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**2022 Summer Mark-Selective Recreational Chinook Fisheries
In Marine Areas 5, 6, 7, 9, 10, 11, 12 and 13**

Post-season Report

DRAFT

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INTRODUCTION

In the marine environments of the Strait of Juan de Fuca and Puget Sound, abundant runs of hatchery Chinook salmon (*Oncorhynchus tshawytscha*) have been mixed with depressed stocks of natural-origin Chinook salmon for many years. Providing recreational anglers with opportunities to harvest abundant hatchery stocks while simultaneously protecting weaker, natural-origin stocks has proven to be a significant conservation and management challenge. The combination of large-scale hatchery marking (i.e., adipose fin clipping) programs and mark-selective harvest regulations makes it possible for anglers to pursue and harvest hatchery Chinook salmon while minimally impacting natural-origin 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 natural-origin) salmon encountered¹.

Since the Washington Department of Fish and Wildlife (WDFW) implemented the first marine mark-selective Chinook salmon fisheries in Marine Areas 5 and 6 (Strait of Juan de Fuca) in 2003 based on state-tribal agreements (Thiesfeld and Hagen-Breaux 2005a, WDFW 2008a), mark-selective Chinook salmon fishing regulations have been implemented in multiple Marine Areas in Puget Sound during both the summer and winter seasons. Including the 2022-2023 management season, mark-selective fisheries for Chinook salmon have been conducted in Puget Sound for the last 20 summer (May through September) seasons and the last 18 winter (October through April) seasons.

During the 2022 summer season, May through September, WDFW implemented mark-selective Chinook salmon fisheries in Marine Areas 5, 6, 7, 9, 10, 11, 12 and 13. The Chinook MSF seasons in each area were scheduled as follows, though note that in some Areas management criteria were met prior to the end date and closed prior to it:

- Marine Area 5 from July 1 through August 15, 2022;
- Marine Area 6 from July 1 through August 15, 2022;
- Marine Area 7 July 14, 15, 16, 21,22, 23, 28, 29, 30, 2022;
- Marine Area 9 July 14, 15, 16, 21,22, 23, 28, 29, 30, 2022;
- Marine Area 10 from July 14 through August 31, 2022;
- Marine Area 11 from June 1 through September 30, 2022;
- Marine Area 12 from July 1 through September 30, 2022;
- Marine Area 13 from May 1 through September 30, 2022

¹The regulations specific to summer mark-selective fisheries in Puget Sound Marine Catch Areas allowed for the retention of up to two legal-sized (>22 inches [56 cm]) marked Chinook salmon per day and required the immediate release of all unmarked or sublegal Chinook salmon. 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.

RESULTS

1) Marine Area 5 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a Chinook MSF in Marine Area 5 from July 1 through August 15, 2022. The fishery was open July 1 through 4, then switched to open every other day starting July 6 through 23. It then reopened seven days a week July 24 through August 15. WDFW’s Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program, a Full Murthy, in Area 5 throughout the season to collect the data needed to estimate key parameters characterizing the fishery and its impacts on unmarked salmon. Sampling activities included dockside creel sampling and efforts to collect voluntary salmon trip reports (STRs) from the angling public. The fishery control for this Area was based on the preseason prediction of total legal-sized Chinook salmon encountered. **Table 1.2** 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 2012a). In this section we present results from our monitoring activities during the Area 5 summer Chinook MSF.

Table 1.1 Fishery dates and fishery retention status of salmon in the 2022 summer Chinook salmon MSF in Marine Area 5.

Start Date	End Date	Fishery Status	Days
1-Jul	4-Jul	Open	4
5-Jul	5-Jul	Closed	1
6-Jul	6-Jul	Open	1
7-Jul	7-Jul	Closed	1
8-Jul	8-Jul	Open	1
9-Jul	9-Jul	Closed	1
10-Jul	10-Jul	Open	1
11-Jul	11-Jul	Closed	1
12-Jul	12-Jul	Open	1
13-Jul	13-Jul	Closed	1
14-Jul	14-Jul	Open	1
15-Jul	15-Jul	Closed	1
16-Jul	16-Jul	Open	1
17-Jul	17-Jul	Closed	1
18-Jul	18-Jul	Open	1
19-Jul	19-Jul	Closed	1
20-Jul	20-Jul	Open	1
21-Jul	21-Jul	Closed	1
22-Jul	22-Jul	Open	1
23-Jul	23-Jul	Closed	1
24-Jul	15-Aug	Open	23

Table 1.2 Sampling/estimation details on target parameters associated with the overall Area 5 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 ¹	Catch rates (CPUE); length, age, and CWT composition of harvest ¹ ; collection of angler fishing methods.	Angler trip; kept fish; reported fish release	Two weeks	Creel estimates were produced for one-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.
		Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook salmon	Boat trip	Season	Dockside encounter data were not used for estimation of Chinook encounters for this fishery (Table 1.15).
On-the-water Surveys	Proportion of total angler effort that uses sample-frame sites (i.e., site “size measures”) versus out-of-frame sites.	Total on-water boat and angler counts at assumed peak effort time interval (instantaneous count); spatial distribution of recreational fishing boats in the area.	Boats and anglers	Month	2 weekday and 2 weekend surveys were conducted during the Area 5 summer Chinook MSF. Recent average site weights to compute catch and effort estimates.
Test Fishing	Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook	Chinook length, age, and DNA-based ² stock composition; species composition of non-Chinook encounters	Fish encounter	Season	Test fishing collected data when the fishery was open to Chinook retention (Table 1.1) were used for estimate of encounters and mortalities during this fishery. LM = 10%; LU = 10%; SM = 65%; SU = 15% (Table 1.11).
Voluntary Salmon Trip Reports (STRs)	Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook salmon	Encounter data for non-Chinook salmon species (e.g., Coho salmon) that the angler may record on the STR form	Fish encounter	Season	2 STRs were returned during this fishery. Due to low sample size of the STRs and a significant difference, p -value < .01, between STR and test fishing data; only the higher quality test fishing data were used for estimates of encounters and mortalities for this fishery.
Overall Fishery Impacts Estimation	Total Chinook salmon encounters and mortalities by size/mark-status group	Ratios of encounters and mortalities per kept Chinook salmon	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.

¹ The length and CWT composition of landed catch was assessed on a season-wide basis for impact estimation.

² Though samples were collected, DNA-based estimates of stock composition are not yet available for this fishery.

Table 1.3 Estimates of total fishing effort and total salmon catch (harvest and releases) during the summer Chinook MSF in Marine Area 5. Values may not add exactly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Month	Stat Week	Start Date	End Date	Est. Effort		Est. Retained Chinook		Est. Released Chinook		Total Est. Chinook Encounters
				Boats	Anglers	AD	UM	AD	UM	
July	27	1-Jul	3-Jul	1,195	2,986	982	7	6,668	2,478	10,135
	28	4-Jul	10-Jul	723	1,788	494	0	3,352	1,249	5,094
	29	12-Jul	16-Jul	407	884	243	2	1,650	613	2,507
	30	18-Jul	24-Jul	804	1,871	714	0	4,845	1,805	7,363
	31	25-Jul	31-Jul	865	1,836	619	0	4,204	1,567	6,390
	32	1-Aug	7-Aug	655	1,459	418	0	2,841	1,058	4,317
	33	8-Aug	15-Aug	965	2,259	466	0	3,161	1,178	4,804
Season Total:				5,615	13,084	3,936	9	26,719	9,947	40,611
Variance:				54,681	335,104	68,451	17	46,999,498	5,302,752	100,456,372
SE:				234	579	262	4	6856	2303	10,023
CV (%):				4	4	7	46	26	23	25
95% CI:				5,157 - 6,073	11,949 - 14,218	3,423 - 4,449	1 - 17	13,282 - 40,156	5,434 - 14,461	20,967 - 60,256

Table 1.4 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the summer Chinook MSF in Marine Area 5.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	935	74	1,009
Unmarked	1	0	1
Total	936	74	1,010

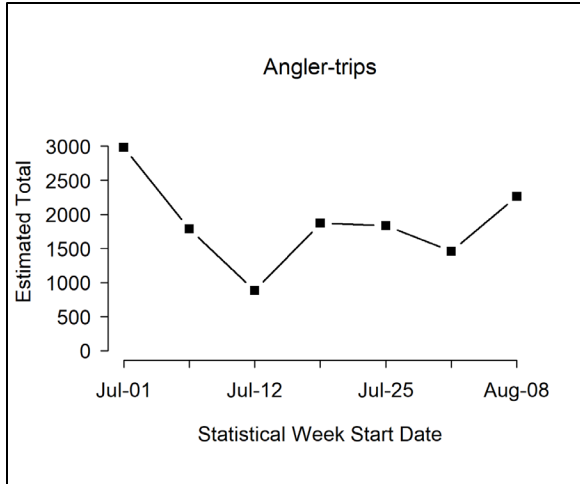


Figure 1.1 Temporal patterns in fishing effort during the summer Chinook MSF in Marine Area 5.

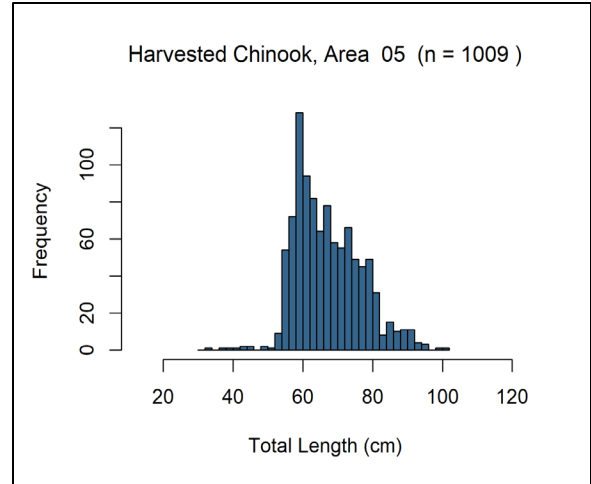


Figure 1.3 Length-frequency distribution of retained marked Chinook sampled in dockside angler interviews during the summer Chinook MSF in Marine Area 5. Note: displayed values are observations where lengths taken.

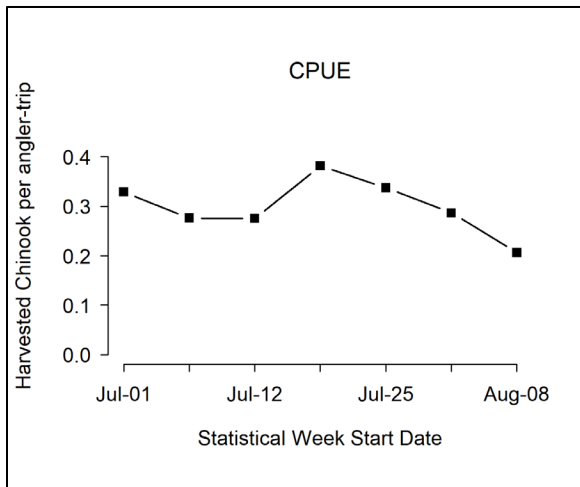


Figure 1.2 Temporal patterns in CPUE (landed Chinook per angler trip) during the summer Chinook MSF in Marine Area 5.

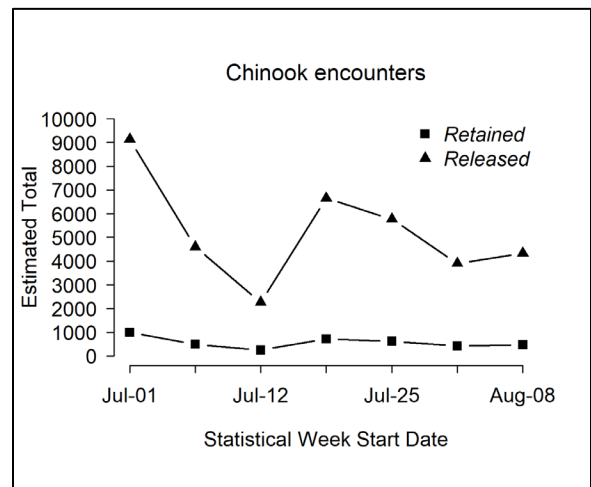


Figure 1.4 Temporal patterns in CPUE (landed Chinook per angler trip) during the summer Chinook MSF in Marine Area 5.

Table 1.5 Comparison of modeled and estimated total Chinook salmon encounters for the summer Chinook MSF in Marine Area 5. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	UM	9,727	2,904	6,823	29
	AD	13,146	4,439	8,707	3,862
	Total	22,873	7,343	15,530	3,891
	% Marked	57	60	56	99
Estimated (Creel) Encounters	UM	9,956	3,930	6,026	9
	AD	30,655	4,192	26,463	3,936
	Total	40,611	8,122	32,489	3,945
	% Marked	75	52	81	100

Table 1.6 Summary of season-wide fishery impact estimates for the summer Chinook MSF in Marine Area 5. Release mortality rate = 0.15 for legal fish and 0.20 for sublegal fish. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Size/mark group	Encounters	Retained	Released	Release Mortality	Total Mortality	Var	SE	95% CI	CV (%)
Legal AD	4,192	3,647	545	82	3,729	106,197	326	3,090 - 4,368	9
Legal UM	3,930	9	3,921	588	597	40,965	202	200 - 994	34
Sublegal AD	26,463	289	26,174	5,235	5,523	1,798,938	1,341	2,895 - 8,152	24
Sublegal UM	6,026	0	6,026	1,205	1,205	139,314	373	474 - 1,937	31
Total	40,611	3,945	36,667	7,110	11,055	2,085,413	1,444	8,224 - 13,885	13

Table 1.7 Comparison of modeled and estimated total Chinook salmon mortalities for the summer Chinook MSF in Marine Area 5. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Mortality Category	FRAM Chinook Mortalities			Estimated Chinook Mortalities		
	UM	AD	Total	UM	AD	Total
Total (Landed + Released)	1,827	5,882	7,709	1,802	9,252	11,055
Released Legal	433	279	712	588	82	670
Released Sublegal	1,365	1,741	3,106	1,205	5,235	6,440
Landed Only	29	3,862	3,891	9	3,936	3,945

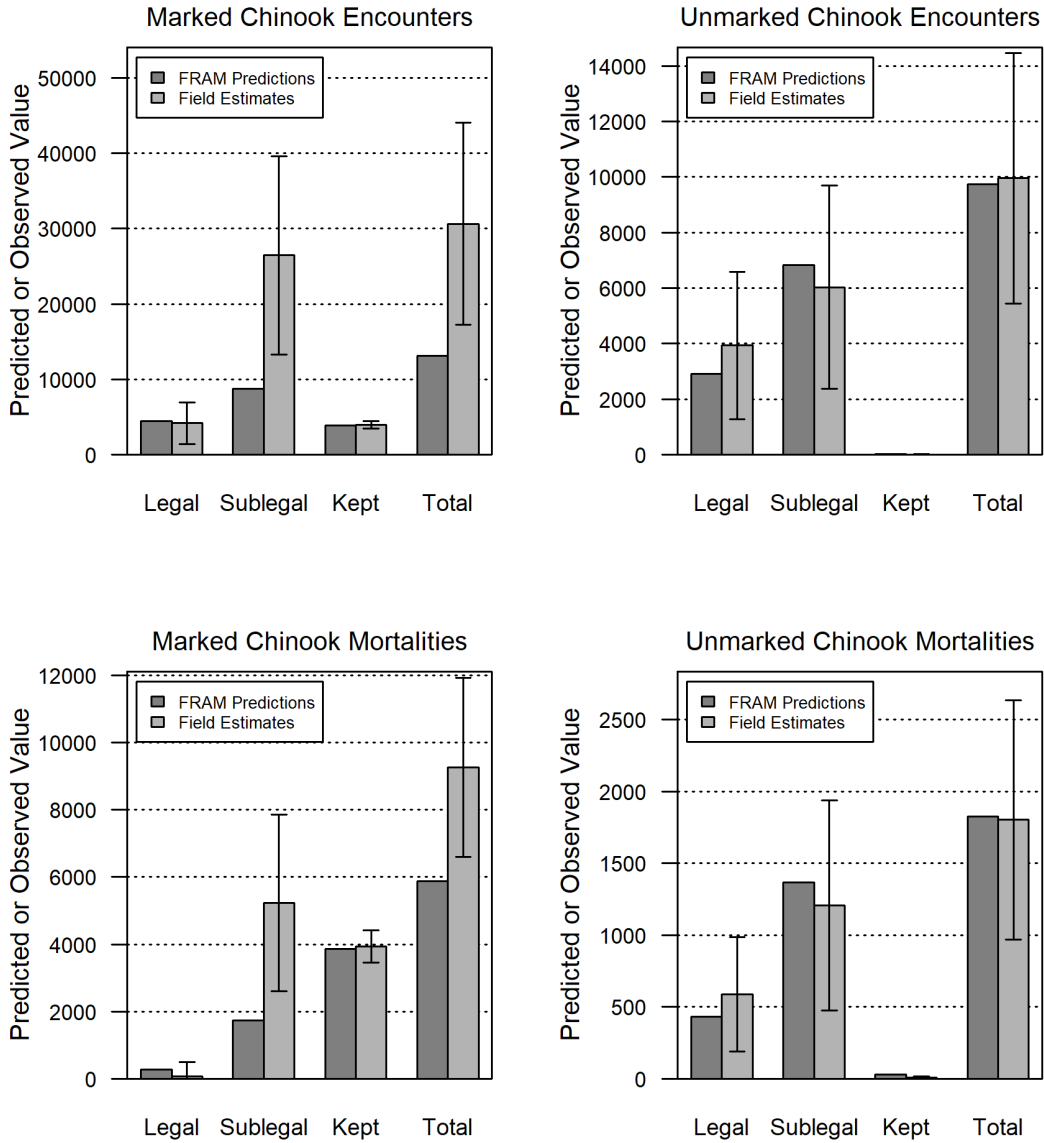


Figure 1.5 Comparison of modeled and estimated total Chinook salmon encounters and mortalities for the summer Chinook MSF in Marine Area 5. Error bars represent approximate 95% confidence intervals for field estimates.

Table 1.8 Summary of the total number of anglers intercepted during on-the-water surveys conducted for the summer Chinook MSF in Marine Area 5. Sites in bold represent those included in the dockside sample frame.

Site Name	Weekday Anglers	Season Total (unadjusted) Size Measure	Weekend Anglers	Season Total (unadjusted) Size Measure
Coho Resort	21	0.0602	27	0.0868
Curley's Resort	12	0.0344	6	0.0193
Neah Bay General	8	0.0229	4	0.0129
Olson's East Docks	73	0.2092	49	0.1576
Olson's Ramp & Docks	80	0.2292	84	0.2701
Olson's Resort	11	0.0315	6	0.0193
Olson's West Docks	24	0.0688	33	0.1061
Pillar Pt Ramp	14	0.0401	2	0.0064
Port Angeles Boat Haven West	2	0.0057	0	0.0000
Port Angeles West Ramp	2	0.0057	0	0.0000
Private	5	0.0143	39	0.1254
Unknown	2	0.0057	0	0.0000
Van Riper's North	29	0.0831	26	0.0836
Van Riper's South	58	0.1662	31	0.0997
Van Riper's Resort	6	0.0172	1	0.0032
Whiskey Creek Camp	2	0.0057	0	0.0000
Bellingham Marine Park Dock	0	0.0000	3	0.0096
Total	349	1	311	1

Table 1.9 Monthly sample rates (Total retained Chinook sampled¹ / Estimated retained Chinook) for the summer Chinook MSF in Marine Area 5. AD = marked (adipose-clipped), UM = unmarked.

Time period			Estimated Retained Chinook			Number of Chinook sampled			Sample Rate
Month	Stat Weeks	Dates	AD	UM	Total	AD	UM	Total	
July	27 - 31	1 Jul - 31 Jul	3,052	9	3,061	896	2	898	29.30%
August	32 - 34	1 Aug - 15 Aug	884	0	884	235	0	235	26.60%
Season Total			3,936	9	3,945	1,131	2	1,133	28.70%

¹ Number of retained Chinook salmon sampled includes all retained Chinook salmon inspected for CWT's, from all sites sampled during the summer Chinook MSF in Marine Area 5 (creel estimates and fish sampled as part of baseline sampling).

Table 1.10 Fishery-total estimates of retained and released salmon (other than Chinook) for the summer Chinook MSF in Marine Area 5. Values may not add exactly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Stat Week	Start Date	End Date	Retained Salmon				Released Salmon					
			Coho AD	Coho UM	Unknown	Pink	Coho AD	Coho UM	Coho UNK	Pink	Sockeye	Unknown
27	1-Jul	3-Jul	387	4	4	0	29	204	91	0	0	76
28	4-Jul	10-Jul	636	8	17	0	72	751	126	0	0	62
29	12-Jul	16-Jul	144	0	2	0	0	127	46	0	0	6
30	18-Jul	24-Jul	716	2	21	2	78	666	41	0	0	19
31	25-Jul	31-Jul	367	3	15	0	59	394	35	0	4	116
32	1-Aug	7-Aug	287	3	8	0	17	260	17	6	0	107
33	8-Aug	15-Aug	432	6	6	5	45	555	91	0	0	163
Season Total:			2,969	26	73	7	299	2,957	448	6	4	550
Variance:			19,687	73	279	18	1,755	39,354	11,149	31	9	4,041
Standard Error:			140	9	17	4	42	198	106	6	3	64
CV (%):			5	32	23	64	14	7	24	91	82	12
95% CI:			2,694 - 3,244	10 - 43	40 - 105	0 - 15	217 - 382	2,569 - 3,346	241 - 655	0 - 17	0 - 10	425 - 674

Table 1.11 Composition of test fishery Chinook salmon encounters and associated mark-rate and size/mark-status proportion estimates for the summer Chinook salmon MSF in Marine Area 5 when the fishery was open to salmon retention (see **Table 1.1**). AD = marked (adipose-clipped), UM = unmarked.

Stat Week	Fishing Effort		Legal		Sublegal		Total
	Days	Hrs Fished	AD	UM	AD	UM	
27	1	6.00	0	2	9	3	14
28	1	6.00	1	2	5	1	9
29	4	22.97	4	2	13	5	24
30	1	6.07	0	0	6	1	7
31	5	29.49	7	6	30	5	48
32	1	6.01	0	1	2	1	4
33	4	22.76	4	2	36	7	49
Total	17	99.30	16	15	101	23	155
Size/mark-status composition:			0.10	0.10	0.65	0.15	
Variance:			(0.0006)	(0.0006)	(0.0015)	(0.0008)	
Legal size mark rate:			0.52				
Overall mark rate:			0.75				

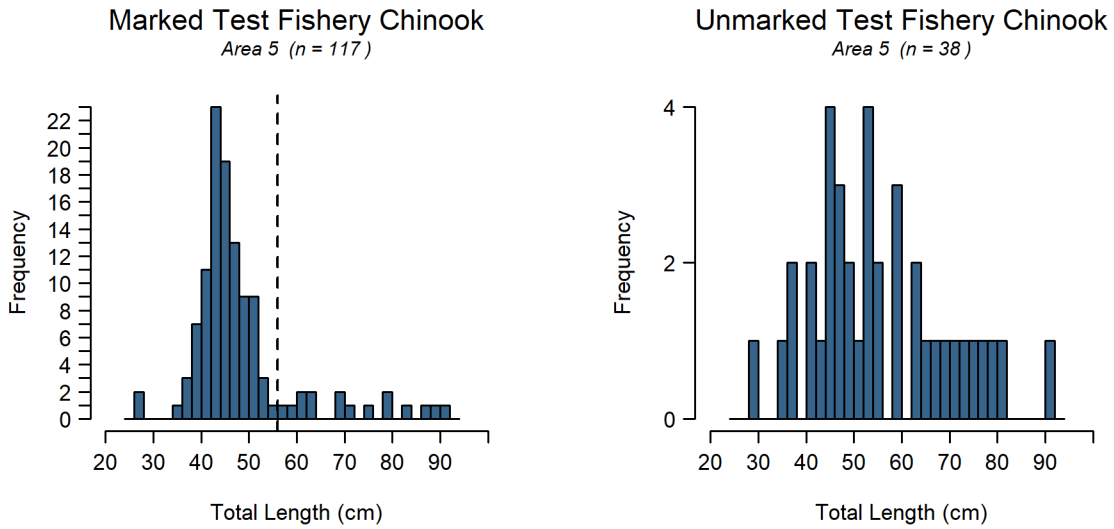


Figure 1.6 Length-frequency distributions of marked (*left panel*) and unmarked (*right panel*) Chinook salmon encountered by test fishers during the summer Chinook salmon MSF in Marine Area 5 when the fishery was open to Chinook salmon retention (see **Table 1.1**). The vertical dashed line in the left panel corresponds to the legal-size limit (22 in or 56 cm).

Table 1.12 Summary of coded-wire tags recovered from Chinook salmon harvested during the summer Chinook MSF in Marine Area 5. The field “Number DITs” corresponds to the number of tags that belonged to double-index tag groups. Note: Not all tags have been processed before writing of this report.

Release Domain	Release Region	Release Site	Rearing Location	CWTs Recovered	No. DITs
BC	Thompson River (3.9%)	R-Chilliwack R	H-Chilliwack River H	2 (1.9%)	0
		R-Harrison R	H-Chehalis River H	1 (1%)	0
		R-Nicola R	H-Spius Creek H	1 (1%)	0
	Georgia Strait (1.9%)	R-Burrard In	H-Sandy Cove Seapen	2 (1.9%)	0
WA	N Washington (4.9%)	Kendall Cr 01.0406	Kendall Cr Hatchery	3 (2.9%)	0
		Friday Cr 03.0017	Samish Hatchery	2 (1.9%)	2
	Strait of Juan De Fuca (12.6%)	Elwha R 18.0272	Elwha Hatchery	1 (1%)	0
		Hoko R 19.0148	Hoko Falls Hatchery	12 (11.7%)	0
	Hood Canal (18.4%)	Purdy Cr 16.0005	George Adams Hatchery	7 (6.8%)	6
		Finch Cr 16.0222	Hoodsport Hatchery	12 (11.7%)	0
	N Puget Sound (8.7%)	Tulalip Cr 07.0001	Bernie Gobin Hatch	1 (1%)	0
		Wallace R 07.0940	Wallace R Hatchery	7 (6.8%)	2
		Whitehorse Springs	Whitehorse Pond	1 (1%)	0
	Skagit River (1.9%)	Cascade R 03.1411	Marblemount Hatchery	1 (1%)	1
		Co Line Pd2 03.1853B	Marblemount Hatchery	1 (1%)	0
	Mid Puget Sound (4.9%)	Grovers Cr Hatchery	Grovers Cr Hatchery	5 (4.9%)	5
	S Puget Sound (13.6%)	Minter Cr 15.0048	Minter Cr Hatchery	7 (6.8%)	0
		Kalama Cr 11.0017	Kalama Cr Hatchery	3 (2.9%)	0
Chambers Cr 12.0007		Garrison Hatchery	3 (2.9%)	0	
Clear Cr 11.0013C		Clear Creek Hatchery	1 (1%)	1	
Willapa Bay (1%)	Naselle R 24.0543	Naselle Hatchery	1 (1%)	0	
Col. Riv.	Upper Columbia R (3.9%)	Wenatchee R 45.0030	Dryden Pond	1 (1%)	0
		Chief Joseph Hatchery	Chief Joseph Hatchery	1 (1%)	0
		Columbia Near Wells	Wells Hatchery	1 (1%)	0
		Col R @ Priest Rapids	Priest Rapids Hatchery	1 (1%)	0
	Central Columbia River (9.7%)	Spring Cr 29.0159	Spring Cr Nfh	8 (7.8%)	8

Release Domain	Release Region	Release Site	Rearing Location	CWTs Recovered	No. DITs
		Klickitat Hatchery (Ykfp)	Klickitat Hatchery (Ykfp)	1 (1%)	0
		Umatilla R	Bonneville Hatchery	1 (1%)	0
	Lower Columbia River (8.7%)	Green R 26.0323	North Toutle Hatchery	1 (1%)	0
		Big Cr (Lwr Col R)	Big Cr Hatchery	4 (3.9%)	0
		Youngs R & Bay	Cedc Net Pens	1 (1%)	0
		Tanner Cr (Bnville)	Bonneville Hatchery	2 (1.9%)	0
		Klaskanine R N Fk	Klaskanine Hatchery	1 (1%)	0
		Snake River (2.9%)	Lyons Ferry Rel.Site	Lyons Ferry Hatchery	2 (1.9%)
	Hammer Crk:Salmon R		Irrigon Hatchery	1 (1%)	0
	CA	Central California Coast (1.9%)	Mare Island Net Pen	Nimbus Fish Hatchery	1 (1%)
Fort Baker Minor Pt			Mok R Fish Ins	1 (1%)	0
Sacramento River (1%)		American R At Sunrise	Nimbus Fish Hatchery	1 (1%)	0
Total				103	25

Table 1.13 Summary of double-index tagged (DIT) Chinook salmon kept by anglers and estimated total mortality of unmarked DIT Chinook salmon due to hook-and-release impacts resulting from the summer Chinook MSF in Marine Area 5. AD = marked (adipose-clipped), UM = unmarked.

Hatchery	Brood Year	DITs Obs	Est.AD	var(Est.AD)	UM DIT Enc	Est.UM	var(Est.UM)	SE(Est.UM)
Clear Creek Hatchery	2020	1	3.9	11.35	4.1	0.4	0.124	0.35
George Adams Hatchery	2019	5	19.5	56.74	21.7	2.2	0.702	1.87
George Adams Hatchery	2020	1	3.9	11.35	4.7	0.5	0.164	0.41
Grovers Cr Hatchery	2018	2	7.8	22.7	7.6	0.8	0.216	0.66
Grovers Cr Hatchery	2019	2	7.8	22.7	8	0.8	0.238	0.69
Grovers Cr Hatchery	2020	1	3.9	11.35	3.6	0.4	0.097	0.31
Marblemount Hatchery	2019	1	3.9	11.35	3.9	0.4	0.115	0.34
Samish Hatchery	2019	2	7.8	22.7	7.9	0.8	0.229	0.68
Spring Cr Nfh	2019	8	31.2	90.78	31.2	3.1	0.906	2.69
Wallace R Hatchery	2019	2	7.8	22.7	8.1	0.8	0.246	0.7
Total		25	97.6	283.7	100.9	10.1	3.037	8.7

Table 1.14 Total Chinook salmon encountered (retained and released) by charter and private-boat anglers logging their trips on STRs, with estimates of legal-size and overall (legal and sublegal) mark rates during summer Chinook salmon MSF in Marine Area 5. AD = marked (adipose-clipped), UM = unmarked. Variances associated with size/mark-status proportions and mark rates are provided in parentheses.

Data Source	Effort and Sample Size	Legal		Sublegal		Totals	Mark Rate	
		AD	UM	AD	UM		Overall	Legal
Private STR	2 1-trip STRs	6	0	0	0	6	1.00	1.00
Size/mark-status composition:		1.00	0.00	0.00	0.00			
Variance:		(0.0000)	(0.0000)	(0.0000)	(0.0000)			

Table 1.15 Dockside encounters (retained and released) by size-mark category during the Summer Chinook salmon MSF in Marine Area 5. Retained fish were sampled for mark-status and length, released fish by size-mark status were reported by the angler.

Dockside Encounters				
Metric	Legal		Sublegal	
	LM	LU	SM	SU
Encounters	960	668	459	558
Bias-corrected size/mark composition	32.3%	25.3%	17.4%	25.1%
Variance	0.0002	0.0002	0.0002	0.0002

Table 1.16 Season-total estimates of Chinook salmon encounters by size/mark-status and total estimates of angler effort, summarized for all seasons to date of the Area 5 summer Chinook MSF. Values may not add exactly due to rounding error.

Season Dates	Effort (Angler-trips)	Retained Chinook				Released Chinook				Total Encounters
		LM	LU	SM	SU	LM	LU	SM	SU	
Jul 5 - Aug 3, 2003	19,398	2,251	53	225	0	336	3,435	1,656	5,174	13,131
Jul 1 - Aug 10, 2004	25,174	2,706	0	194	0	404	4,017	1,167	2,462	10,950
Jul 1 - Aug 10, 2005	30,115	1,520	23	100	26	227	1,418	1,210	1,459	5,984
Jul 1 - Aug 14, 18-21, 2006	23,177	3,105	10	196	7	464	3,125	1,010	2,212	10,129
Jul 1 - Aug 9, 2007	18,830	2,969	23	280	94	444	2,509	1,371	1,118	8,808
Jul 1 - Aug 10, 2008	13,004	2,773	0	45	0	414	1,869	65	330	5,496
Jul 1 - Aug 6, 2009	23,662	4,843	78	1,115	362	724	6,210	9,823	14,309	37,463
Jul 1 - Aug 15, 2010	16,806	5,461	14	242	0	816	4,961	3,163	4,140	18,796
Jul 1 - Aug 15, 2011	24,848	4,259	70	276	22	636	9,275	1,593	5,319	21,450
Jul 1 - Aug 15, 2012	21,074	5,437	9	242	9	812	4,617	3,105	4,765	18,996
Jul 1 - Aug 15, 2013	25,725	7,473	77	933	81	1,117	7,188	8,173	8,702	33,743
Jul 1 - Aug 15, 2014	23,310	4,684	41	401	8	700	3,005	3,707	7,359	19,905
Jul 1 - Aug 15, 2015	21,313	4,434	35	316	17	663	7,562	14,302	8,445	35,774
Jul 1 - Aug 15, 2016	14,684	3,113	2	230	0	465	1,248	14,903	6,122	26,083
Jul 1 - Aug 15, 2017	17,144	2,202	2	107	4	329	1,601	8,542	4,341	17,129
Jul 1 - Aug 15, 2018	13,967	3,630	0	208	0	542	2,562	9,437	4,264	20,645
Jul 1 - Aug 15, 2019	16,768	4,401	7	157	1	658	3,124	4,299	3,251	15,897
Jul 1 - Jul 30, 2020	15,490	3,449	31	169	0	515	3,350	4,567	3,686	15,767
Jul 1, - Jul 18, 2021	10,157	3,414	45	458	30	510	2,219	2,696	2,952	12,324
Jul 1 - Aug 15, 2022	13,084	3,647	9	289	0	545	3,921	26,174	6,026	40,611

2) Marine Area 6 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) planned a summer Chinook MSF in a sub-area of Marine Area 6 west of Ediz Hook from July 1 through August 15, 2022. The fishery was implemented from July 1 through July 23 seven days a week, then again from July 27 through July 30, 2022 (Table 2.1). WDFW’s Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program, Full Murthy, using an aerial design in a sub-area of Marine Area 6 east of Ediz Hook throughout the season to collect the data needed to estimate key parameters characterizing the fishery and its impacts on unmarked salmon. Sampling activities included intensive dockside creel sampling, aerial surveys, test fishing and collection of voluntary salmon trip reports (STRs) from the angling public when possible. The fishery control for this Area was based on the preseason prediction of total legal-sized Chinook salmon encountered. **Table 2.2** 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 2012a). In this section we present results from our monitoring activities during the Marine Area 6 summer Chinook MSF.

Table 2.1 Fishery dates and fishery retention status of salmon in the 2022 summer Chinook salmon MSF in Marine Area 6.

Start Date	End Date	Fishery Status	Days
1-Jul	23-Jul	Open	23
24-Jul	26-Jul	Closed	3
27-Jul	30-Jul	Open	4
31-Jul	3-Aug	Closed	4

Table 2.2 Sampling/estimation details on target parameters associated with the overall Area 6 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	Catch rates (CPUE); length, age, and CWT composition of harvest ¹ ; collection of angler fishing methods.	Angler trip; kept fish; reported fish release	One week.	Creel estimates were produced for one-week estimation periods and stratified into “weekday” (Mon.-Thurs.) and “weekend” (Fri.-Sun.) day-type strata within the week. For the weekday stratum we sampled $n=1$ day out of $N=4$ available weekdays per one-week period. For the weekend stratum we sampled $n=3$ days out of $N=3$ available weekend days per week.
		Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook salmon	Boat trip	Season	Dockside encounter data were not used for estimation of Chinook encounters for this fishery (Table 2.10).
Aerial Surveys	Fraction of Marine Area 6 effort (boats) captured in the four-site sample frame via creel surveys (Sample Fraction, f_{ij}).	Total boat counts at assumed peak effort time interval (instantaneous count); spatial distribution of fishing boats in the area.	Boats	Season	The sample fraction was calculated for individual aerial survey dates (see Table 2.8 $n=6$ surveys conducted out of $N=25$ days available in the season). Season-wide sample fraction was calculated as the average sample fraction over the 6 individual aerial surveys.
Voluntary Salmon Trip Reports (STRs)	Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook	Encounter data for non-Chinook species (e.g., Coho) that the angler may record on the STR form	Fish encounter	Season	STRs data; LM = 11%; LU = 18%; SM = 54%; SU% = 17% were used for estimates of encounters and mortalities for this fishery (Table 2.11).
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.

¹ The length and CWT composition of landed catch was assessed on a season-wide basis for impact estimation.

² Though samples were collected, DNA-based estimates of stock composition are not yet available for this fishery.

Table 2.3 Estimates of total fishing effort and total salmon catch (harvest and releases) during the summer Chinook MSF in Marine Area 6. Values may not add exactly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Month	Stat Week	Start Date	End Date	Est. Effort		Est. Retained Chinook		Est. Released Chinook		Total Est. Chinook Encounters
				Boats	Anglers	AD	UM	AD	UM	
July	27	1-Jul	3-Jul	596	1,322	823	0	4,588	2,910	8,321
	28	4-Jul	10-Jul	1,131	2,332	1,244	0	6,936	4,398	12,578
	29	11-Jul	17-Jul	927	1,908	1,018	2	5,680	3,601	10,301
	30	18-Jul	23-Jul	1,042	2,060	877	0	4,890	3,101	8,867
	31	27-Jul	30-Jul	735	1,443	828	0	4,620	2,930	8,378
Season Total:				4,431	9,066	4,790	2	26,714	16,939	48,444
Variance:				31,206	116,912	38,647	0	41,468,000	11,365,967	120,747,280
SE:				177	342	197	0	6440	3371	10,989
CV (%):				4	4	4	11	24	20	23
95% CI:				4,085 - 4,778	8,395 - 9,736	4,405 - 5,175	1 - 2	14,092 - 39,335	10,331 - 23,547	26,907 - 69,981

Table 2.4 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the summer Chinook MSF in Marine Area 6.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	686	20	706
Unmarked	1	0	1
Total	687	20	707

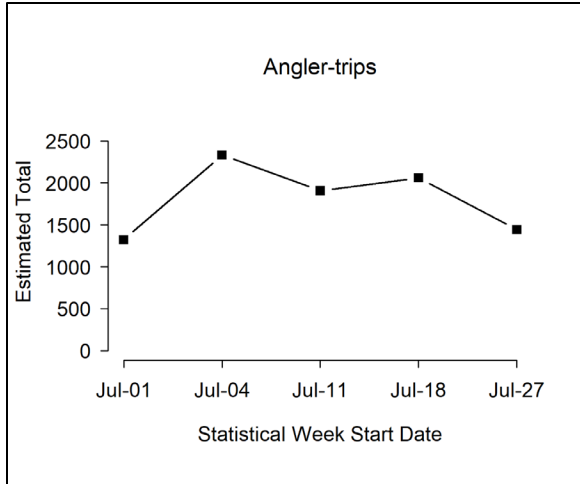


Figure 2.1 Temporal patterns in fishing effort during the summer Chinook MSF in Marine Area 6.

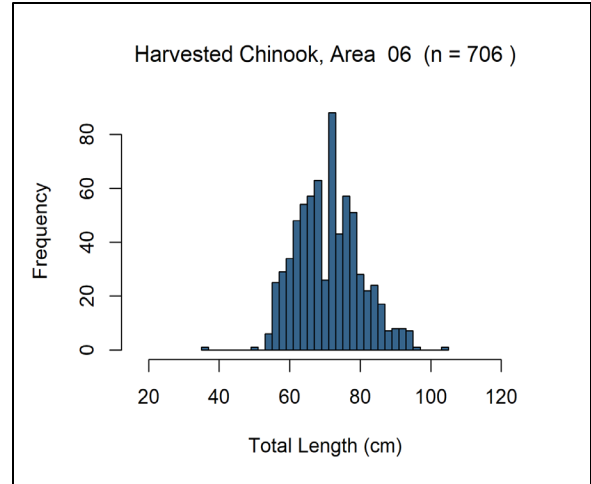


Figure 2.3 Length-frequency distribution of retained marked Chinook sampled in dockside angler interviews during the summer Chinook MSF in Marine Area 6. Note: displayed values are observations where lengths taken.

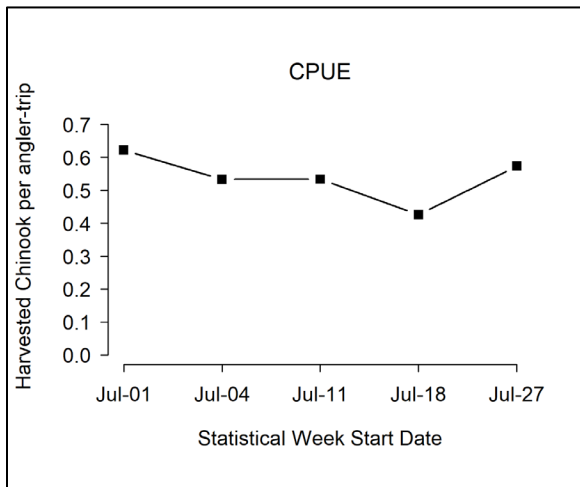


Figure 2.2 Temporal patterns in CPUE (landed Chinook per angler trip) during the summer Chinook MSF in Marine Area 6.

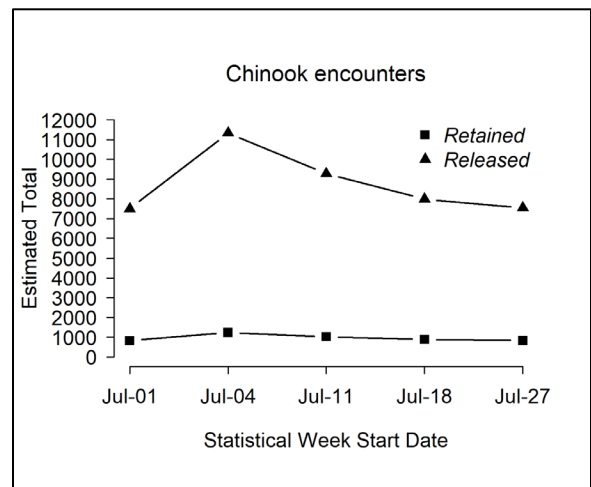


Figure 2.4 Temporal patterns in CPUE (landed Chinook per angler trip) during the summer Chinook MSF in Marine Area 6.

Table 2.5 Comparison of modeled and estimated total Chinook salmon encounters for the summer Chinook MSF in Marine Area 6. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	UM	3,899	2,474	1,425	25
	AD	10,887	6,926	3,961	6,025
	Total	14,786	9,400	5,386	6,050
	% Marked	74	74	74	100
Estimated (Creel) Encounters	UM	16,941	8,916	8,024	2
	AD	31,503	5,350	26,154	4,790
	Total	48,444	14,266	34,178	4,791
	% Marked	65	38	77	100

Table 2.6 Summary of season-wide fishery impact estimates for the summer Chinook MSF in Marine Area 6. Release mortality rate = 0.15 for legal fish and 0.20 for sublegal fish. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Size/mark group	Encounters	Retained	Released	Release Mortality	Total Mortality	Var	SE	95% CI	CV (%)
Legal AD	5,350	4,654	695	104	4,759	101,726	319	4,133 - 5,384	7
Legal UM	8,916	2	8,915	1,337	1,339	138,460	372	609 - 2,068	28
Sublegal AD	26,154	136	26,018	5,204	5,339	1,545,257	1,243	2,903 - 7,776	23
Sublegal UM	8,024	0	8,024	1,605	1,605	208,487	457	710 - 2,500	28
Total	48,444	4,791	43,653	8,250	13,041	1,993,930	1,412	10,274 - 15,809	11

Table 2.7 Comparison of modeled and estimated total Chinook salmon mortalities for the summer Chinook MSF in Marine Area 6. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Mortality Category	FRAM Chinook Mortalities			Estimated Chinook Mortalities		
	UM	AD	Total	UM	AD	Total
Total (Landed + Released)	678	7,254	7,932	2,944	10,098	13,041
Released Legal	368	437	805	1,337	104	1,441
Released Sublegal	285	792	1,077	1,605	5,204	6,809
Landed Only	25	6,025	6,050	2	4,790	4,791

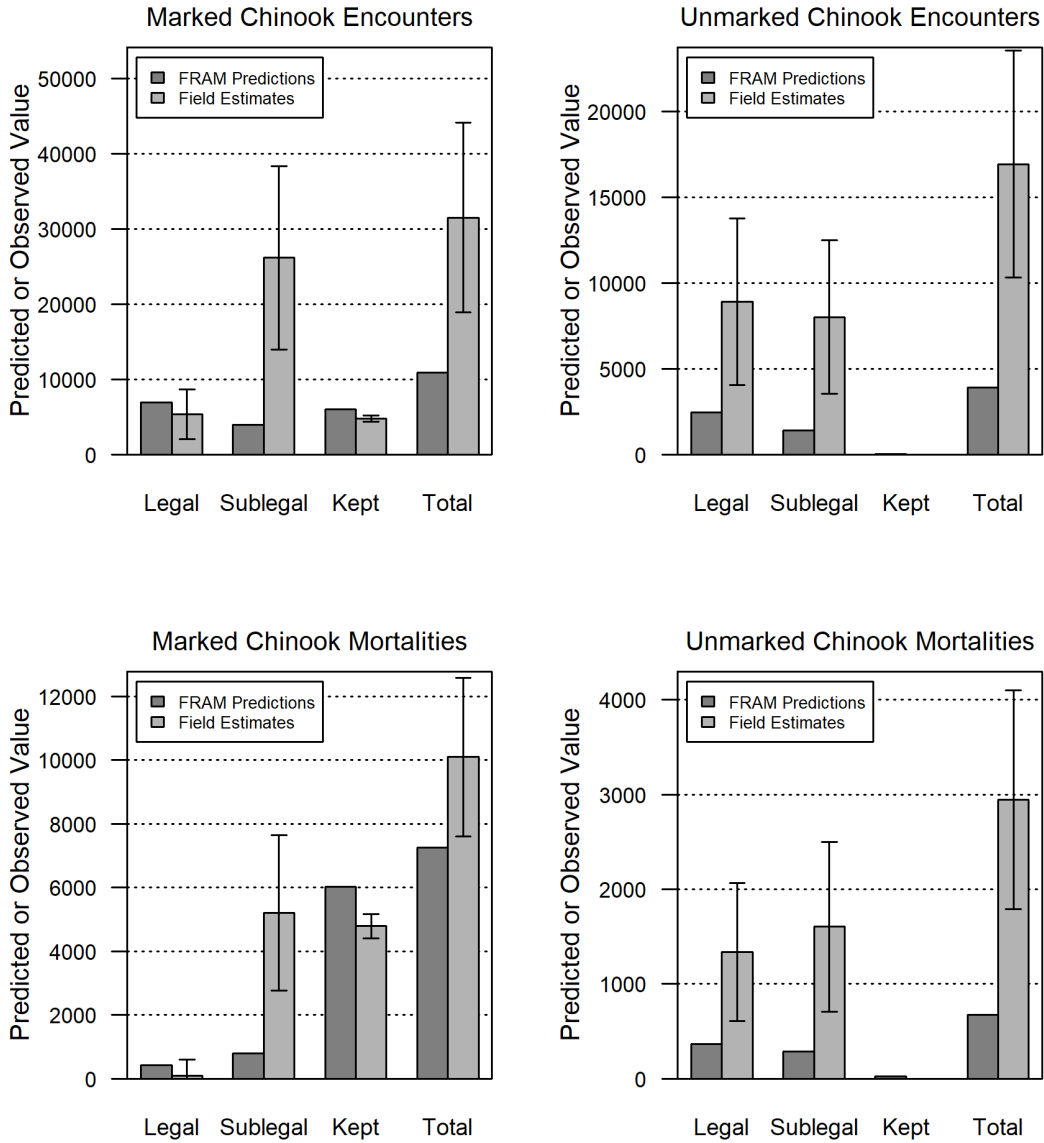


Figure 2.5 Comparison of modeled and estimated total Chinook salmon encounters and mortalities for the summer Chinook MSF in Marine Area 6. Error bars represent approximate 95% confidence intervals for field estimates.

Table 2.8 Summary of aerial survey and dockside data used to estimate the fraction of effort captured in the three-site sample frame during the summer Chinook salmon MSF in Marine Area 6. See Methods Report (WDFW 2012a) for computational details and notation.

Survey Date	Stratum	Aerial Survey Details			Dockside Sampling Details			Sample Fraction, f_{ij}
		Start Time	End Time	Total Boats, m_{ij}	Sampled Boats	Active Boats, X_{ij}	Total Boats, Sy_{ijk}	
1-Jul	WE	12:30	12:44	39	25	88	39	0.641
6-Jul	WD	8:55	9:10	98	57	102	98	0.582
8-Jul	WE	9:21	9:37	132	89	150	132	0.674
9-Jul	WE	9:05	9:23	128	88	141	128	0.688
10-Jul	WE	9:45	10:00	190	120	177	190	0.632
14-Jul	WD	12:50	13:18	27	22	69	27	0.815
Season Totals:				614	401	727	614	
Mean:				102	67	121	102	0.672
St Dev:				62	39	41	62	0.079
CV(%):				60.1%	58.4%	34.1%	60.1%	11.8%

Table 2.9 Monthly sample rates (Total retained Chinook sampled¹ / Estimated retained Chinook) in the summer Chinook MSF in Marine Area 6.

Time period			Estimated Retained Chinook			Number of Chinook sampled			Sample Rate
Month	Stat Weeks	Dates	AD	UM	Total	AD	UM	Total	
Jul	27 - 31	1 Jul - 30 Jul	4,790	2	4,791	2,385	1	2,386	49.80%
Season Total			4,790	2	4,791	2,385	1	2,386	49.80%

¹/ Number of retained Chinook sampled includes all retained Chinook inspected for CWT's, from all sites sampled during the summer Marine Area 6 Chinook MSF (creel estimates and the fish sampled as part of baseline sampling).

Table 2.10 Dockside encounters (retained and released) by size-mark category during the summer Chinook salmon MSF in Marine Area 6. Retained fish were sampled for mark-status and length, released fish by size-mark status were reported by the angler.

Dockside Encounters				
Metric	Legal		Sublegal	
	LM	LU	SM	SU
Encounters	747	577	890	241
Bias-corrected size/mark composition	27.08%	23.50%	36.25%	13.16%
Variance	0.0002	0.0001	0.0003	0.0001

Table 2.11 Total Chinook encountered (retained and released) by private-boat anglers logging their trips on STRs, with estimates of legal-size and overall (legal and sublegal) mark rates during the summer Chinook MSF in Marine Area 6. AD = marked (adipose-clipped), UM = unmarked. Variances associated with size/mark-status proportions and mark rates are provided in parentheses.

Data Source	Effort and Sample Size	Legal		Sublegal		Totals	Mark Rate	
		AD	UM	AD	UM		Overall	Legal
Private VTR	22 1-trip VTRs	18	30	88	27	163	0.65	0.38
Size/mark-status composition:		0.11	0.18	0.54	0.17			
Variance:		(0.0006)	(0.0009)	(0.0015)	(0.0009)			

Table 2.12 Fishery-total estimates of retained and released salmon (other than Chinook) during the summer Chinook MSF in Marine Area 6. Values may not add exactly due to rounding error. AD = marked (adipose-clipped), UM = unmarked, UK = unknown mark-status.

Stat Week	Start Date	End Date	Retained Salmon				Released Salmon				
			Coho AD	Coho UM	Coho UK	Sockeye	Coho AD	Coho UM	Coho UK	Pink	Unknown
27	1-Jul	3-Jul	99	2	3	3	30	33	6	0	18
28	4-Jul	10-Jul	384	6	29	0	31	142	123	0	151
29	11-Jul	17-Jul	54	3	2	0	11	35	20	0	83
30	18-Jul	23-Jul	139	14	0	0	27	101	33	3	30
31	27-Jul	30-Jul	28	2	0	0	2	11	5	0	73
Season Total:			703	26	34	3	100	323	188	3	355
Variance:			1851	6	2	0	179	889	492	0	611
Standard Error:			43	2	2	0	13	30	22	0	25
CV (%):			6	9	4	8	13	9	12	8	7
95% CI:			619 - 788	22 - 31	31 - 37	3 - 4	74 - 126	264 - 381	144 - 231	3 - 3	306 - 403

Table 2.13 Summary of coded-wire tags recovered from Chinook salmon harvested during the summer Chinook MSF in Marine Area 6. The field "Number DITs" corresponds to the number of tags that belonged to double-index tag groups. Note: Not all tags have been processed before writing of this report.

Release Domain	Release Region	Release Site	Rearing Location	CWTs Recovered	No. DITs
BC	Thompson River (2%)	R-Shuswap R Low	H-Shuswap River, Middle,	3 (2%)	0
	W Vancouver Island (2.6%)	R-Robertson Cr	H-Robertson Creek H	4 (2.6%)	0
WA	N Washington (6.6%)	Kendall Cr 01.0406	Kendall Cr Hatchery	2 (1.3%)	0
		Skookum Cr 01.0273	Skookum Cr Hatchery	1 (0.7%)	0
		Friday Cr 03.0017	Samish Hatchery	7 (4.6%)	3
	Strait of Juan De Fuca (4%)	Elwha R 18.0272	Elwha Hatchery	6 (4%)	0
	Hood Canal (20.5%)	Purdy Cr 16.0005	George Adams Hatchery	12 (7.9%)	7
		Finch Cr 16.0222	Hoodsport Hatchery	19 (12.6%)	0
	N Puget Sound (9.9%)	Wallace R 07.0940	Wallace R Hatchery	9 (6%)	1
		Tulalip Cr 07.0001	Bernie Gobin Hatch	4 (2.6%)	1
		Stillaguamish R -Sf	Brenner Hatchery	1 (0.7%)	0
		Whitehorse Springs	Whitehorse Pond	1 (0.7%)	0
Skagit River (4%)	Co Line Slu 03.1853A	Marblemount Hatchery	1 (0.7%)	0	

		Co Line Pd2 03.1853B	Marblemount Hatchery	5 (3.3%)	0
	Mid Puget Sound (20.5%)	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	5 (3.3%)	0
		Big Soos Cr 09.0072	Soos Creek Hatchery	7 (4.6%)	2
		Icy Cr 09.0125	Icy Cr Hatchery	5 (3.3%)	0
		Clarks Cr 10.0027	Clarks Crk Hatchery	1 (0.7%)	0
		Grovers Cr Hatchery	Grovers Cr Hatchery	13 (8.6%)	13
		S Puget Sound (19.9%)	Clear Cr 11.0013C	Clear Creek Hatchery	3 (2%)
	Deschutes R 13.0028		Tumwater Falls Hatchery	5 (3.3%)	0
	Deschutes R 13.0028		Minter Cr Hatchery	2 (1.3%)	0
	Chambers Cr 12.0007		Garrison Hatchery	4 (2.6%)	0
	Kalama Cr 11.0017		Kalama Cr Hatchery	1 (0.7%)	0
	Narrows Marina Pens		Narrows Marina Pens	1 (0.7%)	0
	Minter Cr 15.0048		Minter Cr Hatchery	14 (9.3%)	0
Col. Riv.	Upper Columbia R (0.7%)	Chelan R 47.0052	Chelan Falls Hatchery	1 (0.7%)	0
	Central Columbia River (3.3%)	Spring Cr 29.0159	Spring Cr Nfh	5 (3.3%)	5
	Lower Columbia River (4%)	Big Cr (Lwr Col R)	Big Cr Hatchery	1 (0.7%)	0
		Tanner Cr (Bnville)	Bonneville Hatchery	4 (2.6%)	0
		Klaskanine R N Fk	Klaskanine Hatchery	1 (0.7%)	0
	Snake River (2%)	Captain Johns Pd	Lyons Ferry Hatchery	1 (0.7%)	0
		Snake R @Pittsburg L	Lyons Ferry Hatchery	1 (0.7%)	0
Lyons Ferry Rel.Site		Lyons Ferry Hatchery	1 (0.7%)	0	
Total				151	35

Table 2.14 Summary of double-index tagged (DIT) Chinook salmon kept by anglers and estimated total mortality of unmarked DIT Chinook salmon due to hook-and-release impacts resulting from the summer Chinook MSF in Marine Area 6. AD = marked (adipose-clipped), UM = unmarked.

Hatchery	Brood Year	DITs Obs	Est.AD	var(Est.AD)	UM DIT Enc	Est.UM	var(Est.UM)	SE(Est.UM)
Bernie Gobin Hatch	2019	1	6.8	39.15	6.5	0.7	0.364	0.6
Clear Creek Hatchery	2018	2	13.6	78.31	13.9	1.4	0.825	1.28
Clear Creek Hatchery	2019	1	6.8	39.15	6.6	0.7	0.373	0.61
George Adams Hatchery	2019	7	47.4	274.07	52.8	5.3	3.391	4.87
Grovers Cr Hatchery	2018	8	47.4	274.07	46.3	4.6	2.605	4.27
Grovers Cr Hatchery	2019	5	27.1	156.61	27.7	2.8	1.641	2.56
Samish Hatchery	2019	3	20.3	117.46	20.4	2	1.186	1.89
Soos Creek Hatchery	2019	2	13.6	78.31	13.6	1.4	0.787	1.25
Spring Cr Nfh	2019	5	27.1	156.61	27	2.7	1.557	2.5
Wallace R Hatchery	2019	1	6.8	39.15	7.1	0.7	0.424	0.65
Total		35	216.9	1252.88	221.9	22.2	13.153	20.49

Table 2.15 Season-total estimates of Chinook encounters by size/mark-status and total estimates of angler effort, summarized for all seasons to date of the Marine Area 6 Summer Chinook MSF. Values may not add exactly due to rounding error. LM = legal-sized marked, LU = legal-sized unmarked, SM = sublegal-sized marked, SU = sublegal-sized unmarked.

Area	Season Dates	Effort (Angler-trips)	Retained Chinook				Released Chinook				Total Encounters
			LM	LU	SM	SU	LM	LU	SM	SU	
6	Jul 1 - Aug 3, 2021	8,863	4,968	11	90	28	742	1,920	3,888	1278	12,926
6	Jul 1 - Jul 30, 2022	9,066	4,654	2	136	0	695	8,915	26,018	8,024	48,444

3) Marine Area 7 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) planned and implemented a summer Chinook MSF in Marine Area 7 on July 14, 15, 16, 21,22, 23, 28, 29, 30, 2022. WDFW’s Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program, Full Murthy, using an aerial design in Marine Area 7 throughout the season to collect the data needed to estimate key parameters characterizing the fishery and its impacts on unmarked salmon. Sampling activities included intensive dockside creel sampling, aerial surveys, test fishing and collection of voluntary salmon trip reports (STRs) from the angling public when possible. The fisheries controls used for this fishery were total predicted catch quota, total unmarked encounters and total sublegal encounters. **Table 3.2** 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 2012a). In this section we present results from our monitoring activities during the Marine Area 7 summer Chinook MSF.

Table 3.1 Fishery dates and fishery retention status of salmon in the 2022 summer Chinook salmon MSF in Marine Area 7.

Start Date	End Date	Fishery Status	Days
14-Jul	16-Jul	Open	3
17-Jul	20-Jul	Closed	4
21-Jul	23-Jul	Open	3
24-Jul	27-Jul	Closed	4
28-Jul	30-Jul	Open	3

Table 3.2 Sampling/estimation details on target parameters associated with the overall Marine Area 7 Chinook MSF 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	Catch rates (CPUE); length, age, and CWT composition of harvest ¹ ; collection of angler fishing methods.	Angler trip; kept fish; reported fish release	One week.	Within days, estimates were produced by day-type strata (weekday/weekend). Each week we sampled every Friday, Saturday and Sunday, and we randomly selected $n=2$ out of $N=4$ weekdays (Monday-Thursday) for sampling.
		Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook salmon	Boat trip	Season	Dockside encounter data were not used for estimation of Chinook encounters for this fishery (Table 3.12).
Aerial Surveys	Fraction of Marine Area 7 effort (boats) captured in the four-site sample frame via creel surveys (Sample Fraction, f_{ij}).	Total boat counts at assumed peak effort time interval (instantaneous count); spatial distribution of fishing boats in the area.	Boats	Season	The sample fraction was calculated for individual aerial survey dates (see Table 3.8 $n=6$ surveys conducted out of $N=9$ days available in the season). Season-wide sample fraction was calculated as the average sample fraction over the 6 individual aerial surveys.
Test Fishing	Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook	Chinook length, age, and DNA-based ² stock composition; species composition of non-Chinook encounters	Fish encounter	Season	Test fishing data collected when the fishery was open to Chinook retention Table 3.1 were used for estimate of encounters and mortalities during this fishery. LM = 53%; LU = 29%; SM = 12%; SU = 6% (Table 3.11).
Voluntary Salmon Trip Reports (STRs)	Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook	Encounter data for non-Chinook species (e.g., Coho) that the angler may record on the STR form	Fish encounter	Season	No STRs were returned during this fishery.
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.

¹ The length and CWT composition of landed catch was assessed on a season-wide basis for impact estimation.

Table 3.3 Estimates of total fishing effort and total salmon catch (harvest and releases) during the summer Chinook MSF in Marine Area 7. Values may not add exactly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Month	Stat Week	Start Date	End Date	Est. Effort		Est. Retained Chinook		Est. Released Chinook		Total Est. Chinook Encounters
				Boats	Anglers	AD	UM	AD	UM	
July	29	14-Jul	16-Jul	1,193	2,817	820	0	328	626	1,775
	30	21-Jul	23-Jul	818	1,911	431	0	173	329	933
	31	28-Jul	30-Jul	751	1,708	512	3	205	388	1,108
Season Total:				2,762	6,436	1,763	3	706	1,344	3,816
Variance:				37,112	208,138	15,254	0	575,971	304,090	880,534
SE:				193	456	124	1	759	551	938
CV (%):				7	7	7	20	108	41	25
95% CI:				2,385 - 3,140	5,542 - 7,330	1,521 - 2,005	2 - 4	0 - 2,193	263 - 2,425	1,977 - 5,655

Table 3.4 Summary of total length samples from retained Chinook salmon collected during dockside angler interviews in the Marine Area 7 summer Chinook MSF.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	624	2	626
Unmarked	1	0	1
Total	625	2	627

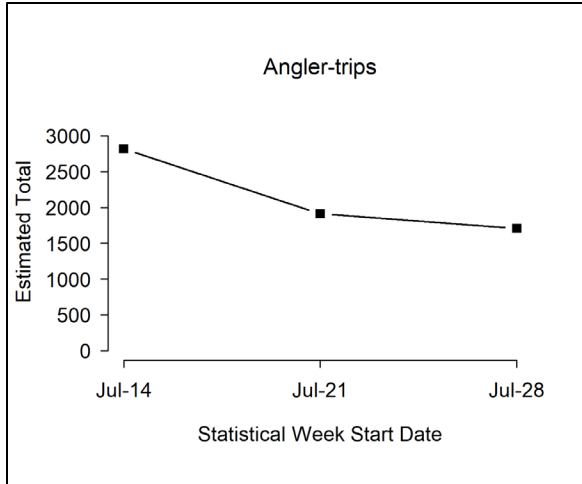


Figure 3.1 Temporal patterns in fishing effort during the summer Chinook MSF in Marine Area 7.

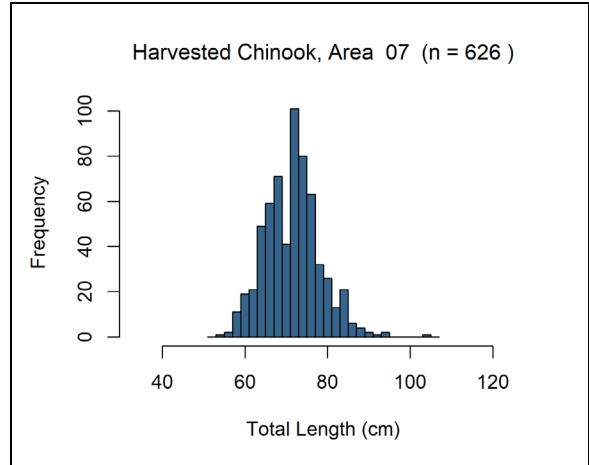


Figure 3.3 Length-frequency distribution of retained marked Chinook salmon sampled in dockside angler interviews during the summer Chinook MSF in Marine Area 7.

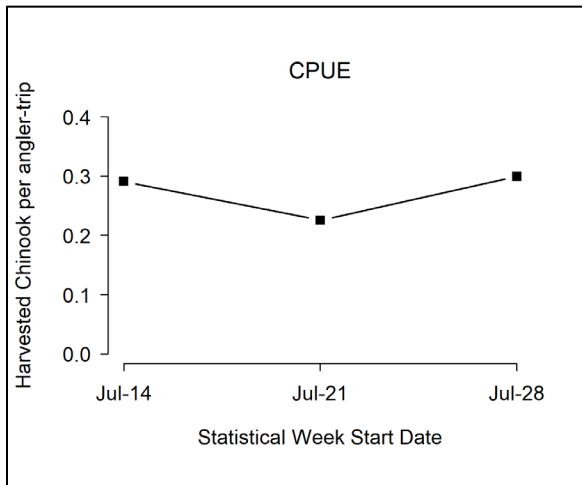


Figure 3.2 Temporal patterns in CPUE (number of Chinook landed per angler trip) during the summer Chinook MSF in Marine Area 7.

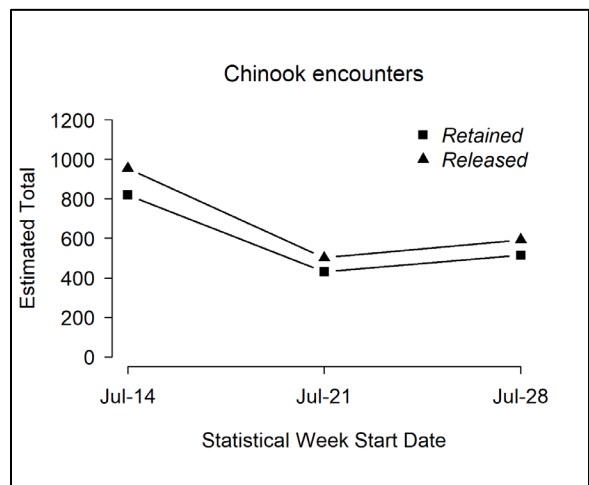


Figure 3.4 Temporal patterns in Chinook salmon encounters (number retained and released) during the summer Chinook MSF in Marine Area 7.

Table 3.5 Comparison of modeled and estimated total Chinook salmon encounters for the summer Chinook MSF in Marine Area 7. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	UM	3,991	2,769	1,222	28
	AD	3,387	2,037	1,350	1,772
	Total	7,378	4,806	2,572	1,800
	% Marked	46	42	52	98
Estimated (Creel) Encounters	UM	1,347	1,122	224	3
	AD	2,469	2,020	449	1,763
	Total	3,816	3,143	673	1,766
	% Marked	65	64	67	100

Table 3.6 Summary of season-wide fishery impact estimates for the summer Chinook MSF in Marine Area 7. Release mortality rate = 0.15 for legal fish and 0.20 for sublegal fish. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Size/mark group	Encounters	Retained	Released	Release Mortality	Total Mortality	Var	SE	95% CI	CV (%)
Legal AD	2,020	1,758	263	39	1,797	25,860	161	1,482 - 2,112	9%
Legal UM	1,122	3	1,120	168	171	5,709	76	23 - 319	44%
Sublegal AD	449	6	443	89	94	4,055	64	0 - 219	68%
Sublegal UM	224	0	224	45	45	2,016	45	0 - 133	100%
Total	3,816	1,766	2,050	341	2,107	37,639	194	1,727 - 2,487	9%

Table 3.7 Comparison of modeled and estimated total Chinook salmon mortalities for the summer Chinook MSF in Marine Area 7. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Mortality Category	FRAM Chinook Mortalities			Estimated Chinook Mortalities		
	UM	AD	Total	UM	AD	Total
Total (Landed + Released)	684	2,171	2,855	216	1,891	2,107
Released Legal	412	129	541	168	39	207
Released Sublegal	244	270	514	45	89	134
Landed Only	28	1,772	1,800	3	1,763	1,766

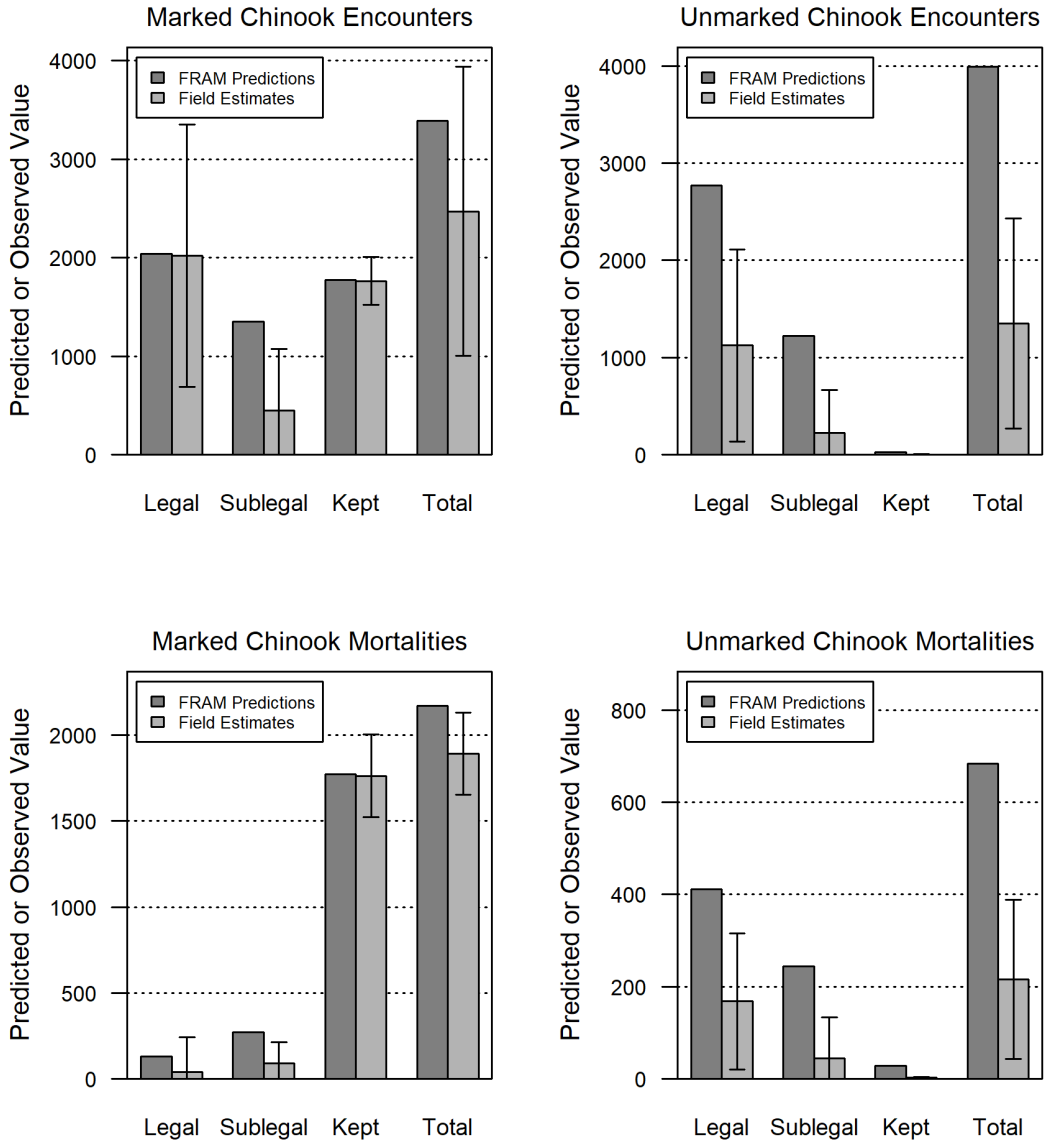


Figure 3.5 Comparison of modeled and estimated total Chinook encounters and mortalities for the summer Chinook MSF in Marine Area 7. Error bars represent approximate 95% confidence intervals for field estimates.

Table 3.8 Summary of aerial survey and dockside data used to estimate the fraction of effort captured in the three-site sample frame during the summer Chinook salmon MSF in Marine Area 7. See Methods Report (WDFW 2012a) for computational details and notation.

Survey Date	Stratum	Aerial Survey Details			Dockside Sampling Details			Sample Fraction, f_{ij}
		Start Time	End Time	Total Boats, m_{ij}	Sampled Boats	Active Boats, X_{ij}	Total Boats, S_{yijk}	
14-Jul	WD	13:34	14:41	396	221	133	658	0.336
15-Jul	WE	9:30	10:37	402	221	143	621	0.356
16-Jul	WE	9:57	11:38	448	273	184	665	0.411
22-Jul	WE	11:45	12:50	276	161	77	577	0.279
23-Jul	WE	11:15	12:23	399	287	194	590	0.486
28-Jul	WD	12:11	13:16	259	120	75	414	0.290
Season Totals:				2,180	1,283	806	3,526	
Mean:				363	214	134	588	0.360
St Dev:				77	64	51	92	0.078
CV(%):				21.1%	30.0%	37.8%	15.6%	21.8%

Table 3.9 Monthly sample rates (Total retained Chinook sampled¹ / Estimated retained Chinook) in the summer Chinook MSF in Marine Area 7.

Time period			Estimated Retained Chinook			Number of Chinook sampled			Sample Rate
Month	Stat Weeks	Dates	AD	UM	Total	AD	UM	Total	
7	29 - 31	14 Jul - 30 Jul	1,763	3	1,766	629	1	630	35.70%
Season Total			1,763	3	1,766	629	1	630	35.70%

¹/ Number of retained Chinook sampled includes all retained Chinook inspected for CWT's, from all sites sampled during the summer Marine Area 7 Chinook MSF (creel estimates and the fish sampled as part of baseline sampling).

Table 3.10 Total Chinook encountered (retained and released) by private-boat anglers logging their trips on STRs, with estimates of legal-size and overall (legal and sublegal) mark rates during the summer Chinook MSF in Marine Area 7. AD = marked (adipose-clipped), UM = unmarked. Variances associated with size/mark-status proportions and mark rates are provided in parentheses.

Data Source	Effort and Sample Size	Legal		Sublegal		Totals	Mark Rate	
		AD	UM	AD	UM		Overall	Legal
Private STR	0 1-trip STRs	0	0	0	0	0	NA	NA
Size/mark-status composition:		NA	NA	NA	NA			
Variance:		NA	NA	NA	NA			

Table 3.11 Composition of test fishery Chinook salmon encounters and associated mark-rate and size/mark-status proportion estimates for the summer Chinook salmon MSF in Marine Area 7 when the fishery was open to salmon retention (see **Table 3.1**). AD = marked (adipose-clipped), UM = unmarked.

Stat Week	Fishing Effort		Legal		Sublegal		Total
	Days	Hrs Fished	AD	UM	AD	UM	
29	9	67.56	7	4	2	1	14
31	4	31.20	2	1	0	0	3
Total	13	98.76	9	5	2	1	17
Size/mark-status composition:			0.53	0.29	0.12	0.06	
Variance:			(0.0156)	(0.0130)	(0.0065)	(0.0035)	
Legal size mark rate:			0.64				
Overall mark rate:			0.65				

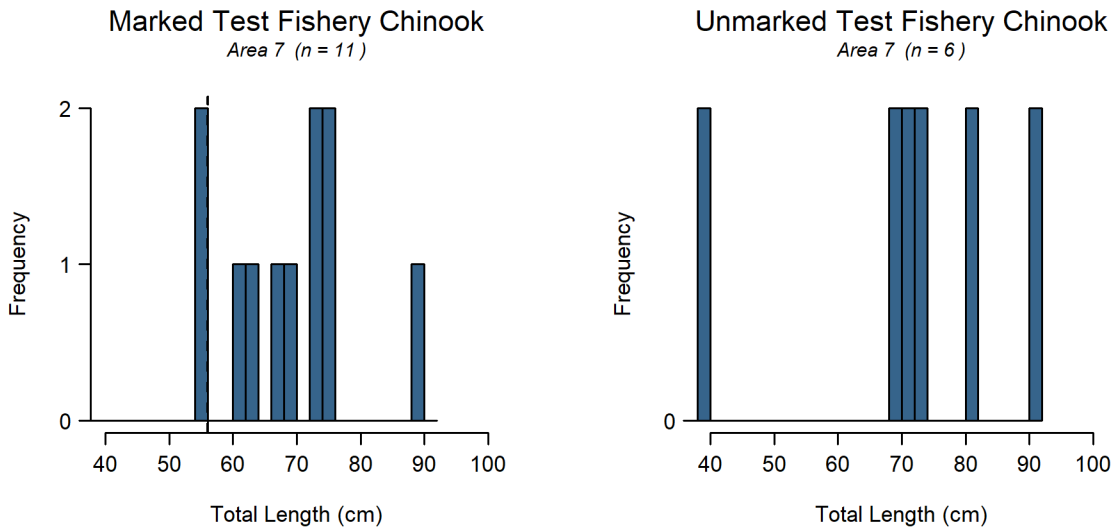


Figure 3.6 Length-frequency distributions of marked (*left panel*) and unmarked (*right panel*) Chinook salmon encountered by test fishers during the summer Chinook salmon MSF in Marine Area 7 when the fishery was open to Chinook salmon retention (see **Table 3.1**). The vertical dashed line in the left panel corresponds to the legal-size limit (22 in or 56 cm).

Table 3.12 Dockside encounters (retained and released) by size-mark category during the summer Chinook salmon MSF in Marine Area 7. Retained fish were sampled for mark-status and length, released fish by size-mark status were reported by the angler.

Dockside Encounters				
Metric	Legal		Sublegal	
	LM	LU	SM	SU
Encounters	639	206	43	48
Bias-corrected size/mark composition	60.8%	22.0%	4.6%	12.6%
Variance	0.0002	0.0002	0.0002	0.0002

Table 3.13 Fishery-total estimates of retained and released salmon (other than Chinook) during the summer Chinook MSF in Marine Area 7. Values may not add exactly due to rounding error. AD = marked (adipose-clipped), UM = unmarked, UK = unknown mark-status.

Stat Week	Start Date	End Date	Retained Salmon					Released Salmon			
			Coho AD	Coho UM	Coho UK	Unknown	Pink	Coho AD	Coho UM	Coho UK	Unknown
29	14-Jul	16-Jul	11	0	0	0	0	3	8	0	34
30	21-Jul	23-Jul	42	0	0	0	0	0	39	0	45
31	28-Jul	30-Jul	0	0	0	0	8	0	14	0	8
Season Total:			53	0	0	0	8	3	61	0	87
Variance:			43	0	0	0	2	0	54	0	67
Standard Error:			7	0	0	0	1	1	7	0	8
CV (%):			12	0	0	0	15	20	12	0	9
95% CI:			40 - 66	0 - 0	0 - 0	0 - 0	6 - 11	2 - 4	47 - 76	0 - 0	71 - 103

Table 3.14 Summary of CWTs recovered from Chinook salmon harvested during the summer Chinook MSF in Marine Area 7. The field “Number DITs” indicates the number of tags that belonged to double-index tag groups. Note: Not all tags have been processed before writing of this report.

Release Domain	Release Region	Release Site	Rearing Location	CWTs Recovered	No. DITs
BC	Thompson River (3.7%)	R-Chilliwack R	H-Chilliwack River H	1 (3.7%)	0
	Georgia Strait (3.7%)	R-Cowichan R	H-Cowichan River H	1 (3.7%)	0
WA	N Washington (11.1%)	Friday Cr 03.0017	Samish Hatchery	3 (11.1%)	2
	Hood Canal (11.1%)	Finch Cr 16.0222	Hoodsport Hatchery	2 (7.4%)	0
		Purdy Cr 16.0005	George Adams Hatchery	1 (3.7%)	1
	N Puget Sound (7.4%)	Tulalip Cr 07.0001	Bernie Gobin Hatch	2 (7.4%)	0
	Skagit River (3.7%)	Cascade R 03.1411	Marblemount Hatchery	1 (3.7%)	0
		Big Soos Cr 09.0072	Soos Creek Hatchery	1 (3.7%)	0
	Mid Puget Sound (25.9%)	Icy Cr 09.0125	Icy Cr Hatchery	1 (3.7%)	0
		Gorst Cr 15.0216	Gorst Cr Rearing Pnd	1 (3.7%)	0
		Green R 09.0001	Palmer Hatchery	1 (3.7%)	0
		Grovers Cr Hatchery	Grovers Cr Hatchery	3 (11.1%)	3
		Chambers Cr 12.0007	Garrison Hatchery	1 (3.7%)	0
	S Puget Sound (29.6%)	Clear Cr 11.0013C	Clear Creek Hatchery	2 (7.4%)	2
		Minter Cr 15.0048	Minter Cr Hatchery	4 (14.8%)	0
		Mcallister Springs Hatch	Mcallister Springs Hatch	1 (3.7%)	0
	Col. Riv.	Upper Columbia R (3.7%)	Methow R 48.0007		1 (3.7%)
Total				27	8

Table 3.15 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 summer Chinook MSF in Marine Area 7. AD = marked (adipose-clipped), UM = unmarked. Note: Not all tags have been processed before writing of this report.

Hatchery	Brood Year	DITs Obs	Est.AD	var(Est.AD)	UM DIT Enc	Est.UM	var(Est.UM)	SE(Est.UM)
Clear Creek Hatchery	2019	2	5.6	10.23	5.5	0.6	0.098	0.44
George Adams Hatchery	2019	1	2.8	5.12	3.1	0.3	0.063	0.25
Grovers Cr Hatchery	2018	1	2.8	5.12	2.7	0.3	0.049	0.22
Grovers Cr Hatchery	2019	2	5.6	10.23	5.8	0.6	0.107	0.46
Samish Hatchery	2019	2	5.6	10.23	5.7	0.6	0.103	0.45
Total		8	22.5	40.94	22.8	2.3	0.42	1.83

Table 3.16 Season-total estimates of Chinook encounters by size/mark-status and total estimates of angler effort, summarized for all seasons to date of the Marine Area 7 Summer Chinook MSF. Values may not add exactly due to rounding error. LM = legal-sized marked, LU = legal-sized unmarked, SM = sublegal-sized marked, SU = sublegal-sized unmarked.

Area	Season Dates	Effort (Angler-trips)	Retained Chinook				Released Chinook				Total Encounters
			LM	LU	SM	SU	LM	LU	SM	SU	
7	Jul 1, 2016 - Jul 31, 2016	9,553	1,292	0	42	0	193	1,485	1443	637	5,092
7	Jul 1, 2017 - Jul 31, 2017	17,535	3,608	22	7	0	539	2,941	4140	2370	13,627
7	Jul 1, 2018 - Jul 31, 2018	10,577	2,220	4	71	0	332	1,028	817	359	4,832
7	Jul 1, 2019 - Jul 31, 2019	11,738	2,947	10	68	0	440	1,370	559	376	5,771
7	Jul 1 - Jul 31, 2020, Aug 22- Aug 31, 2020	20,773	1,532	7	17	0	229	1,053	1,425	681	4,945
7	Jul 1, 2021 - Jul 7, 2021	6,716	2,504	0	0	0	374	759	387	593	4,618
7	Jul 14 - Jul 30, 2022	6,436	1,758	3	6	0	263	1,120	443	224	3,816

4) Marine Area 9 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) planned a summer Chinook MSF in Marine Area 9 on July 14 15, 16, 21, 22, 23, 28, 29, 30 through August 15, 2022, though it only remained open through August 4.. WDFW’s Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program, Full Murthy, in Area 9 throughout the season to collect the data needed to estimate key parameters characterizing the fishery and its impacts on unmarked salmon. Sampling activities included intensive dockside creel sampling, on-the-water effort surveys, test fishing and collection of voluntary salmon trip reports (STRs) from the angling public when possible. Fishery controls were the preseason modeled expected catch. **Table 4.2** 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 2012a). In this section we present results from our monitoring activities during the Marine Area 9 summer Chinook MSF.

Table 4.1 Fishery dates and fishery retention status of salmon in the 2022 summer Chinook salmon MSF in Marine Area 9.

Start Date	End Date	Fishery Status	Days
14-Jul	16-Jul	Open	3
17-Jul	20-Jul	Closed	4
21-Jul	23-Jul	Open	3
24-Jul	27-Jul	Closed	4
28-Jul	4-Aug	Open	8

Table 4.2 Sampling/estimation details on target parameters associated with the overall Marine Area 9 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	Catch rates (CPUE); length, age, and CWT composition of harvest ¹ ; collection of angler fishing methods.	Angler trip; kept fish; reported fish release	One week	Within days, estimates were produced by day-type strata (weekday/weekend). Each week we sampled every Friday, Saturday and Sunday, and we randomly selected $n=2$ out of $N=4$ weekdays (Monday–Thursday) for sampling.
		Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook salmon	Boat trip	Season	Dockside encounter data were not used for estimation of Chinook encounters for this fishery (Table 4.9).
On-the-water Surveys	Proportion of total angler effort that uses sample-frame sites (i.e., site “size measures”) versus out-of-frame sites.	Total on-water boat and angler counts at assumed peak effort time interval (instantaneous count); spatial distribution of recreational fishing boats in the area.	Boats and anglers	Month	A total of 5 boat surveys (two weekday and three weekend) were conducted during this fishery.
Test Fishing	Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook	Chinook salmon length, age, and DNA-based ² stock composition; species composition of non-Chinook salmon encounters	Fish encounter	Season	Test fishing data collected when the fishery was open to Chinook retention Table 4.1 were used for estimate of encounters and mortalities during this fishery. LM = 29%; LU% = 18%; SM% = 45%; SU% = 8% (Table 4.7).
Voluntary Salmon Trip Reports (STRs)	Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook	Encounter data for non-Chinook salmon species (e.g., Coho) that the angler may record on the STR form	Fish encounter	Season	The size/mark-status proportions of Private STR data (LM = 77%, LU = 5%, SM = 18%, SU = 0%; Table 4.8) were significantly different than those of the test fishery data, Chi-Square p-value < .01. STR data were not used in impact estimation due to the assumed higher data quality and sufficient sample sizes of the test fishery data.
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.

¹ The length and CWT composition of landed catch was assessed on a season-wide basis for impact estimation.

² Though samples were collected, DNA-based estimates of stock composition are not yet available for this fishery.

Table 4.3 Estimates of total fishing effort and total salmon catch (harvest and releases) during the summer Chinook MSF in Marine Area 9. Values may not add exactly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Month	Stat Week	Start Date	End Date	Est. Effort		Est. Retained Chinook		Est. Released Chinook		Total Est. Chinook Encounters
				Boats	Anglers	AD	UM	AD	UM	
July	29	14-Jul	16-Jul	2,259	5,306	1,780	3	3,365	1,835	6,983
	30	21-Jul	23-Jul	1,984	4,368	1,025	0	1,937	1,058	4,020
	31	28-Jul	31-Jul	1,945	4,432	1,300	0	2,457	1,342	5,098
August	32	1-Aug	4-Aug	1,086	2,208	589	0	1,114	608	2,311
Season Total:				7,275	16,315	4,694	3	8,874	4,843	18,413
Variance:				378,361	1,749,857	302,516	2	11,822,640	2,970,250	27,150,900
SE:				615	1,323	550	1	3,438	1,723	5,211
CV (%):				8	8	12	52	39	36	28
95% CI:				6,070 - 8,481	13,722 - 18,907	3,616 - 5,772	0 - 6	2,134 - 15,613	1,465 - 8,221	8,200 - 28,626

Table 4.4 Summary of total length samples from retained Chinook salmon collected during dockside angler interviews in the Marine Area 9 summer Chinook MSF.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	981	12	993
Unmarked	1	0	1
Total	982	12	994

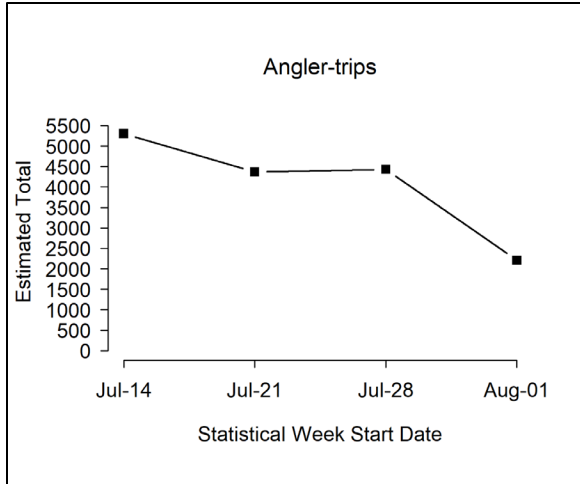


Figure 4.1 Temporal patterns in fishing effort during the summer Chinook MSF in Marine Area 9.

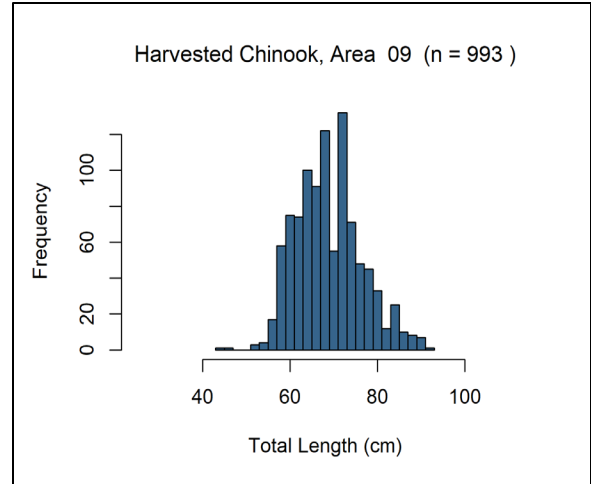


Figure 4.3 Length-frequency distribution of retained marked Chinook sampled in dockside angler interviews during the summer Chinook MSF in Marine Area 9. Note: displayed values are observations where lengths taken.

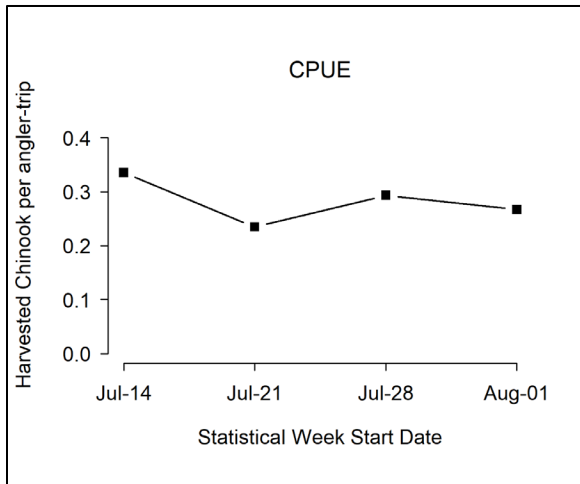


Figure 4.2 Temporal patterns in CPUE (landed Chinook salmon per angler trip) during the summer Chinook MSF in Marine Area 9.

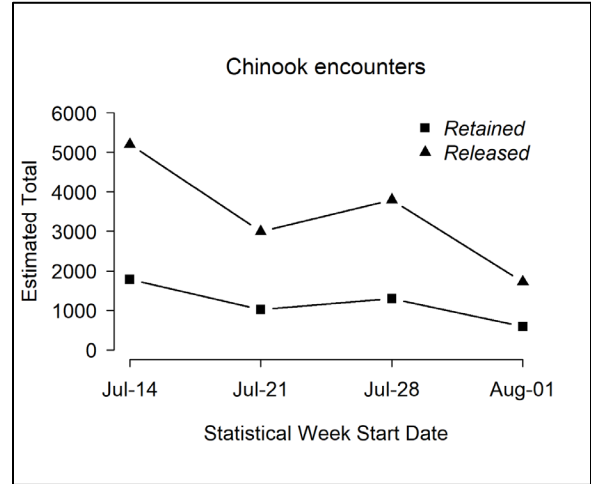


Figure 4.4 Temporal patterns in Chinook salmon encounters (retained and released) during the summer Chinook MSF in Marine Area 9.

Table 4.5 Comparison of modeled and estimated total Chinook encounters for the summer Chinook MSF in Marine Area 9. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped) and UM = unmarked.

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	UM	3,099	1,382	1,717	14
	AD	14,058	5,386	8,672	4,686
	Total	17,157	6,768	10,389	4,700
	% Marked	82	80	83	100
Estimated (Creel) Encounters	UM	4,846	3,392	1,454	3
	AD	13,568	5,330	8,237	4,694
	Total	18,413	8,722	9,691	4,697
	% Marked	74	61	85	100

Table 4.6 Summary of season-wide fishery impact estimates for the summer Chinook MSF in Marine Area 9. Release mortality rate = 0.15 for legal fish and 0.20 for sublegal fish. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Size/mark group	Encounters	Retained	Released	Release Mortality	Total Mortality	Var	SE	95% CI	CV (%)
Legal AD	5,330	4,637	693	104	4,741	392,359	626	3,513 - 5,969	13
Legal UM	3,392	3	3,389	508	511	49,234	222	76 - 946	43
Sublegal AD	8,237	57	8,181	1,636	1,693	301,036	549	617 - 2,768	32
Sublegal UM	1,454	0	1,454	291	291	31,287	177	0 - 637	61
Total	18,413	4,697	13,716	2,539	7,236	773,916	880	5,512 - 8,960	12

Table 4.7 Comparison of modeled and estimated total Chinook mortalities for the summer Chinook MSF in Marine Area 9. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped) and UM = unmarked.

Mortality Category	FRAM Chinook Mortalities			Estimated Chinook Mortalities		
	UM	AD	Total	UM	AD	Total
Total (Landed + Released)	563	6,760	7,323	802	6,434	7,236
Released Legal	206	340	546	508	104	612
Released Sublegal	343	1,734	2,077	291	1,636	1,927
Landed Only	14	4,686	4,700	3	4,694	4,697

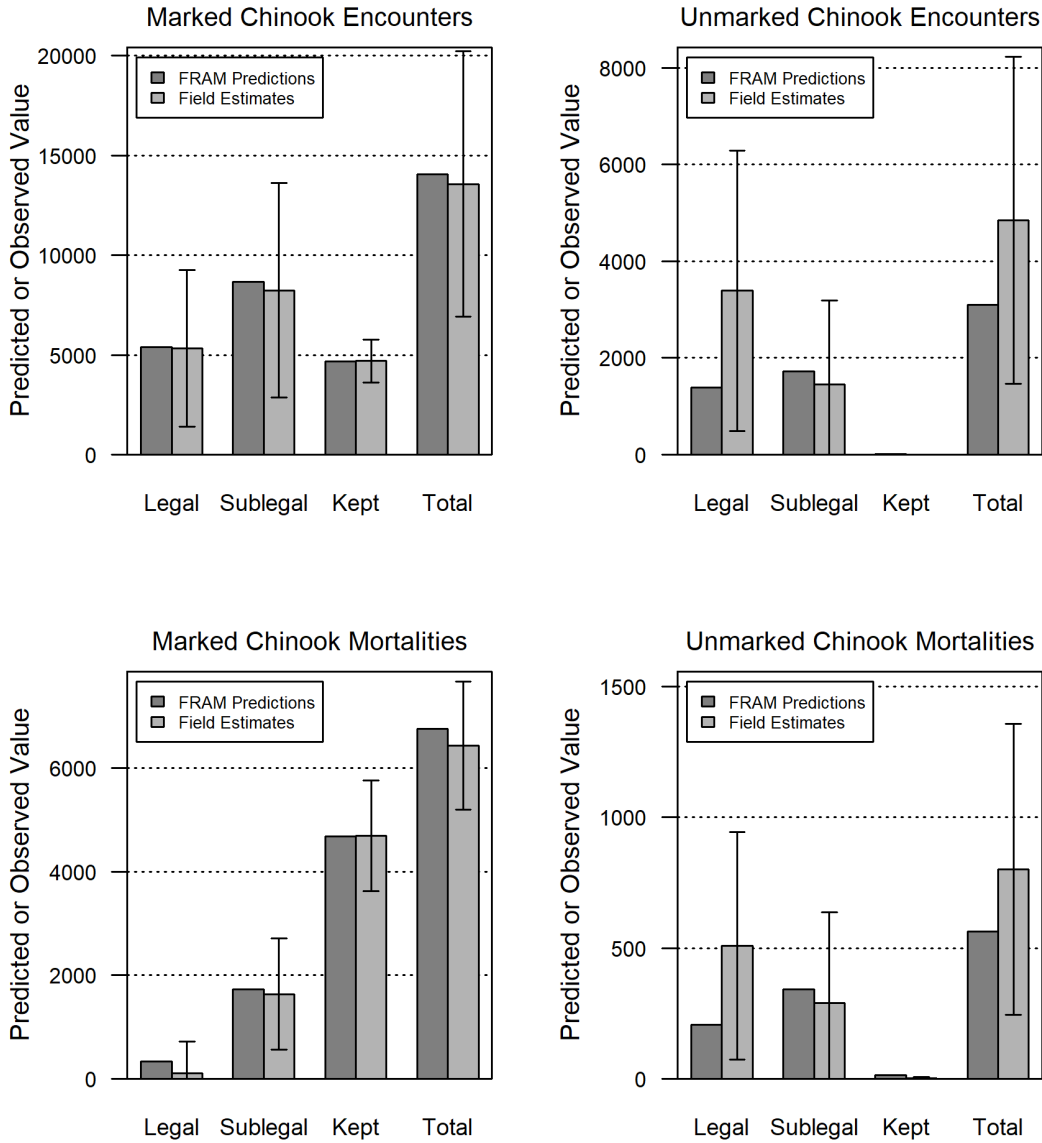


Figure 4.5 Comparison of modeled and estimated total Chinook salmon encounters and mortalities for the summer Chinook MSF in Marine Area 9. Error bars represent approximate 95% confidence intervals for field estimates.

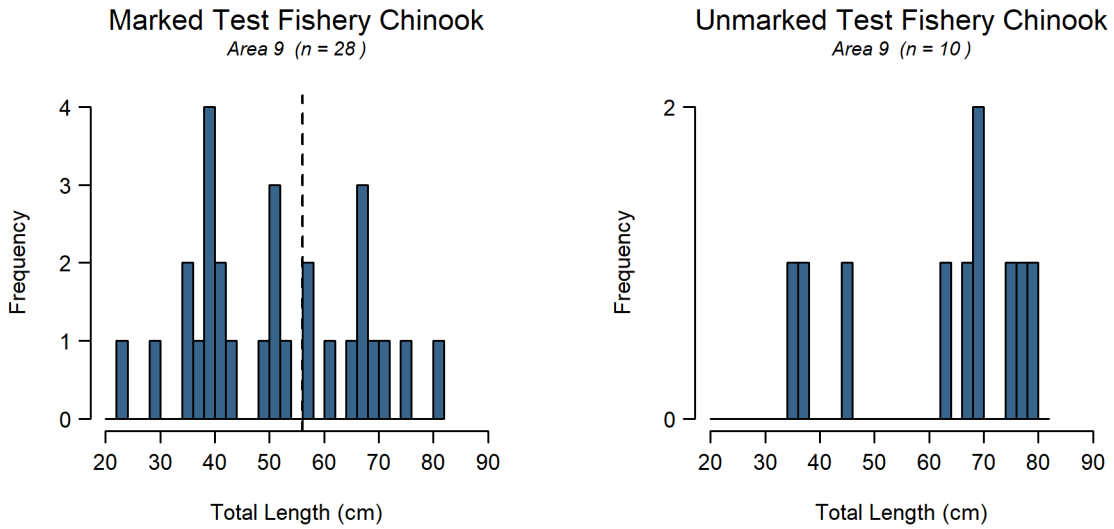


Figure 4.6 Length-frequency distributions of marked (left panel) and unmarked (right panel) Chinook salmon encountered by test fishers during the summer Chinook MSF in Marine Area 9. The vertical dashed line in the left panel corresponds to the legal-size limit (22 in or 56 cm).

Table 4.8 Composition of test fishery Chinook salmon encounters and associated mark-rate and size/mark-status proportion estimates for the summer Chinook salmon MSF in Marine Area 9 when the fishery was open to salmon retention (see **Table 4.1**). AD = marked (adipose-clipped), UM = unmarked.

Stat Week	Fishing Effort		Legal		Sublegal		Total
	Days	Hrs Fished	AD	UM	AD	UM	
29	8	53.15	7	4	12	3	26
31	4	24.07	3	1	3	0	7
32	4	23.89	1	2	2	0	5
Total	16	101.12	11	7	17	3	38
Size/mark-status composition:			0.29	0.18	0.45	0.08	
Variance:			(0.0056)	(0.0041)	(0.0067)	(0.0020)	
Legal size mark rate:			0.61				
Overall mark rate:			0.74				

Table 4.9 Total Chinook salmon encountered (retained and released) by private-boat anglers logging their trips on voluntary salmon trip reports (STRs), with estimates of legal-size and overall (legal and sublegal) mark rates during the summer Chinook MSF in Marine Area 9. AD = marked (adipose-clipped), UM = unmarked. Variances associated with size/mark-status proportions and mark rates are provided in parentheses.

Data Source	Effort and Sample Size	Legal		Sublegal		Totals	Mark Rate	
		AD	UM	AD	UM		Overall	Legal
Private STR	11 1-trip STRs	17	1	4	0	22	0.95	0.94
Size/mark-status composition:		0.77	0.05	0.18	0.00			
Variance:		(0.0084)	(0.0021)	(0.0071)	(0.0000)			

Table 4.10 Dockside encounters (retained and released) by size-mark category during the summer Chinook salmon MSF in Marine Area 9. Retained fish were sampled for mark-status and length, released fish by size-mark status were reported by the angler.

Dockside Encounters				
Metric	Legal		Sublegal	
	LM	LU	SM	SU
Encounters	1,006	259	305	186
Bias-corrected size/mark composition	50.99%	14.75%	17.37%	16.89%
Variance	0.0003	0.0001	0.0002	0.0001

Table 4.11 Summary of coded-wire tags recovered from Chinook salmon harvested during the summer Chinook MSF in Marine Area 9. The field “Number DITs” corresponds to the number of recovered CWTs that belonged to double-index tag groups. Note: Not all tags have been processed before writing of this report.

Release Domain	Release Region	Release Site	Rearing Location	CWTs Recovered	No. DITs
BC	W Vancouver Island (1.3%)	R-Robertson Cr	H-Robertson Creek H	1 (1.3%)	0
WA	N Washington (7.8%)	Friday Cr 03.0017	Samish Hatchery	4 (5.2%)	3
		East Sound Bay (San)	Glenwood Springs	1 (1.3%)	0
		Lummi Sea Ponds	Lummi Sea Ponds	1 (1.3%)	0
		Hood Canal (15.6%)	Purdy Cr 16.0005	George Adams Hatchery	7 (9.1%)
	Hood Canal (15.6%)	Finch Cr 16.0222	Hoodsport Hatchery	5 (6.5%)	0
	N Puget Sound (11.7%)	Stillaguamish R -Sf	Brenner Hatchery	2 (2.6%)	0
		Tulalip Cr 07.0001	Bernie Gobin Hatch	5 (6.5%)	1
		Wallace R 07.0940	Wallace R Hatchery	2 (2.6%)	1
		Green R 09.0001	Palmer Hatchery	3 (3.9%)	0
	Mid Puget Sound (32.5%)	Icy Cr 09.0125	Icy Cr Hatchery	5 (6.5%)	0
		Big Soos Cr 09.0072	Soos Creek Hatchery	2 (2.6%)	1
		Puyallup R 10.0021	Clarks Crk Hatchery	1 (1.3%)	0
		Gorst Cr 15.0216	Gorst Cr Rearing Pnd	3 (3.9%)	0
		Grovers Cr Hatchery	Grovers Cr Hatchery	11 (14.3%)	11
		Deschutes R 13.0028	Minter Cr Hatchery	2 (2.6%)	0
	S Puget Sound (31.2%)	Deschutes R 13.0028	Tumwater Falls Hatchery	2 (2.6%)	0
		Clear Cr 11.0013C	Clear Creek Hatchery	4 (5.2%)	4
		Narrows Marina Pens	Narrows Marina Pens	1 (1.3%)	0
		Kalama Cr 11.0017	Kalama Cr Hatchery	6 (7.8%)	0
		Chambers Cr 12.0007	Garrison Hatchery	4 (5.2%)	0
Minter Cr 15.0048		Minter Cr Hatchery	5 (6.5%)	0	
Total				77	27

Table 4.12 Summary of double-index tagged (DIT) Chinook salmon kept by anglers and estimated total mortality of unmarked DIT Chinook salmon due to hook-and-release impacts resulting from the summer Chinook MSF in Marine Area 9. AD = marked (adipose-clipped), UM = unmarked.

Hatchery	Brood Year	DITs Obs	Est.AD	var(Est.AD)	UM DIT Enc	Est.UM	var(Est.UM)	SE(Est.UM)
Bernie Gobin Hatch	2019	1	4.7	17.6	4.6	0.5	0.164	0.4
Clear Creek Hatchery	2019	4	18.9	70.41	18.5	1.8	0.671	1.64
George Adams Hatchery	2019	5	23.6	88.01	26.3	2.6	1.089	2.33
George Adams Hatchery	2020	1	4.7	17.6	5.7	0.6	0.255	0.5
Grovers Cr Hatchery	2018	2	9.5	35.2	9.2	0.9	0.335	0.82
Grovers Cr Hatchery	2019	9	42.5	158.42	43.5	4.4	1.66	3.86
Samish Hatchery	2019	3	14.2	52.81	14.2	1.4	0.533	1.26
Soos Creek Hatchery	2019	1	4.7	17.6	4.7	0.5	0.177	0.42
Wallace R Hatchery	2019	1	4.7	17.6	4.9	0.5	0.191	0.44
Total		27	127.6	475.25	131.6	13.2	5.074	11.69

Table 4.13 Monthly sample rates (Total retained Chinook salmon sampled¹ / Estimated retained Chinook) in the summer Chinook MSF in Marine Area 9.

Time period			Estimated Retained Chinook			Number of Chinook sampled			Sample Rate
Month	Stat Weeks	Dates	AD	UM	Total	AD	UM	Total	
July	29 - 31	14 Jul - 31 Jul	4,105	3	4,108	1,048	1	1,049	25.50%
August	32 - 32	1 Aug - 4 Aug	589	0	589	67	0	67	11.40%
Season Total			4,694	3	4,697	1,115	1	1,116	23.80%

^{1/} Number of retained Chinook sampled includes all retained Chinook inspected for CWT's, from all sites sampled during the Marine Area 9 selective fishery

Table 4.14 Fishery-total estimates of retained and released salmon (*other than Chinook salmon*) in the summer Chinook MSF in Marine Area 9. Values may not add exactly due to rounding error. AD = marked (adipose-clipped), UM = unmarked, UK = unknown mark-status.

Week	Start Date	End Date	Retained Salmon				Released Salmon			
			Coho AD	Coho UM	Sockeye	Unknown	Coho AD	Coho UM	Coho UK	Unknown
29	14-Jul	16-Jul	141	22	6	9	17	183	55	253
30	21-Jul	23-Jul	169	26	0	0	171	171	51	305
31	28-Jul	31-Jul	217	10	0	25	31	140	118	273
32	1-Aug	4-Aug	122	7	0	0	14	112	64	124
Season Total:			649	64	6	34	232	605	288	954
Variance:			14,305	188	19	191	7,031	9,237	4,602	22,284
Standard Error:			120	14	4	14	84	96	68	149
CV (%):			18	21	78	41	36	16	24	16
95% CI:			415 - 884	37 - 91	0 - 14	7 - 61	68 - 397	417 - 794	155 - 421	662 - 1,247

Table 4.15 Summary of the total number of anglers intercepted during on-the-water surveys conducted for the summer Chinook MSF in Marine Area 9. Sites in bold represent those included in the dockside sample frame.

Site Name	Weekday Anglers	Season Total (unadjusted) Size Measure	Weekend Anglers	Season Total (unadjusted) Size Measure
Adelaide Beach Road	1	0.0044	0	0.0000
Anacortes Marina	7	0.0310	0	0.0000
Armeni Public Ramp	2	0.0088	3	0.0063
Bayside Marina/Drystack	0	0.0000	3	0.0063
Brownsville Marina	0	0.0000	4	0.0085
Bush Point Ramp and Beach	2	0.0088	0	0.0000
Camano Island Ramp	2	0.0088	0	0.0000
Cornet Bay Public Ramp	5	0.0221	0	0.0000
Coupeville Public Ramp	2	0.0088	13	0.0275
Dagmar's Landing, Forklift Launch	0	0.0000	14	0.0296
Driftwood Key Marina	7	0.0310	8	0.0169
Edmonds Boat Basin	2	0.0088	9	0.0190
Edmonds Dry Storage	5	0.0221	12	0.0254
Edmonds Guest Dock	0	0.0000	4	0.0085
Edmonds Marina	11	0.0487	27	0.0571
Edmonds Marine Beach	1	0.0044	3	0.0063
Egdon Public Ramp	2	0.0088	0	0.0000
Everett Marina	16	0.0708	23	0.0486
Everett Ramp	15	0.0664	136	0.2875
Fort Casey Public Ramp and Shore	36	0.1593	27	0.0571
Fort Flagler Ramps-Marrowstone Is	2	0.0088	4	0.0085
Fort Worden Ramp	8	0.0354	9	0.0190
Gardiner Ramp	0	0.0000	2	0.0042
Hadlock Public Ramp	6	0.0265	4	0.0085
John Wayne Marina Docks	3	0.0133	0	0.0000
Kingston Marina	0	0.0000	12	0.0254
Kingston Public Ramp	0	0.0000	9	0.0190
Lagoon Point Ramp and Beach	27	0.1195	3	0.0063
Mukilteo Lighthouse Park	4	0.0177	35	0.0740
Mutiny Bay Public Ramp	0	0.0000	4	0.0085
Mutiny Bay Resort	1	0.0044	0	0.0000
Mystery Bay Dock/Moorage	0	0.0000	3	0.0063
Pleasant Harbor Marina	3	0.0133	0	0.0000
Point Hudson Marina	0	0.0000	2	0.0042
Point No Point Beach	0	0.0000	2	0.0042
Port Hadlock Marina	6	0.0265	2	0.0042
Port Ludlow Marina/Beach Launch	3	0.0133	3	0.0063
Port Townsend Boat Haven	5	0.0221	18	0.0381
Port Townsend Boat Haven Ramp	18	0.0796	34	0.0719
Possession Waterfront Beach Park	0	0.0000	4	0.0085
Private	4	0.0177	4	0.0085
Salsbury County Park Ramp	14	0.0619	13	0.0275
Shilshole Marina	1	0.0044	8	0.0169
Shilshole Public Ramp	0	0.0000	12	0.0254
Skyline Marina/Sling	5	0.0221	0	0.0000
Total Anglers	226	1	473	1

Table 4.16 Season-total estimates of Chinook salmon encounters by size/mark-status and total estimates of angler effort, summarized for all seasons to date of the Marine Area 9 summer Chinook MSF. Values may not add exactly due to rounding error.

Season Dates	Effort (Angler-trips)	Retained Chinook				Released Chinook				Total Encounters
		LM	LU	SM	SU	LM	LU	SM	SU	
Jul 16 - Jul 31, 2007	18,160	5,094	13	146	20	711	1,111	1,286	317	8,697
Jul 16 - Aug 15, 2008	20,399	4,035	3	10	0	597	1,608	3,212	3,826	13,290
Jul 16 - Aug 31, 2009	42,219	3,090	20	139	0	462	1,272	8,256	2,905	16,143
Jul 16 - Aug 31, 2010	31,200	5,282	33	10	6	740	2,125	750	249	9,194
Jul 16 - Aug 31, 2011	37,862	2,285	19	78	6	339	1,142	2,150	1,070	7,090
Jul 16 - Aug 19, 2012	24,886	6,972	12	101	2	1,039	2,351	5,168	4,721	20,366
Jul 16 - Aug 4, 2013	20,501	4,667	18	39	0	697	1,174	1,750	397	8,742
Jul 16 - Aug 15, 2014	23,113	2,865	6	4	0	428	668	745	299	5,015
Jul 16 - Jul 26, 2015	14,118	2,277	13	35	7	340	1,502	1,481	131	5,786
Jul 16 - Aug 15, 2016	14,911	2,861	9	112	0	427	912	4,886	2104	11,311
Jul 16 - Jul 30, 2017	18,548	5,264	0	191	3	787	1261	9,388	2266	19,160
Jul 16 - Jul 29, 2018	17,356	5,935	1	93	1	887	1084	3,628	464	12,094
Jul 25 - Aug 9, 2019	17,147	3,434	5	11	0	513	579	573	146	5,263
Jul 16 - Aug 15, 2020	45,376	3,684	0	102	0	551	1,289	10,392	2,946	18,964
Jul 16 - Aug 5, 2021	24,266	5,119	6	150	13	765	1,675	14,981	5,872	28,580
Jul 14 - Aug 4, 2022	16,315	4,637	3	57	0	693	3,389	8,181	1,454	18,413

5) Marine Area 10 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) planned and implemented a summer Chinook MSF in Marine Area 10 from July 14 through August 31, 2022. WDFW's Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program, Full Murthy, in Marine Area 10 throughout the season to collect the data needed to estimate key parameters characterizing the fishery and its impacts on unmarked salmon. Sampling activities included intensive dockside creel sampling, on-the-water effort surveys, test fishing and collection of voluntary salmon trip reports (STRs) from the angling public whenever possible. The fishery control was the preseason modeled expected catch. **Table 5.1** 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 2012a). In this section we present results from our monitoring activities during the Marine Area 10 summer Chinook MSF.

Table 5.1 Sampling/estimation details on target parameters associated with the overall Marine Area 10 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	Catch rates (CPUE); length, age, and CWT composition of harvest ¹ ; collection of angler fishing methods.	Angler trip; kept fish; reported fish release.	One week	Within days, estimates were produced by day-type strata (weekday/weekend). Each week we sampled every Friday, Saturday, and Sunday, and we randomly selected $n=2$ out of $N=4$ weekdays (Monday-Thursday) for sampling.
		Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook salmon	Boat trip	Season	Dockside encounter data were not used for estimation of Chinook encounters for this fishery (Table 5.9).
On-the-water Surveys	Proportion of total angler effort that uses sample-frame sites (i.e., site “size measures”) versus out-of-frame sites.	Total on-water boat and angler counts at assumed peak effort time interval (instantaneous count); spatial distribution of recreational fishing boats in the area.	Boats and anglers	Month	A total of 12 boat surveys (6 weekday and 6 weekend) were conducted during the fishery.
Test Fishing	Size (legal/sublegal) and mark-status composition (marked, unmarked) of encountered Chinook salmon	Chinook salmon length, age, and DNA-based ² stock composition; species composition of non-Chinook salmon encounters	Fish encounter	Season	Test fishery data only were used to estimate the size/mark-status proportions (LM = 41%, LU = 9%, SM = 27%, SU = 23%; Table 5.7) needed to produce encounter and mortality estimates.
Voluntary Salmon Trip Reports (STRs)	Size (legal/sublegal) and mark-status composition (marked, unmarked) of encountered Chinook salmon	Encounter data for non-Chinook salmon species (e.g., Coho salmon) that the angler may record on the STR form	Fish encounter	Season	STR and test fishing data showed no significant difference, p -value = .08. Due to the higher quality of the test fishing data STR data were not used to produce encounter and mortality estimates
Overall Fishery Impacts Estimation	Total Chinook salmon encounters and mortalities by size/mark-status group	Ratios of encounters and mortalities per kept Chinook salmon	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.

¹ The length and CWT composition of landed catch was assessed on a season-wide basis for impact estimation.² Though samples were collected, DNA-based estimates of stock composition are not yet available for this fishery.

Table 5.2 Estimates of total fishing effort and total salmon catch (harvest and releases) during the summer Chinook MSF in Marine Area 10. Values may not add exactly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Month	Stat Week	Start Date	End Date	Estimated Effort		Est. Retained Chinook		Est. Released Chinook		Total Est. Chinook Encounters
				Boats	Anglers	AD	UM	AD	UM	
Jul	29	14-Jul	17-Jul	1,371	2,989	302	0	253	260	816
	30	18-Jul	24-Jul	1,942	4,065	244	3	205	208	659
	31	25-Jul	31-Jul	2,027	4,349	591	0	495	510	1,596
Aug	32	1-Aug	7-Aug	1,868	3,797	566	0	474	488	1,527
	33	8-Aug	14-Aug	1,783	3,577	695	0	582	599	1,875
	34	15-Aug	21-Aug	2,555	5,043	979	14	820	829	2,642
	35	22-Aug	28-Aug	2,588	5,076	734	3	615	629	1,981
	36	29-Aug	31-Aug	908	1,698	130	0	109	112	350
Season Total				15,041	30,594	4,240	21	3551	3634	11,446
Variance:				158,986	586,846	41,177	6	976,809	397,219	1,889,961
Standard Error:				399	766	203	2	988	630	1375
CV (%):				3	3	5	12	28	17	12
95% CI:				14,259 - 15,822	29,093 - 32,096	3,842 - 4,638	16 - 25	1,614 - 5,488	2,399 - 4,870	8,752 - 14,141

Table 5.3 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the summer Chinook MSF in Marine Area 10.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	1,144	39	1,183
Unmarked	6	4	10
Total	1,150	43	1,193

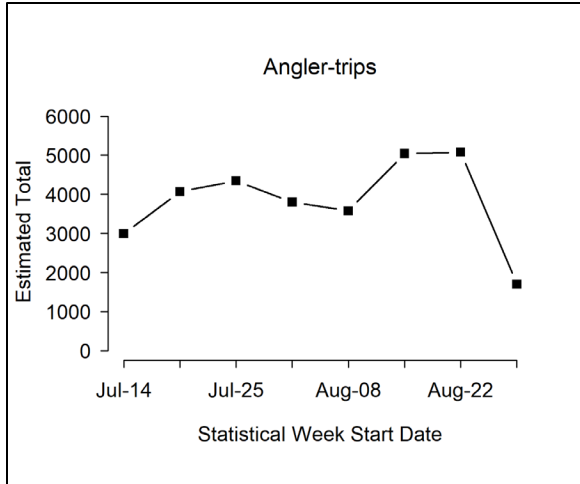


Figure 5.1 Temporal patterns in fishing effort during the summer Chinook MSF in Marine Area 10.

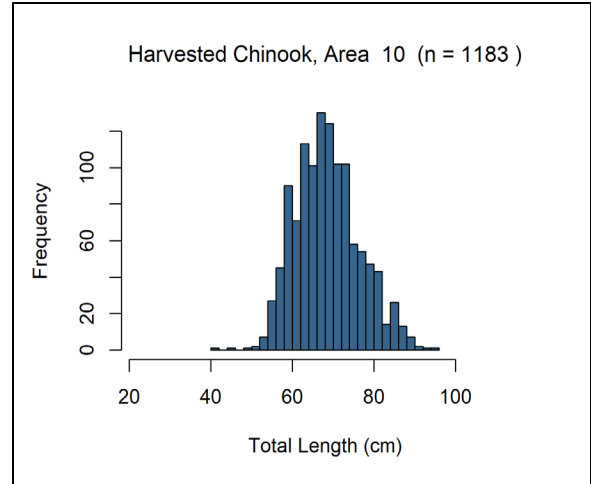


Figure 5.3 Length-frequency distribution of retained marked Chinook salmon sampled in dockside angler interviews during the summer Chinook MSF in Marine Area 10. Note: displayed values are observations where lengths taken.

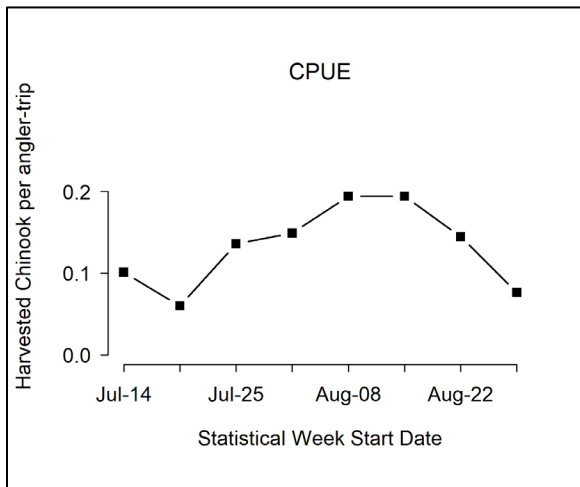


Figure 5.2 Temporal patterns in CPUE (landed Chinook salmon per angler trip) during the summer Chinook MSF in Marine Area 10.

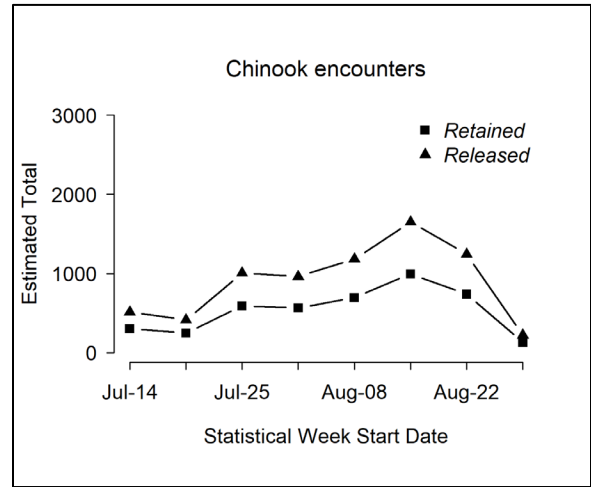


Figure 5.4 Temporal patterns in Chinook salmon encounters (retained and released) during the summer Chinook MSF in Marine Area 10.

Table 5.4 Comparison of modeled and estimated total Chinook salmon encounters for the summer Chinook MSF in Marine Area 10. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped) and UM = unmarked.

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	UM	4,240	1,345	2,895	13
	AD	10,401	4,543	5,858	3,953
	Total	14,641	5,888	8,753	3,966
	% Marked	71	77	67	100
Estimated (Creel) Encounters	UM	3,655	1,058	2,597	21
	AD	7,791	4,713	3,078	4,240
	Total	11,446	5,771	5,675	4,261
	% Marked	68	82	54	100

Table 5.5 Summary of season-wide fishery impact estimates for the summer Chinook MSF in Marine Area 10. Release mortality rate = 0.15 for legal fish and 0.20 for sublegal fish. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Size/mark group	Encounters	Retained	Released	Release Mortality	Total Mortality	Var	SE	95% CI	CV (%)
Legal AD	4,713	4,100	613	92	4,192	53,041	230	3,741 - 4,644	5
Legal UM	1,058	12	1,046	157	169	2,443	49	72 - 266	29
Sublegal AD	3,078	140	2,938	588	727	14,622	121	490 - 964	17
Sublegal UM	2,597	8	2,589	518	526	11,582	108	315 - 737	20
Total	11,446	4,261	7,185	1,354	5,615	81,688	286	5,055 - 6,175	5

Table 5.6 Comparison of modeled and estimated total Chinook salmon mortalities for the summer Chinook MSF in Marine Area 10. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped) and UM = unmarked.

Mortality Category	FRAM Chinook Mortalities			Estimated Chinook Mortalities		
	UM	AD	Total	UM	AD	Total
Total (Landed + Released)	793	5,411	6,204	695	4,920	5,615
Released Legal	201	286	487	157	92	249
Released Sublegal	579	1,172	1,751	518	588	1,105
Landed Only	13	3,953	3,966	21	4,240	4,261

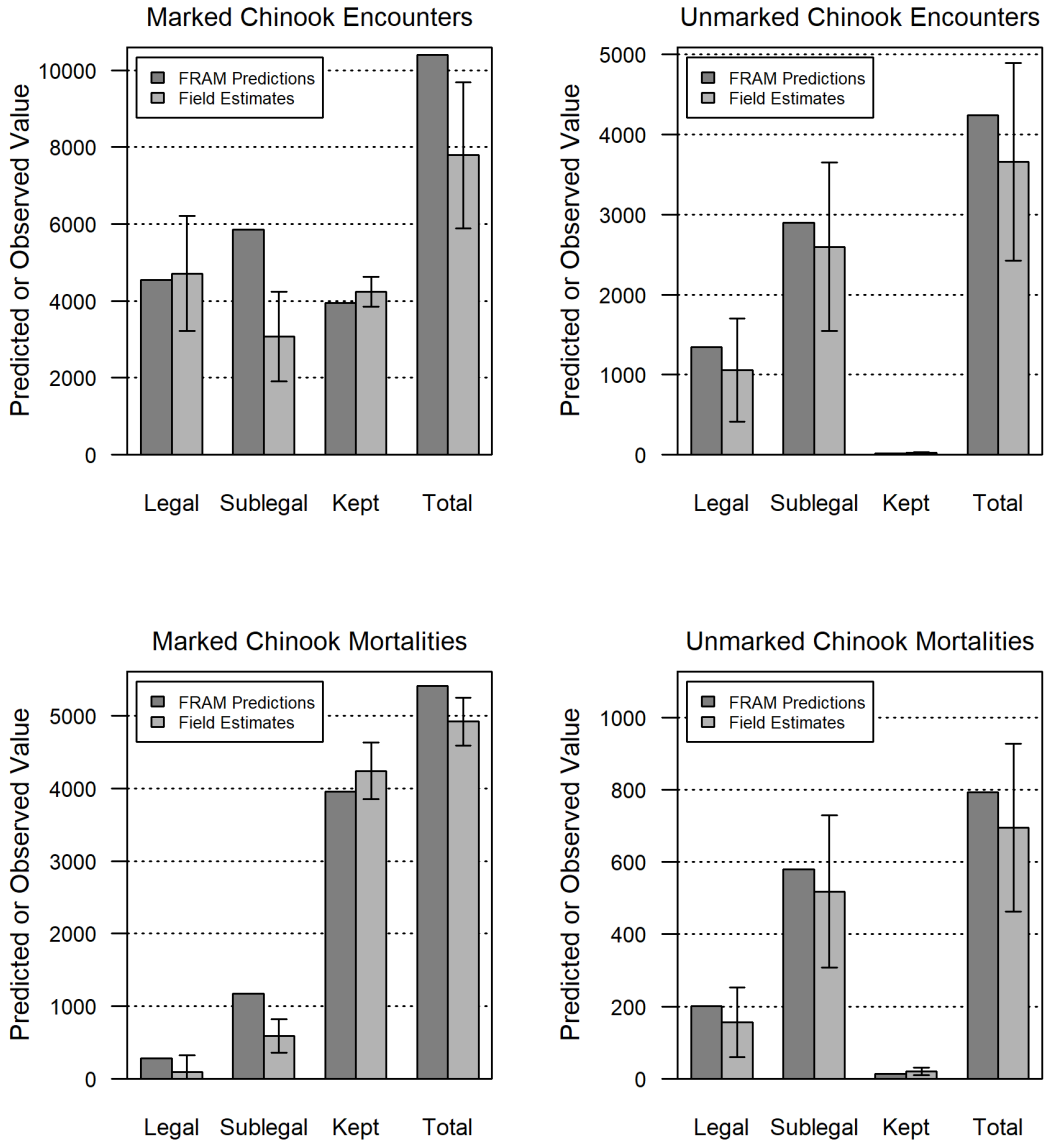


Figure 5.5 Comparison of modeled and estimated total Chinook salmon encounters and mortalities for the summer Chinook MSF in Marine Area 10. Error bars represent approximate 95% confidence intervals for field estimates.

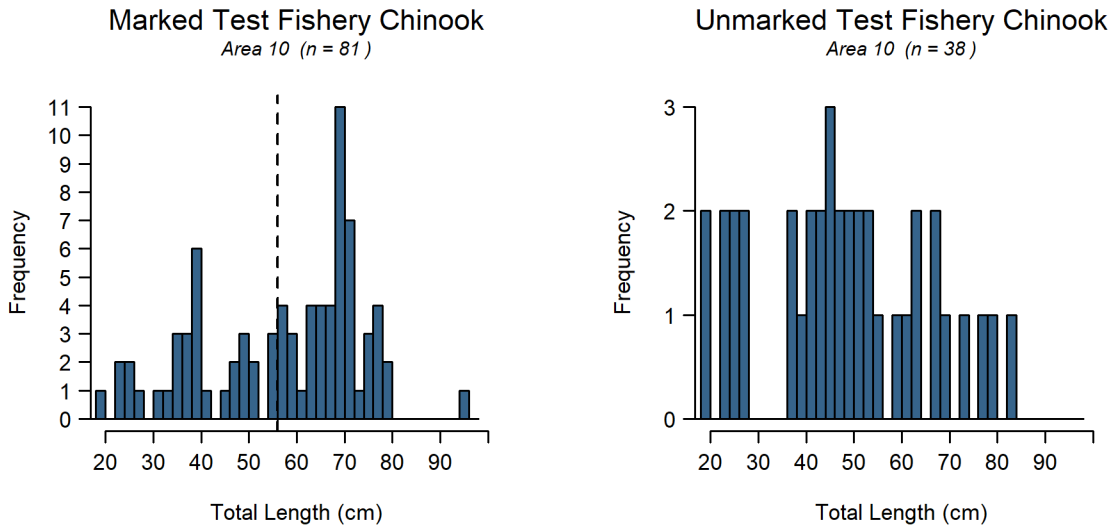


Figure 5.6 Length-frequency distributions of marked (left panel) and unmarked (right panel) Chinook salmon encountered by test fishers during the summer Chinook MSF in Marine Area 10. The vertical dashed line in the left panel corresponds to the legal-size limit (22 in or 56 cm).

Table 5.7 Composition of test fishery Chinook salmon encounters and associated mark-rate and size/mark-status proportion estimates for the summer Chinook MSF in Marine Area 10. AD = marked (adipose-clipped), UM = unmarked. Variances associated with size/mark-status proportions and mark rates are provided in parentheses.

Stat Week	Fishing Effort		Legal		Sublegal		Total
	Days	Hrs Fished	AD	UM	AD	UM	
29	12	67.49	6	2	8	5	21
30	6	59.78	2	1	1	1	5
31	13	73.70	8	3	4	4	19
32	9	54.87	5	1	4	4	14
33	14	75.17	14	2	10	5	31
34	3	17.50	3	1	0	1	5
35	8	48.18	8	1	4	7	20
36	3	20.14	3	0	1	0	4
Total	68	416.83	49	11	32	27	119
Size/mark-status composition:			0.41	0.09	0.27	0.23	
Variance:			(0.0021)	(0.0007)	(0.0017)	(0.0015)	
Legal size mark rate:			0.82				
Overall mark rate:			0.68				

Table 5.8 Total Chinook salmon encountered (retained and released) by private-boat anglers logging their trips on voluntary salmon trip reports (STRs), with estimates of legal-size and overall (legal and sublegal) mark rates during the summer Chinook MSF in Marine Area 10. AD = marked (adipose-clipped), UM = unmarked. Variances associated with size/mark-status proportions and mark rates are provided in parentheses.

Data Source	Effort and Sample Size	Legal		Sublegal		Totals	Mark Rate	
		AD	UM	AD	UM		Overall	Legal
Private STR	15 1-trip STRs	5	1	16	3	25	0.84	0.83
Charter STR	6 1-trip STRs	12	5	7	3	27	0.70	0.71
Total	21 1-trip STRs	17	6	23	6	52	0.77	0.74
Size/mark-status composition:		0.33	0.12	0.44	0.12			
Variance:		(0.0043)	(0.0020)	(0.0048)	(0.0020)			

Table 5.9 Dockside encounters (retained and released) by size-mark category during the summer Chinook salmon MSF in Marine Area 10. Retained fish were sampled for mark-status and length, released fish by size-mark status were reported by the angler.

Dockside Encounters				
Metric	Legal		Sublegal	
	LM	LU	SM	SU
Encounters	1,184	374	587	494
Bias-corrected size/mark composition	39.93%	14.17%	22.24%	23.65%
Variance	0.0001	0.0001	0.0001	0.0001

Table 5.10 Fishery-total estimates of retained and released salmon (*other than Chinook salmon*) in the summer Chinook MSF in Marine Area 10. Values may not add exactly due to rounding error. AD = marked (adipose-clipped), UM = unmarked, UK = unknown mark-status.

Week	Start Date	End Date	Retained Salmon					Released Salmon				
			Coho AD	Coho UM	Coho UK	Pink	Unknown	Coho AD	Coho UM	Coho UK	Chum	Unknown
29	14-Jul	17-Jul	286	495	0	0	0	79	83	200	3	98
30	18-Jul	24-Jul	492	826	0	0	0	148	210	403	0	202
31	25-Jul	31-Jul	238	514	10	0	6	173	182	249	0	431
32	1-Aug	7-Aug	99	292	0	0	0	149	34	240	0	217
33	8-Aug	14-Aug	128	262	5	6	5	90	23	166	0	258
34	15-Aug	21-Aug	328	516	0	0	9	263	98	453	0	536
35	22-Aug	28-Aug	399	560	0	0	7	197	99	478	0	430
36	29-Aug	31-Aug	252	358	0	0	0	148	154	150	0	200
Season Total:			2,223	3,822	15	6	27	1,248	881	2,338	3	2,372
Variance:			9,443	21,257	43	5	61	13,319	6,615	32,592	1	23,870
Standard Error:			97	146	7	2	8	115	81	181	1	154
CV (%):			4	4	43	33	29	9	9	8	43	7
95% CI:			2,032 - 2,413	3,537 - 4,108	2 - 28	2 - 11	12 - 42	1,021 - 1,474	722 - 1,041	1,984 - 2,691	0 - 5	2,069 - 2,675

Table 5.11 Summary of the total number of anglers intercepted during on-the-water surveys conducted for the summer Chinook MSF in Marine Area 10. Sites in bold represent those included in the dockside sample frame.

Site Name	Weekday Anglers	Season Total (unadjusted) Size Measure	Weekend Anglers	Season Total (unadjusted) Size Measure
Armeni Public Ramp	51	0.0416	55	0.0447
Bayside Marina/Drystack	2	0.0016	0	0.0000
Blake Island	0	0.0000	1	0.0008
Brownsville Dock/Ramp	0	0.0000	0	0.0000
Brownsville Marina	38	0.0310	36	0.0292
Commencement Bay Marina Services	0	0.0000	5	0.0041
Dagmar's Landing, Forklift Launch	1	0.0008	3	0.0024
Des Moines Marina	9	0.0073	11	0.0089
Driftwood Key Marina	4	0.0033	2	0.0016
Duwamish Is Marina	2	0.0016	0	0.0000
Eagle Harbor Waterfront Park	23	0.0188	26	0.0211
Edmonds Boat Basin	43	0.0351	46	0.0374
Edmonds Dry Storage	51	0.0416	38	0.0309
Edmonds Marina	281	0.2292	173	0.1405
Edmonds Marine Beach	1	0.0008	3	0.0024
Elliott Bay Marina	16	0.0131	30	0.0244
Everett Marina	28	0.0228	19	0.0154
Everett Ramp	31	0.0253	66	0.0536
Evergreen Park Ramp	1	0.0008	0	0.0000
First Avenue South Public Ramp	2	0.0016	2	0.0016
Fort Casey Public Ramp and Shore (Keystone)	0	0.0000	2	0.0016
Gig Harbor Marina	2	0.0016	0	0.0000
Harbor Isl Marina	0	0.0000	3	0.0024
Hylebos Boat Haven	3	0.0024	0	0.0000
Keyport Ramp	0	0.0000	6	0.0049
Kingston Marina	33	0.0269	29	0.0236
Kingston Public Ramp	71	0.0579	63	0.0512
Manchester Public Ramp	17	0.0139	26	0.0211
Mukilteo Lighthouse Park	6	0.0049	14	0.0114
Narrows Marina	0	0.0000	1	0.0008
Point Defiance Boathouse	0	0.0000	2	0.0016
Point Defiance Public Ramp	4	0.0033	13	0.0106
Point Southworth	1	0.0008	0	0.0000
Port Ludlow Marina/Beach Launch	0	0.0000	2	0.0016
Port Madison Marina	2	0.0016	7	0.0057
Port Orchard Marina	9	0.0073	4	0.0032
Port Orchard Public Ramp	8	0.0065	11	0.0089
Possession Waterfront Beach Park	3	0.0024	2	0.0016
Poulsbo Ramp/Marina	5	0.0041	3	0.0024
Private	15	0.0122	31	0.0252
Redondo Ramp	9	0.0073	4	0.0032
Sandy Point Marina/Ramp	2	0.0016	0	0.0000
Shilshole Marina	235	0.1917	208	0.1690
Shilshole Public Ramp	201	0.1639	273	0.2218
South Park - Duwamish	4	0.0033	0	0.0000
Unknown	2	0.0016	8	0.0065
Winslow City Ramp	3	0.0024	2	0.0016
Winslow Marina	5	0.0041	1	0.0008
Zittels Marina	2	0.0016	0	0.0000
Total Anglers	1,226	1	1,231	1

Table 5.12 Summary of coded-wire tags recovered from Chinook salmon harvested during the summer Chinook MSF in Marine Area 10. The field “Number DITs” corresponds to the number of recovered CWTs that belonged to double-index tag groups.

Note: Not all tags have been processed before writing of this report.

Release Domain	Release Region	Release Site	Rearing Location	CWTs Recovered	No. DITs	
Washington	N Washington (0.8%)	Friday Cr 03.0017	Samish Hatchery	1 (0.8%)	1	
		Purdy Cr 16.0005	George Adams Hatchery	3 (2.5%)	2	
	Hood Canal (5%)	Finch Cr 16.0222	Hoodsport Hatchery	3 (2.5%)	0	
		Tulalip Cr 07.0001	Bernie Gobin Hatch	3 (2.5%)	2	
	N Puget Sound (5.8%)	Wallace R 07.0940	Wallace R Hatchery	4 (3.3%)	0	
		Skagit River (0.8%)	Cascade R 03.1411	Marblemount Hatchery	1 (0.8%)	1
	Mid Puget Sound (50.8%)		Big Soos Cr 09.0072	Soos Creek Hatchery	10 (8.3%)	3
		Gorst Cr 15.0216	Gorst Cr Rearing Pnd	4 (3.3%)	0	
		Clarks Crk Hatchery	Clarks Crk Hatchery	1 (0.8%)	0	
		Issaquah Cr 08.0178	Issaquah Hatchery	1 (0.8%)	0	
		Green R 09.0001	Palmer Hatchery	3 (2.5%)	0	
		Clarks Cr 10.0027	Clarks Crk Hatchery	2 (1.7%)	0	
		Icy Cr 09.0125	Icy Cr Hatchery	10 (8.3%)	0	
		Grovers Cr Hatchery	Grovers Cr Hatchery	28 (23.3%)	28	
		Puyallup R 10.0021	Clarks Crk Hatchery	2 (1.7%)	0	
		S Puget Sound (35.8%)	Chambers Cr 12.0007	Garrison Hatchery	7 (5.8%)	0
			Clear Cr 11.0013C	Clear Creek Hatchery	13 (10.8%)	13
			Deschutes R 13.0028	Tumwater Falls Hatchery	6 (5%)	0
	Minter Cr 15.0048		Minter Cr Hatchery	8 (6.7%)	0	
	Narrows Marina Pens		Narrows Marina Pens	3 (2.5%)	0	
Kalama Cr 11.0017	Kalama Cr Hatchery		6 (5%)	0		
Col. Riv.	Snake River (0.8%)	Lyons Ferry Rel.Site	Lyons Ferry Hatchery	1 (0.8%)	0	
Total				120	50	

Table 5.13 Summary of double-index tagged (DIT) Chinook salmon kept by anglers and estimated total mortality of unmarked DIT Chinook salmon due to hook-and-release impacts resulting from the summer Chinook MSF in Marine Area 10. AD = marked (adipose-clipped), UM = unmarked.

Hatchery	Brood Year	DITs Obs	Est.AD	var(Est.AD)	UM DIT Enc	Est.UM	var(Est.UM)	SE(Est.UM)
Bernie Gobin Hatch	2019	2	7.1	18.37	6.9	0.7	0.171	0.58
Clear Creek Hatchery	2018	1	3.6	9.18	3.7	0.4	0.097	0.31
Clear Creek Hatchery	2019	12	39.3	101.03	41.9	7.4	10.148	6.29
George Adams Hatchery	2019	2	7.1	18.37	7.9	0.8	0.227	0.67
Grovers Cr Hatchery	2018	4	14.3	36.74	13.9	1.4	0.349	1.18
Grovers Cr Hatchery	2019	24	78.6	202.05	84	11.6	11.301	9.85
Marblemount Hatchery	2019	1	3.6	9.18	3.6	0.4	0.094	0.31
Samish Hatchery	2019	1	3.6	9.18	3.6	0.4	0.093	0.3
Soos Creek Hatchery	2019	3	3.6	9.18	10.7	7.5	18.461	6.36
Total		50	160.7	413.29	176.3	30.5	40.94	25.87

Table 5.14 Monthly sample rates (Total retained Chinook salmon sampled ^{1/} Estimated retained Chinook salmon) in the summer Chinook MSF in Marine Area 10.

Time period			Estimated Retained Chinook			Number of Chinook sampled			Sample Rate
Month	Stat Weeks	Dates	AD	UM	Total	AD	UM	Total	
July	29 - 31	14 Jul - 31 Jul	1,138	3	1,141	341	1	342	30.00%
August	32 - 36	1 Aug - 31 Aug	3,102	18	3,120	869	9	878	28.10%
Season Total			4,240	21	4,261	1,210	10	1,220	28.60%

^{1/} Number of retained Chinook sampled includes all retained Chinook inspected for CWT's, from all sites sampled during the Marine Area 10 selective fishery

Table 5.15 Season-total estimates of Chinook salmon encounters by size/mark-status and total estimates of angler effort, summarized for all seasons to date of the Marine Area 10 summer Chinook MSF. Values may not add exactly due to rounding error.

Season Dates	Effort (Angler-trips)	Retained Chinook				Released Chinook				Total Encounters
		LM	LU	SM	SU	LM	LU	SM	SU	
Jul 16 - Jul 28, 2007	8,374	1,469	30	70	8	209	497	3,101	723	6,107
Jul 16 - Aug 15, 2008	13,808	1,027	3	4	0	128	510	189	385	2,246
Jul 16 - Aug 31, 2009	23,179	1,505	22	116	0	220	82	2,488	1,017	5,450
Jul 16 - Aug 31, 2010	21,636	2,950	33	37	9	432	1,026	1,024	1,665	7,178
Jul 16 - Aug 31, 2011	27,753	2,548	14	94	14	372	1,872	964	694	6,573
Jul 16 - Aug 19, 2012	17,823	2,976	17	88	17	443	377	6,343	1,950	12,212
Jul 16 - Aug 18, 2013	27,317	3,434	6	77	17	512	298	2,149	1,603	8,097
Jul 16 - Aug 7, 2014	11,892	1,063	4	0	4	159	322	1,629	322	3,503
Jul 16 - Aug 15, 2016	9,314	1,032	0	53	0	154	274	1,087	593	3,192
Jul 16 - Aug 15, 2017	13,466	2,072	0	153	0	310	741	4,134	1112	8,522
Jul 16 - Aug 16, 2018	19,622	4,695	21	155	14	702	1010	3,733	1097	11,428
Jul 25 - Aug 16, 2019	16,115	3,202	3	64	14	478	1032	396	331	5,521
Jul 16 - Aug 31, 2020	28,880	1,375	6	135	28	205	1123	4079	2079	9,029
Jul 16 - Aug 21, 2021	22,900	3,268	25	199	57	488	1094	9791	3220	18,143
Jul 14 - Aug 31, 2022	30,594	4,100	12	140	8	613	1,046	2,938	2,589	11,446

6) Marine Area 11 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) planned a summer Chinook MSF in Marine Area 11 from June 1 through Sept. 30, 2022. The fishery was implemented from June 1 through 3, July 1 through 9, then again from August 3 through August 13, 2022. WDFW’s Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program, Full Murthy, in Marine Area 11 throughout the season to collect the data needed to estimate key parameters characterizing the fishery and its impacts on unmarked salmon. Sampling activities included dockside creel sampling and collection of voluntary salmon trip reports (STRs) which included a small, committed group from the angling public as part of a pilot project. The fishery control was the preseason modeled expected catch. **Table 6.2** 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 2012a). In this section, we present results from our monitoring activities during the Marine Area 11 summer Chinook MSF.

Table 6.1 Fishery dates and fishery retention status of salmon in the 2022 summer Chinook salmon MSF in Marine Area 11.

Start Date	End Date	Fishery Status	Days
1-Jun	3-Jun	Open	3
4-Jun	30-Jun	Closed	27
1-Jul	2-Jul	Open	2
3-Jul	5-Jul	Closed	3
6-Jul	9-Jul	Open	4
10-Jul	2-Aug	Closed	24
3-Aug	6-Aug	Open	4
7-Aug	9-Aug	Closed	3
10-Aug	13-Aug	Open	4

Table 6.2 Sampling/estimation details on target parameters associated with the overall Marine 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	Catch rates (CPUE); length, age, and CWT composition of harvest ¹ ; collection of angler fishing methods.	Angler trip; kept fish; reported fish release	One week	Within days, estimates were 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 weekdays (Monday-Thursday) for sampling.
		Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook salmon	Boat trip	Season	Dockside encounter data were not used for estimation of Chinook encounters for this fishery (Table 6.10).
On-the-water Surveys	Proportion of total angler effort that uses sample-frame sites (i.e., site “size measures”) versus out-of-frame sites.	Total on-water boat and angler counts at assumed peak effort time interval (instantaneous count); spatial distribution of recreational fishing boats in the area.	Boats and anglers	Month	A total of 7 boat surveys. 4 weekday and 3 weekend boat surveys were conducted during the two-month fishery.
Test Fishing	Size (legal/sublegal) and mark-status composition (marked, unmarked) of encountered Chinook salmon	Chinook salmon length, age, and DNA-based ² stock composition; species composition of non-Chinook salmon encounters	Fish encounter	Season	Test fishing collected data when the fishery was open to Chinook retention Table 6.1 were used for estimates of encounters and mortalities during this fishery. LM = 49%; LU% = 16%; SM% = 20%; SU% = 14%. Table 6.10
Voluntary Salmon Trip Reports (STRs)	Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook salmon	Encounter data for non-Chinook salmon species (e.g., Coho salmon) that the angler may record on the STR form	Fish encounter	Season	STR data (LM = 75%, LU = 15%, SM = 9%, SU = 0%; Table 6.8) were significantly different than test fishing data, p-value < .01, and were not used for estimates of encounters and mortalities in this fishery.
Overall Fishery Impacts Estimation	Total Chinook salmon encounters and mortalities by size/mark-status group	Ratios of encounters and mortalities per kept Chinook salmon	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.

¹ The length and CWT composition of landed catch was assessed on a season-wide basis for impact estimation.

Table 6.3 Estimates of total fishing effort and total salmon catch (harvest and releases) during the summer Chinook MSF in Marine Area 11. Values may not add exactly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

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	1-Jun	3-Jun	755	1,273	654	8	389	447	1,498
July	27	1-Jul	2-Jul	1,030	2,065	794	5	473	548	1,821
	28	6-Jul	9-Jul	1,661	3,077	849	0	506	591	1,946
August	32	3-Aug	6-Aug	1,794	3,568	564	0	336	393	1,294
	33	10-Aug	13-Aug	1,303	2,531	378	0	225	263	867
Subtotal:				6,544	12,513	3,240	14	1,929	2,242	7,425
RCAW Derby				15	26	23	0	14	16	53
S. King Co. PSA Derby				51	91	65	0	39	45	149
Gig Harbor PSA Derby				34	67	54	0	32	38	124
Total:				6,644	12,697	3,382	14	2,014	2,341	7,750
Variance:				38,647	184,409	16,670	11	558,202	227,262	848,011
SE:				197	429	129	3	747	477	921
CV (%):				3	3	4	25	37	20	12
95% CI:				6,258 - 7,029	11,855 - 13,538	3,129 - 3,635	7 - 20	549 - 3,478	1,407 - 3,275	5,946 - 9,555

Table 6.4 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the summer Chinook MSF in Marine Area 11.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	1,310	21	1,331
Unmarked	4	1	5
Total	1,314	22	1,336

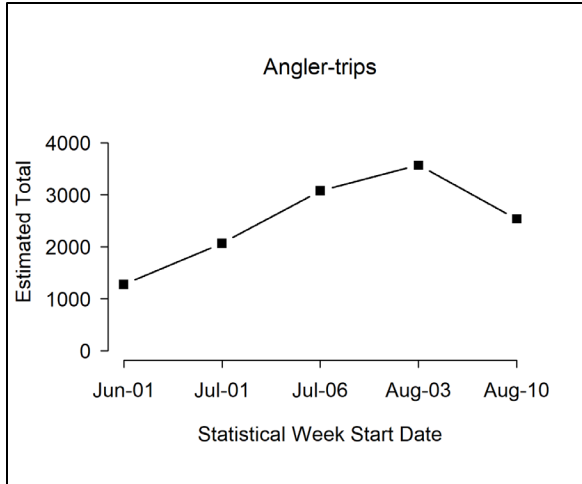


Figure 6.1 Temporal patterns in fishing effort during the summer Chinook MSF in Marine Area 11.

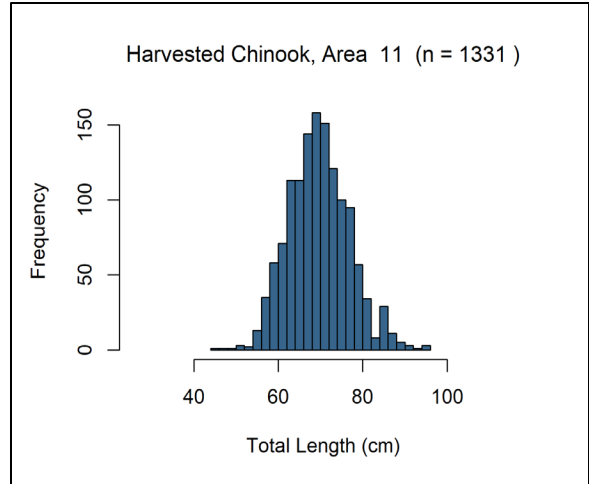


Figure 6.3 Length-frequency distributions of retained marked Chinook salmon sampled in dockside angler interviews during the summer Chinook MSF in Marine Area 11. Note: displayed values are observations where lengths taken.

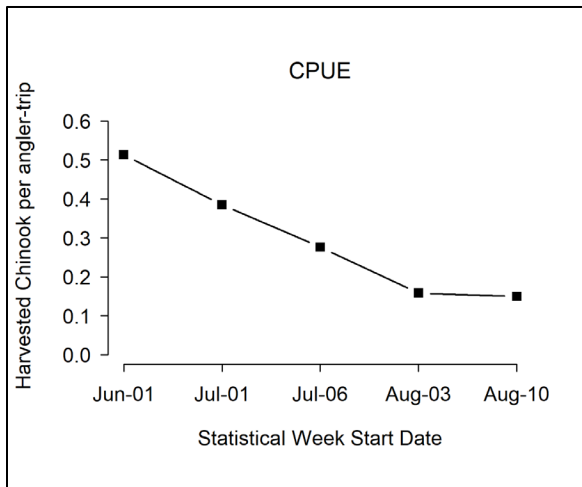


Figure 6.2 Temporal patterns in CPUE (landed Chinook salmon per angler trip) during the summer Chinook MSF in Marine Area 11.

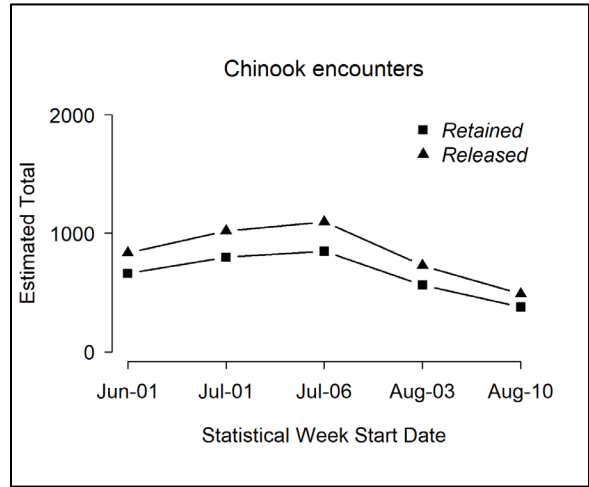


Figure 6.4 Temporal patterns in Chinook salmon encounters (retained and released) during the summer Chinook MSF in Marine Area 11.

Table 6.5 Comparison of modeled and estimated total Chinook salmon encounters for the summer Chinook MSF in Marine Area 11. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	UM	2,091	1,051	1,040	21
	AD	6,965	3,880	3,085	3,375
	Total	9,056	4,931	4,125	3,396
	% Marked	77	79	75	99
Estimated (Creel) Encounters	UM	2,355	1,275	1,079	14
	AD	5,396	3,826	1,570	3,382
	Total	7,750	5,102	2,649	3,396
	% Marked	70	75	59	100

Table 6.6 Summary of season-wide fishery impact estimates for the summer Chinook MSF in Marine Area 11. Release mortality rate = 0.15 for legal fish and 0.20 for sublegal fish. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Size/mark group	Encounters	Retained	Released	Release Mortality	Total Mortality	Var	SE	95% CI	CV (%)
Legal AD	3,826	3,329	497	75	3,403	25,720	160	3,089 - 3,718	5
Legal UM	1,275	11	1,264	190	201	2,897	54	95 - 306	27
Sublegal AD	1,570	53	1,516	303	357	6,475	80	199 - 514	23
Sublegal UM	1,079	3	1,076	215	218	4,327	66	89 - 347	30
Total	7,750	3,396	4,355	783	4,179	39,418	199	3,789 - 4,568	5

Table 6.7 Comparison of modeled and estimated total Chinook salmon mortalities for the summer Chinook MSF in Marine Area 11. Values may not add up perfectly due to rounding error. AD = marked (adipose-clipped), UM = unmarked.

Mortality Category	FRAM Chinook Mortalities			Estimated Chinook Mortalities		
	UM	AD	Total	UM	AD	Total
Total (Landed + Released)	385	4,237	4,622	419	3,760	4,179
Released Legal	156	245	401	190	75	264
Released Sublegal	208	617	825	215	303	519
Landed Only	21	3,375	3,396	14	3,382	3,396

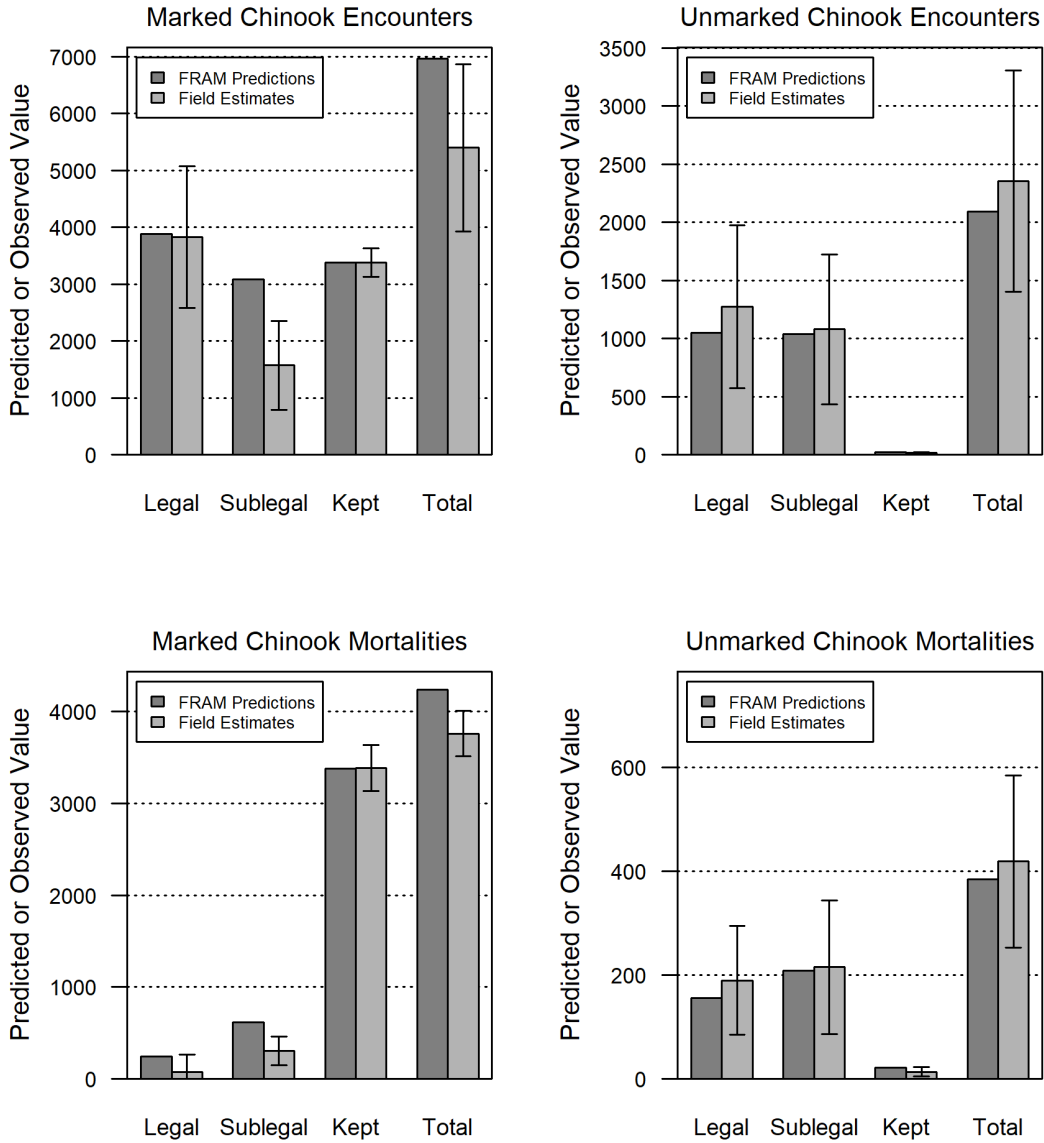


Figure 6.5 Comparison of modeled and estimated total Chinook salmon encounters and mortalities for the summer Chinook MSF in Marine Area 11. Error bars represent approximate 95% confidence intervals for field estimates.

Table 6.8 Total Chinook salmon encountered (retained and released) by private-boat anglers logging their trips on voluntary salmon trip reports (STRs) during the summer Chinook MSF in Marine Area 11, with estimates of legal-size and overall (legal and sublegal) mark rates. AD = marked (adipose-clipped), UM = unmarked. Variances associated with size/mark-status proportions and mark rates are provided in parentheses.

Data Source	Effort and Sample Size	Legal		Sublegal		Totals	Mark Rate	
		AD	UM	AD	UM		Overall	Legal
Private STR	22 1-trip STRs	40	8	5	0	53	0.85	0.83
Size/mark-status composition:		0.75	0.15	0.09	0.00			
Variance:		(0.0036)	(0.0025)	(0.0016)	(0.0000)			

Table 6.9 Dockside encounters (retained and released) by size-mark category during the summer Chinook salmon MSF in Marine Area 11. Retained fish were sampled for mark-status and length, released fish by size-mark status were reported by the angler.

Dockside Encounters				
Metric	Legal		Sublegal	
	LM	LU	SM	SU
Encounters	1,322	236	331	95
Bias-corrected size/mark composition	59.30%	11.90%	16.68%	12.12%
Variance	0.0002	0.0001	0.0002	0.0000

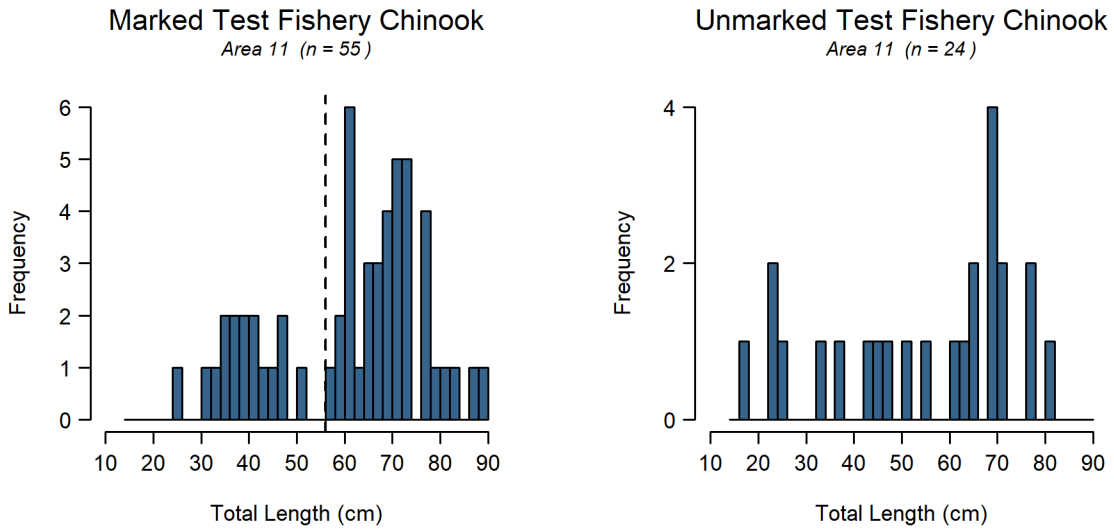


Figure 6.6 Length-frequency distributions of marked (left panel) and unmarked (right panel) Chinook salmon encountered by test fishers during the summer Chinook MSF in Marine Area 11. The vertical dashed line in the left panel corresponds to the legal-size limit (22 in or 56 cm).

Table 6.10 Composition of test fishery Chinook salmon encounters and associated mark-rate and size/mark-status proportion estimates for the summer Chinook salmon MSF in Marine Area 11 when the fishery was open to salmon retention (see **Table 6.1**). AD = marked (adipose-clipped), UM = unmarked.

Stat Week	Fishing Effort		Legal		Sublegal		Total
	Days	Hrs Fished	AD	UM	AD	UM	
22	2	8.54	2	0	0	0	2
23	5	20.71	5	3	1	2	11
27	3	12.87	5	0	0	0	5
28	9	39.23	10	4	4	3	21
32	8	50.01	11	1	6	4	22
33	11	44.49	6	5	5	2	18
Total	38	176	39	13	16	11	79
Size/mark-status composition:			0.49	0.16	0.20	0.14	
Variance:			(0.0032)	(0.0018)	(0.0021)	(0.0015)	
Legal size mark rate:			0.75				
Overall mark rate:			0.70				

Table 6.11 Summary of the total number of anglers intercepted during on-the-water surveys conducted for the summer Chinook MSF in Marine Area 11. Sites in bold represent those included in the dockside sample frame.

Site Name	Weekday Anglers	Season Total (unadjusted) Size Measure	Weekend Anglers	Season Total (unadjusted) Size Measure
Armeni Public Ramp	2	0.0044	9	0.0108
Boston Harbor Ramp/Marina	0	0.0000	2	0.0024
Breakwater Marina	12	0.0265	39	0.0469
Browns Point Ramp	1	0.0022	2	0.0024
Commencement Bay Marina	16	0.0354	29	0.0349
Dash Point Shore	3	0.0066	13	0.0156
Day Island Marina	0	0.0000	2	0.0024
Des Moines Marina	29	0.0642	52	0.0625
Dockton Ramp, Vashon Is	3	0.0066	2	0.0024
Edmonds Marina	0	0.0000	3	0.0036
Elliott Bay Marina	0	0.0000	3	0.0036
Evergreen Park Ramp	0	0.0000	2	0.0024
Fox Island Public Ramp	3	0.0066	2	0.0024
Gardiner Ramp	0	0.0000	5	0.0060
Gig Harbor Marina	19	0.0420	40	0.0481
Gig Harbor Ramp	28	0.0619	42	0.0505
Harbor Isl Marina	2	0.0044	2	0.0024
Hartstene Is. Ramp	1	0.0022	1	0.0012
Jensen Point	2	0.0044	0	0.0000
Longbranch Public Ramp	0	0.0000	2	0.0024
Manchester Public Ramp	1	0.0022	0	0.0000
Misery Point Ramp	0	0.0000	2	0.0024
Narrows Marina	32	0.0708	37	0.0445
Narrows Ramp	0	0.0000	4	0.0048
Olalla Public Ramp	1	0.0022	0	0.0000
Ole & Charlie's Marinas	4	0.0088	0	0.0000
Pleasant Harbor Boat Ramp	3	0.0066	0	0.0000
Point Defiance Beach	1	0.0022	2	0.0024
Point Defiance Boathouse	2	0.0044	7	0.0084
Point Defiance Boathouse Dock	61	0.1350	89	0.1070
Point Defiance Public Ramp	152	0.3363	273	0.3281
Port Orchard Public Ramp	1	0.0022	4	0.0048
Private	14	0.0310	39	0.0469
Quartermaster Marina	3	0.0066	0	0.0000
Redondo Ramp	28	0.0619	67	0.0805
Shilshole Marina	8	0.0177	18	0.0216
Steilacoom Public Ramp	0	0.0000	2	0.0024
Tacoma Yacht Club	2	0.0044	0	0.0000
Three Tree Point Launch	4	0.0088	1	0.0012
Tyee Marina/Ramp	9	0.0199	21	0.0252
Unknown	2	0.0044	8	0.0096
West Shore Marina	2	0.0044	0	0.0000
Wollochet Bay Public Ramp	1	0.0022	1	0.0012
Zittels Marina	0	0.0000	5	0.0060
Total Anglers	452	1	832	1

Table 6.12 Monthly sample rates (Total retained Chinook salmon sampled^{1/} / Estimated retained Chinook salmon) in the summer Chinook MSF in Marine Area 11. AD = marked (adipose-clipped), UM = unmarked.

Time period			Estimated Retained Chinook			Number of Chinook sampled			Sample Rate
Month	Stat Weeks	Dates	AD	UM	Total	AD	UM	Total	
June	23 - 23	1 Jun - 3 Jun	654	8	662	277	4	281	42.40%
July	27 - 28	1 Jul - 9 Jul	1,644	5	1,649	689	2	691	41.90%
August	32 - 33	3 Aug - 13 Aug	1,085	0	1,085	382	0	382	35.20%
Season Total			3,382	14	3,396	1,348	6	1,354	39.90%

^{1/} Number of retained Chinook salmon sampled includes all retained Chinook salmon inspected for CWT's, from all sites sampled during the summer Chinook MSF in Marine Area 11 (creel estimates and the fish sampled as part of baseline sampling).

Table 6.13 Summary of coded-wire tags recovered from Chinook salmon harvested during the summer Chinook MSF in Marine Area 11. The field "Number DITs" corresponds to the number of recovered CWTs that belonged to double-index tag groups.

Note: Not all tags have been processed before writing of this report.

Release Domain	Release Region	Release Site	Rearing Location	CWTs Recovered	No. DITs
WA	N Washington (1%)	Friday Cr 03.0017	Samish Hatchery	1 (1%)	1
	Hood Canal (12.5%)	Finch Cr 16.0222	Hoodsport Hatchery	6 (6.2%)	0
		Purdy Cr 16.0005	George Adams Hatchery	6 (6.2%)	6
	N Puget Sound (13.5%)	Stillaguamish R -Sf	Brenner Hatchery	1 (1%)	0
		Tulalip Cr 07.0001	Bernie Gobin Hatch	2 (2.1%)	0
		Wallace R 07.0940	Wallace R Hatchery	9 (9.4%)	0
		Whitehorse Springs	Whitehorse Pond	1 (1%)	0
	Skagit River (2.1%)	Cascade R 03.1411	Marblemount Hatchery	2 (2.1%)	2
	Mid Puget Sound (22.9%)	Big Soos Cr 09.0072	Soos Creek Hatchery	3 (3.1%)	1
		Green R 09.0001	Palmer Hatchery	1 (1%)	0
		Grovers Cr Hatchery	Grovers Cr Hatchery	9 (9.4%)	9
		Clarks Crk Hatchery	Clarks Crk Hatchery	1 (1%)	0
		Icy Cr 09.0125	Icy Cr Hatchery	8 (8.3%)	0
	S Puget Sound (47.9%)	Chambers Cr 12.0007	Garrison Hatchery	8 (8.3%)	0
		Clear Cr 11.0013C	Clear Creek Hatchery	7 (7.3%)	7
		Deschutes R 13.0028	Minter Cr Hatchery	1 (1%)	0
		Deschutes R 13.0028	Tumwater Falls Hatchery	3 (3.1%)	0
		Kalama Cr 11.0017	Kalama Cr Hatchery	6 (6.2%)	0
		Minter Cr 15.0048	Minter Cr Hatchery	14 (14.6%)	0
		Narrows Marina Pens	Narrows Marina Pens	7 (7.3%)	0
Total				96	26

Table 6.14 Summary of double-index tagged (DIT) Chinook salmon kept by anglers and estimated total mortality of unmarked DIT Chinook salmon due to hook-and-release impacts resulting from the summer Chinook MSF in Marine Area 11. AD = marked (adipose-clipped), UM = unmarked.

Hatchery	Brood Year	DITs Obs	Est.AD	var(Est.AD)	UM DIT Enc	Est.UM	var(Est.UM)	SE(Est.UM)
Clear Creek Hatchery	2018	1	2.5	3.92	2.6	0.3	0.041	0.2
Clear Creek Hatchery	2019	6	15.3	23.51	14.9	1.5	0.224	1.16
George Adams Hatchery	2019	6	15.3	23.51	17	1.7	0.291	1.32
Grovers Cr Hatchery	2019	9	20.3	31.35	23.4	4.6	4.247	3.6
Marblemount Hatchery	2019	2	5.1	7.84	5.1	0.5	0.08	0.4
Samish Hatchery	2019	1	2.5	3.92	2.6	0.3	0.04	0.2
Soos Creek Hatchery	2019	1	2.5	3.92	2.5	0.3	0.039	0.2
Total		26	63.5	97.97	68.1	9.1	4.962	7.08

Table 6.15 Fishery-total estimates of retained and released salmon (other than Chinook salmon) for the summer Chinook MSF in Marine Area 11. AD = marked (adipose-clipped), UM = unmarked, UK = unknown mark-status. Values may not add exactly due to rounding error.

Stat Week	Start Date	End Date	Retained Salmon					Released Salmon				
			Coho AD	Coho UM	Coho UK	Sockeye	Unknown	Coho AD	Coho UM	Coho UK	Cutthroat	Unknown
23	1-Jun	3-Jun	0	0	0	0	0	0	0	0	0	17
27	1-Jul	2-Jul	30	2	0	0	0	0	0	0	0	33
28	6-Jul	9-Jul	8	12	0	4	2	6	10	6	0	30
32	3-Aug	6-Aug	128	37	2	0	0	16	8	23	0	151
33	10-Aug	13-Aug	179	40	0	0	0	31	14	15	12	64
Season Total:			346	92	2	4	2	53	32	44	12	295
Variance:			1,781	74	2	3	1	88	43	95	37	1,092
Standard Error:			42	9	1	2	1	9	7	10	6	33
CV (%):			12	9	51	43	43	18	21	22	52	11
95% CI:			263 - 428	75 - 108	0 - 5	1 - 8	0 - 4	34 - 71	19 - 45	25 - 63	0 - 24	230 - 360

Table 6.16 Season-total estimates of Chinook salmon encounters by size/mark-status and total estimates of angler effort, summarized for all seasons to date of the Marine Area 11 summer Chinook MSF. Values may not add exactly due to rounding error.

Season Dates	Effort (Angler-trips)	Retained Chinook				Released Chinook				Total Encounters
		LM	LU	SM	SU	LM	LU	SM	SU	
Jun 1 - Sept 30, 2007	78,958	10,192	74	354	21	1,511	3,015	8,033	2,357	25,558
Jun 1 - Sept 30, 2008	65,728	7,277	18	100	5	1,087	1,999	1,969	248	12,703
Jun 1 - Sept 30, 2009	80,157	3,149	20	117	17	470	1,269	3,820	3,302	12,164
Jun 1 - Sept 30, 2010	54,594	3,883	64	27	0	580	1,105	900	405	6,965
Jun 1 - Sept 30, 2011	69,919	2,559	9	77	12	382	2,120	1,932	1,579	8,670
Jun 1 - Sept 30, 2012	56,065	4,894	57	72	14	731	2,665	2,649	1,157	12,240
Jun 1 - Sept 30, 2013	64,509	3,056	35	55	0	457	1,289	1,214	669	6,774
Jun 1 - Sept 30, 2014	39,426	2,912	20	11	0	435	1,585	2,142	861	7,966
Jun 1 - Sept 30, 2015	40,858	1,447	10	41	3	216	748	2,491	1599	6,556
Jun 24 - Aug 19, 2016	13,766	1,437	4	40	0	215	443	1,359	298	3,794
Jun 1 - Sep 30, 2017	35,899	3,276	20	265	36	489	1056	2,962	1685	9,789
Jun 1- Aug 25, 2018	32,041	5,476	26	164	7	818	2222	7,929	2690	19,333
Jul 1- Aug 25, 2019	22,935	2,574	12	32	0	385	1174	1,266	520	5,963
Jul 1 - Sep 30, 2020	40,866	2,002	25	100	0	299	677	1,851	234	5,189
Jun 16 - Aug 24, 2021	29,977	3,165	12	104	9	473	1136	2,576	948	8,424
Jun 1- Aug 13, 2022	12,697	3,329	11	53	3	497	1,264	1,516	1,076	7,750

7) Marine Area 12 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a summer Chinook MSF in Marine Area 12 from July 1 through September 30, 2022. WDFW's Puget Sound Sampling Unit (PSSU) implemented a "Baseline Sampling" program (see WDFW 2012a for details) consisting of dockside angler interviews with catch sampling along with efforts to distribute and collect voluntary salmon trip reports (STRs) from the angling public.

Unlike the other survey designs, Baseline Sampling does not provide a means for generating in-season or immediate post-season estimates of fishery total catch and effort. These estimates will be available approximately one year after the close of the fishery through the WDFW Catch Record Card (CRC) program. Once available, CRC-based catch estimates will be used to generate estimates of total Chinook salmon encounters and mortalities by size and mark-status using the methods provided in Conrad, R., T. Garber, and G. Rose. 2020. Draft memo to the co-managers "Assessment of Two Methods for Estimating the Composition of Chinook Encounters Early in the Fishing Season." While these descriptors of MSF impacts are not presented in this document, they will be available at a future time.

Table 7.1 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 2012a). In this section we present results from our monitoring activities during the Marine Area 12 summer Chinook MSF, including relative catch and effort patterns over the course of the season based on the assumption that baseline-sampling observations of these parameters are good indicators of associated fishery-wide trends.

Table 7.1 Sampling/estimation details on target parameters associated with the overall Marine Area 12 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 ¹ ; 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).
		Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook salmon	Boat trip	Season	Dockside encounter data will not be used for estimation of Chinook encounters for this fishery (Table 7.7).
Voluntary Salmon Trip Reports (STRs)	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 STR form	Fish encounter	Season	With adequate sample size, STR data; (LM = 64%; LU = 14%; SM = 17%; SU = 5%;) will be used to estimate encounters and mortalities at a later date.
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 using the CRC-based retained Chinook estimate, when it becomes available.
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 using the CRC-based retained Chinook estimate, when it becomes available. The temporal resolution of DIT impacts is constrained by the total number of tags recovered.

¹ The length and CWT composition of landed catch was assessed on a season-wide basis for impact estimation.

Table 7.2 Observations of fishing effort, Chinook salmon retained, and reported Chinook salmon releases, by week, for the summer Chinook salmon MSF in Marine Area 12 Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates. AD = marked (adipose-clipped), UM = unmarked, UK = unknown mark-status, UD = undetermined mark-status.

Stat Week	Start	End	Effort		Retained Fish			Released Fish		
			Boats	Anglers	Chin AD	Chin UM	Chin UK	Chin AD	Chin UM	Chin UK
27	1-Jul	2-Jul	11	24	0	0	0	0	0	0
28	7-Jul	10-Jul	6	12	3	0	0	0	0	0
29	15-Jul	15-Jul	4	9	0	0	0	1	0	0
30	20-Jul	24-Jul	31	55	7	0	0	3	0	1
31	28-Jul	31-Jul	14	28	5	0	0	5	1	5
32	1-Aug	5-Aug	14	28	10	0	0	3	1	5
33	8-Aug	14-Aug	26	49	36	0	3	1	2	4
34	15-Aug	21-Aug	48	84	53	0	1	3	8	4
35	22-Aug	28-Aug	75	120	57	0	0	19	27	0
36	29-Aug	4-Sep	88	178	19	1	0	18	12	3
37	7-Sep	11-Sep	118	177	5	1	1	2	2	1
38	12-Sep	18-Sep	24	45	0	0	0	5	0	6
39	19-Sep	25-Sep	62	79	0	0	0	0	1	0
40	26-Sep	30-Sep	29	41	0	0	0	0	1	1
Season Total			550	929	195	2	5	60	55	30

Table 7.3 Observations of fishing effort, salmon retained (other than Chinook), and reported salmon releases (other than Chinook), by week, for the summer Chinook salmon MSF in Marine Area 12. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates. AD = marked (adipose-clipped), UM = unmarked, UK = unknown mark-status, UD = undetermined mark-status.

Stat Week	Start	End	Effort		Retained Fish				Released Fish			
			Boats	Anglers	Coho AD	Coho UM	Coho UK	Chum	Coho AD	Coho UM	Coho UK	Chum
27	1-Jul	2-Jul	11	24	0	0	0	0	0	0	0	0
28	7-Jul	10-Jul	6	12	0	0	0	0	0	0	0	0
29	15-Jul	15-Jul	4	9	0	0	0	0	0	0	0	0
30	20-Jul	24-Jul	31	55	0	0	0	0	0	0	1	0
31	28-Jul	31-Jul	14	28	0	0	0	0	0	0	0	0
32	1-Aug	5-Aug	14	28	0	0	0	0	0	0	10	0
33	8-Aug	14-Aug	26	49	0	0	0	0	0	0	2	0
34	15-Aug	21-Aug	48	84	2	0	0	0	0	0	0	0
35	22-Aug	28-Aug	75	120	59	20	0	0	7	3	0	1
36	29-Aug	4-Sep	88	178	147	23	6	0	2	0	4	2
37	7-Sep	11-Sep	118	177	419	44	5	1	5	2	64	28
38	12-Sep	18-Sep	24	45	6	6	0	0	0	4	12	1
39	19-Sep	25-Sep	62	79	35	56	0	0	0	0	1	55
40	26-Sep	30-Sep	29	41	11	33	0		0	0	4	0
Season Total			550	929	679	182	11	1	14	9	98	87

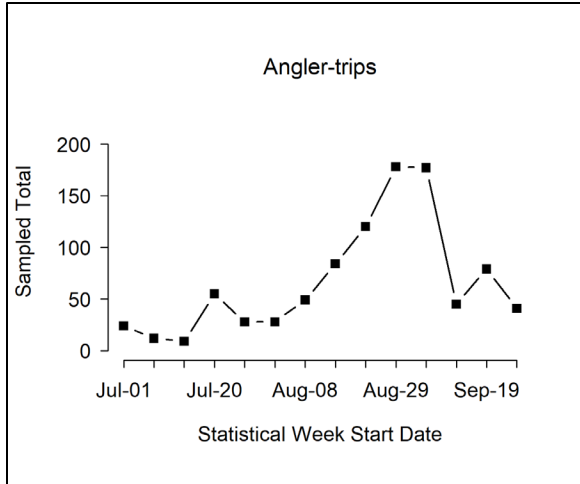


Figure 7.1 Temporal patterns in fishing effort during the summer Chinook MSF in Marine Area 12. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

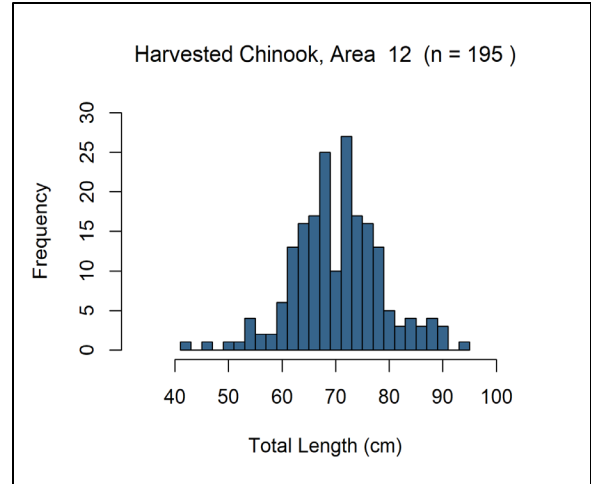


Figure 7.3 Length-frequency distribution of retained marked Chinook sampled in dockside angler interviews during the summer Chinook MSF in Marine Area 12. Note: displayed values are observations where lengths taken. Note: displayed values are observations where lengths taken.

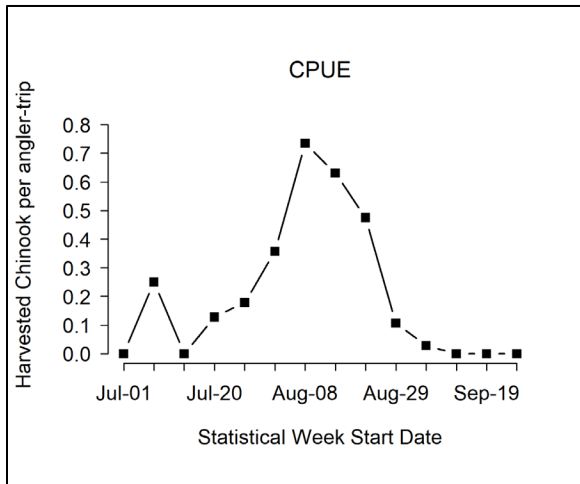


Figure 7.2 Temporal patterns in CPUE (landed Chinook per angler trip) during the summer Chinook MSF in Marine Area 12. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

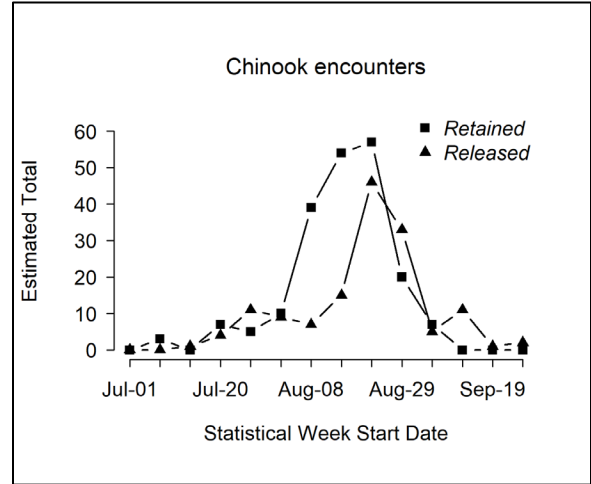


Figure 7.4 Temporal patterns in Chinook encounters (retained and released) during the summer Chinook MSF in Marine Area 12. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

Table 7.4 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the summer Chinook MSF in Marine Area 12.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	192	3	195
Unmarked	1	1	2
Total	193	4	197

Table 7.5 List of sites sampled with the number of sampling events (site-days) during the summer Chinook MSF in Marine Area 12.

Location Name	Number of Site Days Sampled Per Month			Total Site-Days	% of Total
	July	August	September		
Dewatto Creek Watch	0	1	0	1	0.44%
Hoodspoint Shore	4	1	3	8	3.54%
Misery Point Ramp	1	1	3	5	2.21%
Pleasant Harbor Boat Ramp	2	1	0	3	1.33%
Quilcene Bay Ramp	1	11	24	36	15.93%
Saltwater Park Ramp	15	20	25	60	26.55%
Skokomish Tide Flats	6	15	16	37	16.37%
Tahuya Ramp	0	0	1	1	0.44%
Triton Cove State Park	2	0	0	2	0.88%
Twanoh State Park	0	4	9	13	5.75%
Union Ramp	11	22	27	60	26.55%
Grand Total	42	76	108	226	100.00%

Table 7.6 Total Chinook salmon encountered (retained and released) by private-boat anglers logging their trips on voluntary salmon trip reports (STRs) during the summer Chinook MSF in Marine Area 12, with estimates of legal-size and overall (legal and sublegal) mark rates. AD = marked (adipose-clipped), UM = unmarked. Variances associated with size/mark-status proportions and mark rates are provided in parentheses.

Data Source	Effort and Sample Size	Legal		Sublegal		Totals	Mark Rate	
		AD	UM	AD	UM		Overall	Legal
Private STR	30 1-trip STRs	38	8	10	3	59	0.81	0.83
Size/mark-status composition:		0.64	0.14	0.17	0.05			
Variance:		(0.0040)	(0.0020)	(0.0024)	(0.0008)			

Table 7.7 Dockside encounters (retained and released) by size-mark category during the summer Chinook salmon MSF in Marine Area 12. Retained fish were sampled for mark-status and length, released fish by size-mark status were reported by the angler.

Dockside Encounters				
Metric	Legal		Sublegal	
	LM	LU	SM	SU
Encounters	196	33	58	24
Bias-corrected size/mark composition	56.09%	10.61%	18.65%	14.65%
Variance	0.0015	0.0006	0.0007	0.0005

Table 7.8 Summary of coded-wire tags recovered from Chinook salmon harvested during the summer Chinook MSF in Marine Area 12. The field “Number DITs” corresponds to the number of recovered CWTs that belonged to double-index tag groups. Note: Not all tags have been processed before writing of this report.

Release Domain	Release Region	Release Site	Rearing Location	CWTs Recovered	No. DITs
WA	Hood Canal (100%)	Finch Cr 16.0222	Hoodsport Hatchery	3 (33.3%)	0
		Purdy Cr 16.0005	George Adams Hatchery	6 (66.7%)	2
Total				9	2

8) Marine Area 13 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a summer Chinook MSF in Marine Area 13 from May 1 through September 30, 2022. WDFW’s Puget Sound Sampling Unit (PSSU) implemented a “Baseline Sampling” program (see WDFW 2012a for details) consisting of dockside angler interviews with catch sampling along with efforts to distribute and collect voluntary salmon trip reports (STRs) from the angling public whenever possible.

Unlike the other survey designs, Baseline Sampling does not provide a means for generating in-season or immediate post-season estimates of fishery total catch and effort. These estimates will be available approximately one year after the close of the fishery through the WDFW Catch Record Card (CRC) program. Once available, CRC-based catch estimates will be used to generate estimates of total Chinook salmon encounters and mortalities by size and mark-status using the methods provided in Conrad, R., T. Garber, and G. Rose. 2020. Draft memo to the co-managers “Assessment of Two Methods for Estimating the Composition of Chinook Encounters Early in the Fishing Season.” While these descriptors of MSF impacts are not presented in this document, they will be available at a future time.

Table 8.1 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 2012a). In this section we present results from our monitoring activities during the Marine Area 13 summer Chinook MSF, including relative catch and effort patterns over the course of the season based on the assumption that baseline-sampling observations of these parameters are good indicators of associated fishery-wide trends.

Table 8.1 Sampling/estimation details on target parameters associated with the overall Marine Area 13 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 ¹ ; 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).
		Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook salmon	Boat trip	Season	Dockside encounter data will not be used for estimation of Chinook encounters for this fishery (Table 8.6).
Voluntary Salmon Trip Reports (STRs)	Size (legal/sublegal) and mark-status composition (marked, unmarked) of encountered Chinook salmon	Encounter data for non-Chinook salmon species (e.g., Coho salmon) that the angler may record on the STR form	Fish encounter	Season	With adequate sample size, STR data; (LM = 51%; LU = 18%; SM = 29%; SU = 2%); will be used to estimate encounters and mortalities at a later date.
Overall Fishery Impacts Estimation	Total Chinook salmon encounters and mortalities by size/mark-status group	Ratios of encounters and mortalities per kept Chinook salmon	N/A	Season	Will be estimated at a later date using the CRC-based retained Chinook salmon estimate, when it becomes available.
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 using the CRC-based retained Chinook salmon estimate, when it becomes available. The temporal resolution of DIT impacts is constrained by the total number of tags recovered.

¹ The length and CWT composition of landed catch was assessed on a season-wide basis for impact estimation.

Table 8.2 Observations of fishing effort, salmon harvest, and reported salmon releases, by week, for the summer Chinook MSF in Marine Area 13. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates. AD = marked (adipose-clipped), UM = unmarked, UK = unknown mark status.

Stat Week	Start	End	Effort		Retained Fish			Released Fish		
			Boats	Anglers	Chin AD	Chin UM	Chin UK	Chin AD	Chin UM	Chin UK
18	1-May	1-May	21	47	4	0	0	0	0	0
19	2-May	8-May	9	16	4	0	0	2	1	0
20	14-May	15-May	2	2	0	0	0	0	0	0
21	17-May	22-May	28	52	6	0	0	0	1	0
22	25-May	28-May	34	55	32	0	0	2	4	0
23	1-Jun	5-Jun	100	193	91	0	0	22	19	4
24	6-Jun	12-Jun	99	184	24	0	0	9	8	2
25	14-Jun	19-Jun	43	74	22	0	0	4	0	0
26	21-Jun	26-Jun	44	67	19	0	1	6	6	0
27	27-Jun	3-Jul	22	32	5	0	0	1	0	1
28	5-Jul	10-Jul	20	37	10	0	0	2	0	0
29	13-Jul	17-Jul	72	143	8	0	1	11	10	1
30	19-Jul	24-Jul	95	173	15	0	1	8	5	0
31	26-Jul	31-Jul	39	59	3	0	0	3	0	0
32	3-Aug	7-Aug	30	51	11	0	0	0	0	2
33	8-Aug	14-Aug	38	73	6	0	0	8	2	0
34	15-Aug	21-Aug	170	303	74	0	1	13	5	2
35	22-Aug	28-Aug	91	157	32	0	0	8	4	1
36	30-Aug	4-Sep	42	75	19	0	0	1	4	0
37	7-Sep	11-Sep	20	36	7	0	0	4	1	1
38	12-Sep	18-Sep	47	86	3	0	0	4	1	0
39	19-Sep	25-Sep	7	12	0	0	0	2	0	1
40	26-Sep	30-Sep	7	12	0	0	0	2	0	0
Season Total			1,080	1,939	395	0	4	112	71	15

Table 8.3 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the summer Chinook MSF in Marine Area 13.

Stat Week	Start	End	Effort		Retained Fish			Released Fish		
			Boats	Anglers	Coho AD	Coho UM	Coho UK	Coho AD	Coho UM	Coho UK
18	1-May	1-May	21	47	0	0	0	0	0	0
19	2-May	8-May	9	16	0	0	0	0	0	0
20	14-May	15-May	2	2	0	0	0	0	0	0
21	17-May	22-May	28	52	0	0	0	0	0	0
22	25-May	28-May	34	55	0	0	0	0	0	0
23	1-Jun	5-Jun	100	193	0	0	0	0	0	0
24	6-Jun	12-Jun	99	184	0	0	0	0	0	0
25	14-Jun	19-Jun	43	74	0	0	0	0	0	0
26	21-Jun	26-Jun	44	67	0	0	0	0	0	0
27	27-Jun	3-Jul	22	32	0	0	0	2	0	0
28	5-Jul	10-Jul	20	37	1	0	0	0	0	0
29	13-Jul	17-Jul	72	143	0	0	0	3	0	3
30	19-Jul	24-Jul	95	173	0	0	0	6	1	0
31	26-Jul	31-Jul	39	59	2	0	0	1	0	0
32	3-Aug	7-Aug	30	51	0	0	0	2	0	0
33	8-Aug	14-Aug	38	73	0	0	0	0	2	0
34	15-Aug	21-Aug	170	303	7	0	0	4	5	6
35	22-Aug	28-Aug	91	157	1	0	0	0	8	7
36	30-Aug	4-Sep	42	75	0	0	0	4	4	2
37	7-Sep	11-Sep	20	36	2	1	0	0	3	0
38	12-Sep	18-Sep	47	86	2	0	0	2	1	0
39	19-Sep	25-Sep	7	12	0	0	0	0	0	0
40	26-Sep	30-Sep	7	12	1	0	0	0	0	0
Season Total			1,080	1,939	16	1	0	24	24	1818

Table 8.4 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the summer Chinook MSF in Marine Area 13.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	371	12	383
Unmarked	0	0	0
Total	371	12	383

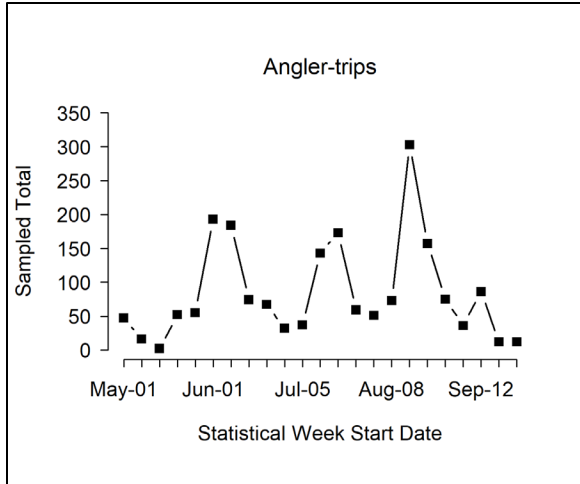


Figure 8.1 Temporal patterns in fishing effort during the summer Chinook salmon MSF in Marine Area 13. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

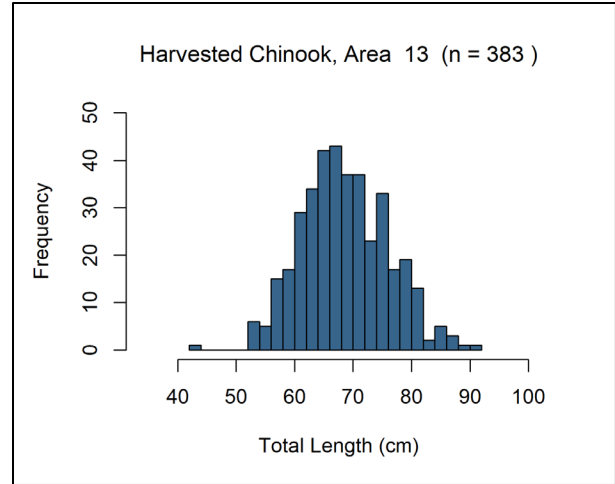


Figure 8.3 Length-frequency distribution of retained marked Chinook salmon sampled in dockside angler interviews during the summer Chinook MSF in Marine Area 13. Note: displayed values are observations where lengths taken.

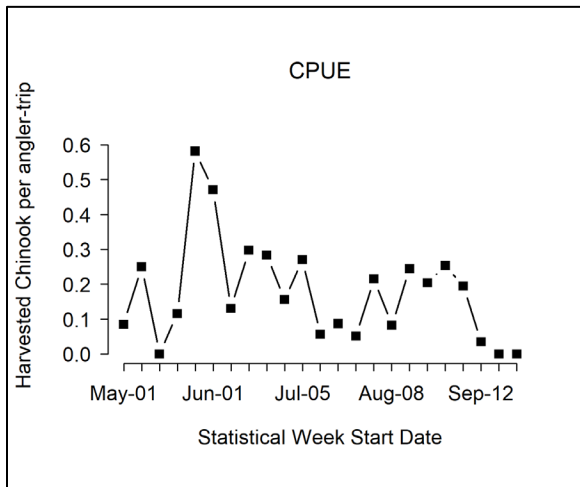


Figure 8.2 Temporal patterns in fishing effort during the summer Chinook salmon MSF in Marine Area 13. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

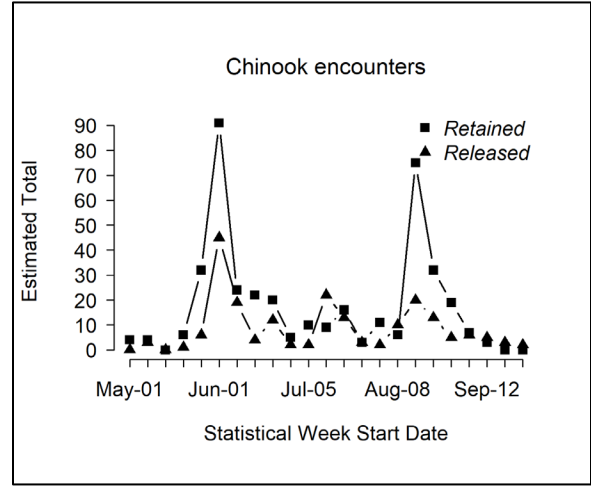


Figure 8.4 Temporal patterns in CPUE (landed Chinook salmon per angler trip) during the summer Chinook MSF in Marine Area 13. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

Table 8.5 Total Chinook salmon encountered (retained and released) by private-boat anglers logging their trips on voluntary salmon trip reports (STRs) during the summer Chinook MSF in Marine Area 13, with estimates of legal-size and overall (legal and sublegal) mark rates. AD = marked (adipose-clipped), UM = unmarked. Variances associated with size/mark-status proportions and mark rates are provided in parentheses.

Data Source	Effort and Sample Size	Legal		Sublegal		Totals	Mark Rate	
		AD	UM	AD	UM		Overall	Legal
Private STR	39 1-trip STRs	25	9	14	1	49	0.80	0.74
Size/mark-status composition:		0.51	0.18	0.29	0.02			
Variance:		(0.0052)	(0.0031)	(0.0043)	(0.0004)			

Table 8.6 Dockside encounters (retained and released) by size-mark category during the summer Chinook salmon MSF in Marine Area 13. Retained fish were sampled for mark-status and length, released fish by size-mark status were reported by the angler.

Dockside Encounters				
Metric	Legal		Sublegal	
	LM	LU	SM	SU
Encounters	388	36	107	35
Bias-corrected size/mark composition	61.01%	6.36%	18.90%	13.72%
Variance	0.0008	0.0002	0.0005	0.0002

Table 8.7 List of sites sampled with the number of sampling events (site-days) during the summer Chinook MSF in Marine Area 13.

Location Name	Number of Site Days Sampled Per Month					Total Site-Days	% of Total
	May	June	July	August	September		
Allyn Public Ramp	0	1	0	0	1	2	0.69%
Boston Harbor Ramp/Marina	6	10	11	17	13	57	19.79%
Concrete Dock	0	1	0	0	0	1	0.35%
East Bay Marina/Ramp	3	3	4	2	5	17	5.90%
Fox Island Public Ramp	0	1	0	0	0	1	0.35%
Grapeview Public Ramp	0	4	0	0	0	4	1.39%
Hartstene Is. Ramp	0	8	0	0	4	12	4.17%
Home Public Ramp	0	0	0	0	1	1	0.35%
Joemma Beach Ramp	0	0	0	0	1	1	0.35%
Landover	0	0	0	0	1	1	0.35%
Longbranch Public Ramp	0	0	0	0	1	1	0.35%
Luhr Beach Ramp	12	21	20	16	14	83	28.82%
Narrows Marina	5	13	10	4	8	40	13.89%
Narrows Park	0	0	1	0	0	1	0.35%
Solo Point	0	1	3	0	0	4	1.39%
Steilacoom Public Ramp	0	0	1	0	1	2	0.69%
Vaughn Public Ramp	0	2	0	0	1	3	1.04%
Zittels Marina	6	17	8	13	13	57	19.79%
Grand Total	32	82	58	52	64	288	100.00%

Table 8.8 Summary of coded-wire tags recovered from Chinook salmon harvested during the summer Chinook MSF in Marine Area 13. The field “Number DITs” corresponds to the number of recovered CWTs that belonged to double-index tag groups. Note: Not all tags have been processed before writing of this report.

Release Domain	Release Region	Release Site	Rearing Location	CWTs Recovered	No. DITs
WA	Hood Canal (6.7%)	Finch Cr 16.0222	Hoodsport Hatchery	1 (3.3%)	0
		Purdy Cr 16.0005	George Adams Hatchery	1 (3.3%)	1
	N Puget Sound (6.7%)	Wallace R 07.0940	Wallace R Hatchery	2 (6.7%)	1
	Mid Puget Sound (20%)	Grovers Cr Hatchery	Grovers Cr Hatchery	3 (10%)	3
		Big Soos Cr 09.0072	Soos Creek Hatchery	1 (3.3%)	1
		Green R 09.0001	Palmer Hatchery	1 (3.3%)	0
		Puyallup R 10.0021	Clarks Crk Hatchery	1 (3.3%)	0
	S Puget Sound (63.3%)	Deschutes R 13.0028	Tumwater Falls Hatchery	4 (13.3%)	0
		Minter Cr 15.0048	Minter Cr Hatchery	1 (3.3%)	0
		Narrows Marina Pens	Narrows Marina Pens	1 (3.3%)	0
		Chambers Cr 12.0007	Garrison Hatchery	4 (13.3%)	0
Clear Cr 11.0013C		Clear Creek Hatchery	9 (30%)	9	
Col. Riv.	Lower Columbia River (3.3%)	Big Cr (Lwr Col R)	Big Cr Hatchery	1 (3.3%)	0
Total				30	15

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APPENDICES

1) DOCKSIDE ENCOUNTERS

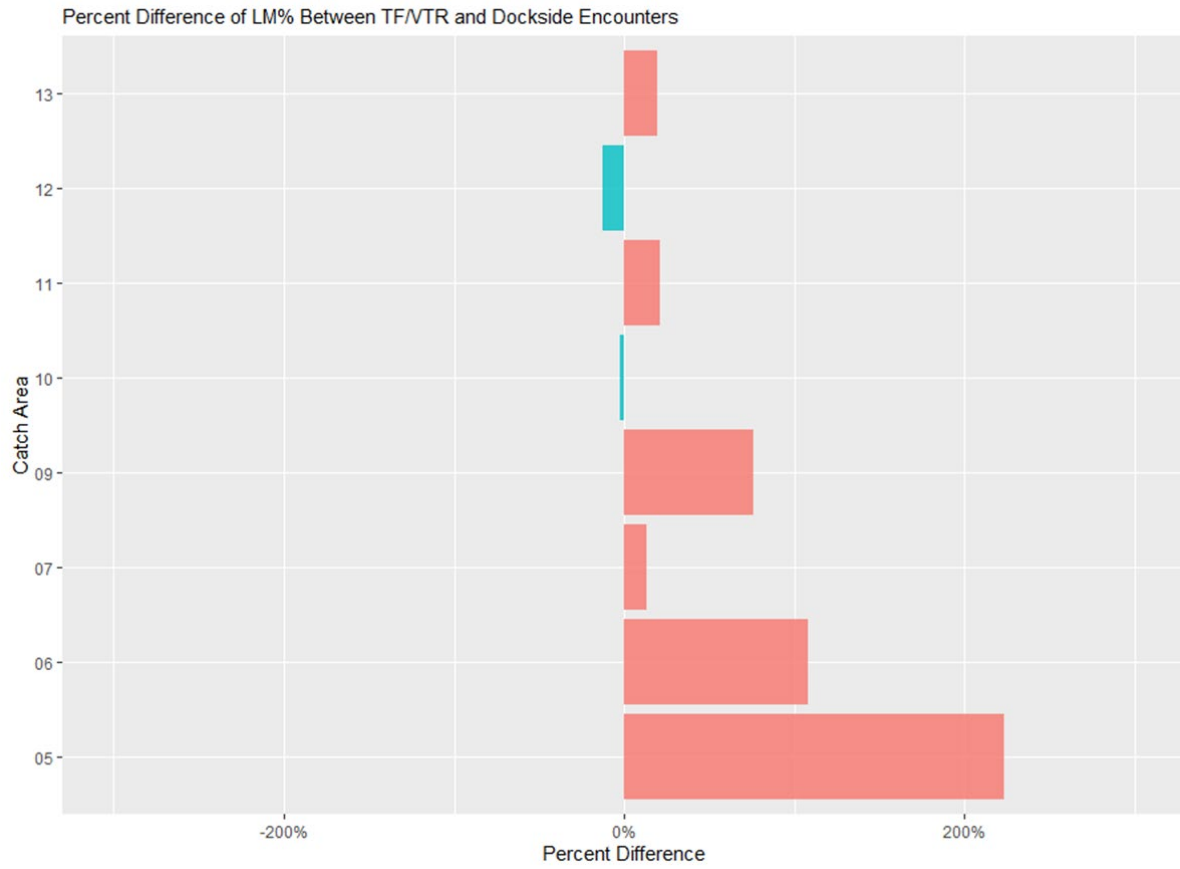
For the 2020-2021 management seasons WDFW implemented the Dockside Encounter² methodology for estimating encounters and mortalities in fisheries where sample sizes of test fishing and STRs (formally VTRs) were low, with the legal marked proportion coefficient of variation greater than or equal to 20%. Originally it was recommended that Dockside Encounters should be used in all situations when test fishing and/or STRs sample sizes were inadequate. For the 2022 management season, the Dockside Encounters methodology was amended, changing the threshold to when it was used from a $\geq 20\%$ coefficient of variation of the legal marked proportion to situations where no legal marked chinook had been encountered in either the test fishing or STR datasets for in-season management.²

For this report, test fishing and STR datasets were compared with the bias-corrected Dockside Encounter dataset. A short analysis showed a mean +55% difference in legal marked proportion between the bias-corrected Dockside Encounter and the test fishing or STR legal marked proportions, with more than +100% differences in Marine Area 5 and Marine Area 6 (see figure below). Because the legal marked proportion is a key parameter used for estimating encounters, releases, and mortalities, use of the Dockside Encounter dataset would produce considerably lower encounter estimates. WDFW chose not to use the Dockside Encounter methodology for any area in this report due to concerns regarding differences in the data sources and a greater preliminary confidence in test fishing and STR data than the Dockside Encounter dataset. All encounters, releases, and mortalities presented in this report are estimated with the more traditional test fishing or STR datasets.

WDFW previously recommended periodic review of the Dockside Encounter bias-correction methodology every four-to-five-years.³ However, given the differences identified in the data sources, WDFW suggests re-examination of the suggested bias-correction on shorter intervals, roughly every two to three years, and will be conducting a re-examination before the next reporting cycle.

² <https://wdfw.wa.gov/sites/default/files/publications/02346/wdfw02346.pdf>

³ <https://wdfw.wa.gov/sites/default/files/publications/02347/wdfw02347.pdf> (pg. 18)



2) SITE WEIGHTS

Appendix 1 Size measures by sample date, for sites sampled during dockside creel surveys for the summer Chinook MSF in Marine Area 5.

Sample Date	Week	Location #1	Site Size	Location #2	Site Size
7/1/2022	27	Van Riper's North	0.1492	Olsons Ramp (1159)	0.3378
7/2/2022	27	Olsons East Docks (1159)	0.2312	Olsons Ramp (1159)	0.3378
7/3/2022	27	Van Riper's South	0.1608	Olsons Ramp (1159)	0.3378
7/6/2022	28	Olsons West Docks (1159)	0.091	Olsons Ramp (1159)	0.1994
7/8/2022	28	Curley's Resort	0.0677	Olsons Ramp (1159)	0.3378
7/10/2022	28	Van Riper's North	0.1492	Olsons Ramp (1159)	0.3378
7/12/2022	29	Olsons West Docks (1159)	0.091	Olsons Ramp (1159)	0.1994
7/14/2022	29	Van Riper's North	0.1695	Olsons West Docks (1159)	0.091
7/16/2022	29	Van Riper's South	0.1608	Olsons Ramp (1159)	0.3378
7/18/2022	30	Olsons East Docks (1159)	0.3098	Olsons Ramp (1159)	0.1994
7/20/2022	30	Van Riper's South	0.1542	Olsons Ramp (1159)	0.1994
7/22/2022	30	Van Riper's North	0.1492	Olsons Ramp (1159)	0.3378
7/24/2022	30	Olsons West Docks (1159)	0.0533	Olsons Ramp (1159)	0.3378
7/25/2022	31	Olsons East Docks (1159)	0.3098	Olsons Ramp (1159)	0.1994
7/28/2022	31	Van Riper's North	0.1695	Olsons West Docks (1159)	0.091
7/29/2022	31	Van Riper's North	0.1492	Olsons Ramp (1159)	0.3378
7/30/2022	31	Van Riper's North	0.1492	Van Riper's South	0.1608
7/31/2022	31	Van Riper's South	0.1608	Olsons East Docks (1159)	0.2312
8/1/2022	32	Van Riper's North	0.1851	Olsons Ramp (1159)	0.2396
8/4/2022	32	Van Riper's North	0.1851	Olsons West Docks (1159)	0.1735
8/5/2022	32	Van Riper's North	0.1641	Van Riper's South	0.1828
8/6/2022	32	Van Riper's South	0.1828	Olsons Ramp (1159)	0.3003
8/7/2022	32	Van Riper's North	0.1641	Olsons East Docks (1159)	0.2101
8/9/2022	33	Van Riper's North	0.1851	Olsons Ramp (1159)	0.2396
8/11/2022	33	Van Riper's North	0.1851	Olsons Ramp (1159)	0.2396
8/12/2022	33	Olsons West Docks (1159)	0.089	Olsons Ramp (1159)	0.3003
8/13/2022	33	Van Riper's North	0.1641	Van Riper's South	0.1828
8/14/2022	33	Van Riper's South	0.1828	Olsons East Docks (1159)	0.2101

Appendix 2 Size measures by sample date, for sites sampled during dockside creel surveys for the summer Chinook MSF in Marine Area 9.

Sample Date	Week	Location #1	Site Size	Location #2	Site Size
7/14/2022	29	Norton Street (Everett) Ramp	0.3664	Port Townsend Boat Haven Ramp	0.2251
7/15/2022	29	Norton Street (Everett) Ramp	0.4383	Fort Casey Public Ramp (Keystone)	0.1607
7/16/2022	29	Norton Street (Everett) Ramp	0.4383	Port Townsend Boat Haven Ramp	0.1534
7/21/2022	30	Norton Street (Everett) Ramp	0.3664	Kingston Public Ramp	0.088
7/22/2022	30	Norton Street (Everett) Ramp	0.4383	Fort Casey Public Ramp (Keystone)	0.1607
7/23/2022	30	Norton Street (Everett) Ramp	0.4383	Port Townsend Boat Haven Ramp	0.1534
7/28/2022	31	Norton Street (Everett) Ramp	0.3664	Port Townsend Boat Haven Ramp	0.2251
7/29/2022	31	Norton Street (Everett) Ramp	0.3664	Fort Casey Public Ramp (Keystone)	0.1721
7/30/2022	31	Mukilteo State Park Public Ramp	0.1244	Port Townsend Boat Haven Ramp	0.1534
7/31/2022	31	Norton Street (Everett) Ramp	0.4383	Kingston Public Ramp	0.0687
8/1/2022	32	Norton Street (Everett) Ramp	0.4276	Fort Casey Public Ramp (Keystone)	0.1964
8/4/2022	32	Norton Street (Everett) Ramp	0.4276	Fort Casey Public Ramp (Keystone)	0.1964

Appendix 3 Size measures by sample date, for sites sampled during dockside creel surveys for the summer Chinook MSF in Marine Area 10.

Sample Date	Week	Location #1	Site Size	Location #2	Site Size
7/14/2022	29	Kingston Public Ramp	0.1899	Shilshole Public Ramp	0.5048
7/15/2022	29	Kingston Public Ramp	0.134	Shilshole Public Ramp	0.5082
7/16/2022	29	Kingston Public Ramp	0.134	Shilshole Public Ramp	0.5082
7/17/2022	29	Armeni Public Ramp	0.1941	Shilshole Public Ramp	0.5082
7/19/2022	30	Armeni Public Ramp	0.1804	Shilshole Public Ramp	0.5048
7/21/2022	30	Kingston Public Ramp	0.1899	Shilshole Public Ramp	0.5048
7/22/2022	30	Kingston Public Ramp	0.134	Shilshole Public Ramp	0.5082
7/23/2022	30	Armeni Public Ramp	0.1941	Shilshole Public Ramp	0.5082
7/24/2022	30	Armeni Public Ramp	0.1941	Shilshole Public Ramp	0.5082
7/25/2022	31	Kingston Public Ramp	0.1899	Shilshole Public Ramp	0.5048
7/28/2022	31	Armeni Public Ramp	0.1804	Shilshole Public Ramp	0.5048
7/29/2022	31	Armeni Public Ramp	0.1941	Shilshole Public Ramp	0.5082
7/30/2022	31	Armeni Public Ramp	0.1941	Shilshole Public Ramp	0.5082
7/31/2022	31	Kingston Public Ramp	0.134	Shilshole Public Ramp	0.5082
8/1/2022	32	Kingston Public Ramp	0.1899	Shilshole Public Ramp	0.4595
8/4/2022	32	Armeni Public Ramp	0.2273	Shilshole Public Ramp	0.4595
8/5/2022	32	Armeni Public Ramp	0.2287	Shilshole Public Ramp	0.4624
8/6/2022	32	Kingston Public Ramp	0.2136	Shilshole Public Ramp	0.4624
8/7/2022	32	Armeni Public Ramp	0.2287	Shilshole Public Ramp	0.4624
8/9/2022	33	Kingston Public Ramp	0.1899	Shilshole Public Ramp	0.4595
8/11/2022	33	Armeni Public Ramp	0.2273	Shilshole Public Ramp	0.4595
8/12/2022	33	Kingston Public Ramp	0.2136	Shilshole Public Ramp	0.4624
8/13/2022	33	Armeni Public Ramp	0.2287	Shilshole Public Ramp	0.4624
8/14/2022	33	Armeni Public Ramp	0.2287	Shilshole Public Ramp	0.4624
8/16/2022	34	Kingston Public Ramp	0.1899	Shilshole Public Ramp	0.4595
8/18/2022	34	Armeni Public Ramp	0.2273	Shilshole Public Ramp	0.4595
8/19/2022	34	Armeni Public Ramp	0.2287	Shilshole Public Ramp	0.4624
8/20/2022	34	Armeni Public Ramp	0.2287	Shilshole Public Ramp	0.4624
8/21/2022	34	Armeni Public Ramp	0.2287	Shilshole Public Ramp	0.4624
8/22/2022	35	Armeni Public Ramp	0.2273	Shilshole Public Ramp	0.4595
8/25/2022	35	Kingston Public Ramp	0.1899	Shilshole Public Ramp	0.4595
8/26/2022	35	Armeni Public Ramp	0.2287	Shilshole Public Ramp	0.4624
8/27/2022	35	Armeni Public Ramp	0.2287	Shilshole Public Ramp	0.4624
8/28/2022	35	Armeni Public Ramp	0.2287	Shilshole Public Ramp	0.4624
8/29/2022	36	Armeni Public Ramp	0.2273	Shilshole Public Ramp	0.4595

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Appendix 4 Size measures by sample date, for sites sampled during dockside creel surveys for the summer Chinook MSF in Marine Area 11.

Sample Date	Week	Location #1	Site Size	Location #2	Site Size
6/1/2022	23	Point Defiance Public Ramp	0.4435	Point Defiance Boathouse	0.258
6/2/2022	23	Point Defiance Public Ramp	0.4435	Point Defiance Boathouse	0.258
6/3/2022	23	Point Defiance Public Ramp	0.4338	Point Defiance Boathouse	0.2509
7/1/2022	27	Point Defiance Public Ramp	0.5092	Point Defiance Boathouse	0.203
7/2/2022	27	Point Defiance Public Ramp	0.5092	Point Defiance Boathouse	0.203
7/6/2022	28	Point Defiance Public Ramp	0.4536	Point Defiance Boathouse	0.2232
7/7/2022	28	Point Defiance Public Ramp	0.4536	Point Defiance Boathouse	0.2232
7/8/2022	28	Point Defiance Public Ramp	0.5092	Point Defiance Boathouse	0.203
7/9/2022	28	Point Defiance Public Ramp	0.5092	Redondo Ramp	0.1736
8/3/2022	32	Point Defiance Public Ramp	0.4149	Redondo Ramp	0.2486
8/4/2022	32	Point Defiance Public Ramp	0.4149	Point Defiance Boathouse	0.1691
8/5/2022	32	Point Defiance Public Ramp	0.4631	Redondo Ramp	0.2239
8/6/2022	32	Point Defiance Public Ramp	0.4631	Point Defiance Boathouse	0.184
8/10/2022	33	Point Defiance Public Ramp	0.4149	Redondo Ramp	0.2486
8/11/2022	33	Point Defiance Public Ramp	0.4149	Redondo Ramp	0.2486
8/12/2022	33	Point Defiance Public Ramp	0.4631	Point Defiance Boathouse	0.184
8/13/2022	33	Point Defiance Public Ramp	0.4631	Gig Harbor Ramp	0.0775

3) CWT RECOVERIES

Appendix 5 Coded-wire tag (CWT) recoveries from the Chinook MSF in Marine Area 5. Note: Not all tags have been processed before writing of this report.

Area	Recovery Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Release Agency	DIT Codes	FL(cm)	Label	Recovery Mark
5	2-Jul-22	211337	2018	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		58	CWT00049914	AD
5	2-Jul-22	637743	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW	637744	56	CWT00087065	AD
5	2-Jul-22	56278	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56387	57	CWT00087066	AD
5	2-Jul-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		67	CWT00087386	AD
5	2-Jul-22	637524	2018	Purdy Cr 16.0005	George Adams Hatchery	WDFW		72	CWT00087387	AD
5	3-Jul-22	637742	2019	Kendall Cr 01.0406	Kendall Cr Hatchery	WDFW		62	CWT00087067	AD
5	3-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	60	CWT00087068	AD
5	3-Jul-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		71	CWT00087365	AD
5	3-Jul-22	211323	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211322; 637442; 637443	55	CWT00087366	AD
5	3-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	52	CWT00087388	AD
5	3-Jul-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	53	CWT00087390	AD
5	3-Jul-22	62059	2019	Fort Baker Minor Pt	Mok R Fish Ins	CDFW		55	CWT00087391	AD
5	3-Jul-22	637742	2019	Kendall Cr 01.0406	Kendall Cr Hatchery	WDFW		75	CWT00096753	AD
5	4-Jul-22	91460	2019	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW			CWT00086907	AD
5	4-Jul-22	91295	2018	Youngs R & Bay	Cedc Net Pens	CCF		67	CWT00086908	AD
5	4-Jul-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		70	CWT00087069	AD
5	4-Jul-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		55	CWT00087070	AD
5	4-Jul-22	185992	2018	R-Nicola R	H-Spius Creek H	CDFO		70	CWT00087860	AD
5	4-Jul-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		51	CWT00087861	AD
5	4-Jul-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		52	CWT00087862	AD
5	4-Jul-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		51	CWT00087863	AD
5	4-Jul-22	91460	2019	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		71	CWT00087864	AD
5	4-Jul-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		60	CWT00087865	AD
5	4-Jul-22	637603	2018	Lyons Ferry Rel.Site	Lyons Ferry Hatchery	WDFW		55	CWT00096741	AD
5	4-Jul-22	211391	2019	Whitehorse Springs	Whitehorse Pond	STIL		65	CWT00096742	AD
5	4-Jul-22	637742	2019	Kendall Cr 01.0406	Kendall Cr Hatchery	WDFW		63	CWT00096750	AD
5	7-Jul-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		59	CWT00086909	AD
5	7-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	59	CWT00087368	AD
5	7-Jul-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		59	CWT00087867	AD
5	7-Jul-22	211488	2020	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	637780; 637781;	35	CWT00087868	AD

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							211489			
5	9-Jul-22	637241	2017	Columbia Near Wells	Wells Hatchery	DCPUD		81	CWT00087375	AD
5	9-Jul-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	56	CWT00087376	AD
5	9-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		54	CWT00087384	AD
5	9-Jul-22	91460	2019	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		51	CWT00087592	AD
5	11-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	53	CWT00087869	AD
5	11-Jul-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		58	CWT00087870	AD
5	15-Jul-22	637922	2020	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637923	36	CWT00087371	AD
5	17-Jul-22	91458	2019	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		55	CWT00049913	AD
5	17-Jul-22	56390	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56389	57	CWT00086912	AD
5	17-Jul-22	211323	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211322; 637442; 637443	72	CWT00087096	AD
5	17-Jul-22	637743	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW	637744	41	CWT00087378	AD
5	17-Jul-22	637758	2019	Lyons Ferry Rel.Site	Lyons Ferry Hatchery	WDFW		52	CWT00087379	AD
5	17-Jul-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		59	CWT00096767	AD
5	17-Jul-22	637488	2018	Klickitat Hatchery (Ykfp)	Klickitat Hatchery (Ykfp)	YAKA		75	CWT00096768	AD
5	18-Jul-22	56278	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56387	70	OSP36908	AD
5	18-Jul-22	62054	2019	Mare Island Net Pen	Nimbus Fish Hatchery	CDFW		77	OSP36909	AD
5	18-Jul-22	185895	2018	R-Chilliwack R	H-Chilliwack River H	CDFO		69	OSP37975	AD
5	19-Jul-22	637627	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		69	CWT00086917	AD
5	19-Jul-22	637449	2018	Green R 26.0323	North Toutle Hatchery	WDFW		60	CWT00086920	AD
5	19-Jul-22	211385	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		58	CWT00087382	AD
5	21-Jul-22	200159	2019	Chief Joseph Hatchery	Chief Joseph Hatchery	CCT		54	CWT00046102	AD
5	21-Jul-22	211317	2018	Co Line Pd2 03.1853B	Marblemount Hatchery	WDFW		86	CWT00046103	AD
5	21-Jul-22	185895	2018	R-Chilliwack R	H-Chilliwack River H	CDFO		74	CWT00046104	AD
5	21-Jul-22	185187	2018	R-Harrison R	H-Chehalis River H	CDFO		79	CWT00092124	AD
5	21-Jul-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		66	CWT00096770	AD
5	23-Jul-22	637593	2018	Wenatchee R 45.0030	Dryden Pond	WDFW		61	CWT00092101	AD
5	24-Jul-22	62052	2019	American R At Sunrise	Nimbus Fish Hatchery	CDFW		55	OSP37989	AD
5	25-Jul-22	637633	2019	Cascade R 03.1411	Marblemount Hatchery	WDFW	637632; 637635; 637634	52	CWT00046105	AD
5	25-Jul-22	91286	2018	Hammer Crk:Salmon R	Irrigon Hatchery	IDFG		75	CWT00046148	AD
5	25-Jul-22	56278	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56387	58	CWT00086926	AD
5	26-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	52	CWT00046147	AD
5	26-Jul-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		58	CWT00087090	AD

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5	29-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	54	CWT00046565	AD
5	30-Jul-22	637624	2019	Naselle R 24.0543	Naselle Hatchery	WDFW		58	CWT00086930	AD
5	30-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	58	CWT00096623	AD
5	31-Jul-22	56390	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56389	76	CWT00046107	AD
5	31-Jul-22	211393	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		78	CWT00092103	AD
5	1-Aug-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		71	CWT00046123	AD
5	1-Aug-22	91458	2019	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		51	CWT00086932	AD
5	1-Aug-22	637751	2019	Elwha R 18.0272	Elwha Hatchery	WDFW		60	CWT00096624	AD
5	2-Aug-22	56390	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56389	70	CWT00046125	AD
5	5-Aug-22	211318	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		61	CWT00046108	AD
5	5-Aug-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		59	CWT00046109	AD
5	5-Aug-22	637229	2017	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		63	CWT00046568	AD
5	5-Aug-22	56278	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56387	55	CWT00096627	AD
5	6-Aug-22	211385	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		66	CWT00046569	AD
5	7-Aug-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		65	CWT00046571	AD
5	8-Aug-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		62	CWT00046126	AD
5	8-Aug-22	186547	2020	R-Burrard In	H-Sandy Cove Seapen	CDFO		56	CWT00046144	AD
5	8-Aug-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		51	CWT00046572	AD
5	8-Aug-22	185780	2018	R-Burrard In	H-Sandy Cove Seapen	CDFO		67	CWT00086935	AD
5	8-Aug-22	90714	2019	Klaskanine R N Fk	Klaskanine Hatchery	ODFW		60	CWT00092104	AD
5	12-Aug-22	211394	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		58	CWT00046127	AD
5	12-Aug-22	211385	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		61	CWT00086936	AD
5	12-Aug-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		67	CWT00086937	AD
5	12-Aug-22	211318	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		60	CWT00096630	AD
5	13-Aug-22	637626	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		47	CWT00086938	AD
5	13-Aug-22	637361	2017	Col R @ Priest Rapids	Priest Rapids Hatchery	WDFW		75	CWT00092320	AD
5	13-Aug-22	211385	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		56	CWT00092321	AD
5	13-Aug-22	211490	2020	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637811; 211491; 637628	39	CWT00096631	AD
5	13-Aug-22	211385	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		63	CWT00096632	AD
5	13-Aug-22	211385	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		64	CWT00096809	AD
5	13-Aug-22	211318	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		62	CWT00096923	AD
5	14-Aug-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		65	CWT00046129	AD
5	14-Aug-22	211318	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		58	CWT00086939	AD
5	14-Aug-22	91403	2018	Umatilla R	Bonneville Hatchery	ODFW		62	CWT00092201	AD
5	14-Aug-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		52	CWT00092203	AD

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5	14-Aug-22	91516	2020	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		52	CWT00096633	AD
5	14-Aug-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		55	CWT00096634	AD
5	14-Aug-22	56390	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56389	65	CWT00096935	AD
5	15-Aug-22	211385	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		83	CWT00046132	AD
5	15-Aug-22	211385	2019	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		53	CWT00049098	AD
5	15-Aug-22	637627	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		58	CWT00092239	AD

Appendix 6 Coded-wire tag (CWT) recoveries from the Chinook MSF in Marine Area 6. Note: Not all tags have been processed before writing of this report.

Area	Recovery Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Release Agency	DIT Codes	FL(cm)	Label	Recovery Mark
6	2-Jul-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		70	CWT00049090	AD
6	2-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		63	CWT00052193	AD
6	2-Jul-22	211409	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA	211410	57	CWT00052194	AD
6	2-Jul-22	637426	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW	637427	60	CWT00052196	AD
6	2-Jul-22	637369	2018	Deschutes R 13.0028	Minter Cr Hatchery	WDFW		72	CWT00086625	AD
6	3-Jul-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA			CWT00047161	AD
6	3-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	71	CWT00047162	AD
6	3-Jul-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		73	CWT00047163	AD
6	3-Jul-22	211317	2018	Co Line Pd2 03.1853B	Marblemount Hatchery	WDFW		78	CWT00047575	AD
6	3-Jul-22	637625	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		61	CWT00049091	AD
6	3-Jul-22	637371	2018	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		73	CWT00052198	AD
6	3-Jul-22	91515	2020	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		59	CWT00052199	AD
6	3-Jul-22	211322	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211323; 637442; 637443	63	CWT00052200	AD
6	3-Jul-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		74	CWT00086624	AD
6	3-Jul-22	637524	2018	Purdy Cr 16.0005	George Adams Hatchery	WDFW		62	CWT00087004	AD
6	3-Jul-22	211322	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211323; 637442; 637443	59	CWT00087005	AD
6	3-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	74	CWT00096801	AD
6	4-Jul-22	637352	2018	Friday Cr 03.0017	Samish Hatchery	WDFW		67	CWT00047165	AD
6	4-Jul-22	637352	2018	Friday Cr 03.0017	Samish Hatchery	WDFW		64	CWT00086601	AD
6	4-Jul-22	184893	2018	R-Robertson Cr	H-Robertson Creek H	CDFO		65	CWT00086602	AD
6	4-Jul-22	211391	2019	Whitehorse Springs	Whitehorse Pond	STIL		63	CWT00086645	AD
6	4-Jul-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		67	CWT00086646	AD
6	4-Jul-22	91458	2019	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		75	CWT00087008	AD
6	4-Jul-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	65	CWT00087009	AD
6	4-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	61	CWT00096803	AD
6	4-Jul-22	184091	2018	R-Robertson Cr	H-Robertson Creek H	CDFO		68	CWT00096821	AD
6	4-Jul-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		76	CWT00096822	AD
6	7-Jul-22	637350	2018	Wallace R 07.0940	Wallace R Hatchery	WDFW		74	CWT00043682	AD
6	7-Jul-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		65	CWT00043700	AD

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6	7-Jul-22	182776	2018	R-Robertson Cr	H-Robertson Creek H	CDFO			CWT00047195	AD
6	7-Jul-22	220195	2019	Captain Johns Pd	Lyons Ferry Hatchery	NPT		53	CWT00049983	AD
6	7-Jul-22	93629	2019	Klaskanine R N Fk	Klaskanine Hatchery	ODFW		58	CWT00086663	AD
6	7-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		59	CWT00086664	AD
6	7-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		78	CWT00086688	AD
6	7-Jul-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		59	CWT00086689	AD
6	7-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	64	CWT00086735	AD
6	7-Jul-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		66	CWT00087010	AD
6	7-Jul-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		69	CWT00096818	AD
6	7-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		70	CWT00096819	AD
6	9-Jul-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		53	CWT00048694	AD
6	9-Jul-22	186572	2019	R-Shuswap R Low	H-Shuswap River, Middle,	CDFO		62	CWT00050067	AD
6	9-Jul-22	91458	2019	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		54	CWT00086603	AD
6	9-Jul-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		61	CWT00086604	AD
6	9-Jul-22	637417	2020	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		34	CWT00086665	AD
6	9-Jul-22	637526	2018	Elwha R 18.0272	Elwha Hatchery	WDFW		78	CWT00088062	AD
6	9-Jul-22	211321	2018	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	637438; 211320; 637437	63	CWT00092500	AD
6	9-Jul-22	637627	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		61	CWT00096816	AD
6	9-Jul-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	53	CWT00096817	AD
6	10-Jul-22	637373	2018	Kendall Cr 01.0406	Kendall Cr Hatchery	WDFW		74	CWT00043152	UNK
6	10-Jul-22	182059	2018	R-Shuswap R Low	H-Shuswap River, Middle,	CDFO		79	CWT00047194	AD
6	10-Jul-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	57	CWT00049619	AD
6	10-Jul-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		81	CWT00086605	AD
6	10-Jul-22	211330	2018	Stillaguamish R -Sf	Brenner Hatchery	STIL		72	CWT00086621	AD
6	10-Jul-22	211322	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211323; 637442; 637443	78	CWT00086622	AD
6	10-Jul-22	637371	2018	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		71	CWT00086623	AD
6	10-Jul-22	637627	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		67	CWT00088022	AD
6	10-Jul-22	211323	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211322; 637442; 637443	73	CWT00088024	AD

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6	10-Jul-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	69	CWT00088025	AD
6	10-Jul-22	211386	2019	Clarks Cr 10.0027	Clarks Crk Hatchery	PUYA		60	CWT00088060	AD
6	10-Jul-22	211387	2019	Co Line Slu 03.1853A	Marblemount Hatchery	WDFW		63	CWT00088061	AD
6	11-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		62	CWT00045448	AD
6	11-Jul-22	211315	2018	Skookum Cr 01.0273	Skookum Cr Hatchery	LUMMI			CWT00047193	AD
6	11-Jul-22	637352	2018	Friday Cr 03.0017	Samish Hatchery	WDFW		70	CWT00086620	AD
6	11-Jul-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		66	CWT00087006	AD
6	11-Jul-22	211317	2018	Co Line Pd2 03.1853B	Marblemount Hatchery	WDFW		79	CWT00088026	AD
6	11-Jul-22	211323	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211322; 637442; 637443	61	CWT00088027	AD
6	11-Jul-22	637525	2018	Purdy Cr 16.0005	George Adams Hatchery	WDFW		71	CWT00088055	AD
6	11-Jul-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	60	CWT00088057	AD
6	11-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		85	CWT00096814	AD
6	11-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW			CWT00097005	AD
6	11-Jul-22	637603	2018	Lyons Ferry Rel.Site	Lyons Ferry Hatchery	WDFW		66	CWT00097007	AD
6	14-Jul-22	182776	2018	R-Robertson Cr	H-Robertson Creek H	CDFO		63	CWT00088029	AD
6	14-Jul-22	637337	2018	Wallace R 07.0940	Wallace R Hatchery	WDFW		67	CWT00097009	AD
6	14-Jul-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		53	CWT00097099	AD
6	15-Jul-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		66	CWT00045461	AD
6	15-Jul-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		66	CWT00046601	AD
6	15-Jul-22	637524	2018	Purdy Cr 16.0005	George Adams Hatchery	WDFW		90	CWT00046602	AD
6	15-Jul-22	220199	2019	Snake R @Pittsburg L	Lyons Ferry Hatchery	NPT		52	CWT00049092	AD
6	15-Jul-22	211322	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211323; 637442; 637443	72	CWT00049984	AD
6	15-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	NA	CWT00086619	AD
6	16-Jul-22	637426	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW	637427	58	CWT00046603	AD
6	16-Jul-22	637611	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		63	CWT00046653	AD
6	16-Jul-22	637626	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		65	CWT00046654	AD
6	16-Jul-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		57	CWT00046655	AD
6	16-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		62	CWT00049093	AD
6	16-Jul-22	637627	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		73	CWT00049986	AD
6	16-Jul-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	62	CWT00097100	AD
6	17-Jul-22	637377	2017	Elwha R 18.0272	Elwha Hatchery	WDFW		80	CWT00049818	AD
6	17-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	56	CWT00049985	AD

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6	17-Jul-22	56390	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56389	69	CWT00049987	AD
6	17-Jul-22	181680	2018	R-Shuswap R Low	H-Shuswap River, Middle,	CDFO		85	CWT00049988	AD
6	17-Jul-22	637371	2018	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		69	CWT00049989	AD
6	17-Jul-22	56390	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56389	65	CWT00049991	AD
6	17-Jul-22	637371	2018	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		78	CWT00096810	AD
6	17-Jul-22	637369	2018	Deschutes R 13.0028	Minter Cr Hatchery	WDFW		69	CWT00096811	AD
6	17-Jul-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		50	CWT00097097	AD
6	18-Jul-22	637526	2018	Elwha R 18.0272	Elwha Hatchery	WDFW		78	CWT00049094	AD
6	18-Jul-22	211323	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211322; 637442; 637443	68	CWT00049817	AD
6	18-Jul-22	637742	2019	Kendall Cr 01.0406	Kendall Cr Hatchery	WDFW		62	CWT00086606	AD
6	18-Jul-22	637580	2018	Chelan R 47.0052	Chelan Falls Hatchery	WDFW		72	CWT00086607	AD
6	18-Jul-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		62	CWT00088100	AD
6	18-Jul-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		54	CWT00096932	AD
6	20-Jul-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		60	CWT00049994	AD
6	20-Jul-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		75	CWT00049996	AD
6	20-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		54	CWT00086617	AD
6	20-Jul-22	637751	2019	Elwha R 18.0272	Elwha Hatchery	WDFW		71	CWT00088050	AD
6	20-Jul-22	211343	2018	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		72	CWT00088051	AD
6	20-Jul-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		84	CWT00096927	AD
6	20-Jul-22	211320	2018	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	637438; 211321; 637437	67	CWT00096930	AD
6	20-Jul-22	637377	2017	Elwha R 18.0272	Elwha Hatchery	WDFW		76	CWT00097096	AD
6	22-Jul-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		78	CWT00047167	AD
6	22-Jul-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		75	CWT00049095	AD
6	22-Jul-22	637626	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		53	CWT00049997	AD
6	22-Jul-22	637788	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		53	CWT00049998	AD
6	22-Jul-22	637524	2018	Purdy Cr 16.0005	George Adams Hatchery	WDFW		81	CWT00049999	AD
6	22-Jul-22	637627	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		63	CWT00050000	AD
6	22-Jul-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		55	CWT00050886	AD
6	23-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	67	CWT00046507	AD
6	23-Jul-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		72	CWT00047196	AD
6	23-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		72	CWT00086616	AD
6	23-Jul-22	91458	2019	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		64	CWT00097011	AD
6	23-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		80	CWT00097095	AD
6	24-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	67	CWT00048605	AD

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6	24-Jul-22	637751	2019	Elwha R 18.0272	Elwha Hatchery	WDFW		64	CWT00086608	AD
6	24-Jul-22	637743	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW	637744	65	CWT00087007	AD
6	24-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		63	CWT00097098	AD
6	28-Jul-22	211317	2018	Co Line Pd2 03.1853B	Marblemount Hatchery	WDFW		92	CWT00086609	AD
6	28-Jul-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		66	CWT00086613	AD
6	28-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		65	CWT00096925	AD
6	28-Jul-22	637246	2018	Finch Cr 16.0222	Hoodspport Hatchery	WDFW		71	CWT00097093	AD
6	29-Jul-22	56278	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56387	69	CWT00045455	AD
6	29-Jul-22	637352	2018	Friday Cr 03.0017	Samish Hatchery	WDFW		67	CWT00048699	AD
6	29-Jul-22	637788	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		59	CWT00049096	AD
6	29-Jul-22	637246	2018	Finch Cr 16.0222	Hoodspport Hatchery	WDFW		71	CWT00049097	AD
6	29-Jul-22	56390	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56389	68	CWT00085414	AD
6	30-Jul-22	211317	2018	Co Line Pd2 03.1853B	Marblemount Hatchery	WDFW		70	CWT00045158	AD
6	30-Jul-22	637626	2019	Finch Cr 16.0222	Hoodspport Hatchery	WDFW		67	CWT00045447	AD
6	30-Jul-22	637686	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		66	CWT00047168	AD
6	30-Jul-22	211317	2018	Co Line Pd2 03.1853B	Marblemount Hatchery	WDFW		89	CWT00047169	AD
6	30-Jul-22	637246	2018	Finch Cr 16.0222	Hoodspport Hatchery	WDFW			CWT00047170	AD
6	30-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	NA	CWT00097013	AD
6	30-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		69	CWT00043153	AD
6	30-Jul-22	637371	2018	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		73	CWT00046502	AD
6	30-Jul-22	637246	2018	Finch Cr 16.0222	Hoodspport Hatchery	WDFW		67	CWT00052583	AD
6	30-Jul-22	637524	2018	Purdy Cr 16.0005	George Adams Hatchery	WDFW		66	CWT00085412	AD
6	30-Jul-22	56390	2019	Spring Cr 29.0159	Spring Cr Nfh	USFWS	56389	79	CWT00085413	AD
6	30-Jul-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		68	CWT00097008	AD
6	30-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	72	CWT00097012	AD
6	30-Jul-22	211323	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211322; 637442; 637443	78	CWT00097014	AD
6	30-Jul-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		57	CWT00097015	AD
6	30-Jul-22	91460	2019	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		52	CWT00097092	AD

Appendix 7 Coded-wire tag (CWT) recoveries from the Chinook MSF in Marine Area 7. Note: Not all tags have been processed before writing of this report.

Area	Recovery Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Release Agency	DIT Codes	FL(cm)	Label	Recovery Mark
7	15-Jul-22	186324	2018	R-Cowichan R	H-Cowichan River H	CDFO		74	CWT00044327	AD
7	15-Jul-22	211323	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211322; 637442; 637443	77	CWT00044328	AD
7	15-Jul-22	185895	2018	R-Chilliwack R	H-Chilliwack River H	CDFO		70	CWT00044336	AD
7	16-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		69	CWT00040776	AD
7	16-Jul-22	637446	2018	Cascade R 03.1411	Marblemount Hatchery	WDFW		67	CWT00044337	AD
7	16-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		69	CWT00044379	AD
7	17-Jul-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	66	CWT00041036	AD
7	17-Jul-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	56	CWT00041053	AD
7	17-Jul-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		53	CWT00043668	AD
7	17-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	74	CWT00044300	AD
7	17-Jul-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		77	CWT00044325	AD
7	17-Jul-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	68	CWT00044338	AD
7	17-Jul-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	64	CWT00047598	AD
7	22-Jul-22	211355	2019	Mcallister Springs Hatch	Mcallister Springs Hatch	NISQ		66	CWT00041037	AD
7	22-Jul-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		70	CWT00044382	AD
7	23-Jul-22	637415	2018	Methow R 48.0007	Na	DCPUD		70	CWT00041051	AD
7	24-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		67	CWT00041038	AD
7	24-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	66	CWT00043647	AD
7	24-Jul-22	637352	2018	Friday Cr 03.0017	Samish Hatchery	WDFW		63	CWT00043648	AD
7	24-Jul-22	637371	2018	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		66	CWT00044340	AD
7	24-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		73	CWT00044384	AD
7	29-Jul-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		73	CWT00044383	AD
7	29-Jul-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		71	CWT00044385	AD

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7	30-Jul-22	637627	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		65	CWT00041050	AD
7	30-Jul-22	637581	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		57	CWT00043673	AD
7	30-Jul-22	637429	2019	Green R 09.0001	Palmer Hatchery	WDFW		80	CWT00044353	AD
7	30-Jul-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	70	CWT00044386	AD

Appendix 8 Coded-wire tag (CWT) recoveries from the Chinook MSF in Marine Area 7. Note: Not all tags have been processed before writing of this report.

Area	Recovery Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Release Agency	DIT Codes	FL(cm)	Label	Recovery Mark
9	15-Jul-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		54	CWT00038400	AD
9	15-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		64	CWT00038678	AD
9	15-Jul-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		76	CWT00038679	AD
9	15-Jul-22	211393	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		60	CWT00038680	AD
9	15-Jul-22	637625	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		61	CWT00039204	AD
9	15-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	54	CWT00039205	AD
9	15-Jul-22	637429	2019	Green R 09.0001	Palmer Hatchery	WDFW		59	CWT00039209	AD
9	15-Jul-22	211409	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA	211410	55	CWT00039210	AD
9	15-Jul-22	637371	2018	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		67	CWT00039980	AD
9	15-Jul-22	637922	2020	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637923	54	CWT00041176	AD
9	15-Jul-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	56	CWT00042282	AD
9	15-Jul-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	62	CWT00042297	AD
9	15-Jul-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	75	CWT00086419	AD
9	15-Jul-22	211393	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		69	CWT00086420	AD
9	15-Jul-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		65	CWT00088031	AD
9	16-Jul-22	211351	2019	Puyallup R 10.0021	Clarks Crk Hatchery	PUYA		49	CWT00039211	AD
9	16-Jul-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		69	CWT00039212	AD
9	16-Jul-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		68	CWT00039215	AD
9	16-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		66	CWT00039978	AD
9	16-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720;	68	CWT00039979	AD

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							211333			
9	16-Jul-22	182191	2018	R-Robertson Cr	H-Robertson Creek H	CDFO		71	CWT00040244	AD
9	16-Jul-22	637743	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW	637744	55	CWT00041177	AD
9	16-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	58	CWT00042446	AD
9	16-Jul-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		64	CWT00088032	AD
9	16-Jul-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	66	CWT00088054	AD
9	17-Jul-22	637426	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW	637427	58	CWT00038386	AD
9	17-Jul-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		63	CWT00038681	AD
9	17-Jul-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		66	CWT00039225	AD
9	17-Jul-22	637429	2019	Green R 09.0001	Palmer Hatchery	WDFW		58	CWT00042295	AD
9	17-Jul-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		71	CWT00044701	AD
9	17-Jul-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	75	CWT00050883	AD
9	17-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	65	CWT00050884	AD
9	17-Jul-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		64	CWT00050885	AD
9	17-Jul-22	637369	2018	Deschutes R 13.0028	Minter Cr Hatchery	WDFW		78	CWT00088053	AD
9	22-Jul-22	637614	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		56	CWT00038682	AD
9	22-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		70	CWT00038683	AD
9	22-Jul-22	637428	2019	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		57	CWT00038687	AD
9	22-Jul-22	211394	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		55	CWT00039230	AD
9	22-Jul-22	637506	2018	East Sound Bay (San)	Glenwood Springs	COOP		61	CWT00088049	AD
9	23-Jul-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		58	CWT00039231	AD
9	23-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		80	CWT00040165	AD
9	23-Jul-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	64	CWT00040318	AD
9	23-Jul-22	637352	2018	Friday Cr 03.0017	Samish Hatchery	WDFW		72	CWT00040345	AD
9	23-Jul-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		64	CWT00040346	AD

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9	23-Jul-22	637369	2018	Deschutes R 13.0028	Minter Cr Hatchery	WDFW		78	CWT00040347	AD
9	23-Jul-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	56	CWT00041340	AD
9	23-Jul-22	637686	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		63	CWT00042409	AD
9	23-Jul-22	211394	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		65	CWT00046605	AD
9	24-Jul-22	637524	2018	Purdy Cr 16.0005	George Adams Hatchery	WDFW		77	CWT00038390	AD
9	24-Jul-22	211322	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211323; 637442; 637443	70	CWT00039981	AD
9	24-Jul-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		62	CWT00039982	AD
9	24-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		78	CWT00042410	AD
9	24-Jul-22	211330	2018	Stillaguamish R - Sf	Brenner Hatchery	STIL		83	CWT00086422	AD
9	24-Jul-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	73	CWT00086423	AD
9	24-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	71	CWT00088033	AD
9	24-Jul-22	637428	2019	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		58	CWT00088048	AD
9	29-Jul-22	637429	2019	Green R 09.0001	Palmer Hatchery	WDFW		54	CWT00039188	AD
9	29-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	59	CWT00039235	AD
9	29-Jul-22	211323	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211322; 637442; 637443	73	CWT00039237	AD
9	29-Jul-22	211343	2018	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		73	CWT00050887	AD
9	29-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		71	CWT00088034	AD
9	29-Jul-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	64	CWT00088035	AD
9	29-Jul-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	70	CWT00088036	AD
9	29-Jul-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		84	CWT00088037	AD

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9	29-Jul-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	68	CWT00088046	AD
9	29-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	65	CWT00088047	AD
9	30-Jul-22	211392	2019	Stillaguamish R - Sf	Brenner Hatchery	STIL		70	CWT00039240	AD
9	30-Jul-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	67	CWT00041343	AD
9	30-Jul-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		74	CWT00042412	AD
9	30-Jul-22	211337	2018	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		69	CWT00088038	AD
9	30-Jul-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		64	CWT00088039	AD
9	31-Jul-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		63	CWT00039241	AD
9	31-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	66	CWT00043699	AD
9	31-Jul-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	66	CWT00088045	AD
9	1-Aug-22	211406	2019	Lummi Sea Ponds	Lummi Sea Ponds	LUMMI		60	CWT00039189	AD
9	1-Aug-22	211412	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		57	CWT00039958	AD
9	1-Aug-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		63	CWT00088043	AD

Appendix 9 Coded-wire tag (CWT) recoveries from the Chinook MSF in Marine Area 10. Note: Not all tags have been processed before writing of this report.

Area	Recovery Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Release Agency	DIT Codes	FL(cm)	Label	Recovery Mark
10	15-Jul-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	59	CWT00041175	AD
10	17-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		59	CWT00039218	AD
10	17-Jul-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	59	CWT00041180	AD
10	18-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		70	CWT00038689	AD
10	18-Jul-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		59	CWT00039951	AD
10	22-Jul-22	211409	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA	211410	52	CWT00038254	AD
10	26-Jul-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	65	CWT00039954	AD
10	28-Jul-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		50	CWT00039049	AD
10	28-Jul-22	637631	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		52	CWT00039050	AD
10	28-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	72	CWT00041254	AD
10	30-Jul-22	637788	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		77	CWT00038258	AD
10	31-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	56	CWT00039956	AD
10	2-Aug-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		68	CWT00041186	AD
10	2-Aug-22	637631	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		65	CWT00042485	AD
10	2-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	60	CWT00042486	AD
10	5-Aug-22	637246	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		79	CWT00038259	AD
10	5-Aug-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		69	CWT00042529	AD
10	6-Aug-22	211322	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211323; 637442; 637443	78	CWT00038269	AD
10	6-Aug-22	637426	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW	637427	61	CWT00041188	AD

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10	6-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	77	CWT00042530	AD
10	6-Aug-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		67	CWT00049195	AD
10	6-Aug-22	211393	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		70	CWT00049199	AD
10	7-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	75	CWT00039054	AD
10	7-Aug-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	59	CWT00039073	AD
10	7-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	68	CWT00039252	AD
10	7-Aug-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		54	CWT00039984	AD
10	7-Aug-22	637429	2019	Green R 09.0001	Palmer Hatchery	WDFW		62	CWT00041189	AD
10	7-Aug-22	637784	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		54	CWT00041190	AD
10	7-Aug-22	637428	2019	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		65	CWT00041212	AD
10	7-Aug-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	68	CWT00041213	AD
10	7-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	56	CWT00041214	AD
10	7-Aug-22	637752	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		63	CWT00041215	UM
10	7-Aug-22	637775	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637720; 211333	61	CWT00049248	UM
10	7-Aug-22	637807	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		63	CWT00049249	AD
10	8-Aug-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		61	CWT00038270	AD
10	8-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	54	CWT00038649	AD
10	8-Aug-22	637686	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		72	CWT00039970	AD
10	8-Aug-22	637787	2020	Issaquah Cr 08.0178	Issaquah Hatchery	WDFW		41	CWT00049250	AD

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10	8-Aug-22	637428	2019	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		52	CWT00049510	AD
10	8-Aug-22	637619	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 211384; 637620	67	CWT00095701	UM
10	10-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	66	CWT00038650	AD
10	12-Aug-22	637807	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		64	CWT00038267	AD
10	12-Aug-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		71	CWT00039071	AD
10	12-Aug-22	211409	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA	211410	57	CWT00039192	AD
10	12-Aug-22	211323	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211322; 637442; 637443	63	CWT00039253	AD
10	12-Aug-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		61	CWT00039969	AD
10	12-Aug-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		59	CWT00095702	AD
10	13-Aug-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		63	CWT00039072	AD
10	13-Aug-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		76	CWT00039193	AD
10	13-Aug-22	211351	2019	Puyallup R 10.0021	Clarks Crk Hatchery	PUYA		56	CWT00039967	AD
10	13-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	68	CWT00039968	AD
10	13-Aug-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		74	CWT00039985	AD
10	13-Aug-22	637747	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW		61	CWT00095704	UM
10	13-Aug-22	637417	2020	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		52	CWT00095705	UM
10	14-Aug-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	61	CWT00038117	AD
10	14-Aug-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	61	CWT00038118	AD
10	14-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	61	CWT00039194	AD

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10	14-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	58	CWT00039966	AD
10	14-Aug-22	637371	2018	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		80	CWT00095706	AD
10	14-Aug-22	211386	2019	Clarks Cr 10.0027	Clarks Crk Hatchery	PUYA		66	CWT00095707	AD
10	14-Aug-22	637427	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW	637426	67	CWT00095709	UM
10	14-Aug-22	637427	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW	637426	73	CWT00095710	UM
10	14-Aug-22	637752	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		71	CWT00095712	UM
10	15-Aug-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		70	CWT00038119	AD
10	15-Aug-22	211394	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		60	CWT00038120	AD
10	15-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	66	CWT00038123	AD
10	15-Aug-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		55	CWT00038124	AD
10	15-Aug-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	75	CWT00038264	AD
10	15-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	69	CWT00038266	AD
10	15-Aug-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	64	CWT00039083	AD
10	15-Aug-22	211323	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211322; 637442; 637443	66	CWT00039101	AD
10	15-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	63	CWT00039102	AD
10	15-Aug-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		68	CWT00039255	AD
10	15-Aug-22	637429	2019	Green R 09.0001	Palmer Hatchery	WDFW		57	CWT00039961	AD
10	15-Aug-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		75	CWT00039962	AD
10	15-Aug-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		84	CWT00039963	AD
10	15-Aug-22	637752	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		64	CWT00039965	UM

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10	15-Aug-22	211441	2020	Clarks Crk Hatchery	Clarks Crk Hatchery	PUYA		55	CWT00039986	AD
10	15-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	NA	CWT00095713	UNK
10	15-Aug-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		64	CWT00095715	AD
10	17-Aug-22	211351	2019	Puyallup R 10.0021	Clarks Crk Hatchery	PUYA		58	CWT00038653	AD
10	19-Aug-22	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		70	CWT00038126	AD
10	19-Aug-22	637509	2018	Chambers Cr 12.0007	Garrison Hatchery	WDFW		73	CWT00038262	AD
10	19-Aug-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		71	CWT00039081	AD
10	19-Aug-22	211394	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		63	CWT00039960	AD
10	20-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	67	CWT00041974	AD
10	20-Aug-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		69	CWT00041975	AD
10	21-Aug-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		69	CWT00038343	AD
10	21-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	66	CWT00095716	AD
10	22-Aug-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		68	CWT00038131	UM
10	22-Aug-22	637603	2018	Lyons Ferry Rel.Site	Lyons Ferry Hatchery	WDFW		76	CWT00038909	AD
10	22-Aug-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	63	CWT00039105	AD
10	22-Aug-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	70	CWT00039106	AD
10	22-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	61	CWT00039260	AD
10	23-Aug-22	211337	2018	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		73	CWT00039107	AD
10	23-Aug-22	637713	2019	Cascade R 03.1411	Marblemount Hatchery	WDFW	637714	54	CWT00039261	AD
10	23-Aug-22	637428	2019	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		54	CWT00041976	AD

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10	26-Aug-22	637371	2018	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		72	CWT00038133	AD
10	26-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	62	CWT00038134	AD
10	26-Aug-22	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		60	CWT00039398	AD
10	27-Aug-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		63	CWT00038136	AD
10	27-Aug-22	211393	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		67	CWT00039084	AD
10	27-Aug-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		63	CWT00039085	AD
10	27-Aug-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	61	CWT00039086	AD
10	27-Aug-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	60	CWT00041333	AD
10	27-Aug-22	211323	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211322; 637442; 637443	67	CWT00041334	AD
10	28-Aug-22	637428	2019	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		63	CWT00038138	AD
10	28-Aug-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	62	CWT00039087	AD
10	28-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	56	CWT00039088	AD
10	28-Aug-22	637611	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		63	CWT00041978	AD
10	29-Aug-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	67	CWT00038140	AD
10	29-Aug-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		71	CWT00038141	AD
10	29-Aug-22	211320	2018	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	637438; 211321; 637437	59	CWT00038142	AD
10	29-Aug-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		66	CWT00038195	AD
10	29-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720;	55	CWT00039091	AD

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							211333			
10	29-Aug-22	211393	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		72	CWT00088645	AD
10	29-Aug-22	637925	2020	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		40	CWT00088692	UM
10	29-Aug-22	211386	2019	Clarks Cr 10.0027	Clarks Crk Hatchery	PUYA		63	CWT00089026	AD
10	30-Aug-22	637429	2019	Green R 09.0001	Palmer Hatchery	WDFW		60	CWT00038280	AD
10	30-Aug-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		63	CWT00039092	AD

Appendix 10 Coded-wire tag (CWT) recoveries from the Chinook MSF in Marine Area 11. Note: Not all tags have been processed before writing of this report.

Area	Recovery Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Release Agency	DIT Codes	FL(cm)	Label	Recovery Mark
11	2-Jun-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		74	CWT00050860	AD
11	2-Jun-22	637807	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		55	CWT00050861	AD
11	2-Jun-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	69	CWT00082701	AD
11	2-Jun-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		64	CWT00082704	AD
11	2-Jun-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	59	CWT00085303	AD
11	2-Jun-22	637350	2018	Wallace R 07.0940	Wallace R Hatchery	WDFW		63	CWT00085401	AD
11	3-Jun-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		60	CWT00046057	AD
11	3-Jun-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	57	CWT00046058	AD
11	3-Jun-22	637784	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		56	CWT00046059	AD
11	3-Jun-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		64	CWT00046061	AD
11	3-Jun-22	637350	2018	Wallace R 07.0940	Wallace R Hatchery	WDFW		79	CWT00050862	AD
11	3-Jun-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	64	CWT00050863	AD
11	3-Jun-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	64	CWT00082705	AD
11	3-Jun-22	637337	2018	Wallace R 07.0940	Wallace R Hatchery	WDFW		71	CWT00082706	AD
11	3-Jun-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		61	CWT00082707	AD
11	3-Jun-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	56	CWT00085305	AD
11	3-Jun-22	211394	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		61	CWT00085402	AD
11	3-Jun-22	637626	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		68	CWT00086501	AD
11	4-Jun-22	637807	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		64	CWT00043088	AD

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11	4-Jun-22	637369	2018	Deschutes R 13.0028	Minter Cr Hatchery	WDFW		65	CWT00046036	AD
11	4-Jun-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	57	CWT00050864	AD
11	4-Jun-22	637788	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		59	CWT00050865	AD
11	4-Jun-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	67	CWT00082709	AD
11	2-Jul-22	211392	2019	Stillaguamish R -Sf	Brenner Hatchery	STIL		68	CWT00046037	AD
11	2-Jul-22	637745	2019	Friday Cr 03.0017	Samish Hatchery	WDFW	637746	65	CWT00046038	AD
11	2-Jul-22	211391	2019	Whitehorse Springs	Whitehorse Pond	STIL		55	CWT00046039	AD
11	2-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		59	CWT00046040	AD
11	2-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		60	CWT00046041	AD
11	2-Jul-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		67	CWT00046042	AD
11	2-Jul-22	211394	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		65	CWT00082932	AD
11	2-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		52	CWT00085501	AD
11	2-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		75	CWT00086402	AD
11	2-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		69	CWT00086403	AD
11	2-Jul-22	637371	2018	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		61	CWT00086405	AD
11	2-Jul-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		63	CWT00086504	AD
11	3-Jul-22	637686	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		67	CWT00046043	AD
11	3-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		64	CWT00046044	AD
11	3-Jul-22	637626	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		69	CWT00050873	AD
11	3-Jul-22	637686	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		66	CWT00050874	AD
11	3-Jul-22	637686	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		56	CWT00085306	AD
11	3-Jul-22	211320	2018	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	637438; 211321; 637437	57	CWT00085307	AD
11	3-Jul-22	637627	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		64	CWT00085406	AD
11	3-Jul-22	637426	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW	637427	64	CWT00085502	AD

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11	3-Jul-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		76	CWT00086406	AD
11	3-Jul-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	72	CWT00086407	AD
11	7-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		69	CWT00046045	AD
11	7-Jul-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		68	CWT00050875	AD
11	7-Jul-22	211394	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		76	CWT00050876	AD
11	7-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	63	CWT00086410	AD
11	7-Jul-22	637686	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		64	CWT00086411	AD
11	8-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		70	CWT00046046	AD
11	8-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		78	CWT00046055	AD
11	8-Jul-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		72	CWT00050877	AD
11	8-Jul-22	637336	2018	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		71	CWT00085503	AD
11	8-Jul-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		70	CWT00085504	AD
11	8-Jul-22	211411	2019	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA		65	CWT00085505	AD
11	8-Jul-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	63	CWT00086412	AD
11	8-Jul-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	72	CWT00086413	AD
11	8-Jul-22	637713	2019	Cascade R 03.1411	Marblemount Hatchery	WDFW	637714	48	CWT00086414	AD
11	8-Jul-22	211394	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		53	CWT00086415	AD
11	8-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		54	CWT00086417	AD
11	9-Jul-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		70	CWT00046047	AD
11	9-Jul-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	66	CWT00050881	AD
11	9-Jul-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		66	CWT00050882	AD
11	9-Jul-22	637429	2019	Green R 09.0001	Palmer Hatchery	WDFW		72	CWT00086416	AD
11	10-Jul-22	211394	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		58	CWT00085415	AD
11	3-Aug-22	637439	2018	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		72	79986	AD

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11	3-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	78	79988	AD
11	3-Aug-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		71	79989	AD
11	5-Aug-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		60	CWT00050889	AD
11	5-Aug-22	637614	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		63	CWT00050891	AD
11	5-Aug-22	637631	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		51	CWT00085409	AD
11	6-Aug-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	73	81207	AD
11	6-Aug-22	637450	2018	Chambers Cr 12.0007	Garrison Hatchery	WDFW		62	81208	AD
11	6-Aug-22	637413	2018	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		74	81209	AD
11	6-Aug-22	637428	2019	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		64	87886	AD
11	6-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	71	87887	AD
11	6-Aug-22	211393	2019	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		76	87889	AD
11	6-Aug-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		65	87891	AD
11	6-Aug-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		74	97378	AD
11	7-Aug-22	637788	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		64	CWT00043100	AD
11	7-Aug-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		60	CWT00050892	AD
11	11-Aug-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		57	CWT00086432	AD
11	11-Aug-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	67	CWT00086434	AD
11	11-Aug-22	637713	2019	Cascade R 03.1411	Marblemount Hatchery	WDFW	637714	62	CWT00086505	AD
11	12-Aug-22	637765	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		68	CWT00046702	AD
11	12-Aug-22	211441	2020	Clarks Crk Hatchery	Clarks Crk Hatchery	PUYA		48	CWT00046703	AD
11	12-Aug-22	637611	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		77	CWT00086437	AD

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11	12-Aug-22	637686	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		59	CWT00086508	AD
11	13-Aug-22	637450	2018	Chambers Cr 12.0007	Garrison Hatchery	WDFW		68	70958	AD
11	13-Aug-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	NA	70960	UNK
11	13-Aug-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	62	85415	AD
11	13-Aug-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	69	CWT00050893	AD
11	13-Aug-22	637616	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		62	CWT00050894	AD
11	13-Aug-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		70	CWT00050895	AD
11	13-Aug-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	71	CWT00085509	AD

Appendix 11 Coded-wire tag (CWT) recoveries from the Chinook MSF in Marine Area 12. Note: Not all tags have been processed before writing of this report.

Area	Recovery Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Release Agency	DIT Codes	FL(cm)	Label	Recovery Mark
12	23-Jul-22	637922	2020	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637923	59	CWT00086421	AD
12	13-Aug-22	637524	2018	Purdy Cr 16.0005	George Adams Hatchery	WDFW		59	CWT00084927	AD
12	16-Aug-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	62	CWT00084926	AD
12	18-Aug-22	637627	2019	Finch Cr 16.0222	Hoodspport Hatchery	WDFW		63	CWT00093707	AD
12	21-Aug-22	637747	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW		55	CWT00093706	UNK
12	22-Aug-22	637524	2018	Purdy Cr 16.0005	George Adams Hatchery	WDFW		64	CWT00093701	AD
12	27-Aug-22	637627	2019	Finch Cr 16.0222	Hoodspport Hatchery	WDFW		61	CWT00084924	AD
12	29-Aug-22	637246	2018	Finch Cr 16.0222	Hoodspport Hatchery	WDFW		69	CWT00084913	AD
12	30-Aug-22	637354	2018	Purdy Cr 16.0005	George Adams Hatchery	WDFW		63	CWT00084925	UM

Appendix 12 Coded-wire tag (CWT) recoveries from the Chinook MSF in Marine Area 13. Note: Not all tags have been processed before writing of this report.

Area	Recovery Date	Tag Code	Brood Year	Release Site	Rearing Hatchery	Release Agency	DIT Codes	FL(cm)	Label	Recovery Mark
13	2-May-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	66	CWT00050857	AD
13	27-May-22	637631	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW		60	CWT00046035	AD
13	28-May-22	637426	2019	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW	637427	53	CWT00050859	AD
13	29-May-22	637429	2019	Green R 09.0001	Palmer Hatchery	WDFW		57	CWT00085301	AD
13	2-Jun-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	64	CWT00082702	AD
13	2-Jun-22	637627	2019	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		60	CWT00085302	AD
13	3-Jun-22	637615	2019	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		67	CWT00085304	AD
13	4-Jun-22	91460	2019	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		60	CWT00082708	AD
13	4-Jun-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		59	CWT00082710	AD
13	5-Jun-22	211339	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637775; 637720; 211333	64	CWT00046056	AD
13	5-Jun-22	211333	2019	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211339; 637775; 637720	57	CWT00050866	AD
13	5-Jun-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		54	CWT00050867	AD
13	5-Jun-22	211351	2019	Puyallup R 10.0021	Clarks Crk Hatchery	PUYA		56	CWT00050868	AD
13	7-Jun-22	637686	2019	Narrows Marina Pens	Narrows Marina Pens	PUYA		52	CWT00086502	AD
13	9-Jun-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	66	CWT00050869	AD
13	9-Jun-22	637749	2019	Purdy Cr 16.0005	George Adams Hatchery	WDFW	637750	65	CWT00086401	AD
13	1-Jul-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	65	CWT00050872	AD
13	24-Jul-22	637417	2020	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		49	CWT00082703	AD
13	3-Aug-22	211321	2018	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	637438; 211320; 637437	70	79987	AD
13	3-Aug-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		68	81200	
13	13-Aug-22	637743	2019	Wallace R 07.0940	Wallace R Hatchery	WDFW	637744	64	70959	AD
13	17-Aug-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384;	68	CWT00046706	AD

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							637619; 637620			
13	18-Aug-22	637852	2020	Chambers Cr 12.0007	Garrison Hatchery	WDFW		58	CWT00051600	AD
13	18-Aug-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	73	CWT00086428	AD
13	18-Aug-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		66	CWT00093801	AD
13	21-Aug-22	637419	2019	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		62	CWT00093802	AD
13	26-Aug-22	637588	2019	Chambers Cr 12.0007	Garrison Hatchery	WDFW		76	CWT00086511	AD
13	2-Sep-22	211383	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211384; 637619; 637620	63	CWT00046708	AD
13	2-Sep-22	211488	2020	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	637780; 637781; 211489	49	CWT00085416	AD
13	4-Sep-22	211384	2019	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211383; 637619; 637620	57	CWT00093804	AD

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