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2005 Chinook Selective Fishery, Marine Areas 5 and 6

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EXECUTIVE SUMMARY

During the summer of 2005, the third year of a recreational Chinook salmon *Oncorhynchus tshawytscha* ("Chinook") fishery that was limited to retention of marked (adipose clipped) hatchery Chinook salmon occurred in Marine Area 5 and the western portion of Marine Area 6 in Puget Sound. Objectives were: 1) increase recreational fishing opportunity while meeting conservation goals for Puget Sound Chinook salmon defined by the Puget Sound Chinook Harvest Management Plan; and 2) collect information necessary to enable evaluation and planning of future potential Chinook mark-selective fisheries. Marine Areas 5 and 6 are located in Washington waters of the Strait of Juan de Fuca. The Chinook Selective Fishery was scheduled to begin on July 1, 2005 and continue through August 10 (41 days) or until a ceiling catch of 3,500 Chinook was kept, whichever occurred first. The fishery started on July 1, 2005 and ran continuously for 41 days through August 10 without the quota being reached.

Chinook and coho catch and catch rates in 2005 were less than observed in 2003 and 2004. For the first time in the three years of the fishery, the Chinook ceiling was not reached and the fishery extended through the entire 41 day period. We estimated that anglers made 34,086 trips during the Chinook Selective Fishery (July 1 – August 10). Those anglers kept an estimated 2,078 Chinook, 3,723 coho salmon *O. kisutch* ("coho"), and 14,850 pink salmon *O. gorbuscha* ("pink"). Area 5 accounted for 88% of the effort (30,115 angler trips) and 80% of the Chinook kept (1,669) for a rate of 0.06 Chinook kept per angler trip. Area 6 accounted for 3,971 angler trips and 408 Chinook kept for a higher catch rate of 0.10 Chinook kept per angler trip. Based on interviews, Area 5 anglers released an estimated 5,772 Chinook, 10,381 coho, 3,894 pink, and 118 other or unidentified salmon. Also based on interviews, Area 6 anglers released an estimated 636 Chinook, 50 coho, 10 pink, and 2 other or unidentified salmon.

During the Chinook Selective Fishery (July 1-August 10), samplers fishing from test boats landed 137 Chinook in Area 5 and 17 Chinook in Area 6. In Area 5, 98% of the Chinook encountered and landed by the test boat were caught using downriggers, even though they were only fished 87% of the time. In Area 6, all the Chinook encountered and landed by the test boat were caught using downriggers, even though they were only fished 75% of the time. Utilizing other gear types resulted in fewer encounters and fewer biological samples for both areas than would have occurred if the test boats had used downriggers exclusively as they did in 2003.

During the Chinook Selective Fishery time period, 55% of the legal-size fish caught by test boats were marked in Area 5 and 41% of the legal-size Chinook were marked in Area 6. The mark rate on sublegal-size Chinook was 47% (n=64) for Area 5, but no sublegal-size Chinook were caught by the test boat in Area 6. Chinook caught on test boats were larger in Area 6 than in Area 5. The percent of legal-size chinook (22" or larger) was significantly different ($X^2 = 85.4$, $\rho < 0.0001$) between Area 6 (100%) and Area 5 (53%).

Sixty-four Chinook were recorded on Voluntary Trip Reports (VTR's) in Area 5 during the 2005 Chinook Selective Fishery, while 40 Chinook were recorded on VTR's in Area 6. In Area 5, 45% of the fish recorded on VTR's were legal-size and 31% of these were marked. In Area 6, 92% of the Chinook encountered were legal-size and 35% of these were marked.

Thirty-three double index coded wire tags were recovered in Areas 5 and 6 from July 1 through August 10. Based on the proportion of the catch that was sampled and the ratio of marked to unmarked double index coded wire tagged Chinook for each hatchery, we estimated that anglers caught and released 105 legal-size, unmarked double index tagged Chinook, and that the mortality of unmarked legal-size double index tagged Chinook due to this selective fishery was 11 fish.

Using the total number of Chinook encounters from the creel survey (8,495) and apportioning into four categories of legal-size marked, legal-size unmarked, sublegal-size marked, and sublegal-size unmarked (as encountered on test boats in Area 5 and as encountered by test boats and anglers reporting their catch on Voluntary Trip Reports in Area 6) suggests that anglers released 665 legal-size and marked Chinook, or 30% of the fish they could have kept. We also estimated the number of encounters by assuming that anglers kept all Chinook that were legal-size and marked. For this second method, total encounters were estimated by dividing the number of legal-size marked fish that anglers retained by the weighted proportion of legal-size marked fish from the test boats (and a combination of test boat and VTR data in Area 6). The number of encounters in the remaining three categories was then obtained by multiplying the total encounters by the proportions for each corresponding category. Using this method, we estimated the total encounters at 6,240 Chinook. The true number of encounters likely lies between the two estimates of encounters, i.e. between 6,240 and 8,495 Chinook.

Using the encounters from the creel survey and a release mortality rate of 15% for legal-size fish and 20% for sublegal-size fish, we estimated the total mortalities of Chinook in the selective fishery at 3,197, of which 785 were unmarked. Using the encounters estimated by assuming anglers kept all legal fish and a release mortality rate of 15% for legal-size fish and 20% for sublegal-size fish, we estimated total mortalities at 2,810 fish, of which 588 were unmarked fish.

Although we believe the true number of mortalities lies between our two estimates, we used the higher number to compare estimated mortalities against pre-season predictions of mortalities. Based on the estimated number of total encounters from the creel survey and apportioning them based on the test boat catch rates, we estimated the 2005 fishery resulted in the mortality of 413 unmarked legal-size Chinook and 372 unmarked sublegal-size Chinook. These estimates are well below the predicted mortalities of 1,701 unmarked legal-size Chinook and 975 unmarked sublegal-size Chinook as produced in the final pre-season run of the Fishery Regulation Assessment Model (FRAM; Model 2705, April 8, 2005), and suggests this fishery did not hinder nor jeopardize achievement of the overall conservation goals for Puget Sound Chinook.

Compliance with existing regulations, and the regulation prohibiting bringing unmarked salmon on board a vessel, was considered an integral part of a successful fishery. Only a few citations or warnings were issued for retention of unmarked Chinook, or for bringing an unmarked salmon on board a vessel.

In summary, the third year of the Area 5 and 6 Chinook selective fishery was successful with respect to the objective of increasing recreational fishing opportunity within conservation constraints for Puget Sound Chinook. Anglers were allowed to fish for and retain Chinook for 41 days in Areas 5 and 6, compared with only 10 days and 5 days in Area 5 in 2001 and 2002,

respectively. Angler effort in Area 5 was double the effort in 2002 during the same time frame. Based on data from the test fishery sampling during the Chinook Selective Fishery, half of the legal-size Chinook encountered were marked and could be retained by anglers.

The fishery was also successful with respect to the objective of implementing monitoring and sampling programs to obtain management information for evaluation and planning of potential future selective Chinook fisheries. Estimated encounters were less than pre-season predictions. Compliance with fishing regulations was good during the fishery. The estimated number of mortalities of unmarked double index coded wire tagged fish was negligible.

INTRODUCTION

In recent years, abundant runs of hatchery salmon have been mixed with depressed runs of wild salmon in the Northwest in both marine and freshwater environments. Providing opportunities to harvest those abundant hatchery stocks while protecting wild stocks has been challenging. One tool for allowing harvest of abundant hatchery fish while limiting impacts on wild stocks is "Selective Fishing". In recreational selective fisheries, anglers are generally allowed to retain adipose fin clipped ("marked") hatchery fish and are required to release unclipped ("unmarked") fish. These unmarked fish are typically wild fish, but also include some unmarked hatchery fish. While selective coho salmon *Oncorhynchus kisutch* ("coho") fisheries have occurred in Oregon, Washington, and British Columbia at various times since 1998, and selective Chinook salmon *O. tshawytscha* ("Chinook") fisheries have occurred in freshwater areas since 2000, a selective Chinook fishery had not been conducted in marine waters prior to 2003.

During the summers of 2003, 2004, and 2005, a selective Chinook recreational fishery was implemented in waters of the Strait of Juan de Fuca with the objectives of: 1) increasing recreational fishing opportunity while meeting conservation goals for Puget Sound Chinook salmon defined by the Puget Sound Chinook Harvest Management Plan; and 2) collecting information necessary to enable evaluation and planning of future potential Chinook mark-selective fisheries. The Northwest Treaty Tribes and the Washington Department of Fish and Wildlife (WDFW) reached agreement to continue selective Chinook sport fishing in this area for the 2005 season. The 2005 fishery was scheduled for the same time and area as the 2003 and 2004 fisheries.

The 2005 Chinook Selective Fishery started on July 1, 2005 and ran continuously through August 10, 2005 in Marine Area 5 and the western portion of Marine Area 6. Marine Areas 5 and 6 (hereafter: Areas 5 and 6) are located in Washington waters of the Strait of Juan de Fuca, running from the Sekiu River easterly to Low Point, and from Low Point to approximately Whidbey Island, respectively (Figure 1). Chinook selective fishing in Area 6 was open only from Low Point easterly to Ediz Hook because the eastern portion of Area 6 has many more boat ramps and other access points, and would have required substantially more sampling effort to obtain precise estimates of harvest and effort. Additional closures to help achieve fishery objectives were established: 1) in the eastern half of Marine Area 4; 2) near the mouths of the Sekiu and Hoko rivers; 3) near the mouth of the Elwha River; and 4) in Port Angeles Harbor.

Anglers were allowed to retain two marked (adipose fin clipped) Chinook salmon $\geq$ 22" (56 cm) as part of their daily limit, and were required to immediately release, unharmed, any unmarked Chinook caught. Integral to the selective fishery was the same salmon handling regulation used in 2004. The 2005 regulation stated "It is illegal to bring a wild salmon, or a species of salmon, aboard a vessel if it is unlawful to retain those salmon. "Aboard a vessel" was defined as "inside the gunwale". During the Chinook Selective Fishery anglers were also allowed to retain pink *O. gorbuscha* ("pink"), sockeye *O. nerka*, and marked hatchery coho salmon.

The 2005 season was scheduled to run from July 1, 2005 through August 10, 2005 (41 days), or until a ceiling of 3,500 hatchery Chinook salmon was caught and retained by anglers. The

fishery was closed at 11:59 p.m., August 10, 2005 as scheduled, without the ceiling being reached.

Preliminary analyses of the 2003 and 2004 fisheries were completed and are reported by Thiesfeld and Hagen-Breaux (2005a, 2005b), and WDFW (2005). This report focuses on methods and results from 2005.

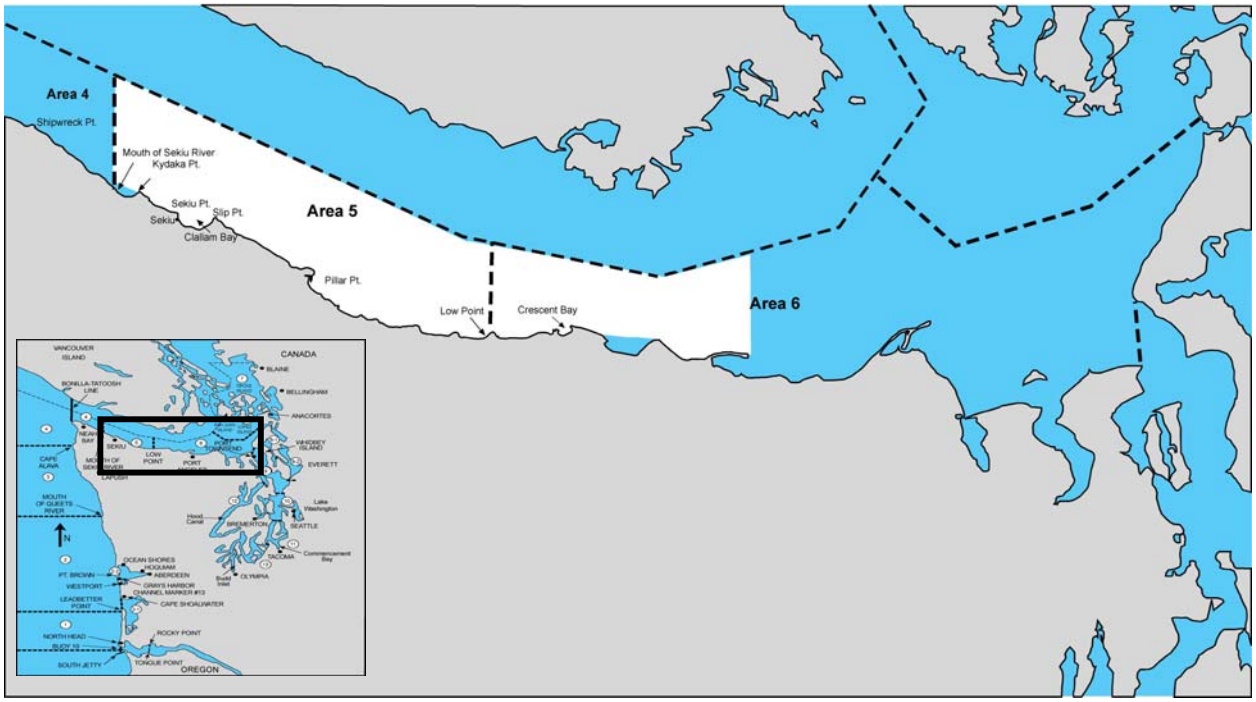

Figure 1. Location of the 2005 Chinook Selective Fishery (shown in white) in Marine Areas 5 and 6.

METHODS

Methods in 2005 were similar to those in 2003 and 2004; a detailed description of which is available in Thiesfeld and Hagen-Breaux (2005a, 2005b). We describe only changes to methods here, or methods that needed elaboration from those presented in the 2003 and 2004 reports.

Access Site Size Determination

Between July 1 and August 10, four surveys were conducted by boat in Area 5, and seven surveys in Area 6, to determine the proportion of effort (or "size") for each access site.

Angler Interviews

Samplers collected total lengths measured to the nearest millimeter from randomly selected Chinook. Samplers collected scales and lengths from 453 Chinook in Area 5 and from 133 Chinook in Area 6. Fifteen additional scale and length samples were collected in Area 6 by samplers that were not collecting data as part of the Murthy estimate.

Anglers on all boats were surveyed from a selected set of two docks or access points per area during a day; except that if some boats and anglers could not be surveyed, the boats were enumerated and harvest and effort data were expanded to account for the missed boats. During the Chinook Selective Fishery, only 33 boats were missed in Area 5 while 3,586 were interviewed, and no boats were missed in Area 6 while 779 were interviewed.

As time permitted, surveyors also randomly recorded the predominant (based on time) angling method used to encounter Chinook (kept and released) by the boat being interviewed if the boat had encountered Chinook according to the following categories: weight and bait (either mooching or trolling), downrigger trolling, trolling with divers, jigging, or other (e.g. fly fishing). Data was collected only for those boats that actually encountered Chinook. Test fishing boats used results of the angling method survey in order to more accurately represent the fishery (see Test Fishing).

Test Fishing

One test boat fished out of Sekiu (Area 5) from July 1 through September 27, and one boat fished out of Port Angeles (Area 6) from July 1 through August 15. Only data collected between July 1 and August 10 were reported and analyzed in this report. Both areas were fished 35 of the 41 open days during the Chinook Selective Fishery.

Samplers attempted to capture Chinook from July 1 through August 10 through their choice of area to fish, depth, gear type and fishing methods. Samplers attempted to fish with gear types in the same proportion of time as anglers were encountering Chinook with each gear type as estimated from the angler interviews (see Angler Interviews).

Samplers measured both total and fork length on captured Chinook. Total length was used for all analyses in this report.

Voluntary Trip Reports

Additional information on mark rates and the percentage of fish that were legal-size was obtained from Voluntary Trip Reports (VTR's). In 2003 and 2004, VTR's were provided to any angler that wished to collect data. To increase the reliability of the VTR data, in 2005, only selected anglers were issued VTR's. Selected anglers were required to attend a class during which they received detailed information on salmon species identification and became familiar with the data forms, were instructed what data to collect, how to fill out the forms, and how to turn in the forms. Participating anglers recorded the date, number of anglers, target species, which Area they were fishing in, each Chinook or coho caught, whether the fish was kept or released, the species of fish, total length to nearest $1/8^{th}$ inch, and whether the fish was adipose fin clipped or not.

RESULTS AND DISCUSSION

Effort and Catch

Chinook and coho catches and catch rates in 2005 were less than observed in 2003 and 2004. For the first time in the three years of the fishery, the Chinook ceiling was not reached and the fishery extended through the entire 41 day period. We estimated that anglers made 34,086 trips during the Chinook Selective Fishery (July 1 – August 10, statistical weeks 27 - 33; see Appendix A for dates associated with statistical weeks). Those anglers kept an estimated 2,078 Chinook, 3,723 coho and 14,850 pink (Table 1). Area 5 accounted for 88% of the effort (30,115 angler trips) and 80% of the Chinook kept (1,669) for a rate of 0.06 Chinook kept per angler trip. Area 6 accounted for 3,971 angler trips and 408 Chinook kept for a higher catch rate of 0.10 Chinook kept per angler trip. Based on interviews, Area 5 anglers released an estimated 5,772 Chinook, 10,381 coho, 3,894 pink, and 118 other or unidentified salmon. Also based on interviews, Area 6 anglers released an estimated 636 Chinook, 50 coho, 10 pink, and 2 other or unidentified salmon. The total of 30,115 angler trips in Area 5 was more than double the effort observed during a similar period in 2002. From July 1 through August 9, 2002, anglers made 11,883 trips in Area 5 to catch 1,792 Chinook.

Despite the poor fishing, effort in Area 5 remained high throughout the first five weeks of the fishery before declining at the end of the season (Figure 2). In Area 6, effort was fairly constant, except for a sharp increase in late July (statistical week 31) when fishing improved (Figure 3). Chinook harvest was extremely low throughout the fishery except in mid- to late July (statistical week 30) in Area 5 (Figure 4) and Area 6 (statistical week 31; Figure 5). Anglers made 831 trips per day in 2005, compared to 820 per day in 2003 and 754 per day in 2004. A bonus limit of two additional pink salmon per day probably contributed to maintaining high angler effort throughout the 2005 fishery.

The number of Chinook kept per angler in Area 5 was very low throughout the fishery except during week 30 (Figure 6). The number of Chinook kept per angler in Area 6 was higher in the last half of the season than the first half the season (Figure 7), continuing a general trend observed in 2003 and 2004.

For Areas 5 and 6 combined, a total of 2,078 Chinook were kept during the Chinook Selective Fishery. Of this total, 2,025 were marked and 53 were unmarked (Table 2). One hundred of the kept marked fish were sublegal-size (5%) and 30 of the kept unmarked fish were sub-legal size (57%). A total of 6,408 Chinook were released during the fishery based on angler interviews and the appropriate expansions. We estimated that anglers encountered 7,442 Chinook in Area 5 and 1,044 in Area 6, for a total of 8,486 encounters. Angler interview data suggested that 31% of the fish were marked in Area 5 and 47% were marked in Area 6. Approximately 90% of the unmarked Chinook caught and released by anglers were caught in Area 5 (Table 3). Weekly sampling data and estimates are presented in Appendices B, C, D and E.

Table 1. Recreational salmon catch estimate during the Chinook Selective Fishery in Marine Areas 5 and 6, July 1 through August 10, 2005 based on angler interviews during creel surveys. Values may not add exactly due to rounding error.

	Trips		Harvested			Released			
Fishery	Boats	Anglers	Chinook	Coho	Pink	Unidentified or Other	Chinook	Coho	Pink
Area 5	11,968	30,115	1,669	3,710	14,609	118	5,772	10,381	3,894
Area 6	2,116	3,971	408	13	241	2	636	50	10
Total	14,084	34,086	2,078	3,723	14,850	120	6,408	10,431	3,904

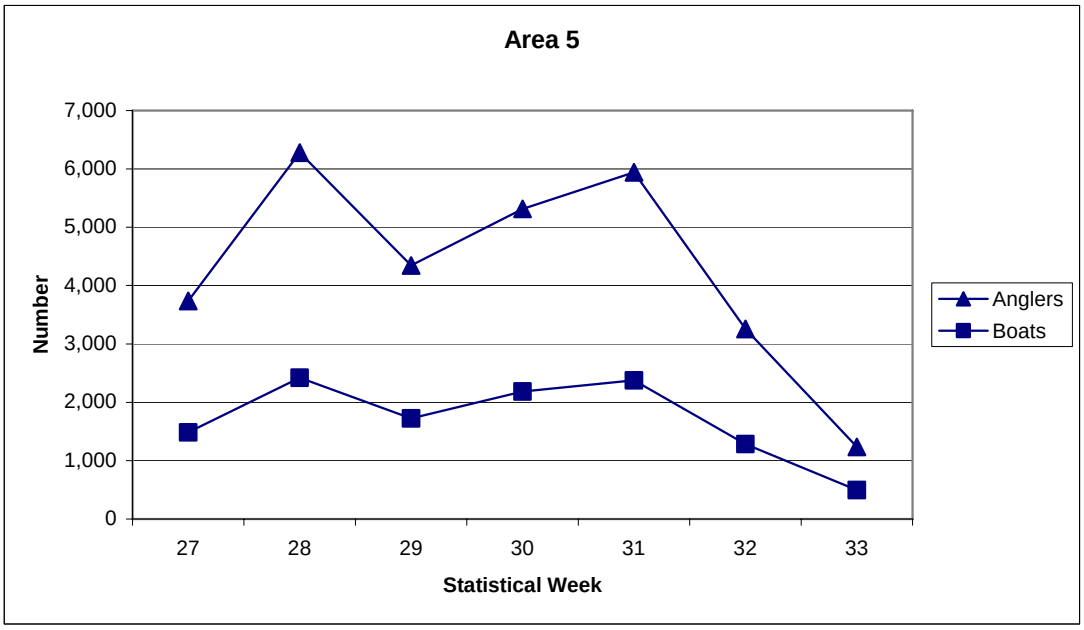

Figure 2. Angler effort in Marine Area 5, by week, for the 2005 Chinook Selective Fishery, July 1 through August 10, 2005. Note the first and last weeks include only three days each.

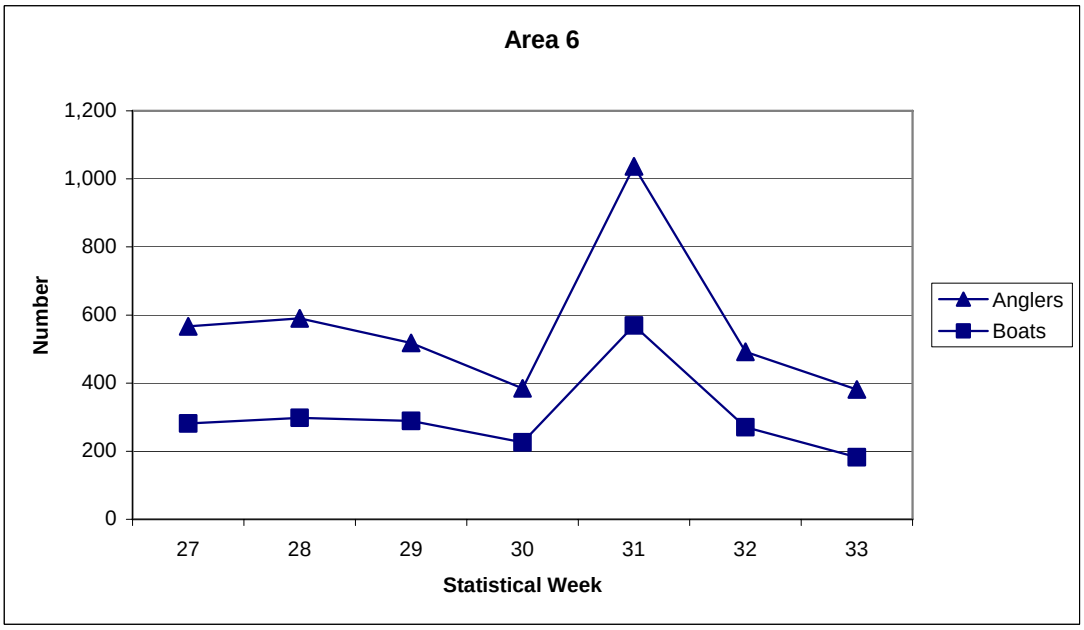

Figure 3. Angler effort in Marine Area 6, by week, for the 2005 Chinook Selective Fishery, July 1 through August 10, 2005. Note the first and last weeks include only three days each.

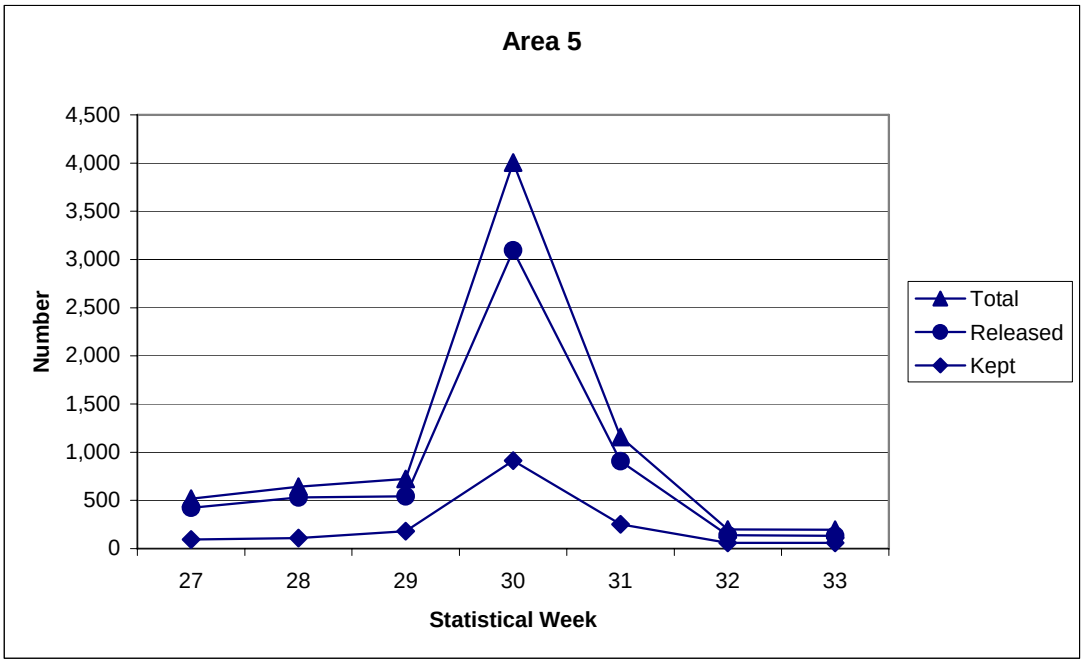

Figure 4. Catch of Chinook salmon from angler interviews in Marine Area 5, by week, for the 2005 Chinook Selective Fishery, July 1 through August 10, 2005. Note the first and last weeks include only three days each.

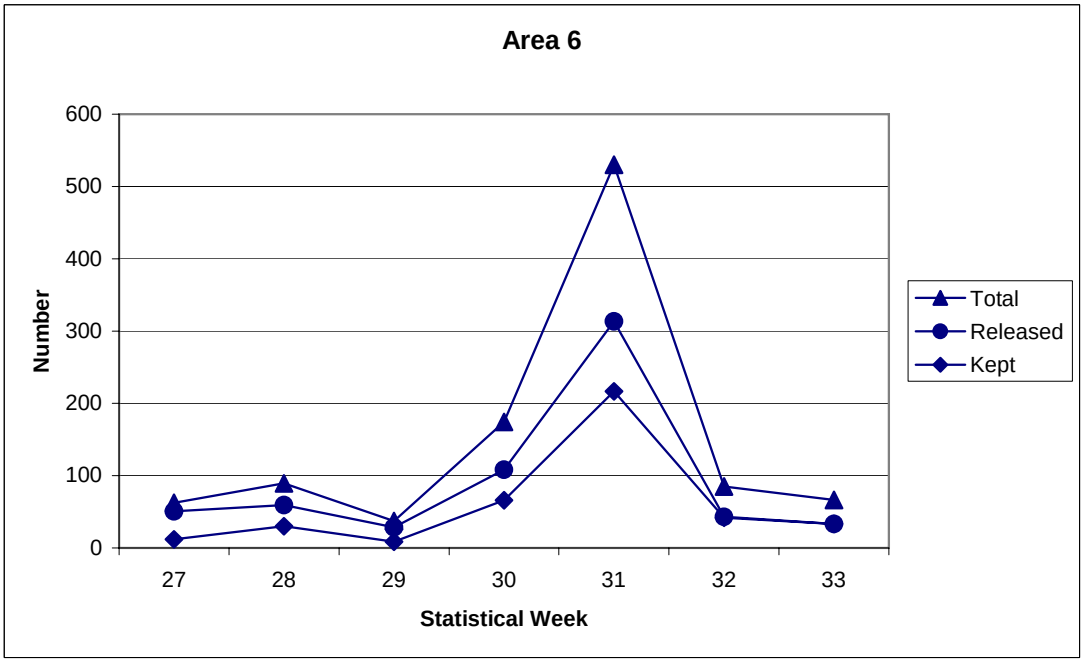

Figure 5. Catch of Chinook salmon from angler interviews in Marine Area 6, by week, for the 2005 Chinook Selective Fishery, July 1 through August 10, 2005. Note the first and last weeks include only three days each.

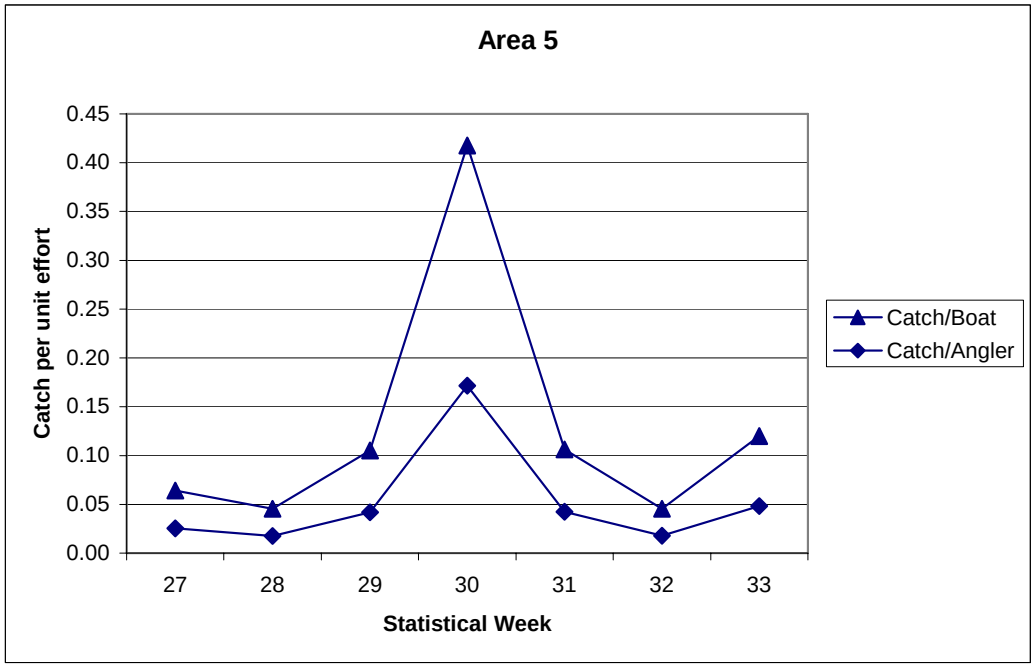

Figure 6. Catch per unit effort for kept Chinook salmon in Marine Area 5, by week, for the 2005 Chinook Selective Fishery, July 1 through August 10, 2005. Note the first and last weeks include only three days each.

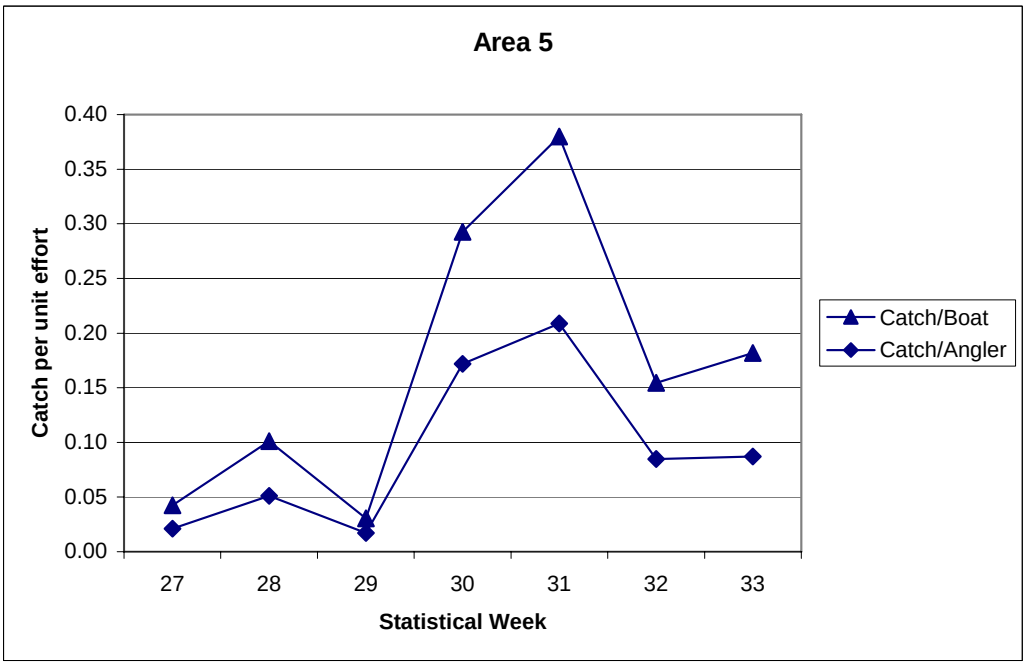

Figure 7. Catch per unit effort for kept Chinook salmon in Marine Area 6, by week, for the 2005 Chinook Selective Fishery, July 1 through August 10, 2005. Note the first and last weeks include only three days each.

Table 2. Creel survey estimates of Chinook kept and released, by mark status, during the Chinook Selective Fishery in Marine Areas 5 and 6, July 1 through August 10, 2005. Values may not add exactly due to rounding error.

	Marked Kept	Unmarked Kept	Total Kept	Marked Released	Unmarked Released	Unknown Released	Total Released	Total Encounters
Area 5	1,620	49	1,669	542	4,664	566	5,772	7,442
Area 6	404	4	408	85	549	3	636	1,044
Total	2,025	53	2,078	627	5,213	568	6,408	8,486

Table 3. Summary of creel survey estimates of marked and unmarked Chinook catch and variances (in parentheses) during the Chinook Selective Fishery in Marine Areas 5 and 6, July 1 through August 10, 2005. Values may not add exactly due to rounding error.

	Chinook Kept			Chinook Released			
Area	Marked	Unmarked	Total	Marked	Unmarked	Unknown	Total
5	1,620	49	1,669	542	4,664	566	5,772
	(26,662)	(268)	(26,930)	(4,526)	(135,221)	(16,642)	(156,388)
6	404	4	408	85	549	3	636
	(14,938)	(3)	(14,941)	(4,540)	(17,679)	(1)	(22,220)
5 and 6 Combined	2,025	53	2,078	627	5,213	568	6,408
	(41,600)	(270)	(41,871)	(9,066)	(152,900)	(16,643)	(178,608)

Test Fisheries

Test boats attempted to replicate the fishing methods used by anglers encountering Chinook by utilizing fishing methods in the same proportions reported by anglers. Fishing was extremely slow in Area 6, and the number of Chinook encounters there was very low. During the Chinook Selective Fishery (July 1-August 10), samplers fishing from the test boats landed 137 Chinook in Area 5 (Table 4) and 17 Chinook in Area 6 (Table 5). The low sample size in Area 6 precluded calculation of weighted proportions of Chinook into legal-size marked, legal-size unmarked, sublegal-size marked, and sublegal-size unmarked categories.

Downriggers were the most commonly used method by anglers who encountered Chinook in both areas, followed by bait (Table 6); therefore, downriggers were the most commonly used method by samplers fishing from the test boats (Table 7). In Area 5, 98% of the Chinook landed by the test boat were caught using downriggers (Table 8), even though they were only fished 87% of the time. In Area 6, all the Chinook landed by the test boat were caught using downriggers (Table 8), even though they were only fished 75% of the time. Samplers caught only three Chinook using other gear types and all three fish were sublegal-size. Test fishing with other gear types resulted in fewer encounters and fewer biological samples for both areas than would have occurred if the samplers had used exclusively downriggers as they did in 2003.

During the Chinook Selective Fishery time period, 55% of the legal-size fish were marked in Area 5 and 41% of the legal-size Chinook were marked in Area 6 (Table 9). Based on these data, anglers could retain one of every two legal-size Chinook they encountered during the fishery. The mark rate on sublegal Chinook was 47% (n = 64) for Area 5, but no sublegal Chinook were encountered in Area 6 (Table 9). The low sample size in Area 6 precluded meaningful comparison of mark rates between areas (Figure 8).

Chinook caught by test boats were larger in Area 6 than in Area 5 (Figures 9 and 10). The average size of fish in Area 5 was 61 cm with a minimum of 37 cm and a maximum of 101 cm (n = 137), while the average size in Area 6 was 77 cm with a minimum of 63 cm and a maximum of 92 cm (n = 17). Despite the low sample size in Area 6, the percent of fish that were legal size (22” or larger) was significantly different ($X^2 = 85.4$, $\rho < 0.0001$) between Area 6 (100%) and Area 5 (53%).

Table 4. Catch data and calculations used to estimate weekly weighted mark rate and variance for Chinook salmon caught on the test boat during the Chinook Selective Fishery in Marine Area 5, July 1 through August 10, 2005. Upper table shows the catch by week. Middle table shows the rates of marked and unmarked fish by week. Bottom table shows the weekly rate weighted (multiplied) by proportion of the total catch, and a season-long weighted mark rate (sum of the weekly data).

		Week							
Size	Mark Status	27	28	29	30	31	32	33	Total
Legal	Marked	0	2	3	19	10	4	2	40
	Unmarked	1	1	3	14	8	1	5	33
Sublegal	Marked	0	2	11	11	5	0	1	30
	Unmarked	0	0	9	19	5	0	1	34
Total		1	5	26	63	28	5	9	137

	Week						
Weekly Rates	27	28	29	30	31	32	33
Legal Mark Rate	0.000	0.667	0.500	0.576	0.556	0.800	0.286
Sublegal Mark Rate		1.000	0.550	0.367	0.500		0.500
Combined Mark Rate	0.000	0.800	0.538	0.476	0.536	0.800	0.333
Proportion Legal and Marked	0.000	0.400	0.115	0.302	0.357	0.800	0.222
Proportion Legal and Unmarked	1.000	0.200	0.115	0.222	0.286	0.200	0.556
Proportion Sublegal and Marked	0.000	0.400	0.423	0.175	0.179	0.000	0.111
Proportion Sublegal and Unmarked	0.000	0.000	0.346	0.302	0.179	0.000	0.111

	Week							Season-long	Standard
	27	28	29	30	31	32	33	Weighted Rate	Error
Proportion of Catch (from Creel)	0.057	0.066	0.109	0.546	0.152	0.035	0.035		
Legal Mark Rate	0.000	0.044	0.055	0.315	0.084	0.028	0.010	0.54	0.152
Sublegal Mark Rate		0.066	0.060	0.200	0.076		0.018	--	--
Combined Mark Rate	0.000	0.053	0.059	0.260	0.081	0.028	0.012	0.49	0.158
Proportion Legal and Marked	0.000	0.026	0.013	0.165	0.054	0.028	0.008	0.29	0.137
Proportion Legal and Unmarked	0.057	0.013	0.013	0.121	0.043	0.007	0.020	0.27	0.194
Proportion Sublegal and Marked	0.000	0.026	0.046	0.095	0.027	0.000	0.004	0.20	0.112
Proportion Sublegal and Unmarked	0.000	0.000	0.038	0.165	0.027	0.000	0.004	0.23	0.116

Table 5. Catch by week for Chinook salmon caught on the test boat during the Chinook Selective Fishery in Marine Area 6, July 1 through August 10, 2005.

		Week							
Size	Mark Status	27	28	29	30	31	32	33	Total
Legal	Marked	0	1	2	1	0	1	2	7
	Unmarked	0	4	0	3	0	2	1	10
Sublegal	Marked	0	0	0	0	0	0	0	0
	Unmarked	0	0	0	0	0	0	0	0
Total		0	5	2	4	0	3	3	17

Table 6. Predominate gear type used by anglers (% of boat trips) to encounter Chinook (kept and released) during the Chinook Selective Fishery in Marine Areas 5 and 6, July 1 through August 10, 2005.

	Area 5					Area 6			
Statistical Week	Down-rigger	Weight and Bait	Diver	Jig	Other	Down-rigger	Weight and Bait	Diver	Jig
27	73	19	8	1	0	77	12	4	8
28	90	7	2	0	0	55	14	3	28
29	91	7	2	0	0	60	25	0	15
30	83	8	9	0	1	52	18	2	27
31	67	13	19	0	1	57	23	0	19
32	80	15	6	0	0	73	23	0	5
33	83	9	4	4	0	68	18	9	5
Weighted Average	82	10	8	0	0	61	19	2	17

Table 7. Percent of time that test boats fished various methods during the Chinook Selective Fishery in Marine Areas 5 and 6, July 1 through August 10, 2005.

	Area 5				Area 6			
Statistical Week	Down-rigger	Weight and Bait	Diver	Jig	Down-rigger	Weight and Bait	Diver	Jig
27	100	0	0	0	100	0	0	0
28	100	0	0	0	98	0	0	2
29	76	18	6	0	67	13	7	13
30	83	13	4	0	65	14	0	21
31	91	6	2	0	61	26	0	13
32	85	7	9	0	89	11	0	0
33	100	0	0	0	100	0	0	0
Weighted Average	87	9	4	0	75	13	1	11

Table 8. Percent of Chinook that test boats caught using various methods during the Chinook Selective Fishery in Marine Areas 5 and 6, July 1 through August 10, 2005.

	Area 5				Area 6			
Statistical Week	Down-rigger	Weight and Bait	Diver	Jig	Down-rigger	Weight and Bait	Diver	Jig
27	100	0	0	0	--	--	--	--
28	100	0	0	0	100	0	0	0
29	92	8	0	0	100	0	0	0
30	98	2	0	0	100	0	0	0
31	100	0	0	0	--	--	--	--
32	100	0	0	0	100	0	0	0
33	100	0	0	0	100	0	0	0
Weighted Average	98	2	0	0	100	0	0	0

Table 9. Summary of the number of marked and unmarked, legal-size and sublegal-size Chinook salmon caught by test boats during the Chinook Selective Fishery in Marine Areas 5 and 6, July 1 through August 10, 2005.

	Legal-size			Sublegal-size			Total		
	Marked	Unmarked	% Marked	Marked	Unmarked	% Marked	Marked	Unmarked	% Marked
Area 5	40	33	55	30	34	47	70	67	51
Area 6	7	10	41	0	0	--	7	10	41
Total	47	43	52	30	34	47	77	77	50

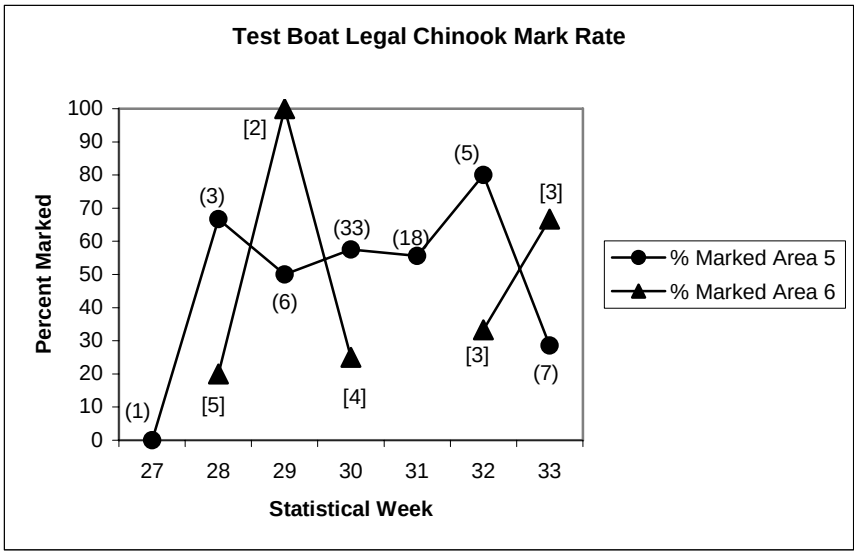

Figure 8. Mark rate (% adipose fin clipped) of legal-size Chinook caught by WDFW test boats in Marine Areas 5 and 6 during 2005. Sample sizes for Marine Area 5 are in parentheses (), while sample sizes for Marine Area 6 are in brackets []. The Chinook Selective Fishery occurred from July 1 through August 10, 2005 (statistical weeks 27 – 33). Note the first and last weeks include only three days each.

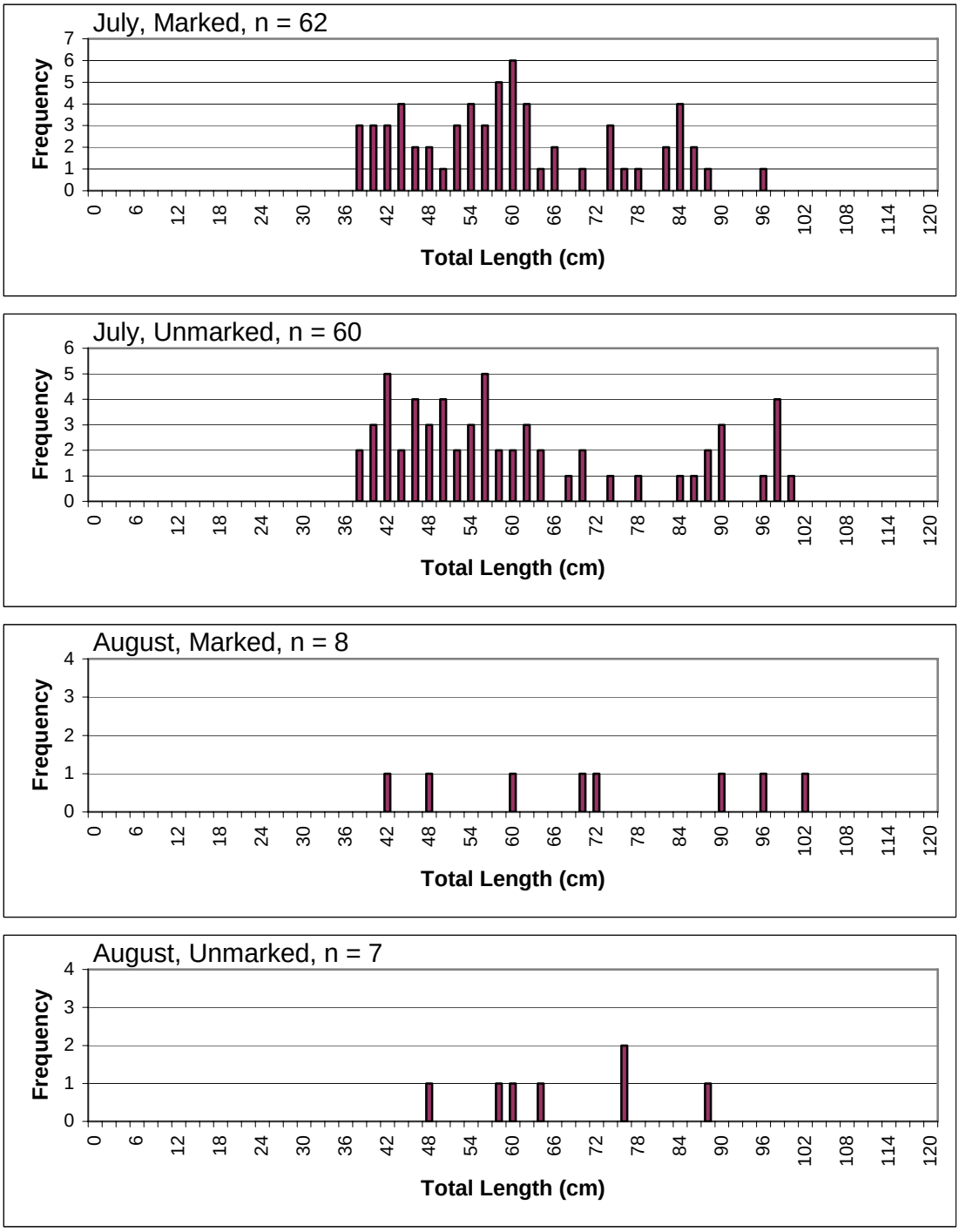

Figure 9. Length frequency histograms of Chinook salmon caught by test fishing boats sampling from July 1 through August 10, 2005, in Marine Area 5.

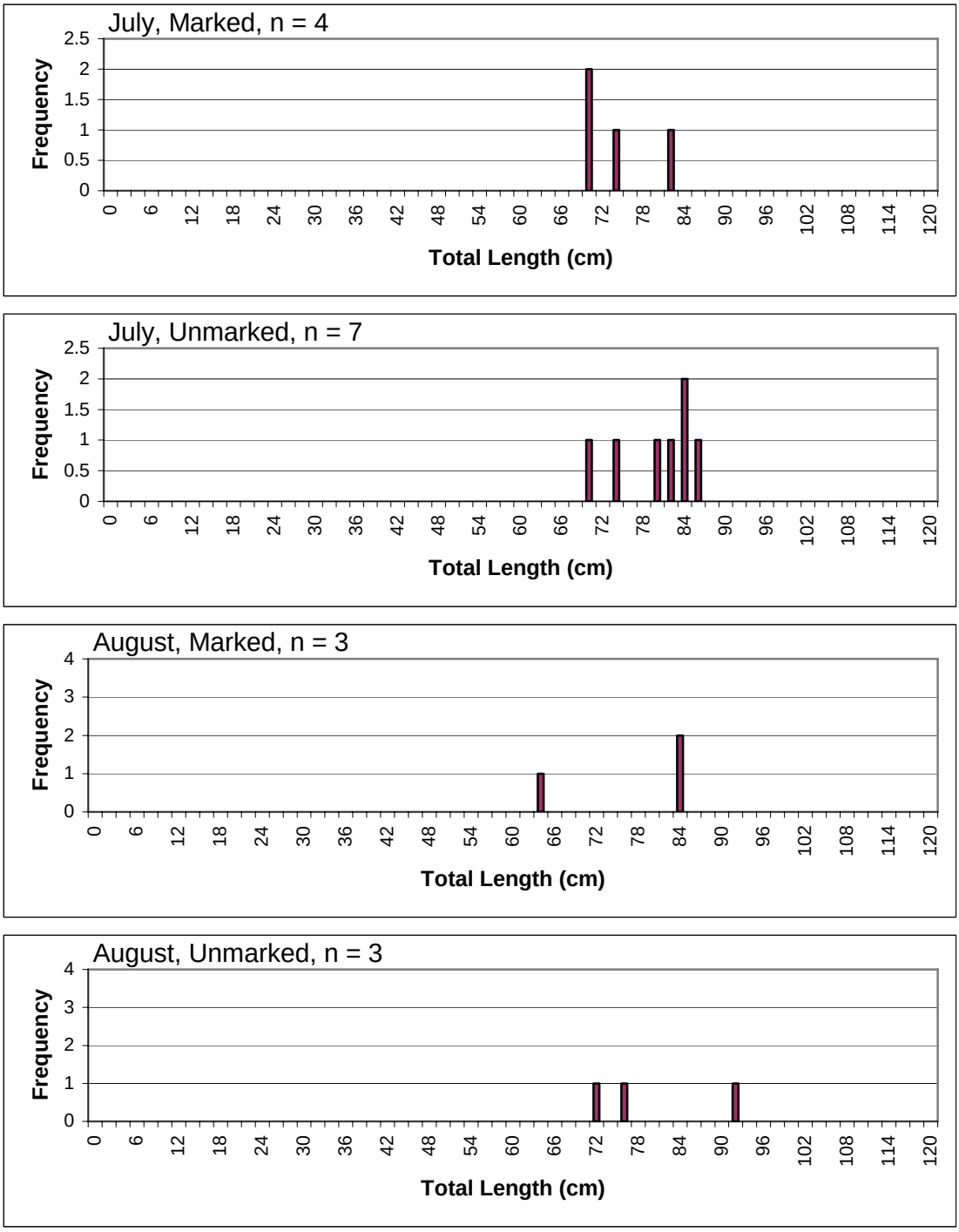

Figure 10. Length frequency histograms of Chinook salmon caught by test fishing boats sampling from July 1 through August 10, 2005, in Marine Area 6.

Voluntary Trip Reports (VTR's)

Sixty-four Chinook were recorded on VTR's in Area 5 during the 2005 Chinook Selective Fishery (Table 10), while 40 Chinook were recorded on VTR's in Area 6 (Table 11). In Area 5, 45% of the fish recorded on VTR's were legal-size and 31% of these were marked. However, because no catch was reported in week 33, we were unable to calculate a weighted mark rate. In Area 6, 93% of the Chinook encountered were legal-size and 33% of these were marked (Tables 11 and 12). It was difficult to discern any pattern in mark rate of legal-size fish from the VTR's (Figure 11). In Area 5, VTR's generally showed a lower mark rate for legal-size fish than the test fishery (Figure 12). No trend was evident between the two methods for mark rates of legal-size Chinook in Area 6 (Figure 13).

Coded Wire Tags

Samplers recovered 82 coded wire tags from harvested Chinook during the Chinook Selective Fishery (Appendix F). Of these, 69 percent were Puget Sound stocks, 19 percent were Columbia River stocks, 9 percent were Canadian stocks, and the remainder from elsewhere. Thirty-three double index coded wire tags were recovered in Areas 5 and 6 from July 1 through August 10 (Table 13). Fish from George Adams, Grovers Creek, and Samish hatcheries contributed the highest number of double index tags. We estimated that anglers caught and released 105 legal-size, unmarked double index tagged Chinook, and that the mortality of unmarked legal-size double index tagged Chinook due to this selective fishery was 11 fish (Table 14).

Encounters and Total Mortalities

We used two methods for estimating Chinook encountered in the fishery. The first method was based on applying the weighted proportions of marked and unmarked, legal and sublegal size Chinook to the sum of landed catch plus the creel interview reports of Chinook released. For Area 5, we only used the test boat catches to calculate the weighted proportions. Due to the small sample of fish caught by the test boat in Area 6, we combined the test boat and VTR data into a single data set, and calculated weighted proportions of marked and unmarked, legal and sublegal-size fish in Area 6 for this analysis (Table 15). Using the estimate of total Chinook encounters from the creel survey and apportioning encounters into the four categories of legal-size marked, legal-size unmarked, sublegal-size marked, and sublegal-size unmarked from the combined data set resulted in slightly fewer encounters in Area 6 of legal-size marked fish (398) than the estimated number retained in the creel survey (404). To remedy this situation, we set the number of encounters of legal-size marked fish in Area 6 at the estimated number of fish retained, or 404 fish. Due to this adjustment, the final number of encounters for area 6 is slightly higher than reported in the creel survey. Using these methods, we estimated that anglers encountered 8,495 Chinook in Areas 5 and 6 combined. We estimated that anglers released 665 legal-size and marked Chinook in Area 5 and zero legal-size and marked Chinook in Area 6 (Table 16). The 665 fish released in Area 5 suggests that anglers released 30% of the fish they could have kept. Given the poor overall fishing during the 2005 Chinook Selective Fishery, we believe most anglers would have kept a greater percentage of the fish they caught and that the

calculated release rate of 30% is unrealistically high. Using this method, we estimated the total Chinook mortality during this fishery at 3,197 fish (Table 16).

The second method for estimating the number of encounters was based on the assumption that anglers kept all fish that were legal-size and marked. Total encounters were estimated by dividing the number of legal-size marked fish that anglers retained by the weighted proportion of legal-size marked fish from the test boats (and a combination of test boat and VTR data in Area 6). The number of encounters in the remaining three categories was then obtained by multiplying the total encounters by the proportions for each corresponding category. This method resulted in an estimate of 6,240 encounters (Table 17) compared to 8,495 encounters for the first method.

The first method produced a result that implied anglers were "sorting" their catch by releasing one-third of the fish that were legal to keep. The second method assumed that all retainable Chinook were kept. Given the extremely low catch rate of marked legal-size Chinook in this fishery (about one fish for every 16 anglers), it seems unlikely that extensive sorting was occurring. It is also unlikely that all legal-size and marked fish were kept; even in low success fisheries barely legal-size fish may be voluntarily released in hopes of landing a larger one. The true number of encounters likely lies between the two estimates, i.e. between 6,240 and 8,495 Chinook (Table 18).

The range of encounters resulting from the two methods produces a corresponding range of mortalities. Using the first method and a release mortality rate of 15% for legal size Chinook and 20% for sublegal-size Chinook, we estimated the total mortalities of Chinook in the selective fishery at 3,197, which includes the harvest of 2,078 fish (Table 19). Based on the estimated 7,441 Chinook encounters in Area 5 from angler interviews, we estimated the total mortality of Chinook in this area at 2,689 fish, including the 1,669 harvested. Based on the estimated 1,054 encounters of Chinook in Area 6 from angler interviews, we estimated the total mortality of Chinook in this area at 508 fish, including the 408 harvested. Overall, we estimated the total mortality of unmarked fish at 785 fish, of which 372 were sublegal-size fish and 413 were legal-size fish.

Using the encounters estimated by assuming anglers kept all legal fish (method two) we estimated total mortalities at 2,810 fish, of which 588 were unmarked fish (Table 19). Of the unmarked fish, we estimated that 267 were sublegal-size and 322 were legal-size.

Although we believe the true number of mortalities lies between our two estimates, we used the higher number to compare estimated mortalities against pre-season predictions of mortalities. Based on the estimated number of total encounters from the creel survey and apportioning them based on the test boat catch rates, we estimated the 2005 fishery resulted in the mortality of 413 unmarked legal-size Chinook and 372 unmarked sublegal-size Chinook (Table 16). These estimates are well below the predicted mortalities of 1,701 unmarked legal-size Chinook and 975 unmarked sublegal-size Chinook as produced in the final pre-season run of the Fishery Regulation Assessment Model (FRAM; Model 2705, April 8, 2005), and suggests this fishery did not hinder nor jeopardize achievement of the overall conservation goals for Puget Sound Chinook.

Table 10. Catch by week for Chinook salmon caught by anglers reporting their catch on Voluntary Trip Reports (VTR's) during the Chinook Selective Fishery in Marine Area 5, July 1 through August 10, 2005.

		Week							
Size	Mark Status	27	28	29	30	31	32	33	Total
Legal	Marked	1	0	0	1	5	2	0	9
	Unmarked	0	3	3	6	8	0	0	20
Sublegal	Marked	1	1	1	3	5	0	0	11
	Unmarked	1	2	1	0	19	1	0	24
Total		3	6	5	10	37	3	0	64

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Table 11. Catch data and calculations used to estimate weekly weighted mark rate and variance for Chinook salmon caught by anglers reporting their catch on Voluntary Trip Reports (VTR's) during the Chinook Selective Fishery in Marine Area 6, July 1 through August 10, 2005. Upper table shows the catch by week. Middle table shows the rates of marked and unmarked fish by week. Bottom table shows the weekly rate weighted (multiplied) by proportion of the total catch, and a season-long weighted mark rate (sum of the weekly data).

		Week							
Size	Mark Status	27	28	29	30	31	32	33	Total
Legal	Marked	0	1	0	0	6	5	1	13
	Unmarked	1	2	3	1	7	10	0	24
Sublegal	Marked	2	0	0	0	1	0	0	3
	Unmarked	0	0	0	0	0	0	0	0
Total		3	3	3	1	14	15	1	40

	Week						
Weekly Rates	27	28	29	30	31	32	33
Legal Mark Rate	0.000	0.333	0.000	0.000	0.462	0.333	1.000
Sublegal Mark Rate	1.000				1.000		
Combined Mark Rate	0.667	0.333	0.000	0.000	0.500	0.333	1.000
Proportion Legal and Marked	0.000	0.333	0.000	0.000	0.429	0.333	1.000
Proportion Legal and Unmarked	0.333	0.667	1.000	1.000	0.500	0.667	0.000
Proportion Sublegal and Marked	0.667	0.000	0.000	0.000	0.071	0.000	0.000
Proportion Sublegal and Unmarked	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	Week							Season-long	Standard
	27	28	29	30	31	32	33	Weighted Rate	Error
Proportion of Catch (from Creel)	0.029	0.074	0.022	0.162	0.529	0.103	0.081		
Legal Mark Rate	0.000	0.025	0.000	0.000	0.244	0.034	0.081	0.38	0.257
Sublegal Mark Rate	0.042	--	--	--	0.750	--	--	--	--
Combined Mark Rate	0.020	0.025	0.000	0.000	0.265	0.034	0.081	0.42	0.257
Proportion Legal and Marked	0.000	0.025	0.000	0.000	0.227	0.034	0.081	0.37	0.252
Proportion Legal and Unmarked	0.010	0.049	0.022	0.162	0.265	0.069	0.000	0.58	0.257
Proportion Sublegal and Marked	0.020	0.000	0.000	0.000	0.038	0.000	0.000	0.06	0.112
Proportion Sublegal and Unmarked	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000

Table 12. Summary of the number of marked and unmarked, legal-size and sublegal-size Chinook salmon caught by volunteers reporting their catch on Voluntary Trip Reports (VTR's) during the Chinook Selective Fishery in Marine Areas 5 and 6, July 1 through August 10, 2005.

	Legal-size			Sublegal-size			Total		
	Marked	Unmarked	% Marked	Marked	Unmarked	% Marked	Marked	Unmarked	% Marked
Area 5	9	20	31	11	24	31	20	44	31
Area 6	13	24	35	3	0	100	16	24	40
Total	22	44	33	14	24	37	36	68	35

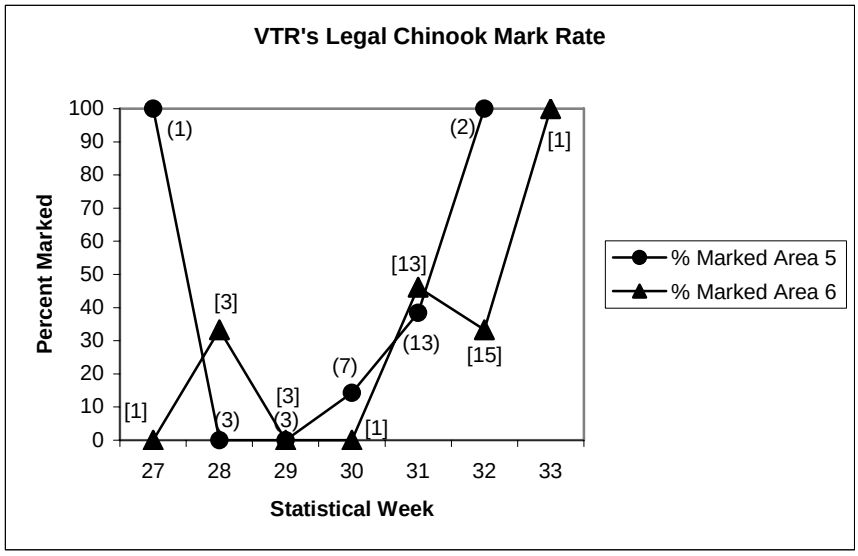

Figure 11. Mark rate (% adipose fin clipped) of legal-size Chinook caught by anglers submitting Voluntary Trip Reports for Marine Areas 5 and 6 during 2005. Sample sizes for Marine Area 5 are in parentheses (), while sample sizes for Marine Area 6 are in brackets []. The Chinook Selective Fishery occurred from July 1 through August 10, 2005 (statistical weeks 27 – 33). Note the first and last weeks include only three days each.

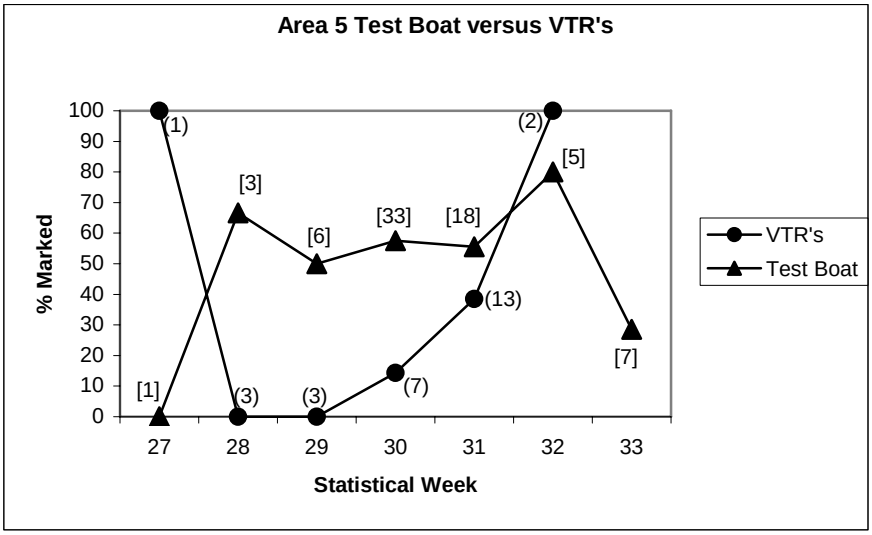

Figure 12. Mark rate (% adipose fin clipped) of legal-size Chinook salmon caught by the WDFW test boat and anglers recording their catch on Voluntary Trip Reports (VTR's) in Marine Area 5 during 2005. Sample sizes for the test boat are in brackets [], while sample sizes for VTR's are in parentheses (). The Chinook Selective Fishery was from July 1 through August 10. Note the first and last weeks include only three days each.

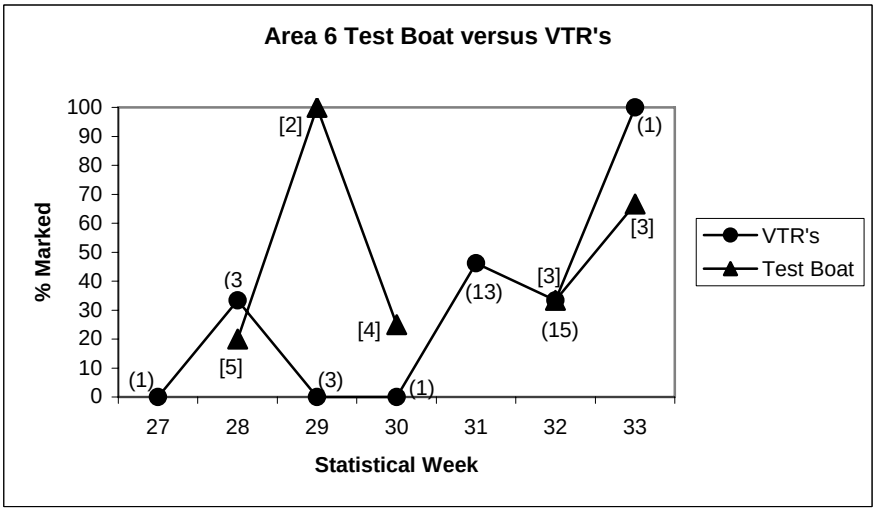

Figure 13. Mark rate (% adipose fin clipped) of legal-size Chinook salmon caught by the WDFW test boat and anglers recording their catch on Voluntary Trip Reports (VTR's) in Marine Area 6 during 2004. Sample sizes for the test boat are in brackets [], while sample sizes for VTR's are in parentheses (). The Chinook Selective Fishery was from July 1 through August 10. Note the first and last weeks include only three days each.

Table 13. Observed harvested Chinook salmon with Double Index Tag (DIT) coded wire tags during the Chinook Selective Fishery in Marine Areas 5 and 6, July 1 through August 10, 2005.

Area	Recovery Date	Tag code	Brood Year	Rearing Hatchery	Release Site	Release Agency	Fork Length (cm)
06	8-Jul-05	210390	2001	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	75
06	15-Jul-05	210390	2001	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	82
06	8-Aug-05	210390	2001	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	73
06	8-Aug-05	210390	2001	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	79
05	2-Jul-05	210407	2002	DUNGENESS HATCHERY	GRAY WOLF R 18.0048	WDFW	70
06	1-Jul-05	210479	2002	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	61
06	26-Jul-05	210483	2002	NISQUALLY HATCHERY	CLEAR CR 11.0013C	NISQ	74
05	20-Jul-05	210548	2003	NISQUALLY HATCHERY	CLEAR CR 11.0013C	NISQ	39
06	8-Jul-05	631371	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	68
05	21-Jul-05	631371	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	64
05	22-Jul-05	631371	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	52
05	23-Jul-05	631371	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	62
05	23-Jul-05	631371	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	59
05	23-Jul-05	631371	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	52
06	24-Jul-05	631371	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	63
05	10-Aug-05	631371	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	72
05	10-Aug-05	631371	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	61
05	6-Aug-05	631375	2001	SOOS CREEK HATCHERY	BIG SOOS CR 09.0072	WDFW	86
05	23-Jul-05	631377	2001	SAMISH HATCHERY	FRIDAY CR 03.0017	WDFW	84
05	7-Aug-05	631377	2001	SAMISH HATCHERY	FRIDAY CR 03.0017	WDFW	72
05	21-Jul-05	631387	2002	WALLACE R HATCHERY	WALLACE R 07.0940	WDFW	59
05	22-Jul-05	631414	2002	MARBLEMOUNT HATCHERY	CASCADE R 03.1411	WDFW	56
05	22-Jul-05	631414	2002	MARBLEMOUNT HATCHERY	CASCADE R 03.1411	WDFW	56
05	20-Jul-05	631546	2002	KENDALL CR HATCHERY	DEADHORSE CR 01.0495	WDFW	55
05	20-Jul-05	631774	2002	SAMISH HATCHERY	FRIDAY CR 03.0017	WDFW	61
05	21-Jul-05	631774	2002	SAMISH HATCHERY	FRIDAY CR 03.0017	WDFW	58
06	23-Jul-05	631774	2002	SAMISH HATCHERY	FRIDAY CR 03.0017	WDFW	60
05	23-Jul-05	631776	2002	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	57
05	21-Jul-05	631784	2002	SOOS CREEK HATCHERY	BIG SOOS CR 09.0072	WDFW	61
05	20-Jul-05	631789	2003	KENDALL CR HATCHERY	NOOKSACK R -NF 01.01	WDFW	42
05	23-Jul-05	636322	2001	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	67
06	25-Jul-05	636322	2001	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	83
06	4-Aug-05	636322	2001	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW	83

Table 14. Observed number of double index tagged (DIT) Chinook kept by anglers, and the estimated mortality of unmarked double index tagged Chinook due to catch and release mortality, during the Chinook Selective Fishery in Marine Areas 5 and 6, July 1 through August 10, 2005.

Hatchery	Brood Year	DIT Tagged fish Observed	Estimated Harvest of Marked DIT fish	Variance of Estimated Harvest of Marked DIT Fish	Estimated Angler Releases of Unmarked DIT fish	Estimated Mortality of Unmarked DIT fish	Variance of Estimated Mortality of Unmarked DIT Fish	Standard Error of Estimated Mortality of Unmarked DIT Fish
Dungeness	2002	1	2.51	3.78	2.43	0.24	0.04	0.19
George Adams	2001	3	12.02	44.23	11.27	1.13	0.39	0.97
George Adams	2002	9	27.43	61.40	27.32	2.73	0.61	2.23
Grovers Creek	2001	4	8.25	9.74	8.26	0.83	0.10	0.59
Grovers Creek	2002	2	5.63	11.62	5.50	0.55	0.11	0.44
Kendall Creek	2002	1	3.65	9.67	3.71	0.37	0.10	0.32
Kendall Creek	2003	1	3.65	9.67	4.46	0.45	0.14	0.38
Marblemount	2002	2	7.30	19.34	7.33	0.73	0.19	0.62
Nisqually	2002	1	6.17	31.93	6.92	0.69	0.40	0.63
Nisqually	2003	1	3.65	9.67	3.60	0.36	0.09	0.31
Samish	2001	2	6.08	13.13	5.94	0.59	0.13	0.49
Samish	2002	3	9.13	20.87	9.23	0.92	0.21	0.75
Soos Creek	2001	1	2.43	3.46	2.21	0.22	0.03	0.17
Soos Creek	2002	1	3.65	9.67	3.81	0.38	0.11	0.32
Wallace River	2002	1	3.65	9.67	3.72	0.37	0.10	0.32
Total		33	105.19		105.70	10.57		

Table 15. Catch data and calculations used to estimate weekly weighted mark rate and variance for Chinook salmon caught by the WDFW test boat and anglers reporting their catch on Voluntary Trip Reports (VTR's) during the Chinook Selective Fishery in Marine Area 6, July 1 through August 10, 2005. Upper table shows the catch by week. Middle table shows the rates of marked and unmarked fish by week. Bottom table shows the weekly rate weighted (multiplied) by proportion of the total catch, and a season-long weighted mark rate (sum of the weekly data).

		Week							
Size	Mark Status	27	28	29	30	31	32	33	Total
Legal	Marked	0	2	2	1	6	6	3	20
	Unmarked	1	6	3	4	7	12	1	34
Sublegal	Marked	2	0	0	0	1	0	0	3
	Unmarked	0	0	0	0	0	0	0	0
Total		3	8	5	5	14	18	4	57

	Week						
Weekly Rates	27	28	29	30	31	32	33
Legal Mark Rate	0.000	0.250	0.400	0.200	0.462	0.333	0.750
Sublegal Mark Rate	1.000				1.000		
Combined Mark Rate	0.667	0.250	0.400	0.200	0.500	0.333	0.750
Proportion Legal and Marked	0.000	0.250	0.400	0.200	0.429	0.333	0.750
Proportion Legal and Unmarked	0.333	0.750	0.600	0.800	0.500	0.667	0.250
Proportion Sublegal and Marked	0.667	0.000	0.000	0.000	0.071	0.000	0.000
Proportion Sublegal and Unmarked	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	Week							Season-long	Standard
	27	28	29	30	31	32	33	Weighted Rate	Error
Proportion of Catch (from Creel)	0.029	0.074	0.022	0.162	0.529	0.103	0.081		
Legal Mark Rate	0.000	0.018	0.009	0.032	0.244	0.034	0.061	0.40	0.159
Sublegal Mark Rate	0.029	--	--	--	0.529	--	--	--	--
Combined Mark Rate	0.020	0.018	0.009	0.032	0.265	0.034	0.061	0.38	0.153
Proportion Legal and Marked	0.000	0.018	0.009	0.032	0.227	0.034	0.061	0.38	0.153
Proportion Legal and Unmarked	0.010	0.055	0.013	0.129	0.265	0.069	0.020	0.56	0.156
Proportion Sublegal and Marked	0.020	0.000	0.000	0.000	0.038	0.000	0.00	0.06	0.112
Proportion Sublegal and Unmarked	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000

Table 16. Calculations used to estimate encounters and total mortality of Chinook salmon during the 2005 Chinook Selective Fishery in Marine Areas 5 and 6, July 1 through August 10. Uses the number of encounters obtained from dockside creel estimates, and apportions those encounters into categories of legal marked, legal unmarked, sublegal marked and sublegal unmarked according to the proportions those fish were caught by test fishing in Area 5 and by a combination of test fishing and Voluntary Trip Report data in Area 6.

Chinook Mortalities in the Recreational Chinook Selective Fisheries in Areas 5 and 6

July 1 - August 10, 2005

Area 5			Kept Marked		Kept Unmarked		Released
Total Encounters (E)	**7,441**	=	1,620	+	49	+	5,772
V(E)	183,318	=	26,662	+	268	+	156,388

Test fishing proportions are used to split total encounters into legal marked/legal un-marked/sub-legal marked/sub-legal unmarked

	Test Fishery	V(TF)	Encounters	Retained	V(Ret)	Mortality Rate	Mortality	Released	Release Mortality Rate	Release Mortality	Total Mortality	VAR	StErr	LCI	UCI	%SE
% legal marked	0.294	0.0189	2184	1520	23809	100%	1520	665	15%	100	1619	41103	203	1222	2017	0.125
% legal Unmarked	0.274	0.0376	2039	23	93	100%	23	2016	15%	302	325	47218	217	-100	751	0.668
% sub-legal marked	0.199	0.0124	1480	100	449	100%	100	1380	20%	276	376	28040	167	48	704	0.445
% sub-legal unmarked	0.234	0.0135	1738	26	108	100%	26	1712	20%	342	368	30368	174	27	710	0.473
Total			**7,441**				**1,669**	**5,772**		**1,020**	**2,689**					

Area 6			Kept Marked		Kept Unmarked		Released
Total Encounters (E)	**1,044**	=	404	+	4	+	636
V(E)	37,161	=	14,938	+	3	+	22,220

Test fishing and VTR proportions are used to split total encounters into legal marked/legal un-marked/sub-legal marked/sub-legal unmarked

	Test Fishery & VTR's	V(TF)	Encounters	Retained	V(Ret)	Mortality Rate	Mortality	Released	Release Mortality Rate	Release Mortality	Total Mortality	VAR	StErr	LCI	UCI	%SE
% legal marked	0.381	0.0233	398	404	14,938	100%	404	0	15%	0	404	11486	107	194	614	0.265
% legal Unmarked	0.561	0.0244	586	0	0			586	15%	88	88	862	29	30	145	0.334
% sub-legal marked	0.057	0.0125	60	0	0			60	20%	12	12	550	23	-34	58	1.956
% sub-legal unmarked	0.000	0.0000	0	4	3	100%	4	0	20%	0	4	864	29	30	145	0.334
Total			**1,044**				**408**	**646**		**100**	**508**					

Computation of Variance on Total Mortality

E = Encounters

PPN Test = Proportions legal marked or legal unmarked or sub-legal marked or sub-legal unmarked from test fishery

sfm = Selective Fishery Mortality Rate

Variance = (1-sfm)^2 * V(Ret) + (E^2 * V(TF) + V(Tot Enc) * PPN Test^2) * sfm^2

Table 17. Estimated encounters of Chinook in the Area 5 and 6 Chinook selective fishery in 2005, assuming that anglers retained all legal-size marked Chinook. Total encounters were estimated by dividing the number of legal-size marked fish that anglers retained by the weighted proportion of legal-size marked fish from the test boats (and a combination of test boat and VTR data in Area 6). The number of encounters in the remaining three categories was then obtained by multiplying the total encounters by the proportions for each corresponding category. Values may not add exactly due to rounding error.

	Area	Legal-size Marked	Legal-size Unmarked	Sublegal-size Marked	Sublegal-size Unmarked	Total
Proportions	5	0.294	0.274	0.199	0.234	
	6	0.381	0.561	0.057	0.000	
Estimated Encounters	5	1,520	1,419	1,030	1,209	5,177
	6	404	594	61	4	1,063
	5 & 6 Combined	1,924	2,013	1,091	1,213	6,240

Table 18. Comparison of estimated encounters of Chinook in the Area 5 and 6 Chinook selective fishery in 2005. Method 1 assumes that the number of encounters estimated by creel survey is accurate and uses the proportion of legal-size marked, legal-size unmarked, sublegal-size marked, and sublegal-size marked fish as encountered by test fishing in Area 5 and a combination of test fishing and volunteer reporting in area 6. Method 2 assumes that anglers did not release any legal-size marked fish, and total encounters were estimated by dividing the number of legal-size marked fish that anglers retained by the weighted proportion of legal-size marked fish from the test boats (and a combination of test boat and VTR data in Area 6). The number of encounters in the remaining three categories was then obtained by multiplying the total encounters by the proportions for each corresponding category. Values may not add exactly due to rounding error.

Method	Area	Legal-size Marked Kept	Legal-size Marked Released	Legal-size Unmarked Kept	Legal-size Unmarked Released	Sublegal-size Marked Kept	Sublegal-size Marked Released	Sublegal-size Unmarked Kept	Sublegal-size Unmarked Released	Total Encountered
1. Total encounters from Creel Surveys	5	1,520	665	23	2,016	100	1,380	26	1,712	7,441
	6	404	0	0	586	0	60	4	0	1,054
	Total	1,924	665	23	2,602	100	1,440	30	1,712	8,495
2. Total encounters from legal-size marked fish retained	5	1,520	0	23	1,396	100	929	26	1,183	5,177
	6	404	0	0	594	0	61	4	0	1,063
	Total	1,924	0	23	1,990	100	990	30	1,183	6,240

Table 19. Comparison of estimated mortalities of Chinook in the Area 5 and 6 Chinook selective fishery in 2005. Method 1 assumes that the number of encounters estimated by creel survey is accurate and uses the proportion of legal-size marked, legal-size unmarked, sublegal-size marked, and sublegal-size marked fish as encountered by test fishing in Area 5 and a combination of test fishing and volunteer reporting in area 6. Method 2 assumes that anglers did not release any legal-size marked fish, and apportions the remaining categories by the same proportions used in method 1. Values may not add exactly due to rounding error.

Method	Area	Legal-size Marked Kept	Legal-size Marked Released	Legal-size Unmarked Kept	Legal-size Unmarked Released	Sublegal-size Marked Kept	Sublegal-size Marked Released	Sublegal-size Unmarked Kept	Sublegal-size Unmarked Released	Total Encountered
1. Total encounters from Creel Surveys	5	1,520	100	23	302	100	276	26	342	2,689
	6	404	0	0	88	0	12	4	0	508
	Total	1,924	100	23	390	100	288	30	342	3,197
2. Total encounters from legal-size marked fish retained	5	1,520	0	23	209	100	186	26	237	2,301
	6	404	0	0	89	0	12	4	0	509
	Total	1,924	0	23	298	100	198	30	237	2,810

COMPLIANCE WITH REGULATIONS

Compliance with existing regulations, and the regulation prohibiting bringing unmarked salmon on board a vessel, was considered an integral part of a successful fishery. Between July 1 and August 10, officers contacted 499 anglers in Area 5 and 228 anglers in Area 6. From those contacts, five citations and no warnings were issued for retention of unmarked Chinook, all in Area 5. Two citations and one warning were issued for bringing an unmarked salmon on board a vessel. Also, out of 592 Chinook sampled by creel surveyors, only 19 were unmarked (3.2%) which expands to an estimated 53 unmarked fish retained (23 legal-size and 30 sublegal-size). Although the number of unmarked fish retained is up slightly from previous years, it is still well below the 613 unmarked legal-size fish used in the FRAM model for 2005, and well below the 8% rate of unmarked encounters used for modeling purposes. Applying an 8% illegal retention rate of unmarked legal-size encounters to the lowest estimate of unmarked legal-size encounters in 2005 predicts that anglers would have retained 169 unmarked fish. We believe the slightly higher retention of unmarked fish in 2005 versus 2004 is a result of the extremely low catch rate on Chinook and anglers switching their target species to pink salmon and then incorrectly identifying small Chinook as pink salmon. Additional educational and enforcement efforts will be necessary in 2006 and especially in 2007 to ensure that anglers are correctly identifying their salmon. Nonetheless, from the perspective of protecting wild Chinook and ensuring proper handling during release, the high compliance rate suggests that conservation objectives were obtained in 2005. Although this study was not designed to obtain an unbiased estimate of compliance, these data suggest a high level of compliance in the fishery.

SUMMARY

Total Chinook catch was down considerably from previous years and the quota was not reached for the first time. Catch per unit effort was very poor except for one or two weeks of fishing. Despite the poor success on Chinook, angler effort remained high throughout the duration of the fishery. A bonus limit of two additional pink salmon per day probably contributed to keeping angler effort high during the fishery.

This third year of the Area 5 and 6 Chinook selective fishery was successful with respect to the objective of increasing recreational fishing opportunity within conservation constraints for Puget Sound Chinook. Anglers were allowed to fish for and retain Chinook for 41 days in Areas 5 and 6, compared with only 10 days and 5 days of non-selective fishing in Area 5 in 2001 and 2002, respectively. Angler effort in Area 5 in 2005 was double the effort in 2002 during the same time frame. Based on data from the test fishery sampling during the Chinook Selective Fishery, half of the legal-size Chinook encountered were marked and could be retained by anglers.

Measured impacts of the fishery were less than pre-season expectations. Estimated encounters were less than pre-season predictions. Compliance with fishing regulations was good during the fishery. The estimated number of mortalities of unmarked double index coded wire tagged fish was negligible. The fishery was also successful with respect to the objective of implementing monitoring and sampling programs to obtain management information for evaluation and planning of potential future selective Chinook fisheries.

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Appendix A. 2005 statistical weeks used by Washington Department of Fish and Wildlife.

2005 Statistical Weeks (Monday - Sunday)

Stat. Mon	Week No.	Calendar Dates Start	Calendar Dates End	Julian Dates Start	Julian Dates End
Jan	1	01-Jan	02-Jan	1	2
	2	03-Jan	09-Jan	3	9
1	3	10-Jan	16-Jan	10	16
	4	17-Jan	23-Jan	17	23
	5	24-Jan	30-Jan	24	30
Feb	6	31-Jan	06-Feb	31	37
	7	07-Feb	13-Feb	38	44
2	8	14-Feb	20-Feb	45	51
	9	21-Feb	27-Feb	52	58
Mar	10	28-Feb	06-Mar	59	65
	11	07-Mar	13-Mar	66	72
3	12	14-Mar	20-Mar	73	79
	13	21-Mar	27-Mar	80	86
Apr	14	28-Mar	03-Apr	87	93
	15	04-Apr	10-Apr	94	100
4	16	11-Apr	17-Apr	101	107
	17	18-Apr	24-Apr	108	114
	18	25-Apr	01-May	115	121
May	19	02-May	08-May	122	128
	20	09-May	15-May	129	135
5	21	16-May	22-May	136	142
	22	23-May	29-May	143	149
June	23	30-May	05-Jun	150	156
	24	06-Jun	12-Jun	157	163
6	25	13-Jun	19-Jun	164	170
	26	20-Jun	26-Jun	171	177

Stat. Mon	Week No.	Calendar Dates Start	Calendar Dates End	Julian Dates Start	Julian Dates End
Jul	27	27-Jun	03-Jul	178	184
	28	04-Jul	10-Jul	185	191
7	29	11-Jul	17-Jul	192	198
	30	18-Jul	24-Jul	199	205
	31	25-Jul	31-Jul	206	212
Aug	32	01-Aug	07-Aug	213	219
	33	08-Aug	14-Aug	220	226
8	34	15-Aug	21-Aug	227	233
	35	22-Aug	28-Aug	234	240
Sep	36	29-Aug	04-Sep	241	247
	37	05-Sep	11-Sep	248	254
9	38	12-Sep	18-Sep	255	261
	39	19-Sep	25-Sep	262	268
Oct	40	26-Sep	02-Oct	269	275
	41	03-Oct	09-Oct	276	282
10	42	10-Oct	16-Oct	283	289
	43	17-Oct	23-Oct	290	296
	44	24-Oct	30-Oct	297	303
Nov	45	31-Oct	06-Nov	304	310
	46	07-Nov	13-Nov	311	317
11	47	14-Nov	20-Nov	318	324
	48	21-Nov	27-Nov	325	331
Dec	49	28-Nov	04-Dec	332	338
	50	05-Dec	11-Dec	339	345
12	51	12-Dec	18-Dec	346	352
	52	19-Dec	25-Dec	353	359
	53	26-Dec	31-Dec	360	365

Appendix B. Sample rates for the 2005 Area 5 and 6 Chinook Selective fisheries, July 1 – August 10, 2005.

	Area 5			Area 6		
Week	Number of Chinook Sampled	Estimated Chinook Retained	Sample Rate	Number of Chinook Sampled	Estimated Chinook Retained	Sample Rate
27	38	95	0.399	6	12	0.504
28	23	110	0.209	18	30	0.596
29	58	182	0.319	6	9	0.681
30	250	912	0.274	36	66	0.545
31	47	253	0.186	35	216	0.162
32	24	58	0.412	19	42	0.455
33	21	59	0.353	13	33	0.392
Total	461	1,669	0.276	133	408	0.326

Appendix C1. Weekly sampling data from creel surveys conducted during the Chinook Selective Fishery in Marine Area 5, July 1 through August 10, 2005.

	Week							
Statistic	27	28	29	30	31	32	33	Total
Kept Chinook Sampled	38	23	58	250	47	24	21	461
Kept Chinook Marked	37	23	58	241	43	23	19	444
Released Chinook	160	135	193	901	168	55	40	1,652
Released Chinook Unmarked	118	117	164	736	123	49	35	1,342
Released Chinook Marked	27	11	13	71	24	2	1	149
Released Chinook Unknown Mark Status	15	7	16	94	21	4	4	161
Mark Rate (%)	35	23	30	30	35	33	35	30
Catch Proportion[1]	0.06	0.07	0.11	0.55	0.15	0.03	0.04	
Weighted Mark Rate (%)	2.0	1.5	3.3	16.1	5.2	1.2	1.3	30.5
Variance								9

1. The weekly estimated harvest of Chinook divided by the estimated season total Chinook harvest (see Appendix D).

Appendix C2. Weekly sampling data from creel surveys conducted during the Chinook Selective Fishery in Marine Area 6, July 1 through August 10, 2005.

	Week							
Statistic	27	28	29	30	31	32	33	Total
Kept Chinook Sampled	6	18	6	36	35	19	13	133
Kept Chinook Marked	6	18	5	34	34	19	13	129
Released Chinook	22	31	22	55	47	21	7	205
Released Chinook Unmarked	21	29	20	54	44	18	7	193
Released Chinook Marked	1	1	2	1	2	3	0	10
Released Chinook Unknown Mark Status	0	1	0	0	1	0	0	2
Mark Rate (%)	25	40	25	38	44	55	65	41
Catch Proportion[1]	0.03	0.07	0.02	0.16	0.53	0.10	0.08	
Weighted Mark Rate (%)	0.7	2.9	0.5	6.2	23.6	5.6	5.3	44.9
Variance								85

1. The weekly estimated harvest of Chinook divided by the estimated season total Chinook harvest (see Appendix E).

Appendix D. Weekly creel survey estimates of marked and unmarked Chinook catch and variances (in parentheses) during the Chinook Selective Fishery in Marine Area 5, July 1 through August 10, 2005. Values may not add exactly due to rounding error.

Statistical Week	Chinook Kept			Chinook Released			
	Marked	Unmarked	Total	Marked	Unmarked	Unknown	Total
27	93 (157)	3 (4)	95 (160)	71 (453)	309 (1,459)	42 (140)	423 (2,052)
28	110 (241)	0 (0)	110 (241)	35 (88)	477 (2,929)	20 (73)	532 (3,089)
29	182 (1,603)	0 (0)	182 (1,603)	36 (160)	475 (6,698)	31 (141)	542 (6,999)
30	892 (18,674)	20 (85)	912 (18,759)	282 (3,462)	2,459 (61,782)	353 (15,557)	3,093 (80,801)
31	233 (5,625)	20 (164)	253 (5,789)	111 (351)	705 (60,902)	90 (656)	906 (61,910)
32	57 (58)	2 (1)	58 (59)	4 (3)	127 (309)	10 (18)	141 (329)
33	55 (306)	5 (13)	59 (319)	4 (9)	113 (1,142)	19 (57)	135 (1,208)
Total	1,620 (26,662)	49 (268)	1,669 (26,930)	542 (4,526)	4,664 (135,221)	566 (16,642)	5,772 (156,388)

Appendix E. Weekly creel survey estimates of marked and unmarked Chinook catch and variances (in parentheses) during the Chinook Selective Fishery in Marine Area 6, July 1 through August 10, 2005. Values may not add exactly due to rounding error.

	Chinook Kept			Chinook Released			
Statistical Week	Marked	Unmarked	Total	Marked	Unmarked	Unknown	Total
27	12 (41)	0 (0)	12 (41)	5 (17)	46 (421)	0 (0)	51 (438)
28	30 (50)	0 (0)	30 (50)	1 (0)	57 (95)	1 (1)	59 (96)
29	7 (4)	1 (1)	9 (4)	3 (1)	26 (21)	0 (0)	28 (23)
30	63 (128)	3 (2)	66 (130)	3 (9)	105 (165)	0 (0)	108 (174)
31	216 (14,221)	0 (0)	216 (14,221)	69 (4,509)	243 (16,154)	1 (0)	313 (20,663)
32	42 (341)	0 (0)	42 (341)	4 (3)	39 (387)	0 (0)	43 (390)
33	33 (154)	0 (0)	33 (154)	0 (0)	33 (437)	0 (0)	33 (437)
Total	404 (14,938)	4 (3)	408 (14,941)	85 (4,540)	549 (17,679)	3 (1)	636 (22,220)

Appendix F. Recoveries of coded wire tags from Chinook salmon during the Chinook Selective Fisheries in Marine Areas 5 and 6, July 1 through August 10, 2005.

Area	Recovery Date	Tagcode	Recovery Mark	Fork Length (cm)	Total Length (mm)	Brood Year	Rearing Hatchery	Release Site	Release Agency
05	Jul 22 2005	062763	AD Fin Clp	74	785	2002	FEATHER R HATCHERY	BENICIA	CDWR
05	Jul 10 2005	090119	AD Fin Clp	82	--	2000	WILLAMETTE HATCHERY	BLIND SL (LWR COL R)	ODFW
05	Jul 4 2005	183224	AD Fin Clp	80	--	2001	H-CLAYOQUOT	R-KENNEDY R LOW	CDFO
05	Jul 20 2005	185527	AD Fin Clp	60	650	2002	H-NANAIMO R	R-NANAIMO R	CDFO
05	Jul 30 2005	185660	AD Fin Clp	49	514	2003	H-COWICHAN R	R-COWICHAN R UP	CDFO
06	Aug 8 2005	210390	AD Fin Clp	73	742	2001	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ
06	Aug 8 2005	210390	AD Fin Clp	79	811	2001	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ
06	Jul 8 2005	210390	AD Fin Clp	75	800	2001	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ
06	Jul 15 2005	210390	AD Fin Clp	82	861	2001	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ
05	Aug 10 2005	210402	AD Fin Clp	70	755	2001	MARBLEMOUNT HATCHERY	BAKER R 03.0435	WDFW
06	Aug 7 2005	210406	AD Fin Clp	80	831	2001	LUMMI SEA PONDS	SLATER SLOUGH 1.0156	LUMM
05	Jul 2 2005	210407	AD Fin Clp	70	716	2002	DUNGENESS HATCHERY	GRAY WOLF R 18.0048	WDFW
06	Jul 1 2005	210479	AD Fin Clp	61	635	2002	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ
06	Jul 26 2005	210483	AD Fin Clp	70	742	2002	NISQUALLY HATCHERY	CLEAR CR 11.0013C	NISQ
05	Jul 20 2005	210485	AD Fin Clp	69	719	2002	COWSKULL ACCLIM POND	COWSKULL ACCLIM POND	PUYA
05	Jul 8 2005	210506	AD Fin Clp	59	--	2002	KALAMA CR HATCHERY	KALAMA CR 11.0017	NISQ
05	Jul 24 2005	210506	AD Fin Clp	60	703	2002	KALAMA CR HATCHERY	KALAMA CR 11.0017	NISQ
06	Jul 24 2005	210506	AD Fin Clp	67	715	2002	KALAMA CR HATCHERY	KALAMA CR 11.0017	NISQ
06	Jul 25 2005	210506	AD Fin Clp	78	783	2002	KALAMA CR HATCHERY	KALAMA CR 11.0017	NISQ
06	Jul 30 2005	210506	AD Fin Clp	70	713	2002	KALAMA CR HATCHERY	KALAMA CR 11.0017	NISQ
05	Jul 31 2005	210506	AD Fin Clp	55	--	2002	KALAMA CR HATCHERY	KALAMA CR 11.0017	NISQ
05	Jul 21 2005	210508	AD Fin Clp	64	678	2002	LUMMI SEA PONDS	LUMMI SEA PONDS	LUMM
05	Jul 12 2005	210509	AD Fin Clp	81	821	2002	LUMMI SEA PONDS	NOOKSACK R 01.0120	LUMM
05	Jul 22 2005	210509	AD Fin Clp	70	730	2002	LUMMI SEA PONDS	NOOKSACK R 01.0120	LUMM
05	Jul 29 2005	210511	Unmarked	52	560	2002	WHITE RIVER HATCHERY	WHITE R 10.0031	MUCK
05	Jul 20 2005	210548	AD Fin Clp	39	425	2003	NISQUALLY HATCHERY	CLEAR CR 11.0013C	NISQ
05	Jul 23 2005	612659	AD Fin Clp	53	561				Nez Perce
05	Jul 14 2005	630399	AD Fin Clp	69	740	2000	PORTAGE BAY HATCHERY	PORTAGE BAY/SHIP CNL	UW
06	Aug 8 2005	630783	AD Fin Clp	68	698	2000	MCALLISTER HATCHERY	MCALLISTER CR11.0324	WDFW
05	Jul 9 2005	630865	AD Fin Clp	66	704	2001	GORST CR REARING PND	GORST CR 15.0216	SUQ
05	Jul 20 2005	630890	AD Fin Clp	74	786	2001	LYONS FERRY HATCHERY	SNAKE R-LOWR 33.0002	WDFW
05	Jul 23 2005	631007	AD Fin Clp	53	571	2002	TURTLE ROCK HATCHERY	COLUMBIA R - GENERAL	WDFW
05	Aug 10 2005	631371	AD Fin Clp	72	773	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
05	Aug 10 2005	631371	AD Fin Clp	61	688	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
06	Jul 8 2005	631371	AD Fin Clp	68	712	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
05	Jul 21 2005	631371	AD Fin Clp	64	696	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
05	Jul 22 2005	631371	AD Fin Clp	52	563	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
05	Jul 23 2005	631371	AD Fin Clp	62	634	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
05	Jul 23 2005	631371	AD Fin Clp	59	612	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
05	Jul 23 2005	631371	AD Fin Clp	52	771	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
06	Jul 24 2005	631371	AD Fin Clp	63	654	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
05	Aug 6 2005	631375	AD Fin Clp	86	883	2001	SOOS CREEK HATCHERY	BIG SOOS CR 09.0072	WDFW
05	Aug 7 2005	631377	AD Fin Clp	72	751	2001	SAMISH HATCHERY	FRIDAY CR 03.0017	WDFW
05	Jul 23 2005	631377	AD Fin Clp	84	878	2001	SAMISH HATCHERY	FRIDAY CR 03.0017	WDFW

Appendix F. Continued.

Area	Recovery Date	Tagcode	Recovery Mark	Fork Length (cm)	Total Length (mm)	Brood Year	Rearing Hatchery	Release Site	Release Agency
05	Jul 21 2005	631387	AD Fin Clp	59	656	2002	WALLACE R HATCHERY	WALLACE R 07.0940	WDFW
05	Jul 22 2005	631414	AD Fin Clp	56	582	2002	MARBLEMOUNT HATCHERY	CASCADE R 03.1411	WDFW
05	Jul 22 2005	631414	AD Fin Clp	56	595	2002	MARBLEMOUNT HATCHERY	CASCADE R 03.1411	WDFW
05	Jul 24 2005	631436	AD Fin Clp	65	673	2002	GORST CR REARING PND	GORST CR 15.0216	SUQ
06	Jul 26 2005	631436	AD Fin Clp	72	741	2002	GORST CR REARING PND	GORST CR 15.0216	SUQ
05	Jul 16 2005	631545	AD Fin Clp	63	660	2002	LYONS FERRY HATCHERY	SNAKE R-LOWR 33.0002	WDFW
05	Jul 20 2005	631546	AD Fin Clp	55	583	2002	KENDALL CR HATCHERY	DEADHORSE CR 01.0495	WDFW
05	Jul 22 2005	631548	AD Fin Clp	67	696	2002	WELLS HATCHERY	WELLS DAM- CHIEF JOE	WDFW
05	Jul 22 2005	631552	AD Fin Clp	75	777	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
05	Jul 23 2005	631553	AD Fin Clp	65	720	2002	GORST CR REARING PND	GORST CR 15.0216	SUQ
05	Jul 21 2005	631555	AD Fin Clp	57	603	2002	BIG BEEF CR HATCHERY	BIG BEEF CR HATCHERY	WDFW
06	Aug 4 2005	631558	AD Fin Clp	75	782	2002	MINTER HATCHERY	MINTER CR 15.0048	WDFW
05	Jul 22 2005	631585	AD Fin Clp	66	680	2002	LYONS FERRY HATCHERY	SNAKE R-LOWR 33.0002	WDFW
05	Jul 1 2005	631587	AD Fin Clp	89	920	2002	DRYDEN POND	WENATCHEE R 45.0030	WDFW
05	Jul 16 2005	631771	AD Fin Clp	73	763	2002	PORTAGE BAY HATCHERY	PORTAGE BAY/SHIP CNL	UW
05	Jul 20 2005	631774	AD Fin Clp	61	652	2002	SAMISH HATCHERY	FRIDAY CR 03.0017	WDFW
05	Jul 21 2005	631774	AD Fin Clp	58	633	2002	SAMISH HATCHERY	FRIDAY CR 03.0017	WDFW
06	Jul 23 2005	631774	AD Fin Clp	60	624	2002	SAMISH HATCHERY	FRIDAY CR 03.0017	WDFW
05	Jul 23 2005	631776	Unmarked	57	594	2002	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ
05	Jul 21 2005	631777	AD Fin Clp	62	653	2002	HOODSPORT HATCHERY	FINCH CR 16.0222	WDFW
06	Jul 29 2005	631777	AD Fin Clp	71	752	2002	HOODSPORT HATCHERY	FINCH CR 16.0222	WDFW
05	Jul 22 2005	631780	AD Fin Clp	59	619	2002	VOIGHTS CR HATCHERY	VOIGHT CR 10.0414	WDFW
05	Jul 22 2005	631780	AD Fin Clp	54	573	2002	VOIGHTS CR HATCHERY	VOIGHT CR 10.0414	WDFW
05	Jul 26 2005	631780	AD Fin Clp	65	682	2002	VOIGHTS CR HATCHERY	VOIGHT CR 10.0414	WDFW
05	Jul 2 2005	631781	AD Fin Clp	60	610	2002	TUMWATER FALLS HATCH	DESCHUTES R 13.0028	WDFW
05	Jul 21 2005	631784	AD Fin Clp	61	638	2002	SOOS CREEK HATCHERY	BIG SOOS CR 09.0072	WDFW
05	Jul 20 2005	631789	AD Fin Clp	42	447	2002	KENDALL CR HATCHERY	NOOKSACK R -NF 01.01	WDFW
05	Jul 20 2005	631799	AD Fin Clp	56	591	2002	WALLACE R HATCHERY	WALLACE R 07.0940	WDFW
05	Aug 10 2005	631887	AD Fin Clp	60	633	2002	GLENWOOD SPRINGS	EAST SOUND BAY-ORCAS	WDFW
05	Jul 16 2005	631887	AD Fin Clp	50	540	2002	GLENWOOD SPRINGS	EAST SOUND BAY-ORCAS	WDFW
05	Aug 10 2005	631898	AD Fin Clp	56	584	2002	COWLITZ SALMON HATCH	COWLITZ R 26.0002	WDFW
05	Jul 16 2005	631969	AD Fin Clp	55	582	2002	COWLITZ SALMON HATCH	COWLITZ R 26.0002	WDFW
05	Jul 17 2005	631974	AD Fin Clp	60	626	2002	COWLITZ SALMON HATCH	COWLITZ R 26.0002	WDFW
05	Jul 1 2005	632167	AD Fin Clp	53	562	2002	LYONS FERRY HATCHERY	SNAKE R-LOWR 33.0002	WDFW
05	Jul 21 2005	632167	AD Fin Clp	62	651	2002	LYONS FERRY HATCHERY	SNAKE R-LOWR 33.0002	WDFW
05	Jul 24 2005	632167	AD Fin Clp	50	535	2002	LYONS FERRY HATCHERY	SNAKE R-LOWR 33.0002	WDFW
06	Aug 4 2005	636322	AD Fin Clp	83	842	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
05	Jul 23 2005	636322	AD Fin Clp	67	692	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW
06	Jul 25 2005	636322	AD Fin Clp	83	831	2002	GEORGE ADAMS HATCHRY	PURDY CR 16.0005	WDFW