

**Update Coho FRAM Base Period for Mark-Selective
Fishing Years (1998-2009), Year 1 : Phase I and II**

Developed for

PSC Southern Boundary Restoration and Enhancement Fund

Developed by

James F. Packer[†]

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[†] Washington Department Fish and Wildlife, 600 Capitol Way N, Olympia, WA 98506

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Introduction

The Fishery Regulation Assessment Model (FRAM) is currently used by the Pacific Salmon Commission to annually estimate impacts of fisheries on Coho salmon stocks. The Pacific Fishery Management Council (PFMC) also uses FRAM for evaluation of proposed regulations for both Chinook and Coho in its pre-season planning process. The maintenance and testing of this model is a high priority activity needed to insure accurate estimates of fishery impacts for a wide range of stocks from Alaska to California. The model is a single season, deterministic computer program that uses an average of annual coast wide cohort analyses to compare to the current forecasts of stock abundances and fishery regulations. The cohort analyses are done using code wire tag (CWT) recoveries and terminal fishery and escapement values to estimate abundance and exploitation rates by fishery and time step. The process of collecting and collating all the necessary input values is tedious and time. The purpose of this project has been to collect all those data types with particular concern for impacts due to mark selective fisheries (MSF). The project was divided into individual sections for Canada (CDFO), Washington (WDFW), Washington State Treaty Tribes (NWIFC), Oregon (ODFW), and U.S. federal government (USFWS). Each party had specific data responsibilities for model stocks and fisheries. Stock data included escapement values for both hatchery and wild stocks by mark-type (ad-clip) and CWT release codes needed to estimate ocean distributions. The fishery data included landed catch and MSF encounter data by mark-type. The range of years (1998-2009) reflects the period when mark selective fishery regulations for Coho were implemented. The input data will be analyzed for annual catch year cohort analyses using the RRTERM and MSM programs that have also been funded by the PSC Southern Endowment Fund process.

Project Need and Objectives

The implementation of mark selective fishery regulations for Coho has increased substantially since 1998 and the effects of those fishery impacts have not been analyzed in terms of model performance. The PSC Coho Technical Committee (CoTC) has made this evaluation a priority task following the provisions of the 2009 agreements (PSC, 2009). The first provision is for the parties to develop management measures and programs. This has required the parties to invest substantial involvement in the development process and analysis. This project addresses those needs by requiring all the involved parties to collect and analyze all the input data types and review the final estimates. The objective of this first phase of the project is to collect the input data and submit it to the CoTC for analysis. The second year in year 2 will be the annual coast wide cohort analyses for each of the catch years since 1998. This report will focus on the WDFW data collection portion of the project.

Input Data for Washington State Stocks

The input data for stocks in all regions involves both escapement estimates by mark type and CWT release codes needed to estimate ocean distributions by fishery. Escapement estimates for wild stocks are all considered to be unmarked because nearly all wild stock tagging programs did not ad-clip fish after 1998. The wild stock escapement estimates for all Washington State stocks were taken directly from the current RRTERM outputs. The hatchery escapement values were derived from the WDFW hatchery escapement spreadsheet that has estimates for both marked and unmarked returns. The mark rate for hatchery releases during the study period has not always been 100% because of agreements and the logistics of complete marking by each facility. There are also substantial wild stock recruitments to some facilities. An example of the WDFW hatchery escapement estimates are shown in Figure 1. The spreadsheet is arranged as a pivot table that can easily be used to focus on one facility or to list all facilities by region. The table list returns by mark type including “Unknown”. The results for all the Washington State facilities are shown in Table 1.

The CWT release codes by stock for all regions were compiled in the USFWS project. That project also included an initial assessment of suitability for use in the MSM cohort analysis phase of the second year of this project. The final list of those CWT codes has been reviewed and selected by WDFW for use in the MSM program analysis. The list of codes for Washington State stocks is shown in Table 2. The codes selected were examined for the total number of recoveries and the overall survival rate of the release group.

Hatchery Region	Facility	Run	Marks	Data	By												
					1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		
Puget Sound Region	CEDAR RIVER HATCHERY	NA	MARKED	Total Returns	23	3					3			30		1	
			Total Spawned	0	0				0			0		0			
			UNKNOWN	Total Returns	10	4	28	4									
		Total Spawned	0	0	0	0											
		UNMARKED	Total Returns			5	32	27	30	36	2	3	13				2
		Total Spawned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NA Total Returns				10	27	36	36	27	33	36	32	3	14		2	
	NA Total Spawned				0	0	0	0	0	0	0	0	0	0	0	0	0
	CEDAR RIVER HATCHERY Total Returns				10	27	36	36	27	33	36	32	3	14		2	
	CEDAR RIVER HATCHERY Total Spawned				0	0	0	0	0	0	0	0	0	0	0	0	0
	DUNGENESS HATCHERY	FA	MARKED	Total Returns	2,382												
				Total Spawned	506												
UNKNOWN				Total Returns	0												
Total Spawned			0														
UNMARKED			Total Returns	66													
Total Spawned			24														
FA Total Returns				2,448													
FA Total Spawned				530													
NA		MARKED	Total Returns	17,533	19,155	4,413	13,170	2,644	1,824	373	1,556	447	8,942				
			Total Spawned	444	490	440	396	391	419	352	401	364	362				
			UNKNOWN	Total Returns	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total Spawned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	UNMARKED	Total Returns	65	51		76	169	64	13	76	15	244					
	Total Spawned	4	8		32	8	22	13	0	0	0	0	0	0			
NA Total Returns				17,598	19,206	4,413	13,246	2,813	1,888	386	1,632	462	9,186				
NA Total Spawned				448	498	440	428	399	441	365	401	364	362				
DUNGENESS HATCHERY Total Returns				2,448	17,598	19,206	4,413	13,246	2,813	1,888	386	1,632	462	9,186			
DUNGENESS HATCHERY Total Spawned				530	448	498	440	428	399	441	365	401	364	362			

Figure 1. WDFW Hatchery Escapement Spreadsheet Puget Sound Example

Hatchery Region	Facility	Run	Marks	Data	By										
					1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Coastal Region	BINGHAM CR HATCHERY	LA	MARKED	Total Returns	701	746	7,258	6,090	5,066	870	1,139	2,269	1,715	615	3,760
			Total Spawned	445	396	392	442	491	383	338	634	505	356	63	
			UNKNOWN	Total Returns	0	0	0	0	25	22	4	4	77	3	6
		Total Spawned	0	0	0	0	0	0	0	0	0	0	0	0	
		UNMARKED	Total Returns	107	202	272	138	195	48	29	19	563	176	292	
		Total Spawned	0	0	0	0	25	22	4	4	77	3	6		
	LA Total Returns				808	948	7,530	6,228	5,261	918	1,168	2,286	1,791	4,052	
	LA Total Spawned				445	396	392	442	516	405	342	638	502	359	69
	NA	MARKED	Total Returns	5,855	9,085	27,740	27,565	20,802	8,958	10,669	5,799	5,120	6,602	13,874	
			Total Spawned	1,726	1,540	1,141	1,011	1,129	1,164	1,153	1,126	1,294	679	428	
			UNKNOWN	Total Returns	1,095										
		Total Spawned	0	0	0	0	0	0	0	0	0	0	0	0	
UNMARKED		Total Returns	2,044	1,832	3,085	3,660	1,308	1,248	2,087	980	737	1,499	6,343		
Total Spawned		0	0	0	0	72	48	99	73	174	103	334			
NA Total Returns				7,899	12,012	30,825	31,225	22,110	10,205	12,756	6,779	5,859	8,101	20,217	
NA Total Spawned				1,726	1,540	1,141	1,011	1,201	1,212	1,252	1,198	1,468	782	762	
BINGHAM CR HATCHERY Total Returns				8,707	12,960	38,355	37,453	27,371	11,124	13,924	9,067	8,144	8,892	24,269	
BINGHAM CR HATCHERY Total Spawned				2,171	1,936	1,533	1,453	1,717	1,617	1,594	1,836	2,050	1,141	831	
ELK CREEK TRAP	LA	MARKED	Total Returns	206	130										
			Total Spawned	0	0										
			UNKNOWN	Total Returns	0	0	352	0							
	Total Spawned	0	0	0	0										
	UNMARKED	Total Returns	0	0	0	0	26	5							
	Total Spawned	0	0	0	0	0	0	0							
LA Total Returns				0	0	352	235	135					398		
LA Total Spawned				0	0	0	0	0					0		
NA	MARKED	Total Returns	460	134											
		Total Spawned	0	0											
		UNKNOWN	Total Returns	2,754											
	Total Spawned	0	0												
	UNMARKED	Total Returns	0	0	3,228			89							
	Total Spawned	0	0	0	0			0							
NA Total Returns				2,754	3,688			223					361		
NA Total Spawned				0	0			0					0		
ELK CREEK TRAP Total Returns				3,106	3,923	135	223						759		
ELK CREEK TRAP Total Spawned				0	0	0	0						0		
FORKS CREEK HATCHERY	LA	MARKED	Total Returns	333	1,818	1,947	2,316	3,505	445	416	496	243	506	257	
			Total Spawned	99	117	97	160	195	224	220	284	204	237	73	
			UNKNOWN	Total Returns	0	0	0	0	0	0	0	0	1	0	0
	Total Spawned	0	0	0	0	0	0	0	0	0	0	0	0		
	UNMARKED	Total Returns	18	95	34	117	206	94	40	63	57	152	78		
	Total Spawned	0	3	0	0	15	5	0	0	0	52	61	0		
LA Total Returns				351	1,913	1,981	2,433	3,711	539	456	559	301	658	335	
LA Total Spawned				99	120	97	160	210	229	220	284	257	298	73	

Figure 2. WDFW Hatchery Escapement Spreadsheet Coastal Example

Input Data for Washington State Fisheries

The input data for Washington State fisheries include landed catch by mark type and encounters (landed but released) numbers in mark selective fisheries. The initial catch values were summarized using data from the Pacific Salmon Marine Fishery Council (PSMFC) Regional Mark Information System (RMIS). All catch records for the study years were downloaded and summarized by fishery, time step, and mark type. The “Fishery Catch” function of the MSM program was used to do the summarization. This step was particularly important because the fishery and time step strata had to be the same as used in the FRAM and MSM programs. The large number of “Recovery Location Codes” and time strata used in the RMIS catch/sample records made this a very difficult task to do by simple aggregation of records. The summary of total landed catch by fishery was found to be fairly accurate, but the split between mark types was not. This was likely due to misunderstanding of the “Mark Type Percent” field in the RMIS records. The resultant table was sent out for review by the other parties involved in this project. An example of the RMIS summarized catch data from the new MSM program is shown in Table 3. Corrections have been received and updated in the final catch tables from the management agencies responsible for each of the fisheries.

The RMIS catch/sample records do not include MSF encounter estimates. Most of those estimates have been received from the other project parties. The estimates for the Washington State fisheries were retrieved from the WDFW sampling records for all MSF in the study years. The estimates were only for the actual sample data and had not expanded to reflect the total number of MSF encounter by fishery and time step. This expansion was done by combining the rates of encounters from the sampling data with the revised landed catch estimates to get the MSF encounter totals.

The data for each sampling year were recently added to a MS Access database with a specific format for each catch year. The varying year-specific formats were converted to a common format shown below in Table 4. The WDFW raw sport sampling data was then summarized into monthly estimates by catch record card area by a specialized MS Visual Studio program named “PS_MSFC_CatchSample”. The format for the summarized records is shown below in Table 5. The summary program was run for each of the MSF catch years. The results of the summarization program are shown in Tables 6-17.

Columbia River Run Reconstruction

The most important component of proposed coast wide cohort analysis is the contribution and estimation of Columbia River stocks in the mixed stock fisheries. Accurate estimation of these stocks is dependent on the terminal run reconstruction numbers for escapement and stock composition of the large river fisheries. The current methodology used for the Columbia River run reconstruction includes average estimates of run timing for the early, late, and Special Area Fishery Enhancement (SAFE) net pen stocks in the defined terminal area of the river. This approach has been questioned recently because of observed differences in expected terminal run timings. A major shift in hatchery production strategy to include large releases of unmarked hatchery fish above Bonneville Dam has also occurred during recent years. A new approach was developed to address these issues using CWT recoveries by hatchery, stock, fishery, release location, and mark type. The Columbia River system has the largest hatchery program of any of the FRAM stocks and all the facilities had CWT releases and mass-marking estimates during all of the catch years used in this analysis.

A specialized computer program was written to summarize all of the CWT release, CWT recovery, and fishery catch/sample data for all of the study years. There were 9 hatchery facilities in Washington and Oregon below Bonneville Dam identified as early-timed stock release sites, 5 facilities in Washington identified as late-timed release sites, and 5 primary sites for SAFE releases. All CWT releases above Bonneville Dam were grouped into early or late stock groupings. All the RMIS CWT release records for the 1995-2006 broods in the Columbia River system were summarized into the strata defined above. The early-timed CWT release codes are shown in Table 18, late-timed in Table 19, and SAFE in Table 20.

Table 21. Columbia River Coho CWT and Total release numbers of early-timed marked fish (1995-2006 brood years).

MARKED Only												Total	SAFE
Brd YR	Coho Smolts CWTs Rel	Early Grays	Early Elochoman	Early Toutle	Early Kalama	Early Lewis	Early BigCr	Early Bonneville	Sandy	Eagle Cr	Hatchery CWTs	CEDC/Klask	
	Catch Yr											0	
1995	1998	-	-	31,055	27,441	68,835	55,296	56,330	130,417	129,281	498,655	133,358	
1996	1999	29,510	29,221	30,221	28,175	73,416	51,133	42,292	59,021	127,938	470,927	257,478	
1997	2000	28,440	28,946	30,410	28,176	73,001	52,645	51,051	117,497	128,648	538,814	276,563	
1998	2001	28,774	28,815	29,649	30,074	73,830	51,115	53,021	126,494	101,955	523,727	286,789	
1999	2002	28,835	29,522	123,092	30,863	66,831	53,792	50,923	123,553	104,078	611,489	277,127	
2000	2003	29,251	29,819	30,737	30,059	72,278	53,974	52,372	54,522	103,492	456,504	292,051	
2001	2004	-	25,757	30,470	29,892	70,000	54,217	50,775	55,681	104,739	421,531	284,429	
2002	2005	29,200	29,022	29,392	14,575	69,607	53,472	77,850	54,236	105,092	462,446	224,666	
2003	2006	24,856	28,655	29,880	59,660	68,438	53,242	52,762	53,844	104,866	476,203	125,784	
2004	2007	27,588	28,694	30,063	30,229	70,295	55,819	53,603	52,285	91,448	440,024	134,202	
2005	2008	28,397	19,656	31,243	25,482	72,157	53,356	81,178	54,174	106,587	472,230	166,815	
2006	2009	33,234	8,189	30,696	30,607	75,500	52,062	61,921	53,314	98,520	444,043	193,921	

Brd YR	Coho Smolts Released	Early Grays	Early Elochoman	Early Toutle	Early Kalama	Early Lewis	Early BigCr	Early Bonneville	Early Sandy	Early Eagle Cr	Total Hatchery Return	SAFE CEDC/Klask
	Catch Yr											
1995	1998	-	-	362,910	478,464	881,735	516,544	1,030,422	670,221	2,036,073	5,976,369	1,924,024
1996	1999	156,368	469,767	1,017,807	533,034	822,374	487,372	902,132	254,768	1,039,609	5,683,231	2,110,761
1997	2000	212,428	332,412	677,399	408,258	804,042	491,611	1,300,315	648,730	715,139	5,590,334	3,513,329
1998	2001	101,662	263,439	804,582	524,819	864,444	529,068	797,634	803,440	1,061,662	5,750,750	3,908,285
1999	2002	160,549	353,017	505,768	354,750	754,615	532,829	1,236,053	689,892	767,506	5,354,979	3,542,185
2000	2003	150,408	587,997	1,128,205	378,883	784,393	534,811	1,193,711	829,923	565,309	6,153,640	3,809,266
2001	2004	-	429,994	785,312	377,624	781,265	535,986	1,241,760	738,369	562,290	5,452,600	3,867,025
2002	2005	157,000	419,363	757,607	110,811	745,179	513,922	1,149,736	673,606	613,964	5,141,188	3,025,077
2003	2006	144,724	419,859	585,795	362,384	803,994	501,297	1,170,169	420,123	579,656	4,988,001	1,787,842
2004	2007	154,260	314,112	681,635	381,513	826,055	524,940	805,053	721,931	502,613	4,912,112	1,545,904
2005	2008	155,802	406,976	744,540	271,263	838,687	524,483	1,252,793	690,032	586,344	5,470,920	2,088,837
2006	2009	130,523	128,692	819,798	313,287	760,228	551,023	1,212,294	714,320	566,964	5,197,129	2,554,736

Table 22. Columbia River Coho CWT and Total release numbers of late-timed marked fish (1995-2006 brood years).

MARKED Only							
Coho Smolts CWTs Rel		Late Elochoman	Late Kalama	Late Cowlitz	Late Lewis	Late Washougal	Total Hatchery
Brd YR	CatchYR						
1995	1998	-	-	31,055	27,441	68,835	127,331
1996	1999	29,510	29,221	30,221	28,175	73,416	190,543
1997	2000	28,440	28,946	30,410	28,176	73,001	188,973
1998	2001	28,774	28,815	29,649	30,074	73,830	191,142
1999	2002	28,835	29,522	123,092	30,863	66,831	279,143
2000	2003	29,251	29,819	30,737	30,059	72,278	192,144
2001	2004	-	25,757	30,470	29,892	70,000	156,119
2002	2005	29,200	29,022	29,392	14,575	69,607	171,796
2003	2006	24,856	28,655	29,880	59,660	68,438	211,489
2004	2007	27,588	28,694	30,063	30,229	70,295	186,869
2005	2008	28,397	19,656	31,243	25,482	72,157	176,935
2006	2009	33,234	8,189	30,696	30,607	75,500	178,226

Coho Smolts Released		Late Elochoman	Late Kalama	Late Cowlitz	Late Lewis	Late Washougal	Total Hatchery
Brd YR	CatchYR						
1995	1998	-	-	362,910	478,464	881,735	1,723,109
1996	1999	156,368	469,767	1,017,807	533,034	822,374	2,999,350
1997	2000	212,428	332,412	677,399	408,258	804,042	2,434,539
1998	2001	101,662	263,439	804,582	524,819	864,444	2,558,946
1999	2002	160,549	353,017	505,768	354,750	754,615	2,128,699
2000	2003	150,408	587,997	1,128,205	378,883	784,393	3,029,886
2001	2004	-	429,994	785,312	377,624	781,265	2,374,195
2002	2005	157,000	419,363	757,607	110,811	745,179	2,189,960
2003	2006	144,724	419,859	585,795	362,384	803,994	2,316,756
2004	2007	154,260	314,112	681,635	381,513	826,055	2,357,575
2005	2008	155,802	406,976	744,540	271,263	838,687	2,417,268
2006	2009	130,523	128,692	819,798	313,287	760,228	2,152,528

Table 23. Columbia River Coho CWT and Total release numbers of above Bonneville Dam fish (1995-2006 brood years).

Early						Late					
	Total	Marked	Total	UnMarked	Total		Total	Marked	Total	UnMarked	Total
	Release	CWT	Marked	CWT	UnMarked	BY	Release	CWT	Marked	CWT	UnMarked
BY	Release	Release	Release	Release	Release	BY	Release	Release	Release	Release	Release
1995	3590736	507689	2730204	53953	860532	1995	273708	30918	273691	17	17
1996	5414953	519812	4017679	292673	1397274	1996	1401367	60305	1284841	411	116526
1997	3889597	336742	2329879	182091	1559718	1997	3560742	83997	3531094	29530	29648
1998	5699599	346261	3215310	1217267	2484289	1998	1852905	29569	1852856	49	49
1999	3769432	754257	1558359	364487	2211073	1999	3301056	105298	1356292	438	1944764
2000	3666536	582603	1498878	1524770	2167658	2000	3478166	101569	1081865	0	2396301
2001	3358331	82211	616362	1923592	2741969	2001	3514805	90718	1015046	1679	2499759
2002	3751758	44761	1026483	2447955	2725275	2002	3398624	101325	990279	1333	2408345
2003	1666036	0	0	1472912	1666036	2003	3498523	96575	1054127	76	2444396
2004	3189517	289199	1169183	1396710	2020334	2004	2424276	50920	50920	106	2373356
2005	3911375	241024	1269084	1775524	2642291	2005	2403690	55900	55900	106	2347790
2006	2555228	46226	1097912	1231319	1457316	2006	2694824	127472	128362	0	2566462

Table 24. Columbia River Coho returns of hatchery CWT and total fish

Year	Hatchery	MARKED Only			UNMARKED Only			Total Return	Marked Return	UnMarked Return
		Origin	Early	Late	Origin	Early	Late	Total Return	Marked	UnMarked
1998	Early Grays	7	7	0	0	0	0	195	192	3
	Early Elocoman	74	75	0	0	0	0	1038	1036	2
	Early Toutle	1347	1347	0	0	0	0	14865	14644	221
	Early Kalama	229	239	0	0	0	0	3715	3705	10
	Early Lewis	681	687	0	759	762	0	12881	11676	1205
	Early Washougal	0	0	0	0	0	0	0	0	0
	Early Big Creek	256	257	0	0	0	0	2032	304	1728
	Early Bonneville	325	334	0	0	0	0	6373	628	5745
	Early Sandy	965	966	0	3	3	0	5703	1348	4355
	Early Eagle Creek	901	906	0	532	547	0	13826	13826	0
	Late Elochoman	311	0	311	0	0	0	2159	2149	10
	Late Kalama	19	0	21	0	0	0	893	891	2
	Late Cowlitz	0	0	0	0	0	0	24469	16528	7941
	Late Lewis	77	0	77	0	0	0	12906	12773	133
	Late Washougal	6	0	7	0	0	0	2203	2178	25
SAFE Klaskanine	44	0	0	0	0	0	1063	1012	51	
1999	Early Grays	95	99	0	0	0	0	986	986	0
	Early Elocoman	100	101	0	0	0	0	2363	2260	103
	Early Toutle	292	293	0	0	0	0	13569	13507	62
	Early Kalama	202	219	0	0	0	0	5102	5085	17
	Early Lewis	1201	1202	0	1484	1485	0	19176	17282	1894
	Early Washougal	0	0	0	0	0	0	543	543	0
	Early Big Creek	223	223	0	0	0	0	2108	279	1829
	Early Bonneville	260	274	0	0	0	0	4675	4675	0
	Early Sandy	200	200	0	146	146	0	1688	369	1319
	Early Eagle Creek	617	622	0	690	693	0	12724	12724	0
	Late Elochoman	355	0	364	0	0	0	3826	3785	41
	Late Kalama	39	0	39	0	0	0	1299	1297	2
	Late Cowlitz	53	0	53	0	0	0	50465	44264	6201
	Late Lewis	988	0	988	244	0	244	24481	23839	642
	Late Washougal	244	0	245	0	0	0	2960	2881	79
SAFE Klaskanine	35	0	0	0	0	0	496	37	459	
2000	Early Grays	1125	1146	0	0	0	0	13334	13321	13
	Early Elocoman	163	163	0	0	0	0	8752	8621	131
	Early Toutle	680	680	0	0	0	0	30713	30043	670
	Early Kalama	152	221	0	0	0	0	3879	3874	5
	Early Lewis	1964	1964	0	2156	2156	0	26805	24387	2418
	Early Washougal	0	0	0	0	0	0	329	329	0
	Early Big Creek	645	645	0	0	0	0	6462	6462	0
	Early Bonneville	765	796	0	0	0	0	19179	19179	0
	Early Sandy	1481	1482	0	420	420	0	13531	13531	0
	Early Eagle Creek	1622	1645	0	1920	1921	0	38546	38546	0
	Late Elochoman	679	0	691	0	0	0	6571	6323	248
	Late Kalama	268	0	268	0	0	0	10273	10206	67
	Late Cowlitz	1012	0	1012	0	0	0	65807	63705	2102
	Late Lewis	1173	0	1173	1420	0	1421	34016	32640	1376
	Late Washougal	518	0	521	0	0	0	8482	8474	8
SAFE Klaskanine	159	0	0	1	0	0	2841	2841	0	

Table 24 continued. Columbia River Coho returns of hatchery CWT and total fish

Year	Hatchery	MARKED Only			UNMARKED Only			Total Return	Marked Return	UnMarked Return
		Origin	Early	Late	Origin	Early	Late	Total Return	Marked	UnMarked
2001	Early Grays	575	589	0	0	0	0	7205	7205	0
	Early Elocoman	368	371	0	0	0	0	11872	11860	12
	Early Toutle	410	447	0	0	0	0	15787	15756	31
	Early Kalama	483	605	0	0	0	0	12136	12136	0
	Early Lewis	2703	2705	0	3746	3746	0	45530	41297	4233
	Early Washougal	0	0	0	0	0	0	3179	3179	0
	Early Big Creek	1017	1018	0	0	0	0	11313	11313	0
	Early Bonneville	1767	1767	0	0	0	0	45930	2044	43886
	Early Sandy	2051	2052	0	745	745	0	22411	2931	19480
	Early Eagle Creek	615	620	0	738	739	0	31009	21235	9774
	Late Elochoman	313	0	316	0	0	0	7649	7649	0
	Late Kalama	499	0	500	0	0	0	15720	15658	62
	Late Cowlitz	2012	0	2014	0	0	0	84236	77748	6488
	Late Lewis	2215	0	2217	2754	0	2754	61406	58747	2659
	Late Washougal	873	0	874	0	0	0	18739	18721	18
	SAFE Klaskanine	58	0	0	1	0	0	1540	61	1479
Year	Hatchery	Origin	Early	Late	Origin	Early	Late	Total Return	Marked	UnMarked
2002	Early Grays	56	56	0	0	0	0	635	635	0
	Early Elocoman	195	195	0	0	0	0	8310	8310	0
	Early Toutle	1563	1703	0	0	0	0	22769	22360	409
	Early Kalama	247	347	0	0	0	0	4274	4271	3
	Early Lewis	1750	1751	0	1973	1974	0	27077	25022	2055
	Early Washougal	0	0	0	0	0	0	27	19	8
	Early Big Creek	813	814	0	0	0	0	10303	891	9412
	Early Bonneville	1072	1072	0	0	0	0	27778	1158	26620
	Early Sandy	839	839	0	174	174	0	8393	1104	7289
	Early Eagle Creek	514	515	0	539	539	0	7412	6203	1209
	Late Elochoman	183	0	186	0	0	0	4437	4437	0
	Late Kalama	439	0	441	0	0	0	4671	4667	4
	Late Cowlitz	983	0	986	0	0	0	94387	83792	10595
	Late Lewis	1158	0	1159	1155	0	1158	12506	11273	1233
	Late Washougal	989	0	992	0	0	0	19743	18515	1228
	SAFE Klaskanine	107	0	0	0	0	0	1991	142	1849
Year	Hatchery	Origin	Early	Late	Origin	Early	Late	Total Return	Marked	UnMarked
2003	Early Grays	46	47	0	0	0	0	829	827	2
	Early Elocoman	120	121	0	0	0	0	8139	8107	32
	Early Toutle	819	831	0	0	0	0	32243	31826	417
	Early Kalama	228	296	0	0	0	0	3302	3302	0
	Early Lewis	2838	2858	0	3846	3861	0	34653	31272	3381
	Early Washougal	0	0	0	0	0	0	0	0	0
	Early Big Creek	648	648	0	0	0	0	8918	8918	0
	Early Bonneville	1636	1638	0	0	0	0	36790	36790	0
	Early Sandy	467	467	0	288	288	0	10377	10377	0
	Early Eagle Creek	210	215	0	325	325	0	5687	3482	2205
	Late Elochoman	72	0	73	0	0	0	3032	3032	0
	Late Kalama	387	0	391	0	0	0	5001	4518	483
	Late Cowlitz	902	0	906	0	0	0	48706	39406	9300
	Late Lewis	1718	0	1723	2187	0	2190	15619	13588	2031
	Late Washougal	147	0	148	0	0	0	6407	5140	1267
	SAFE Klaskanine	105	0	0	0	0	0	2547	262	2285

Table 24 continued. Columbia River Coho returns of hatchery CWT and total fish

		MARKED Only			UNMARKED Only			Total Return	Marked Return	UnMarked Return
2004	Early Grays	1	1	0	0	0	0	2394	2394	0
	Early Elocoman	58	58	0	0	0	0	5824	5797	27
	Early Toutle	753	753	0	0	0	0	25693	25329	364
	Early Kalama	53	64	0	0	0	0	1198	1198	0
	Early Lewis	1789	1789	0	2487	2487	0	12481	10950	1531
	Early Washougal	0	0	0	0	0	0	0	0	0
	Early Big Creek	431	432	0	0	0	0	5043	5043	0
	Early Bonneville	1037	1037	0	0	0	0	24824	24824	0
	Early Sandy	836	836	0	460	460	0	17784	17784	0
	Early Eagle Creek	234	242	0	333	338	0	8343	582	7761
	Late Elochoman	33	0	33	0	0	0	1185	1151	34
	Late Kalama	241	0	242	0	0	0	3608	3513	95
	Late Cowlitz	1009	0	1009	0	0	0	54100	48387	5713
	Late Lewis	1055	0	1055	1420	0	1420	6131	5287	844
	Late Washougal	184	0	184	0	0	0	4304	3074	1230
SAFE Klaskanine	50	0	0	0	0	0	1533	1533	0	
Year	Hatchery	Origin	Early	Late	Origin	Early	Late	Total Return	Marked	UnMarked
2005	Early Grays	244	245	0	0	0	0	4838	4838	0
	Early Elocoman	29	29	0	0	0	0	2942	2925	17
	Early Toutle	177	178	0	0	0	0	7992	7912	80
	Early Kalama	110	127	0	0	0	0	1073	1051	22
	Early Lewis	1631	1631	0	1859	1859	0	15508	14216	1292
	Early Washougal	0	0	0	0	0	0	0	0	0
	Early Big Creek	522	522	0	0	0	0	7259	7259	0
	Early Bonneville	999	1000	0	0	0	0	27067	27067	0
	Early Sandy	558	558	0	498	498	0	11545	11545	0
	Early Eagle Creek	375	378	0	381	381	0	9941	9941	0
	Late Elochoman	15	0	15	0	0	0	883	855	28
	Late Kalama	90	0	92	0	0	0	1705	1489	216
	Late Cowlitz	780	0	780	0	0	0	45047	37557	7490
	Late Lewis	1366	0	1367	1912	0	1912	10089	7426	2663
	Late Washougal	117	0	117	0	0	0	3500	3189	311
SAFE Klaskanine	2	0	0	0	0	0	32	32	0	
Year	Hatchery	Origin	Early	Late	Origin	Early	Late	Total Return	Marked	UnMarked
2006	Early Grays	90	92	0	0	0	0	876	874	2
	Early Elocoman	62	63	0	0	0	0	2780	2744	36
	Early Toutle	103	103	0	0	0	0	7493	7448	45
	Early Kalama	212	282	0	0	0	0	2717	2717	0
	Early Lewis	1517	1518	0	1626	1626	0	19159	17607	1552
	Early Washougal	0	0	0	0	0	0	0	0	0
	Early Big Creek	484	484	0	0	0	0	7405	7405	0
	Early Bonneville	1902	1911	0	0	0	0	42574	42574	0
	Early Sandy	467	468	0	481	481	0	11188	11188	0
	Early Eagle Creek	172	176	0	236	236	0	16838	16838	0
	Late Elochoman	27	0	27	0	0	0	346	331	15
	Late Kalama	369	0	370	0	0	0	5814	5540	274
	Late Cowlitz	1328	0	1331	2	0	2	66976	60458	6518
	Late Lewis	1496	0	1496	1689	0	1689	19445	18042	1403
	Late Washougal	521	0	523	0	0	0	11085	10389	696
SAFE Klaskanine	3	0	0	0	0	0	34	34	0	

Table 24 continued. Columbia River Coho returns of hatchery CWT and total fish

		MARKED Only			UNMARKED Only			Total Return	Marked Return	UnMarked Return
2007	Early Grays	125	140	0	0	0	0	984	979	5
	Early Elocoman	164	165	0	0	0	0	2216	2084	132
	Early Toutle	556	556	0	0	0	0	18149	18005	144
	Early Kalama	233	262	0	0	0	0	4591	4591	0
	Early Lewis	1456	1456	0	2003	2003	0	14143	12740	1403
	Early Washougal	0	0	0	0	0	0	0	0	0
	Early Big Creek	322	324	0	0	0	0	4635	4635	0
	Early Bonneville	1380	1380	0	0	0	0	34959	34959	0
	Early Sandy	463	465	0	438	439	0	7755	7755	0
	Early Eagle Creek	505	506	0	761	762	0	11106	11106	0
	Late Elochoman	35	0	36	0	0	0	1009	988	21
	Late Kalama	168	0	170	0	0	0	1907	1848	59
	Late Cowlitz	687	0	687	2	0	3	47299	41975	5324
	Late Lewis	1194	0	1194	1503	0	1503	14111	12656	1455
	Late Washougal	184	0	184	0	0	0	5362	5299	63
	SAFE Klaskanine	1	0	0	0	0	0	30	30	0
Year	Hatchery	Origin	Early	Late	Origin	Early	Late	Total Return	Marked	UnMarked
2008	Early Grays	88	95	0	0	0	0	1372	1372	0
	Early Elocoman	257	257	0	0	0	0	3837	3673	164
	Early Toutle	959	961	0	0	0	0	33797	33328	469
	Early Kalama	215	396	0	0	0	0	2750	2750	0
	Early Lewis	2335	2335	0	3021	3021	0	20332	18727	1605
	Early Washougal	0	0	0	0	0	0	0	0	0
	Early Big Creek	338	343	0	0	0	0	5944	5944	0
	Early Bonneville	1764	1764	0	0	0	0	51984	1003	50981
	Early Sandy	492	492	0	326	326	0	8756	927	7829
	Early Eagle Creek	148	164	0	276	276	0	6641	5701	940
	Late Elochoman	173	0	174	0	0	0	2109	2029	80
	Late Kalama	409	0	409	0	0	0	5471	5368	103
	Late Cowlitz	1404	0	1404	6	0	6	98947	92074	6873
	Late Lewis	1831	0	1831	2070	0	2070	15811	14219	1592
	Late Washougal	146	0	151	0	0	0	6234	6125	109
	SAFE Klaskanine	112	0	0	0	0	0	1706	1706	0
Year	Hatchery	Origin	Early	Late	Origin	Early	Late	Total Return	Marked	UnMarked
2009	Early Grays	0	1	0	0	0	0	0	0	0
	Early Elocoman	0	0	0	0	0	0	0	0	0
	Early Toutle	0	0	0	0	0	0	0	0	0
	Early Kalama	0	0	0	0	0	0	0	0	0
	Early Lewis	0	62	0	0	0	0	0	0	0
	Early Washougal	0	0	0	0	0	0	0	0	0
	Early Big Creek	336	336	0	0	0	0	3064	378	2686
	Early Bonneville	741	741	0	0	0	0	2961	961	2000
	Early Sandy	0	0	0	0	0	0	2117	117	2000
	Early Eagle Creek	0	2	0	0	0	0	0	0	0
	Late Elochoman	0	0	0	0	0	0	0	0	0
	Late Kalama	0	0	0	0	0	0	0	0	0
	Late Cowlitz	0	0	0	0	0	0	0	0	0
	Late Lewis	0	0	0	0	0	0	0	0	0
	Late Washougal	0	0	0	0	0	0	0	0	0
	SAFE Klaskanine	234	0	0	0	0	0	266	266	0

Table 25. Columbia River Coho CWT recoveries by fishery and stock grouping.

MARKED Only		Total				
Year	Fishery	Early	Late	SAFE	AB Early	AB Late
1998	Buoy 10	126	8	22	37	0
	LCR Sport	262	0	18	77	0
	LCR Net	0	2	0	1	0
	SAFE Net	228	15	1173	46	2
	ABonn Net	5	0	0	10	0
	Escapement	4785	413	44	0	0
1999	Buoy 10	283	10	123	98	26
	LCR Sport	21	13	0	11	0
	LCR Net	301	884	832	72	43
	SAFE Net	98	24	3651	5	0
	ABonn Net	13	0	0	108	4
	Escapement	3189	1679	35	0	0
2000	Buoy 10	679	149	229	160	13
	LCR Sport	97	109	0	22	0
	LCR Net	221	2553	607	25	231
	SAFE Net	527	84	5706	3	8
	ABonn Net	36	0	0	193	0
	Escapement	8598	3650	159	0	0
2001	Buoy 10	3522	822	1179	1119	18
	LCR Sport	84	25	7	16	9
	LCR Net	1822	4289	2280	522	89
	SAFE Net	279	54	2009	12	4
	ABonn Net	21	0	0	59	0
	Escapement	9988	5911	58	0	0
2002	Buoy 10	278	41	49	12	15
	LCR Sport	100	87	7	7	6
	LCR Net	1345	2094	742	15	386
	SAFE Net	1163	19	3050	8	0
	ABonn Net	10	0	0	16	1
	Escapement	7049	3752	107	0	0
2003	Buoy 10	1640	41	1103	172	11
	LCR Sport	23	0	0	0	0
	LCR Net	688	1894	2212	50	247
	SAFE Net	631	30	6546	40	2
	ABonn Net	56	0	0	84	0
	Escapement	7013	3225	105	0	0

Table 25 continued. Columbia River Coho CWT recoveries by fishery and stock grouping.

MARKED Only		Total				
2004	Buoy 10	520	101	242	27	1
	LCR Sport	50	15	0	0	0
	LCR Net	56	1375	378	0	349
	SAFE Net	134	5	3071	1	4
	ABonn Net	67	0	0	5	5
	Escapement	5191	2521	50	0	0
2005	Buoy 10	119	7	47	1	0
	LCR Sport	13	0	0	0	0
	LCR Net	204	383	884	0	110
	SAFE Net	362	12	2697	2	2
	ABonn Net	27	0	0	0	1
	Escapement	4645	2368	2	0	0
2006	Buoy 10	78	3	17	0	3
	LCR Sport	25	11	4	0	0
	LCR Net	175	644	216	0	151
	SAFE Net	657	25	1826	0	0
	ABonn Net	62	0	0	0	12
	Escapement	5008	3741	3	0	0
2007	Buoy 10	434	58	41	22	4
	LCR Sport	49	4	0	7	0
	LCR Net	109	691	102	210	34
	SAFE Net	162	11	628	1	0
	ABonn Net	66	0	0	480	0
	Escapement	5203	2268	1	0	0
2008	Buoy 10	356	39	76	28	3
	LCR Sport	87	18	13	0	0
	LCR Net	139	178	76	57	32
	SAFE Net	289	24	3173	15	6
	ABonn Net	379	0	0	595	21
	Escapement	6596	3964	112	0	0
2009	Buoy 10	1578	334	404	134	44
	LCR Sport	0	0	0	0	0
	LCR Net	17	9	0	263	44
	SAFE Net	0	0	32	0	0
	ABonn Net	0	0	0	0	2366
	Escapement	1077	0	234	0	0

Table 26. Columbia River Coho landed catch by fishery.

Year	Fishery	Total Catch	Marked	UnMarked
1998	Buoy 10	3184	1898	1286
	LCR Sport	4310	2008	2302
	LCR Net	4245	4245	0
	SAFE Net	19528	19528	0
	ABonn Net	219	219	0
1999	Buoy 10	8947	8811	136
	LCR Sport	1778	282	1496
	LCR Net	63595	53829	9766
	SAFE Net	17340	14147	3193
	ABonn Net	1677	407	1270
2000	Buoy 10	22109	21889	220
	LCR Sport	4069	4069	0
	LCR Net	127575	57749	69826
	SAFE Net	45198	40507	4691
	ABonn Net	3945	1888	2057
2001	Buoy 10	131394	130829	565
	LCR Sport	3449	3449	0
	LCR Net	223895	110658	113237
	SAFE Net	28331	25235	3096
	ABonn Net	3687	1586	2102
2002	Buoy 10	6068	3265	2803
	LCR Sport	3383	375	3008
	LCR Net	94863	69226	25636
	SAFE Net	69598	63123	6475
	ABonn Net	652	250	402
2003	Buoy 10	54442	54176	266
	LCR Sport	1172	1172	0
	LCR Net	164545	117084	47461
	SAFE Net	92993	83677	9316
	ABonn Net	2638	763	1875

Table 26 continued. Columbia River Coho landed catch by fishery.

Year	Fishery	Total Catch	Marked	UnMarked
2004	Buoy 10	15147	8001	7145
	LCR Sport	1340	109	1231
	LCR Net	66625	40671	25954
	SAFE Net	57034	51486	5548
	ABonn Net	5553	511	5042
2005	Buoy 10	1967	1908	59
	LCR Sport	607	225	382
	LCR Net	34659	26796	7862
	SAFE Net	68172	61788	6384
	ABonn Net	1873	101	1772
2006	Buoy 10	942	926	16
	LCR Sport	1211	66	1145
	LCR Net	27296	19320	7976
	SAFE Net	37552	32888	4664
	ABonn Net	5372	1247	4125
2007	Buoy 10	8566	3721	4845
	LCR Sport	909	74	835
	LCR Net	29074	21135	7939
	SAFE Net	10422	9038	1384
	ABonn Net	7980	1327	6653
2008	Buoy 10	8502	8472	30
	LCR Sport	2575	2575	0
	LCR Net	12736	8388	4348
	SAFE Net	54551	49579	4972
	ABonn Net	18796	2069	16727
2009	Buoy 10	47731	21552	26179
	LCR Sport	4034	4034	0
	LCR Net	45241	27801	17440
	SAFE Net	80950	70764	10186
	ABonn Net	9718	1116	8602

Table 27. Example of Columbia River Coho fishery reconstruction using 1998 Buoy 10 Sport.

1998				
MARKED				
Stock	CWT Percent			PEF
	Juv	Adlt	Actual	
Early Hatchery	8.34%	10.10%	10.00%	10.000
Late Hatchery	7.39%	1.21%	5.00%	20.000
SAFE Hatchery	6.93%	4.14%	6.00%	16.667
Above Bonn Early	18.60%	76.03%	18.00%	5.556
Above Bonn Late	11.30%	99.99%	11.00%	9.091

UNMARKED				
Stock	CWT Percent			PEF
	Juv	Adlt	Actual	
Early Hatchery	58.22%	9.75%	0.00%	0.00
Late Hatchery	38.31%	0.00%	0.00%	0.00
SAFE Hatchery	100.00%	0.00%	0.00%	0.00
Above Bonn Early	6.27%	23.97%	6.00%	16.67
Above Bonn Late	100.00%	0.01%	0.00%	0.00
Early WILD				
Late WILD				

SUM

Buoy 10 Sport August					August PEF		UnMarked Catch
Stock	August	PEF	Percent	MARKED	Total	Stock	
	Marked	Expanded	Expanded	August			Catch w/o
	CWT-Rec	CWT-Rec	CWT-Rec	Normalize	B10 Aug	Early Hatchery	UnMarked
Early Hatchery	126	1260	63.25%	1200	5014	SAFE Hatchery	Expanded
Late Hatchery	8	160	8.03%	152	2163	Above Bonn Early	CWT-Rec
SAFE Hatchery	22	367	18.40%	349	13963	Above Bonn Late	CWT-Rec
Above Bonn Early	37	206	10.32%	196	2079	Early WILD	
Above Bonn Late	0	0	0.00%	0	392	Late WILD	
		1992			23611		
Total August Marked Catch (Actual)				1898		Total August UnMarked Catch (Actual)	1286

Buoy 10 Sport September					Sept. PEF		UnMarked Catch
Stock	Sept.	PEF	Percent	MARKED	Total	Stock	
	Marked	Expanded	Expanded	Sept.			Catch w/o
	CWT-Rec	CWT-Rec	CWT-Rec	Normalize	B10 Sept	Early Hatchery	UnMarked
Early Hatchery	0	0	0.00%	455	5760	SAFE Hatchery	Expanded
Late Hatchery	0	0	0.00%	313	2003	Above Bonn Early	CWT-Rec
SAFE Hatchery	0	0	0.00%	130	14182	Above Bonn Late	CWT-Rec
Above Bonn Early	0	0	0.00%	242	2033	Early WILD	
Above Bonn Late	0	0	0.00%	106	286	Late WILD	
		0			24264		
Total Sept. Marked Catch (Actual)				1245		Total Sept. UnMarked Catch (Actual)	135

Buoy 10 Sport October					Oct-Dec PEF		UnMarked Catch
Stock	Oct-Dec	PEF	Percent	MARKED	Total	Stock	
	Marked	Expanded	Expanded	Oct-Dec			Catch w/o
	CWT-Rec	CWT-Rec	CWT-Rec	Normalize	B10 Oct	Early Hatchery	UnMarked
Early Hatchery	0	0	0.00%	360	5854	SAFE Hatchery	Expanded
Late Hatchery	0	0	0.00%	248	2067	Above Bonn Early	CWT-Rec
SAFE Hatchery	0	0	0.00%	103	14209	Above Bonn Late	CWT-Rec
Above Bonn Early	0	0	0.00%	192	2084	Early WILD	
Above Bonn Late	0	0	0.00%	84	308	Late WILD	
		0			24522		
Total Oct-Dec Marked Catch (Actual)				987		Total Oct-Dec UnMarked Catch (Actual)	125

Actual	Percent	Escape	Percent
Escape	Escape	w/o PEF	w/o PEF
13269	34.82%	13269	44.45%
8111	21.28%	8111	27.17%
51	0.13%	51	0.17%
8262	21.68%	0	0.00%
1	0.00%	1	0.00%
3283	8.62%	3283	11.00%
5133	13.47%	5133	17.20%
38110		29848	

MARKED		Total	Marked	Total
Stock		Marked	Percent	Marked
		Return	Return	Escape
Early Hatchery		53573	36.52%	47359
Late Hatchery		36834	25.11%	34519
SAFE Hatchery		15324	10.45%	1012
Above Bonn Early		28487	19.42%	26211
Above Bonn Late		12492	8.51%	12100
TOTAL		146711		121202

Table 4. WDFW Sport Sampling Data Format for MSM Fishery Database

StatWeek	Statistical Week used in Fishery Management
SampleDate	Date of Landing
CRCarea	Catch Record Card Area (1-4 Ocean, 5-7 JDF & SJI, 8-13 PS)
FishMeth	Fishing Method (1-Kicker, 2-Charter, 3-Pier, 4-Shore)
ChinookCaught	Legal Sized Chinook Sampled
ChinAd	Chinook with Adipose Clip
TotalCohoCatch	Total Coho Sampled
CohoAd	Coho without Adipose Clip
SalmonReleasedSpCode	Species Code (1=Chinook, 4=Coho, 99=Unknown)
SalmonReleasedCount	Count of Released Fish for Species Code
SalmonRelUM	Count of UnMarked Released
SalmonRelAd	Count of Marked Released
SalmonRelUK	Count of Unknown Mark Released

Table 5. Summarized WDFW Sport Sampling Data Format for MSM Fishery Database

CRCArea	Catch Record Card Area (1-4 Ocean, 5-7 JDF & SJI, 8-13 PS)
SampleMonth	Calendar Month used in Fishery Management
TotalCohoCatch	Total Coho Sampled
CohoAD	Coho without Adipose Clip
TotalCohoReleased	Total Coho Released
CohoUMReleased	UnMarked Coho Released
CohoADReleased	Marked Coho Released
CohoUKReleased	Unknown Mark Type Coho Released
CohoEncounterRate	Total Coho Released Divided By Total Coho Sampled
CohoUMEncRate	UnMarked Coho Released Divided By Total Coho Sampled

Table 6. Summarized WDFW Puget Sound Coho MSF Sampling Records for 1998

CRCArea	SampleMonth	TotalCohoCat	CohoAD-Clip	TotalCohoRel	CohoUMRel	CohoADRel	CohoUKRel	CohoEncRate	CohoUMEncRt
5	8	2240	390	2782	0	32	2664	1.242	0
5	9	210	34	545	0	1	544	2.5952	0
6	8	797	139	1598	0	6	1240	2.005	0
6	9	155	16	360	0	1	254	2.3226	0
7	8	1	0	12	0	0	0	12	0
7	9	35	4	121	0	0	0	3.4571	0
7	10	16	2	50	0	0	0	3.125	0
9	8	54	12	151	0	0	3	2.7963	0.25
9	9	225	33	353	0	0	26	1.5689	0.7879
9	10	19	2	57	0	0	9	3	4.5
10	7	4	0	29	0	0	0	7.25	0
10	8	60	16	167	0	0	0	2.7833	0
10	9	567	183	763	0	7	5	1.3457	0
10	10	151	47	262	0	0	0	1.7351	0
11	6	10	0	55	0	4	3	5.5	0
11	7	15	0	56	0	0	0	3.7333	0
11	8	19	1	135	0	1	0	7.1053	0
11	9	116	7	275	0	0	0	2.3707	0
11	10	22	0	113	0	2	0	5.1364	0
12	8	5	3	11	0	0	3	2.2	1
12	9	10	2	21	0	0	6	2.1	3
12	10	17	1	18	0	0	0	1.0588	0
13	6	9	0	99	0	0	0	11	0
13	7	1	0	13	0	0	0	13	0
13	9	6	0	28	0	0	0	4.6667	0
13	10	5	1	28	0	0	0	5.6	0

Table 7. Summarized WDFW Puget Sound Coho MSF Sampling Records for 1999

CRCArea	SampleMonth	TotalCohoCat	CohoAD-Clip	TotalCohoRel	CohoUMRel	CohoADRel	CohoUKRel	CohoEncRate	CohoUMEncRt
5	8	677	657	4303	0	88	115	6.356	0
5	9	976	958	5906	0	342	129	6.0512	0
6	8	7	7	117	0	0	9	16.7143	1.2857
6	9	33	32	537	0	7	8	16.2727	0
7	9	2	0	23	0	0	19	11.5	0
7	10	1	1	2	0	0	1	2	1
9	8	4	2	119	0	3	74	29.75	0
9	9	39	12	208	0	3	138	5.3333	0
9	10	4	0	128	0	3	93	32	0
10	8	12	2	70	0	10	40	5.8333	0
10	9	83	25	520	0	50	365	6.2651	0
10	10	3	2	186	0	8	136	62	0
11	7	3	0	63	0	2	5	21	0
11	8	8	5	141	0	40	57	17.625	0
11	9	13	8	198	0	22	127	15.2308	0
11	10	3	2	132	0	15	64	44	0
13	6	2	0	16	0	0	0	8	0
13	7	7	5	77	0	17	33	11	0
13	8	6	6	86	0	21	17	14.3333	0
13	9	3	2	114	0	24	47	38	0
13	10	12	12	71	0	33	2	5.9167	0

Table 8. Summarized WDFW Puget Sound Coho MSF Sampling Records for 2000

CRCArea	SampleMonth	TotalCohoCat	CohoAD-Clip	TotalCohoRel	CohoUMRel	CohoADRel	CohoUKRel	CohoEncRate	CohoUMEncRt
4	8	25	25	132	0	5	11	5.28	0
4	9	2	2	2	0	0	0	1	0
5	8	1471	1467	5635	0	304	682	3.8307	0
5	9	4345	4333	11052	0	745	525	2.5436	0
6	8	2	2	155	0	29	69	77.5	0
6	9	682	682	2352	0	144	888	3.4487	0
7	8	1	0	6	0	0	3	6	0
7	9	14	4	40	0	1	24	2.8571	0
7	10	24	8	41	0	3	31	1.7083	0
9	9	209	81	667	0	0	0	3.1914	0
9	10	24	14	193	0	0	16	8.0417	1.1429
10	7	55	17	105	0	0	3	1.9091	0.1765
10	8	124	62	422	0	0	0	3.4032	0
10	9	221	124	702	0	0	2	3.1765	0.0161
10	10	26	14	278	0	0	0	10.6923	0
11	7	55	28	197	0	12	82	3.5818	0
11	8	13	8	127	0	3	53	9.7692	0
11	9	26	21	179	0	25	112	6.8846	0
11	10	11	8	102	0	3	98	9.2727	0
12	9	5	3	18	0	0	18	3.6	6
12	10	8	3	8	0	1	4	1	0
13	6	9	8	110	0	40	44	12.2222	0
13	7	2	1	38	0	6	7	19	0
13	8	10	8	54	0	9	38	5.4	0
13	9	72	66	120	0	30	57	1.6667	0
13	10	5	5	45	0	11	33	9	0

Table 9. Summarized WDFW Puget Sound Coho MSF Sampling Records for 2001

CRCArea	SampleMonth	TotalCohoCat	CohoAD-Clip	TotalCohoRel	CohoUMRel	CohoADRel	CohoUKRel	CohoEncRate	CohoUMEncRt
4	7	34	34	87	87	0	0	2.5588	2.5588
4	8	3	3	5	5	0	0	1.6667	1.6667
5	7	1922	1856	8178	7805	208	158	4.2549	4.2883
5	8	2093	2044	9424	9141	143	141	4.5026	4.5401
5	9	6018	1975	10887	905	461	9512	1.8091	3.6491
6	8	306	296	2344	2156	49	126	7.6601	7.6993
6	9	576	560	2667	2490	82	89	4.6302	4.6
7	7	1	0	3	0	1	0	3	0
7	8	29	24	190	143	11	18	6.5517	6.6667
7	9	116	98	671	554	20	71	5.7845	6.3571
7	10	129	32	224	68	41	115	1.7364	4.375
9	8	75	51	213	21	38	74	2.84	0.9216
9	9	390	152	437	13	18	58	1.1205	0.2434
9	10	154	22	247	6	2	25	1.6039	1.1364
10	6	1	0	48	0	0	0	48	0
10	7	21	8	117	0	0	0	5.5714	0
10	8	90	52	313	0	0	13	3.4778	0.25
10	9	379	211	576	0	0	0	1.5198	0
10	10	35	9	258	1	0	3	7.3714	0.4444
11	7	12	4	79	4	1	12	6.5833	3.5
11	8	76	53	345	6	0	0	4.5395	0.1132
11	9	156	116	490	7	0	1	3.141	0.069
11	10	21	17	195	2	0	16	9.2857	1.0588
12	8	2	1	34	0	0	8	17	8
12	9	65	36	88	7	0	1	1.3538	0.2222
12	10	12	3	36	0	0	0	3	0
13	6	10	10	148	25	55	65	14.8	4.5
13	7	1	1	23	1	8	14	23	3
13	9	14	11	62	7	9	41	4.4286	2.2727
13	10	22	20	36	4	15	16	1.6364	0.35

Table 10. Summarized WDFW Puget Sound Coho MSF Sampling Records for 2002

4	7	9	8	29	23	0	6	3.2222	3.625
4	8	11	11	20	20	0	0	1.8182	1.8182
5	7	279	273	1137	1005	78	54	4.0753	3.8645
5	8	1879	1875	4244	3780	173	289	2.2586	2.1632
5	9	4388	4364	13045	10160	363	2522	2.9729	2.8861
6	8	24	24	104	23	3	44	4.3333	2.5833
6	9	137	136	452	371	6	69	3.2993	3.2279
7	8	6	6	33	18	1	4	5.5	3.6667
7	9	93	90	281	258	10	11	3.0215	2.9889
7	10	96	46	163	60	5	97	1.6979	3.2609
9	6	2	2	38	0	12	0	19	0
9	7	5	2	42	1	1	7	8.4	2
9	8	20	12	181	6	8	53	9.05	2.4167
9	9	146	67	437	1	1	9	2.9932	0.0896
9	10	10	3	244	2	0	7	24.4	3
10	7	13	5	38	0	0	0	2.9231	0
10	8	99	63	306	0	0	0	3.0909	0
10	9	360	261	1206	0	0	0	3.35	0
10	10	55	40	468	0	0	0	8.5091	0
11	7	9	1	104	3	1	2	11.5556	4
11	8	7	4	115	2	0	5	16.4286	1.75
11	9	18	12	136	0	1	0	7.5556	0
11	10	2	0	32	0	1	2	16	0
12	8	8	5	12	1	1	2	1.5	0.4
12	9	3	0	18	0	0	14	6	0
12	10	12	0	12	6	1	2	1	0
13	9	13	12	22	2	3	11	1.6923	0.5
13	10	4	2	40	3	11	26	10	4.5

Table 11. Summarized WDFW Puget Sound Coho MSF Sampling Records for 2003

CRCArea	SampleMonth	TotalCohoCat	CohoAD-Clip	TotalCohoRel	CohoUMRel	CohoADRel	CohoUKRel	CohoEncRate	CohoUMEncRt
4	7	3	3	21	19	0	0	7	6.3333
4	8	5	5	55	55	0	0	11	11
4	9	4	4	16	16	0	0	4	4
5	7	675	664	4555	4009	134	392	6.7481	6.6084
5	8	1456	1413	5786	5428	107	241	3.9739	4.0085
5	9	4547	4513	12619	10500	795	1312	2.7752	2.5969
6	7	8	8	110	100	4	6	13.75	13.25
6	8	35	35	496	479	6	11	14.1714	14
6	9	444	442	1277	1198	42	29	2.8761	2.7738
7	8	1	1	63	50	2	6	63	56
7	9	24	23	158	123	11	23	6.5833	6.2609
7	10	28	12	41	4	0	37	1.4643	3.4167
9	7	5	0	27	0	0	2	5.4	0
9	8	21	9	105	4	7	24	5	1.4444
9	9	239	112	368	1	0	20	1.5397	0.1875
9	10	75	22	142	0	0	27	1.8933	1.2273
10	7	29	10	76	0	0	0	2.6207	0
10	8	229	110	442	0	0	0	1.9301	0
10	9	874	606	1925	0	0	0	2.2025	0
10	10	43	20	254	0	0	0	5.907	0
11	7	2	0	50	0	0	14	25	0
11	8	28	12	130	10	9	12	4.6429	1.3333
11	9	44	37	162	6	4	52	3.6818	1
12	9	20	8	41	2	0	5	2.05	0.875
12	10	2	0	8	1	0	3	4	0
13	9	30	28	52	12	10	30	1.7333	1
13	10	4	1	38	10	6	6	9.5	14

Table 12. Summarized WDFW Puget Sound Coho MSF Sampling Records for 2004

CRCArea	SampleMonth	TotalCohoCat	CohoAD-Clip	TotalCohoRel	CohoUMRel	CohoADRel	CohoUKRel	CohoEncRate	CohoUMEncRt
4	6	1	1	25	6	0	19	25	25
4	7	34	34	212	199	2	11	6.2353	6.1765
4	8	7	7	61	55	6	0	8.7143	7.8571
4	9	10	10	30	30	0	0	3	3
5	7	853	853	4213	4040	105	66	4.939	4.8113
5	8	2473	2469	8283	7179	345	754	3.3494	3.1989
5	9	4824	4807	17564	14528	315	2720	3.641	3.576
6	8	14	14	88	61	5	22	6.2857	5.7857
6	9	262	261	1011	953	6	52	3.8588	3.8506
7	8	1	0	23	19	1	3	23	0
7	9	15	15	74	57	7	10	4.9333	4.4
7	10	15	9	10	2	0	8	0.6667	1.1111
9	8	31	11	179	5	7	71	5.7742	3.1818
9	9	81	28	255	5	1	133	3.1481	4.1429
9	10	33	2	179	4	5	92	5.4242	22.5
10	7	24	11	67	0	0	0	2.7917	0
10	8	101	52	287	0	0	8	2.8416	0.1538
10	9	170	77	359	0	0	2	2.1118	0.026
10	10	12	3	109	0	0	1	9.0833	0.3333
11	7	12	7	44	3	6	1	3.6667	0.4286
11	8	26	17	118	3	2	32	4.5385	1.2941
11	9	26	17	299	1	1	181	11.5	5.4118
11	10	5	3	173	1	0	157	34.6	52.6667
12	8	8	4	16	0	0	16	2	4
12	9	2	1	93	11	0	81	46.5	92
12	10	11	0	36	9	2	24	3.2727	0
13	8	1	1	91	4	7	29	91	15
13	9	21	20	84	17	20	36	4	1.7
13	10	30	26	310	19	32	109	10.3333	2.3077

Table 13. Summarized WDFW Puget Sound Coho MSF Sampling Records for 2005

CRCArea	SampleMonth	TotalCohoCat	CohoAD-Clip	TotalCohoRel	CohoUMRel	CohoADRel	CohoUKRel	CohoEncRate	CohoUMEncRt
4	7	4	4	12	12	0	0	3	3
4	9	10	10	27	24	3	0	2.7	2.4
5	7	482	479	2700	2502	123	75	5.6017	5.3716
5	8	1274	1247	3497	3377	74	46	2.7449	2.7442
5	9	3551	3531	8026	7653	208	165	2.2602	2.213
6	8	31	31	102	95	3	3	3.2903	3.1613
6	9	145	145	363	348	12	1	2.5034	2.4069
7	9	14	13	89	58	2	28	6.3571	6.5385
7	10	5	0	4	2	0	2	0.8	0
9	8	15	14	47	0	0	27	3.1333	1.9286
9	9	79	41	158	1	2	12	2	0.122
9	10	30	9	124	19	7	94	4.1333	9.7778
10	7	15	9	101	0	0	6	6.7333	0.6667
10	8	15	10	104	0	0	0	6.9333	0
10	9	114	60	270	0	0	1	2.3684	0.0167
10	10	40	18	254	27	15	147	6.35	6.7778
11	7	8	2	83	1	0	26	10.375	13.5
11	8	10	3	72	4	0	9	7.2	4.3333
11	9	9	4	27	0	1	5	3	0
11	10	8	4	14	1	0	3	1.75	1
12	9	3	0	10	4	0	4	3.3333	0
12	10	25	2	18	4	0	14	0.72	9
13	6	12	8	351	17	115	165	29.25	4.75
13	7	3	3	19	0	3	13	6.3333	0
13	8	9	7	45	11	13	19	5	2.8571
13	9	26	23	26	17	1	7	1	1.0435
13	10	5	5	23	8	9	6	4.6	2.2

Table 14. Summarized WDFW Puget Sound Coho MSF Sampling Records for 2006

CRCArea	SampleMonth	TotalCohoCat	CohoAD-Clip	TotalCohoRel	CohoUMRel	CohoADRel	CohoUKRel	CohoEncRate	CohoUMEncRt
5	7	92	92	377	357	20	0	4.0978	3.8804
5	8	54	54	721	366	141	214	13.3519	9.6296
5	9	1520	1518	7446	3989	711	2746	4.8987	4.1634
6	9	23	23	123	95	4	24	5.3478	5.1304
6	10	1	0	16	8	1	7	16	0
7	8	4	4	64	15	38	11	16	4.5
7	9	1	1	15	8	1	6	15	13
9	7	13	6	42	1	0	41	3.2308	7
9	8	10	5	185	10	7	168	18.5	21.8
9	9	23	10	480	42	35	403	20.8696	26.2
9	10	2	0	104	6	7	91	52	0
10	7	107	39	141	4	14	120	1.3178	0.7949
10	8	62	25	198	0	0	193	3.1935	7.72
10	9	29	12	285	11	10	262	9.8276	12.3333
10	10	1	0	199	9	25	165	199	0
11	7	10	4	68	18	8	42	6.8	11.75
11	8	8	2	69	4	8	57	8.625	11.5
11	9	7	3	100	7	14	79	14.2857	11
12	9	2	2	92	9	8	75	46	24.5
12	10	7	6	40	18	12	10	5.7143	4
13	6	7	4	27	7	11	9	3.8571	2.5
13	7	6	4	34	2	17	16	5.6667	1
13	8	2	2	97	3	15	79	48.5	8
13	9	2	2	98	8	16	74	49	16.5
13	10	4	4	171	18	14	139	42.75	24

Table 15. Summarized WDFW Puget Sound Coho MSF Sampling Records for 2007

CRCArea	SampleMonth	TotalCohoCat	CohoAD-Clip	TotalCohoRel	CohoUMRel	CohoADRel	CohoUKRel	CohoEncRate	CohoUMEncRt
4	8	8	7	28	28	0	0	3.5	4
5	7	349	337	1855	1793	35	27	5.3152	5.3976
5	8	518	510	2499	2397	55	47	4.8243	4.7902
5	9	4388	2498	9225	5292	648	3253	2.1023	3.2786
6	8	8	8	59	52	2	5	7.375	7.125
6	9	91	91	382	373	7	2	4.1978	4.1209
6	10	21	4	34	8	5	21	1.619	5.25
7	7	2	0	12	4	5	3	6	0
7	9	11	9	91	75	2	14	8.2727	9.8889
7	10	7	2	12	7	0	5	1.7143	6
9	7	110	72	515	101	103	307	4.6818	3.5139
9	8	22	15	188	26	44	118	8.5455	4.6667
9	9	40	16	57	6	7	44	1.425	1.625
9	10	13	1	24	5	1	18	1.8462	20
10	7	52	33	310	36	38	236	5.9615	4.5758
10	8	22	10	151	20	18	113	6.8636	7.9
10	9	69	50	208	22	26	160	3.0145	1.9
10	10	1	0	32	1	4	27	32	0
11	6	4	3	50	4	11	35	12.5	4.3333
11	7	7	3	91	17	30	44	13	11
11	8	27	17	354	50	49	256	13.1111	10.5294
11	9	37	29	108	21	25	62	2.9189	1.6897
11	10	4	1	13	6	5	2	3.25	7
12	9	1	0	14	10	0	4	14	0
12	10	12	0	15	1	0	14	1.25	0
13	6	19	12	235	39	80	116	12.3684	6.4167
13	7	3	3	21	7	9	5	7	3
13	8	4	4	18	4	4	10	4.5	2.25

Table 16. Summarized WDFW Puget Sound Coho MSF Sampling Records for 2008

CRCArea	SampleMonth	TotalCohoCat	CohoAD-Clip	TotalCohoRel	CohoUMRel	CohoADRel	CohoUKRel	CohoEncRate	CohoUMEncRt
5	8	813	810	1832	1343	148	330	2.2534	2.0247
5	9	482	292	2551	849	251	1451	5.2925	6.7432
6	8	10	10	13	11	2	0	1.3	1.1
6	9	16	16	100	65	20	15	6.25	4.75
7	7	24	16	50	0	4	46	2.0833	0
7	8	3	3	54	12	12	30	18	9
7	9	1	1	25	17	2	6	25	22
7	10	1	0	1	0	0	1	1	0
9	7	50	49	511	161	129	221	10.22	5.7959
9	8	15	15	399	83	61	255	26.6	15.3333
9	9	4	4	190	24	18	149	47.5	27.25
9	10	2	1	131	7	15	109	65.5	42
10	7	21	17	234	22	39	173	11.1429	4.9412
10	8	53	37	510	79	128	303	9.6226	5.2703
10	9	92	69	518	58	77	385	5.6304	3.2319
10	10	1	1	201	31	28	142	201	106
11	7	12	7	163	29	16	118	13.5833	15
11	8	20	15	453	36	92	326	22.65	8.5333
11	9	15	13	384	59	59	265	25.6	14.7692
12	9	1	0	5	0	0	5	5	0
13	7	3	2	33	3	5	25	11	6
13	9	30	30	84	12	35	34	2.8	0.7
13	10	3	2	192	14	57	121	64	19

Table 17. Summarized WDFW Puget Sound Coho MSF Sampling Records for 2009

CRCArea	SampleMonth	TotalCohoCat	CohoAD-Clip	TotalCohoRel	CohoUMRel	CohoADRel	CohoUKRel	CohoEncRate	CohoUMEncRt
4	7	9	9	25	25	0	0	2.7778	2.7778
4	8	6	6	8	8	0	0	1.3333	1.3333
5	7	814	804	5357	4858	230	255	6.5811	6.3445
5	8	1858	1841	6443	6100	128	201	3.4677	3.4204
5	9	1217	1002	2814	2542	76	196	2.3122	2.7265
5	10	113	18	162	8	9	142	1.4336	4.1667
6	8	5	5	25	24	0	1	5	5
6	9	267	264	1047	876	46	125	3.9213	3.7689
6	10	18	9	85	24	9	52	4.7222	6.8889
7	7	3	2	8	2	5	1	2.6667	1
7	8	7	7	71	54	3	14	10.1429	9.5714
7	9	25	25	171	136	9	26	6.84	6.4
9	7	10	6	148	34	21	93	14.8	15.1667
9	8	8	3	127	34	17	76	15.875	28.3333
9	9	126	50	108	11	9	81	0.8571	1.12
9	10	1	1	19	3	0	16	19	19
10	7	33	18	273	39	44	189	8.2727	7.1111
10	8	50	31	346	51	53	242	6.92	5.4839
10	9	178	111	277	39	34	203	1.5562	1.3243
10	10	11	6	85	13	14	58	7.7273	6.8333
11	7	10	4	94	18	22	54	9.4	10.5
11	8	7	1	112	33	21	58	16	68
11	9	36	27	199	60	34	105	5.5278	4.7037
11	10	1	1	7	0	3	4	7	0
12	10	2	0	4	1	1	2	2	0
13	6	14	14	294	31	89	174	21	5.4286
13	8	1	1	5	4	0	1	5	5
13	10	9	5	6	3	1	2	0.6667	0.8

Table 3. Example of Summarized Coho Catch/Sample Records using MSM Program.

2009 FINAL Catch/Sample Estimates								
FisheryName	MarkType	Jan-June	July	August	September	Oct-Dec	Total	#Sampled
No Cal Trm	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Cn Cal Trm	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Ft Brg Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Ft Brg Trl	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Ca KMZ Spt	Marked	0	0	0	0	0	0	3
	UnMark	0	0	8	0	0	8	0
Ca KMZ Trl	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
So Cal Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
So Cal Trl	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
So Ore Trm	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Or Prv Trm	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
SMi Or Trm	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
NMi Or Trm	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
No Ore Trm	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Or Cst Trm	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Brkngs Spt	Marked	0	88	2	0	0	91	460
	UnMark	6	1035	57	9	0	1106	0
Brkngs Trl	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Newprt Spt	Marked	168	1138	982	56	0	2345	9942
	UnMark	2396	16595	13712	391	0	33093	0
Newprt Trl	Marked	0	0	0	34	0	34	1405
	UnMark	0	0	0	5069	0	5069	0
Coos B Spt	Marked	91	498	79	2	0	670	3402

	UnMark	1058	7071	1091	40	0	9260	
Coos B Trl	Marked	0	0	0	14	0	14	146
	UnMark	0	0	0	672	0	672	
Tillmk Spt	Marked	78	935	824	29	0	1866	6656
	UnMark	1063	11741	8632	284	3	21723	
Tillmk Trl	Marked	0	0	0	52	0	52	641
	UnMark	0	0	0	3422	0	3422	
Buoy10 Spt	Marked	0	53	17217	4226	0	21496	13175
	UnMark	0	55	17263	8917	0	26235	
L ColR Spt	Marked	0	0	95	9129	7826	17051	2270
	UnMark	164	199	1327	3225	18181	23095	
L ColR Net	Marked	0	0	315	24459	3027	27801	12580
	UnMark	0	0	1016	14846	1578	17440	
Yngs B Net	Marked	1	0	1658	39863	1846	43367	10072
	UnMark	0	0	170	5486	306	5963	
LCROrT Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Clackm Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
SandyR Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
LCRWaT Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
UpColR Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
UpColR Net	Marked	0	0	92	1024	0	1116	2476
	UnMark	0	0	1110	7492	0	8602	
A1-Ast Spt	Marked	343	28197	35880	1804	0	66224	38507
	UnMark	130	9071	8858	337	0	18396	
A1-Ast Trl	Marked	0	1204	1099	81	0	2384	2895
	UnMark	0	8614	3779	165	0	12558	
Area2TrlINT	Marked	0	1870	4741	3346	0	9957	3811
	UnMark	0	84	7	12	0	103	
Area2TrlTR	Marked	0	147	0	0	0	0	0
	UnMark	0	147	5184	0	0	5478	
Area 2 Spt	Marked	539	15640	27203	9285	0	52666	17801
	UnMark	0	111	165	36	0	313	
Area3TrlINT	Marked	0	2478	2267	913	0	5658	2459
	UnMark	0	4	1495	0	0	1499	
Area3TrlTR	Marked	0	0	1218	0	0	1218	524
	UnMark	0	164	1845	0	0	2009	
Area 3 Spt	Marked	164	2955	3408	416	49	6993	4665
	UnMark	1	17	7	2	2	28	

Area 4 Spt	Marked	118	6428	5500	903	0	12949	5303
	UnMark	0	141	137	9	0	287	
A4/4BTrlNT	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
A4/4BTrlTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
A 5-6C Trl	Marked	74	0	0	0	0	74	45
	UnMark	93	4	0	0	11	108	
Willpa Spt	Marked	0	0	0	0	0	0	0
	UnMark	25	6	34	270	453	788	
Wlp Tb Spt	Marked	0	0	0	0	0	0	0
	UnMark	25	6	34	365	3048	3478	
WlpaBT Net	Marked	0	0	0	34745	2146	36891	12549
	UnMark	0	0	4	30406	7859	38269	
GryHbr Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
SGryHb Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
GryHbr Net	Marked	0	0	0	392	0	392	9038
	UnMark	0	0	0	4441	26180	30621	
Hump R Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
LwCheh Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Hump R C&S	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Chehal Spt	Marked	0	0	0	1454	1143	2597	886
	UnMark	0	6	48	1381	2495	3930	
Hump R Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
UpCheh Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Chehal C&S	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Wynoch Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Hoquam Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Wishkh Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Satsop Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Quin R Spt	Marked	0	0	0	0	0	0	0

	UnMark	0	0	0	0	6	6	
Quin R Net	Marked	0	0	0	0	0	0	10177
	UnMark	0	3	323	40392	14142	54860	
Quin R C&S	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Queets Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	190	699	889	
Clrwtr Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Salm R Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Queets Net	Marked	0	0	0	0	0	0	6600
	UnMark	0	0	0	21225	2421	23646	
Queets C&S	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Quilly Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	42	393	238	3815	4488	
Quilly Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Quilly C&S	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Hoh R Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	35	180	296	511	
Hoh R Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Hoh R C&S	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Mak FW Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	7	0	0	22	29	
Mak FW Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	1521	1542	3063	
Makah C&S	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
A 4-4A Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
A4B6CNetNT	Marked	0	0	0	2	0	2	40
	UnMark	0	387	10	304	2497	3198	
A4B6CNetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Ar6D NetNT	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Ar6D NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	

Elwha Net	Marked	0	0	0	35	193	228	125
	UnMark	0	0	0	19	98	117	
WJDF T Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	15	15	
EJDF T Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
7-7A NetNT	Marked	0	0	27	1152	100	1279	1406
	UnMark	0	0	97	4334	686	5117	
7-7A NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
EJDF FWSpt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
WJDF FWSpt	Marked	0	0	0	0	0	0	0
	UnMark	6	35	46	88	51	226	
Area 5 Spt	Marked	0	7955	10765	7662	2238	28620	10106
	UnMark	37	154	153	7571	10711	18626	
Area 6 Spt	Marked	0	74	480	2316	179	3049	716
	UnMark	10	11	12	94	417	544	
Area 7 Spt	Marked	0	101	76	434	10	622	143
	UnMark	0	56	52	46	0	153	
Dung R Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	556	556	
ElwhaR Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	466	466	
7BCD NetNT	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
7BCD NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Nook R Net	Marked	0	0	75	888	980	1943	782
	UnMark	0	2	26	1865	565	2458	
Nook R Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	24	318	342	
Samh R Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	6	0	113	85	204	
Ar 8 NetNT	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Ar 8 NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Skag R Net	Marked	0	0	80	1798	492	2370	4550
	UnMark	0	6	526	3681	3216	7429	
Skgr TsNet	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
SwinCh Net	Marked	0	0	0	0	0	0	0

	UnMark	0	0	0	0	0	0	0
Ar 8-1 Spt	Marked	0	0	11	372	0	383	119
	UnMark	0	0	65	424	0	489	
Area 9 Spt	Marked	7	304	789	6505	309	7914	2220
	UnMark	2	280	1068	8800	968	11118	
Skag R Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	7	193	1278	2059	3537	
Ar8A NetNT	Marked	0	0	127	4865	560	5552	6047
	UnMark	0	0	477	10300	1407	12184	
Ar8A NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Ar8D NetNT	Marked	0	0	2	5222	2936	8160	4521
	UnMark	0	0	18	3552	1635	5205	
Ar8D NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Stil R Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	188	188	
Snoh R Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Ar 8-2 Spt	Marked	0	7	49	1652	93	1801	1223
	UnMark	0	14	200	3856	331	4401	
Stil R Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Snoh R Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	18	151	169	
Ar 10 Spt	Marked	5	465	879	5954	257	7560	3325
	UnMark	6	453	610	3040	283	4392	
Ar10 NetNT	Marked	0	0	0	32	16	48	82
	UnMark	0	0	2	27	186	215	
Ar10 NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
A10A NetNT	Marked	0	0	0	63	67	130	141
	UnMark	0	0	0	142	35	177	
A10A NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
A10E NetNT	Marked	0	0	1	0	0	1	1
	UnMark	0	0	0	0	0	0	
A10E NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
10F-G Net	Marked	0	0	0	8983	52	9036	2743
	UnMark	0	0	0	3521	49	3569	
Duwm R Net	Marked	0	0	0	12863	2032	14895	5700

	UnMark	0	0	0	4991	817	5808	
Duwm R Spt	Marked	0	0	0	58	0	58	30
	UnMark	6	0	71	437	1298	1812	
L WaSm Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	49	122	171	
Ar 11 Spt	Marked	5	255	276	2276	164	2976	862
	UnMark	4	176	167	1027	144	1518	
Ar11 NetNT	Marked	0	0	0	0	2	2	7
	UnMark	0	0	0	56	139	195	
Ar11 NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
A11A NetNT	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
A11A NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Puyl R Net	Marked	0	0	0	8476	164	8640	3769
	UnMark	59	0	1164	9920	285	11428	
Puyl R Spt	Marked	0	0	1217	9496	0	10713	475
	UnMark	6	24	1593	4763	1807	8193	
Ar 13 Spt	Marked	63	0	43	112	82	301	52
	UnMark	9	0	0	12	22	43	
Ar13 NetNT	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	74	6	80	
Ar13 NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
A13C NetNT	Marked	0	0	0	0	0	0	0
	UnMark	0	0	1	0	0	1	
A13C NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
A13A NetNT	Marked	0	0	0	36	0	36	5
	UnMark	0	0	0	1479	19	1498	
A13A NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
A13D NetNT	Marked	0	0	0	29940	3554	33494	15455
	UnMark	0	32	0	8085	2331	10448	
A13D NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
13FK NetNT	Marked	0	0	0	799	0	799	262
	UnMark	0	0	0	139	0	139	
13FK NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Nisq R Net	Marked	0	0	0	454	1462	1916	940
	UnMark	0	15	0	528	1441	1984	

McAlls Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
13D-K TSpt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	14	120	134	0
Nisq R Spt	Marked	0	0	0	0	0	0	0
	UnMark	6	0	53	773	1216	2048	0
Desc R Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Ar 12 Spt	Marked	0	0	91	964	0	1054	60
	UnMark	5	0	27	141	246	420	0
9-9A NetNT	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
9-9A NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
A12B NetNT	Marked	0	0	0	1445	88	1533	3212
	UnMark	0	0	0	3270	7211	10481	0
A12B NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
A12A NetNT	Marked	0	0	1738	14111	33	15882	3339
	UnMark	0	0	403	2327	75	2805	0
A12A NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
12CD NetNT	Marked	0	0	0	1310	64	1375	2819
	UnMark	0	0	0	4258	2845	7102	0
12CD NetTR	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Skok R Net	Marked	0	0	0	1853	418	2271	2407
	UnMark	0	0	137	2298	3352	5787	0
Quilcn Net	Marked	0	0	0	4855	0	4855	644
	UnMark	0	0	0	1018	0	1018	0
1212B TSpt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
12A Tb Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	7	0	7	0
12C-D TSpt	Marked	0	0	0	0	0	0	0
	UnMark	7	0	0	100	380	487	0
Skok R Spt	Marked	0	0	0	136	0	136	25
	UnMark	6	0	72	288	983	1349	0
FRSLOW Trm	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
FRSUPP Trm	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Fraser Spt	Marked	0	0	0	0	0	0	0

	UnMark	0	0	0	0	0	0	0
JStrBC Trl	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
No BC Trl	Marked	0	756	1585	578	0	2919	56129
	UnMark	0	82422	109737	25358	0	217517	
NoC BC Trl	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
SoC BC Trl	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
NW VI Trl	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
SW VI Trl	Marked	0	0	0	0	0	0	131
	UnMark	0	0	0	0	0	0	0
GeoStr Trl	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
BC JDF Trl	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
No BC Net	Marked	0	0	3	0	0	3	801
	UnMark	0	0	1948	0	90	2038	
Cen BC Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
NW VI Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	1	0	0	1	0
SW VI Net	Marked	0	0	233	165	0	398	345
	UnMark	0	0	249	261	0	510	
Johnst Net	Marked	0	0	0	0	0	0	0
	UnMark	0	182	58	8	0	248	
GeoStr Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	1	1	0
Fraser Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
BC JDF Net	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
JStrBC Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
No BC Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
Cen BC Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	0
BC JDF Spt	Marked	1163	3474	3319	1411	200	9566	398
	UnMark	77	210	219	2129	1142	3778	
WC VI Spt	Marked	2439	12695	20411	4719	0	40264	0
	UnMark	3629	13128	16025	2033	0	34815	

NGaStr Spt	Marked	0	98	632	483	0	1213	0
	UnMark	0	0	369	25	0	394	
SGaStr Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
Albern Spt	Marked	0	0	0	0	0	0	0
	UnMark	0	0	0	0	0	0	
SW AK Trl	Marked	0	2920	1558	0	0	4478	121097
	UnMark	0	272564	87956	0	0	360520	
SE AK Trl	Marked	100	1194	1446	0	0	2739	40422
	UnMark	2925	103801	67340	0	0	174067	
NW AK Trl	Marked	34	5877	6237	0	0	12147	305871
	UnMark	3519	519086	393573	1	0	916180	
NE AK Trl	Marked	71	238	1338	0	0	1647	39129
	UnMark	4537	32448	82784	0	0	119769	
SW AK Net	Marked	0	480	899	0	0	1380	11983
	UnMark	0	42288	81568	0	0	123855	
SE AK Net	Marked	265	2378	2271	3840	0	8754	116660
	UnMark	8339	112325	149686	134893	1286	406529	
NW AK Net	Marked	0	70	31	0	0	101	818
	UnMark	294	3984	22818	104741	10477	142314	
NE AK Net	Marked	1	38	290	1165	35	1529	28807
	UnMark	175	17494	28272	51387	1999	99327	
SW AK Spt	Marked	11	26	27	0	0	64	11285
	UnMark	1107	5483	4631	0	0	11221	
SE AK Spt	Marked	50	135	198	137	0	519	9166
	UnMark	2141	6925	10519	3797	0	23383	
NW AK Spt	Marked	67	45	169	0	0	280	14351
	UnMark	6378	8752	17737	607	0	33475	
NE AK Spt	Marked	14	12	44	54	0	125	2194
	UnMark	666	3728	2726	1906	0	9025	

Note: End of Table 3.

Table 18. Columbia River Coho early stock hatchery CWT release codes

Early Grays River			Early Elochoman						
Brood Year	CWT List		Brood Year	CWT List					
1995			1995						
1996	636248		1996	630536					
1997	630830		1997	630834					
1998	631163		1998	631118					
1999	630370		1999	630366					
2000	631097		2000	630766					
2001			2001	631172					
2002	632076		2002	631691					
2003	632293		2003	632292					
2004	632698		2004	632696	633079	633588	633589		
2005	633699		2005	633765	633990	633994	633993	633991	
2006	634177		2006	633770	634585	634584			
2007	634475		2007	634470	634197	633992			
Early Toutle						Early Kalama			
Brood Year	CWT List					Brood Year	CWT List		
1995	636235					1995	636242		
1996	630535					1996	630539		
1997	630829					1997	630839		
1998	630204	631227				1998	631044	631226	
1999	630564	630364	630388				1999	630569	
2000	631194	630955				2000	631099		
2001	631570					2001	631571		
2002	632068					2002	632071		
2003	632687					2003	632686		
2004	633274					2004	633273		
2005	633769					2005	633767		
2006	633280	633282				2006	634378		
2007	634473					2007	634476		
Early Lewis						Early Big Creek			
Brood Year	CWT List					Brood Year	CWT List		
1995	636147	636146				1995	70946	70842	
1996	636156	636155				1996	92254	92255	
1997	630558	630559				1997	92419	92420	
1998	630823	630820				1998	92431	92434	
1999	631104	631209				1999	92731	92732	
2000	630576	630577				2000	93243	93242	
2001	631367	631366				2001	91930	91929	
2002	631535	161536	631536				2002	93725	93724
2003	631982	631984				2003	94126	94125	
2004	632982	632983				2004	93704	93703	
2005	633565	633566				2005	94430	94431	
2006	633671	633670				2006	94554	94555	
2007	634576	634575				2007	94648	94530	

Note: Bold, italicized numbers are Double Index Tagged (DIT) releases.

Table 18 continued. Columbia River Coho early stock hatchery CWT release codes

Early Bonneville			Early Sandy				
Brood Year	CWT List		Brood Year	CWT List			
1995	91819	91817	1995	70843	70844	92034	91842
1996	92303	92307		91839	91838		
1997	92418	92421	1996	92332	92333	92337	
1998	92715	92726	1997	92432	92433	71316	92655
1999	92733	93012	1998	92727	92728	92747	92639
2000	93345	93014		92938			
2001	93459	91931	1999	92748	93221	93218	93219
2002	93726	93731	2000	93354	93353	93355	
2003	94052	93943	2001	93462	93463	93637	
2004	92042	94245	2002	93734	93733	93918	
2005	94449	94454	2003	94116	94115	94117	
2006	94626	94630	2004	94307	94308	94309	
2007	94658	94656	2005	94502	94503	94420	
			2006	94637	94636	94638	
			2007	90162	90161	90163	
Early Eagle Creek							
Brood Year	CWT List						
1995	53931	91753	91805	71363	71362	71361	71360
	53806	91810					91809
1996	53807	92308	92313	92309	53526	92314	
1997	53731	92423	92424	92425	92538	53633	
1998	54248	92717	92719	92718	54247	92915	
1999	50189	93008	93007	93009	50190	93201	
2000	54249	93016	93010	93017	93327	54253	
2001	54036	91933	91934	91935	54035	93616	
2002	53355	93730	93729	93728	53354		
2003	54860	93735	94049	94048	53353		
2004	50484	94243	94244	93701	50483		
2005	52586	94458	94448	94447	52587		
2006	53774	94624	94625	94632	53775		
2007	54182	94660	94528	54183			

Note: Bold, italicized numbers are Double Index Tagged (DIT) releases.

Table 18 continued. Columbia River Coho early stock hatchery CWT release codes

Early Above Bonneville								
Brood Year	CWT List							
1995	636239	636238	636240	636241	636243	636151	91834	53249
	53849	53113	53929	636203	53945	636237	71246	53944
	71245	636234	636202	91843				
1996	53934	636207	92311	92312	92310	53808	53730	53935
	636145	636144	53525	636208	92315	105305	105115	612601
	612602							
1997	630943	54256	92426	92427	630942	612604	612603	
	53933	92539	612607	612605	612606			
1998	53949	630910	54926	631124	631110	92720	92721	612609
	612610	54927	631109	92916	54504	54463	54462	54461
	54451	54452	54450	54449	612612	612608	612611	
1999	54431	54506	54505	54508	54507	54511	54512	54510
	54509	93011	54338	54337	54430	54932	54933	54244
	54260	54261	54262	54306	54305	93202	612617	
	54339	54340						
2000	54308	54263	54442	54417	54416	54445	54444	54954
	54446	93326	612637	612619	54443	54314	54313	54315
	54316	54312	54309	54311	54319	54310	50581	50577
	54532	55012	50582	50578	54527	93328	54332	612620
612636	612618							
2001	54935	54910	54333	50896	50893	50892	50891	50895
	50964	50965	50966	50894	54705	54706	50890	50889
	50888	50967	50971	54533	54531	54320	50969	50972
	50968	54326	54328	54327	54324	54325	54909	54329
	54330	54331	54323	54321	54322	612638		
2002	51467	51468	50580	51472	50765	50270	50796	51792
	51793	51466	51465	51176	54120	51490	54853	54852
	51488	51487	51485	51491	51469	50268	51486	54920
	54923	54922	54919	51482	55047	54925	54924	51483
	54918	51484	54921	51180	51492	51481	51471	50269
	51496	51470	612644	612645				
2003	52098	52194	52099	52165	52169	52170	52190	52191
	52164	52193	52195	52196	52192	54858	54856	54857
	54859	52097	52167	52166	52168	52171	52172	51583
	51580	51582	51581	612683	612682	612681	612684	
	612685	612680	612679	612688				
2004	52664	52665	633268	612689	612663	52697	52698	52692
	52693	52694	52695	52696	52669	52680	52690	52691
	52683	52682	52681	52684	52686	52685	52572	52666
	52591	612701	612690	612640	612703	612664		
2005	53186	633270	612719	612643	53196	53197	53198	53188
	53189	53194	53190	53191	53195	53192	53165	53271
	53272	53193	52976	53268	53183	53182	53269	53270
	53199	53265	53266	53264	53267	52964	53184	53187
	53167	53168	53169	53185	612704	612718	612721	612642
	612705							
2006	633688	190128	190134	190124	190133	190132	190127	53868
	53478	190126	612722	612706	612720			

Table 9. Columbia River Coho late stock hatchery CWT release codes

Late Grays River				Late Kalama			
Brood Year CWT List				Brood Yea CWT List			
1995	636236	635930		1995			
1996	630537	636246		1996	630538		
1997	630836	630833	630202	1997	630840		
1998	631050	631051		1998	631043	631225	
1999	630368	630367		1999	630568		
2000	630765			2000	631093		
2001	631173			2001	631598		
2002				2002	632070		
2003	632195	632066		2003	632685		
2004	632689			2004	633272		
2005	633766			2005	633768		
2006	632766			2006	634380		
Late Cowlitz							
Brood Year CWT List							
1995							
1996							
1997	630206	630853	630845	630209	630846	630848	630208
	630207	630617					630851
1998	631130	631115	631129	631133	631134	631136	631146
	631127	630620	630961				631113
1999	630963	630395	630394	630393	630959	630392	630958
	630957	630960	630956				630365
2000	630585						
2001	630586						
2002	631560						
2003	631561						
2004	631981	633586					
2005	633182	633785					
2006	633790	633783	633796	634764	634765		
Late Lewis				Late Washougal			
Brood Year CWT List				Brood Yea CWT List			
1995				1995			
1996	630339			1996	630544		
1997	630560	630561	630854	1997	630541		
1998	630914	630913		1998	631224	631042	
1999	636232	636336	636233	636335	1999	630565	
2000	630897	630898		2000	631167		
2001	631476	631191		2001	631492		
2002	631562	631563		2002	632069		
2003	631983	631985		2003	632295		
2004	633087	633088		2004	633271		
2005	633580	633581		2005	633697		
2006	633669	634196	634195	633668	2006	634199	

Table 19 continued. Columbia River Coho late stock hatchery CWT release codes

Late Above Bonneville				
Brood Year	CWT List			
1995	91840			
1996	630542	630543		
1997	630824	630827	636217	636218
1998	631143			
1999	630498	630499	631158	
2000	631165	631166	630588	
2001	631487	630971		
2002	631182	631526		
2003	631184	632269		
2004	632699	632764		
2005	631188			
2006	634264	612511		

Table 20. Columbia River Coho SAFE hatchery CWT release codes

SAFE								
Brood Year	CWT List							
1995	91818	71336	70942	71335	91824			
1996	636247	92306	53732	53733	92336	92305	92302	92321
	92338							
1997	630531	630530	630532	92528	92529	53946	92334	53947
	92643	92422	92428	92656				
1998	631201	631202	631117	92912	92913	92749	92729	92716
	92914	53948	92730	92540				
1999	630376	630375	630369	93159	93220	93160	54908	50191
	93006	93161	93013	93222				
2000	631082	630664	630764	93352	93341	54254	93339	93340
	54250	93015	93357	93356				
2001	631519	631520	631174	93611	93461	54759	93612	54760
	91932	93610	93460	93638				
2002	632077	632072	632067	93863	93732	53725	93862	53724
	93727							
2003	632294	93946	94114	93945	93944			
2004	632697	94306	94241	92044	94242			
2005	633698	633764	94501	94330	94331	94455		
2006	634178	94635	94623	94631	94514	93934	93626	

Note: Bold, italicized numbers are Double Index Tagged (DIT) releases.

