3,786
	Released Legal	244	148	392	154	65	219
	Released Sublegal	326	732	1,058	333	205	538
	Landed Only	174	2,042	2,216	42	2,988	3,030



**Figure 15.** Comparison of modeled (i.e., using FRAM, model run 1010) and estimated total Chinook encounters (*upper panel*) and mortalities (*lower panel*) for the **Area 9** July 16-August 31, 2010 mark-selective Chinook fishery. Error bars represent approximate 95% confidence intervals for field estimates.



**Figure 16.** Comparison of modeled (i.e., using FRAM, model run 1010) and estimated total Chinook encounters (*upper panel*) and mortalities (*lower panel*) for the **Area 10** July 16-August 31, 2010 mark-selective Chinook fishery. Error bars represent approximate 95% confidence intervals for field estimates.

**Table 33.** Summary of double-index tagged (DIT) Chinook kept by anglers, and estimated total mortality of unmarked DIT Chinook due to hook-and-release impacts resulting from the **Area 9** mark-selective Chinook fishery, from July 16 through August 31, 2010. AD = marked (i.e., adipose-clipped), UM = unmarked.

Hatchery	Brood Year	DITs Obs'd	AD DIT Harvest		UM DIT Enc.	UM DIT Mortality		
			Est.	var(Est.)		Est.	var(Est.)	SE(Est.)
CLEAR CREEK HATCHERY	2006	1	3.2	6.9	3.2	0.3	0.1	0.3
	2007	7	22.3	48.7	22.1	2.2	0.5	1.8
GEORGE ADAMS HATCHRY	2007	15	47.8	104.4	48.2	4.8	1.1	4.0
GROVERS CR HATCHERY	2006	1	3.2	6.9	3.2	0.3	0.1	0.3
	2007	22	70.0	152.7	70.1	7.0	1.5	5.8
H-CHILLIWACK R	2007	4	12.7	27.8	12.8	1.3	0.3	1.1
	2008	1	3.2	7.0	3.2	0.3	0.1	0.3
MARBLEMOUNT HATCHERY	2006	1	3.2	7.0	3.1	0.3	0.1	0.3
SAMISH HATCHERY	2007	7	22.3	48.7	22.9	2.3	0.5	1.9
SOOS CREEK HATCHERY	2007	4	12.7	27.8	12.7	1.3	0.3	1.1
<b>TOTAL</b>		<b>63</b>	<b>200.5</b>	<b>437.8</b>	<b>201.4</b>	<b>20.1</b>	<b>4.4</b>	<b>16.7</b>

**Table 34.** Summary of double-index tagged (DIT) Chinook kept by anglers, and estimated total mortality of unmarked DIT Chinook due to hook-and-release impacts resulting from the **Area 10** mark-selective Chinook fishery, from July 16 through August 31, 2010. AD = marked (i.e., adipose-clipped), UM = unmarked.

Hatchery	Brood Year	DITs Obs'd	AD DIT Harvest		UM DIT Enc.	UM DIT Mortality		
			Est.	var(Est.)		Est.	var(Est.)	SE(Est.)
CLEAR CREEK HATCHERY	2006	2	5.7	10.5	5.7	0.6	0.1	0.5
	2007	7	20.0	37.2	19.9	2.0	0.4	1.6
GEORGE ADAMS HATCHRY	2007	1	2.8	5.2	2.9	0.3	0.1	0.2
GROVERS CR HATCHERY	2007	5	14.2	26.1	14.2	1.4	0.3	1.1
H-CHILLIWACK R	2007	5	14.6	28.0	14.6	1.5	0.3	1.2
	2008	1	3.0	5.9	3.0	0.3	0.1	0.2
SOOS CREEK HATCHERY	2006	1	0.0	0.0	3.0	3.0	5.9	2.4
	2007	6	14.2	26.1	17.0	4.3	5.5	3.4
<b>TOTAL</b>		<b>28</b>	<b>74.5</b>	<b>139.1</b>	<b>80.3</b>	<b>13.3</b>	<b>12.5</b>	<b>10.7</b>

**Table 35.** Monthly sample rates (Total retained Chinook sampled <sup>1/</sup> / Estimated retained Chinook) in the Areas 9 and 10 July 16-August 31, 2010 mark-selective Chinook fisheries.

Area	Month	Time Period		Estimated Retained Chinook			Number of Retained Chinook Sampled			Sample Rate
		Stat. Weeks	Dates	Marked	Un-marked	Total	Marked	Un-marked	Total	
Area 9	July	29-31	Jul 16 - Aug 1	3,107	0	3,107	975	0	975	31.4%
	August	32-36	Aug 2 - Aug 31	1,831	39	1,870	576	6	582	31.1%
	<b>Season Total</b>				<b>4,938</b>	<b>39</b>	<b>4,977</b>	<b>1,551</b>	<b>6</b>	<b>1,557</b>
Area 10	July	29-31	Jul 16 - Aug 1	984	3	987	331	1	332	33.6%
	August	32-36	Aug 2- Aug 31	1,940	39	1,979	683	8	691	34.9%
	<b>Season Total</b>				<b>2,924</b>	<b>42</b>	<b>2,966</b>	<b>1,014</b>	<b>9</b>	<b>1,023</b>

<sup>1/</sup> Number of retained Chinook sampled includes all retained Chinook inspected for CWT's, from all sites sampled during the 2010 summer Areas 9 and 10 selective Chinook fisheries (i.e., the sample-frame sites included in the creel estimates and the fish sampled as part of baseline sampling in the area).

**Table 36.** Fishery-total estimates of retained and released salmon (other than Chinook salmon) for the **Area 9** July 16 – August 31, 2010 mark-selective Chinook fishery. Values may not add up perfectly due to rounding error.

Month	Stat. Week	Start Date	End Date	Est. Effort		Est. Other Sp. Retained		Est. Other Sp. Released			
				Boats	Anglers	AD Coho	UM Coho	AD Coho	UM Coho	Unk. Coho	Unk. Salmon
July	29	16-Jul	19-Jul	1,918	4,198	10	7	13	10	37	267
	30	20-Jul	26-Jul	2,559	5,514	10	0	39	63	23	450
	31	27-Jul	02-Aug	2,783	5,995	7	9	41	7	21	155
August	32	03-Aug	09-Aug	1,880	4,195	10	0	0	8	10	150
	33	10-Aug	16-Aug	1,965	4,147	54	8	5	8	5	100
	34	17-Aug	23-Aug	1,539	3,216	43	42	8	20	28	262
	35	24-Aug	30-Aug	1,443	3,139	74	57	5	19	9	307
	36	31-Aug	31-Aug	220	409	30	5	0	0	16	83
<b>Season Total</b>				<b>14,306</b>	<b>30,812</b>	<b>239</b>	<b>128</b>	<b>112</b>	<b>134</b>	<b>148</b>	<b>1,774</b>
<b>Variance</b>				692,441	3,264,007	1,036	407	613	572	637	44,745
<b>Standard Error:</b>				832	1,807	32	20	25	24	25	212
<b>CV (%):</b>				6%	6%	14%	16%	22%	18%	17%	12%
<b>95% CI:</b>				12,675-15,937	27,271-34,353	176-302	88-168	63-160	87-181	99-198	1,359-2,189

**Table 37.** Fishery-total estimates of retained and released salmon (other than Chinook salmon) for the **Area 10** July 16 – August 31, 2010 mark-selective Chinook fishery. Values may not add up perfectly due to rounding error.

Month	Stat. Week	Start Date	End Date	Est. Effort		Est. Other Sp. Retained		Est. Other Sp. Released						
				Boats	Anglers	AD Coho	UM Coho	AD Coho	UM Coho	Unk. Coho	Pink	Chum	Trout	Unk. Salmon
July	29	16-Jul	19-Jul	860	1,839	32	29	34	7	24	5	0	0	188
	30	20-Jul	26-Jul	1,371	2,685	49	38	51	49	57	0	0	10	286
	31	27-Jul	02-Aug	2,140	4,194	33	36	44	23	31	0	0	0	280
August	32	03-Aug	09-Aug	1,533	2,904	34	11	16	4	29	2	0	0	164
	33	10-Aug	16-Aug	1,762	3,559	101	83	22	16	61	0	0	0	151
	34	17-Aug	23-Aug	1,637	3,211	136	83	49	19	85	0	0	0	500
	35	24-Aug	30-Aug	1,360	2,616	172	86	39	20	42	0	6	0	267
	36	31-Aug	31-Aug	302	497	143	11	15	4	19	0	0	0	103
<b>Season Total</b>				<b>10,965</b>	<b>21,504</b>	<b>700</b>	<b>377</b>	<b>269</b>	<b>141</b>	<b>348</b>	<b>7</b>	<b>6</b>	<b>10</b>	<b>1,939</b>
<b>Variance</b>				221,515	932,445	1,826	1,235	1,109	211	1,230	18	4	43	27,234
<b>Standard Error:</b>				471	966	43	35	33	15	35	4	2	7	165
<b>CV (%):</b>				4%	5%	6%	9%	12%	10%	10%	57%	33%	63%	9%
<b>95% CI:</b>				10,042-11,887	19,612-23,397	616-784	308-446	204-334	113-170	279-416	-1-16	2-10	-2-23	1,615-2,262

**Table 38.** Total number of anglers intercepted in Area 9 during on-the-water surveys conducted between July 16 and August 31, 2010. Dark gray shaded sites were included in the dockside sample frame.

Site Name	Weekday Anglers	Season Total (unadjusted) Size Measure	Weekend Anglers	Season Total (unadjusted) Size Measure
Armeni Ramp	0	0.000	10	0.011
Bayside Marina	11	0.026	6	0.007
Brownsville	0	0.000	3	0.003
Bush Point (Prvt)	2	0.005	6	0.007
Camano Is St Park	0	0.000	9	0.010
Dagmars Landing	9	0.021	9	0.010
Dagmars Marina	0	0.000	8	0.009
Driftwood Key Marina	0	0.000	25	0.028
Edmonds Marina Dry Storage	23	0.055	31	0.034
Edmonds Marina Moorage	39	0.092	50	0.055
Edmonds Marina Sling	17	0.040	30	0.033
Eglon Ramp	2	0.005	6	0.007
Everett Marina	11	0.026	32	0.035
Everett Ramp (Norton St.)	100	0.237	184	0.204
Fort Flagler	1	0.002	11	0.012
Fort Casey/Keystone	32	0.076	79	0.087
Fort Warden	29	0.069	27	0.030
Hat Island	2	0.005	0	0.000
Hudson Point	0	0.000	11	0.012
John Wayne	0	0.000	2	0.002
Kingston Ramp	25	0.059	29	0.032
Kingston Marina	0	0.000	6	0.007
Lagoon Point	3	0.007	35	0.039
Lake Union Prvt.	0	0.000	10	0.011
Max Welton (Whidbey)	3	0.007	0	0.000
Mukilteo Ramp	32	0.076	65	0.072
Mutiny Bay	1	0.002	21	0.023
Port Hadlock Marina (Moorage)	1	0.002	0	0.000
Port Hadlock Ramp	6	0.014	6	0.007
Port Ludlow	3	0.007	2	0.002
Port Townsend Moorage	0	0.000	4	0.004
Port Townsend Ramp	35	0.083	65	0.072
Possession Ramp	5	0.012	22	0.024
Private Buoy/moorage/launch	22	0.052	55	0.061
Private Marrowstone	0	0.000	2	0.002
Salmon Bay	0	0.000	2	0.002
Salisbury Ramp	3	0.007	10	0.011
Sandy Hook (Prvt.)	0	0.000	3	0.003
Shilshole ramp	3	0.007	17	0.019
Shilshole Marina (Prvt.)	2	0.005	9	0.010
Utsalady	0	0.000	2	0.002
<b>Total Anglers</b>	<b>422</b>	<b>1.000</b>	<b>904</b>	<b>1.000</b>

**Table 39.** Total number of anglers intercepted in Area 10 during on-the-water surveys conducted between July 16 and August 31, 2010. Dark gray shaded sites were included in the dockside sample frame.

Site Name	Weekday Anglers	Season Total (unadjusted) Size Measure	Weekend Anglers	Season Total (unadjusted) Size Measure
Armeni Ramp	56	0.083	39	0.184
Brownsville Marina	6	0.009	0	0.000
Brownsville Ramp	32	0.047	8	0.038
Des Moines Marina	16	0.024	7	0.033
Eagle Harbor	7	0.010	6	0.028
Eagle Harbor Moorage	2	0.003	0	0.000
Edmonds Marina Dry Storage	30	0.044	5	0.024
Edmonds Marina Moorage	47	0.070	10	0.047
Edmonds Marina Sling	38	0.056	10	0.047
Elliott Bay Marina	21	0.031	0	0.000
Evergreen Park	3	0.004	1	0.005
Everett (Norton St.)	20	0.030	0	0.000
Everett Wet	2	0.003	3	0.014
First Ave So Ramp	5	0.007	0	0.000
Kingston Ramp	66	0.098	19	0.090
Kingston Marina	17	0.025	0	0.000
Lake Union	5	0.007	0	0.000
Manchester Ramp	24	0.036	6	0.028
Port Orchard Marina	2	0.003	0	0.000
Poulsbo Marina	5	0.007	0	0.000
Prvt. Launch/Moorage	41	0.061	14	0.066
Salmon Bay	3	0.004	3	0.014
Shilshole Marina (Prvt.)	28	0.041	13	0.061
Shilshole Ramp	192	0.284	68	0.321
Suquamish Ramp	2	0.003	0	0.000
Winslow	6	0.009	0	0.000
<b>Total Anglers</b>	<b>676</b>	<b>1.000</b>	<b>212</b>	<b>1.000</b>

**Table 40.** Season-total estimates of Chinook encounters by size/mark status, and total estimates of angler effort, summarized for all seasons to date of the Areas 9 and 10 summer mark-selective Chinook fisheries.

Area	Season Dates	Year	Effort (Angler-trips)	Retained Chinook				Released Chinook				Total Encounters
				LM	LU	SM	SU	LM	LU	SM	SU	
9	July 16 - July 31	2007	18,160	5,094	13	146	20	711	1,111	1,286	317	8,697
9	July 16 - Aug 15	2008	20,399	4,035	3	10	0	597	1,608	3,212	3,826	13,290
9	July 16 - Aug 31	2009	42,219	3,090	20	139	0	462	1,272	8,256	2,905	16,143
9	July 16 - Aug 31	2010	31,200	5,282	33	10	6	740	2,125	750	249	9,194
10	July 16 - July 28	2007	8,374	1,469	30	70	8	209	497	3,101	723	6,107
10	July 16 - Aug 15	2008	13,808	1,027	3	4	0	128	510	189	385	2,246
10	July 16 - Aug 31	2009	23,179	1,505	22	116	0	220	82	2,488	1,017	5,450
10	July 16 - Aug 31	2010	21,636	2,950	33	37	9	432	1,026	1,024	1,665	7,178

#### 4) Marine Area 11 Summer 2010 Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a mark-selective Chinook fishery (MSF) in Marine Area 11 for the fourth summer season from June 1 through September 30, 2010. WDFW's Puget Sound Sampling Unit (PSSU) implemented a comprehensive monitoring program in Area 11 throughout the season in order to collect the data needed to estimate key parameters characterizing the fishery and its impacts on unmarked salmon. Sampling activities in Area 11 included dockside creel sampling (with in-season catch and effort estimates), on-the-water effort surveys (boat surveys), and intensive efforts to distribute and collect voluntary trip reports (VTRs) from the angling public. **Table 41** summarizes the parameters estimated and the sampling activities associated with each parameter. Specific procedures used for collecting these data and estimating critical data parameters are presented in detail in our separate Methods Report (WDFW 2011a).

During the 2010 season in Area 11, we continued focusing considerable effort on our enhanced VTR program to obtain estimates of Chinook encounter rates by size class (legal or sublegal) and mark status (ad-marked or unmarked). For the enhanced VTR program, an additional WDFW technician was hired to work exclusively on distributing and collecting VTRs from the angling public in Area 11. Additionally, the VTR technician and dockside samplers educated anglers about the VTR program and salmon species identification in a focused effort to increase the sample size of VTR-based encounters data.

In the following section we present results from our monitoring activities during the June 1 through September 30, 2010 Area 11 summer selective Chinook fishery season. To generate the estimates of Chinook encounters and mortalities by size/mark group, we used the VTR-based estimates of Chinook encounter rates by size/mark group (legal size-marked [LM], legal size-unmarked [LU], sublegal size-marked [SM], and sublegal size-unmarked [SU]) and applied Conrad and McHugh's (2008) bias-corrected method (see WDFW 2011a, Appendix B).

**Table 41.** Sampling/estimation details on target parameters associated with the overall Area 11 summer mark-selective fishery monitoring program.

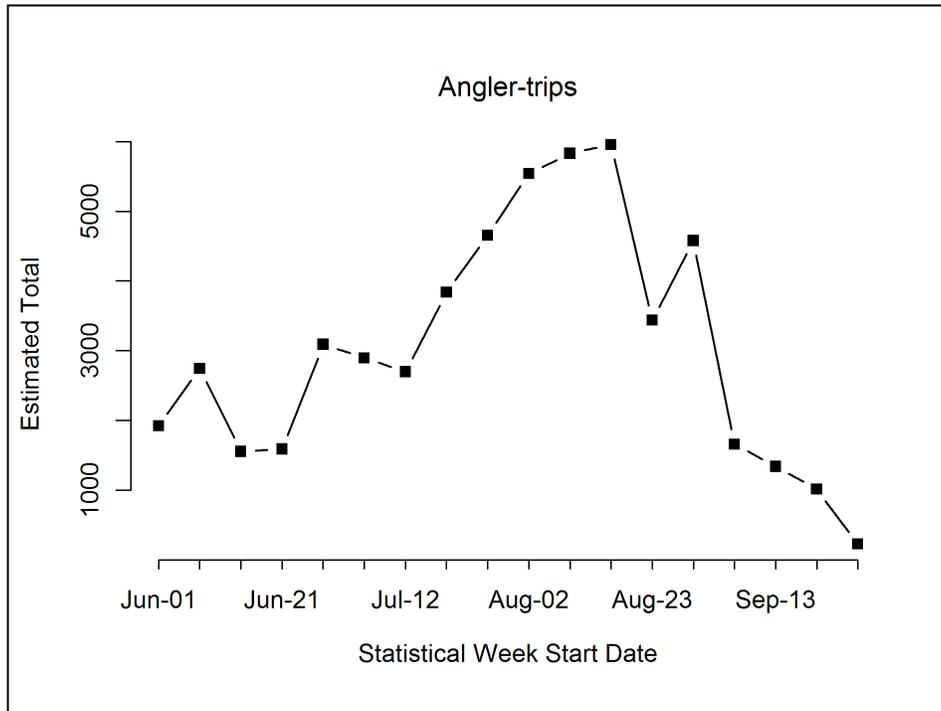
Activity	Focal Parameter(s)	Secondary Parameter(s)	Sample Unit(s)	Finest Estimation Time Step	Comments
Dockside Creel Sampling	Fishing effort (boat & angler trips); kept and released fish <sup>1</sup>	Catch rates (CPUE); length, age, and CWT composition of harvest <sup>2</sup> ; collection of angler fishing methods.	Angler trip; kept fish; reported fish release	Two weeks <sup>1</sup>	Creel estimates were produced for two-week estimation periods and stratified into “weekday” (Mon.-Thurs.) and “weekend” (Fri.-Sun.) day-type strata within weeks. For the weekday stratum, we sampled $n=2$ days out of $N=8$ available weekdays per two-week period. For the weekend stratum, we sampled $n=2$ days out of $N=3$ available weekend days per week <sup>1</sup> .
On-the-water Surveys (Boat Surveys)	Proportion of total angler effort accessing fishery via sample-frame sites (i.e., site “size measures”) versus out-of-frame sites. Size measures were used to select sites for dockside creel surveys using a probability proportional to size (PPS) site selection process, and to produce total-fishery creel estimates (see WDFW 2011a).	Data on spatial distribution of recreational fishing boats in the area.	Boats and anglers; A total of 888 boats were contacted on the water over the season (529 in weekend surveys; 359 in weekday surveys).	Month	Eight boat surveys were conducted during the four-month fishery (4 weekdays and 4 weekend days).
Voluntary Trip Reports (VTRs)	Size (legal/sublegal) and mark-status composition (marked, unmarked) of encountered Chinook	Encounter data for non-Chinook species (e.g., coho) that the angler may record on the VTR form	Fish encounter	Season	VTR data were used in the estimation of total Chinook encounters by size/mark group (LM=64.1%, LU=16.8%, SM=13.3%, SU=5.8%; <b>Table 44</b> ) and associated impacts.
Overall Fishery Impacts Estimation	Total Chinook encounters and mortalities, by size/mark-status group	Ratios of encounters and mortalities per kept Chinook	N/A	Season	Estimated on a monthly time step but considered at the season-total level.
Coded-wire tag (CWT) Impacts Estimation	Marked/unmarked double-index tag (DIT) encounters and mortalities	N/A	N/A	Season	The temporal resolution of DIT impacts is constrained by the total number of tags recovered.

<sup>1</sup> To generate weekly catch and effort estimates, the four-day “weekday stratum” estimate was added to the three-day “weekend stratum” estimate for the particular week. The eight-day weekday estimates for each two-week period were split evenly between individual weeks in the two-week block to enable weekly estimates, with variances computed using the  $n=2$  days sampled out of  $N=8$  available weekdays in the appropriate variance equation (see WDFW 2011 a).

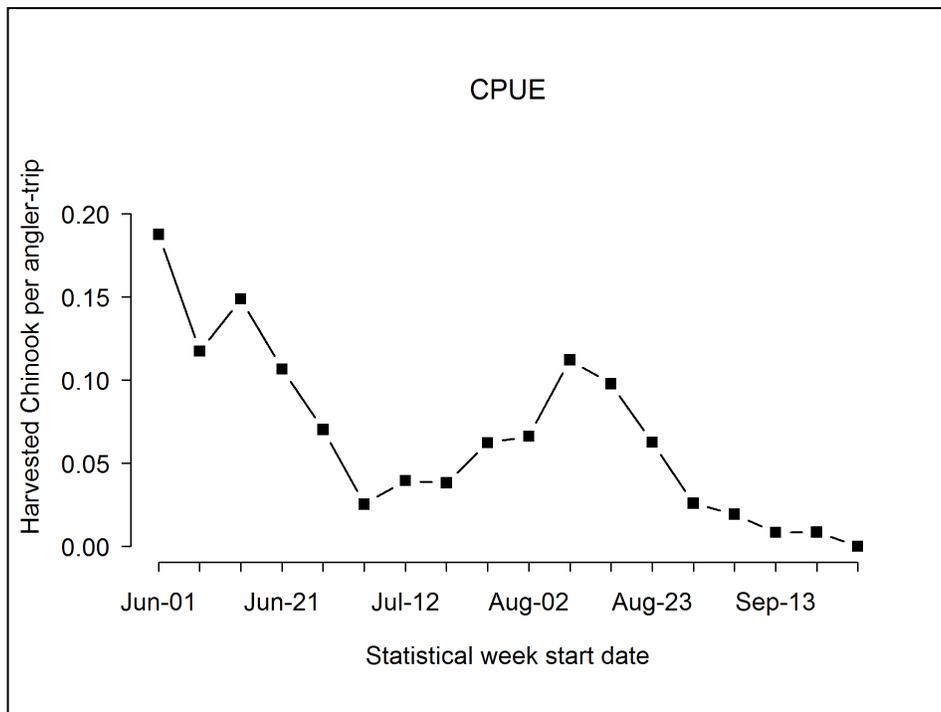
<sup>2</sup> The length and CWT composition of landed catch was assessed on a season-wide basis for impact estimation.

**Table 42.** Estimates of total fishing effort and the total number of salmon kept and released during the Area 11 summer 2010 mark-selective Chinook fishery, from June 1 through September 30, 2010. Values may not add up perfectly due to rounding error.

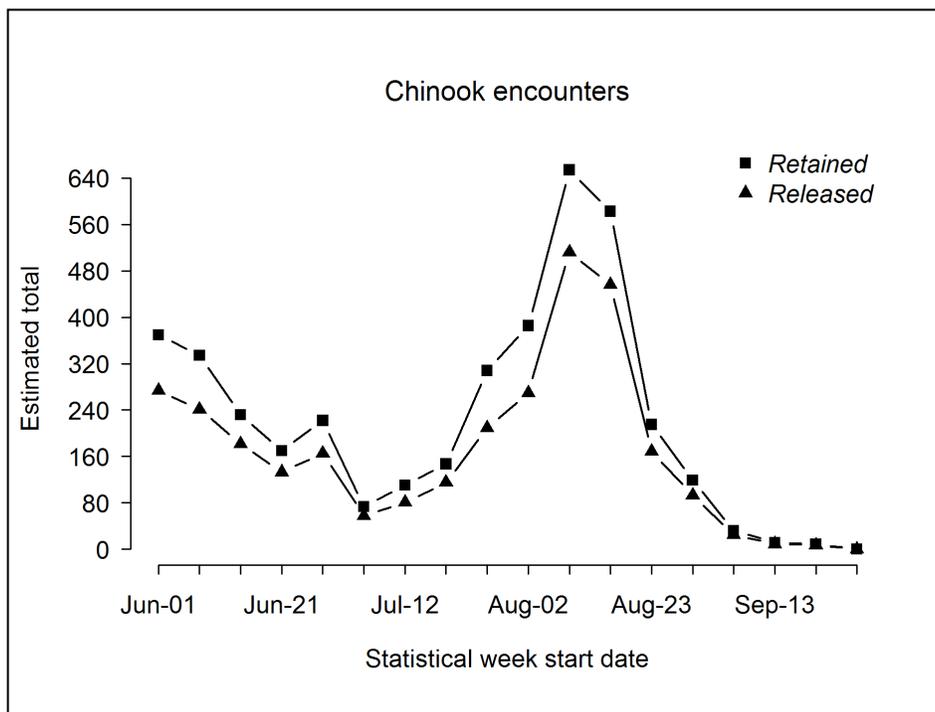
Month	Stat Week	Start Date	End Date	Est. Effort		Est. Retained Chinook		Est. Released Chinook		Est. Total Chinook Encounters
				Boats	Anglers	AD	UM	AD	UM	
June	23	Jun-01	Jun-06	1,206	1,922	361	9	137	137	643
	24	Jun-07	Jun-13	1,567	2,747	323	12	123	119	575
	25	Jun-14	Jun-20	952	1,557	232	0	88	93	413
	26	Jun-21	Jun-27	972	1,591	170	0	64	68	303
July	27	28-Jun	Jul-04	1,692	3,091	217	5	83	83	387
	28	Jul-05	Jul-11	1,515	2,897	73	0	28	30	131
	29	Jul-12	Jul-18	1,511	2,700	107	3	41	40	191
	30	Jul-19	Jul-25	1,988	3,839	147	0	56	59	262
	31	Jul-26	Aug-01	2,514	4,653	290	18	110	99	517
Aug.	32	Aug-02	Aug-08	2,969	5,541	367	18	140	130	655
	33	Aug-09	Aug-15	3,095	5,831	654	0	249	264	1,166
	34	Aug-16	Aug-22	3,143	5,955	583	0	221	235	1,039
	35	Aug-23	Aug-29	1,815	3,438	215	0	82	87	384
Sep	36	Aug-30	Sep-05	2,306	4,580	119	0	45	48	212
	37	Sep-06	Sep-12	968	1,661	32	0	12	13	57
	38	Sep-13	Sep-19	713	1,343	11	0	4	5	20
	39	Sep-20	Sep-26	541	1,017	9	0	3	4	15
	40	Sep-27	Sep-30	156	229	0	0	0	0	0
<b>Season Total:</b>				<b>29,623</b>	<b>54,594</b>	<b>3,910</b>	<b>64</b>	<b>1,485</b>	<b>1,512</b>	<b>6,971</b>
<b>Variance:</b>				2,563,849	8,899,435	111,892	792	299,911	25,282	391,268
<b>Standard Error:</b>				1601	2983	335	28	548	159	626
<b>CV (%):</b>				5%	6%	9%	44%	37%	11%	9%
<b>95% CI:</b>				26,484-32,761	48,747-60,441	3,254-4,565	9-120	412-2,559	1,200-1,823	5,745-8,197



**Figure 17.** Temporal patterns in weekly total fishing effort (estimated number of angler trips) during the Area 11 summer 2010 mark-selective Chinook fishery, June 1 through September 30, 2010.



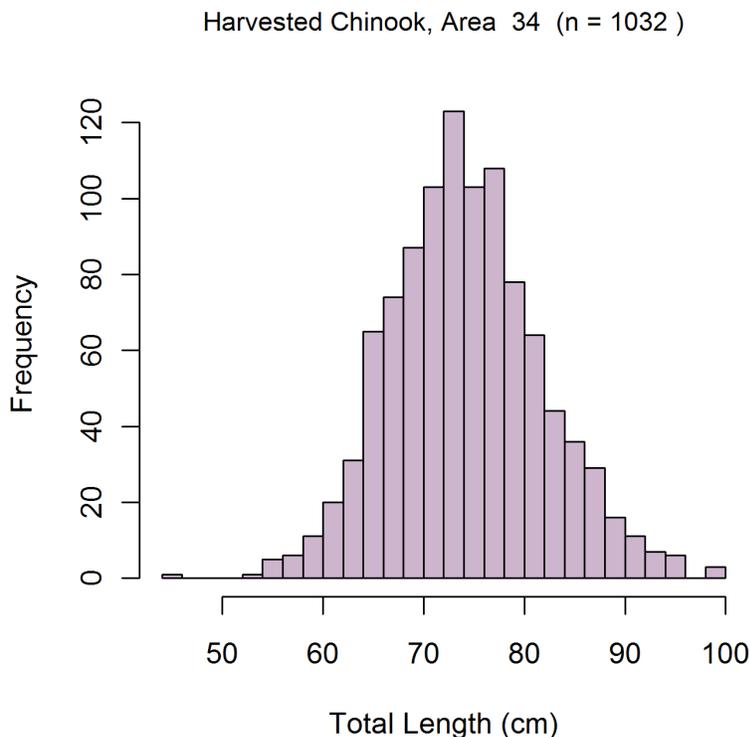
**Figure 18.** Temporal patterns in CPUE (landed marked Chinook per angler trip, weekly estimates) during the Area 11 summer 2010 mark-selective Chinook fishery, June 1 through September 30, 2010.



**Figure 19.** Temporal patterns in weekly total Chinook harvest and releases (ad-marked and unmarked combined) during the Area 11 summer mark-selective Chinook fishery, June 1 through September 30, 2010.

**Table 43.** Summary of length samples collected from retained Chinook salmon during dockside angler interviews in the Area 11 summer mark-selective Chinook fishery, June 1 through September 30, 2010.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	1,025	7	1,032
Unmarked	8	0	8
<b>Total</b>	<b>1,033</b>	<b>7</b>	<b>1,040</b>



**Figure 20.** Length-frequency distributions of retained marked Chinook sampled at dockside during the Area 11 summer 2010 mark-selective Chinook fishery, June 1 through September 30, 2010.

**Table 44.** Total Chinook encountered (retained and released) by private-boat anglers logging their trips on voluntary trip reports (VTRs), with estimates of legal-size and overall mark rates in the Area 11 mark-selective Chinook fishery, June 1 through September 30, 2010.

Data source	Effort & Sample Size	Legal		Sublegal		Total	Mark Rates	
		AD	UM	AD	UM		Overall	Legal
Private Boat VTR	621 1-trip VTRs, 1,097 Angler Trips	496	130	103	45	774	77.4%	79.2%
Size/mark-status comp:		0.641	0.168	0.133	0.058			
Variance:		(0.00030)	(0.00018)	(0.00015)	(0.00007)			

**Table 45.** Summary of coded-wire tags recovered from Chinook salmon harvested during the Area 11 summer mark-selective Chinook fishery, June 1 through September 30, 2010. The field “No. DITs” corresponds to the number of tags that belonged to double-index tag groups.

Release Domain	Release Region (% Contribution)	Release Site	Rearing Location	CWTs Recovered	No. DITs
Washington	Northern Washington (4.5%)	FRIDAY CR 03.0017	SAMISH HATCHERY	2 (4.5%)	2
	Hood Canal (15.9%)	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	2 (4.5%)	2
		FINCH CR 16.0222	HOODSPORT HATCHERY	5 (11.4%)	0
	Northern Puget Sound (6.8%)	WHITEHORSE SPRINGS	WHITEHORSE POND	2 (4.5%)	0
		WALLACE R 07.0940	WALLACE R HATCHERY	1 (2.3%)	1
	Mid Puget Sound (25.0%)	GROVERS CR HATCHERY	GROVERS CR HATCHERY	3 (6.8%)	3
		VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	5 (11.4%)	0
		GREEN R 09.0001	N/A	3 (6.8%)	0
	Southern Puget Sound (43.2%)	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	9 (20.5%)	9
		LAKESWOOD HATCHERY	LAKESWOOD HATCHERY	1 (2.3%)	0
		CHAMBERS CR 12.0007	GARRISON HATCHERY	8 (18.2%)	0
		MINTER CR 15.0048	MINTER HATCHERY	1 (2.3%)	0
Columbia River	Upper Columbia R. (above McNary Dam; excludes Snake River) (2.3%)	SIMILKAMEEN R 490325	SIMILKAMEEN HATCHERY	1 (2.3%)	0
	Snake River (2.3%)	SNAKE R@PITT. LNDG	LYONS FERRY HATCHERY	1 (2.3%)	0
<b>Total</b>				<b>44</b>	<b>17</b>

**Table 46.** Summary of season-wide fishery impact estimates for the summer 2010 Area 11 mark-selective Chinook fishery, June 1-September 30, 2010. Values may not add up perfectly due to rounding error.

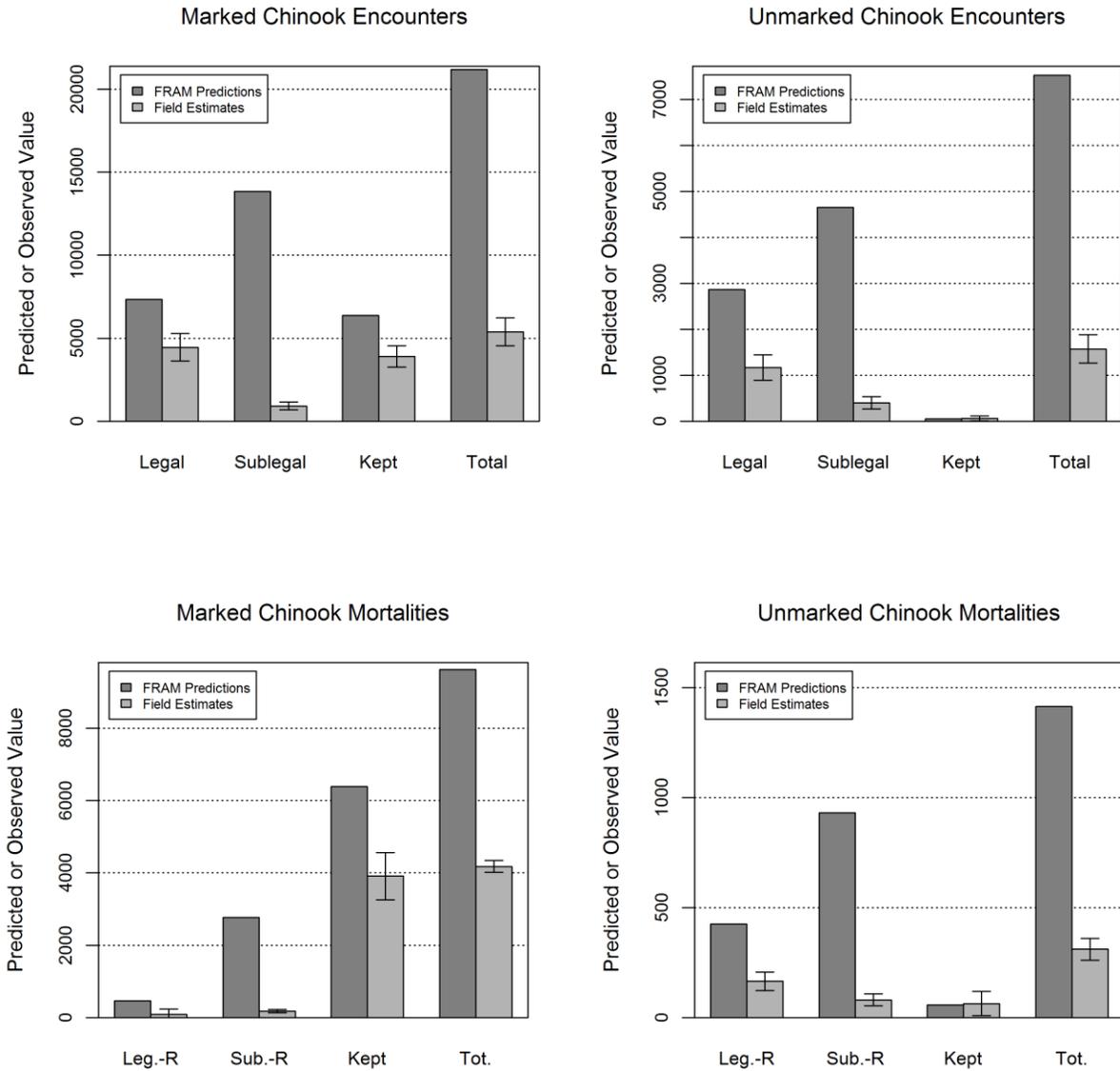
<b>Total Encounters</b> <b>(E): 6,965</b> <b>V(E): 390,607</b>										
<b>Size/mark group</b>	<b>Chinook Encounters</b>	<b>No. Retained</b>	<b>No. Rel'd</b>	<b>Rel. Mort. Rate</b>	<b>Rel. Mort.</b>	<b>Total Mortality</b>	<b>Var</b>	<b>SE</b>	<b>95% CI</b>	<b>CV (%)</b>
Legal marked	4,463	3,883	580	0.15	87	3,970	116,896	342	3300 – 4640	9
Legal unmarked	1,170	64	1,105	0.15	166	230	1,254	35	161 - 300	15
Sublegal marked	927	27	900	0.20	180	207	672	26	156 - 257	13
Sublegal unmarked	405	0	405	0.20	81	81	189	14	54 - 108	17
<b>All groups combined</b>	<b>6,965</b>	<b>3,974</b>	<b>2,991</b>		<b>514</b>	<b>4,488</b>	<b>119,012</b>	<b>345</b>	<b>3812 - 5164</b>	<b>8</b>

**Table 47.** Comparison of modeled (i.e., using FRAM, model run 1010) and estimated total Chinook encounters for the Area 11 summer 2010 mark-selective Chinook fishery, June 1-September 30, 2010.

<b>Data Source</b>	<b>Group</b>	<b>Total Encounters</b>	<b>Legal</b>	<b>Sublegal</b>	<b>Landed Only</b>
FRAM Encounters	Unmark.	7,524	2,869	4,655	58
	Mark.	21,181	7,336	13,845	6,382
	Total	28,705	10,205	18,500	6,440
	% Mark.	74	72	75	99
Estimated (Creel) Encounters	Unmark.	1,575	1,170	405	64
	Mark.	5,390	4,463	927	3,910
	Total	6,965	5,633	1,332	3,974
	% Mark.	77	79	70	98

**Table 48.** Comparison of modeled (i.e., using FRAM, model run 1010) and estimated total Chinook mortalities for the Area 11 summer 2010 mark-selective Chinook fishery, June 1-September 30, 2010.

<b>Mortality Category</b>	<b>FRAM Chinook Mortalities</b>			<b>Estimated Chinook Mortalities</b>		
	<b>Unmark</b>	<b>Mark</b>	<b>Total</b>	<b>Unmark</b>	<b>Mark</b>	<b>Total</b>
Total (Landed + Released)	1,414	9,614	11,028	311	4,177	4,488
Released Legal	425	463	888	166	87	253
Released Sublegal	931	2,769	3,700	81	180	261
Landed Only	58	6,382	6,440	64	3,910	3,974



**Figure 21.** Comparison of modeled (i.e., using FRAM, model run 1010) and estimated total marked (*left column*) and unmarked (*right column*) Chinook encounters (*upper row*) and mortalities (*lower row*) in the Area 11 summer 2010 mark-selective Chinook fishery, June 1-September 30, 2010. Error bars represent approximate 95% confidence intervals for field estimates.

**Table 49.** Summary of double-index tagged (DIT) Chinook kept by anglers, and estimated total mortality of unmarked DIT Chinook due to hook-and-release impacts resulting from the Area 11 mark-selective Chinook fishery from June 1 through September 30, 2010. AD = marked (i.e., adipose-clipped), UM = unmarked.

Hatchery	Brood Year	DITs Obs'd	AD DIT Harvest		UM DIT Enc.	UM DIT Mortality		
			Est.	var(Est.)		Est.	var(Est.)	SE(Est.)
CLEAR CREEK HATCHERY	2007	9	27.7	87.8	33.9	9.1	14.9	7.7
GEORGE ADAMS HATCHRY	2007	2	6.8	16.3	6.9	0.7	0.2	0.6
GROVERS CR HATCHERY	2007	3	14.2	55.7	14.3	1.4	0.6	1.3
SAMISH HATCHERY	2007	2	10.8	47.1	11	1.1	0.5	1
WALLACE R HATCHERY	2006	1	3.3	7.7	3.4	0.3	0.1	0.3
<b>TOTAL</b>		<b>17</b>	<b>62.8</b>	<b>214.6</b>	<b>69.4</b>	<b>12.7</b>	<b>16.2</b>	<b>10.8</b>

**Table 50.** Sample rates (Retained Chinook Sampled <sup>1/</sup>/Total Estimated Retained Chinook) for the Area 11 mark-selective Chinook fishery from June 1 through September 30, 2010 selective Chinook fisheries.

Time Period			Estimated Retained Chinook			Number of Retained Chinook Sampled			Sample Rate
Month	Stat. Weeks	Dates	Marked	Un-marked	Total	Marked	Un-marked	Total	
June	23-26	June 1-June 27	1,086	21	1,107	202	2	204	18.4%
July	27-31	June 28-Aug. 1	834	26	860	251	3	254	29.5%
August	32-35	Aug. 2-Aug. 29	1,819	18	1,837	523	2	525	28.6%
September	36-40	Aug. 30-Sep. 30	171	0	171	56	1	57	33.3%
<b>Season Total</b>			<b>3,910</b>	<b>65</b>	<b>3,975</b>	<b>1,032</b>	<b>8</b>	<b>1,040</b>	<b>26.2%</b>

<sup>1/</sup> Number of retained Chinook sampled includes all retained Chinook inspected for CWT's, from all sites sampled during the 2010 summer Area 11 selective Chinook fishery (i.e., the sample-frame sites included in the creel estimates and the fish sampled as part of baseline sampling in the area).

**Table 51.** Total number of anglers intercepted in Area 11 during on-the-water surveys conducted between June 1 through September 30, 2010. (Dark gray shaded sites were included in the dockside sample frame.)

Site Name	Weekday Anglers	Season Total (unadjusted) Size Measure	Weekend Anglers	Season Total (unadjusted) Size Measure
Armeni Ramp	25	0.038	30	0.029
Gig Harbor Ramp	56	0.085	46	0.044
Narrows Marina/Ramp	11	0.017	24	0.023
Point Defiance BH	75	0.115	80	0.078
Point Defiance Ramp	155	0.237	302	0.294
Redondo Ramp	78	0.119	135	0.131
Out of Frame	255	0.389	407	0.397
<b>Total Anglers</b>	<b>655</b>	<b>1.000</b>	<b>1,024</b>	<b>1.000</b>

**Table 52.** Fishery-total estimates of retained and released salmon (other than Chinook) catch for the Area 11 June 1 through September 30, 2010 mark-selective Chinook fishery.

Month	Stat Week	Start Date	End Date	Est. Effort		Est. Other Species Kept			Est. Other Species Released					
				Boats	Anglers	AD Coho	UM Coho	Chum	Ad Coho	UM Coho	UK Coho	Chum	Pink	Unk. Salmon
June	23	1-Jun	7-Jun	1,206	1,922	0	0	0	0	3	0	0	0	7
	24	8-Jun	14-Jun	1,567	2,747	0	0	0	0	4	0	0	0	14
	25	15-Jun	21-Jun	952	1,557	0	0	0	0	0	0	0	0	15
	26	22-Jun	28-Jun	972	1,591	0	7	0	0	0	0	0	0	22
July	27	29-Jun	5-Jul	1,692	3,091	0	0	0	0	0	0	0	0	0
	28	6-Jul	12-Jul	1,515	2,897	0	4	0	0	0	7	0	0	14
	29	13-Jul	19-Jul	1,511	2,700	0	8	0	0	14	0	0	0	15
	30	20-Jul	26-Jul	1,988	3,839	3	3	0	4	15	10	0	0	46
	31	27-Jul	2-Aug	2,514	4,653	0	4	0	4	0	0	0	4	57
August	32	3-Aug	9-Aug	2,969	5,541	0	0	0	0	0	7	0	0	78
	33	10-Aug	16-Aug	3,095	5,831	39	8	0	8	28	16	0	0	43
	34	17-Aug	23-Aug	3,143	5,955	22	25	0	0	40	16	0	0	62
	35	24-Aug	30-Aug	1,815	3,438	58	4	0	0	7	4	0	0	12
September	36	31-Aug	7-Sep	2,306	4,580	59	5	5	14	5	38	0	0	142
	37	8-Sep	13-Sep	968	1,661	25	4	0	97	0	26	0	0	38
	38	14-Sep	20-Sep	713	1,343	6	0	9	138	13	62	0	0	19
	39	21-Sep	27-Sep	541	1,017	16	7	0	35	0	19	4	0	42
	40	28-Sep	30-Sep	156	229	7	7	0	0	0	6	0	0	6
<b>Season Total:</b>				<b>29,623</b>	<b>54,594</b>	<b>236</b>	<b>86</b>	<b>13</b>	<b>298</b>	<b>129</b>	<b>210</b>	<b>4</b>	<b>4</b>	<b>631</b>
<b>Variance</b>				2,563,849	8,899,435	2,132	471	22	47,694	3,419	3,753	11	7	5,467
<b>Standard Error:</b>				1,601	2,983	46	22	5	218	58	61	3	3	74
<b>CV (%):</b>				5%	6%	20%	25%	35%	73%	46%	29%	75%	69%	12%
<b>95% CI:</b>				26,485-32,761	48,747-60,441	146-327	43-128	4-23	109-726	14-243	90-330	2-11	2-9	486-776

**Table 53.** Season-total estimates of Chinook encounters by size/mark status, and total estimates of angler effort, summarized for the previous and current seasons of the Area 11 summer mark-selective Chinook fisheries.

Area	Season Dates	Effort (Angler Trips)	Retained Chinook				Released Chinook				Total Encounters
			LM	LU	SM	SU	LM	LU	SM	SU	
11	June 1 - September 30, 2007	78,958	10,192	74	354	21	1,511	3,015	8,033	2,357	25,558
11	June 1 - September 30, 2008	65,728	7,277	18	100	5	1,087	1,999	1,969	248	12,703
11	June 1 - September 30, 2009	80,157	3,149	20	117	17	470	1,269	3,820	3,302	12,164
11	June 1 - September 30, 2010	54,594	3,883	64	27	0	580	1,105	900	405	6,965

## 5) Marine Area 13 Summer 2010 Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a mark-selective Chinook fishery (MSF) in Marine Area 13 for the fourth summer season from May 1 through September 30, 2010. WDFW's Puget Sound Sampling Unit (PSSU) implemented a comprehensive sampling program consisting of dockside angler interviews with catch sampling ("Baseline Sampling" approach; see WDFW 2011a for details) along with intensive efforts to distribute and collect voluntary trip reports (VTRs) from the angling public. While the Baseline Sampling approach did not provide a means for generating in- or immediately post-season estimates of fishery total catch and effort, the observed catch per angler trip and species composition data obtained from baseline sampling will ultimately be combined with Catch Record Card (CRC) data to produce the fishery-total estimates at a later time (approximately one year following the fishery). **Table 54** summarizes the parameters estimated and the sampling activities associated with each parameter. Specific procedures used for collecting these data and estimating critical data parameters are presented in detail in our separate Methods Report (WDFW 2011a).

In the following section we present results from our monitoring activities during the May 1 through September 30, 2010 Area 13 summer selective Chinook fishery season. Note that we will generate estimates of fishery-total Chinook encounters and mortalities by size/mark group for the Area 13 Chinook MSF at a later date, when post-season CRC-based retained Chinook estimates become available for the 2010 Area 13 Chinook MSF season (approximately one year after the fishery). We will then apply the proportion of legal-marked Chinook obtained from VTRs in the 2010 Area 13 Chinook MSF to the CRC-based retained Chinook estimate, enabling an estimate of total Chinook encounters and associated mortalities using Conrad and McHugh's (2008) bias-corrected method (see WDFW 2011a, Appendix B).

**Table 54.** Sampling/estimation details on target parameters associated with the overall Area 13 summer mark-selective fishery monitoring program.

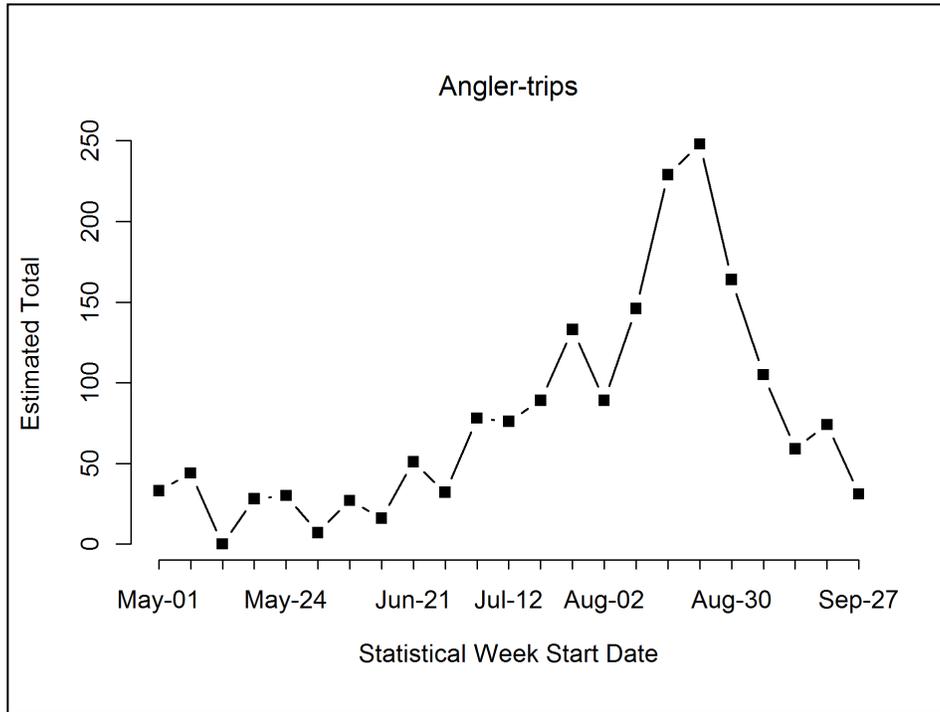
Activity	Focal Parameter(s)	Secondary Parameter(s)	Sample Unit(s)	Finest Estimation Time Step	Comments
Dockside Angler Interviews (Baseline Sampling)	Observed (in-sample) fishing effort (boat & angler trips); kept and released fish.	Catch rates (CPUE); length, age, and CWT composition of harvest <sup>1</sup> ; collection of angler fishing methods.	Angler trip; kept fish; reported fish release	Week	Observed catch per angler trip and species composition data obtained from baseline sampling will ultimately be combined with Catch Record Card (CRC) data to produce fishery-total estimates at a later time (approximately one year following the fishery).
Voluntary Trip Reports (VTRs)	Size (legal/sublegal) and mark-status composition (marked, unmarked) of encountered Chinook	Encounter data for non-Chinook species (e.g., coho) that the angler may record on the VTR form	Fish encounter	Season	VTR data will be used in the estimation of total Chinook encounters by size/mark group (LM=75.0%, LU=10.7%, SM=10.7%, SU=3.6%; <b>Table 59</b> ) and associated impacts, once CRC-based retained Chinook estimates become available, using Conrad and McHugh's (2008) bias-corrected method.
Overall Fishery Impacts Estimation	Total Chinook encounters and mortalities, by size/mark-status group	Ratios of encounters and mortalities per kept Chinook	N/A	Season	Will be estimated at a later date, when post-season CRC-based retained Chinook estimates become available (approximately one year after the fishery). We will then apply the proportion of legal-marked Chinook obtained from VTRs to the CRC-based retained Chinook estimate, enabling an estimate of total Chinook encounters and associated mortalities by size/mark group using Conrad and McHugh's (2008) bias-corrected method (see WDFW 2011a, Appendix B).
Coded-wire tag (CWT) Impacts Estimation	Marked/unmarked double-index tag (DIT) encounters and mortalities	N/A	N/A	Season	Will be estimated at a later date, when CRC-based fishery total estimates become available (approximately one year after the fishery). The temporal resolution of DIT impacts is constrained by the total number of tags recovered.

**Table 55.** List of sites sampled, with the number of sampling events (site-days) during the Area 13 summer 2010 mark-selective Chinook fishery, May 1 through September 30, 2010.

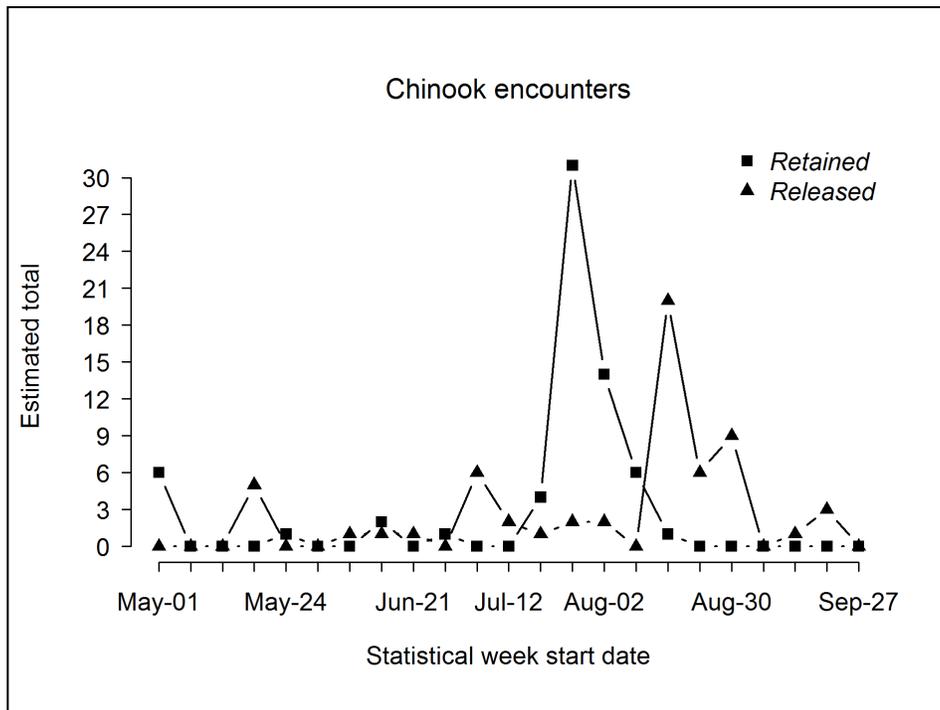
Location	Number Site-Days Sampled per Month					Total Site-Days	% of Total
	May	June	July	August	Sept		
Allyn Public Ramp			2		5	7	2.0%
Arcadia Ramp	1				1	2	0.6%
Boston Harbor Ramp	2	1	13	12	7	35	10.1%
Concrete Dock			2			2	0.6%
Day Island Yacht Club						0	0.0%
Fox Island Public Ramp	2		5	2	1	10	2.9%
Gig Harbor Ramp		3	1	1		5	1.4%
Grapeview Public Ramp			1		1	2	0.6%
Harper Ramp						0	0.0%
Harstene Is Ramp			5	4		9	2.6%
Johns Creek						0	0.0%
Luhr Beach Ramp	4		15	14	14	47	13.6%
Narrows Marina	11	7	20	16	11	65	18.8%
Narrows Properties Park	1	1	3	1	2	8	2.3%
Point Defiance Boat House	1	1		1		3	0.9%
Point Defiance Ramp	1	3	6	6	8	24	7.0%
Port of Shelton Ramp					1	1	0.3%
Redondo Ramp						0	0.0%
Solo Point Ramp	5	2	16	13	11	47	13.6%
Solo Point Shore				1		1	0.3%
Steilacoom Public Ramp			2	4	3	9	2.6%
Vaughn Public Ramp		1	3			4	1.2%
Wallochet Bay Public Ramp	2		5			7	2.0%
Wauna Ramp/Shore			1			1	0.3%
Zittels Marina	11	5	18	13	9	56	16.2%
<b>Grand Total</b>	<b>41</b>	<b>24</b>	<b>118</b>	<b>88</b>	<b>74</b>	<b>345</b>	<b>100.0%</b>

**Table 56.** Observations of fishing effort, salmon harvest, and reported salmon releases, by week, for the Area 13, May 1-Sept. 30, 2010 mark-selective Chinook fishery. Note: displayed values are sample observations (i.e., summed across sampled sites) and not fishery totals.

Month	Stat Week	Effort		Retained Chin.		Other Sp. Kept.			Rel'd Chin.			Other Sp. Released						
		Boats	Anglers	AD	UM	AD Coho	UM Coho	Chum	AD	UM	UNK	AD Coho	UM Coho	UNK Coho	Pink	Chum	Cut-throat Trout	Unk Salmon
May	18	14	33	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	19	24	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21	17	28	0	0	0	0	0	1	2	2	0	0	0	0	0	0	0
	22	13	30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	10
June	23	6	7	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
	24	12	27	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	25	9	16	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	26	24	51	0	0	0	0	0	0	1	0	0	0	3	0	0	0	7
July	27	16	32	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	28	38	78	0	0	0	0	0	0	0	6	0	0	0	0	0	0	1
	29	40	76	0	0	0	0	0	1	0	1	0	1	0	0	0	0	19
	30	47	89	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	31	62	133	30	1	0	0	0	1	0	2	0	0	0	0	0	0	0
Aug.	32	46	89	14	0	0	0	0	0	1	1	0	0	0	0	0	0	1
	33	72	146	6	0	0	0	0	0	0	2	0	0	0	0	0	0	4
	34	115	229	0	1	0	0	0	4	3	13	0	0	0	0	0	0	1
	35	127	248	0	0	0	0	0	1	3	2	0	0	0	0	0	0	1
Sep.	36	85	164	0	0	0	0	0	2	3	4	0	0	0	0	0	0	0
	37	54	105	0	0	0	0	0	0	0	0	0	1	0	0	0	0	23
	38	33	59	0	0	0	0	0	0	0	1	0	0	0	0	0	0	11
	39	45	74	0	0	0	0	4	2	0	1	0	1	1	0	0	0	7
	40	18	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Grand Total:</b>		<b>917</b>	<b>1,789</b>	<b>64</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>13</b>	<b>15</b>	<b>35</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>89</b>	<b>5</b>



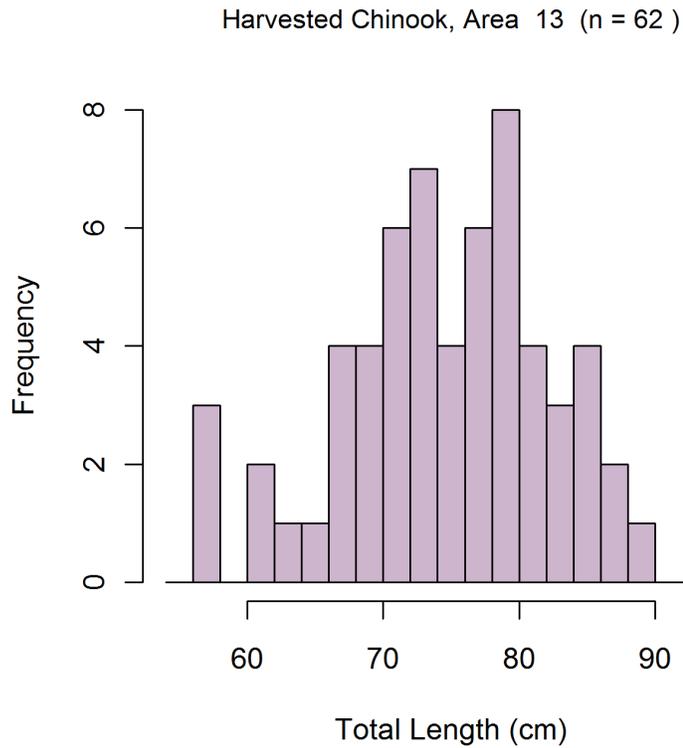
**Figure 22.** Temporal patterns in weekly total fishing effort (*observed* angler trips) during the Area 13 summer mark-selective Chinook fishery, May 1-September 30, 2010. Note: displayed values are sample observations (i.e., summed across sampled sites) and not fishery-total estimates.



**Figure 23.** Temporal patterns in *observed* weekly Chinook harvest and releases during the Area 13 summer mark-selective Chinook fishery, May 1-September 31, 2010. Note: displayed values are sample observations (i.e., summed across sampled sites) and not fishery-total estimates.

**Table 57.** Summary of length samples collected from retained Chinook salmon during dockside angler interviews in the Area 13 mark-selective Chinook fishery, May 1-September 30, 2010.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	62	0	62
Unmarked	2	0	2
<b>Total</b>	<b>64</b>	<b>0</b>	<b>64</b>



**Figure 24.** Length-frequency distributions of retained marked Chinook sampled at dockside during the Area 13 summer 2010 mark-selective Chinook fishery, May 1 through September 30, 2010.

**Table 58.** Summary of coded-wire tags recovered from Chinook salmon harvested during the Area 13 summer mark-selective Chinook fishery from May 1 through September 30, 2010. The field “No. DITs” corresponds to the number of tags that belonged to double-index tag groups.

Release Domain	Release Region	Release Site	Rearing Location	CWTs Recovered	No. DITs
Washington	Southern Puget Sound	CHAMBERS CR 12.0007	GARRISON HATCHERY	1 (50%)	0
		LAKWOOD HATCHERY	LAKWOOD HATCHERY	1 (50%)	0
<b>TOTAL</b>				<b>2</b>	<b>0</b>

**Table 59.** Total Chinook encountered (retained and released) by private anglers logging their trips on voluntary trip reports (VTRs), with estimates of legal-size and overall mark rates, in the Area 13 summer mark-selective Chinook fishery, May 1-September 30, 2010.

Data source	Effort & Sample Size	Legal		Sublegal		Total	Mark Rates	
		AD	UM	AD	UM		Overall	Legal
<b>Private Boat VTR</b>	22 1-trip VTRs, 111 Angler Trips	<b>21</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>28</b>	<b>85.7%</b>	<b>87.5%</b>
Size/mark-status composition:		0.750	0.107	0.107	0.036			
Variance:		(0.0069)	(0.0035)	(0.0035)	(0.0013)			

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**APPENDICES**

**Appendix A-1.** Size measures by sample date, for sites sampled during dockside creel surveys in the Area 5 mark-selective Chinook fishery from July 1 through August 15, 2010.

SAMPLE DATE	WEEK	SITE SIZE	LOCATION	SAMPLE DATE	WEEK	SITE SIZE	LOCATION
7/1	27	0.195	Van Riper's South	8/4	32	0.240	Olson's East Docks
7/1	27	0.199	Olson's East Docks	8/4	32	0.263	Van Riper's South
7/2	27	0.371	Olson's Ramp & Docks	8/7	32	0.329	Olson's Ramp & Docks
7/2	27	0.278	Olson's East Docks	8/7	32	0.138	Olson's East Docks
7/3	27	0.371	Olson's Ramp & Docks	8/8	32	0.329	Olson's Ramp & Docks
7/3	27	0.278	Olson's East Docks	8/8	32	0.138	Curley's/Straitside
7/8	28	0.319	Olson's Ramp & Docks	8/12	33	0.318	Olson's Ramp & Docks
7/8	28	0.142	Olson's West Docks	8/12	33	0.240	Olson's East Docks
7/9	28	0.371	Olson's Ramp & Docks	8/13	33	0.252	Van Riper's South
7/9	28	0.175	Van Riper's South	8/13	33	0.138	Olson's East Docks
7/10	28	0.175	Van Riper's South				
7/10	28	0.371	Olson's Ramp & Docks				
7/15	29	0.115	Van Riper's North				
7/15	29	0.319	Olson's Ramp & Docks				
7/16	29	0.371	Olson's Ramp & Docks				
7/16	29	0.278	Olson's East Docks				
7/18	29	0.371	Olson's Ramp & Docks				
7/18	29	0.175	Van Riper's South				
7/22	30	0.115	Van Riper's North				
7/22	30	0.199	Olson's East Docks				
7/24	30	0.278	Olson's East Docks				
7/24	30	0.072	Olson's West Docks				
7/25	30	0.371	Olson's Ramp & Docks				
7/25	30	0.067	Van Riper's North				
7/29	31	0.263	Van Riper's South				
7/29	31	0.240	Olson's East Docks				
7/30	31	0.252	Van Riper's South				
7/30	31	0.329	Olson's Ramp & Docks				
8/1	31	0.252	Van Riper's South				
8/1	31	0.329	Olson's Ramp & Docks				

**Appendix A-2.** Size measures by sample date, for sites sampled during dockside creel surveys in the Area 9 summer mark-selective Chinook fishery from July 16 through August 31, 2010.

SAMPLE DATE	WEEK	SITE SIZE	LOCATION	SAMPLE DATE	WEEK	SITE SIZE	LOCATION
7/16/2010	29	0.438	Everett	8/8/2010	32	0.505	Everett
7/16/2010	29	0.300	Pt Townsend BH	8/8/2010	32	0.090	Pt Townsend BH
7/17/2010	29	0.333	Everett	8/10/2010	33	0.137	Mukilteo
7/17/2010	29	0.264	Pt Townsend BH	8/10/2010	33	0.121	Pt Townsend BH
7/18/2010	29	0.333	Everett	8/12/2010	33	0.434	Everett
7/18/2010	29	0.264	Pt Townsend BH	8/12/2010	33	0.143	Ft Casey
7/19/2010	30	0.438	Everett	8/13/2010	33	0.137	Mukilteo
7/19/2010	30	0.300	Pt Townsend BH	8/13/2010	33	0.121	Pt Townsend BH
7/22/2010	30	0.438	Everett	8/14/2010	33	0.505	Everett
7/22/2010	30	0.113	Ft Casey	8/14/2010	33	0.126	Kingston
7/23/2010	30	0.438	Everett	8/15/2010	33	0.505	Everett
7/23/2010	30	0.300	Pt Townsend BH	8/15/2010	33	0.090	Pt Townsend BH
7/24/2010	30	0.333	Everett	8/17/2010	34	0.434	Everett
7/24/2010	30	0.264	Pt Townsend BH	8/17/2010	34	0.121	Pt Townsend BH
7/25/2010	30	0.333	Everett	8/18/2010	34	0.434	Everett
7/25/2010	30	0.264	Pt Townsend BH	8/18/2010	34	0.121	Pt Townsend BH
7/28/2010	31	0.438	Everett	8/20/2010	34	0.434	Everett
7/28/2010	31	0.300	Pt Townsend BH	8/20/2010	34	0.121	Pt Townsend BH
7/29/2010	31	0.438	Everett	8/21/2010	34	0.505	Everett
7/29/2010	31	0.113	Ft Casey	8/21/2010	34	0.126	Kingston
7/30/2010	31	0.150	Mukilteo	8/22/2010	34	0.505	Everett
7/30/2010	31	0.300	Pt Townsend BH	8/22/2010	34	0.090	Pt Townsend BH
7/31/2010	31	0.333	Everett	8/24/2010	35	0.434	Everett
7/31/2010	31	0.264	Pt Townsend BH	8/24/2010	35	0.090	Pt Townsend BH
8/1/2010	31	0.333	Everett	8/26/2010	35	0.434	Everett
8/1/2010	31	0.287	Ft Casey	8/26/2010	35	0.156	Pt Townsend BH
8/3/2010	32	0.434	Everett	8/27/2010	35	0.434	Everett
8/3/2010	32	0.121	Pt Townsend BH	8/27/2010	35	0.156	Pt Townsend BH
8/4/2010	32	0.137	Mukilteo	8/28/2010	35	0.505	Everett
8/4/2010	32	0.143	Ft Casey	8/28/2010	35	0.963	Kingston
8/6/2010	32	0.434	Everett	8/29/2010	35	0.505	Everett
8/6/2010	32	0.121	Pt Townsend BH	8/29/2010	35	0.090	Pt Townsend BH
8/7/2010	32	0.505	Everett	8/30/2010	36	0.505	Everett
8/7/2010	32	0.113	Ft Casey	8/30/2010	36	0.156	Pt Townsend BH

**Appendix A-3.** Size measures by sample date, for sites sampled during dockside creel surveys in the Area 10 summer mark-selective Chinook fishery from July 16 through August 31, 2010.

SAMPLE DATE	WEEK	SITE SIZE	LOCATION	SAMPLE DATE	WEEK	SITE SIZE	LOCATION
7/16/2010	29	0.455	Shilshole	8/8/2010	32	0.509	Shilshole
7/16/2010	29	0.182	Armeni	8/8/2010	32	0.075	Manchester
7/17/2010	29	0.543	Shilshole	8/10/2010	33	0.455	Shilshole
7/17/2010	29	0.216	Kingston	8/10/2010	33	0.182	Armeni
7/18/2010	29	0.543	Shilshole	8/12/2010	33	0.455	Shilshole
7/18/2010	29	0.121	Armeni	8/12/2010	33	0.075	Manchester
7/19/2010	30	0.455	Shilshole	8/13/2010	33	0.455	Shilshole
7/19/2010	30	0.073	Kingston	8/13/2010	33	0.182	Armeni
7/22/2010	30	0.455	Shilshole	8/14/2010	33	0.509	Shilshole
7/22/2010	30	0.182	Kingston	8/14/2010	33	0.170	Kingston
7/23/2010	30	0.455	Shilshole	8/15/2010	33	0.509	Shilshole
7/23/2010	30	0.182	Armeni	8/15/2010	33	0.170	Kingston
7/24/2010	30	0.543	Shilshole	8/17/2010	34	0.486	Shilshole
7/24/2010	30	0.216	Kingston	8/17/2010	34	0.279	Armeni
7/25/2010	30	0.453	Shilshole	8/18/2010	34	0.486	Shilshole
7/25/2010	30	0.086	Brownsville	8/18/2010	34	0.279	Armeni
7/28/2010	31	0.455	Shilshole	8/20/2010	34	0.486	Shilshole
7/28/2010	31	0.182	Armeni	8/20/2010	34	0.075	Manchester
7/29/2010	31	0.455	Shilshole	8/21/2010	34	0.509	Shilshole
7/29/2010	31	0.073	Manchester	8/21/2010	34	0.170	Kingston
7/30/2010	31	0.455	Shilshole	8/22/2010	34	0.509	Shilshole
7/30/2010	31	0.182	Armeni	8/22/2010	34	0.164	Armeni
7/31/2010	31	0.509	Shilshole	8/24/2010	35	0.486	Shilshole
7/31/2010	31	0.170	Kingston	8/24/2010	35	0.279	Armeni
8/1/2010	31	0.509	Shilshole	8/26/2010	35	0.486	Shilshole
8/1/2010	31	0.082	Brownsville	8/26/2010	35	0.136	Kingston
8/3/2010	32	0.455	Shilshole	8/27/2010	35	0.486	Shilshole
8/3/2010	32	0.109	Brownsville	8/27/2010	35	0.279	Armeni
8/4/2010	32	0.455	Shilshole	8/28/2010	35	0.509	Shilshole
8/4/2010	32	0.182	Armeni	8/28/2010	35	0.170	Kingston
8/6/2010	32	0.455	Shilshole	8/29/2010	35	0.509	Shilshole
8/6/2010	32	0.182	Armeni	8/29/2010	35	0.164	Armeni
8/7/2010	32	0.509	Shilshole	8/30/2010	36	0.486	Shilshole
8/7/2010	32	0.170	Kingston	8/30/2010	36	0.279	Armeni

**Appendix A-4.** Size measures by sample date, for sites sampled during dockside creel surveys in the Area 11 mark-selective Chinook fishery from June 1 through August 31, 2010.

SAMPLE DATE	WEEK	SITE SIZE	LOCATION	SAMPLE DATE	WEEK	SITE SIZE	LOCATION
6/1/2010	23	0.478	Point Defiance Ramp	8/1/2010	31	0.499	Point Defiance Ramp
6/1/2010	23	0.215	Point Defiance BH	8/1/2010	31	0.120	Point Defiance BH
6/4/2010	23	0.405	Point Defiance Ramp	8/4/2010	32	0.484	Point Defiance Ramp
6/4/2010	23	0.144	Point Defiance BH	8/4/2010	32	0.150	Redondo Ramp
6/5/2010	23	0.405	Point Defiance Ramp	8/7/2010	32	0.085	Gig Harbor
6/5/2010	23	0.144	Point Defiance BH	8/7/2010	32	0.224	Redondo Ramp
6/9/2010	24	0.478	Point Defiance Ramp	8/8/2010	32	0.499	Point Defiance Ramp
6/9/2010	24	0.215	Point Defiance BH	8/8/2010	32	0.120	Point Defiance BH
6/12/2010	24	0.405	Point Defiance Ramp	8/12/2010	33	0.484	Point Defiance Ramp
6/12/2010	24	0.144	Point Defiance BH	8/12/2010	33	0.039	Narrows Marina/Ramp
6/13/2010	24	0.405	Point Defiance Ramp	8/13/2010	33	0.499	Point Defiance Ramp
6/13/2010	24	0.144	Point Defiance BH	8/13/2010	33	0.120	Point Defiance BH
6/16/2010	25	0.478	Point Defiance Ramp	8/14/2010	33	0.499	Point Defiance Ramp
6/16/2010	25	0.215	Point Defiance BH	8/14/2010	33	0.224	Redondo Ramp
6/18/2010	25	0.405	Point Defiance Ramp	8/18/2010	34	0.484	Point Defiance Ramp
6/18/2010	25	0.105	Narrows Marina/Ramp	8/18/2010	34	0.150	Redondo Ramp
6/19/2010	25	0.405	Point Defiance Ramp	8/20/2010	34	0.499	Point Defiance Ramp
6/19/2010	25	0.144	Point Defiance BH	8/20/2010	34	0.085	Gig Harbor
6/22/2010	26	0.478	Point Defiance Ramp	8/21/2010	34	0.499	Point Defiance Ramp
6/22/2010	26	0.215	Point Defiance BH	8/21/2010	34	0.120	Point Defiance BH
6/25/2010	26	0.405	Point Defiance Ramp	8/26/2010	35	0.484	Point Defiance Ramp
6/25/2010	26	0.151	Redondo Ramp	8/26/2010	35	0.101	Gig Harbor
6/26/2010	26	0.405	Point Defiance Ramp	8/27/2010	35	0.499	Point Defiance Ramp
6/26/2010	26	0.144	Point Defiance BH	8/27/2010	35	0.224	Redondo Ramp
7/1/2010	27	0.509	Point Defiance Ramp	8/28/2010	35	0.499	Point Defiance Ramp
7/1/2010	27	0.081	Point Defiance BH	8/28/2010	35	0.120	Point Defiance BH
7/2/2010	27	0.431	Point Defiance Ramp	8/31/2010	36	0.352	Point Defiance Ramp
7/2/2010	27	0.060	Armeni Ramp	8/31/2010	36	0.243	Redondo Ramp
7/3/2010	27	0.431	Point Defiance Ramp	9/4/2010	36	0.414	Point Defiance Ramp
7/3/2010	27	0.151	Point Defiance BH	9/4/2010	36	0.298	Redondo Ramp
7/8/2010	28	0.509	Point Defiance Ramp	9/5/2010	36	0.414	Point Defiance Ramp
7/8/2010	28	0.130	Gig Harbor	9/5/2010	36	0.097	Point Defiance BH
7/9/2010	28	0.431	Point Defiance Ramp	9/9/2010	37	0.352	Point Defiance Ramp
7/9/2010	28	0.236	Redondo Ramp	9/9/2010	37	0.226	Point Defiance BH
7/10/2010	28	0.431	Point Defiance Ramp	9/10/2010	37	0.414	Point Defiance Ramp
7/10/2010	28	0.151	Point Defiance BH	9/10/2010	37	0.097	Point Defiance BH
7/15/2010	29	0.509	Point Defiance Ramp	9/12/2010	37	0.414	Point Defiance Ramp
7/15/2010	29	0.081	Point Defiance BH	9/12/2010	37	0.097	Point Defiance BH

SAMPLE DATE	WEEK	SITE SIZE	LOCATION	SAMPLE DATE	WEEK	SITE SIZE	LOCATION
7/16/2010	29	0.431	Point Defiance Ramp	9/15/2010	38	0.352	Point Defiance Ramp
7/16/2010	29	0.236	Redondo Ramp	9/15/2010	38	0.121	Gig Harbor
7/18/2010	29	0.431	Point Defiance Ramp	9/17/2010	38	0.414	Point Defiance Ramp
7/18/2010	29	0.151	Point Defiance BH	9/17/2010	38	0.298	Redondo Ramp
7/22/2010	30	0.509	Point Defiance Ramp	9/18/2010	38	0.414	Point Defiance Ramp
7/22/2010	30	0.130	Gig Harbor	9/18/2010	38	0.097	Point Defiance BH
7/24/2010	30	0.431	Point Defiance Ramp	9/23/2010	39	0.352	Point Defiance Ramp
7/24/2010	30	0.236	Redondo Ramp	9/23/2010	39	0.226	Point Defiance BH
7/25/2010	30	0.431	Point Defiance Ramp	9/25/2010	39	0.414	Point Defiance Ramp
7/25/2010	30	0.151	Point Defiance BH	9/25/2010	39	0.298	Redondo Ramp
7/29/2010	31	0.484	Point Defiance Ramp	9/26/2010	39	0.414	Point Defiance Ramp
7/29/2010	31	0.101	Gig Harbor	9/26/2010	39	0.117	Gig Harbor
7/30/2010	31	0.499	Point Defiance Ramp	9/29/2010	40	0.352	Point Defiance Ramp
7/30/2010	31	0.224	Redondo Ramp	9/29/2010	40	0.226	Point Defiance BH

**Appendix B-1.** Coded Wire Tag (CWT) recoveries in the Area 5 summer mark-selective Chinook fishery, July 1 – August 15, 2010.

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
5	1-Jul-10	634671	2007	SNAKE R-UPPR 35.0002	LYONS FERRY HATCHERY	WDFW		60	60870	AD Fin Clp
5	1-Jul-10	634671	2007	SNAKE R-UPPR 35.0002	LYONS FERRY HATCHERY	WDFW		71	60858	AD Fin Clp
5	1-Jul-10	182211	2007	R-COWICHAN ESTUARY		CDFO		69	60857	AD Fin Clp
5	1-Jul-10	634274	2007	NOOKSACK R -NF 01.0120	KENDALL CR HATCHERY	WDFW	634275	74	60852	AD Fin Clp
5	1-Jul-10	633967	2006	GREEN R 09.0001		WDFW		73	60856	AD Fin Clp
5	1-Jul-10	50685	2007	SPRING CR 29.0159	SPRING CR NFH	USFWS	53767, 53766, 50686	72	60851	AD Fin Clp
5	1-Jul-10	634284	2007	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		59	60368	AD Fin Clp
5	1-Jul-10	633579	2006	GROVERS CR 15.0299	GROVERS CR HATCHERY	Suquamish Tribe	210737	70	60369	AD Fin Clp
5	1-Jul-10	634296	2007	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW		54	60855	AD Fin Clp
5	1-Jul-10	633882	2006	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	633883	86	49533	AD Fin Clp
5	1-Jul-10	185558	2007	R-HARRISON R	H-CHEHALIS R	CDFO		67	50799	AD Fin Clp
5	1-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	67	60854	AD Fin Clp
5	1-Jul-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		77	60151	AD Fin Clp
5	2-Jul-10	210789	2007	SKAGIT R 03.0176		WDFW		52	60153	AD Fin Clp
5	2-Jul-10	210688	2006	COWSKULL ACCLIM POND	COWSKULL ACCLIM POND	Puyallup Tribe (WA)		74	60152	AD Fin Clp
5	2-Jul-10	633366	2005	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	633365	74	60158	AD Fin Clp
5	3-Jul-10	210801	2007	KALAMA CR 11.0017	KALAMA CR HATCHERY	Nisqually Tribe (WA)		71	60861	AD Fin Clp
5	3-Jul-10	185926	2006	R-NICOLA R	H-SPIUS CR	CDFO		74	49540	AD Fin Clp
5	4-Jul-10	210777	2007	TULALIP CR 07.0001	BERNIE GOBIN HATCH	Tulalip Tribes			60619	AD Fin Clp
5	4-Jul-10	92359	2007	ROCK CR (N UMPQUA R)	ROCK CR HATCHERY	ODFW		65	60618	AD Fin Clp
5	4-Jul-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		61	60160	AD Fin Clp
5	4-Jul-10	633887	2006	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW	633888	79	60370	AD Fin Clp
5	4-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	56	60161	AD Fin Clp
5	4-Jul-10	185926	2006	R-NICOLA R	H-SPIUS CR	CDFO		68	49541	AD Fin Clp
5	4-Jul-10	210801	2007	KALAMA CR 11.0017	KALAMA CR HATCHERY	Nisqually Tribe (WA)		71	49542	AD Fin Clp
5	4-Jul-10	186242	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186241, 186240, 186000	70	60862	AD Fin Clp
5	8-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	62	49543	AD Fin Clp
5	9-Jul-10	53767	2007	SPRING CR 29.0159	SPRING CR NFH	USFWS	50685, 53766, 50686	78	60372	AD Fin Clp
5	9-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	64	60371	AD Fin Clp
5	9-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	66	49546	AD Fin Clp
5	9-Jul-10	634182	2006	SIMILKAMEEN R 490325		WDFW		61	49545	AD Fin Clp
5	9-Jul-10	94506	2006	UMATILLA R	UMATILLA HATCHERY	ODFW		79	60863	AD Fin Clp
5	9-Jul-10	633579	2006	GROVERS CR 15.0299	GROVERS CR HATCHERY	Suquamish Tribe	210737	72	60373	AD Fin Clp
5	9-Jul-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	67	49544	AD Fin Clp
5	10-Jul-10	634182	2006	SIMILKAMEEN R 490325		WDFW		78	60865	AD Fin Clp

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
5	10-Jul-10	54375	2007	SOOES R 20.0015	MAKAH NFH ON SOOES R	USFWS		61	60801	AD Fin Clp
5	10-Jul-10	633987	2006	SNAKE R-LOWR 33.0002	LYONS FERRY HATCHERY	WDFW		58	60620	AD Fin Clp
5	10-Jul-10	94611	2006	CEDAR CR #1 (SANDY R	CLACKAMAS HATCHERY	ODFW		70	60864	AD Fin Clp
5	10-Jul-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		52	60802	AD Fin Clp
5	10-Jul-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	65	60803	AD Fin Clp
5	10-Jul-10	210745	2006	BAKER R 03.0435		WDFW		74	60374	AD Fin Clp
5	13-Jul-10	103680	2007	SNAKE@ HLLS CNYON DM	OXBOW HATCHERY	IDFG		67	60869	AD Fin Clp
5	13-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	57	60901	AD Fin Clp
5	13-Jul-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	56	60866	AD Fin Clp
5	13-Jul-10	634672	2007	SNAKE R-LOWR 33.0002	LYONS FERRY HATCHERY	WDFW		67	60867	AD Fin Clp
5	15-Jul-10	634364	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		51	60804	AD Fin Clp
5	15-Jul-10	634680	2007	SNAKE R @ ASOTIN	LYONS FERRY HATCHERY	WDFW		52	60200	AD Fin Clp
5	16-Jul-10	186242	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186241, 186240, 186000	72	60871	AD Fin Clp
5	16-Jul-10	185707	2007	R-HARRISON R	H-CHEHALIS R	CDFO		51	60806	AD Fin Clp
5	16-Jul-10	634268	2007	KLICKITAT HATCHERY (YKFP)	KLICKITAT HATCHERY (YKFP)	Yakama Nation		56	60805	AD Fin Clp
5	16-Jul-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		67	S60155	AD Fin Clp
5	16-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	53	60868	AD Fin Clp
5	17-Jul-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	52	60159	AD Fin Clp
5	17-Jul-10	94507	2007	UMATILLA R	UMATILLA HATCHERY	ODFW		60	60872	AD Fin Clp
5	17-Jul-10	186242	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186241, 186240, 186000		60198	AD Fin Clp
5	17-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	64	60197	AD Fin Clp
5	18-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	75	60807	AD Fin Clp
5	18-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	76	60859	AD Fin Clp
5	19-Jul-10	185001	2007	R-HARRISON R	H-CHEHALIS R	CDFO		57	60375	AD Fin Clp
5	19-Jul-10	633889	2006	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		87	60376	AD Fin Clp
5	20-Jul-10	210777	2007	TULALIP CR 07.0001	BERNIE GOBIN HATCH	Tulalip Tribes		57	60874	AD Fin Clp
5	20-Jul-10	634680	2007	SNAKE R @ ASOTIN	LYONS FERRY HATCHERY	WDFW		55	60875	AD Fin Clp
5	21-Jul-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		66	60860	AD Fin Clp
5	21-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	59	60839	AD Fin Clp
5	21-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	82	60840	AD Fin Clp
5	22-Jul-10	185040	2007	R-HARRISON R	H-CHEHALIS R	CDFO		65	60850	AD Fin Clp
5	22-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	60	60876	AD Fin Clp
5	23-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	62	60847	AD Fin Clp
5	23-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	57	60912	AD Fin Clp
5	23-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	70	60848	AD Fin Clp
5	23-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	55	60849	AD Fin Clp
5	24-Jul-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		62	60163	AD Fin Clp
5	25-Jul-10	633887	2006	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW	633888	73	S60156	AD Fin Clp
5	25-Jul-10	633869	2007	CASCADE R 03.1411	MARBLEMOUNT HATCHERY	WDFW		68	60846	AD Fin Clp

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
5	25-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	62	60157	AD Fin Clp
5	25-Jul-10	612517	2007	BIG CANYON ACCL POND	LYONS FERRY HATCHERY	Nez Perce Tribe (ID)		60	49547	AD Fin Clp
5	26-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	57	60873	AD Fin Clp
5	26-Jul-10	612752	2007	CAPTAIN JOHNS PD	LYONS FERRY HATCHERY	Nez Perce Tribe (ID)		54	60377	AD Fin Clp
5	27-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	63	60911	AD Fin Clp
5	27-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	61	60910	AD Fin Clp
5	27-Jul-10	53392	2006	SOOES R 20.0015	MAKAH NFH ON SOOES R	USFWS		88	60909	AD Fin Clp
5	28-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	59	60621	AD Fin Clp
5	29-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	56	49548	AD Fin Clp
5	29-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	58	60379	AD Fin Clp
5	29-Jul-10	634274	2007	NOOKSACK R -NF 01.0120	KENDALL CR HATCHERY	WDFW	634275	66	60164	AD Fin Clp
5	29-Jul-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	57	60845	AD Fin Clp
5	29-Jul-10	185558	2007	R-HARRISON R	H-CHEHALIS R	CDFO		65	49549	AD Fin Clp
5	29-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	55	60166	AD Fin Clp
5	29-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	57	60165	AD Fin Clp
5	29-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	74	60167	AD Fin Clp
5	29-Jul-10	185359	2007	R-COWICHAN R UP	H-COWICHAN R	CDFO		80	60884	AD Fin Clp
5	29-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	78	60378	AD Fin Clp
5	29-Jul-10	634283	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		69	49550	AD Fin Clp
5	30-Jul-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		61	60885	AD Fin Clp
5	30-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	62	60842	AD Fin Clp
5	30-Jul-10	210688	2006	COWSKULL ACCLIM POND	COWSKULL ACCLIM POND	Puyallup Tribe (WA)		80	60841	AD Fin Clp
5	30-Jul-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		87	60380	AD Fin Clp
5	30-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	59	60844	AD Fin Clp
5	30-Jul-10	634694	2007	COL R @ TURTLE ROCK	TURTLE ROCK HATCHERY	WDFW		51	60810	AD Fin Clp
5	30-Jul-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		65	60808	AD Fin Clp
5	30-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	61	60843	AD Fin Clp
5	31-Jul-10	634284	2007	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		55	60168	AD Fin Clp
5	31-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	57	61509	AD Fin Clp
5	31-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	58	61508	AD Fin Clp
5	31-Jul-10	634680	2007	SNAKE R @ ASOTIN	LYONS FERRY HATCHERY	WDFW		56	60881	AD Fin Clp
5	31-Jul-10	634680	2007	SNAKE R @ ASOTIN	LYONS FERRY HATCHERY	WDFW		56	60812	AD Fin Clp
5	31-Jul-10	210777	2007	TULALIP CR 07.0001	BERNIE GOBIN HATCH	Tulalip Tribes		54	61507	AD Fin Clp
5	31-Jul-10	634284	2007	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		53	60605	AD Fin Clp
5	31-Jul-10	633967	2006	GREEN R 09.0001		WDFW		68	60381	AD Fin Clp
5	31-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	60	60811	AD Fin Clp
5	1-Aug-10	633969	2006	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		85	49551	AD Fin Clp
5	1-Aug-10	633964	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		79	60813	AD Fin Clp
5	1-Aug-10	634680	2007	SNAKE R @ ASOTIN	LYONS FERRY HATCHERY	WDFW		57	60814	AD Fin Clp

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
5	1-Aug-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	56	60815	AD Fin Clp
5	1-Aug-10	634364	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		69	60816	AD Fin Clp
5	1-Aug-10	634283	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		56	60383	AD Fin Clp
5	1-Aug-10	210682	2005	GROVERS CR 15.0299	GROVERS CR HATCHERY	Suquamish Tribe	633285	56	60382	AD Fin Clp
5	1-Aug-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		62	60171	AD Fin Clp
5	1-Aug-10	634283	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		51	60177	AD Fin Clp
5	1-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	59	60181	AD Fin Clp
5	1-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	56	60170	AD Fin Clp
5	1-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	66	49553	AD Fin Clp
5	1-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	59	49552	AD Fin Clp
5	2-Aug-10	186242	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186241 186240 186000	70	49501	AD Fin Clp
5	2-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	67	40956	AD Fin Clp
5	2-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	59	60384	AD Fin Clp
5	3-Aug-10	210787	2007	WHITEHORSE SPRINGS	WHITEHORSE POND	Stillaguamish Tribe		55	60880	AD Fin Clp
5	4-Aug-10	186240	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186242, 186241, 186000	71	60818	AD Fin Clp
5	4-Aug-10	634184	2006	WENATCHEE R 45.0030		WDFW		75	60817	AD Fin Clp
5	4-Aug-10	633579	2006	GROVERS CR 15.0299	GROVERS CR HATCHERY	Suquamish Tribe	210737	80	60195	AD Fin Clp
5	4-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	61	60883	AD Fin Clp
5	4-Aug-10	186240	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186242, 186241, 186000	71	60173	AD Fin Clp
5	4-Aug-10	634080	2006	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		80	60174	AD Fin Clp
5	5-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	51	60822	AD Fin Clp
5	5-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	71	60194	AD Fin Clp
5	5-Aug-10	210777	2007	TULALIP CR 07.0001	BERNIE GOBIN HATCH	Tulalip Tribes		56	60823	AD Fin Clp
5	5-Aug-10	210801	2007	KALAMA CR 11.0017	KALAMA CR HATCHERY	Nisqually Tribe (WA)		56	60908	AD Fin Clp
5	5-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		62	60820	AD Fin Clp
5	5-Aug-10	210801	2007	KALAMA CR 11.0017	KALAMA CR HATCHERY	Nisqually Tribe (WA)		56	60819	AD Fin Clp
5	5-Aug-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	63	60886	AD Fin Clp
5	5-Aug-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	63	60176	AD Fin Clp
5	5-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	71	60193	AD Fin Clp
5	5-Aug-10	68634	2008	SAN PABLO BAY NET PENS	FEATHER R HATCHERY	CDFG		52	60821	AD Fin Clp
5	7-Aug-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	66	49502	AD Fin Clp
5	7-Aug-10	107502	2007	SNAKE@ HLLS CNYON DM	OXBOW HATCHERY	IDFG		57	49503	AD Fin Clp
5	7-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		62	60829	AD Fin Clp
5	7-Aug-10	632974	2007	WENATCHEE R 45.0030	DRYDEN POND	WDFW		62	60828	AD Fin Clp
5	7-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS	WDFW	634270	52	60622	AD Fin Clp

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
					HATCHRY					
5	7-Aug-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		70	60825	AD Fin Clp
5	7-Aug-10	90169	2007	MOLALLA R	WILLAMETTE HATCHERY	ODFW		61	60623	AD Fin Clp
5	7-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	66	60826	AD Fin Clp
5	7-Aug-10	53874	2007	SPRING CR 29.0159	SPRING CR NFH	USFWS	53779, 53875, 53776	62	60830	AD Fin Clp
5	7-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	59	60827	AD Fin Clp
5	7-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	56	61510	AD Fin Clp
5	7-Aug-10	634296	2007	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW		59	49504	AD Fin Clp
5	7-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	62	49505	AD Fin Clp
5	7-Aug-10	185558	2007	R-HARRISON R	H-CHEHALIS R	CDFO		61	60191	AD Fin Clp
5	7-Aug-10	634281	2007	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW	634282	57	60190	AD Fin Clp
5	7-Aug-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	56	60189	AD Fin Clp
5	7-Aug-10	634284	2007	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		56	60882	AD Fin Clp
5	7-Aug-10	634296	2007	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW		54	60831	AD Fin Clp
5	7-Aug-10	186242	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186241, 186240, 186000	61	60178	AD Fin Clp
5	7-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	60	60192	AD Fin Clp
5	7-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	52	60179	AD Fin Clp
5	7-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	57	60180	AD Fin Clp
5	7-Aug-10	185707	2007	R-HARRISON R	H-CHEHALIS R	CDFO		58	60182	AD Fin Clp
5	8-Aug-10	634284	2007	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		55	60186	AD Fin Clp
5	8-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		58	13704	AD Fin Clp
5	8-Aug-10	634283	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		56	60184	AD Fin Clp
5	8-Aug-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		78	60625	AD Fin Clp
5	8-Aug-10	634274	2007	NOOKSACK R -NF 01.0120	KENDALL CR HATCHERY	WDFW	634275	74	60185	AD Fin Clp
5	8-Aug-10	180485	2008	R-HARRISON R	H-CHEHALIS R	CDFO		51	60187	AD Fin Clp
5	8-Aug-10	633875	2006	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	633876	74	60188	AD Fin Clp
5	8-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	60	60624	AD Fin Clp
5	8-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		53	60832	AD Fin Clp
5	8-Aug-10	186242	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186241, 186240, 186000	60	60833	AD Fin Clp
5	8-Aug-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		57	61512	AD Fin Clp
5	9-Aug-10	634995	2008	LYONS FERRY REL.SITE	LYONS FERRY HATCHERY	WDFW		50	13705	AD Fin Clp
5	9-Aug-10	68805	2007	TRINITY R HATCHERY	TRINITY R HATCHERY	Hoopa Valley Tribe (CA)		63	13714	AD Fin Clp
5	9-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	65	49507	AD Fin Clp
5	9-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	53	49508	AD Fin Clp
5	9-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		54	49509	AD Fin Clp

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
5	9-Aug-10	633389	2006	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	633390	73	49510	AD Fin Clp
5	10-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	59	60888	AD Fin Clp
5	11-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	55	61520	AD Fin Clp
5	11-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	66	60907	AD Fin Clp
5	11-Aug-10	68636	2008	SAN PABLO BAY NET PENS	FEATHER R HATCHERY	CDFG		53	60834	AD Fin Clp
5	12-Aug-10	185356	2007	R-COWICHAN R UP	H-COWICHAN R	CDFO		63	60835	AD Fin Clp
5	12-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	72	49511	AD Fin Clp
5	13-Aug-10	634672	2007	SNAKE R-LOWR 33.0002	LYONS FERRY HATCHERY	WDFW		67	60837	AD Fin Clp
5	13-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	66	60838	AD Fin Clp
5	13-Aug-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		58	60836	AD Fin Clp
5	14-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	57	49514	AD Fin Clp
5	14-Aug-10	633867	2006	CASCADE R 03.1411	MARBLEMOUNT HATCHERY	WDFW		72	49513	AD Fin Clp
5	15-Aug-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	59	61539	AD Fin Clp

**Appendix B-2.** Coded-wire tag (CWT) recoveries in the Area 6 summer mark-selective Chinook fishery, July 1–August 15, 2010.

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
6	7-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	69	60088	AD Fin Clp
6	23-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	78	60091	AD Fin Clp
6	31-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	68	60092	AD Fin Clp
6	1-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	59	60093	AD Fin Clp
6	31-Jul-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		61	60094	AD Fin Clp
6	11-Jul-10	53874	2007	SPRING CR 29.0159	SPRING CR NFH	USFWS	53779, 53875, 53776	81	60095	AD Fin Clp
6	11-Jul-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		80	60096	AD Fin Clp
6	16-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	66	60098	AD Fin Clp
6	17-Jul-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	80	60099	AD Fin Clp
6	1-Jul-10	633967	2006	GREEN R 09.0001		WDFW		85	60107	AD Fin Clp
6	3-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	68	60108	AD Fin Clp
6	3-Jul-10	94646	2007	BIG CR (LWR COL R)	BIG CR HATCHERY	ODFW	94662	77	60109	AD Fin Clp
6	16-Jul-10	633886	2006	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		75	60111	AD Fin Clp
6	7-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	58	60113	AD Fin Clp
6	8-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	67	60114	AD Fin Clp
6	5-Aug-10	633579	2006	GROVERS CR 15.0299	GROVERS CR HATCHERY	Suquamish Tribe	210737	85	60115	AD Fin Clp
6	4-Aug-10	210278	2007	BAKER R 03.0435		WDFW		64	60119	AD Fin Clp

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
6	9-Aug-10	185001	2007	R-HARRISON R	H-CHEHALIS R	CDFO		73	60126	AD Fin Clp
6	8-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	70	60757	AD Fin Clp
6	8-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	66	60758	AD Fin Clp
6	10-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	77	60759	AD Fin Clp
6	11-Jul-10	186225	2007	R-COWICHAN R	H-COWICHAN R	CDFO		72	60760	AD Fin Clp
6	13-Jul-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	68	60761	AD Fin Clp
6	13-Jul-10	633579	2006	GROVERS CR 15.0299	GROVERS CR HATCHERY	Suquamish Tribe	210737	77	60762	AD Fin Clp
6	13-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	59	60763	AD Fin Clp
6	31-Jul-10	182211	2007	R-COWICHAN ESTUARY		CDFO		71	60764	AD Fin Clp
6	1-Aug-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	70	60765	AD Fin Clp
6	2-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	59	60766	AD Fin Clp
6	3-Aug-10	633391	2006	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	210736	77	60767	AD Fin Clp
6	15-Aug-10	633875	2006	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	633876	76	60768	AD Fin Clp
6	13-Aug-10	186242	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186241, 186240, 186000	76	60770	AD Fin Clp
6	13-Aug-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		74	60771	AD Fin Clp
6	13-Aug-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	77	60772	AD Fin Clp
6	15-Aug-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	77	60775	AD Fin Clp
6	15-Aug-10	186240	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186242, 186241, 186000	73	60776	AD Fin Clp
6	19-Jul-10	53874	2007	SPRING CR 29.0159	SPRING CR NFH	USFWS	53779, 53875, 53776	77	60799	AD Fin Clp
6	13-Jul-10	53778	2007	SPRING CR 29.0159	SPRING CR NFH	USFWS	53779, 53875, 53776	79	60800	AD Fin Clp

**Appendix B-3.** Coded-wire tag (CWT) recoveries in the Area 9 summer mark-selective Chinook fishery, July 16 – August 31, 2010.

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
9	16-Jul-10	186240	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186242, 186241, 186000	74	58332	AD Fin Clp
9	16-Jul-10	210745	2006	BAKER R 03.0435		WDFW		85	66604	AD Fin Clp
9	16-Jul-10	210777	2007	TULALIP CR 07.0001	BERNIE GOBIN HATCH	Tulalip Tribes		76	54734	AD Fin Clp
9	16-Jul-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	65	42659	AD Fin Clp
9	16-Jul-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	67	66582	AD Fin Clp
9	16-Jul-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	66	66601	AD Fin Clp
9	16-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	84	54735	AD Fin Clp
9	16-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	70	66603	AD Fin Clp
9	16-Jul-10	633967	2006	GREEN R 09.0001		WDFW		86	32736	AD Fin Clp
9	16-Jul-10	633967	2006	GREEN R 09.0001		WDFW		73	54733	AD Fin Clp
9	16-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	72	32734	AD Fin Clp
9	16-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	70	58330	AD Fin Clp
9	16-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	73	32735	AD Fin Clp
9	16-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	67	54732	AD Fin Clp
9	17-Jul-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	84	60626	AD Fin Clp
9	17-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	68	58222	AD Fin Clp
9	17-Jul-10	633466	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		69	66562	AD Fin Clp
9	17-Jul-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		77	66561	AD Fin Clp
9	17-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	66	58223	AD Fin Clp
9	17-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	66	54736	AD Fin Clp
9	17-Jul-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		73	66605	AD Fin Clp
9	18-Jul-10	210688	2006	COWSKULL ACCLIM POND	COWSKULL ACCLIM POND	Puyallup Tribe (WA)		70	54738	AD Fin Clp
9	18-Jul-10	633869	2007	CASCADE R 03.1411	MARBLEMOUNT HATCHERY	WDFW		56	42660	AD Fin Clp
9	18-Jul-10	633971	2006	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		76	66570	AD Fin Clp
9	18-Jul-10	634080	2006	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		81	58337	AD Fin Clp
9	18-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	76	54737	AD Fin Clp
9	18-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	72	66606	AD Fin Clp
9	18-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	67	66580	AD Fin Clp
9	18-Jul-10	634364	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		60	66563	AD Fin Clp

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
9	22-Jul-10	634384	2007	JOHN CR 16.0253	RFEG 6 HOOD CANAL	WDFW		59	58224	AD Fin Clp
9	23-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	77	58259	AD Fin Clp
9	23-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	61	66607	AD Fin Clp
9	23-Jul-10	634364	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		58	66555	AD Fin Clp
9	24-Jul-10	185556	2007	R-HARRISON R	H-CHEHALIS R	CDFO		75	66557	AD Fin Clp
9	24-Jul-10	633966	2006	WALLACE R 07.0940		WDFW			66584	AD Fin Clp
9	24-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	72	66572	AD Fin Clp
9	24-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	65	66608	AD Fin Clp
9	24-Jul-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	68	66571	AD Fin Clp
9	24-Jul-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		73	54740	AD Fin Clp
9	25-Jul-10	185556	2007	R-HARRISON R	H-CHEHALIS R	CDFO		74	58341	AD Fin Clp
9	25-Jul-10	633487	2006	CASCADE R 03.1411	MARBLEMOUNT HATCHERY	WDFW	633486	73	66609	AD Fin Clp
9	25-Jul-10	633886	2006	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		70	58260	AD Fin Clp
9	25-Jul-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		84	42661	AD Fin Clp
9	25-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	82	54742	AD Fin Clp
9	25-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	76	66560	AD Fin Clp
9	25-Jul-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	66	58261	AD Fin Clp
9	25-Jul-10	634384	2007	JOHN CR 16.0253	RFEG 6 HOOD CANAL	WDFW		74	58340	AD Fin Clp
9	28-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	73	66610	AD Fin Clp
9	28-Jul-10	633889	2006	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		80	66564	AD Fin Clp
9	28-Jul-10	633889	2006	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		82	66565	AD Fin Clp
9	28-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	70	66566	AD Fin Clp
9	29-Jul-10	180480	2008	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	180482, 180481	56	66587	AD Fin Clp
9	29-Jul-10	633967	2006	GREEN R 09.0001		WDFW		65	66567	AD Fin Clp
9	30-Jul-10	186242	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186241, 186240, 186000	77	54744	AD Fin Clp
9	30-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	70	42662	AD Fin Clp
9	30-Jul-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	69	66576	AD Fin Clp
9	30-Jul-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		74	58231	AD Fin Clp
9	30-Jul-10	633971	2006	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		81	66573	AD Fin Clp
9	30-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	74	66568	AD Fin Clp
9	30-Jul-10	634583	2007	EAST SOUND BAY (SAN)	GLENWOOD SPRINGS	WDFW		70	54743	AD Fin Clp
9	31-Jul-10	633889	2006	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		76	54745	AD Fin Clp
9	31-Jul-10	633967	2006	GREEN R 09.0001		WDFW		78	58225	AD Fin Clp

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
9	31-Jul-10	633967	2006	GREEN R 09.0001		WDFW		73	58236	AD Fin Clp
9	31-Jul-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	73	58482	AD Fin Clp
9	31-Jul-10	634284	2007	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		68	58483	AD Fin Clp
9	31-Jul-10	634284	2007	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		62	66588	AD Fin Clp
9	31-Jul-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	62	58226	AD Fin Clp
9	1-Aug-10	633967	2006	GREEN R 09.0001		WDFW		79	66626	AD Fin Clp
9	3-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	73	42663	AD Fin Clp
9	3-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	65	42664	AD Fin Clp
9	4-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	61	57066	AD Fin Clp
9	4-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	71	58227	AD Fin Clp
9	6-Aug-10	186240	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186242, 186241, 186000	73	58228	AD Fin Clp
9	6-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	68	58229	AD Fin Clp
9	6-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	70	58262	AD Fin Clp
9	7-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	58	66569	AD Fin Clp
9	7-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	78	57065	AD Fin Clp
9	7-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	74	58230	AD Fin Clp
9	7-Aug-10	633579	2006	GROVERS CR 15.0299	GROVERS CR HATCHERY	Suquamish Tribe	210737	80	58238	AD Fin Clp
9	7-Aug-10	633964	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		79	66631	AD Fin Clp
9	7-Aug-10	633967	2006	GREEN R 09.0001		WDFW		79	58263	AD Fin Clp
9	7-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		67	54747	AD Fin Clp
9	8-Aug-10	633967	2006	GREEN R 09.0001		WDFW		77	57063	AD Fin Clp
9	8-Aug-10	634296	2007	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW		60	57064	AD Fin Clp
9	10-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	82	60116	AD Fin Clp
9	10-Aug-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	68	66632	AD Fin Clp
9	12-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	72	58240	AD Fin Clp
9	12-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	80	66801	AD Fin Clp
9	13-Aug-10	633964	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		78	54748	AD Fin Clp
9	13-Aug-10	633967	2006	GREEN R 09.0001		WDFW		77	58235	AD Fin Clp
9	13-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	74	66633	AD Fin Clp
9	13-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		68	54749	AD Fin Clp
9	14-Aug-10	633391	2006	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	210736	79	65055	AD Fin Clp
9	14-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	71	54750	AD Fin Clp
9	14-Aug-10	634291	2007	CHIWAWA R 45.0759		WDFW		59	66577	AD Fin Clp

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
9	15-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	56	58233	AD Fin Clp
9	15-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	64	66646	AD Fin Clp
9	15-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	60	66642	AD Fin Clp
9	15-Aug-10	634296	2007	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW		61	58234	AD Fin Clp
9	15-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		55	66643	AD Fin Clp
9	17-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	69	57057	AD Fin Clp
9	20-Aug-10	210801	2007	KALAMA CR 11.0017	KALAMA CR HATCHERY	Nisqually Tribe (WA)		76	66647	AD Fin Clp
9	20-Aug-10	633466	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		63	66634	AD Fin Clp
9	20-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		55	66661	AD Fin Clp
9	21-Aug-10	634299	2007	LAKWOOD HATCHERY	LAKWOOD HATCHERY	WDFW		58	58264	AD Fin Clp
9	22-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	76	57058	AD Fin Clp
9	22-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	64	66662	AD Fin Clp
9	28-Aug-10	186240	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186242, 186241, 186000	66	66635	AD Fin Clp
9	28-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	63	66636	AD Fin Clp
9	28-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	73	65056	AD Fin Clp
9	29-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	66	67036	AD Fin Clp

**Appendix B-4.** Coded-wire tag (CWT) recoveries in the Area 10 summer mark-selective Chinook fishery, July 16 – August 31, 2010.

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
10	16-Jul-10	185936	2006	R-NICOLA R	H-SPIUS CR	CDFO		67	66581	AD Fin Clp
10	16-Jul-10	633297	2005	MINTER CR 15.0048	MINTER HATCHERY	WDFW		73	58087	AD Fin Clp
10	16-Jul-10	634299	2007	LAKWOOD HATCHERY	LAKWOOD HATCHERY	WDFW		66	58331	AD Fin Clp
10	17-Jul-10	186242	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186241, 186240, 186000	67	58335	AD Fin Clp
10	17-Jul-10	210723	2006	WHITE R 10.0031	WHITE RIVER HATCHERY	Muckleshoot Tribe		74	58088	Unmarked
10	17-Jul-10	634384	2007	JOHN CR 16.0253	RFEG 6 HOOD CANAL	WDFW		69	58333	AD Fin Clp
10	23-Jul-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		67	58338	AD Fin Clp
10	24-Jul-10	633466	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		65	58339	AD Fin Clp
10	24-Jul-10	634299	2007	LAKWOOD HATCHERY	LAKWOOD HATCHERY	WDFW		54	65052	AD Fin Clp
10	24-Jul-10	634364	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		63	66583	AD Fin Clp
10	25-Jul-10	180480	2008	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	180482, 180481	51	66558	AD Fin Clp
10	25-Jul-10	186240	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186242, 186241, 186000	80	66585	AD Fin Clp
10	28-Jul-10	210801	2007	KALAMA CR 11.0017	KALAMA CR HATCHERY	Nisqually Tribe (WA)		72	58089	AD Fin Clp
10	29-Jul-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	70	66599	AD Fin Clp
10	31-Jul-10	186240	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186242, 186241, 186000	82	54953	AD Fin Clp
10	31-Jul-10	633883	2006	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	633882	84	58090	Unmarked
10	1-Aug-10	633965	2006	SKOKOMISH R 16.0001	RICKS PD (LLTK)	WDFW		59	58455	AD Fin Clp
10	1-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		59	66589	AD Fin Clp
10	5-Aug-10	185556	2007	R-HARRISON R	H-CHEHALIS R	CDFO		60	58343	AD Fin Clp
10	5-Aug-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		72	58342	AD Fin Clp
10	6-Aug-10	633879	2006	ELWHA R 18.0272		WDFW		78	58344	Unmarked
10	7-Aug-10	634299	2007	LAKWOOD HATCHERY	LAKWOOD HATCHERY	WDFW		56	58346	AD Fin Clp
10	8-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	63	66630	AD Fin Clp
10	8-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	64	66628	AD Fin Clp
10	9-Aug-10	210801	2007	KALAMA CR 11.0017	KALAMA CR HATCHERY	Nisqually Tribe (WA)		73	58452	AD Fin Clp
10	9-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	69	58451	AD Fin Clp
10	10-Aug-10	186242	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186241, 186240, 186000	78	67001	AD Fin Clp
10	11-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	76	58453	AD Fin Clp
10	12-Aug-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		86	67004	AD Fin Clp
10	12-Aug-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		89	67006	AD Fin Clp

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
10	13-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	71	67008	AD Fin Clp
10	13-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	67	66590	AD Fin Clp
10	14-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	63	67010	AD Fin Clp
10	14-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	67	58349	AD Fin Clp
10	14-Aug-10	634285	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634286	58	58350	Unmarked
10	14-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		59	67016	AD Fin Clp
10	15-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	69	67012	AD Fin Clp
10	16-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	74	58091	AD Fin Clp
10	17-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		57	66613	AD Fin Clp
10	18-Aug-10	633391	2006	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	210736	81	58456	AD Fin Clp
10	20-Aug-10	633391	2006	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	210736	81	67014	AD Fin Clp
10	20-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	64	67015	AD Fin Clp
10	20-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		62	66614	AD Fin Clp
10	20-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		57	67013	AD Fin Clp
10	20-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		61	67017	AD Fin Clp
10	21-Aug-10	210801	2007	KALAMA CR 11.0017	KALAMA CR HATCHERY	Nisqually Tribe (WA)		67	58094	AD Fin Clp
10	22-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	76	67019	AD Fin Clp
10	24-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	69	66615	AD Fin Clp
10	26-Aug-10	634286	2007	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	634285	71	58095	AD Fin Clp
10	27-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	64	58098	AD Fin Clp
10	27-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	70	58097	AD Fin Clp
10	27-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		58	58096	AD Fin Clp
10	28-Aug-10	634298	2007	GREEN R 09.0001	ICY CR HATCHERY	WDFW		50	65002	AD Fin Clp
10	29-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	78	67033	AD Fin Clp
10	29-Aug-10	633967	2006	GREEN R 09.0001		WDFW		79	67034	AD Fin Clp
10	29-Aug-10	634364	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		62	67035	AD Fin Clp
10	30-Aug-10	186240	2007	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	186242, 186241, 186000	71	67028	AD Fin Clp

**Appendix B-5.** Coded-wire tag (CWT) recoveries in the Area 11 summer mark-selective Chinook fishery, June 1 – September 30, 2010.

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	DIT codes	FKL (cm)	Label	Mark
11	1-Jun-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	73	56775	AD Fin Clp
11	13-Jun-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	76	56776	AD Fin Clp
11	18-Jun-10	634272	2007	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	634273	68	41621	AD Fin Clp
11	19-Jun-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	71	51909	AD Fin Clp
11	20-Jun-10	634299	2007	LAKEWOOD HATCHERY	LAKEWOOD HATCHERY	WDFW		68	41622	AD Fin Clp
11	22-Jun-10	633868	2006	MINTER CR 15.0048	MINTER HATCHERY	WDFW		76	51910	AD Fin Clp
11	22-Jun-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	72	56552	AD Fin Clp
11	26-Jun-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	62	56709	AD Fin Clp
11	30-Jun-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		54	56777	AD Fin Clp
11	1-Jul-10	612512	2006	SNAKE R@PITT. LNDG	LYONS FERRY HATCHERY	Nez Perce Tribe (ID)		73	56710	AD Fin Clp
11	1-Jul-10	633967	2006	GREEN R 09.0001		WDFW		81	56711	AD Fin Clp
11	16-Jul-10	634277	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	210788	63	62702	Unmarked
11	18-Jul-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		66	56778	AD Fin Clp
11	23-Jul-10	633967	2006	GREEN R 09.0001		WDFW		82	41624	AD Fin Clp
11	24-Jul-10	633887	2006	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW	633888	78	62605	AD Fin Clp
11	25-Jul-10	633889	2006	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		74	56779	AD Fin Clp
11	30-Jul-10	634284	2007	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		71	56780	AD Fin Clp
11	31-Jul-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		88	62704	AD Fin Clp
11	1-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	73	56781	AD Fin Clp
11	6-Aug-10	634271	2007	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	634270	71	54954	AD Fin Clp
11	7-Aug-10	210790	2007	GROVERS CR HATCHERY	GROVERS CR HATCHERY	Suquamish Tribe	634276	67	56553	AD Fin Clp
11	8-Aug-10	633967	2006	GREEN R 09.0001		WDFW		80	51684	AD Fin Clp
11	12-Aug-10	633382	2005	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		81	56554	AD Fin Clp
11	12-Aug-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		72	56712	AD Fin Clp
11	13-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	68	56713	AD Fin Clp
11	14-Aug-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		89	41625	AD Fin Clp
11	14-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	74	41626	AD Fin Clp
11	14-Aug-10	634284	2007	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		61	56783	AD Fin Clp
11	15-Aug-10	633375	2005	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		74	51911	AD Fin Clp
11	17-Aug-10	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		78	51912	AD Fin Clp
11	20-Aug-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		63	62705	AD Fin Clp
11	21-Aug-10	210787	2007	WHITEHORSE SPRINGS	WHITEHORSE POND	Stillaguamish Tribe		72	56714	AD Fin Clp
11	21-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	73	62706	AD Fin Clp
11	22-Aug-10	633889	2006	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		86	26068	AD Fin Clp
11	26-Aug-10	633964	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		77	26069	AD Fin Clp
11	28-Aug-10	633466	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		63	56716	AD Fin Clp
11	28-Aug-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	67	65003	AD Fin Clp
11	3-Sep-10	633475	2007	SIMILKAMEEN R 490325	SIMILKAMEEN HATCHERY	WDFW		56	26070	AD Fin Clp
11	3-Sep-10	634364	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		63	26071	AD Fin Clp
11	3-Sep-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	66	56785	AD Fin Clp
11	3-Sep-10	633466	2007	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		67	66503	AD Fin Clp
11	4-Sep-10	634297	2007	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		53	62700	AD Fin Clp
11	19-Sep-10	210840	2008	WHITEHORSE SPRINGS	WHITEHORSE POND	Stillaguamish Tribe		50	8353	AD Fin Clp
11	24-Sep-10	210788	2007	CLEAR CR 11.0013C	CLEAR CREEK HATCHERY	Nisqually Tribe (WA)	634277	64	62750	Unmarked

**Appendix B-6.** Coded-wire tag (CWT) recoveries in the Area 13 summer mark-selective Chinook fishery, May 1 – September 30, 2010.

Area	Recov. Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Rel. Agency	FKL (cm)	Label	Mark
13	5/22/2010	634299	2007	LAKEWOOD HATCHERY	LAKEWOOD HATCHERY	WDFW	66	51908	AD Fin Clp
13	8/18/2010	633968	2006	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW	67	26363	AD Fin Clp