

**2020 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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Prepared by:

Ty Garber and Karen Kloempken

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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., 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.

During the 2020 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 actual fisheries end dates may have varied if fisheries controls for a Marine Area were met prior to these dates:

- Marine Area 5 from July 1 through August 15, 2020;
- Marine Area 6 from July 1 through August 15, 2020;
- Marine Area 7 from July 1 through July 31 and from August 16 through August 31, 2020;
- Marine Area 9 from July 16 through August 15, 2020;
- Marine Area 10 July 16 through August 31, 2020;
- Marine Area 11 July 1 through September 30, 2020 (five days a week, closed Thursdays and Fridays);
- Marine Area 12 July 1 through September 30, 2020; and
- Marine Area 13 May 1 through September 30, 2020.

All fisheries were monitored and sampled as planned pre-season, though fisheries were closed until May 5, 2020, due to the COVID-10 pandemic.

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, 2020. WDFW's Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program 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. Salmon trips reports were not physically handed out of anglers, to reduce exposure, though the form was available online for anglers to fill out. **Table 1.1** 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 Area 5 summer Chinook MSF.

Table 1.1 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 two-week estimation periods and stratified into “weekday” (Mon.-Thurs.) and “weekend” (Fri.-Sun.) day-type strata within weeks. For the weekday stratum we sampled $n=2$ days out of $N=8$ available weekdays per two-week period. For the weekend stratum we sampled $n=2$ days out of $N=3$ available weekend days per week. Due to furloughs of WDFW employees due to the COVID-19 pandemic on July 10, 2020, July 17, 2020, July 24, 2020, August 8, 2020, and September 4, 2020, strata were expanded from the nearest day to estimate for the absent furlough day.
		Size (legal/sublegal) and mark-status (marked/unmarked) composition of encountered Chinook salmon	Boat trip	Season	Because no STRs were returned during the fishery, but 2,467 Chinook encounters were reported in Dockside sampling, bias-corrected encounter proportions from the Dockside data (Table 1.13) used to produce encounter and mortality estimates.
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 weekend boat surveys and 2 weekday surveys were conducted during the 2020 Area 5 summer Chinook MSF. As in-season observations suggested that sites and effort patterns did not change substantially in 2020 compared to past years, we incorporated data from these surveys into recent average site weights to compute catch and effort estimates.
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	No STRs were returned during the course of 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 1.2 Estimates of total fishing effort and total salmon catch (harvest and releases) during the 2020 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	5-Jul	1477	3529	1572	14	2208	3056	6850
	28	6-Jul	12-Jul	1762	4,323	1222	13	1717	2374	5,325
	29	13-Jul	19-Jul	1524	3,604	287	0	403	561	1,251
	30	20-Jul	26-Jul	1355	3,002	409	4	574	795	1,782
	31	27-Jul	30-Jul	506	1,033	128	0	180	251	559
Season Total:				6,624	15,490	3,618	31	5,082	7,036	15,767
Variance:				143,526	959,465	289,796	123	1,477,213	798,111	6,644,749
SE:				379	980	538	11	1,215	893	2,578
CV (%):				6	6	15	36	24	13	16
95% CI:				5,881 - 7,366	13,570 - 17,410	2,563 - 4,673	9 - 52	2,700 - 7,465	5,285 - 8,787	10,715 - 20,819

Table 1.3 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the 2020 summer Chinook MSF in Marine Area 5.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	633	31	664
Unmarked	4	0	4
Total	637	31	668

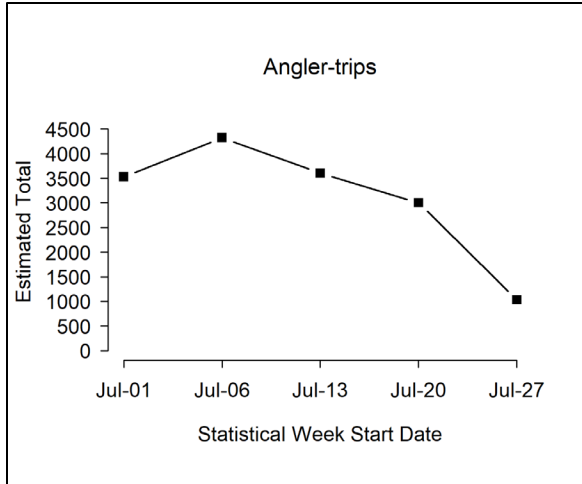


Figure 1.1 Temporal patterns in fishing effort during the 2020 summer Chinook MSF in Marine Area 5.

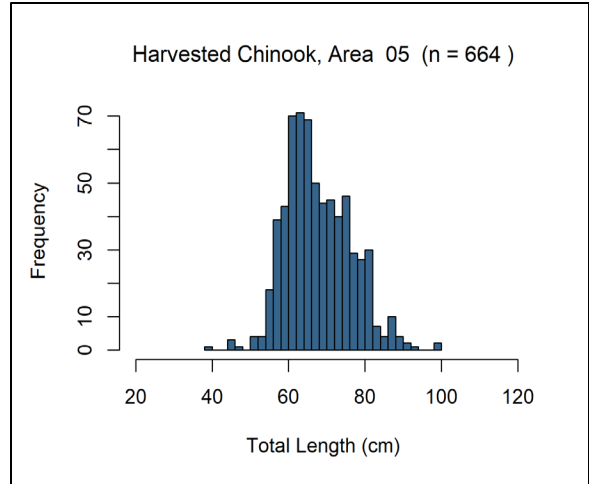


Figure 1.3 Length-frequency distribution of retained marked Chinook sampled in dockside angler interviews during the 2020 summer Chinook MSF in Marine Area 5. Note: displayed values are observations where lengths taken.

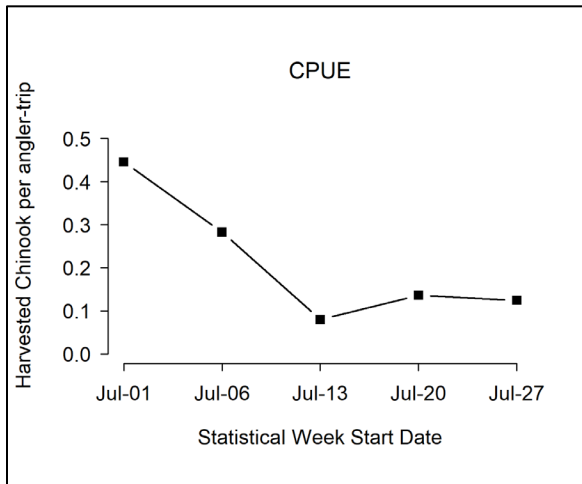


Figure 1.2 Temporal patterns in CPUE (landed Chinook per angler trip) during the 2020 summer Chinook MSF in Marine Area 5.

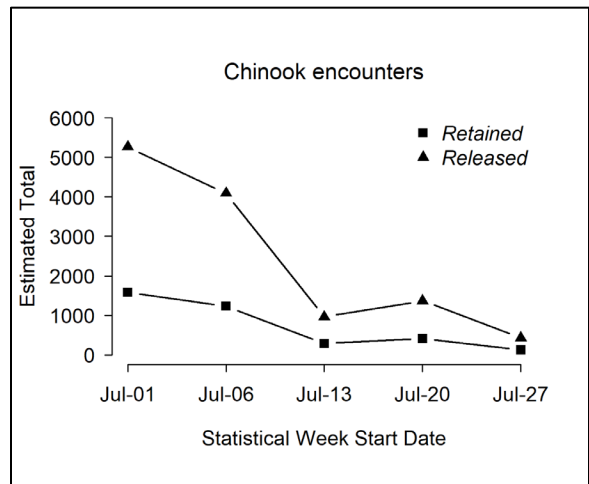


Figure 1.4 Temporal patterns in CPUE (landed Chinook per angler trip) during the 2020 summer Chinook MSF in Marine Area 5.

Table 1.4 Summary of season-wide fishery impact estimates for the 2020 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	3,965	3,449	515	77	3,527	281,181	530	2,487 - 4,566	15
Legal UM	3,381	31	3,350	503	533	8,419	92	353 - 713	17
Sublegal AD	4,736	169	4,567	913	1,082	30,439	174	740 - 1,424	16
Sublegal UM	3,686	0	3,686	737	737	17,176	131	480 - 994	18
Total	15,767	3,649	12,118	2,230	5,879	337,215	581	4,741 - 7,017	10

Table 1.5 Comparison of modeled and estimated total Chinook salmon encounters for the 2020 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	9,537	2,464	7,073	25
	AD	13,588	4,568	9,020	3,974
	Total	23,125	7,032	16,093	3,999
	% Marked	59	65	56	99
Estimated (Creel) Encounters	UM	7,066	3,381	3,686	31
	AD	8,700	3,965	4,736	3,618
	Total	15,767	7,346	8,421	3,649
	% Marked	55	54	56	99

Table 1.6 Comparison of modeled and estimated total Chinook salmon mortalities for the 2020 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)	1807	6,066	7,873	1,270	4,609	5,879
Released Legal	367	288	655	503	77	580
Released Sublegal	1415	1,804	3,219	737	913	1,650
Landed Only	25	3,974	3,999	31	3,618	3,649

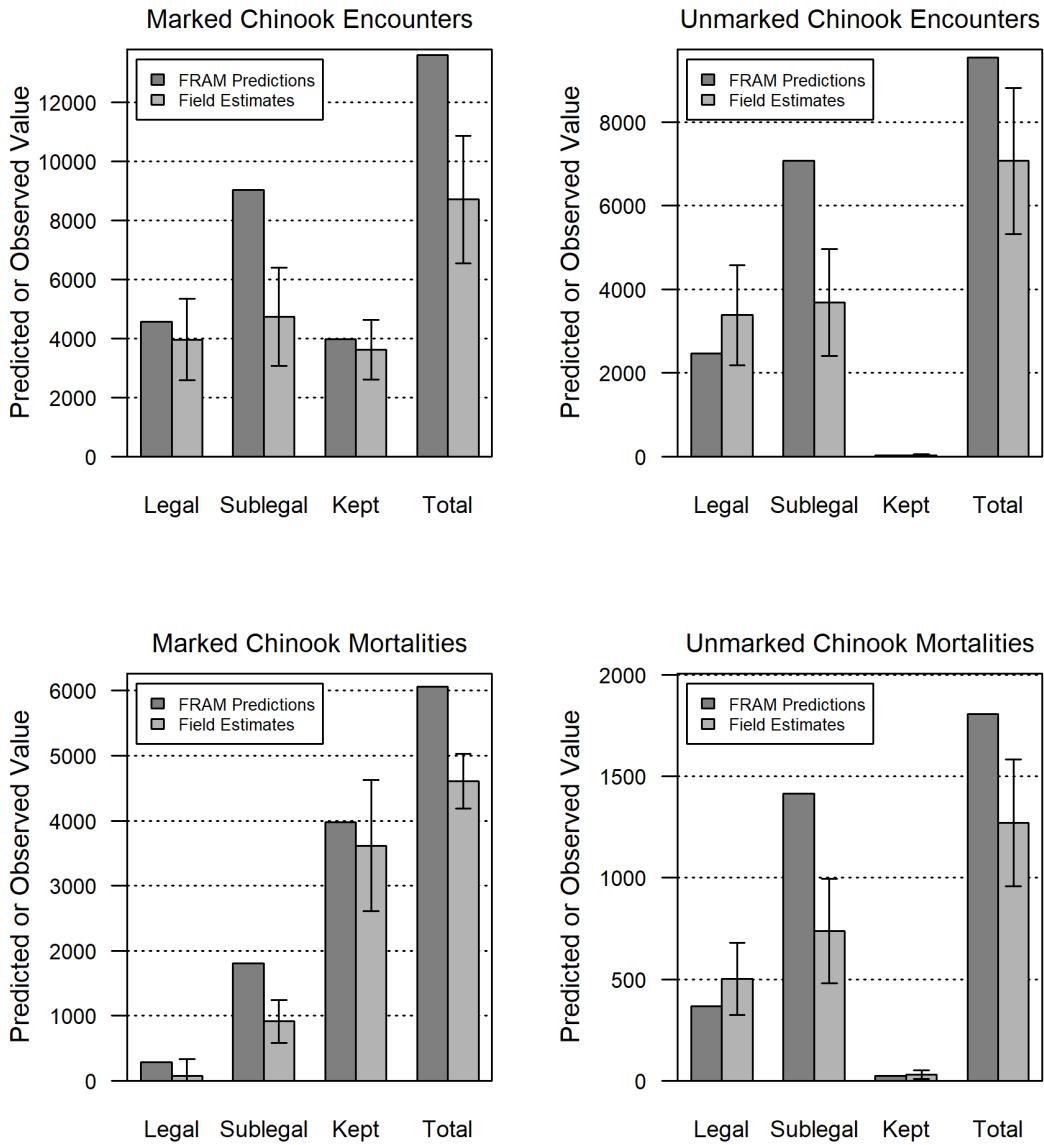


Figure 1.5 Comparison of modeled and estimated total Chinook salmon encounters and mortalities for the 2020 summer Chinook MSF in Marine Area 5. Error bars represent approximate 95% confidence intervals for field estimates.

Table 1.7 Summary of the total number of anglers intercepted during on-the-water surveys conducted for the 2020 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
Curleys Resort	14	0.0628	21	0.0616
Freshwater Bay Ramp	0	0.0000	2	0.0059
Olson's East Docks	31	0.1390	42	0.1232
Olson's Ramp & Docks	73	0.3274	145	0.4252
Olson's Resort	2	0.0090	6	0.0176
Olson's West Docks	3	0.0135	8	0.0235
Olson's South Dock	9	0.0404	12	0.0352
Unknown	24	0.1076	31	0.0909
Van Riper's North*	14	0.0628	9	0.0264
Van Riper's South*	53	0.2377	65	0.1906
Total Anglers	223	1	341	1

Table 1.8 Monthly sample rates (Total retained Chinook sampled¹ / Estimated retained Chinook) for the 2020 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 - 30 Jul	3,618	31	3,649	749	7	756	20.70%
Season Total			3,618	31	3,649	749	7	756	20.70%

^{1/} Number of retained Chinook salmon sampled includes all retained Chinook salmon inspected for CWT's, from all sites sampled during the 2020 summer Chinook MSF in Marine Area 5 (creel estimates and fish sampled as part of baseline sampling).

Table 1.9 Fishery-total estimates of retained and released salmon (*other than Chinook*) for the 2020 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	Coho UK	Pink	Coho AD	Coho UM	Coho UK	Pink	Cutthroat	Unknown
27	1-Jul	5-Jul	402	12	63	0	206	674	533	0	4	315
28	6-Jul	12-Jul	695	22	127	3	327	833	1128	0	0	109
29	13-Jul	19-Jul	171	5	37	0	15	137	142	0	0	122
30	20-Jul	26-Jul	160	4	20	0	37	152	109	3	0	172
31	27-Jul	30-Jul	43	11	11	0	54	131	0	0	0	32
Season Total:			1471	54	258	3	640	1927	1913	3	4	749
Variance:			34,595	245	14229	5	10,568	78,354	1,105,571	5	11	22,215
Standard Error:			186	16	119	2	103	280	1051	2	3	149
CV (%):			13	29	46	76	16	15	55	76	83	20
95% CI:			1,107 - 1,836	23 - 85	24 - 491	0 - 7	439 - 842	1,379 - 2,476	0 - 3,973	0 - 7	0 - 10	457 - 1,042

Table 1.10 Summary of coded-wire tags recovered from Chinook salmon harvested during the 2020 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 (17.8%)	R-Shuswap R Low	H-Shuswap River, Middle,	2 (1%)	0
		R-Harrison R	H-Chehalis River H	8 (4%)	0
		R-Nicola R	H-Spius Creek H	1 (0.5%)	0
		R-Chilliwack R	H-Chilliwack River H	25 (12.4%)	0
	Georgia Strait (5%)	R-Cowichan R	H-Cowichan River H	1 (0.5%)	0
		R-Burrard In	H-Sandy Cove Seapen	3 (1.5%)	0
		R-Capilano R Up	H-Capilano River H	1 (0.5%)	0
		R-Sandy Cv	H-Sandy Cove Seapen	5 (2.5%)	0
WA	N Washington (2%)	East Sound Bay (San)	Glenwood Springs	2 (1%)	0
		Friday Cr 03.0017	Samish Hatchery	1 (0.5%)	0
		Skookum Cr 01.0273	Skookum Cr Hatchery	1 (0.5%)	0
	Strait of Juan De Fuca (3%)	Gray Wolf R 18.0048	Gray Wolf R Accl Pd	1 (0.5%)	0
		Hoko R 19.0148	Hoko Falls Hatchery	2 (1%)	0
		Elwha R 18.0272	Elwha Hatchery	3 (1.5%)	0
	Hood Canal (5%)	Purdy Cr 16.0005	George Adams Hatchery	3 (1.5%)	0
		Finch Cr 16.0222	Hoodsport Hatchery	7 (3.5%)	0
	N Puget Sound (2%)	Wallace R 07.0940	Wallace R Hatchery	4 (2%)	0
	Skagit River (1%)	Cascade R 03.1411	Marblemount Hatchery	1 (0.5%)	0
		Co Line Pd2 03.1853B	Marblemount Hatchery	1 (0.5%)	0
	Mid Puget Sound (5.9%)	Sammamish R 08.0057	Issaquah Hatchery	1 (0.5%)	0
		Grovers Cr Hatchery	Grovers Cr Hatchery	5 (2.5%)	5
		Icy Cr 09.0125	Icy Cr Hatchery	1 (0.5%)	0
		Clarks Crk Hatchery	Clarks Crk Hatchery	1 (0.5%)	0
		Grovers Cr 15.0299	Grovers Cr Hatchery	1 (0.5%)	1
		Gorst Cr 15.0216	Gorst Cr Rearing Pnd	3 (1.5%)	0
	S Puget Sound (6.9%)	Kalama Cr 11.0017	Kalama Cr Hatchery	1 (0.5%)	0
		Deschutes R 13.0028	Tumwater Falls Hatchery	5 (2.5%)	0
Minter Cr 15.0048		Minter Cr Hatchery	7 (3.5%)	0	
Minter Cr 15.0048		Hupp Springs Rearing	1 (0.5%)	0	
Col. Riv.	Col. Riv. General Region (1.5%)	Columbia R - General	Wells Hatchery	3 (1.5%)	0
	Upper Columbia R (2.5%)	Chelan R 47.0052	Chelan Falls Hatchery	1 (0.5%)	0
		Col R @ Priest Rapids	Priest Rapids Hatchery	1 (0.5%)	0
		Omak Pond	Chief Joseph Hatchery	1 (0.5%)	0
		Methow R 48.0007	NA	1 (0.5%)	0
		Methow R 48.0002	NA	1 (0.5%)	0
	Central Columbia River) (4%)	Spring Cr 29.0159	Spring Cr Nfh	8 (4%)	8
	Lower Columbia River (13.4%)	Kalama R 27.0002	Kalama Falls Hatchery	1 (0.5%)	0
		Fallert Cr 27.0017	Fallert Cr Hatchery	1 (0.5%)	0
		Cowlitz R 26.0002	Cowlitz Salmon Hatchery	4 (2%)	0
		Bull Run R	Sandy Hatchery	4 (2%)	0
		Row R (Willamette R Cst)	Willamette Hatchery	1 (0.5%)	0
		Tanner Cr (Bnville)	Bonneville Hatchery	7 (3.5%)	0
		Clackamas R	Clackamas Hatchery	1 (0.5%)	0
		Big Cr (Lwr Col R)	Big Cr Hatchery	8 (4%)	0
Snake River (5%)	Hammer Crk:Salmon R	Irrigon Hatchery	1 (0.5%)	0	
	Clwtr @ Lapwai Crk	Npt Hatchery	1 (0.5%)	0	
	Npt Hatchery	Npt Hatchery	1 (0.5%)	0	
	Lyons Ferry Rel.Site	Lyons Ferry Hatchery	2 (1%)	0	
	Snake R @Pittsburg L	Lyons Ferry Hatchery	1 (0.5%)	0	

		Grande Ronde R 1	Irrigon Hatchery	1 (0.5%)	0
		Luke's Gulch A F	Npt Hatchery	1 (0.5%)	0
		Captain Johns Pd	Lyons Ferry Hatchery	2 (1%)	0
OR	S Oregon Coast (0.5%)	Elk R	Elk R Hatchery	1 (0.5%)	0
CA	N California Coast (0.5%)	Smith River	Rowdy Creek Hatchery	1 (0.5%)	0
	Cen. California Coast (11.9%)	Mare Island Net Pen	Feather R Hatchery	7 (3.5%)	0
		Fort Baker Minor Pt	Mok R Fish Ins	5 (2.5%)	0
		Fort Baker Minor Pt	Feather R Hatchery	4 (2%)	0
		Mare Island Net Pen	Nimbus Fish Hatchery	1 (0.5%)	0
		Half Moon Bay John Pr Net	Mok R Fish Ins	6 (3%)	0
		Wickland Oil Net Pen	Nimbus Fish Hatchery	1 (0.5%)	0
	Sacramento River (8.4%)	American R At Sunrise	Nimbus Fish Hatchery	2 (1%)	0
		Feather Boyds Pump Ramp	Feather R Hatchery	1 (0.5%)	0
		Coleman Nfh	Coleman Nfh	14 (6.9%)	0
	San Joaquin River (3%)	San Joaq Shrm Isl Net Pen	Mok R Fish Ins	5 (2.5%)	0
		San Joaq Shrm Isl Net Pen	Merced R Fish Facil	1 (0.5%)	0
NA	NA (1%)	NA	NA	2 (1%)	0
Total				202	14

Table 1.11 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 2020 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)
Grovers Cr Hatchery	2015	5	27.3	121.87	28.8	2.9	1.351	2.6
Grovers Cr Hatchery	2016	1	5.5	24.37	5.2	0.5	0.225	0.47
Spring Cr Nfh	2015	1	5.5	24.37	5.5	0.5	0.247	0.5
Spring Cr Nfh	2016	7	38.2	170.62	38	3.8	1.683	3.43
Total		14	76.5	341.23	77.5	7.7	3.506	7

Table 1.12 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 2020 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	0 1-trip STRs	0	0	0	0	0	0.00	0.00
Size/mark-status composition:		0.00	0.00	0.00	0.00			
Variance:		(0.0000)	(0.0000)	(0.0000)	(0.0000)			

Table 1.13 Dockside encounters (retained and released) by size-mark category during the 2020 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				
Status	Legal		Sublegal	
	LM	LU	SM	SU
Kept	633	4	31	0
Released	64	525	710	500
Total	697	529	741	500
Size/mark-status composition	0.28	0.21	0.30	0.20
Bias-corrected size/mark composition	0.25	0.21	0.30	0.23

Table 1.14 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

2) Marine Area 6 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a summer Chinook MSF in Marine Area 6 from July 1 through August 15, 2020. WDFW's Puget Sound Sampling Unit (PSSU or unit) implemented a "Baseline Sampling" program (see WDFW 2012a for details) consisting of dockside angler interviews with catch sampling along with intensive efforts to distribute and collect voluntary salmon trip reports (STRs) from the angling public. We planned to maintain our enhanced STR program to improve the return rate of voluntary salmon trip reports, which provide estimates of Chinook salmon encounter rates by size class (legal or sublegal) and mark status (marked or unmarked) but were unable to implement this fully due to the COVID-19 pandemic and wanting to limit exposure.

Unlike the other survey designs used by the sampling unit, 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 2.1 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 Area 6 summer Chinook MSF, including relative catch and effort patterns over the season based on the assumption that baseline-sampling observations of these parameters are good indicators of associated fishery-wide trends.

Table 2.1 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 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	When CRC-based retained Chinook estimates become available bias-corrected dockside proportion data will be used to estimate Chinook encounters by size/mark group (LM = 37%, LU = 22%, SM = 33%, SU = 7%; Table 2.7).
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	Due to low sample size (N=42, LM percentage CV=.42) STRs will not be used for a Chinook encounters estimated based on CRC data.
Overall Fishery Impacts Estimation	Total Chinook salmon 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 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 2.2 Observations of fishing effort, Chinook salmon retained, and reported Chinook salmon releases, by week, for the summer Chinook salmon MSF in Marine Area 6. 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 UD	Chin UK	Chin AD	Chin UM	Chin UK
27	1-Jul	5-Jul	266	562	161	0	6	0	41	49	53
28	6-Jul	12-Jul	217	439	57	0	2	0	44	31	23
29	13-Jul	19-Jul	199	405	86	0	9	0	36	50	27
30	20-Jul	26-Jul	174	360	60	0	4	0	34	29	15
31	27-Jul	2-Aug	144	262	56	0	5	0	35	18	7
32	3-Aug	9-Aug	206	414	69	0	0	1	56	53	9
33	10-Aug	15-Aug	223	336	30	0	0	53	148	68	58
Season Total			1429	2778	519	0	24	54	394	298	192

Table 2.3 Observations of fishing effort, salmon retained (other than Chinook), and reported salmon releases (other than Chinook), by week, for the summer 2020 Chinook salmon MSF in Marine Area 6. 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 AD	Coho UM	Coho UN	Pink	Unknown
27	1-Jul	5-Jul	266	562	1	1	1	3	1	1
28	6-Jul	12-Jul	217	439	5	0	1	7	0	3
29	13-Jul	19-Jul	199	405	11	1	6	2	0	6
30	20-Jul	26-Jul	174	360	3	2	0	0	0	5
31	27-Jul	2-Aug	144	262	6	1	0	2	0	3
32	3-Aug	9-Aug	206	414	20	5	6	4	0	11
33	10-Aug	15-Aug	223	336	21	4	6	6	0	22
Season Total			1429	2778	67	14	20	24	1	51

Table 2.4 List of sites sampled with the number of sampling events (site-days) during the summer 2020 Chinook salmon MSF in Marine Area 6.

Location Name	Number of Site Days Sampled Per Month		Total Site-Days	% of Total
	July	August		
Ediz Hook, Port Angeles Public Ramp	18	9	27	42.19%
Freshwater Bay Ramp	1	0	1	1.56%
John Wayne Marina	3	5	8	12.50%
Port Angeles Boat Haven	1	0	1	1.56%
Port Angeles West Ramp	18	9	27	42.19%
Grand Total	41	23	64	100.00%

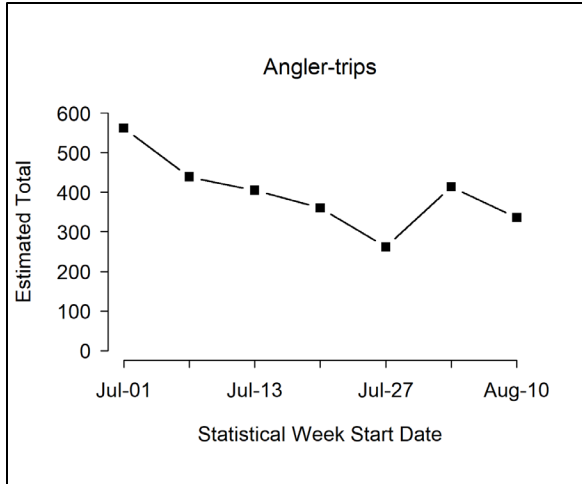


Figure 2.1 Temporal patterns in fishing effort during the 2020 summer Chinook MSF in Marine Area 6. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

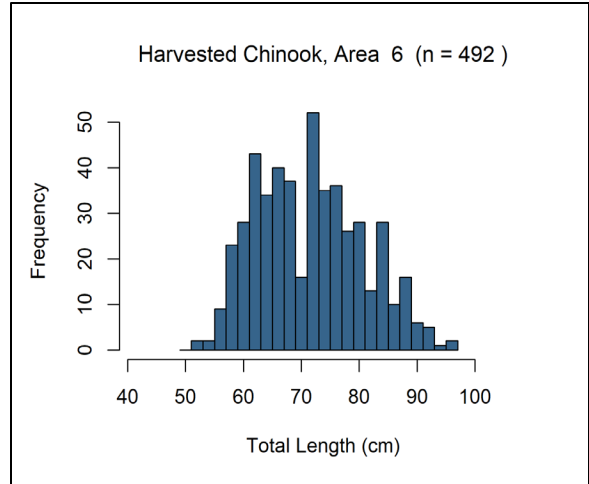


Figure 2.3 Length-frequency distribution of retained marked Chinook salmon sampled in dockside angler interviews during the 2020 summer Chinook MSF in Marine Area 6. Note: displayed values are observations where lengths taken.

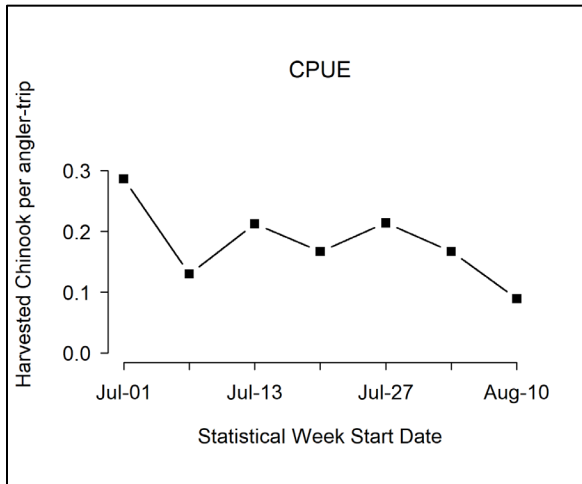


Figure 2.2 Temporal patterns in CPUE (landed Chinook salmon per angler trip) during the 2020 summer Chinook MSF in Marine Area 6. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

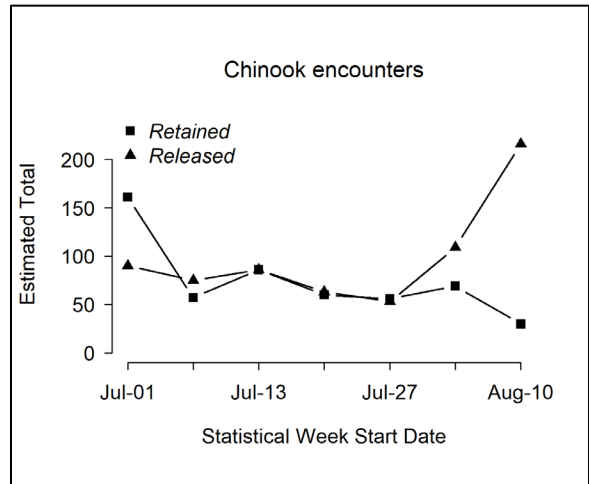


Figure 2.4 Temporal patterns in CPUE (landed Chinook salmon per angler trip) during the 2020 summer Chinook MSF in Marine Area 6. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

Table 2.5 Summary of total length samples from retained Chinook salmon collected during dockside angler interviews in the 2020 summer Chinook MSF in Marine Area 6.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	484	8	492
Unmarked	0	0	0
Total	484	8	492

Table 2.6 Total Chinook salmon encountered (retained and released) by private-boat anglers logging their trips on voluntary salmon trip reports (STRs) during the 2020 summer Chinook MSF in Marine Area 6, 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	12 1-trip STRs	5	5	18	14	42	0.55	0.50
Size/mark-status composition:		0.12	0.12	0.43	0.33			
Variance:		(0.0026)	(0.0026)	(0.0060)	(0.0054)			

Table 2.7 Dockside encounters (retained and released) by size-mark category during the 2020 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				
Status	Legal		Sublegal	
	LM	LU	SM	SU
Kept	484	0	8	0
Released	11	266	383	32
Total	495	266	391	32
Size/mark-status composition	0.42	0.22	0.33	0.03
Bias Corrected	0.37	0.22	0.33	0.07

Table 2.8 Summary of coded-wire tags recovered from Chinook salmon harvested during the 2020 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 (7.7%)	R-Chilko R	H-Chehalis River H	1 (1.9%)	0
		R-Chilliwack R	H-Chilliwack River H	2 (3.8%)	0
		R-Harrison R	H-Chehalis River H	1 (1.9%)	0
	W Vancouver Island (1.9%)	R-Robertson Cr	H-Robertson Creek H	1 (1.9%)	0
WA	N Washington (13.5%)	Friday Cr 03.0017	Samish Hatchery	3 (5.8%)	0
		Kendall Cr 01.0406	Kendall Cr Hatchery	1 (1.9%)	0
		East Sound Bay (San)	Glenwood Springs	3 (5.8%)	0
	Strait of Juan De Fuca (17.3%)	Elwha R 18.0272	Elwha Hatchery	9 (17.3%)	0
	Hood Canal (11.5%)	Finch Cr 16.0222	Hoodsport Hatchery	4 (7.7%)	0
		Purdy Cr 16.0005	George Adams Hatchery	2 (3.8%)	0
	N Puget Sound (1.9%)	Tulalip Cr 07.0001	Bernie Gobin Hatch	1 (1.9%)	1
	Mid Puget Sound (15.4%)	Big Soos Cr 09.0072	Soos Creek Hatchery	1 (1.9%)	0
		Gorst Cr 15.0216	Gorst Cr Rearing Pnd	2 (3.8%)	0
		Grovers Cr 15.0299	Grovers Cr Hatchery	4 (7.7%)	4
		Icy Cr 09.0125	Icy Cr Hatchery	1 (1.9%)	0
	S Puget Sound (21.2%)	Deschutes R 13.0028	Tumwater Falls Hatchery	3 (5.8%)	0
		Minter Cr 15.0048	Minter Cr Hatchery	4 (7.7%)	0
		Mcallister Springs Hatch	Mcallister Springs Hatch	1 (1.9%)	0
Clear Cr 11.0013C		Clear Creek Hatchery	3 (5.8%)	3	
Col. Riv.	Upper Columbia R (1.9%)	Chelan R 47.0052	Chelan Falls Hatchery	1 (1.9%)	0
	Central Columbia River (3.8%)	Spring Cr 29.0159	Spring Cr Nfh	2 (3.8%)	2
	Lower Columbia River (3.8%)	Big Cr (Lwr Col R)	Big Cr Hatchery	1 (1.9%)	0
		Tanner Cr (Bnville)	Bonneville Hatchery	1 (1.9%)	0
Total				52	10

3) Marine Area 7 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a summer Chinook MSF in Marine Area 7 from July 1 through July 31, 2020 and again from August 16 through August 31, 2020. Due to the number of Chinook salmon encountered (both kept and released) in July, the reopening of the fishery was delayed by six days until August 22, 2020. WDFW's Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program 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. In 2020, WDFW increased the test fishing efforts by utilizing two vessels instead of one and fishing seven days per week whenever possible. **Table 3.1** 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 7 summer Chinook MSF.

Table 3.1 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	Because no LM Chinook were encountered in the test fishery or reported on STRs during the August 22,– August 31, 2020 time period, but 45 legal-size Chinook were reported in dockside sampling, bias-corrected encounter proportions from the dockside encounter data (Table 3.11, lower panel) were used to produce encounter and mortality estimates for the August 22,– August 31, 2020 time period.
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 $n=8$ surveys conducted out of $N=41$ days available in the season). Season-wide sample fraction was calculated as the average sample fraction over the 5 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 size/mark proportions (LM = 43%, LU = 10%, SM = 31%, SU = 16%; Table 3.9, upper panel) were used to produce encounter and mortality estimates for the July 1 – July 31, 2020 time period.
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 the course of 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.

Table 3.2 Estimates of total fishing effort and total salmon catch (harvest and releases) during the 2020 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	27	1-Jul	5-Jul	1,693	3,981	478	3	459	317	1,257
	28	6-Jul	12-Jul	1,829	3,967	408	0	392	274	1,073
	29	13-Jul	19-Jul	1,357	2,999	229	0	220	154	603
	30	20-Jul	26-Jul	1,270	2,889	223	0	214	150	587
	31	27-Jul	31-Jul	609	1,234	39	0	37	26	103
July Total				6,758	15,070	1,377	3	1,322	920	3,623
Variance:				174,354	905,022	5,884	0	233,409	69,473	387,283
SE:				418	951	77	0	483	264	622
CV (%):				6	6	6	13	37	29	17
95% CI:				5,939 - 7,576	13,205 - 16,934	1,227 - 1,527	2 - 4	376 - 2,269	404 - 1,437	2,403 - 4,843
August	27	22-Aug	22-Aug	766	1,890	76	0	146	361	583
	28	24-Aug	30-Aug	1,535	3,462	88	4	170	416	678
	29	31-Aug	31-Aug	160	351	8	0	15	38	61
August Total				2,461	5,703	172	4	331	815	1,322
Variance:				34,709	193,002	177	1	13,837	25,890	67,071
SE:				186	439	13	1	118	161	259
CV (%):				8	8	8	21	35	20	20
95% CI:				2,095 - 2,826	4,842 - 6,564	146 - 198	2 - 6	101 - 562	499 - 1,130	815 - 1,830
Grand Total				9,219	20,773	1,549	7	1,653	1,735	4,945
Variance:				209,063	1,098,024	6,061	1	247,246	95,363	454,354
SE:				457	1048	78	1	497	309	674
CV (%):				5	5	5	14	30	18	14
95% CI:				8323 - 10115	18719 - 22827	1396 - 1702	5 - 9	678 - 2628	1130 - 2340	3624 - 6266

Table 3.3 Summary of total length samples from retained Chinook salmon collected during dockside angler interviews in the Marine Area 7 Chinook MSF.

July			
Marked Type	Number Sampled		
	Legal-size	Sublegal-Size	Total
Marked	315	4	319
Unmarked	1	0	1
Total	316	4	320

August			
Marked Type	Number Sampled		
	Legal-size	Sublegal-Size	Total
Marked	38	0	38
Unmarked	1	0	1
Total	39	0	39

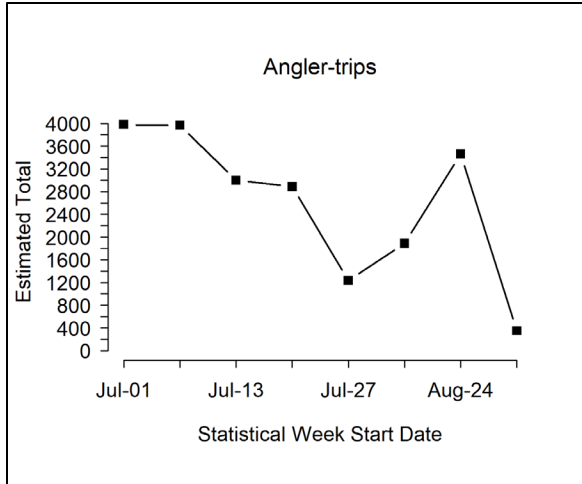


Figure 3.1 Temporal patterns in fishing effort during the 2020 summer Chinook MSF in Marine Area 7.

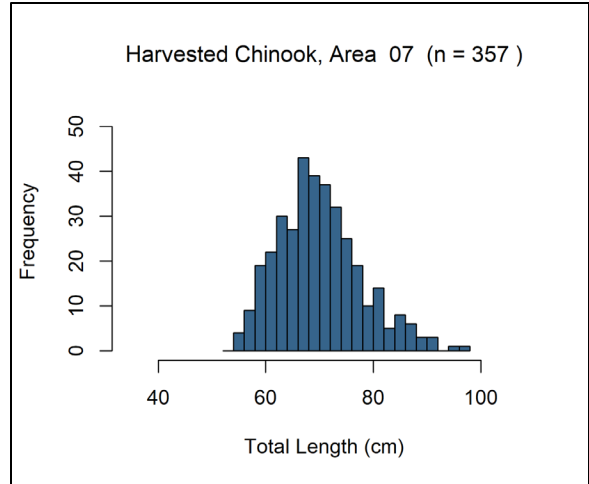


Figure 3.3 Length-frequency distribution of retained marked Chinook salmon sampled in dockside angler interviews during the 2020 summer Chinook MSF in Marine Area 7.

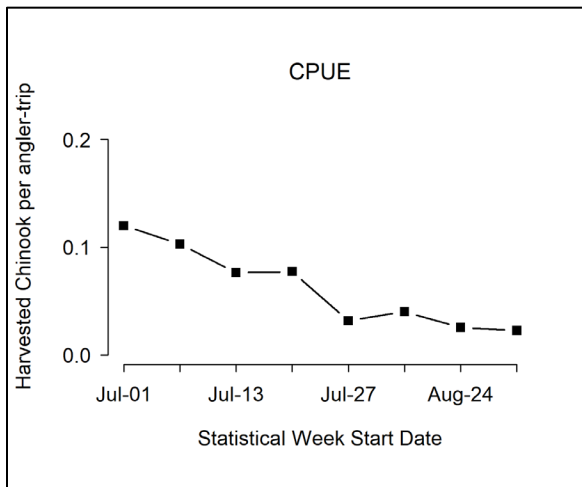


Figure 3.2 Temporal patterns in CPUE (number of Chinook landed per angler trip) during the 2020 summer Chinook MSF in Marine Area 7.

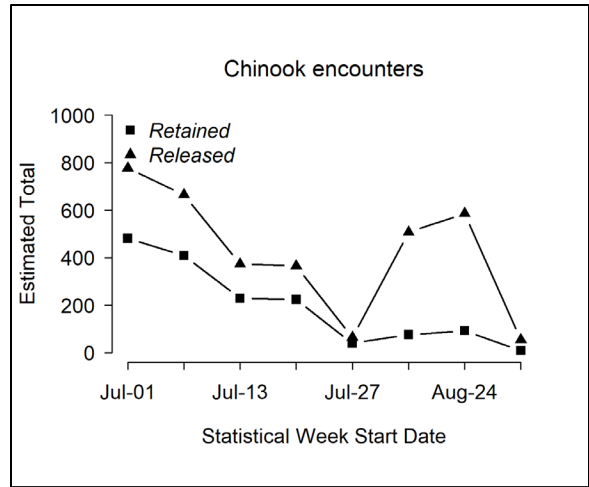


Figure 3.4 Temporal patterns in Chinook salmon encounters (number retained and released) during the 2020 summer Chinook MSF in Marine Area 7.

Table 3.4 Summary of season-wide fishery impact estimates for the 2020 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	1,760	1,532	229	34	1,566	9,211	96	1,378 - 1,754	6%
Legal UM	1,061	7	1054	158	165	1149	34	99 - 232	21%
Sublegal AD	1443	17	1425	285	302	4,234	65	175 - 430	22%
Sublegal UM	682	0	682	136	136	1,774	42	54 - 219	31%
Total	4,945	1,556	3,389	614	2,170	16,368	128	1,919 - 2,420	6%

Table 3.5 Comparison of modeled and estimated total Chinook salmon encounters for the 2020 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	3224	2140	1084	21
	AD	3,267	1,771	1,496	1541
	Total	6,491	3,911	2,580	1562
	% Marked	50	45	58	99
Estimated (Creel) Encounters	UM	1,742	1061	682	7
	AD	3,203	1,760	1443	1,549
	Total	4,945	2,821	2,124	1,556
	% Marked	65	62	68	100

Table 3.6 Comparison of modeled and estimated total Chinook salmon mortalities for the 2020 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)	557	1,951	2,508	301	1868	2170
Released Legal	319	111	430	158	34	192
Released Sublegal	217	299	516	136	285	421
Landed Only	21	1541	1562	7	1549	1556

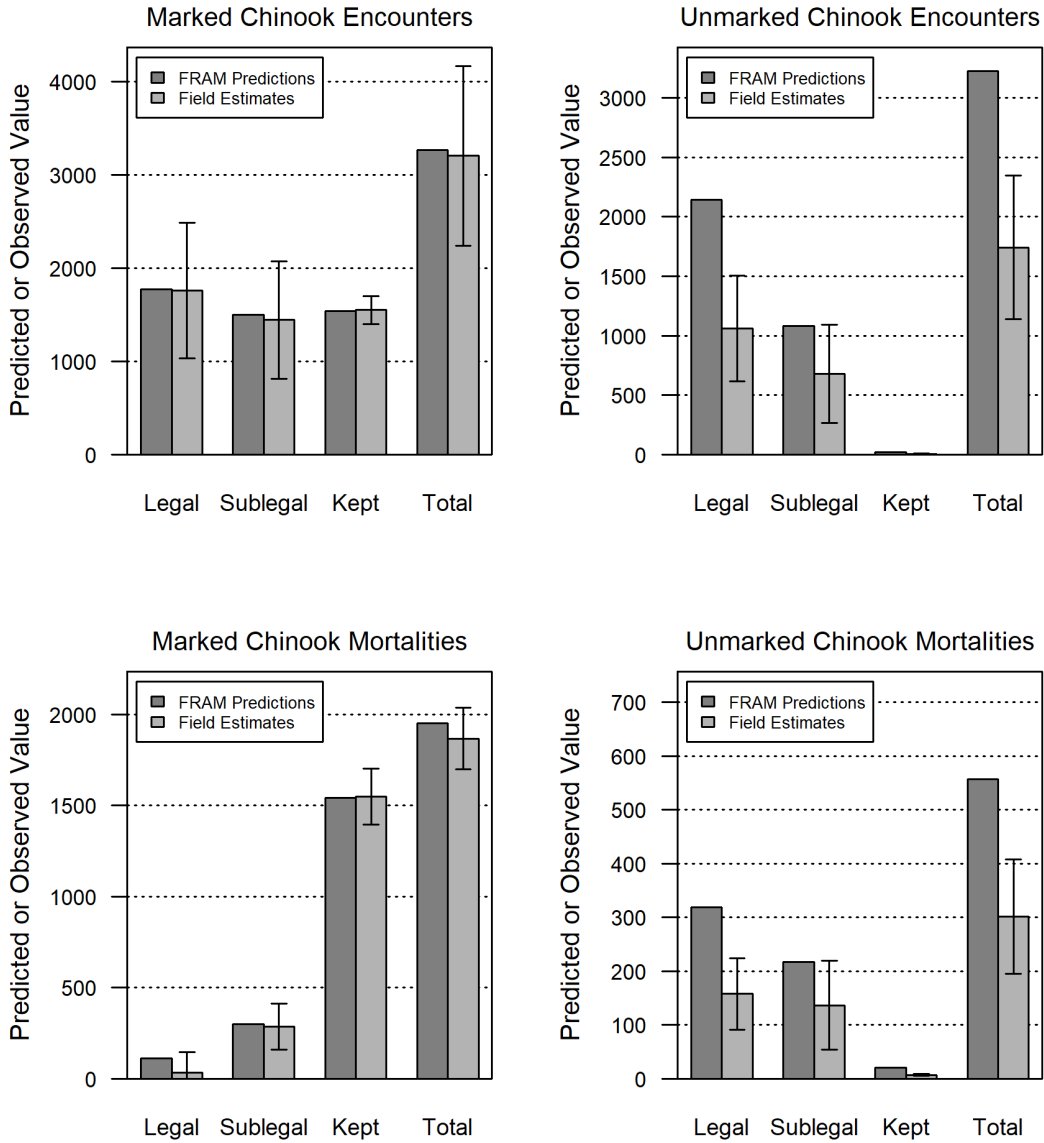


Figure 3.5 Comparison of modeled and estimated total Chinook encounters and mortalities for the 2020 summer Chinook MSF in Marine Area 7. Error bars represent approximate 95% confidence intervals for field estimates

Table 3.7 Summary of aerial survey and dockside data used to estimate the fraction of effort captured in the three-site sample frame during the 2020 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, $S_{y_{ijk}}$	
7-Jul	WD	9:55	11:00	119	70	37	225	0.311
12-Jul	WE	9:36	10:49	289	164	86	551	0.298
18-Jul	WE	9:20	10:30	538	294	153	1034	0.284
19-Jul	WE	11:11	12:14	407	262	155	688	0.381
20-Jul	WD	9:47	10:57	164	153	66	380	0.402
25-Jul	WE	9:46	10:57	504	267	163	826	0.323
July Totals:				2021	1210	660	3704	
Mean:				337	202	110	617	0.333
St Dev:				175	87	54	295	0.048
CV(%):				51.9%	43.0%	49.0%	47.8%	14.3%
25-Aug	WD	10:57	12:06	251	76	50	382	0.199
30-Aug	WE	9:40	10:47	344	192	104	635	0.302
August Totals:				595	268	154	1017	
Mean:				298	134	77	508	0.251
St Dev:				66	82	38	179	0.073
CV(%):				22.1%	61.2%	49.6%	35.3%	29.1%

Table 3.8 Monthly sample rates (Total retained Chinook sampled¹ / Estimated retained Chinook) in the 2020 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	27 - 31	1 Jul - 31 Jul	1,377	3	1,380	331	2	333	24.1%
8	34 - 36	22 Aug - 31 Aug	172	4	176	38	1	39	22.2%
Season Total			1,549	7	1,556	369	3	372	23.9%

^{1/} Number of retained Chinook sampled includes all retained Chinook inspected for CWT's, from all sites sampled during the summer 2020 Marine Area 7 Chinook MSF (creel estimates and the fish sampled as part of baseline sampling).

Table 3.9 Composition of test fishery Chinook encounters and associated mark-rate and size/mark-status proportion estimates from the 2020 summer Chinook MSF in Marine Area 7 in July (upper panel) and August (lower panel) AD = marked (adipose-clipped), UM = unmarked.

Stat Week	Fishing Effort		Legal		Sublegal		Total
	Days	Hrs Fished	AD	UM	AD	UM	
27	2	11.60	4	2	1	0	7
28	6	39.82	4	0	5	1	10
29	7	45.00	7	0	4	0	11
30	7	45.39	3	1	3	4	11
31	5	30.91	4	2	3	3	12
Total	27	172.72	22	5	16	8	51
Size/mark-status composition:			0.43	0.10	0.31	0.16	
Variance:			(0.0049)	(0.0018)	(0.0043)	(0.0026)	
Legal-size mark rate:			0.81				
Overall mark rate:			0.75				

Stat Week	Fishing Effort		Legal		Sublegal		Total
	Days	Hrs Fished	AD	UM	AD	UM	
34	2	13.34	0	0	3	0	3
35	7	50.08	0	7	3	2	12
Total	9	63.41	0	7	6	2	15
Size/mark-status composition:			0.00	0.47	0.40	0.13	
Variance:			(0.0000)	(0.0178)	(0.0171)	(0.0083)	
Legal-size mark rate:			0.00				
Overall mark rate:			0.40				

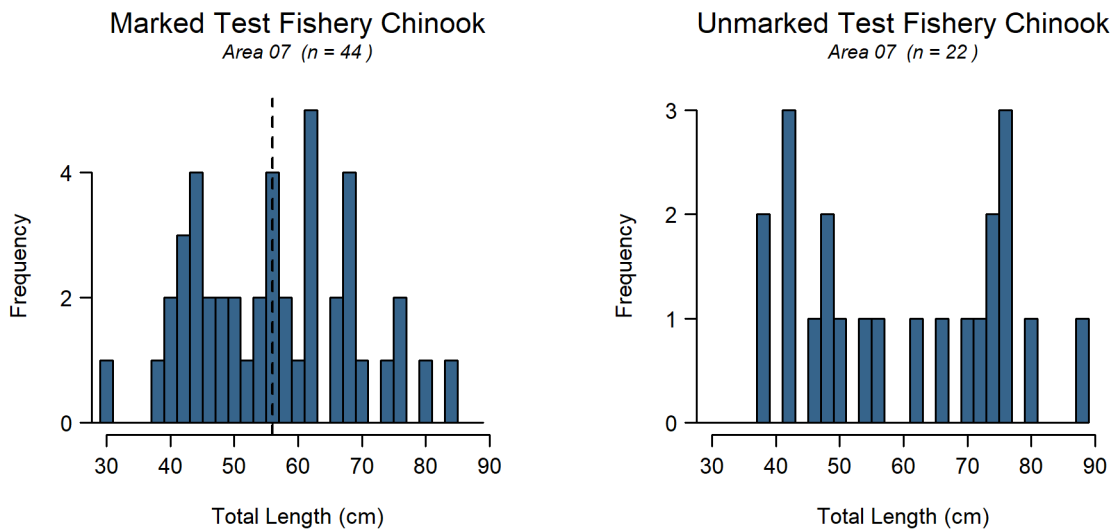


Figure 3.6 Length-frequency distributions of marked (left panel) and unmarked (right panel) Chinook encountered by test fishers during the 2020 summer Chinook MSF in Marine Area 7. The vertical dashed line in the left panel corresponds to the legal-size limit (22 in or 56 cm).

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 2020 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	0.00	0.00
Size/mark-status composition:		0.00	0.00	0.00	0.00			
Variance:		(0.0000)	(0.0000)	(0.0000)	(0.0000)			

Table 3.11 Dockside encounters (retained and released) by size-mark category during the 2020 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.

July 1-31 Dockside Encounters				
Status	Legal		Sublegal	
	LM	LU	SM	SU
Kept	315	1	4	0
Released	15	115	167	34
Total	330	116	171	34
Size/mark-status composition	0.51	0.18	0.26	0.05
Bias Corrected	0.45	0.18	0.26	0.11

August 22-31 Dockside Encounters				
Status	Legal		Sublegal	
	LM	LU	SM	SU
Kept	38	1	0	0
Released	7	142	62	18
Total	45	143	62	18
Size/mark-status composition	0.17	0.53	0.23	0.07
Bias Corrected	0.15	0.53	0.23	0.09

Table 3.12 Fishery-total estimates of retained and released salmon (other than Chinook) during the 2020 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	Pink	Coho AD	Coho UM	Coho UK	Pink	Unknown
27	1-Jul	5-Jul	0	5	0	0	0	0	0	0	9
28	6-Jul	12-Jul	6	0	0	0	0	0	0	0	18
29	13-Jul	19-Jul	0	5	0	0	0	0	0	14	5
30	20-Jul	26-Jul	0	0	0	5	0	0	0	0	9
31	27-Jul	31-Jul	12	0	0	0	0	0	0	0	0
34	22-Aug	23-Aug	163	48	0	0	12	20	8	0	12
35	24-Aug	30-Aug	387	363	4	4	8	20	4	0	61
36	31-Aug	31-Aug	80	32	0	0	0	0	4	0	4
Season Total:			648	453	4	9	20	40	16	14	118
Variance:			4130	3408	1	8	63	9	26	4	213
Standard Error:			64	58	1	3	8	3	5	2	15
CV (%):			10	13	25	31	57	15	13	13	12
95% CI:			522 - 774	339 - 567	2 - 6	3 - 15	-2 - 30	14 - 26	30 - 50	12 - 20	89 - 147

Table 3.13 Summary of CWTs recovered from Chinook salmon harvested during the 2020 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
WA	S Puget Sound (100%)	Deschutes R 13.0028	Tumwater Falls Hatchery	1 (100%)	0
Total				1	0

Table 3.14 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 2020 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)
No DITs.								

Table 3.15 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 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, 2020 - Jul 31, 2020, Aug 22- Aug 31, 2020	20,773	1,532	7	17	0	229	1,053	1,425	681	4,945

4) Marine Area 9 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a summer Chinook MSF in Marine Area 9 from July 16 through August 15, 2020. WDFW's Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program 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. **Table 4.1** 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 9 summer Chinook MSF.

Table 4.1 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.
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 3 weekend) were conducted during the five week 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	Given sufficient sample size ($n=103$, .18 LM percentage CV) of fish caught in the test fishery, we used the test fishery data only to estimate the size/mark-status proportions (LM = 22%, LU = 7%, SM = 55%, SU = 16%; Table 4.7) needed to produce encounter and mortality estimates.
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 = 17%, LU = 4%, SM = 9%, SU = 10%; Table 4.8) were significantly different than those of the test fishery data. 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 4.2 Estimates of total fishing effort and total salmon catch (harvest and releases) during the 2020 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	16-Jul	19-Jul	5,091	11,952	1,157	0	3,344	1,294	5,796
	30	20-Jul	26-Jul	4,766	10,438	868	0	2,510	971	4,350
	31	27-Jul	2-Aug	4,067	8,452	786	0	2,271	879	3,936
August	32	3-Aug	9-Aug	3,310	7,372	589	0	1,703	659	2,952
	33	10-Aug	15-Aug	3,422	7,161	386	0	1,114	431	1,931
Season Total:				20,656	45,376	3,786	0	10,943	4,235	18,964
Variance:				1,574,309	8,469,658	64,778	0	6,440,481	1,059,209	13,906,322
SE:				1,255	2,910	255	0	2,538	1,029	3,729
CV (%):				6	6	7	0	23	24	20
95% CI:				18,197 - 23,115	39,672 - 51,080	3,287 - 4,285	0 - 0	5,969 - 15,917	2,217 - 6,252	11,655 - 26,273

Table 4.3 Summary of total length samples from retained Chinook salmon collected during dockside angler interviews in the 2020 summer Chinook MSF in Marine Area 9.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	541	15	556
Unmarked	0	0	0
Total	541	15	556

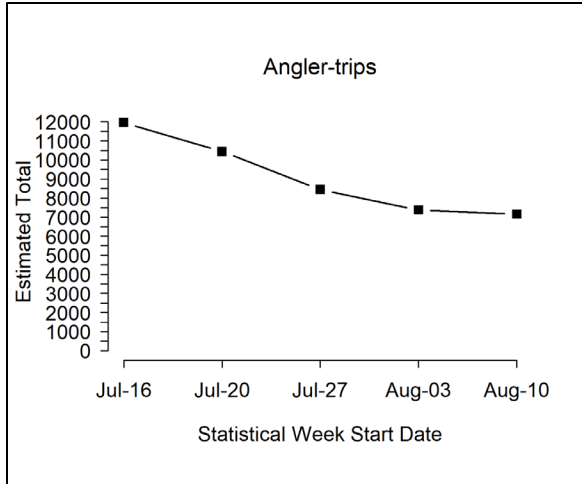


Figure 4.1 Temporal patterns in fishing effort during the 2020 summer Chinook MSF in Marine Area 9.

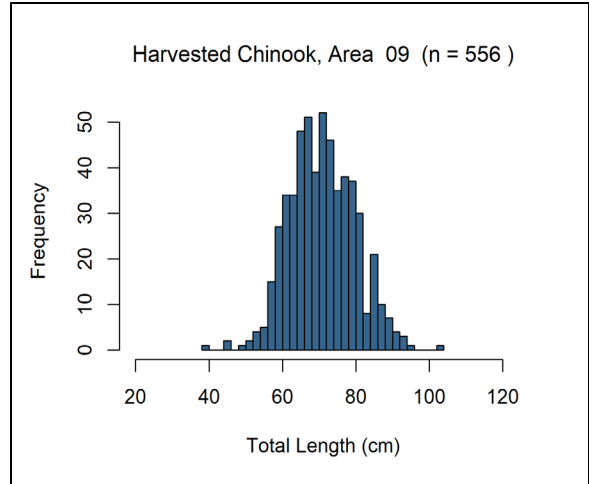


Figure 4.3 Length-frequency distribution of retained marked Chinook sampled in dockside angler interviews during the 2020 summer Chinook MSF in Marine Area 9. Note: displayed values are observations where lengths taken.

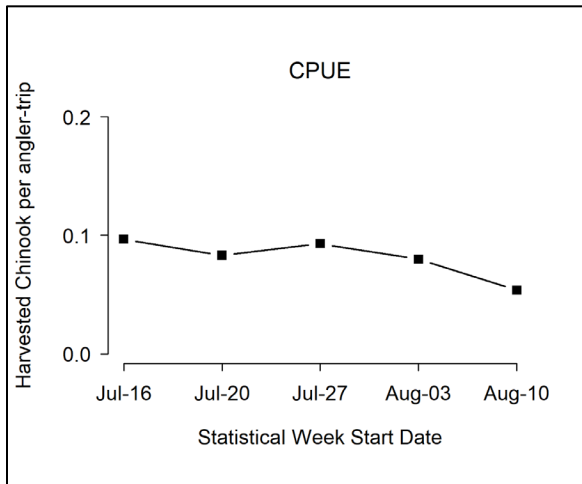


Figure 4.2 Temporal patterns in CPUE (landed Chinook salmon per angler trip) during the 2020 summer Chinook MSF in Marine Area 9.

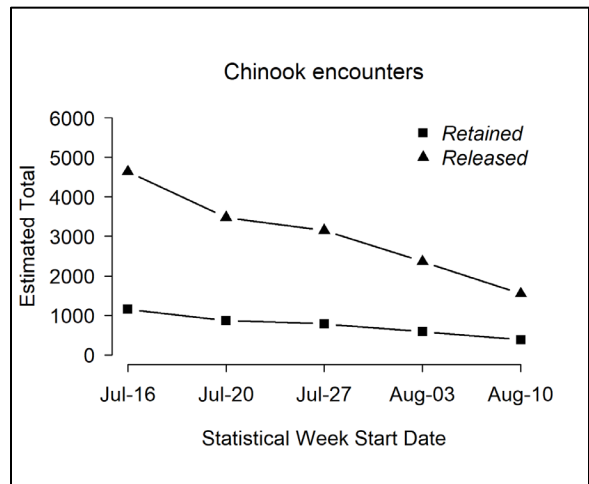


Figure 4.4 Temporal patterns in Chinook salmon encounters (retained and released) during the 2020 summer Chinook MSF in Marine Area 9.

Table 4.4 Comparison of modeled and estimated total Chinook encounters for the 2020 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	1,957	1279	678	13
	AD	13,654	7,505	6,149	6,529
	Total	15,611	8,784	6,827	6,542
	% Marked	87	85	90	100
Estimated (Creel) Encounters	UM	4235	1289	2946	0
	AD	14,729	4,235	10495	3,786
	Total	18,964	5,523	13440	3,786
	% Marked	78	77	78	100

Table 4.5 Summary of season-wide fishery impact estimates for the 2020 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	4,235	3,684	551	83	3,767	92,229	304	3,171 - 4,362	8
Legal UM	1289	0	1289	193	193	6,276	79	38 - 349	41
Sublegal AD	10495	102	10392	2078	2181	204,611	452	1,294 - 3,067	21
Sublegal UM	2946	0	2946	589	589	31211	177	243 - 935	30
Total	18,964	3,786	15,178	2944	6,730	334,326	578	5,597 - 7,863	9

Table 4.6 Comparison of modeled and estimated total Chinook mortalities for the 2020 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)	339	8,232	8,571	782	5,947	6,730
Released Legal	190	473	663	193	83	276
Released Sublegal	136	1230	1366	589	2078	2668
Landed Only	13	6,529	6,542	0	3,786	3,786

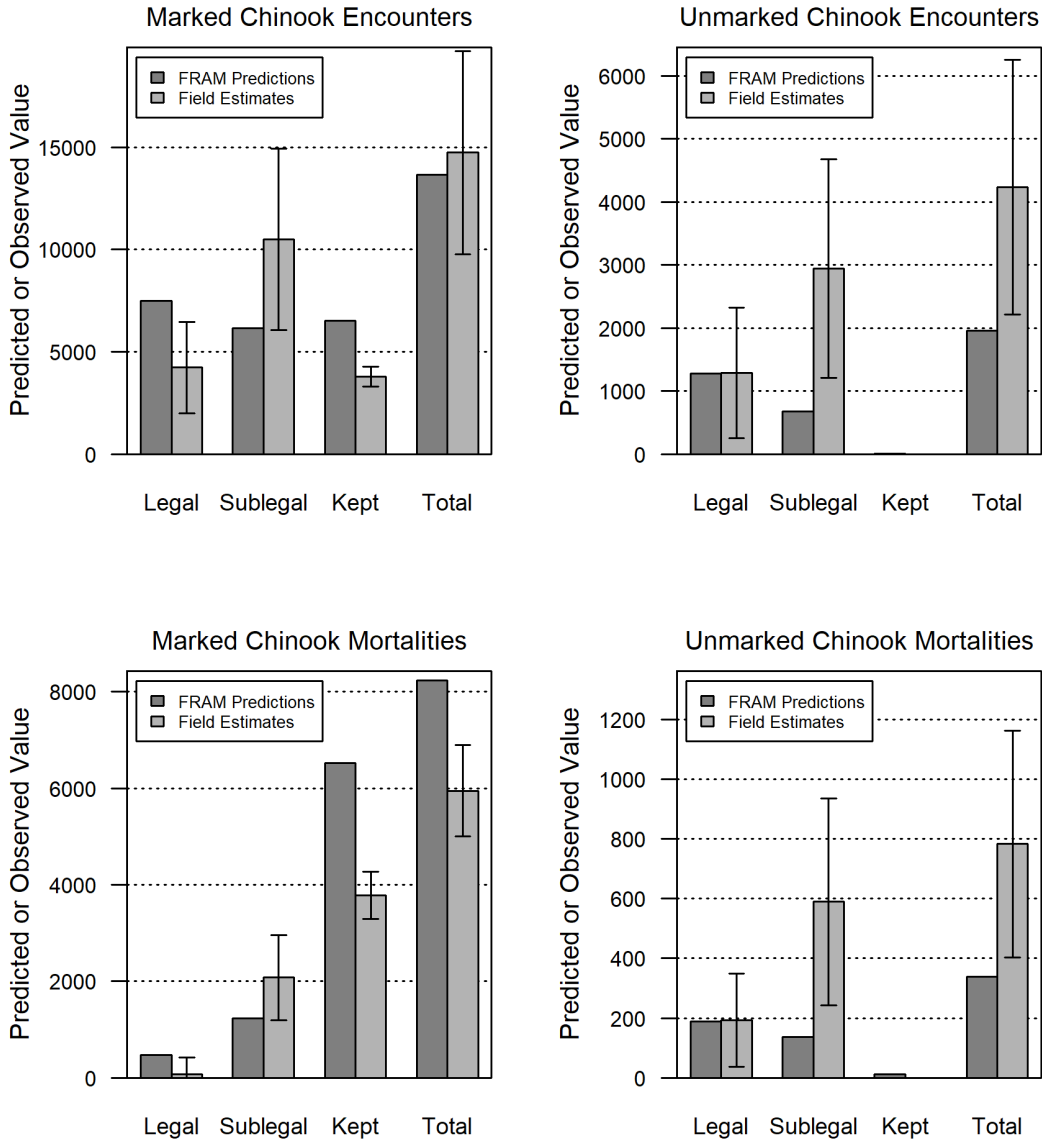


Figure 4.5 Comparison of modeled and estimated total Chinook salmon encounters and mortalities for the 2020 summer Chinook MSF in Marine Area 9. Error bars represent approximate 95% confidence intervals for field estimates.

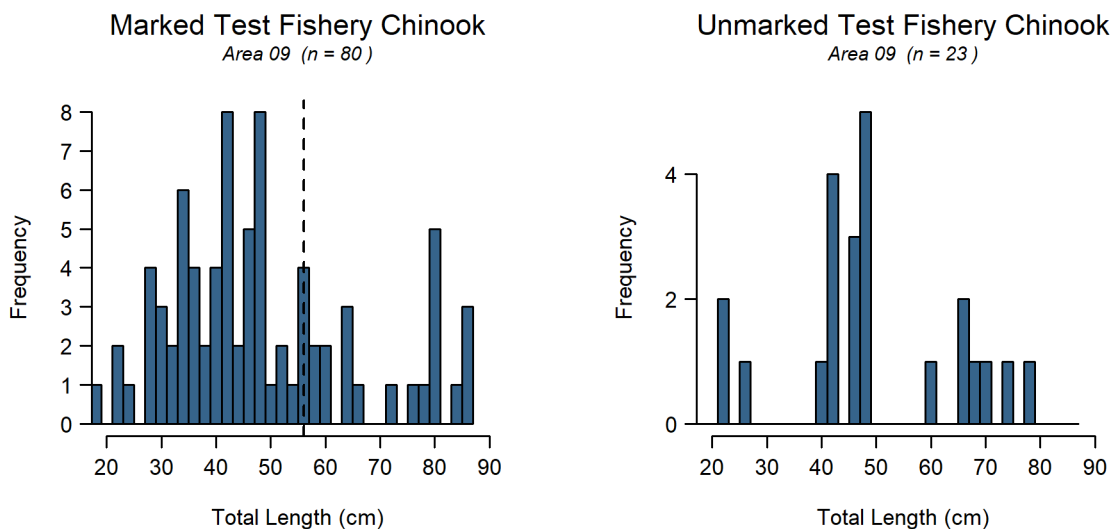


Figure 4.6 Length-frequency distributions of marked (left panel) and unmarked (right panel) Chinook salmon encountered by test fishers during the 2020 summer Chinook MSF in Marine Area 9. The vertical dashed line in the left panel corresponds to the legal-size limit (22 in or 56 cm).

Table 4.7 Composition of test fishery Chinook salmon encounters and associated mark-rate and size/mark-status proportion estimates for the summer 2020 Chinook salmon MSF in Marine Area 9. AD = marked (adipose-clipped), UM = unmarked.

Stat Week	Fishing Effort		Legal		Sublegal		Total
	Days	Hrs Fished	AD	UM	AD	UM	
29	6	41.32	6	0	12	3	21
30	6	37.60	4	1	5	2	12
31	5	34.22	4	2	10	3	19
32	6	35.06	5	1	12	4	22
33	5	34.19	4	3	18	4	29
Total	28	182.40	23	7	57	16	103
Size/mark-status composition:			0.22	0.07	0.55	0.16	
Variance:			(0.0017)	(0.0006)	(0.0024)	(0.0013)	
Legal-size mark rate:			0.77				
Overall mark rate:			0.78				

Table 4.8 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 2020 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	12 1-trip STRs	4	1	9	10	24	0.54	0.80
Size/mark-status composition:		0.17	0.04	0.38	0.42			
Variance:		(0.0060)	(0.0017)	(0.0102)	(0.0106)			

Table 4.9 Dockside encounters (retained and released) by size-mark category during the 2020 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				
Status	Legal		Sublegal	
	LM	LU	SM	SU
Kept	541	0	15	0
Released	25	158	779	309
Total	566	158	794	309
Size/mark-status composition	0.31	0.09	0.43	0.17
Bias Corrected	0.28	0.09	0.43	0.20

Table 4.10 Summary of coded-wire tags recovered from Chinook salmon harvested during the 2020 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	Thompson River (14.3%)	R-Chilliwack R	H-Chilliwack River H	7 (14.3%)	0
	Georgia Strait (2%)	R-Cowichan R	H-Cowichan River H	1 (2%)	0
WA	N Washington (12.2%)	Friday Cr 03.0017	Samish Hatchery	5 (10.2%)	0
		Kendall Cr 01.0406	Kendall Cr Hatchery	1 (2%)	0
	Strait of Juan De Fuca (2%)	Elwha R 18.0272	Elwha Hatchery	1 (2%)	0
	Hood Canal (18.4%)	Purdy Cr 16.0005	George Adams Hatchery	3 (6.1%)	0
		Finch Cr 16.0222	Hoodsport Hatchery	6 (12.2%)	0
	Mid Puget Sound (26.5%)	Icy Cr 09.0125	Icy Cr Hatchery	6 (12.2%)	0
		Gorst Cr 15.0216	Gorst Cr Rearing Pnd	1 (2%)	0
		Big Soos Cr 09.0072	Soos Creek Hatchery	1 (2%)	0
		Grovers Cr Hatchery	Grovers Cr Hatchery	1 (2%)	1
		Portage Bay/Ship Cnl	Issaquah Hatchery	2 (4.1%)	0
		Grovers Cr 15.0299	Grovers Cr Hatchery	2 (4.1%)	2
		S Puget Sound (22.4%)	Chambers Cr 12.0007	Garrison Hatchery	1 (2%)
	Clear Cr 11.0013C		Clear Creek Hatchery	1 (2%)	1
	Deschutes R 13.0028		Tumwater Falls Hatchery	4 (8.2%)	0
	Mcallister Springs Hatch		Clear Creek Hatchery	1 (2%)	0
	Minter Cr 15.0048		Minter Cr Hatchery	2 (4.1%)	0
Kalama Cr 11.0017	Kalama Cr Hatchery		2 (4.1%)	0	
NA	NA (2%)	NA	NA	1 (2%)	0
Total				49	4

Table 4.11 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 2020 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)
Clear Creek Hatchery	2017	1	6.8	39.56	6.8	0.7	0.398	0.63
Grovers Cr Hatchery	2015	1	6.8	39.56	6.8	0.7	0.39	0.62
Grovers Cr Hatchery	2016	1	6.8	39.56	7.2	0.7	0.439	0.66
Grovers Cr Hatchery	2017	1	6.8	39.56	6.5	0.7	0.365	0.6
Total		4	27.2	158.26	27.3	2.7	1.592	2.52

Table 4.12 Monthly sample rates (Total retained Chinook salmon sampled¹ / Estimated retained Chinook) in the 2020 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	16 Jul - 2 Aug	2,811	0	2,811	409	0	409	14.50%
August	32 - 33	3 Aug - 15 Aug	975	0	975	173	0	173	17.70%
Season Total			3,786	0	3,786	582	0	582	15.40%

^{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 4.13 Fishery-total estimates of retained and released salmon (*other than Chinook salmon*) in the 2020 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	Coho UK	Unknown	Coho AD	Coho UM	Coho UK	Unknown
29	16-Jul	19-Jul	673	57	0	136	111	280	900	5,190
30	20-Jul	26-Jul	460	10	10	32	126	299	696	3,757
31	27-Jul	2-Aug	461	8	0	0	142	194	449	4,149
32	3-Aug	9-Aug	462	5	15	5	157	298	598	4,670
33	10-Aug	15-Aug	399	32	39	0	230	264	452	5,840
Season Total:			2,455	111	64	174	766	1,336	3,095	23,606
Variance:			112,496	837	1,187	3,041	37,116	24,963	257,545	8,765,901
Standard Error:			335	29	34	55	193	158	507	2961
CV (%):			14	26	54	32	25	12	16	13
95% CI:			1,797 - 3,112	55 - 168	0 - 131	66 - 282	388 - 1,143	1,026 - 1,645	2,100 - 4,090	17,803 - 29,409

Table 4.14 Summary of the total number of anglers intercepted during on-the-water surveys conducted for the 2020 summer Chinook MSF in Marine Area 9. Sites in bold represent those included in the dockside sample frame. Continued on to the next page.

Site Name	Weekday Anglers	Season Total (unadjusted) Size Measure	Weekend Anglers	Season Total (unadjusted) Size Measure
Armeni Public Ramp	0	0.0000	2	0.0024
Bayside Marina/Drystack	6	0.0120	11	0.0131
Brownsville Marina/Dock/Ramp	6	0.0120	4	0.0048
Bush Point Ramp and Beach	4	0.0080	12	0.0143
Camano Island State Park Public Ramp	2	0.0040	5	0.0060
Cape George Marina	3	0.0060	0	0.0000
Cornet Bay Marina	2	0.0040	2	0.0024
Cornet Bay Public Ramp	0	0.0000	3	0.0036
Coupeville Public Ramp	0	0.0000	6	0.0072
Dagmar's Landing, Forklift Launch	4	0.0080	19	0.0227
Driftwood Key Marina	21	0.0422	31	0.0370
Ebey Waterfront Park	1	0.0020	0	0.0000
Edmonds Boat Basin (Public Sling)	18	0.0361	16	0.0191
Edmonds Dry Storage	8	0.0161	20	0.0239
Edmonds Marina	49	0.0984	55	0.0657
Eglon Public Ramp	5	0.0100	6	0.0072
Eleventh Street Bridge Ramp	0	0.0000	1	0.0012
Elliott Bay Marina	1	0.0020	0	0.0000
Everett Marina	44	0.0884	37	0.0442
Everett Ramp	87	0.1747	164	0.1959
Fort Casey Public Ramp and Shore	64	0.1285	63	0.0753
Fort Flagler Ramps-Marrowstone Is	4	0.0080	2	0.0024
Fort Worden Ramp	4	0.0080	12	0.0143
Hadlock Public Ramp	2	0.0040	18	0.0215
John Wayne Marina	0	0.0000	2	0.0024
Keyport Ramp	0	0.0000	2	0.0024
Kingston Marina	4	0.0080	7	0.0084
Kingston Public Ramp	13	0.0261	28	0.0335
La Conner Moorage	0	0.0000	1	0.0012
Lagoon Point Ramp and Beach	1	0.0020	20	0.0239
Langus Riverfront Park Ramp (Smith Is)	0	0.0000	2	0.0024
Manchester Public Ramp	0	0.0000	4	0.0048
Mats Bay Ramp	2	0.0040	4	0.0048
Mukilteo Lighthouse Park	13	0.0261	36	0.0430
Mutiny Bay Public Ramp	0	0.0000	2	0.0024
Mutiny Bay Resort	0	0.0000	6	0.0072
Mystery Bay Dock/Moorage	0	0.0000	5	0.0060
New Marysville Public Ramp	1	0.0020	0	0.0000
Oak Harbor Marina & Public Ramp	2	0.0040	0	0.0000
Point Hudson Marina	6	0.0120	5	0.0060
Point No Point Beach	1	0.0020	2	0.0024
Port Hadlock Marina	1	0.0020	2	0.0024
Port Ludlow Marina/Beach Launch	5	0.0100	4	0.0048
Port Orchard Public Ramp	0	0.0000	3	0.0036
Port Townsend Boat Haven (Docks)	7	0.0141	17	0.0203

Site Name	Weekday Anglers	Season Total (unadjusted) Size Measure	Weekend Anglers	Season Total (unadjusted) Size Measure
Port Townsend Boat Haven Ramp	38	0.0763	73	0.0872
Possession Waterfront Beach Park	1	0.0020	11	0.0131
Private	27	0.0542	29	0.0346
Salmon Club Ramp	6	0.0120	0	0.0000
Salsbury County Park Ramp	17	0.0341	31	0.0370
Shilshole Marina	5	0.0100	25	0.0299
Shilshole Public Ramp	13	0.0261	23	0.0275
Skyline Marina/Sling (Flounder Bay)	0	0.0000	2	0.0024
Unknown	0	0.0000	2	0.0024
Total Anglers	498	1	837	1

Table 4.15 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 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, 2016 - Aug 15, 2016	14,911	2,861	9	112	0	427	912	4,886	2104	11,311
Jul 16, 2017 - Jul 30, 2017	18,548	5,264	0	191	3	787	1261	9,388	2266	19,160
Jul 16, 2018 - Jul 29, 2018	17,356	5,935	1	93	1	887	1084	3,628	464	12,094
Jul 25, 2019 - Aug 9, 2019	17,147	3,434	5	11	0	513	579	573	146	5,263
Jul 16, 2020 - Aug 15, 2020	45,376	3,684	0	102	0	551	1,289	10,392	2,946	18,964

5) Marine Area 10 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a summer Chinook MSF in Marine Area 10 from July 16 through August 31, 2020. WDFW's Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program in Marine Area 10 throughout the season in order to collect the data needed to estimate key parameters characterizing the fishery and its impacts on unmarked salmon. Sampling activities 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. **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.
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 9 boat surveys (5 weekday and 4 weekend) were conducted during the month long 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	Given sufficient sample size ($n=120$, .20 LM percentage CV) of fish caught in the test fishery, we used the test fishery data only to estimate the size/mark-status proportions (LM = 18%, LU = 13%, SM = 47%, 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	The size/mark-status proportions of Private STR data (LM = 29%, LU = 12%, SM = 24%, SU = 35%; Table 5.8) were similar (p -value=.28) to those of the test fishery data, but with the sufficient size of the test fishing data set and the assumption that test fishing data was more accurate only test fishing data was used.
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 2020 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	16-Jul	19-Jul	1921	4185	123	0	348	263	734
	30	20-Jul	26-Jul	1659	3425	117	6	333	246	702
	31	27-Jul	2-Aug	1537	2,883	165	0	468	354	987
Aug	32	3-Aug	9-Aug	2,181	4,338	390	3	1106	832	2331
	33	10-Aug	16-Aug	2,349	4,573	375	0	1066	805	2246
	34	17-Aug	23-Aug	1,824	3,693	212	0	602	455	1269
	35	24-Aug	30-Aug	2,702	5,212	112	25	318	216	671
	36	31-Aug	31-Aug	298	570	15	0	43	32	90
Season Total				14,471	28,880	1,510	33	4284	3202	9,029
Variance:				236,421	1,162,834	7,835	122	1,141,375	436,229	3,527,490
Standard Error:				486	1078	89	11	1068	660	1878
CV (%):				3	4	6	33	25	21	21
95% CI:				13,518 - 15,424	26,767 - 30,994	1,336 - 1,683	12 - 55	2,190 - 6,378	1,907 - 4,497	5,348 - 12,710

Table 5.3 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the 2020 summer Chinook MSF in Marine Area 10.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	418	41	459
Unmarked	2	10	12
Total	420	51	471

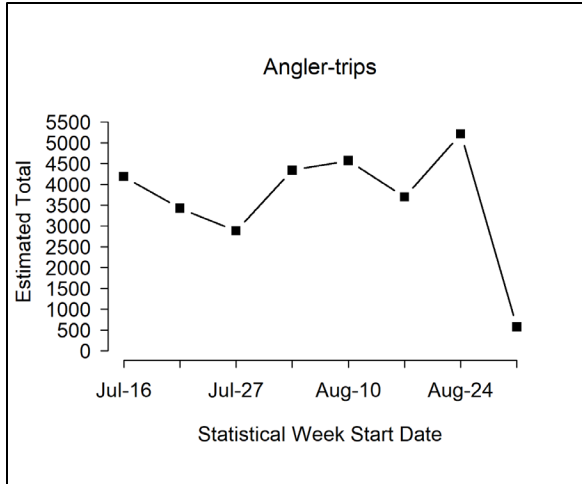


Figure 5.1 Temporal patterns in fishing effort during the 2108 summer Chinook MSF in Marine Area 10.

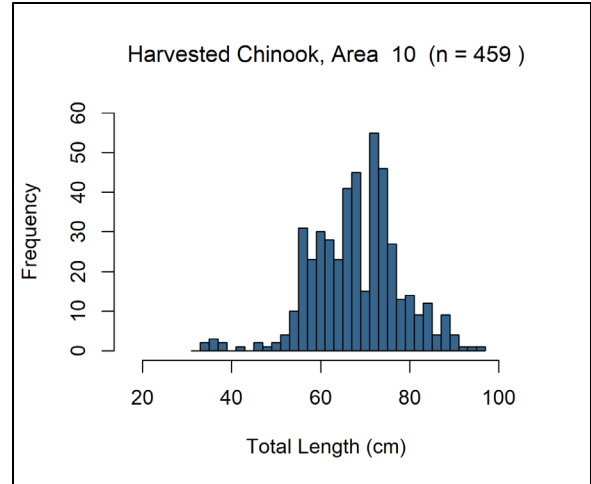


Figure 5.3 Length-frequency distribution of retained marked Chinook salmon sampled in dockside angler interviews during the 2020 summer Chinook MSF in Marine Area 10. Note: displayed values are observations where lengths taken.

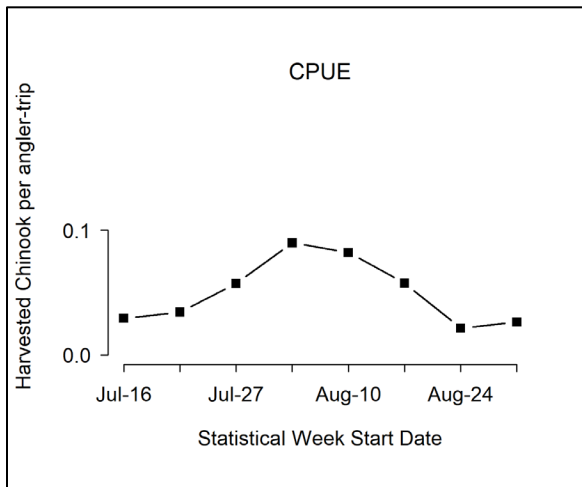


Figure 5.2 Temporal patterns in CPUE (landed Chinook salmon per angler trip) during the 2020 summer Chinook MSF in Marine Area 10.

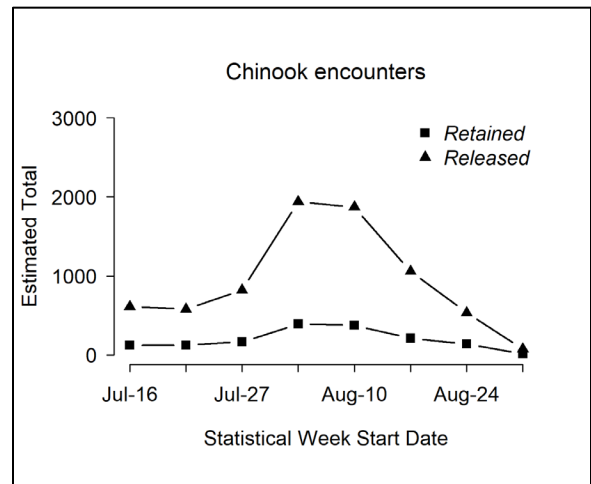


Figure 5.4 Temporal patterns in Chinook salmon encounters (retained and released) during the 2020 summer Chinook MSF in Marine Area 10.

Table 5.4 Comparison of modeled and estimated total Chinook salmon encounters for the 2020 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	2,110	944	1166	9
	AD	9,462	4,769	4,693	4,149
	Total	11,572	5,713	5,859	4,158
	% Marked	82	83	80	100
Estimated (Creel) Encounters	UM	3235	1129	2107	33
	AD	5,794	1,580	4214	1,510
	Total	9,029	2,709	6320	1,543
	% Marked	64	58	67	98

Table 5.5 Summary of season-wide fishery impact estimates for the 2020 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	1,580	1,375	205	31	1,406	11,616	108	1,194 - 1,617	8
Legal UM	1129	6	1123	168	174	2870	54	69 - 279	31
Sublegal AD	4214	135	4079	816	951	37,738	194	570 - 1,331	20
Sublegal UM	2107	28	2079	416	444	12,474	112	225 - 663	25
Total	9,029	1,543	7,486	1431	2,974	64,698	254	2,475 - 3,472	9

Table 5.6 Comparison of modeled and estimated total Chinook salmon mortalities for the 2020 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)	383	5,389	5,772	618	2,356	2,974
Released Legal	141	301	442	168	31	199
Released Sublegal	233	939	1172	416	816	1232
Landed Only	9	4,149	4,158	33	1,510	1,543

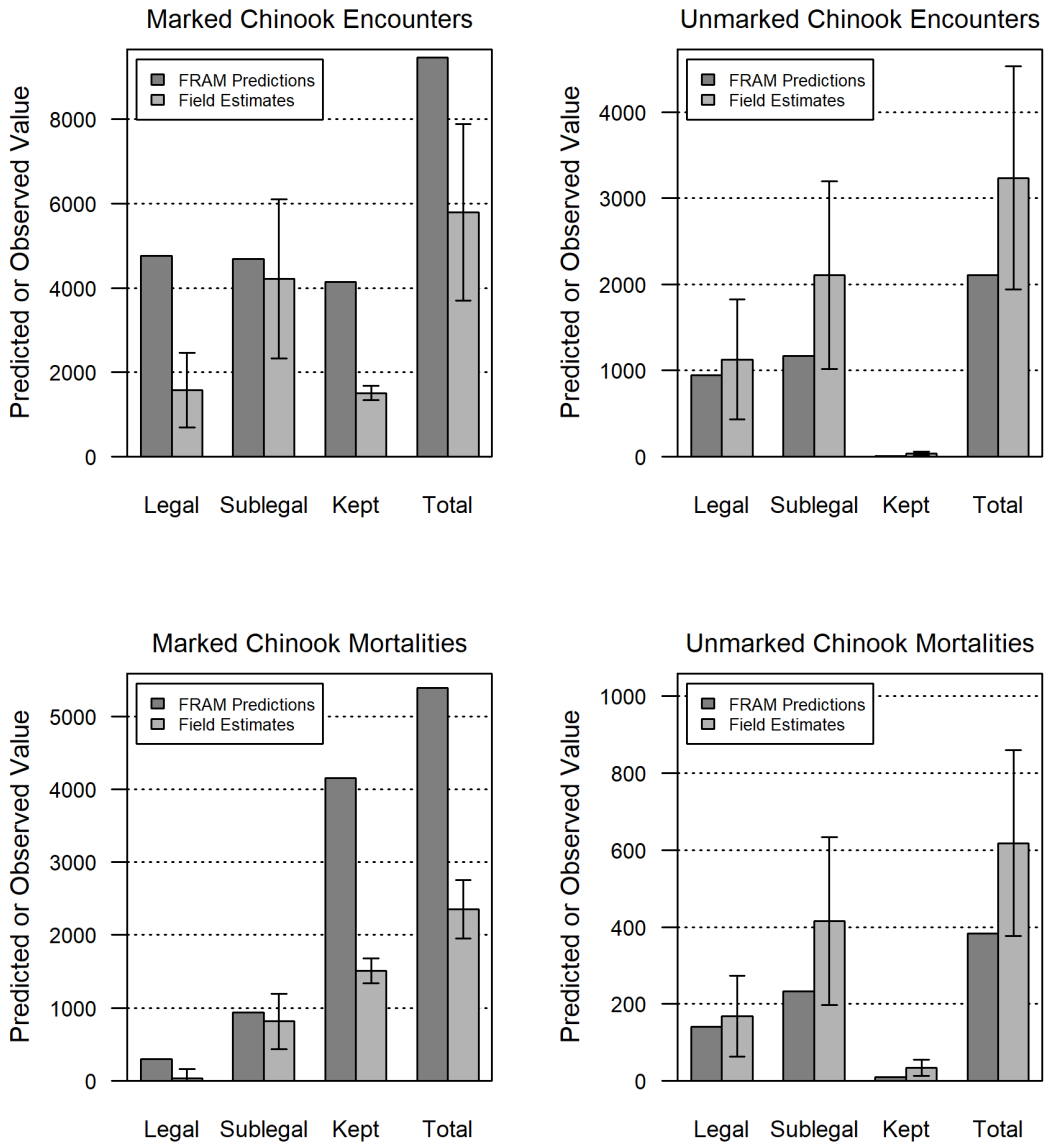


Figure 5.5 Comparison of modeled and estimated total Chinook salmon encounters and mortalities for the 2020 summer Chinook MSF in Marine Area 10. Error bars represent approximate 95% confidence intervals for field estimates.

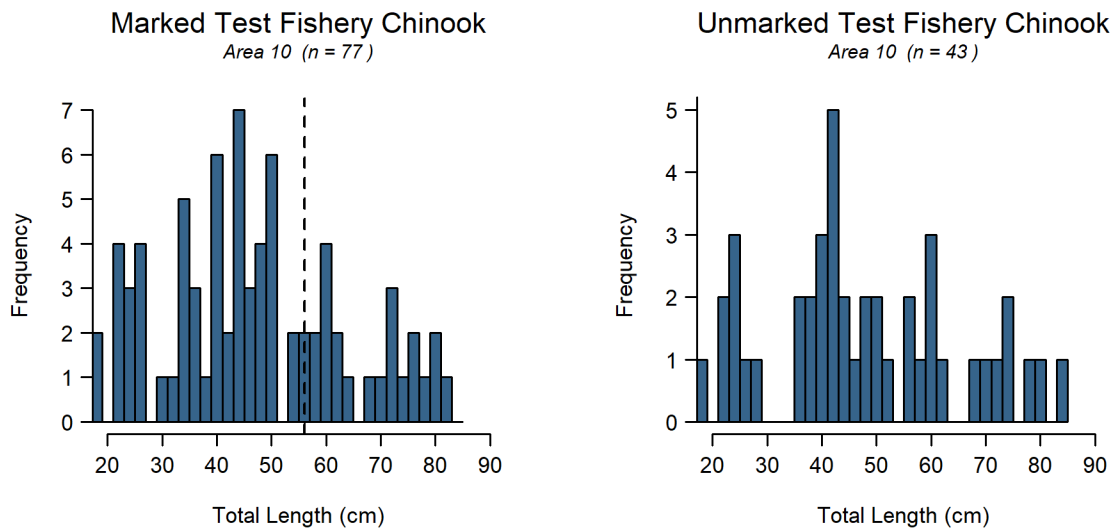


Figure 5.6 Length-frequency distributions of marked (left panel) and unmarked (right panel) Chinook salmon encountered by test fishers during the 2020 summer Chinook MSF in Marine Area 10. The vertical dashed line in the left panel corresponds to the legal-size limit (22 in or 56 cm).

Table 5.7 Composition of test fishery Chinook salmon encounters and associated mark-rate and size/mark-status proportion estimates for the 2020 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	5	31.08	2	0	3	1	6
30	5	34.27	6	3	4	2	15
31	5	31.16	4	0	1	2	7
32	4	22.02	1	0	4	2	7
33	4	27.30	0	2	10	7	19
34	11	60.46	5	7	15	9	36
35	10	56.03	3	3	19	5	30
Total	44	262.33	21	15	56	28	120
Size/mark-status composition:			0.18	0.13	0.47	0.23	
Variance:			(0.0012)	(0.0009)	(0.0021)	(0.0015)	
Legal-size mark rate:			0.58				
Overall mark rate:			0.64				

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 2020 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	7 1-trip STRs	5	2	4	6	17	0.53	0.71
Size/mark-status composition: Variance:		0.29 (0.0130)	0.12 (0.0065)	0.24 (0.0112)	0.35 (0.0143)			
Charter STR	9 1-trip STRs	8	9	2	2	21	0.48	0.47
Size/mark-status composition: Variance:		0.38 (0.0118)	0.43 (0.0122)	0.10 (0.0043)	0.10 (0.0043)			

Table 5.9 Dockside encounters (retained and released) by size-mark category during the 2020 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				
Status	Legal		Sublegal	
	LM	LU	SM	SU
Kept	418	2	41	10
Released	18	248	1,125	432
Total	436	250	1,166	442
Size/mark-status composition	0.19	0.11	0.51	0.19
Bias Corrected	0.17	0.11	0.51	0.21

Table 5.10 Fishery-total estimates of retained and released salmon (*other than Chinook salmon*) in the 2020 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	Chum	Pink	Unknown	Coho AD	Coho UM	Coho UK	Chum	Pink	Cutthroat	Unknown
29	16-Jul	19-Jul	467	365	10	0	0	32	324	100	444	0	0	0	570
30	20-Jul	26-Jul	400	395	0	0	0	8	96	207	498	0	0	4	979
31	27-Jul	2-Aug	342	314	0	0	0	0	203	82	580	3	0	6	723
32	3-Aug	9-Aug	451	440	0	3	4	0	360	147	650	6	4	18	1,607
33	10-Aug	16-Aug	488	445	0	0	0	0	233	52	943	0	0	183	2,258
34	17-Aug	23-Aug	612	431	0	0	0	0	307	101	827	0	0	39	2,645
35	24-Aug	30-Aug	968	1,057	0	0	0	19	330	235	1,269	0	0	94	4,520
36	31-Aug	31-Aug	172	161	0	0	0	0	56	25	101	0	0	3	506
Season Total:			3,900	3,608	10	3	4	59	1,908	949	5,312	9	4	347	13,809
Variance:			35,859	30,046	30	2	6	303	44,004	20,191	133,126	13	6	29,420	859,162
Standard Error:			189	173	6	2	2	17	210	142	365	4	2	172	927
CV (%):			5	5	55	53	63	29	11	15	7	39	63	49	7
95% CI:			3,529 - 4,271	3,269 - 3,948	0 - 21	0 - 6	0 - 8	25 - 93	1,497 - 2,320	671 - 1,228	4,596 - 6,027	2 - 16	0 - 8	10 - 683	11,992 - 15,625

Table 5.11 Summary of the total number of anglers intercepted during on-the-water surveys conducted for the 2020 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	63	0.0724	65	0.0547
Bayside Marina/Drystack	6	0.0069	3	0.0025
Blake Island	3	0.0034	0	0.0000
Browns Point Ramp	0	0.0000	6	0.0050
Brownsville Marina/Dock/Ramp	35	0.0402	59	0.0496
Camano Island State Park Public Ramp	2	0.0023	0	0.0000
Coupeville Public Ramp	2	0.0023	0	0.0000
Dagmar's Landing, Forklift Launch	6	0.0069	8	0.0067
Des Moines Marina (Moorage)	5	0.0057	12	0.0101
Eagle Harbor Waterfront Park	13	0.0149	20	0.0168
Edmonds Boat Basin (Public Sling)	23	0.0264	49	0.0412
Edmonds Dry Storage	26	0.0299	32	0.0269
Edmonds Marina	139	0.1598	125	0.1051
Elliott Bay Marina	7	0.0080	25	0.0210
Everett Marina	15	0.0172	46	0.0387
Everett Ramp	20	0.0230	123	0.1034
Evergreen Park Ramp	0	0.0000	3	0.0025
First Avenue South Public Ramp	0	0.0000	2	0.0017
Gig Harbor Marina	2	0.0023	0	0.0000
Keyport Ramp	1	0.0011	0	0.0000
Kingston Marina	40	0.0460	21	0.0177
Kingston Public Ramp	44	0.0506	86	0.0723
Manchester Public Ramp	14	0.0161	40	0.0336
Marysville Public Ramp	2	0.0023	0	0.0000
Mukilteo Lighthouse Park	3	0.0034	17	0.0143
Point Defiance Public Ramp	4	0.0046	0	0.0000
Port Orchard Marina	8	0.0092	0	0.0000
Port Orchard Public Ramp	8	0.0092	13	0.0109
Possession Waterfront Beach Park	3	0.0034	2	0.0017
Poulsbo Ramp/Marina	4	0.0046	7	0.0059
Private	50	0.0575	76	0.0639
Redondo Ramp	6	0.0069	3	0.0025
Shilshole Marina	161	0.1851	94	0.0791
Shilshole Public Ramp	152	0.1747	245	0.2061
Unknown	1	0.0011	0	0.0000
Winslow City Ramp	2	0.0023	3	0.0025
Winslow Marina	0	0.0000	4	0.0034
Total Anglers	870	1	1189	1

Table 5.12 Summary of coded-wire tags recovered from Chinook salmon harvested during the 2020 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
BC	Thompson River (3.4%)	R-Chilko R	H-Chehalis River H	1 (1.7%)	0
		R-Chilliwack R	H-Chilliwack River H	1 (1.7%)	0
	W Vancouver Island (1.7%)	R-Robertson Cr	H-Robertson Creek H	1 (1.7%)	0
WA	Hood Canal (1.7%)	Finch Cr 16.0222	Hoodsport Hatchery	1 (1.7%)	0
	N Puget Sound (1.7%)	Wallace R 07.0940	Wallace R Hatchery	1 (1.7%)	0
	Skagit River (1.7%)	Cascade R 03.1411	Marblemount Hatchery	1 (1.7%)	0
	Mid Puget Sound (66.1%)	Big Soos Cr 09.0072	Soos Creek Hatchery	5 (8.5%)	0
		Icy Cr 09.0125	Icy Cr Hatchery	16 (27.1%)	0
		Gorst Cr 15.0216	Gorst Cr Rearing Pnd	2 (3.4%)	0
		Grovers Cr 15.0299	Grovers Cr Hatchery	11 (18.6%)	11
		Grovers Cr Hatchery	Grovers Cr Hatchery	4 (6.8%)	4
		Portage Bay/Ship Cnl	Issaquah Hatchery	1 (1.7%)	0
	S Puget Sound (23.7%)	Chambers Cr 12.0007	Garrison Hatchery	2 (3.4%)	0
		Clear Cr 11.0013C	Clear Creek Hatchery	3 (5.1%)	3
		Deschutes R 13.0028	Tumwater Falls Hatchery	2 (3.4%)	0
		Kalama Cr 11.0017	Kalama Cr Hatchery	4 (6.8%)	0
		Minter Cr 15.0048	Minter Cr Hatchery	2 (3.4%)	0
		Minter Cr Tr 15.0051	Hupp Springs Rearing	1 (1.7%)	0
Total				59	18

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 2020 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)
Clear Creek Hatchery	2016	1	3.3	7.46	3.3	0.3	0.075	0.27
Clear Creek Hatchery	2017	1	3.3	7.46	3.3	0.3	0.075	0.27
Clear Creek Hatchery	2018	1	3.3	7.46	3.4	0.3	0.079	0.28
Grovers Cr Hatchery	2016	3	9.8	22.37	10.3	1	0.248	0.86
Grovers Cr Hatchery	2017	11	32.8	74.57	31.5	3.1	0.688	2.62
Grovers Cr Hatchery	2018	1	3.3	7.46	3.2	0.3	0.071	0.27
Total		18	55.7	126.76	54.9	5.5	1.235	4.58

Table 5.14 Monthly sample rates (Total retained Chinook salmon sampled ^{1/} Estimated retained Chinook salmon) in the 2020 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	16 Jul - 2 Aug	405	6	411	111	1	112	27.30%
August	32 - 36	3 Aug - 31 Aug	1105	28	1132	366	12	378	33.40%
Season Total			1,510	33	1,543	477	13	490	31.80%

^{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, 2020 - Aug 31, 2020	28,880	1,375	6	135	28	205	1123	4079	2079	9,029

6) Marine Area 11 Summer Mark-Selective Chinook Fishery

The Washington Department of Fish and Wildlife (WDFW) implemented a summer Chinook MSF in Marine Area 11 from July 1 through September 30, 2020 five days a week, closed Thursdays and Fridays. Due to in-season management action, the fishery was closed on September 6, 2020 when the quota was reached. WDFW's Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program in Marine Area 11 throughout the season in order to collect the data needed to estimate key parameters characterizing the fishery and its impacts on unmarked salmon. Sampling activities 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. This group submitted the majority of the STRs for Area 11 in the summer of 2020. **Table 6.1** 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 11 summer Chinook MSF.

Table 6.1 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	Two weeks	Creel estimates were produced for two-week estimation periods and stratified into “weekday” (Mon.-Weds.) and “weekend” (Sat.-Sun.) day-type strata within weeks. For the weekday stratum, we sampled $n=2$ days out of $N=6$ available weekdays per two-week period. For the weekend stratum, we sampled $n=2$ days out of $N=2$ available weekend days per week.
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 11 boat surveys. 4 weekday and 7 weekend boat surveys were conducted during the three month fishery.
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 = 44%, LU = 14%, SM = 38%, SU = 5%; Table 6.7) were used to estimate the size/mark-status proportions needed 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

Table 6.2 Estimates of total fishing effort and total salmon catch (harvest and releases) during the 2020 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	
July	27	1-Jul	5-Jul	1,279	2,236	147	0	150	65	362
	28	6-Jul	12-Jul	1,925	3,560	226	0	231	101	559
	29	13-Jul	19-Jul	1,620	3,291	95	0	97	42	233
	30	20-Jul	26-Jul	1,474	2,901	123	0	125	55	303
	31	27-Jul	2-Aug	2,373	4,059	506	0	518	225	1,249
August	32	3-Aug	9-Aug	2,396	4,475	310	0	317	138	766
	33	10-Aug	16-Aug	2,181	4,306	290	25	296	104	715
	34	17-Aug	23-Aug	1,736	3,306	288	0	295	128	712
	35	24-Aug	30-Aug	2,084	4,126	37	0	38	17	92
	36	31-Aug	6-Sep	1,810	3,648	56	0	57	25	137
September	37	7-Sep	13-Sep	668	1,362	8	0	9	4	21
	38	14-Sep	20-Sep	665	1,193	0	0	0	0	0
	39	21-Sep	27-Sep	1,028	1,760	12	0	13	5	30
	40	28-Sep	30-Sep	425	643	4	0	4	2	9
Season Total:				21,663	40,866	2,102	25	2,150	911	5,189
Variance:				919,734	3,001,634	51,462	532	337,200	44,132	572,112
SE:				959	1,733	227	23	581	210	756
CV (%):				4	4	11	92	27	23	15
95% CI:				19,783 - 23,542	37,470 - 44,262	1,658 - 2,547	0 - 70	1,012 - 3,288	499 - 1,323	3,706 - 6,671

Table 6.3 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the 2020 summer Chinook MSF in Marine Area 11.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	441	22	463
Unmarked	3	0	3
Total	444	22	466

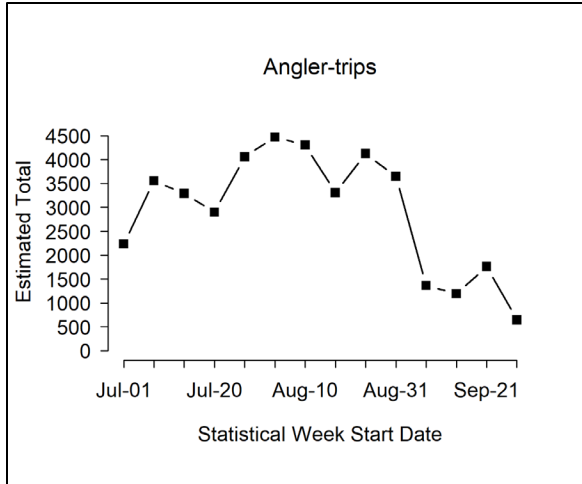


Figure 6.1 Temporal patterns in fishing effort during the 2020 summer Chinook MSF in Marine Area 11.

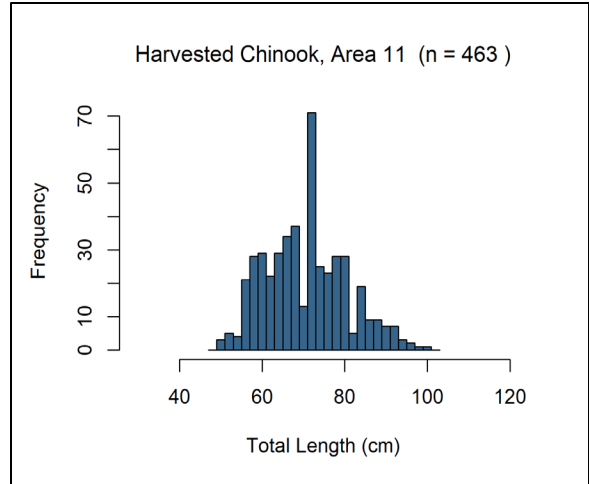


Figure 6.3 Length-frequency distributions of retained marked Chinook salmon sampled in dockside angler interviews during the 2020 summer Chinook MSF in Marine Area 11. Note: displayed values are observations where lengths taken.

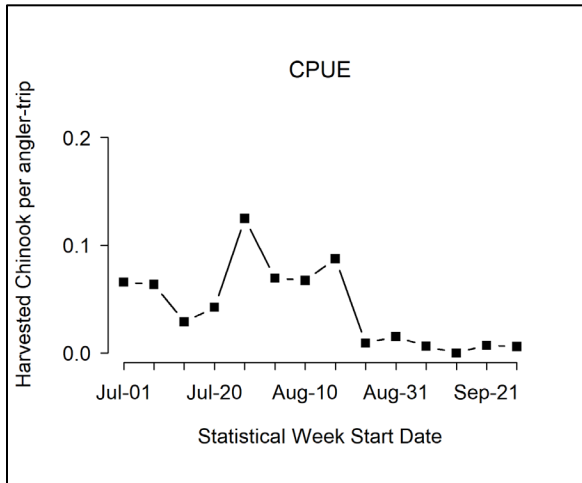


Figure 6.2 Temporal patterns in CPUE (landed Chinook salmon per angler trip) during the 2020 summer Chinook MSF in Marine Area 11.

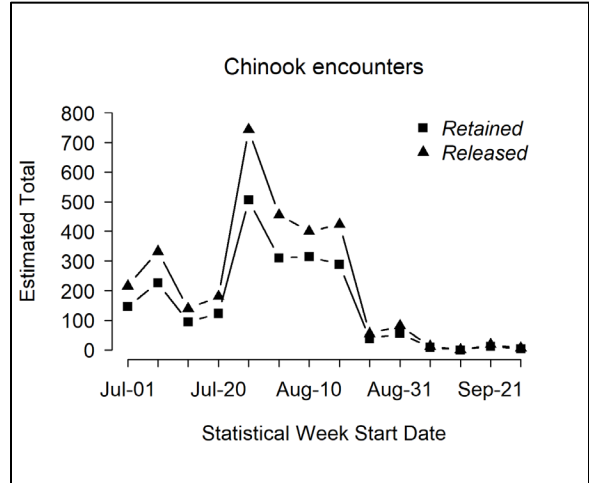


Figure 6.4 Temporal patterns in Chinook salmon encounters (retained and released) during the 2020 summer Chinook MSF in Marine Area 11.

Table 6.4 Comparison of modeled and estimated total Chinook salmon encounters for the 2020 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	1,750	718	1,032	14
	AD	9,159	4,806	4,353	4,182
	Total	10,909	5,524	5,385	4,196
	% Marked	84	87	81	100
Estimated (Creel) Encounters	UM	936	702	234	25
	AD	4,252	2,302	1,951	2,102
	Total	5,189	3,004	2,185	2,128
	% Marked	82	77	89	99

Table 6.5 Summary of season-wide fishery impact estimates for the 2020 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	2,302	2,002	299	45	2,047	51,817	228	1,601 - 2,493	11
Legal UM	702	25	677	102	127	1305	36	56 - 198	29
Sublegal AD	1,951	100	1,851	370	470	5,673	75	322 - 618	16
Sublegal UM	234	0	234	47	47	391	20	8 - 86	42
Total	5,189	2,128	3,061	563	2,691	59,186	243	2,214 - 3,168	9

Table 6.6 Comparison of modeled and estimated total Chinook salmon mortalities for the 2020 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)	327	5,355	5,682	174	2,517	2,691
Released Legal	107	302	409	102	45	146
Released Sublegal	206	871	1077	47	370	417
Landed Only	14	4,182	4,196	25	2,102	2,128

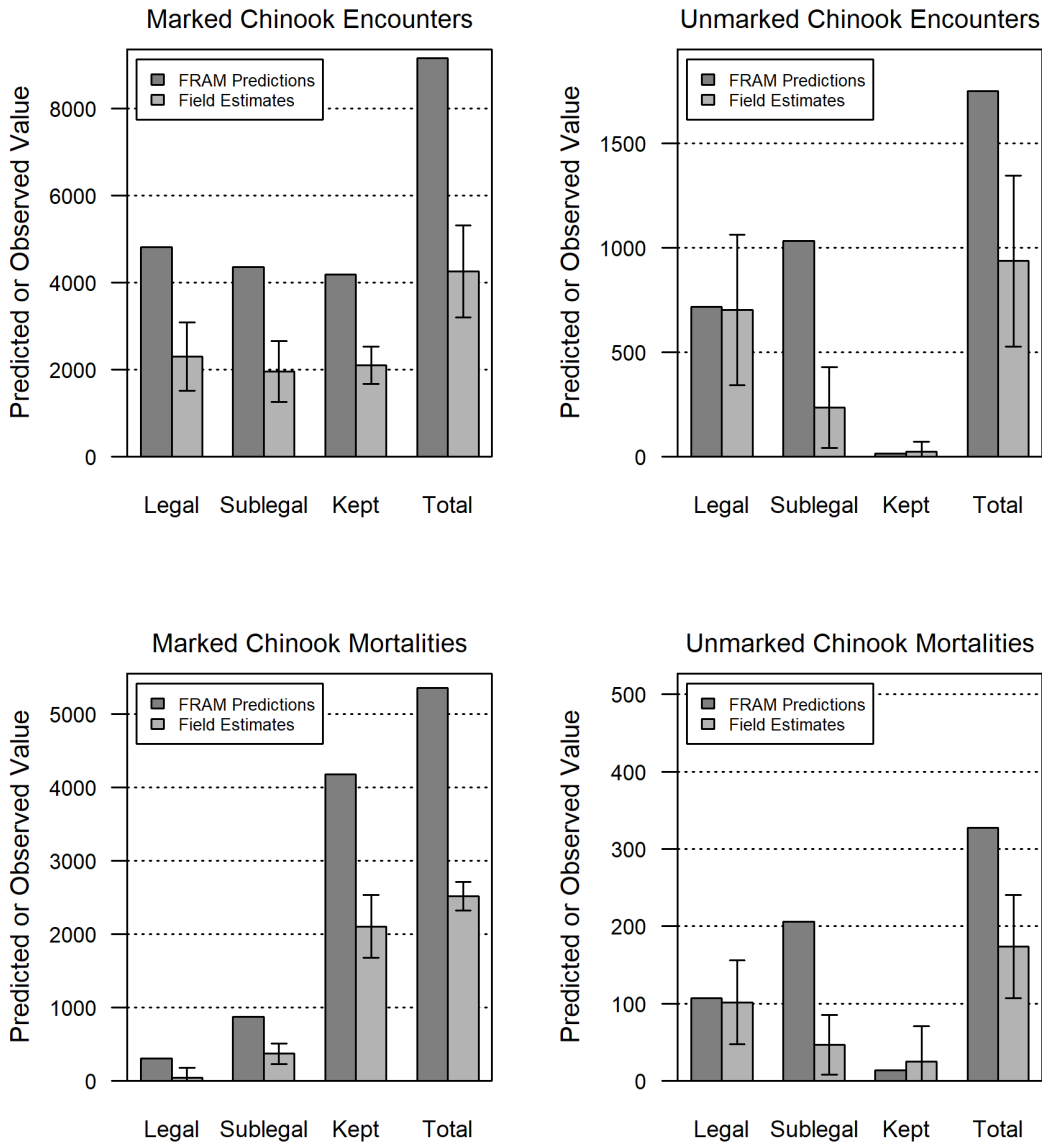


Figure 6.5 Comparison of modeled and estimated total Chinook salmon encounters and mortalities for the 2020 summer Chinook MSF in Marine Area 11. Error bars represent approximate 95% confidence intervals for field estimates.

Table 6.7 Total Chinook salmon encountered (retained and released) by private-boat anglers logging their trips on voluntary salmon trip reports (STRs) during the 2020 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	104 1-trip STRs	59	18	50	6	133	0.82	0.77
Size/mark-status composition:		0.44	0.14	0.38	0.05			
Variance:		(0.0019)	(0.0009)	(0.0018)	(0.0003)			

Table 6.8 Dockside encounters (retained and released) by size-mark category during the 2020 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				
Status	Legal		Sublegal	
	LM	LU	SM	SU
Kept	441	3	22	0
Released	19	115	620	101
Total	460	118	642	101
Size/mark-status composition	0.35	0.09	0.49	0.08
Bias Corrected	0.31	0.09	0.49	0.11

Table 6.9 Summary of the total number of anglers intercepted during on-the-water surveys conducted for the 2020 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	8	0.0140	18	0.0125
Breakwater Marina (Warters)	17	0.0297	15	0.0104
Bremerton Yacht Club	0	0.0000	1	0.0007
Browns Point Ramp	7	0.0122	5	0.0035
Brownsville Marina/Dock/Ramp	0	0.0000	9	0.0063
Burton Ramp, Vashon Is	0	0.0000	2	0.0014
Chambers Bay Beach	0	0.0000	2	0.0014
Commencement Bay Marina Services	14	0.0244	19	0.0132
Dash Point Dock	0	0.0000	2	0.0014
Dash Point Shore	0	0.0000	3	0.0021
Day Island Marina	2	0.0035	11	0.0076
Des Moines Marina (Moorage)	78	0.1361	176	0.1222
Dockton Ramp, Vashon Is	7	0.0122	14	0.0097
Elliott Bay Marina	3	0.0052	6	0.0042
Evergreen Park Ramp	0	0.0000	3	0.0021
Foss Tug Dock	0	0.0000	2	0.0014
Fox Island Public Ramp	0	0.0000	1	0.0007
Gig Harbor Marina	17	0.0297	50	0.0347
Gig Harbor Ramp	42	0.0733	63	0.0438
Harbor Isl Marina	0	0.0000	3	0.0021
Home Public Ramp	0	0.0000	1	0.0007
Hylebos Boat Haven	3	0.0052	0	0.0000
John Wayne Marina Docks	0	0.0000	3	0.0021
Manchester Public Ramp	7	0.0122	42	0.0292
Narrows Marina	7	0.0122	37	0.0257
Narrows Ramp	0	0.0000	1	0.0007
Olalla Public Ramp	2	0.0035	7	0.0049
Point Defiance Boathouse Dock	2	0.0035	2	0.0014
Point Defiance Boathouse	50	0.0873	155	0.1076
Point Defiance Public Ramp	143	0.2496	405	0.2813
Port Orchard Marina	6	0.0105	9	0.0063
Port Orchard Public Ramp	2	0.0035	8	0.0056
Private	47	0.0820	114	0.0792
Quartermaster Marina (Vashon Is)	0	0.0000	3	0.0021
Redondo Ramp	84	0.1466	196	0.1361
Shilshole Public Ramp	0	0.0000	1	0.0007
Steilacoom Public Ramp	0	0.0000	3	0.0021
Tacoma Yacht Club	3	0.0052	2	0.0014
Tyee Marina/Ramp	16	0.0279	30	0.0208
Unknown	6	0.0105	7	0.0049
Winslow Marina	0	0.0000	2	0.0014
Wollochet Bay Public Ramp	0	0.0000	2	0.0014
Zittels Marina	0	0.0000	5	0.0035
Total Anglers	573	1	1440	1

Table 6.10 Monthly sample rates (Total retained Chinook salmon sampled¹ / Estimated retained Chinook salmon) in the 2020 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	
July	27 - 31	1 Jul - 2 Aug	1,096	0	1,096	222	1	223	20.30%
August	32 - 35	3 Aug - 30 Aug	926	25	951	238	4	242	25.40%
September	36 - 40	31 Aug - 30 Sep	80	0	80	12	0	12	15.00%
Season Total			2,102	25	2,128	472	5	477	22.40%

^{1/} Number of retained Chinook salmon sampled includes all retained Chinook salmon inspected for CWT's, from all sites sampled during the summer 2020 Marine Area 11 Chinook MSF (creel estimates and the fish sampled as part of baseline sampling).

Table 6.11 Summary of coded-wire tags recovered from Chinook salmon harvested during the 2020 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 Puget Sound (33.3%)	Whitehorse Springs	Whitehorse Pond	1 (33.3%)	0
	S Puget Sound (66.7%)	Deschutes R 13.0028	Tumwater Falls Hatchery	1 (33.3%)	0
		Kalama Cr 11.0017	Kalama Cr Hatchery	1 (33.3%)	0
Total				3	0

Table 6.12 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 2020 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)
No DITS								
Total								

Table 6.13 Fishery-total estimates of retained and released salmon (other than Chinook salmon) for the 2020 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	Coho AD	Coho UM	Coho UK	Cutthroat	Unknown
27	1-Jul	5-Jul	25	24	0	3	0	6	0	38
28	6-Jul	12-Jul	14	4	0	6	3	0	0	40
29	13-Jul	19-Jul	61	21	0	12	5	27	0	186
30	20-Jul	26-Jul	47	20	0	38	5	76	0	305
31	27-Jul	2-Aug	106	37	0	200	106	223	5	754
32	3-Aug	9-Aug	129	33	0	166	99	348	5	825
33	10-Aug	16-Aug	50	11	0	151	4	99	42	962
34	17-Aug	23-Aug	103	33	0	47	0	13	46	1,071
35	24-Aug	30-Aug	432	204	10	173	13	70	230	2,093
36	31-Aug	6-Sep	398	145	10	143	20	79	213	2,397
37	7-Sep	13-Sep	97	6	0	45	0	59	0	1,236
38	14-Sep	20-Sep	181	30	0	45	0	36	0	1,145
39	21-Sep	27-Sep	310	25	0	26	10	134	27	2,052
40	28-Sep	30-Sep	151	13	0	20	4	51	17	916
Season Total:			2,104	607	20	1,076	268	1,222	585	14,018
Variance:			46,452	7,659	342	23,975	2,421	70,571	41,270	914,778
Standard Error:			216	88	19	155	49	266	203	956
CV (%):			10	14	91	14	18	22	35	7
95% CI:			1,682 - 2,526	435 - 778	0 - 57	773 - 1,380	172 - 365	701 - 1,742	187 - 983	12,144 - 15,893

Table 6.14 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

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, 2020. 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	When CRC-based retained Chinook estimates become available bias-corrected dockside proportion data will be used to estimate Chinook encounters by size/mark group (LM = 31%, LU = 4%, SM = 46%, SU = 19%; 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	No STRs were returned for this fishery and will not be used for a Chinook encounter estimate based on CRCs.
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 2020 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 UD	Chin UK	Chin AD	Chin UM	Chin Unk
27	1-Jul	5-Jul	10	21	0	0	0	0	1	1	0
28	6-Jul	12-Jul	11	23	0	0	0	0	0	0	0
29	13-Jul	19-Jul	20	42	0	0	0	0	0	0	0
30	20-Jul	26-Jul	18	30	3	0	1	0	6	1	0
31	27-Jul	2-Aug	77	138	28	0	0	0	12	2	13
32	3-Aug	9-Aug	112	214	48	0	7	2	15	7	32
33	10-Aug	16-Aug	38	91	4	0	0	0	9	3	64
34	17-Aug	23-Aug	58	107	27	0	1	0	2	4	15
35	24-Aug	30-Aug	42	63	6	0	1	0	0	3	3
36	31-Aug	6-Sep	27	35	3	0	0	0	0	0	1
37	7-Sep	13-Sep	9	15	0	0	0	0	0	0	0
38	14-Sep	20-Sep	28	39	1	0	0	0	0	0	4
39	21-Sep	27-Sep	9	14	0	0	0	0	10	3	0
40	28-Sep	30-Sep	4	6	0	0	0	0	27	10	0
Season Total			463	838	120	0	10	2	82	34	132

Table 7.3 Observations of fishing effort, salmon retained (other than Chinook), and reported salmon releases (other than Chinook), by week, for the summer 2020 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 UD	Trout	Coho AD	Coho UM	Coho UK	Chum	Cutthroat	Unknown
27	1-Jul	5-Jul	10	21	0	0	0	0	0	0	0	0	0	5
28	6-Jul	12-Jul	11	23	0	0	0	0	0	0	1	0	0	0
29	13-Jul	19-Jul	20	42	0	0	0	0	0	0	0	0	0	0
30	20-Jul	26-Jul	18	30	0	0	0	0	0	0	2	0	1	0
31	27-Jul	2-Aug	77	138	0	0	0	0	0	0	0	0	0	0
32	3-Aug	9-Aug	112	214	0	0	0	0	0	0	0	0	0	30
33	10-Aug	16-Aug	38	91	0	0	0	0	0	0	0	0	0	14
34	17-Aug	23-Aug	58	107	6	1	0	0	1	1	0	1	2	15
35	24-Aug	30-Aug	42	63	13	0	0	0	0	0	0	0	0	28
36	31-Aug	6-Sep	27	35	25	2	0	0	0	0	0	0	0	19
37	7-Sep	13-Sep	9	15	4	2	0	0	0	0	0	0	0	0
38	14-Sep	20-Sep	28	39	5	12	3	0	13	1	4	1	0	3
39	21-Sep	27-Sep	9	14	0	0	0	6	0	0	1	0	0	5
40	28-Sep	30-Sep	4	6	0	0	0	0	0	0	0	0	0	0
Season Total			463	838	53	17	3	6	14	2	8	2	3	119

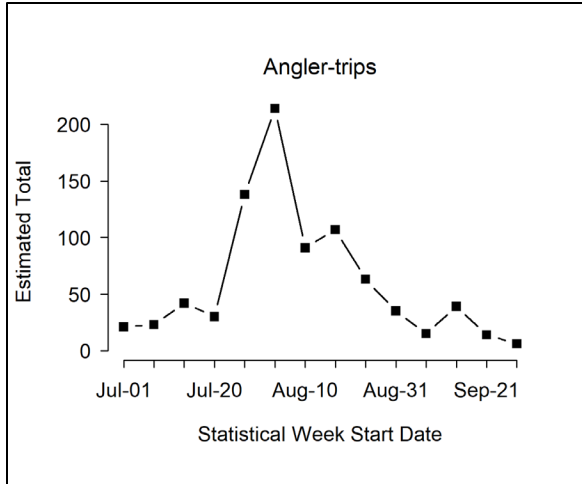


Figure 7.1 Temporal patterns in fishing effort during the 2020 summer Chinook MSF in Marine Area 12. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

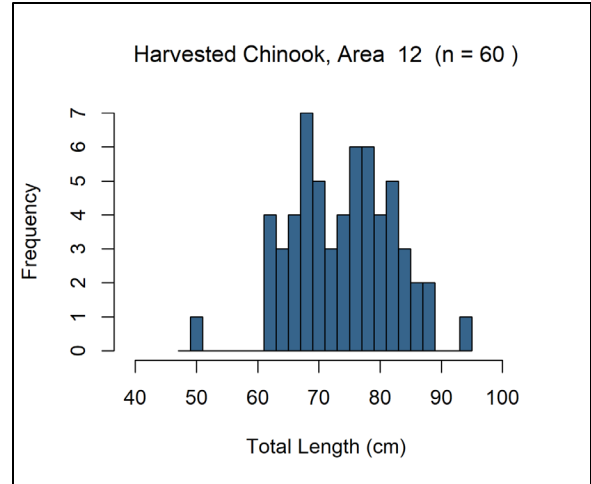


Figure 7.3 Length-frequency distribution of retained marked Chinook sampled in dockside angler interviews during the 2020 summer Chinook MSF in Marine Area 12. Note: displayed values are observations where lengths taken. Note: displayed values are observations where lengths taken.

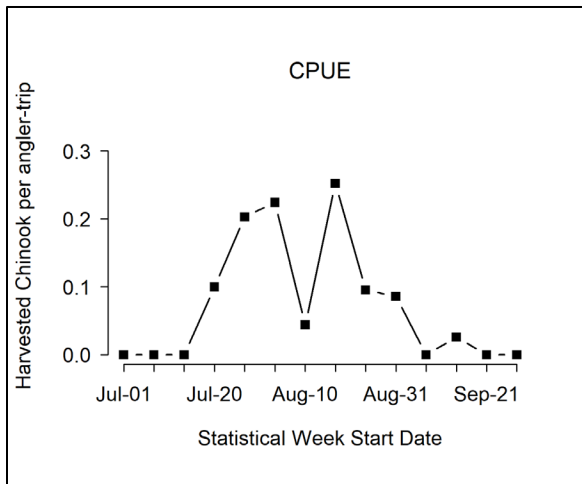


Figure 7.2 Temporal patterns in CPUE (landed Chinook per angler trip) during the 2020 summer Chinook MSF in Marine Area 12. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

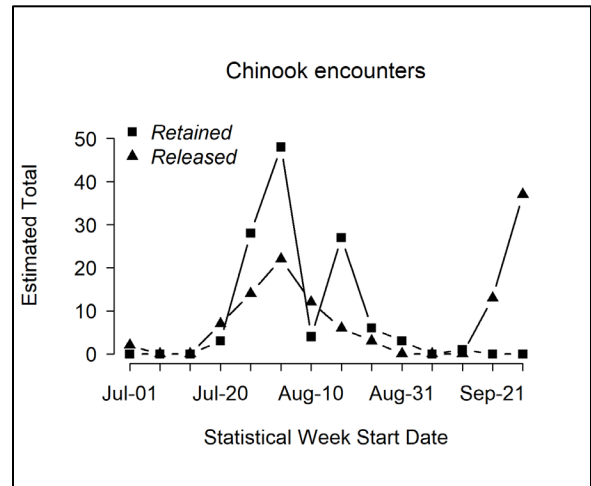


Figure 7.4 Temporal patterns in Chinook encounters (retained and released) during the 2020 summer Chinook MSF in Marine Area 12. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

Table 7.4 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the 2020 summer Chinook MSF in Marine Area 12.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	59	1	60
Unmarked	0	0	0
Total	59	1	60

Table 7.5 List of sites sampled with the number of sampling events (site-days) during the 2020 summer Chinook MSF in Marine Area 12.

Location Name	Number of Site Days Sampled Per Month			Total Site-Days	% of Total
	July	August	September		
Hoodspoint Shore	1	2	5	8	4.00%
Misery Point Ramp	0	1	5	6	3.00%
Olympic View Marina	0	0	1	1	0.50%
Pleasant Harbor Boat Ramp	0	3	2	5	2.50%
Pleasant Harbor Marina	0	2	0	2	1.00%
Point Whitney Ramp	0	3	0	3	1.50%
Quilcene Bay Ramp	0	8	12	20	10.00%
Saltwater Park Ramp	1	0	0	1	0.50%
Skokomish Tide Flats	4	20	14	38	19.00%
Summertide Resort	1	0	0	1	0.50%
Tahuya Ramp	2	1	0	3	1.50%
Triton Cove State Park	1	3	1	5	2.50%
Twanoh State Park	22	13	9	44	22.00%
Union Ramp	18	24	21	63	31.50%
Grand Total	50	80	70	200	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 2020 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	0 1-trip STRs	0	0	0	0	0	0.00	0.00
Size/mark-status composition:		0.00	0.00	0.00	0.00			
Variance:		(0.0000)	(0.0000)	(0.0000)	(0.0000)			

Table 7.7 Dockside encounters (retained and released) by size-mark category during the 2020 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				
Status	Legal		Sublegal	
	LM	LU	SM	SU
Kept	59	0	1	0
Released	2	7	80	27
Total	61	7	81	27
Size/mark-status composition	0.35	0.04	0.46	0.15
Bias Corrected	0.31	0.04	0.46	0.19

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 5 through September 30, 2020. The fishery was closed May 1 through 4 due to the COVID-19 pandemic. 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	When CRC-based retained Chinook estimates become available bias-corrected dockside proportion data will be used to estimate Chinook encounters by size/mark group (LM = 31%, LU = 4%, SM = 46%, SU = 19%; Table 7.7).
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	Due to low sample size (N=15, LM percentage CV=.25) STRs will not be used for a Chinook encounter estimates based on CRC data.
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 2020 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 UD	Chin AD	Chin UM	Chin UK
19	5-May	10-May	21	35	3	0	0	6	3	0
20	11-May	17-May	29	46	2	0	0	4	0	0
21	18-May	24-May	21	31	1	0	0	4	0	0
22	25-May	31-May	13	21	0	0	0	0	0	0
23	1-Jun	7-Jun	5	5	0	0	0	0	0	0
24	8-Jun	14-Jun	7	8	0	0	0	0	0	0
25	15-Jun	21-Jun	17	29	0	0	0	3	0	0
26	22-Jun	28-Jun	25	40	3	0	0	17	3	0
27	29-Jun	5-Jul	10	17	0	0	0	1	0	0
28	6-Jul	12-Jul	56	96	10	0	0	41	13	1
29	13-Jul	19-Jul	24	48	1	0	0	0	0	0
30	20-Jul	26-Jul	39	72	7	0	0	14	3	7
31	27-Jul	2-Aug	43	74	5	0	0	10	0	7
32	3-Aug	9-Aug	124	239	18	1	1	34	5	12
33	10-Aug	16-Aug	85	156	18	0	0	35	6	15
34	17-Aug	23-Aug	177	333	19	0	0	20	4	2
35	24-Aug	30-Aug	133	242	33	0	1	23	4	5
36	31-Aug	6-Sep	78	143	3	0	4	22	11	0
37	7-Sep	13-Sep	15	23	0	0	0	4	1	12
38	14-Sep	20-Sep	26	44	0	0	0	4	0	3
39	21-Sep	27-Sep	17	25	0	0	0	1	0	0
40	28-Sep	30-Sep	2	2	0	0	0	0	0	0
Season Total			967	1729	123	1	6	243	53	64

Table 8.3 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the 2020 summer Chinook MSF in Marine Area 13.

Stat Week	Start	End	Effort		Retained Fish			Released Fish						
			Boats	Anglers	Coho AD	Coho UM	Chum	Coho AD	Coho UM	Coho UK	Cutthroat	Pink	Trout	Unknown
19	5-May	10-May	21	35	0	0	0	0	0	0	0	0	0	0
20	11-May	17-May	29	46	0	0	0	0	0	0	0	0	0	0
21	18-May	24-May	21	31	0	0	0	0	0	0	0	0	0	0
22	25-May	31-May	13	21	0	0	0	0	0	0	0	0	0	0
23	1-Jun	7-Jun	5	5	0	0	0	0	0	0	0	0	0	0
24	8-Jun	14-Jun	7	8	0	0	0	0	1	0	2	0	0	0
25	15-Jun	21-Jun	17	29	0	0	0	0	0	0	1	0	0	1
26	22-Jun	28-Jun	25	40	0	0	0	0	0	0	0	0	0	1
27	29-Jun	5-Jul	10	17	0	0	0	0	0	0	0	0	0	0
28	6-Jul	12-Jul	56	96	0	0	0	0	0	0	0	0	0	0
29	13-Jul	19-Jul	24	48	0	0	0	10	1	1	0	0	0	2
30	20-Jul	26-Jul	39	72	1	0	0	0	0	5	3	0	0	1
31	27-Jul	2-Aug	43	74	1	0	0	0	0	1	0	0	0	7
32	3-Aug	9-Aug	124	239	3	0	0	0	0	4	2	7	0	33
33	10-Aug	16-Aug	85	156	0	0	0	0	0	0	0	0	0	23
34	17-Aug	23-Aug	177	333	2	0	0	7	1	0	1	0	0	18
35	24-Aug	30-Aug	133	242	3	0	1	5	0	1	0	0	0	17
36	31-Aug	6-Sep	78	143	2	1	0	0	0	0	0	0	0	29
37	7-Sep	13-Sep	15	23	1	0	0	0	0	0	0	0	5	0
38	14-Sep	20-Sep	26	44	1	0	0	0	0	0	0	0	0	9
39	21-Sep	27-Sep	17	25	1	1	0	2	1	0	0	0	0	6
40	28-Sep	30-Sep	2	2	0	0	0	0	0	0	0	0	0	0
Season Total			967	1729	15	2	1	24	4	12	9	7	5	147

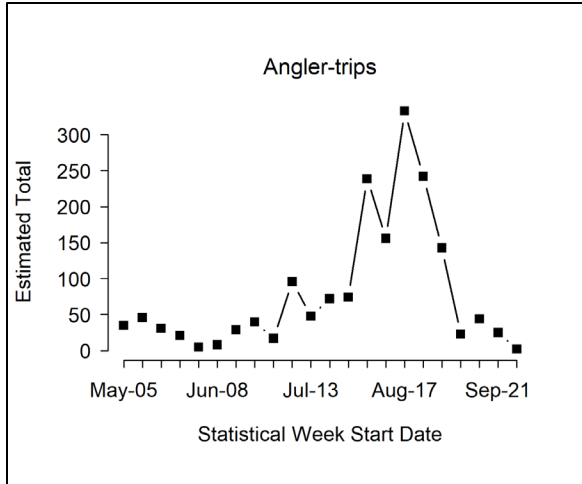


Figure 8.1 Temporal patterns in fishing effort during the 2020 summer Chinook salmon MSF in Marine Area 13. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

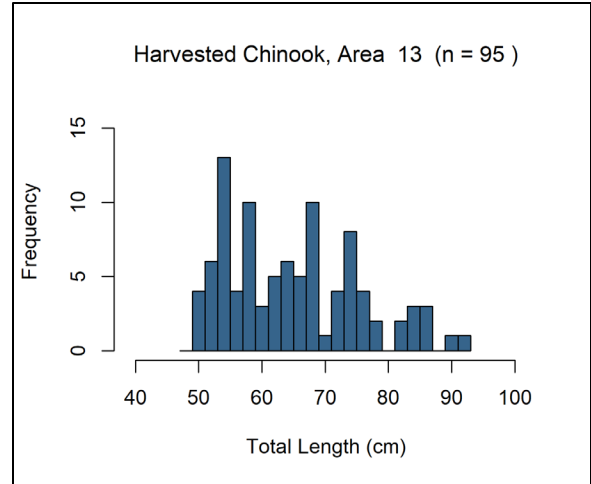


Figure 8.3 Length-frequency distribution of retained marked Chinook salmon sampled in dockside angler interviews during the 2020 summer Chinook MSF in Marine Area 13. Note: displayed values are observations where lengths taken.

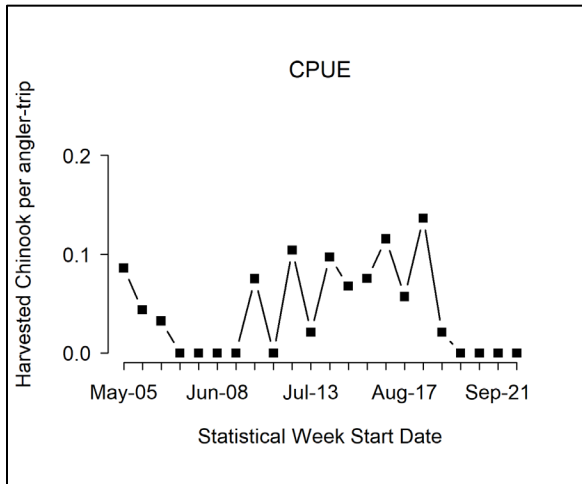


Figure 8.2 Temporal patterns in CPUE (landed Chinook salmon per angler trip) during the 2020 summer Chinook MSF in Marine Area 13. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

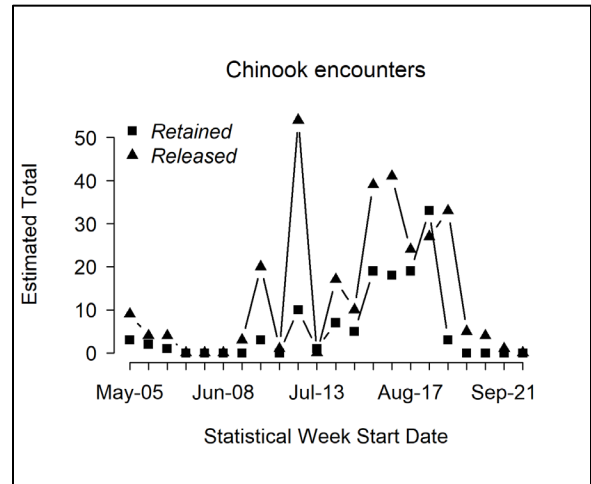


Figure 8.4 Temporal patterns in CPUE (landed Chinook salmon per angler trip) during the 2020 summer Chinook MSF in Marine Area 13. Note: displayed values are sample observations (summed across sampled sites) and not fishery-total estimates.

Table 8.4 Number of total length samples collected from retained Chinook salmon collected during dockside angler interviews in the 2020 summer Chinook MSF in Marine Area 13.

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	91	4	95
Unmarked	0	0	0
Total	91	4	95

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 2020 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	7 1-trip STRs	8	5	1	1	15	0.60	0.62
Size/mark-status composition:		0.53	0.33	0.07	0.07			
Variance:		(0.0178)	(0.0159)	(0.0044)	(0.0044)			

Table 8.6 Dockside encounters (retained and released) by size-mark category during the 2020 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				
Status	Legal		Sublegal	
	LM	LU	SM	SU
Kept	91	0	4	0
Released	6	18	237	35
Total	97	18	241	35
Size/mark-status composition	0.25	0.05	0.62	0.09
Bias Corrected	0.22	0.05	0.62	0.12

Table 8.7 List of sites sampled with the number of sampling events (site-days) during the 2020 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	2	1	0	4	1.12%
Arcadia Ramp	0	0	0	1	0	1	0.28%
Boston Harbor Ramp/Marina	10	0	8	20	15	53	14.85%
East Bay Marina/Ramp (Oly. Isle)	10	1	2	1	4	18	5.04%
Fox Island Public Ramp	0	1	1	0	0	2	0.56%
Fox Island Sand Spit	0	0	1	0	0	1	0.28%
Grapeview Public Ramp	1	1	8	2	0	12	3.36%
Hartstene Is. Ramp (aka Latimer's Landing)	1	1	2	4	2	10	2.80%
Home Public Ramp	1	6	0	0	0	7	1.96%
Landover	0	1	0	0	0	1	0.28%
Longbranch Public Ramp	1	6	0	0	0	7	1.96%
Luhr Beach Ramp	17	9	18	22	12	78	21.85%
Narrows Marina	12	8	6	10	5	41	11.48%
Narrows Park	0	1	0	0	1	2	0.56%
Perry Creek	0	0	0	0	1	1	0.28%
Priest Point Park	0	0	0	0	2	2	0.56%
Solo Point	1	0	4	2	7	14	3.92%
Steamboat Island Bridge	0	0	0	2	5	7	1.96%
Steilacoom Public Ramp	1	0	0	2	2	5	1.40%
Vaughn Public Ramp	2	6	0	1	0	9	2.52%
Wauna Ramp	1	3	0	0	0	4	1.12%
Wauna Shore	3	4	0	1	0	8	2.24%
Wollochet Bay Public Ramp	0	1	0	0	0	1	0.28%
Zittels Marina	12	6	19	15	17	69	19.33%
Grand Total	73	56	71	84	73	357	100.00%

Table 8.8 Summary of coded-wire tags recovered from Chinook salmon harvested during the 2020 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
Washington	N Puget Sound (25%)	Whitehorse Springs	Whitehorse Pond	1 (25%)	0
	S Puget Sound (75%)	Chambers Cr 12.0007	Garrison Hatchery	1 (25%)	0
		Deschutes R 13.0028	Tumwater Falls Hatchery	1 (25%)	0
		Kalama Cr 11.0017	Kalama Cr Hatchery	1 (25%)	0
	Total			4	0

ACKNOWLEDGEMENTS

The completion of the 2020 summer mark-selective Chinook salmon fisheries in the Marine Areas of Puget Sound is the result of the dedicated efforts of several individuals. We thank many the WDFW Puget Sound Sampling Unit (PSSU) field staff who successfully implemented comprehensive sampling programs during the summer 2020 Chinook MSFs. Staff conducted many hours of dockside creel surveys, test fishery sampling, on-the-water effort surveys, aerial surveys, voluntary salmon trip reports, angler education, as well as compiled, error-checked, and delivered high-quality monitoring data to enable MSF evaluations. From Central Sound, we thank Jeff McKee (Central Sound Sampling Supervisor), Kathy Young-Berg, Sue Kraemer, Pete Sergeeff, Corey Corrick, Mary Raymond, April Bosley, Bailey Keeler, Kaili Park, Spencer Kubo, Ryan Horn, Erin Horkan, Steven Sweet, Devin Robinson, Evan Rogers, Catherine Morello, Adam High, Alec Corbet, Joe Short, Matt Larson and Samuel Neilson. From the Olympic Peninsula area, we thank Larry Bennett (Peninsula Sampling Supervisor), Connie Konopaski, Lorena McGovern, Will Jasper, Steve Sapp, Hope Anderson, Holly Keedy, Ciera Edison, Michelle Leach, Christena Villalobos, Evan Hill, Mathew Pelling, and Bent Burns. From North Sound, we thank Chad Paul (North Sampling Supervisor), Samantha Bund, Nate Layman, Dean Toba, Angela Foster, Dyanne Dalrymple, Henry Kei, Vanessa Jimenez, Catherine, Harris, Liam Price, Shelby Miles, Katherine Kissinger, Marc Fuhrmeister, Zachary Calief, Adriana Santiago, Brain Zhang, Cristopher Clark, Abbigail Haley, Patty Barry, and Haizel Allen. From South Sound as well as Hood Canal and the Kitsap Peninsula, we thank Justin Terry (South Sound Supervisor), Marcus Thompson, Ryan Ollerman, Scott Walker, Cara Crowley, John Pahutski, Paul Lorenz, Tom Matthews, Bryan Blazer, Maria Garcia-Rojas, Sharyn Wolfenbarger, Fred Bodine, Justin Miller, Andrew Potter Maul, Madison Guest, Julie Chen, Jenny Von Henkelman and Andrew Beckman. Additionally, we thank WDFW pilots Marty Kimbrel, and Kevin Nelson and samplers Brant Boelts, Karen Kloempken, John Edwards, Sarah Golden, Anja Huff, and Ann Stephenson for their time surveying Marine Area 7 from the sky. At the WDFW Headquarters in Olympia, we thank Gil Lensegrav and the CWT Lab staff for their help and expertise in providing decoded CWT data. Brant Boelts and Sarah Golden provided substantial help with quality control and flow of data, in addition to personnel logistics and support services for the summer 2020 MSF sampling projects. Ann Stephenson supervised staff, ensured continued funding for and oversaw the sampling unit. John Edwards supervised field sampling staff, provided electronic data collection support and reviewed data. Karen Kloempken supervised quality control staff, provided timely in-season creel estimates, scheduled all boat surveys and aerial surveys, and worked with the WDFW Selective Fisheries Biologist, Ty Garber, to produce post-season analyses and reports, managed the WDFW sampling databases and provided finalized post-season data. A select group of anglers from the Gig Harbor and Tacoma Chapter of the Puget Sound Anglers provided STR reports for special program in Marine Area 11. Members include Art Tachell, Frank Baker, Mike Colito, Lenny Leach, Dave Leavens, Dave Morgan, Jerry Henderson, Wayne Harmond and Chris Urban. Bob Conrad and Marlene Bellman with the NWFIC for their work on the methodology to estimate encounters from dockside sampling catch and releases. Are Strom completed “R” programming updates and database development to enable efficient analyses of selective fishery data and produce tables and figures for our post-season selective fishery reports.

REFERENCES

- Conrad, R., and P. McHugh. 2008. Assessment of Two Methods for Estimating Total Chinook Salmon Encounters in Puget Sound/Strait of Juan de Fuca Mark-Selective Chinook Fisheries. Northwest Fishery Resource Bulletin Manuscript Series No. 2. <http://wdfw.wa.gov/publications/00492/>
- 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. September 25, 2020.
- Puget Sound Indian Tribes and WDFW. 2004. Comprehensive Management Plan for Puget Sound Chinook: Harvest Management Component. Olympia, WA. 253 pp.
- Puget Sound Indian Tribes and WDFW. 2010. Comprehensive Management Plan for Puget Sound Chinook: Harvest Management Component. Olympia, WA. 230 pp.
- Thiesfeld, S.L., and A. Hagen-Breaux. 2005a. 2003 Chinook Selective Fishery, Marine Areas 5 and 6. January 12, 2005. Washington Department of Fish and Wildlife. Olympia, Washington. <http://wdfw.wa.gov/publications/00913/>
- Thiesfeld, S.L., and A. Hagen-Breaux. 2005b. 2004 Chinook Selective Fishery, Marine Areas 5 and 6. January 14, 2005. Washington Department of Fish and Wildlife. Olympia, Washington. <http://wdfw.wa.gov/publications/00914/>
- Thiesfeld, S.L., and A. Hagen-Breaux. 2006. 2005 Chinook Selective Fishery, Marine Areas 5 and 6. March 21, 2006. Washington Department of Fish and Wildlife, Olympia, Washington. <http://wdfw.wa.gov/publications/00915/>
- Washington Department of Fish and Wildlife (WDFW). 2007a. Marine Areas 9 and 10 Selective Chinook Fishery, July 16-31, 2007: Post-season Report. Draft Report: October 3, 2007. Washington Department of Fish and Wildlife. Olympia, Washington. 82 pp. <http://wdfw.wa.gov/publications/00493/>
- Washington Department of Fish and Wildlife (WDFW). 2007b. Marine Areas 11 and 13 Selective Chinook Fishery, 2007: Post-season Report. Draft Report: October 30, 2007. Washington Department of Fish and Wildlife. Olympia, Washington. 80 pp. <http://wdfw.wa.gov/publications/00494/>
- Washington Department of Fish and Wildlife (WDFW). 2008a. A Multi-year Assessment of the Marine Areas 5 and 6 Selective Chinook Fishery: 2003-2007. Final Report Draft: March 14, 2008. Washington Department of Fish and Wildlife. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00495/>
- Washington Department of Fish and Wildlife (WDFW). 2008b. A Multi-year Assessment of the Marine Areas 8-1 and 8-2 Selective Chinook Fishery: 2005-2007. Final Report Draft: February 25, 2008. Washington Department of Fish and Wildlife. Olympia, Washington. 149 pp. <http://wdfw.wa.gov/publications/00496/>

- Washington Department of Fish and Wildlife (WDFW). 2009a. Marine Area 7 Mark-Selective Recreational Chinook Fishery, February 1-29, 2008: Post-season Report. Revised Draft Report: February 20, 2009. Washington Department of Fish and Wildlife. Olympia, Washington. 47 pp. <http://wdfw.wa.gov/publications/00491/>
- Washington Department of Fish and Wildlife (WDFW). 2009b. Marine Areas 8-1 and 8-2 Mark-Selective Recreational Chinook Fishery, November 1, 2007-April 30, 2008. Revised Draft Report: February 20, 2009. Washington Department of Fish and Wildlife. Olympia, Washington. 62 pp. <http://wdfw.wa.gov/publications/00486/>
- Washington Department of Fish and Wildlife (WDFW). 2009c. Marine Area 9 Mark-Selective Recreational Chinook Fishery, January 16 – April 15, 2008 Post-season Report: Revised Draft Report: February 20, 2009. Washington Department of Fish and Wildlife. Olympia, Washington. 49 pp. <http://wdfw.wa.gov/publications/00490/>
- Washington Department of Fish and Wildlife (WDFW). 2009d. Marine Area 10 Mark-Selective Recreational Chinook Fishery, January 16 – April 15, 2008 Post-season Report: Revised Draft Report: February 23, 2009. Washington Department of Fish and Wildlife. Olympia, Washington. 47 pp. <http://wdfw.wa.gov/publications/00489/>
- Washington Department of Fish and Wildlife (WDFW). 2009e. Marine Areas 5 and 6 Mark-Selective Recreational Chinook Fishery, Summer 2008: Post-season Report. Revised Draft Report: February 17, 2009. Washington Department of Fish and Wildlife. Olympia, Washington. 64 pp. <http://wdfw.wa.gov/publications/00485/>
- Washington Department of Fish and Wildlife (WDFW). 2009f. Marine Areas 9 and 10 Mark-Selective Recreational Chinook Fishery, July 16-August 15, 2008. Revised Draft Report: February 23, 2009. Washington Department of Fish and Wildlife. Olympia, Washington. 60 pp. <http://wdfw.wa.gov/publications/00487/>
- Washington Department of Fish and Wildlife (WDFW). 2009g. Marine Areas 11 and 13 Mark-Selective Recreational Chinook Fishery, Summer 2008. Revised Draft Report: February 24, 2009. Washington Department of Fish and Wildlife. Olympia, Washington. 64 pp. <http://wdfw.wa.gov/publications/00488/>
- Washington Department of Fish and Wildlife (WDFW). 2010a. Marine Area 7 Mark-Selective Recreational Chinook Fishery, February 1–April 15, 2009: Post-season Report. Revised Draft Report: June 11, 2010. Washington Department of Fish and Wildlife. Olympia, Washington. 50 pp. <http://wdfw.wa.gov/publications/01060/>
- Washington Department of Fish and Wildlife (WDFW). 2010b. Marine Areas 8-1 and 8-2 Mark-Selective Recreational Chinook Fishery, January 1-April 30, 2009: Post-season Report. Revised Draft Report: June 14, 2010. Washington Department of Fish and Wildlife. Olympia, Washington. 62 pp. <http://wdfw.wa.gov/publications/01061/>
- Washington Department of Fish and Wildlife (WDFW). 2010c. Marine Area 9 Mark-Selective Recreational Chinook Fishery, November 1-30, 2008 and January 16-April 15, 2009: Post-season Report. Revised Draft Report: June 15, 2010. Washington Department of Fish and Wildlife. Olympia, Washington. 50 pp. <http://wdfw.wa.gov/publications/01062/>

- Washington Department of Fish and Wildlife (WDFW). 2010d. Marine Area 10 Mark-Selective Recreational Chinook Fishery, December 1, 2008–January 31, 2009, Post-season Report. Revised Draft Report: June 17, 2010. Washington Department of Fish and Wildlife. Olympia, Washington. 48 pp. <http://wdfw.wa.gov/publications/01059/>
- Washington Department of Fish and Wildlife (WDFW). 2010e. Marine Areas 5 and 6 Mark-Selective Recreational Chinook Fishery, Summer 2009: Post-season Report. Revised Draft Report: June 29, 2010. Washington Department of Fish and Wildlife. Olympia, Washington. 61 pp. <http://wdfw.wa.gov/publications/01058/>
- Washington Department of Fish and Wildlife (WDFW). 2010f. Marine Areas 9 and 10 Mark-Selective Recreational Chinook Fishery, Summer 2009: Post-season Report. Revised Draft Report: June 28, 2010. Washington Department of Fish and Wildlife. Olympia, Washington. 64 pp. <http://wdfw.wa.gov/publications/01057/>
- Washington Department of Fish and Wildlife (WDFW). 2010g. Marine Areas 11 and 13 Mark-Selective Recreational Chinook Fishery, Summer 2009: Post-season Report. Revised Draft Report: June 21, 2010. Washington Department of Fish and Wildlife. Olympia, Washington. 63 pp. <http://wdfw.wa.gov/publications/01056/>
- Washington Department of Fish and Wildlife (WDFW). 2011a. 2009-2010 Winter Mark-Selective Recreational Chinook Fisheries in Marine Areas 7, 8-1, 8-2, 9, 10, 11, and 12: Post-season Report. Revised Draft Report: March 31, 2011. Washington Department of Fish and Wildlife. Olympia, Washington. 93 pp. <http://wdfw.wa.gov/publications/01372/>
- Washington Department of Fish and Wildlife (WDFW). 2011b. 2010 Summer Mark-Selective Recreational Chinook Fisheries in Marine Areas 5, 6, 9, 10, 11, and 13: Post-season Report. Revised Draft Report: March 25, 2011. Washington Department of Fish and Wildlife. Olympia, Washington. 88 pp. <http://wdfw.wa.gov/publications/01373/>
- Washington Department of Fish and Wildlife (WDFW). 2012a. Methods Report: Monitoring Mark-Selective Recreational Chinook Fisheries In the Marine Catch Areas of Puget Sound (Areas 5 through 13). Revised Draft Report: January 30, 2012. Washington Department of Fish and Wildlife. Olympia, Washington. 81 pp. <http://wdfw.wa.gov/publications/01357/>
- Washington Department of Fish and Wildlife (WDFW). 2012b. 2010-2011 Winter Mark-Selective Recreational Chinook Fisheries In Marine Areas 7, 8-1, 8-2, 9, 10, 11 and 12: Post-season Report. Revised Draft Report: October 31, 2012. Washington Department of Fish and Wildlife. Olympia, Washington. 98 pp. <http://wdfw.wa.gov/publications/01435/>
- Washington Department of Fish and Wildlife (WDFW). 2012c. 2011 Summer Mark-Selective Recreational Chinook Fisheries In Marine Areas 5, 6, 9, 10, 11 and 13: Post-season Report. Revised Draft Report: November 13, 2012. Washington Department of Fish and Wildlife. Olympia, Washington. 89 pp. <http://wdfw.wa.gov/publications/01438/>
- Washington Department of Fish and Wildlife (WDFW). 2013a. 2011-2012 Winter Mark-Selective Recreational Chinook Fisheries In Marine Areas 7, 8-1, 8-2, 9, 10, 11 and 12

- (Revised Draft Post-season Report; January 24, 2013). Washington Department of Fish and Wildlife. Olympia, Washington. 90 pp. <http://wdfw.wa.gov/publications/01533/>
- Washington Department of Fish and Wildlife (WDFW). 2013b. 2012 Summer Mark-Selective Recreational Chinook Fisheries In Marine Areas 5, 6, 9, 10, 11, 12 and 13 (Revised Draft Post-season Report; February 26, 2013). Washington Department of Fish and Wildlife. Olympia, Washington. 91 pp. <http://wdfw.wa.gov/publications/01534/>
- Washington Department of Fish and Wildlife (WDFW). 2013c. 2012-2013 Winter Mark-Selective Recreational Chinook Fisheries in Marine Areas 6, 7, 8-1, 8-2, 9, 10, 11 and 12 (Revised Draft Post-season Report; December 6, 2013). Washington Department of Fish and Wildlife. Olympia, Washington. 95 pp. <http://wdfw.wa.gov/publications/01619/>
- Washington Department of Fish and Wildlife (WDFW). 2014a. 2013 Summer Mark-Selective Recreational Chinook Fisheries in Marine Areas 5, 6, 9, 10, 11, 12 and 13. (Revised Draft Post-season Report; February 12, 2014). Washington Department of Fish and Wildlife. Olympia, Washington. 91 pp. <http://wdfw.wa.gov/publications/01618/>
- Washington Department of Fish and Wildlife (WDFW). 2014b. 2013-2014 Winter Mark-Selective Recreational Chinook Fisheries in Marine Areas 6, 7, 8-1, 8-2, 9, 10, 11 and 12 (Revised Draft Post-season Report; December 19, 2014). Washington Department of Fish and Wildlife. Olympia, Washington. 95 pp. <http://wdfw.wa.gov/publications/01739/>
- Washington Department of Fish and Wildlife (WDFW). 2015a. 2014 Summer Mark-Selective Recreational Chinook Fisheries in Marine Areas 5, 6, 9, 10, 11, 12 and 13. (Revised Draft Post-season Report; May 11, 2015). Washington Department of Fish and Wildlife. Olympia, Washington. 91 pp. <http://wdfw.wa.gov/publications/01741/>
- Washington Department of Fish and Wildlife (WDFW). 2015b. 2014-2015 Winter Mark-Selective Recreational Chinook Fisheries in Marine Areas 6, 7, 8-1, 8-2, 9, 10, 11 and 12 (Revised Draft Post-season Report; November 23, 2015). Washington Department of Fish and Wildlife. Olympia, Washington. 108 pp.
- Washington Department of Fish and Wildlife (WDFW) and Northwest Indian Fisheries Commission (NWIFC). 2013. Estimating Total Chinook Encounters using Catch Record Card-Based Estimates of Harvest. Draft Report: November 26, 2013. Olympia, Washington. <https://wdfw.wa.gov/publications/01620>
- Washington Department of Fish and Wildlife (WDFW). 2016a. 2015 Summer Mark-Selective Recreational Chinook Fisheries in Marine Areas 5, 6, 9, 10, 11, 12 and 13. (Revised Draft Post-season Report; January 28, 2016). Washington Department of Fish and Wildlife. Olympia, Washington. 77 pp. <https://wdfw.wa.gov/publications/02086>
- Washington Department of Fish and Wildlife (WDFW). 2016b. 2015-2016 Winter Mark-Selective Recreational Chinook Fisheries in Marine Areas 6, 7, 8-1, 8-2, 9, 10, 11 and 12 (Revised Draft Post-season Report; November 23, 2016). Washington Department of Fish and Wildlife. Olympia, Washington. 111 pp. <https://wdfw.wa.gov/publications/02087>

- Washington Department of Fish and Wildlife (WDFW). 2017a. 2016 Summer Mark-Selective Recreational Chinook Fisheries in Marine Areas 5, 6, 7, 9, 10, 11, 12 and 13. (Revised Draft Post-season Report; January 28, 2017). Washington Department of Fish and Wildlife. Olympia, Washington. 102 pp. <https://wdfw.wa.gov/publications/02088>
- Washington Department of Fish and Wildlife (WDFW). 2017b. 2016-2017 Winter Mark-Selective Recreational Chinook Fisheries in Marine Areas 6, 7, 8-1, 8-2, 9, 10, 11 and 12 (Revised Draft Post-season Report; November 23, 2017). Washington Department of Fish and Wildlife. Olympia, Washington. 130 pp. <https://wdfw.wa.gov/publications/02089>
- Washington Department of Fish and Wildlife (WDFW). 2018a. 2017 Summer Mark-Selective Recreational Chinook Fisheries in Marine Areas 5, 6, 9, 10, 11, 12 and 13. (Revised Draft Post-season Report; January 28, 2018). Washington Department of Fish and Wildlife. Olympia, Washington. 111 pp. <https://wdfw.wa.gov/publications/02221>
- Washington Department of Fish and Wildlife (WDFW). 2018b. 2017-2018 Winter Mark-Selective Recreational Chinook Fisheries in Marine Areas 5, 6, 7, 8-1, 8-2, 9, 10, 11, 12 and 13 (Revised Draft Post-season Report; October 23, 2018). Washington Department of Fish and Wildlife. Olympia, Washington. 117 pp. <https://wdfw.wa.gov/publications/02090>
- Washington Department of Fish and Wildlife (WDFW). 2019a. 2018 Summer Mark-Selective Recreational Chinook Fisheries in Marine Areas 5, 6, 9, 10, 11, 12 and 13. (Revised Draft Post-season Report; January 28, 2019). Washington Department of Fish and Wildlife. Olympia, Washington. 132 pp. <https://wdfw.wa.gov/publications/02220>
- Washington Department of Fish and Wildlife (WDFW). 2019b. 2018-2019 Winter Mark-Selective Recreational Chinook Fisheries in Marine Areas 5, 6, 7, 8-1, 8-2, 9, 10, 11, 12 and 13 (Revised Draft Post-season Report; November 27, 2019). Washington Department of Fish and Wildlife. Olympia, Washington. 123 pp. <https://wdfw.wa.gov/publications/02152>
- Washington Department of Fish and Wildlife (WDFW). 2020a. 2019 Summer Mark-Selective Recreational Chinook Fisheries in Marine Areas 5, 6, 9, 10, 11, 12 and 13. (Revised Draft Post-season Report; January 23, 2020). Washington Department of Fish and Wildlife. Olympia, Washington. 113 pp. <https://wdfw.wa.gov/publications/02153>
- Washington Department of Fish and Wildlife (WDFW). 2020b. 2019-2020 Winter Mark-Selective Recreational Chinook Fisheries in Marine Areas 5, 6, 7, 8-1, 8-2, 9, 10, 11, 12 and 13 (Revised Draft Post-season Report; November 23, 2020). Washington Department of Fish and Wildlife. Olympia, Washington. 112 pp. <https://wdfw.wa.gov/publications/02219>
- Washington Department of Fish and Wildlife (WDFW). 2020. Total Encounters and Mortality Estimates for Puget Sound Recreational Chinook Mark-Selective Fisheries Monitored using Baseline Sampling: 2017-2018. (Draft January 12, 2020). Washington Department of Fish and Wildlife. Olympia, Washington. 36 pp. <https://wdfw.wa.gov/publications/02151>

APPENDICES

1) SITE WEIGHTS

Appendix 1 Size measures by sample date, for sites sampled during dockside creel surveys for the 2020 summer Chinook MSF in Marine Area 5.

Sample Date	Week	Location #1	Site Size	Location #2	Site Size
7/1/2020	27	Olsons West Docks	0.0929	Olsons Ramp	0.2138
7/3/2020	27	Olsons East Docks	0.2171	Olsons Ramp	0.346
7/5/2020	27	Van Riper's South	0.1774	Olsons East Docks	0.2171
7/9/2020	28	Olsons East Docks	0.2965	Olsons Ramp	0.2138
7/11/2020	28	Van Riper's North	0.1153	Olsons Ramp	0.346
7/12/2020	28	Olsons East Docks	0.2171	Olsons Ramp	0.346
7/14/2020	29	Olsons East Docks	0.2965	Olsons Ramp	0.2138
7/18/2020	29	Van Riper's South	0.1774	Olsons Ramp	0.346
7/19/2020	29	Van Riper's South	0.1774	Olsons West Docks	0.0646
7/20/2020	30	Van Riper's South	0.1618	Olsons East Docks	0.2965
7/25/2020	30	Olsons East Docks	0.2171	Olsons Ramp	0.346
7/26/2020	30	Olsons East Docks	0.2171	Olsons Ramp	0.346
7/30/2020	31	Van Riper's North	0.1615	Olsons Ramp	0.2138

Appendix 2 Size measures by sample date, for sites sampled during dockside creel surveys for the 2020 summer Chinook MSF in Marine Area 9.

Sample Date	Week	Location #1	Site Size	Location #2	Site Size
7/16/2020	29	Port Townsend Boat Haven Ramp	0.208	Norton Street (Everett) Ramp	0.379
7/18/2020	29	Fort Casey Public Ramp (Keystone)	0.1692	Norton Street (Everett) Ramp	0.4039
7/19/2020	29	Port Townsend Boat Haven Ramp	0.1611	Norton Street (Everett) Ramp	0.4039
7/20/2020	30	Port Townsend Boat Haven Ramp	0.208	Norton Street (Everett) Ramp	0.379
7/22/2020	30	Fort Casey Public Ramp (Keystone)	0.1665	Norton Street (Everett) Ramp	0.379
7/25/2020	30	Port Townsend Boat Haven Ramp	0.1611	Norton Street (Everett) Ramp	0.4039
7/26/2020	30	Port Townsend Boat Haven Ramp	0.1611	Norton Street (Everett) Ramp	0.4039
7/29/2020	31	Port Townsend Boat Haven Ramp	0.208	Norton Street (Everett) Ramp	0.379
7/30/2020	31	Kingston Public Ramp	0.0918	Norton Street (Everett) Ramp	0.379
7/31/2020	31	Port Townsend Boat Haven Ramp	0.1611	Norton Street (Everett) Ramp	0.4039
8/1/2020	31	Fort Casey Public Ramp (Keystone)	0.1376	Mukilteo State Park Public Ramp	0.1411
8/2/2020	31	Port Townsend Boat Haven Ramp	0.0977	Norton Street (Everett) Ramp	0.4764
8/4/2020	32	Kingston Public Ramp	0.1011	Mukilteo State Park Public Ramp	0.1223
8/5/2020	32	Port Townsend Boat Haven Ramp	0.1746	Norton Street (Everett) Ramp	0.3608
8/7/2020	32	Kingston Public Ramp	0.0959	Norton Street (Everett) Ramp	0.4764
8/8/2020	32	Fort Casey Public Ramp (Keystone)	0.1376	Norton Street (Everett) Ramp	0.4764
8/9/2020	32	Fort Casey Public Ramp (Keystone)	0.1376	Norton Street (Everett) Ramp	0.4764
8/10/2020	33	Kingston Public Ramp	0.1011	Norton Street (Everett) Ramp	0.3608
8/13/2020	33	Port Townsend Boat Haven Ramp	0.1746	Norton Street (Everett) Ramp	0.3608
8/15/2020	33	Kingston Public Ramp	0.0959	Norton Street (Everett) Ramp	0.4764

Appendix 3 Size measures by sample date, for sites sampled during dockside creel surveys for the 2020 summer Chinook MSF in Marine Area 10.

Sample Date	Week	Location #1	Site Size	Location #2	Site Size
7/16/2020	29	Shilshole Public Ramp	0.5002	Kingston Public Ramp	0.1834
7/18/2020	29	Shilshole Public Ramp	0.4702	Armeni Public Ramp	0.2064
7/19/2020	29	Armeni Public Ramp	0.2064	Kingston Public Ramp	0.139
7/20/2020	30	Shilshole Public Ramp	0.5002	Armeni Public Ramp	0.1695
7/21/2020	30	Shilshole Public Ramp	0.5002	Armeni Public Ramp	0.1695
7/25/2020	30	Shilshole Public Ramp	0.4702	Armeni Public Ramp	0.2064
7/26/2020	30	Shilshole Public Ramp	0.4702	Armeni Public Ramp	0.2064
7/29/2020	31	Shilshole Public Ramp	0.5002	Armeni Public Ramp	0.1695
7/30/2020	31	Shilshole Public Ramp	0.5002	Kingston Public Ramp	0.1834
7/31/2020	31	Shilshole Public Ramp	0.4702	Kingston Public Ramp	0.139
8/1/2020	31	Shilshole Public Ramp	0.4279	Armeni Public Ramp	0.265
8/2/2020	31	Shilshole Public Ramp	0.4279	Armeni Public Ramp	0.265
8/4/2020	32	Shilshole Public Ramp	0.4616	Kingston Public Ramp	0.1396
8/5/2020	32	Shilshole Public Ramp	0.4616	Armeni Public Ramp	0.2539
8/7/2020	32	Shilshole Public Ramp	0.4279	Kingston Public Ramp	0.1647
8/8/2020	32	Shilshole Public Ramp	0.4279	Kingston Public Ramp	0.1647
8/9/2020	32	Shilshole Public Ramp	0.4279	Armeni Public Ramp	0.265
8/10/2020	33	Shilshole Public Ramp	0.4616	Armeni Public Ramp	0.2539
8/13/2020	33	Shilshole Public Ramp	0.4616	Armeni Public Ramp	0.2539
8/15/2020	33	Shilshole Public Ramp	0.4279	Armeni Public Ramp	0.265
8/16/2020	33	Shilshole Public Ramp	0.4279	Armeni Public Ramp	0.265
8/18/2020	34	Shilshole Public Ramp	0.4616	Armeni Public Ramp	0.2539
8/20/2020	34	Shilshole Public Ramp	0.4616	Kingston Public Ramp	0.1396
8/21/2020	34	Shilshole Public Ramp	0.4279	Kingston Public Ramp	0.1647
8/22/2020	34	Shilshole Public Ramp	0.4279	Armeni Public Ramp	0.265
8/23/2020	34	Armeni Public Ramp	0.265	Manchester Public Ramp	0.0647
8/25/2020	35	Shilshole Public Ramp	0.4616	Kingston Public Ramp	0.1396
8/26/2020	35	Shilshole Public Ramp	0.4616	Kingston Public Ramp	0.1396
8/28/2020	35	Shilshole Public Ramp	0.4279	Kingston Public Ramp	0.1647
8/29/2020	35	Shilshole Public Ramp	0.4279	Armeni Public Ramp	0.265
8/30/2020	35	Shilshole Public Ramp	0.4279	Kingston Public Ramp	0.1647
8/31/2020	36	Shilshole Public Ramp	0.4616	Armeni Public Ramp	0.2539

Appendix 4 Size measures by sample date, for sites sampled during dockside creel surveys for the 2020 summer Chinook MSF in Marine Area 11.

Sample Date	Week	Location #1	Site Size	Location #2	Site Size
7/1/2020	27	Point Defiance Boathouse	0.1863	Point Defiance Public Ramp	0.4882
7/3/2020	27	Point Defiance Boathouse	0.1747	Point Defiance Public Ramp	0.4632
7/5/2020	27	Redondo Ramp	0.2232	Point Defiance Public Ramp	0.4632
7/9/2020	28	Point Defiance Boathouse	0.1863	Point Defiance Public Ramp	0.4882
7/11/2020	28	Redondo Ramp	0.2232	Point Defiance Public Ramp	0.4632
7/12/2020	28	Point Defiance Boathouse	0.1747	Point Defiance Public Ramp	0.4632
7/14/2020	29	Point Defiance Boathouse	0.1863	Point Defiance Public Ramp	0.4882
7/18/2020	29	Redondo Ramp	0.2232	Point Defiance Public Ramp	0.4632
7/19/2020	29	Redondo Ramp	0.2232	Point Defiance Public Ramp	0.4632
7/20/2020	30	Armeni Public Ramp	0.0769	Point Defiance Public Ramp	0.4882
7/25/2020	30	Redondo Ramp	0.2232	Point Defiance Public Ramp	0.4632
7/26/2020	30	Gig Harbor Ramp	0.0828	Point Defiance Public Ramp	0.4632
7/30/2020	31	Redondo Ramp	0.1327	Point Defiance Public Ramp	0.4882
7/31/2020	31	Point Defiance Boathouse	0.1747	Point Defiance Public Ramp	0.4632
8/1/2020	31	Point Defiance Boathouse	0.1306	Point Defiance Public Ramp	0.4642
8/5/2020	32	Point Defiance Boathouse	0.1587	Point Defiance Public Ramp	0.4021
8/7/2020	32	Redondo Ramp	0.2487	Point Defiance Public Ramp	0.4642
8/9/2020	32	Redondo Ramp	0.2487	Point Defiance Public Ramp	0.4642
8/13/2020	33	Redondo Ramp	0.2249	Point Defiance Public Ramp	0.4021
8/15/2020	33	Gig Harbor Ramp	0.0895	Point Defiance Public Ramp	0.4642
8/16/2020	33	Redondo Ramp	0.2487	Point Defiance Public Ramp	0.4642
8/18/2020	34	Point Defiance Boathouse	0.1587	Point Defiance Public Ramp	0.4021
8/21/2020	34	Redondo Ramp	0.2487	Point Defiance Public Ramp	0.4642
8/22/2020	34	Redondo Ramp	0.2487	Point Defiance Public Ramp	0.4642
8/26/2020	35	Redondo Ramp	0.2249	Point Defiance Public Ramp	0.4021
8/28/2020	35	Redondo Ramp	0.2487	Point Defiance Public Ramp	0.4642
8/30/2020	35	Redondo Ramp	0.2487	Point Defiance Public Ramp	0.4642
9/3/2020	36	Redondo Ramp	0.2847	Point Defiance Public Ramp	0.3761
9/5/2020	36	Redondo Ramp	0.3043	Point Defiance Public Ramp	0.4453
9/9/2020	37	Redondo Ramp	0.2847	Point Defiance Public Ramp	0.3761
9/12/2020	37	Gig Harbor Ramp	0.1191	Point Defiance Public Ramp	0.4453
9/15/2020	38	Gig Harbor Ramp	0.1112	Point Defiance Public Ramp	0.3761
9/18/2020	38	Gig Harbor Ramp	0.1191	Point Defiance Public Ramp	0.4453
9/20/2020	38	Redondo Ramp	0.3043	Point Defiance Public Ramp	0.4453
9/21/2020	39	Point Defiance Boathouse	0.2104	Point Defiance Public Ramp	0.3761
9/26/2020	39	Point Defiance Public Ramp	0.4453	Redondo Ramp	0.3043
9/27/2020	39	Redondo Ramp	0.3043	Point Defiance Public Ramp	0.4453
9/29/2020	40	Redondo Ramp	0.2847	Point Defiance Public Ramp	0.3761

2) CWT RECOVERIES

Appendix 5 Coded-wire tag (CWT) recoveries from the 2020 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	1-Jul-20	211215	2016	Co Line Pd2 03.1853B	Marblemount Hatchery	WDFW		88	81571	AD
5	1-Jul-20	184165	2016	R-Burrard In	H-Sandy Cove Seapen	CDFO		82	CWT00047245	AD
5	1-Jul-20	637311	2017	Sammamish R 08.0057	Issaquah Hatchery	WDFW		57	CWT00049601	AD
5	1-Jul-20	637174	2016	Friday Cr 03.0017	Samish Hatchery	WDFW		61	CWT00049603	AD
5	1-Jul-20	61484	2017	Half Moon Bay John Pr Net	Mok R Fish Ins	CDFW		61	CWT00049827	AD
5	1-Jul-20	637395	2017	Grande Ronde R 1	Irrigon Hatchery	ODFW		60	CWT00049844	AD
5	1-Jul-20	91182	2017	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		80	CWT00050069	AD
5	1-Jul-20	637229	2017	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		62	CWT00050070	AD
5	1-Jul-20	60970	2016	Mare Island Net Pen	Feather R Hatchery	CDFW		66	CWT00050071	AD
5	2-Jul-20	60998	2016	American R At Sunrise	Nimbus Fish Hatchery	CDFW		62	CWT00047343	AD
5	2-Jul-20	637258	2017	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		61	CWT00049006	AD
5	2-Jul-20	211219	2016	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637158	81	CWT00050072	AD
5	2-Jul-20	211219	2016	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637158	71	CWT00050073	AD
5	2-Jul-20	184580	2016	R-Nicola R	H-Spius Creek H	CDFO		75	CWT00050074	AD
5	2-Jul-20	637258	2017	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		75	CWT00050075	AD
5	2-Jul-20	637227	2017	Wallace R 07.0940	Wallace R Hatchery	WDFW			CWT00050077	AD
5	2-Jul-20	637167	2016	Finch Cr 16.0222	Hoodsport Hatchery	WDFW			CWT00050078	AD
5	3-Jul-20	60983	2016	San Joaq Shrm Isl Net Pen	Mok R Fish Ins	CDFW		67	CWT00047307	AD
5	3-Jul-20	56068	2016	Coleman Nfh	Coleman Nfh	USFWS		77	CWT00047308	AD
5	3-Jul-20	637173	2016	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		73	CWT00047310	AD
5	3-Jul-20	91185	2017	Hammer Crk:Salmon R	Irrigon Hatchery	IDFG		60	CWT00047312	AD
5	3-Jul-20	60950	2016	San Joaq Shrm Isl Net Pen	Mok R Fish Ins	CDFW		74	CWT00049007	AD
5	3-Jul-20	91186	2017	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		65	CWT00049008	AD
5	3-Jul-20	61484	2017	Half Moon Bay John Pr Net	Mok R Fish Ins	CDFW		59	CWT00049009	AD
5	3-Jul-20	91012	2016	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		57	CWT00049010	AD
5	3-Jul-20	55928	2017	Spring Cr 29.0159	Spring Cr Nfh	USFWS	55927	57	CWT00049011	AD
5	3-Jul-20	637228	2017	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		69	CWT00049012	AD
5	3-Jul-20	185768	2017	R-Sandy Cv	H-Sandy Cove Seapen	CDFO		69	CWT00049013	AD

5	3-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		69	CWT00049014	AD
5	3-Jul-20	91171	2016	Bull Run R	Sandy Hatchery	ODFW		86	CWT00049016	AD
5	3-Jul-20	91182	2017	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		58	CWT00049017	AD
5	3-Jul-20	56246	2017	Coleman Nfh	Coleman Nfh	USFWS		60	CWT00049018	AD
5	3-Jul-20	55928	2017	Spring Cr 29.0159	Spring Cr Nfh	USFWS	55927	62	CWT00049605	AD
5	3-Jul-20	91186	2017	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		71	CWT00049606	AD
5	3-Jul-20	211187	2015	Clarks Crk Hatchery	Clarks Crk Hatchery	PUYA		68	CWT00049607	AD
5	3-Jul-20	184374	2016	R-Harrison R	H-Chehalis River H	CDFO		72	CWT00049608	AD
5	3-Jul-20	211229	2016	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		57	CWT00049610	AD
5	3-Jul-20	91124	2016	Row R (Willamette R Cst)	Willamette Hatchery	ODFW		78	CWT00049613	AD
5	3-Jul-20	637173	2016	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		75	CWT00049615	AD
5	3-Jul-20	637167	2016	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		82	CWT00049616	AD
5	3-Jul-20	637375	2017	Purdy Cr 16.0005	George Adams Hatchery	WDFW		75	CWT00049617	AD
5	3-Jul-20	637136	2016	Columbia R - General	Wells Hatchery	DCPUD		66	CWT00049618	AD
5	3-Jul-20	200142	2016	Omak Pond	Chief Joseph Hatchery	CCT		67	CWT00049620	AD
5	3-Jul-20	91186	2017	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW			CWT00049832	NA
5	3-Jul-20	60598	2016	Fort Baker Minor Pt	Mok R Fish Ins	CDFW		61	CWT00049835	AD
5	3-Jul-20	55928	2017	Spring Cr 29.0159	Spring Cr Nfh	USFWS	55927	63	CWT00049836	AD
5	3-Jul-20	637173	2016	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		68	CWT00049837	AD
5	3-Jul-20	184384	2016	R-Chilliwack R	H-Chilliwack River H	CDFO		77	CWT00049843	AD
5	4-Jul-20	60598	2016	Fort Baker Minor Pt	Mok R Fish Ins	CDFW		72	OSP14050	AD
5	4-Jul-20	637229	2017	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		56	OSP19136	AD
5	4-Jul-20	220502	2017	Captain Johns Pd	Lyons Ferry Hatchery	NPT		63	OSP19137	AD
5	4-Jul-20	185098	2017	R-Harrison R	H-Chehalis River H	CDFO		73	OSP19138	AD
5	4-Jul-20	220507	2017	Ske R @Pittsburg L	Lyons Ferry Hatchery	NPT		63	OSP19139	AD
5	4-Jul-20	184385	2016	R-Chilliwack R	H-Chilliwack River H	CDFO		60	OSP19141	AD
5	4-Jul-20	55827	2017	Spring Cr 29.0159	Spring Cr Nfh	USFWS	55826	53	OSP19142	AD
5	4-Jul-20	56078	2016	Coleman Nfh	Coleman Nfh	USFWS		67	OSP19143	AD
5	4-Jul-20	61459	2017	Fort Baker Minor Pt	Feather R Hatchery	CDFW		46	OSP24846	AD
5	4-Jul-20	184372	2016	R-Harrison R	H-Chehalis River H	CDFO		84	OSP24848	AD
5	4-Jul-20	55827	2017	Spring Cr 29.0159	Spring Cr Nfh	USFWS	55826	64	OSP24849	AD
5	4-Jul-20	185293	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		79	OSP24850	AD
5	4-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		54	OSP28701	AD
5	4-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		71	OSP28702	AD
5	4-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		67	OSP28705	AD
5	4-Jul-20	56239	2017	Coleman Nfh	Coleman Nfh	USFWS		54	OSP30014	AD

5	4-Jul-20	185292	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		64	OSP30016	AD
5	4-Jul-20	220258	2017	Clwtr @ Lapwai Crk	Npt Hatchery	NPT			OSP30017	AD
5	4-Jul-20	184374	2016	R-Harrison R	H-Chehalis River H	CDFO		73	OSP30019	AD
5	4-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		63	OSP30307	AD
5	4-Jul-20	61468	2017	Mare Island Net Pen	Nimbus Fish Hatchery	CDFW		55	OSP30308	AD
5	4-Jul-20	220261	2016	Luke'S Gulch A F	Npt Hatchery	NPT		90	OSP30309	AD
5	4-Jul-20	56075	2016	Coleman Nfh	Coleman Nfh	USFWS		63	OSP30311	AD
5	4-Jul-20	637162	2016	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		58	OSP30312	AD
5	4-Jul-20	60952	2016	Half Moon Bay John Pr Net	Mok R Fish Ins	CDFW		65	OSP30313	AD
5	4-Jul-20	61475	2017	San Joaq Shrm Isl Net Pen	Mok R Fish Ins	CDFW		61	OSP30314	AD
5	4-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		64	OSP30316	AD
5	4-Jul-20	185767	2017	R-Sandy Cv	H-Sandy Cove Seapen	CDFO		75	OSP30317	AD
5	5-Jul-20	185768	2017	R-Sandy Cv	H-Sandy Cove Seapen	CDFO		63	CWT00047247	AD
5	5-Jul-20	61460	2017	Fort Baker Minor Pt	Feather R Hatchery	CDFW		54	CWT00047249	AD
5	5-Jul-20	56084	2016	Coleman Nfh	Coleman Nfh	USFWS		63	CWT00047313	AD
5	5-Jul-20	56240	2017	Coleman Nfh	Coleman Nfh	USFWS		59	CWT00049624	AD
5	5-Jul-20	185293	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		66	CWT00049626	AD
5	5-Jul-20	211219	2016	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637158	66	CWT00049627	AD
5	5-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		64	CWT00049629	AD
5	5-Jul-20	637403	2017	Cowlitz R 26.0002	Cowlitz Salmon Hatchery	WDFW		57	CWT00049631	AD
5	5-Jul-20	185292	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		59	CWT00049632	AD
5	5-Jul-20	185292	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		79	CWT00049633	AD
5	5-Jul-20	60982	2016	San Joaq Shrm Isl Net Pen	Mok R Fish Ins	CDFW		65	CWT00049634	AD
5	5-Jul-20	56235	2017	Coleman Nfh	Coleman Nfh	USFWS		56	CWT00049635	AD
5	5-Jul-20	637167	2016	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		75	CWT00049636	AD
5	5-Jul-20	184374	2016	R-Harrison R	H-Chehalis River H	CDFO		77	CWT00049637	AD
5	5-Jul-20	220502	2017	Captain Johns Pd	Lyons Ferry Hatchery	NPT			CWT00049828	AD
5	5-Jul-20	637203	2016	Lyons Ferry Rel.Site	Lyons Ferry Hatchery	WDFW		55	CWT00049830	AD
5	5-Jul-20	185164	2017	R-Harrison R	H-Chehalis River H	CDFO		59	CWT00049845	AD
5	5-Jul-20	60952	2016	Half Moon Bay John Pr Net	Mok R Fish Ins	CDFW		61	CWT00050085	AD
5	5-Jul-20	56238	2017	Coleman Nfh	Coleman Nfh	USFWS		55	CWT00050087	AD
5	5-Jul-20	637162	2016	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		66	CWT00050088	AD
5	5-Jul-20	61471	2017	San Joaq Shrm Isl Net Pen	Mok R Fish Ins	CDFW		57	CWT00050089	AD
5	5-Jul-20	636939	2016	Columbia R - General	Wells Hatchery	DCPUD		62	CWT00050091	AD

5	5-Jul-20	637165	2016	Minter Cr 15.0048	Hupp Springs Rearing	WDFW			CWT00050094	NA
5	5-Jul-20	60653	2017	Mare Island Net Pen	Feather R Hatchery	CDFW		60	CWT00050095	AD
5	5-Jul-20	91186	2017	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		59	CWT00050096	AD
5	5-Jul-20	637358	2017	Col R @ Priest Rapids	Priest Rapids Hatchery	WDFW		65	CWT00050097	AD
5	5-Jul-20	55928	2017	Spring Cr 29.0159	Spring Cr Nfh	USFWS	55927	75	CWT00050098	AD
5	5-Jul-20	55828	2016	Spring Cr 29.0159	Spring Cr Nfh	USFWS	55829	77	CWT00050099	AD
5	5-Jul-20	184168	2016	R-Capilano R Up	H-Capilano River H	CDFO		74	CWT00050100	AD
5	6-Jul-20	637162	2016	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		59	OSP14052	AD
5	6-Jul-20	91012	2016	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		72	OSP24851	AD
5	6-Jul-20	184165	2016	R-Burrard In	H-Sandy Cove Seapen	CDFO			OSP28707	AD
5	6-Jul-20	61467	2017	Wickland Oil Net Pen	Nimbus Fish Hatchery	CDFW		55	OSP28708	AD
5	6-Jul-20	56238	2017	Coleman Nfh	Coleman Nfh	USFWS		55	OSP28709	AD
5	6-Jul-20	637147	2016	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		68	OSP30020	AD
5	6-Jul-20	61484	2017	Half Moon Bay John Pr Net	Mok R Fish Ins	CDFW		69	OSP30021	AD
5	6-Jul-20	637171	2016	Wallace R 07.0940	Wallace R Hatchery	WDFW			OSP30022	AD
5	6-Jul-20	60653	2017	Mare Island Net Pen	Feather R Hatchery	CDFW		60	OSP30318	AD
5	6-Jul-20	184376							OSP30319	AD
5	6-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		69	OSP30321	AD
5	6-Jul-20	184383	2016	R-Chilliwack R	H-Chilliwack River H	CDFO		83	OSP30322	AD
5	6-Jul-20	211219	2016	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637158	55	OSP30323	AD
5	7-Jul-20	60653	2017	Mare Island Net Pen	Feather R Hatchery	CDFW			OSP19144	AD
5	7-Jul-20	56079	2016	Coleman Nfh	Coleman Nfh	USFWS		65	OSP19145	AD
5	7-Jul-20	185098	2017	R-Harrison R	H-Chehalis River H	CDFO		62	OSP19146	AD
5	7-Jul-20	637146	2016	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		61	OSP24853	AD
5	7-Jul-20	637223	2017	Cascade R 03.1411	Marblemount Hatchery	WDFW		62	OSP24854	AD
5	7-Jul-20	185768	2017	R-Sandy Cv	H-Sandy Cove Seapen	CDFO		61	OSP24855	AD
5	7-Jul-20	61405	2017	Feather Boyds Pump Ramp	Feather R Hatchery	CDFW		61	OSP28711	AD
5	7-Jul-20	60770	2015	Smith River	Rowdy Creek Hatchery	ROWH		63	OSP30324	AD
5	7-Jul-20	185098	2017	R-Harrison R	H-Chehalis River H	CDFO		61	OSP30325	AD
5	7-Jul-20	637377	2017	Elwha R 18.0272	Elwha Hatchery	WDFW		71	OSP30327	AD
5	7-Jul-20	60653	2017	Mare Island Net Pen	Feather R Hatchery	CDFW		60	OSP30328	AD
5	8-Jul-20	184166	2016	R-Burrard In	H-Sandy Cove Seapen	CDFO		78	CWT00049801	AD
5	8-Jul-20	61538	2017	San Joaq Shrm Isl Net Pen	Merced R Fish Facil	CDFW		54	CWT00049824	AD
5	9-Jul-20	91172	2016	Bull Run R	Sandy Hatchery	ODFW		77	CWT00047348	AD

5	9-Jul-20	637217	2016	Methow R 48.0007		DCPUD		61	CWT00049802	AD
5	9-Jul-20	56071	2016	Coleman Nfh	Coleman Nfh	USFWS		62	CWT00049805	AD
5	9-Jul-20	60998	2016	American R At Sunrise	Nimbus Fish Hatchery	CDFW		59	CWT00049820	AD
5	9-Jul-20	637216	2016	Chelan R 47.0052	Chelan Falls Hatchery	WDFW		67	CWT00049822	AD
5	9-Jul-20	637367	2017	Methow R 48.0002		DCPUD		72	CWT00049823	AD
5	9-Jul-20	637228	2017	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		55	CWT00049826	AD
5	9-Jul-20	91186	2017	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		61	CWT00049839	AD
5	9-Jul-20	637162	2016	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		78	CWT00049846	AD
5	9-Jul-20	184365	2016	R-Shuswap R Low	H-Shuswap River, Middle,	CDFO		76	CWT00050080	AD
5	9-Jul-20	60598	2016	Fort Baker Minor Pt	Mok R Fish Ins	CDFW		62	CWT00050083	AD
5	9-Jul-20	60972	2016	Mare Island Net Pen	Feather R Hatchery	CDFW		64	CWT00050084	AD
5	10-Jul-20	637192	2016	Purdy Cr 16.0005	George Adams Hatchery	WDFW		85	OSP19161	AD
5	10-Jul-20	91228	2017	Bull Run R	Sandy Hatchery	ODFW		56	OSP19162	AD
5	10-Jul-20	61484	2017	Half Moon Bay John Pr Net	Mok R Fish Ins	CDFW		57	OSP24860	AD
5	10-Jul-20	637338	2017	Cowlitz R 26.0002	Cowlitz Salmon Hatchery	WDFW			OSP28714	AD
5	11-Jul-20	637167	2016	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		66	CWT00045538	AD
5	11-Jul-20	60598	2016	Fort Baker Minor Pt	Mok R Fish Ins	CDFW		68	CWT00045542	AD
5	11-Jul-20	637394	2017	Lyons Ferry Rel.Site	Lyons Ferry Hatchery	WDFW		67	CWT00049035	AD
5	11-Jul-20	637167	2016	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		76	CWT00049036	AD
5	11-Jul-20	637228	2017	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		65	CWT00049807	AD
5	12-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		63	CWT00045401	AD
5	12-Jul-20	637393	2017	East Sound Bay (San)	Glenwood Springs	COOP		58	CWT00045403	AD
5	12-Jul-20	184382	2016	R-Chilliwack R	H-Chilliwack River H	CDFO		75	CWT00045481	AD
5	12-Jul-20	91182	2017	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		67	CWT00045484	AD
5	12-Jul-20	61459	2017	Fort Baker Minor Pt	Feather R Hatchery	CDFW		50	CWT00047351	AD
5	12-Jul-20	60598	2016	Fort Baker Minor Pt	Mok R Fish Ins	CDFW		68	CWT00047354	AD
5	13-Jul-20	184385	2016	R-Chilliwack R	H-Chilliwack River H	CDFO		62	CWT00048638	AD
5	13-Jul-20	211290	2017	Skookum Cr 01.0273	Skookum Cr Hatchery	LUMMI		60	CWT00048639	AD
5	14-Jul-20	637393	2017	East Sound Bay (San)	Glenwood Springs	COOP		51	CWT00045528	AD
5	14-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		60	CWT00047359	AD
5	14-Jul-20	60653	2017	Mare Island Net Pen	Feather R Hatchery	CDFW		57	CWT00049852	AD
5	14-Jul-20	91171	2016	Bull Run R	Sandy Hatchery	ODFW		72	CWT00049853	AD
5	15-Jul-20	637171	2016	Wallace R 07.0940	Wallace R Hatchery	WDFW		77	OSP14078	AD

5	16-Jul-20	91168	2016	Clackamas R	Clackamas Hatchery	ODFW		73	OSP19183	AD
5	16-Jul-20	91186	2017	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		60	OSP19184	AD
5	16-Jul-20	91234	2017	Elk R	Elk R Hatchery	ODFW		63	OSP24868	AD
5	16-Jul-20	61464	2017	Fort Baker Minor Pt	Feather R Hatchery	CDFW		71	OSP30331	AD
5	16-Jul-20	637137	2016	Columbia R - General	Wells Hatchery	DCPUD		66	OSP30333	AD
5	17-Jul-20	211225	2016	Gray Wolf R 18.0048	Gray Wolf R Accl Pd	WDFW		84	OSP14081	AD
5	17-Jul-20	637162	2016	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		81	OSP28717	AD
5	17-Jul-20	637403	2017	Cowlitz R 26.0002	Cowlitz Salmon Hatchery	WDFW		51	OSP28719	AD
5	18-Jul-20	637173	2016	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		72	CWT00045150	AD
5	18-Jul-20	637146	2016	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		70	CWT00048688	AD
5	18-Jul-20	637227	2017	Wallace R 07.0940	Wallace R Hatchery	WDFW		59	CWT00048689	AD
5	18-Jul-20	55928	2017	Spring Cr 29.0159	Spring Cr Nfh	USFWS	55927		CWT00048691	AD
5	19-Jul-20	637173	2016	Minter Cr 15.0048	Minter Cr Hatchery	WDFW			81575	NA
5	19-Jul-20	637261	2017	Kalama R 27.0002	Kalama Falls Hatchery	WDFW		58	CWT00045316	AD
5	19-Jul-20	220266	2017	Npt Hatchery	Npt Hatchery	NPT		61	CWT00048687	AD
5	20-Jul-20	56289	2018	Coleman Nfh	Coleman Nfh	USFWS		43	CWT00045152	AD
5	20-Jul-20	56235	2017	Coleman Nfh	Coleman Nfh	USFWS		54	CWT00045568	AD
5	20-Jul-20	185292	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		53	CWT00045569	AD
5	20-Jul-20	637383	2017	Cowlitz R 26.0002	Cowlitz Salmon Hatchery	WDFW		51	CWT00045570	AD
5	20-Jul-20	185292	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		57	CWT00045571	AD
5	20-Jul-20	637377	2017	Elwha R 18.0272	Elwha Hatchery	WDFW			CWT00048686	AD
5	22-Jul-20	184376							OSP28720	AD
5	22-Jul-20	185767	2017	R-Sandy Cv	H-Sandy Cove Seapen	CDFO		63	OSP30033	AD
5	22-Jul-20	184579	2016	R-Shuswap R Low	H-Shuswap River, Middle,	CDFO		81	OSP30035	AD
5	23-Jul-20	211276	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211275; 637248	68	OSP19185	AD
5	23-Jul-20	637228	2017	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW			OSP28721	AD
5	23-Jul-20	637163	2016	Elwha R 18.0272	Elwha Hatchery	WDFW		80	OSP30036	AD
5	23-Jul-20	211219	2016	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637158	57	OSP30336	AD
5	24-Jul-20	184382	2016	R-Chilliwack R	H-Chilliwack River H	CDFO		80	OSP30341	AD
5	25-Jul-20	185083	2017	R-Cowichan R	H-Cowichan River H	CDFO		59	CWT00048683	AD
5	25-Jul-20	184475	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		69	CWT00048685	AD

5	27-Jul-20	637098	2016	Fallert Cr 27.0017	Fallert Cr Hatchery	WDFW		79	OSP14082	AD
5	27-Jul-20	185292	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		74	OSP19188	AD
5	27-Jul-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		54	OSP28726	AD
5	27-Jul-20	211214	2016	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		81	OSP30038	AD
5	27-Jul-20	637192	2016	Purdy Cr 16.0005	George Adams Hatchery	WDFW		67	OSP30342	AD
5	30-Jul-20	211201	2016	Hoko R 19.0148	Hoko Falls Hatchery	MAKAH		74	CWT00045155	AD

Appendix 6 Coded-wire tag (CWT) recoveries from the 2020 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	1-Jul-20	211220	2016	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	637159	65	CWT00043146	AD
6	1-Jul-20	182092	2016	R-Robertson Cr	H-Robertson Creek H	CDFO		70	CWT00043165	AD
6	1-Jul-20	637221	2017	Kendall Cr 01.0406	Kendall Cr Hatchery	WDFW		67	CWT00043166	AD
6	1-Jul-20	55928	2017	Spring Cr 29.0159	Spring Cr Nfh	USFWS	55927	66	CWT00043167	AD
6	1-Jul-20	637214	2016	East Sound Bay (San)	Glenwood Springs	COOP		67	CWT00043169	AD
6	1-Jul-20	637225	2017	Friday Cr 03.0017	Samish Hatchery	WDFW		53	CWT00047502	AD
6	1-Jul-20	211276	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211275; 637248	54	CWT00047503	AD
6	1-Jul-20	637216	2016	Chelan R 47.0052	Chelan Falls Hatchery	WDFW		68	CWT00047504	AD
6	2-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		81	CWT00043164	AD
6	3-Jul-20	637173	2016	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		85	CWT00047126	AD
6	3-Jul-20	211220	2016	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	637159	67	CWT00047128	AD
6	3-Jul-20	637173	2016	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		79	CWT00047129	AD
6	3-Jul-20	211255	2017	Tulalip Cr 07.0001	Bernie Gobin Hatch	TULA	211256	54	CWT00047130	AD
6	3-Jul-20	637192	2016	Purdy Cr 16.0005	George Adams Hatchery	WDFW		68	CWT00047131	AD
6	3-Jul-20	637146	2016	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		74	CWT00047132	AD
6	3-Jul-20	637167	2016	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		62	CWT00047133	AD
6	3-Jul-20	184178	2015	R-Chilko R	H-Chehalis River H	CDFO		81	CWT00047134	AD
6	3-Jul-20	637393	2017	East Sound Bay (San)	Glenwood Springs	COOP		58	CWT00047534	AD
6	3-Jul-20	637047	2015	East Sound Bay (San)	Glenwood Springs	COOP		80	CWT00047535	AD
6	5-Jul-20	637225	2017	Friday Cr 03.0017	Samish Hatchery	WDFW		75	CWT00047536	AD
6	8-Jul-20	637229	2017	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		55	CWT00047135	AD
6	8-Jul-20	211275	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211276; 637248	66	CWT00047136	AD
6	9-Jul-20	637375	2017	Purdy Cr 16.0005	George Adams Hatchery	WDFW		65	CWT00047137	AD
6	9-Jul-20	184382	2016	R-Chilliwack R	H-Chilliwack River H	CDFO		72	CWT00047537	AD
6	12-Jul-20	637147	2016	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		69	CWT00047538	AD
6	14-Jul-20	91186	2017	Big Cr (Lwr Col R)	Big Cr Hatchery	ODFW		65	CWT00047140	AD
6	14-Jul-20	211267	2017	Mcallister Springs Hatch	Mcallister Springs Hatch	NISQ		65	CWT00047142	AD
6	14-Jul-20	184373	2016	R-Harrison R	H-Chehalis River H	CDFO		76	CWT00047145	AD

6	14-Jul-20	637377	2017	Elwha R 18.0272	Elwha Hatchery	WDFW		79	CWT00047539	AD
6	14-Jul-20	637167	2016	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		79	CWT00047540	AD
6	15-Jul-20	637377	2017	Elwha R 18.0272	Elwha Hatchery	WDFW		67	CWT00047147	AD
6	15-Jul-20	637377	2017	Elwha R 18.0272	Elwha Hatchery	WDFW		71	CWT00047148	AD
6	15-Jul-20	637377	2017	Elwha R 18.0272	Elwha Hatchery	WDFW		65	CWT00047149	AD
6	18-Jul-20	636963	2015	Elwha R 18.0272	Elwha Hatchery	WDFW		85	CWT00047200	AD
6	19-Jul-20	637163	2016	Elwha R 18.0272	Elwha Hatchery	WDFW		84	CWT00047198	AD
6	19-Jul-20	637225	2017	Friday Cr 03.0017	Samish Hatchery	WDFW			CWT00047546	AD
6	25-Jul-20	637162	2016	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		84	CWT00047150	AD
6	25-Jul-20	211276	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211275; 637248	62	CWT00047151	AD
6	25-Jul-20	211273	2017	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211274; 637251; 637252	63	CWT00047152	AD
6	25-Jul-20	637167	2016	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		74	CWT00047153	AD
6	26-Jul-20	637163	2016	Elwha R 18.0272	Elwha Hatchery	WDFW		85	CWT00047547	AD
6	31-Jul-20	637377	2017	Elwha R 18.0272	Elwha Hatchery	WDFW		70	CWT00047154	AD
6	1-Aug-20	637168	2016	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		76	CWT00047155	AD
6	1-Aug-20	637377	2017	Elwha R 18.0272	Elwha Hatchery	WDFW		67	CWT00047157	AD
6	7-Aug-20	637173	2016	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		81	CWT00043163	AD
6	9-Aug-20	637258	2017	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		64	CWT00047158	AD
6	9-Aug-20	637228	2017	Tanner Cr (Bnville)	Bonneville Hatchery	ODFW		55	CWT00047528	AD
6	12-Aug-20	637234	2017	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		61	CWT00043162	AD
6	13-Aug-20	637234	2017	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW			CWT00047527	NA
6	15-Aug-20	211276	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211275; 637248	72	CWT00047525	AD
6	15-Aug-20	55827	2017	Spring Cr 29.0159	Spring Cr Nfh	USFWS	55826		CWT00047541	NA
6	15-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		54	CWT00047542	AD

Appendix 7 Coded-wire tag (CWT) recoveries from the 2020 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	29-Aug-20	637234	2017	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		57	CWT00049727	AD

Appendix 8 Coded-wire tag (CWT) recoveries from the 2020 Chinook MSF in Marine Area 9. 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	16-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		76	CWT00039331	AD
9	16-Jul-20	637173	2016	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		75	CWT00039613	AD
9	16-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		79	CWT00041581	AD
9	16-Jul-20	637310	2017	Portage Bay/Ship Cnl	Issaquah Hatchery	WDFW		66	CWT00041582	AD
9	16-Jul-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		53	CWT00041961	AD
9	16-Jul-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		NA	CWT00042215	AD
9	16-Jul-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		71	CWT00042217	AD
9	16-Jul-20	637225	2017	Friday Cr 03.0017	Samish Hatchery	WDFW		62	CWT00042250	AD
9	16-Jul-20	637192	2016	Purdy Cr 16.0005	George Adams Hatchery	WDFW		74	CWT00052494	AD
9	18-Jul-20	637335	2017	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		62	CWT00041111	AD
9	18-Jul-20	637225	2017	Friday Cr 03.0017	Samish Hatchery	WDFW		68	CWT00041583	AD
9	18-Jul-20	637377	2017	Elwha R 18.0272	Elwha Hatchery	WDFW		58	CWT00041798	AD
9	18-Jul-20	184475	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		75	CWT00042218	AD
9	18-Jul-20	211169	2015	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	636943	66	CWT00042248	AD
9	19-Jul-20	637170	2016	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		79	CWT00039732	AD
9	19-Jul-20	637225	2017	Friday Cr 03.0017	Samish Hatchery	WDFW		65	CWT00042219	AD
9	19-Jul-20	637229	2017	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		65	CWT00043414	AD
9	19-Jul-20	637335	2017	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		55	CWT00043415	AD
9	19-Jul-20	637162	2016	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		89	CWT00043416	AD
9	19-Jul-20	637335	2017	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		61	CWT00049707	AD
9	19-Jul-20	211229	2016	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		76	CWT00049709	AD
9	19-Jul-20	211230	2016	Mcallister Springs Hatch	Clear Creek Hatchery	NISQ		67	CWT00052497	AD
9	20-Jul-20	185080	2017	R-Cowichan R	H-Cowichan River H	CDFO		61	CWT00049710	AD
9	25-Jul-20	637375	2017	Purdy Cr 16.0005	George Adams Hatchery	WDFW		60	CWT00039887	AD

9	25-Jul-20	211276	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211275; 637248	66	CWT00041546	AD
9	25-Jul-20	637225	2017	Friday Cr 03.0017	Samish Hatchery	WDFW		53	CWT00049714	AD
9	26-Jul-20	637258	2017	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		60	CWT00043418	AD
9	26-Jul-20	636958	2015	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		84	CWT00049719	AD
9	29-Jul-20	637225	2017	Friday Cr 03.0017	Samish Hatchery	WDFW		54	CWT00041568	AD
9	29-Jul-20	637310	2017	Portage Bay/Ship Cnl	Issaquah Hatchery	WDFW		73	CWT00043429	AD
9	29-Jul-20	637147	2016	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		66	CWT00043594	AD
9	31-Jul-20	211229	2016	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		72	CWT00049721	AD
9	1-Aug-20	184475	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		73	CWT00039620	AD
9	1-Aug-20	211273	2017	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211274; 637251; 637252	57	CWT00039888	AD
9	1-Aug-20	637162	2016	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		74	CWT00043430	AD
9	2-Aug-20	637255	2017	Chambers Cr 12.0007	Garrison Hatchery	WDFW		62	CWT00039621	AD
9	2-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		54	CWT00041584	AD
9	2-Aug-20	637167	2016	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		71	CWT00043438	AD
9	7-Aug-20	637459						69	CWT00042054	AD
9	8-Aug-20	184475	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		73	CWT00041564	AD
9	8-Aug-20	637170	2016	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		77	CWT00041704	AD
9	8-Aug-20	637229	2017	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		54	CWT00043401	AD
9	8-Aug-20	637234	2017	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		68	CWT00043413	AD
9	8-Aug-20	637373	2018	Kendall Cr 01.0406	Kendall Cr Hatchery	WDFW		53	CWT00049258	AD
9	9-Aug-20	637234	2017	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		56	CWT00041550	AD
9	9-Aug-20	637375	2017	Purdy Cr 16.0005	George Adams Hatchery	WDFW		62	CWT00043412	AD
9	12-Aug-20	211219	2016	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637158	59	CWT00042092	AD
9	15-Aug-20	184474	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		75	CWT00042228	AD
9	15-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		63	CWT00042229	AD

Appendix 9 Coded-wire tag (CWT) recoveries from the 2020 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	18-Jul-20	211276	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211275; 637248	63	CWT00041797	AD
10	19-Jul-20	211229	2016	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		64	CWT00041510	AD
10	25-Jul-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		57	CWT00041570	AD
10	25-Jul-20	637167	2016	Finch Cr 16.0222	Hoodsport Hatchery	WDFW		79	CWT00041789	AD
10	25-Jul-20	211219	2016	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637158	67	CWT00049230	AD
10	26-Jul-20	637170	2016	Icy Cr 09.0125	Icy Cr Hatchery	WDFW			CWT00041793	AD
10	26-Jul-20	637230	2017	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		83	CWT00041794	AD
10	30-Jul-20	211229	2016	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		70	CWT00041795	AD
10	30-Jul-20	211275	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211276; 637248	65	CWT00049216	AD
10	31-Jul-20	637173	2016	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		52	CWT00039340	AD
10	31-Jul-20	180264	2016	R-Robertson Cr	H-Robertson Creek H	CDFO		77	CWT00041589	AD
10	31-Jul-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		52	CWT00041590	AD
10	31-Jul-20	637173	2016	Minter Cr 15.0048	Minter Cr Hatchery	WDFW		68	CWT00041591	AD
10	31-Jul-20	637168	2016	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		81	CWT00041717	AD
10	1-Aug-20	211273	2017	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	211274; 637251; 637252	64	CWT00041519	AD
10	1-Aug-20	211219	2016	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637158	83	CWT00041520	AD
10	2-Aug-20	211276	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211275; 637248	67	CWT00039338	NA
10	2-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		74	CWT00041534	AD
10	2-Aug-20	211276	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211275; 637248	71	CWT00041536	AD
10	5-Aug-20	211276	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211275; 637248	65	CWT00039522	AD
10	5-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		72	CWT00041547	AD
10	5-Aug-20	211220	2016	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	637159	73	CWT00041593	AD
10	7-Aug-20	211275	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211276; 637248	58	CWT00041523	AD
10	7-Aug-20	637170	2016	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		78	CWT00041548	AD
10	8-Aug-20	637146	2016	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		70	CWT00039544	AD
10	8-Aug-20	637413	2019	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		32	CWT00041524	AD
10	8-Aug-20	211275	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211276; 637248	59	CWT00041549	AD
10	9-Aug-20	637234	2017	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		71	CWT00039542	AD
10	9-Aug-20	211275	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211276; 637248	83	CWT00041597	AD
10	9-Aug-20	184475	2017	R-Chilliwack R	H-Chilliwack River H	CDFO		79	CWT00041707	AD
10	9-Aug-20	211229	2016	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		80	CWT00042227	AD
10	11-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		65	CWT00041598	AD

10	11-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		57	CWT00041790	AD
10	13-Aug-20	211275	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211276; 637248	72	CWT00038301	AD
10	13-Aug-20	637451	2018	Chambers Cr 12.0007	Garrison Hatchery	WDFW		55	CWT00039520	AD
10	13-Aug-20	211322	2018	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	211323; 637442; 637443	54	CWT00049226	AD
10	15-Aug-20	637230	2017	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		65	CWT00038309	AD
10	15-Aug-20	637451	2018	Chambers Cr 12.0007	Garrison Hatchery	WDFW		58	CWT00039518	AD
10	15-Aug-20	211219	2016	Grovers Cr Hatchery	Grovers Cr Hatchery	SUQ	637158	71	CWT00041555	AD
10	15-Aug-20	637234	2017	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		66	CWT00041710	AD
10	15-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		54	CWT00041711	AD
10	16-Aug-20	637230	2017	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		79	CWT00038304	UM
10	16-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		55	CWT00039323	AD
10	16-Aug-20	637444	2018	Gorst Cr 15.0216	Gorst Cr Rearing Pnd	SUQ		44	CWT00041713	AD
10	16-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		57	CWT00041714	AD
10	16-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		55	CWT00041715	AD
10	18-Aug-20	637371	2018	Big Soos Cr 09.0072	Soos Creek Hatchery	WDFW		47	CWT00041560	AD
10	18-Aug-20	185298	2017	R-Chilko R	H-Chehalis River H	CDFO		64	CWT00041716	AD
10	18-Aug-20	637223	2017	Cascade R 03.1411	Marblemount Hatchery	WDFW		66	CWT00042094	AD
10	21-Aug-20	211320	2018	Clear Cr 11.0013C	Clear Creek Hatchery	NISQ	637438; 211321; 637437	53	CWT00041742	AD
10	21-Aug-20	637310	2017	Portage Bay/Ship Cnl	Issaquah Hatchery	WDFW		67	CWT00049223	AD
10	22-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		58	CWT00041526	AD
10	22-Aug-20	211337	2018	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		53	CWT00041528	AD
10	23-Aug-20	211275	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211276; 637248	63	CWT00038423	AD
10	23-Aug-20	637351	2018	Wallace R 07.0940	Wallace R Hatchery	WDFW		42	CWT00038424	UM
10	24-Aug-20	637413	2019	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		40	CWT00039524	AD
10	26-Aug-20	637343	2018	Minter Cr Tr 15.0051	Hupp Springs Rearing	WDFW		36	CWT00038404	UM
10	26-Aug-20	211275	2017	Grovers Cr 15.0299	Grovers Cr Hatchery	SUQ	637249; 211276; 637248	57	CWT00038410	AD
10	30-Aug-20	637232	2017	Icy Cr 09.0125	Icy Cr Hatchery	WDFW		56	CWT00038311	AD

Appendix 10 Coded-wire tag (CWT) recoveries from the 2020 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	13-Aug-20	211279	2017	Whitehorse Springs	Whitehorse Pond	STIL		65	CWT00051966	AD
11	18-Aug-20	637234	2017	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		67	CWT00038307	AD
11	28-Aug-20	211343	2018	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		49	CWT00047664	AD

Appendix 11 Coded-wire tag (CWT) recoveries from the 2020 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
No CWTs										

Appendix 12 Coded-wire tag (CWT) recoveries from the 2020 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	16-May-20	211279	2017	Whitehorse Springs	Whitehorse Pond	STIL		64	CWT00043297	AD
13	11-Jul-20	637451	2018	Chambers Cr 12.0007	Garrison Hatchery	WDFW		50	CWT00048103	AD
13	11-Aug-20	211149	2017	Kalama Cr 11.0017	Kalama Cr Hatchery	NISQ		61	CWT00048104	AD
13	20-Aug-20	637234	2017	Deschutes R 13.0028	Tumwater Falls Hatchery	WDFW		62	CWT00048107	AD