

**PACIFIC SALMON COMMISSION
SELECTIVE FISHERIES EVALUATION COMMITTEE**

**MASS MARKING AND
MARK SELECTIVE FISHERIES FOR 2003 and 2004**

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**Report of the Regional Coordination Working Group
of the
Selective Fishery Evaluation Committee**

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MASS MARKING AND MARK-SELECTIVE FISHERIES FOR 2003 and 2004

Report of the Regional Coordination Working Group of the Selective Fishery Evaluation Committee

1 EXECUTIVE SUMMARY

This report provides information on mass marking of hatchery salmon, and mark-selective fisheries and sampling programs conducted during 2003 and 2004. The information includes numbers of mass marked (MM) fish released, Double Index Tagging (DIT), electronic tag detection (ETD) capabilities, and implementation of mark-selective fisheries (MSF).

Essentially all coho production intended for harvest from Southern B.C. and Southern U.S. hatcheries is now being mass marked. Participating facilities extend from the Columbia and Snake Rivers to the north end of Vancouver Island. There is no mass marking in California, north/central B.C. or Alaska.

Beginning with 2003 brood, mass marking of chinook increased over previous levels. Most of the increase was for yearling Chinook. These fish were released in 2005 and will be summarized in a subsequent report. There is no Chinook mass marking in California, British Columbia or Alaska.

There were no commercial MSFs in Canadian waters. For recreational fisheries, coho MSFs were implemented in most of southern B.C., including Johnstone Strait, the Strait of Georgia, Juan de Fuca Strait and the West Coast of Vancouver Island. Non-MSF were implemented in terminal areas where local wild stocks are showing improvement.

Numerous coho MSFs occurred in Washington and Oregon in 2003 and 2004. These included commercial troll and recreational fisheries in marine waters. Coastal commercial troll MSFs occurred in Area 1 of Washington, and north of Cape Falcon in Oregon. Recreational coho MSFs occurred in numerous areas in both years. In Washington these occurred in all coastal waters (Areas 1-4) and in various Puget Sound fisheries (Areas 5, 6, 7, and 13). In Oregon these occurred in ocean areas from Leadbetter Point (WA) to Humbug Mountain in 2003, and extended to the Oregon/California border in 2004. Recreational MSFs also occurred in the Columbia River and some Oregon coastal rivers in both years.

The only commercial Chinook MSF in Washington and Oregon was an experimental fishery using tooth net (tangle net) gear. This was jointly implemented by ODFW and WDFW to evaluate the feasibility of a commercial MSF for spring Chinook in the Columbia River. Several recreational Chinook MSFs occurred in both years. In Washington these included an experimental test fishery in Areas 5-6, and the in-stream Skykomish River fishery. In Oregon, coastal in-stream MSFs for spring Chinook

occurred in the Tillamook and Nestucca River basins during both years. MSFs for spring and summer run Chinook occurred in the Columbia River from the mouth upstream to the Oregon/Washington border above McNary Dam, and in the Willamette and Snake Rivers.

2 INTRODUCTION

This report provides information on mass marking of hatchery salmon, and mark-selective fisheries and sampling programs conducted during 2003 and 2004. The information includes numbers of mass marked (MM) fish released, Double Index Tagging (DIT), electronic tag detection (ETD) capabilities, and implementation of mark-selective fisheries (MSF).

Information is included for Alaska Department of Fish & Game (ADFG), Canadian Department of Fisheries & Oceans (CDFO), Washington Department of Fish & Wildlife (WDFW), Member Tribes of the Northwest Indian Fisheries Commission (NWIFC), U.S. Fish & Wildlife Service (USFWS) and Oregon Department of Fish & Wildlife (ODFW).

3 COHO

3.1 *Releases of Mass Marked Coho in 2003 (2001 Brood) and 2004 (2002 Brood)*

3.1.1 Summary of Mass Marking

Releases of mass marked coho from Canadian and U.S. hatcheries occurred largely as planned. There were no significant changes from previous years. Essentially all coho production intended for harvest from Southern B.C. and Southern U.S. hatcheries is now being mass marked. Participating facilities extend from the Columbia and Snake Rivers to the north end of Vancouver Island. There is no mass marking in California, north/central B.C. or Alaska.

The majority of mass marked coho were released as smolts, with relatively small numbers released as fry. Fry releases are generally not mass marked, although some groups may be tagged with or without an adipose clip.

Coho smolt releases, by agency, are summarized in the following table. Adipose mark numbers do not include adipose-clipped coded-wire tagged releases. Details of individual releases can be found in the Regional Mark Information System (RMIS) database maintained by the Pacific States Marine Fisheries Commission.

Regional Summary of Mass Marked Coho Released in 2002 through 2004.

Area	Agency	2002 Releases (2000 Brood)		2003 Releases (2001 Brood)		2004 Releases (2002 Brood)	
		Total (millions)	Adipose Marks ¹	Total (millions)	Adipose Marks ¹	Total (millions)	Adipose Marks ¹
Strait of Georgia	CDFO	10.1	7.4	9.5	7.4	8.3	6.9
West Coast Vancouver Is	CDFO	1.4	1.2	1.3	1.2	1.1	0.9
Puget Sound	WDFW	7.2	6.0	6.3	4.9	6.5	5.0
	NWIFC	5.5	3.1	5.9	2.7	5.4	3.2
	USFWS	0.4	0.3	0.4	0.3	0.4	0.3
Coastal Washington	WDFW	7.0	6.1	5.6	4.9	4.9	4.3
	NWIFC	1.1	0.2	1.0	0.3	1.0	0.2
	USFWS	0.9	0.5	0.8	0.4	0.9	0.4
Columbia River	WDFW	12.2	8.8	12.0	8.4	11.7	8.4
	USFWS	2.6	1.4	1.4	1.0	1.8	1.4
	ODFW	7.2	5.0	7.0	4.9	6.2	4.1
Coastal Oregon	ODFW	1.0	0.6	0.8	0.5	0.7	0.4
TOTAL ALL AREAS		56.6	40.6	52.0	36.9	47.9	32.3

¹Adipose mark numbers do not include adipose-clipped coded-wire tagged releases.

3.1.2 Summary of Coho DIT Releases

Coho Double Index Tag groups by stock and region released in 2003 and 2004.

Region	Natural/Unmarked Stock			Release Year	Clipped Tagcode	Unclipped Tagcode		
	Representation	DIT Stock	Hatchery					
Strait of Georgia	East Coast Vancouver Island	Big Qualicum R	Big Qualicum R	2003	185310	185311		
				2004	185511	185512		
	Lower Fraser	Chilliwack R	Chilliwack R	2003	184863	184862		
				2004	185520	185521		
				2003	Goldstream R	Goldstream R	182426	182338
							182425	182337
	2004			184143	081214			
				184144	081215			
	Lower Fraser	Inch Cr	Inch Cr	2003	185315	185314		
				2004	185523	185522		
	North Vancouver Island	Quinsam R	Quinsam R	2003	183945	183946		
					185337	185338		
						185322		
				2004	184149	184036		
184137					184034			
184136					184035			
	184151	184033						
	184152							
	184150							
Thompson River	Thompson River	Coldwater R	Spius Cr	2003	185313	185312		
				2004	185518	185519		
West Coast Vancouver Is	West Coast Vancouver Island	Robertson Cr	Robertson Cr	2003	184018	184019		
					184021	184022		
					184017	184023		

Natural/Unmarked Stock						
Region	Representation	DIT Stock	Hatchery	Release Year	Clipped Tagcode	Unclipped Tagcode
					184020	184024
				2004	183405	184148
					183404	184147
						184146
						184145
Puget Sound	Nooksack	Nooksack	WDFW Kendall Cr	2003	631493	631568
				2004	631690	631689
	Skagit	Skagit	WDFW Marblemount	2003	631253	631069
					631255	631254
					631257	631256
					631259	631258
				2004	632088	632092
					632089	632093
	Stillaguamish/Snohomish	Skykomish	WDFW Wallace R	2003	631576	631575
					631578	631577
				2004	632196	632197
					632199	632198
	Mid Puget Sound	Green River	WDFW Soos Cr	2003	631486	631485
				2004	631994	631995
	South Puget Sound	Puyallup	WDFW Voights Cr.	2003	631484	631483
				2004	631488	631525
	North Hood Canal	Quilcene	USFWS Quilcene NFH	2003	051078	051077
					051080	051079
					051083	051081
					051076	051082
				2004	051668	051669
					051670	051671
	Quilcene Net Pens (Hood Canal)	Quilcene	Quilcene Net Pens	2003	050999	051064
2004				051676	051677 ¹	
South Hood Canal	George Adams	WDFW George Adams	2003	631517	631473	
				631518	631474	
			2004	632078	632080	
				632079	632081	
Strait of Juan de Fuca	Elwha	Lower Elwha Tribal	2003	210222	210409	
			2004	210426	210376	
Washington Coast	North Coast	Makah	2003	051090	050188	
				051088	051089	
				051086	051087	
				051084	051085	
			2004	051898	051899	
				051896	051897	
				051894	051895	

Natural/Unmarked Stock Representation						
Region	DIT Stock	Hatchery	Release Year	Clipped Tagcode	Unclipped Tagcode	
				051892	051893	
	Solduc	WDFW Solduc	2003	631564	631565	
				631677	631678	
				631679	631680	
			2004	631988	631685	
				632265	632264	
				632266	632267	
North Central Coast	Queets	Quinault Salmon R.	2003	631413	210395	
			2004	210572	632691	
	Quinault	USFWS Quinault NFH	2003	050287	050288	
				050289	050290	
				050297	050298	
				050293	050294	
				050364	050365	
				050366	050367	
				050291	050292	
			2004	050667	050668	
				050673	050674	
				050665	050666	
				050669	050670	
				050671	050672	
Grays Harbor	Satsop	WDFW Bingham Cr.	2003	631475	631531	
			2004	631875	631874	
Willapa Bay	Forks Creek	WDFW Forks Creek	2003	631533	631534	
			2004	631986	631987	
Columbia River	Lower Columbia R – Type N	Lewis River	WDFW Lewis River	2003	631476	631191
				2004	631562	631563
	Lower Columbia R – Type S	Lewis River	WDFW Lewis River	2003	631367	631366
				2004	631535	631536
	Lower Columbia River	L. W. Salmon	USFWS Willard NFH	2003	054935	054333
				2004	051467	051468
		Eagle Creek	Eagle Creek NFH	2003	054036	054035
				2004	053355	053354
	Lower Columbia River	Sandy	ODFW Sandy	2003	093462	093637
				2004	093734	093918
	Lower Columbia River at Blind Slough	Sandy	ODFW Sandy/CEDC	2003	093638	093461
				2004	discontinued	discontinued
	Umatilla River	Tanner Creek	ODFW Cascade	2003	091933	093616
				2004	discontinued	discontinued
Oregon Coast	Oregon South Coast	Rogue River	ODFW Cole M. Rivers	2003	091939	093519
				2004	093805	093803

¹ Approximately 2/3 of this tagcode was erroneously clipped, 1/3 unclipped.

3.2 Fisheries Sampling for Coded-Wire Tagged Coho in 2003 and 2004

This section summarises the coded-wire tag sampling programs for all fisheries (MSF and non-MSF).

3.2.1 Alaska

ADFG continues traditional (adipose-mark) visual CWT sampling for coho salmon, with no plans to convert to electronic sampling. Catch and Sample information is summarized in the table below.

2003 and 2004 Southeast Alaska Coho Fishery Sampling for CWT.

Year	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT		
				Sample Method	Detection Method	Tags Processed
2003	Net	815,283	157,808 (19%)	Direct	Visual	All
	Troll	1,220,782	460,233 (38%)	Direct	Visual	All
	Sport	188,472	51,736 (27%)	Direct	Visual	All
2004	Net	703,247	108,327 (15%)	Direct	Visual	All
	Troll	1,915,069	460,430 (24%)	Direct	Visual	All
	Sport	154,050	40,251 (26%)	Direct	Visual	All

3.2.2 Canada

Management actions implemented in previous years to limit the exploitation rate on Thompson River coho to a ceiling of 3% across all Canadian fisheries were continued in 2003 and 2004. During the May through September time period when Interior Fraser coho are encountered in southern B.C. waters, management ranged from non-retention to time and area closures. There was no retention of unclipped coho in southern B.C. recreational or commercial fisheries, apart from some terminal sport fisheries along the WCVI and limited experimental fisheries where surplus hatchery coho were available. Some First Nations retained unclipped coho, usually caught incidental to another target species.

Wands were used to sample the few coho that were landed in commercial fisheries. Anglers were requested to submit heads from marked coho to the Voluntary Head Recovery Program (VHRP) for all areas of B.C.. Recreational coho fisheries in southern B.C. were sampled by Creel Survey staff for effort and mark rate.

There were many problems in previous years with regard to direct sampling of the recreational fishery, including very low sample rates and anecdotal reports of unreliable wands. The majority of the tags recovered did not come from the creel survey program but from heads turned in by anglers to the VHRP. The VHRP in B.C. has been found to be more cost effective and provide more recoveries than the Creel Survey program. In 2003 and 2004, Creel Samplers concentrated on obtaining effort and mark rate data and did not collect heads, while CWTs were obtained via the VHRP. Sport Awareness factors will continue to be used to expand submitted CWTs to estimated recoveries in the

recreational catch. The sport awareness factor is the inverse of the angler participation rate in the VHRP.

In the tables below, the North Region includes all areas north of Vancouver Island. The Outside Region includes all areas on the west coast of Vancouver Island. The Inside Region includes all areas on the east side of Vancouver Island.

2003 and 2004 Coho Fishery Sampling for CWT for Canada

Year	Region	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed
2003	North	Net	10,408	6,026 (57.9%)	Direct	Electronic	All
		Troll	186,651	15,713 (8.4%)	Direct	Electronic	All
		Sport	n/a	n/a	Voluntary	Visual	All
	Outside	Net	6,281	1,447 (23.0%)	Direct	Electronic	All
		Troll	150	0 (0%)	Direct	Electronic	All
		Sport	88,905	* (3.4%)	Voluntary	Visual	All
	Inside	Net	369	369 (100%)	Direct	Electronic	All
		Troll	9	9 (100%)	Direct	Electronic	All
		Sport	12,281	* (4.6%)	Voluntary	Visual	All
	Freshwater	Sport	n/a	n/a	Voluntary	Visual	All
2004	North	Net	71,513	4,126 (57.5%)	Direct	Electronic	All
		Troll	242,397	93,724 (38.7%)	Direct	Electronic	All
		Sport	n/a	n/a	Voluntary	Visual	All
	Outside	Net	3,789	21 (0.6%)	Direct	Electronic	All
		Troll	198	0 (0%)	Direct	Electronic	All
		Sport	40,185	* (6.5%)	Voluntary	Visual	All
	Inside	Net	152	151 (99.9%)	Direct	Electronic	All
		Troll	5	0 (0%)	Direct	Electronic	All
		Sport	14,131	* (6.8%)	Voluntary	Visual	All
	Freshwater	Sport	n/a	n/a	Voluntary	Visual	All

* VHRP Participation Rate

3.2.3 Puget Sound & Washington Coast

With the exception of some low intensity freshwater recreational fisheries, all coho and Chinook salmon fisheries conducted in Washington waters during 2003 and 2004 were CWT sampled. All fishery sampling is conducted using electronic tag detection protocols.

2003 and 2004 Coho Fishery Sampling for CWT for Puget Sound¹.

Year	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed
2003	Sport	101,476	20.0	Direct	Electronic	All
	Net	262,256	36.4	Direct	Electronic	All
2004	Sport	88,028	21.0	Direct	Electronic	All
	Net	567,818	26.0	Direct	Electronic	All

2003 and 2004 Coho Fishery Sampling for CWT for Washington Coast².

Year	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed
2003	Ocean Sport	139,069	42.5	Direct	Electronic	All
	Troll	20,125	18.3	Direct	Electronic	All
	Coastal Sport	2,268	20.6	Direct	Electronic	All
	Coastal Net	73,220	22.0	Direct	Electronic	All
2004	Ocean Sport	112,936	44.5	Direct	Electronic	All
	Troll	76,146	29.0	Direct	Electronic	All
	Coastal Sport	2,428	40.9	Direct	Electronic	All
	Coastal Net	21,702	30.0	Direct	Electronic	All

3.2.4 Oregon Coast

All adopted coho salmon fisheries in ocean waters off Oregon in 2003 and 2004 were mark-selective, with the exception of the last open period in the 2004 commercial troll salmon coho season (September 1-5) in the area to the North of Cape Falcon, Oregon.

Recreational fishery sampling is conducted at the time of landing. All coho on each sampled boat are inspected using wands to determine the presence/absence of a CWT. Although Oregon state law requires anglers to provide snouts to ODFW sampling staff, samplers still request the snouts. For the 2003 recreational ocean fishery, snouts were recovered from 98.8% of the coho that tested positive for the presence of a CWT. In 2004, 99.1% of the snouts with a positive reading were recovered.

Commercial fishery sampling occurs at the time of transfer of salmon from the fisherman to the fish buyer. Trip information is gathered by interviewing the fisherman; all coho are then tested for CWT presence following purchase by the buyer. Snouts from all coho testing positive for the presence of a CWT are collected at this time.

¹ NOTES: All catch values are preliminary. PS sport catch is based on catch record cards only (no creel survey).

² NOTES: All catch values are preliminary. Coastal net is non-treaty only. Coastal sport is Grays Harbor and Willapa Bay areas only. Ocean sport is areas 1,2,3,4. Troll is non-treaty and treaty, includes Juan de Fuca.

2003 and 2004 Coho Fishery Sampling for CWT for Oregon Coast.

Year	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed
2003	Sport	113,659	35,041 (30.8%)	Direct	Electronic	All
	Troll	6,711	1,087 (16.2%)	Direct	Electronic	All
2004	Sport	71,829	21,197 (29.5%)	Direct	Electronic	All
	Troll	9,292	2,793 (30.1%)	Direct	Electronic	All

3.2.5 Columbia River

Wands have been used to detect CWTs in coho caught in the Columbia River Estuary (Buoy 10) and the mainstem recreational fisheries since MSF-only regulations were adopted in 1998. Because coho are essentially an incidental species in the mainstem fall Chinook fishery, samplers did not always carry wands but were instructed to take snouts off every Coho encountered. Wands have also been used in non-selective Treaty-Indian and non-Indian commercial fisheries for coho since 1998. Despite the large volume of coho landings from the non-Treaty commercial fishery, sampling rates have not been compromised.

2003 and 2004 Coho Fishery Sampling for CWT for Columbia River.

Year	Region	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed
2003	Columbia R (Oregon)	Buoy 10 Sport	29,668	7,689 (26%)	Direct	Electronic	All
	Columbia R (Washington)	Buoy 10 Sport	24,772	7010 (28%)	Direct	Electronic	All
	Columbia R. (OR/WA)	Lower River Sport	1,145	236 (21%)	Direct	Electronic	All
	Columbia R. (OR/WA)	Non-Treaty (gillnet) commercial	149,766	36,061 (24%)	Direct	Electronic	All
	Select Area (Oregon)	Non-Treaty (gillnet) commercial	117,133	18,808 (16%)	Direct	Electronic	All
	Columbia R. (OR/WA)	Treaty-Indian (setnet) commercial	5,670	1,027 (18%)	Direct	Electronic	All
2004	Columbia R. (Oregon & Washington)	Buoy 10 Sport	7,649	2,467 (32%)	Direct	Electronic	All
	Columbia R. (OR/WA)	Lower River Sport	7,474	1,611 (22%)	Direct	Electronic	All
	Columbia R. (OR/WA)	Non-Treaty (gillnet) commercial	66,522	35,317 (53%)	Direct	Electronic	All
	Select Area (Oregon)	Non-Treaty (gillnet) commercial	51,944	13,494 (26%)	Direct	Electronic	All
	Columbia R. OR/WA	Treaty-Indian (setnet) commercial	10,287	1,904 (19%)	Direct	Electronic	All

3.3 Summary of 2003 and 2004 Coho Mark-Selective Fisheries

This section summarizes sampling and monitoring conducted for Mark-Selective Fisheries. Sampling information for Non-MSFs is not included in these tables.

Definitions of column headings are as follows:

Sampling and Monitoring Conducted:

CWT: method used to collect tag rate information and obtain CWTs from catch

Encounter: program used to estimate total landed catch and number of fish released

Observers: whether or not observers were on-board vessels

Mortality: programs directed toward estimating mortality of released fish

Compliance: programs directed to monitoring and improving compliance with fishery regulations. This does not include regular enforcement activities.

Mark Selective Fisheries by Region:

Estimated Mark Rate: Mark rate from total legal sized coho encountered

3.3.1 2003 Monitoring of Coho Mark-Selective Fisheries

Region	Fishery	Sampling & Monitoring Conducted				
		CWT	Encounters	Observers	Mortality	Compliance
Alaska	No MSF					
East Coast Vancouver Island	Sport - St of Georgia & Juan de Fuca	10% Creel & VHRP	Creel, guide logbook, test fishing	No	No	No
West Coast Vancouver Island	Sport - Nootka Sd, Quatsino Sd, Pt Renfrew, Alberni Canal	10% Creel & VHRP	Creel, guide logbook, test fishing	No	No	No
Lower Fraser Freshwater	Sport – Fraser R Chilliwack/Vedder	10% Creel & VHRP	Creel test fishing	No	No	No
West Coast Vancouver Island Freshwater	Sport – Somass (Robertson)	10% Creel & VHRP	Creel test fishing	No	No	No
East Coast Vancouver Island Freshwater	Sport – Big Qualicum R Cowichan R	10% Creel & VHRP	Creel test fishing	No	No	No
Southern B.C. Freshwater	Other FW sport	Voluntary	No	No	No	No
Puget Sound	Area 5,6 sport coho	ETD @ 22.6%	Creel, test fishing	No	No	Yes
	Area 7 sport coho	ETD@ 15.2%	Creel	No	No	Yes
	Area 7 Reefnet coho	Commercial Direct at buyer	No	No	No	Yes
	Area 13 sport coho	Creel @ 11.3%	Creel	No	No	Yes
Coastal Washington	Area 1 sport coho	ETD@47%	Creel, observers	Yes	No	Yes
	Area 2 sport coho	ETD@ 45%	Creel, observers	Yes	No	Yes
	Area 3 sport coho	ETD@73%	Creel, logbooks	No	No	Yes
	Area 4 sport coho	ETD@ 42%	Creel, test fishing, observers	Yes	No	Yes
	Area 1 troll coho	Dockside @ 42%	No	No	No	Yes
Coastal Oregon	Sport	ETD	Creel	Yes	No	No
	Troll	Comm.Direct at Buyer	No	No	No	No
Columbia R	Lower Columbia R. sport	ETD @ 21%	Creel	No	No	No
	Buoy 10 sport coho (OR/WA)	ETD @ 26%	Creel	Yes (WA only)	No	No

3.3.2 2004 Monitoring of Coho Mark-Selective Fisheries

Region	Fishery	Sampling & Monitoring Conducted				
		CWT	Encounter	Observers	Mortality	Compliance
Alaska	No MSF					
East Coast Vancouver Is	Sport - St of Georgia, Johnstone St & Juan de Fuca	10% Creel & VHRP	Creel, guide logbook, test fishing	No	No	No
West Coast Vancouver Is	Sport - Nootka Sd, Pt Renfrew, Alberni Canal	10% Creel & VHRP	Creel, guide logbook, test fishing	No	No	No
Lower Fraser Freshwater	Sport – Nicomen Sl (Inch), Chilliwack/Vedder	10% Creel & VHRP	Creel test fishing	No	No	No
West Coast Vancouver Island Freshwater	Sport – Somass (Robertson)	10% Creel & VHRP	Creel test fishing	No	No	No
East Coast Vancouver Is Freshwater	Sport – Big Qualicum R Cowichan R	10% Creel & VHRP	Creel test fishing	No	No	No
Southern B.C. Freshwater	Other FW sport	Voluntary	No	No	No	No
Puget Sound	Area 5,6 sport coho	ETD @ 22.6%	Creel, test fishing	No	No	Yes
	Area 7 sport coho	Creel @ 15.2%	Creel	No	No	Yes
	Area 7 Reefnet coho	Commercial Direct @ Buyer	No	No	No	Yes
	Area 13 sport coho	ETD @ 11.3%	Creel	No	No	Yes
Coastal Washington	Area 1 sport coho	ETD@47%	Creel, observers	Yes	No	Yes
	Area 2 sport coho	ETD @ 45%	Creel, observers	Yes	No	Yes
	Area 3 sport coho	ETD @73%	Creel, logbooks	No	No	Yes
	Area 4 sport coho	ETD @ 42%	Creel, test fishing, observers	Yes	No	Yes
	Area 1 troll coho	Commercial @ Buyer @ 42%	Creel	No	No	Yes
Coastal Oregon	Sport	ETD	Creel	Yes	No	No
	Troll	ETD	Creel	No	No	No
Columbia R	Lower Columbia R.	ETD @ 14%	Creel	No	No	No
	Buoy 10 sport Coho (OR/WA)	ETD@ 32%	Creel	Yes (WA only)	No	No

3.3.3 Alaska

There are no MSFs occurring in Alaska.

3.3.4 Canada

There were no commercial mark-selective fisheries in Canadian waters. For recreational fisheries, coho MSFs were implemented in most of southern B.C., including Johnstone Strait, the Strait of Georgia, Juan de Fuca Strait and the West Coast of Vancouver Island. Non-MSFs were implemented in terminal areas where local wild stocks are showing improvement. Effective June 1, retention of 2 coho (hatchery or wild) was permitted in Port San Juan (20-2) and inner portions of Areas 23-25 and 27. Regulations and catch in fisheries subject to mark-selective regulations are summarized in the following table.

2003 and 2004 Coho Mark-Selective Fisheries in Canada.

Year	Region	Fishery	Fishery Period	Regulations	Estimated Catch (retention)	Estimated Mark Rate
2003	West Coast Vancouver Island	Westcoast Vancouver Island (Area 21, outer portions of 23, outer portion of 24, Areas 25-27, 121, 123-127)	July 1- Dec 31	2 clipped coho	67,036	40.1%
		Inner portion of Area 23 (23-1 to 23-2)	July 1-31	2 clipped coho	83	50.2%
		Inner portion of Area 24	Sep 13- Oct 15	Mixed Bag (MB) – max 4 of which 2 may be unclipped	n/a	n/a
	East Coast Vancouver Island	Queen Charlotte Sd, Queen Charlotte St, Johnstone St (11-1,11-2)	July 1- Dec 31	2 clipped coho	n/a	n/a
		Portion of Area 11	Aug 1-Oc 31	MB – max 2 of which 1 may be unclipped	n/a	n/a
		Strait of Georgia North (12-16)	July 1- Dec 31	2-4 clipped coho, depending on area & time	8,346	92.2%
		Portion of Area 12	Aug 22- Dec 31	MB - max 2 of which 1 may be unclipped	n/a	n/a
		Strait of Georgia South (17, 18, 28, 29)	July 1- Dec 31	2 clipped coho	1,558	96.0
		Juan de Fuca (19-1 to 19-6, 20)	July 1- Dec 31	2 clipped coho	11,833	71.7%
		Terminal (portions of 14, 16, 29)	Jun 1-Dec 31	2 clipped coho	n/a	n/a
		Lower Fraser FW Sport	Fraser River		2 clipped coho	886
	Chilliwack/Veddar R			2-4 clipped coho	14,861	n/a

Year	Region	Fishery	Fishery Period	Regulations	Estimated Catch (retention)	Estimated Mark Rate
2004	West Coast Vancouver Island	Westcoast Vancouver Island (Area 21, outer portions of 23, outer portion of 24, Areas 25-27, 121, 123-127)	July 1- July 31	2 clipped coho	83	50.2%
		Inner portion of Area 23 (23-1 to 23-2)	July 1-31	2 clipped coho	1,141	51.7%
	East Coast Vancouver Island	Queen Charlotte Sd, Queen Charlotte St, Johnstone St (11-1,11-2)	July 1- Dec 31	2 clipped coho	n/a	n/a
		Portion of Area 11	Aug 1-Oc 31	MB – max 2 of which 1 may be unclipped	n/a	n/a
		Strait of Georgia North (12-16)	July 1- Dec 31	2 clipped coho	1,439	97.6%
		Portion of Area 12	Aug 22- Dec 31	MB - max 2 of which 1 may be unclipped	n/a	n/a
		Strait of Georgia South (17, 18, 28, 29)	July 1- Dec 31	2 clipped coho	1,639	98.7%
		Juan de Fuca (19-1 to 19-6, 20)	July 1- Dec 31	2 clipped coho	11,053	77.6%
		Area 20-1	Sep 1 – Dec 31	MB – max 2 of which 1 may be unclipped	n/a	n/a
		Terminal (portions of 14, 16, 29)	Jun 1-Dec 31	2 clipped coho	n/a	n/a
	Lower Fraser FW Sport	Nicomen Sl (Inch Cr)		2-4 clipped coho	333	n/a
		Chilliwack/Veddar R		2-4 clipped coho	10,245	n/a

3.3.5 Puget Sound

2003 and 2004 Puget Sound Coho Mark-Selective Fisheries.

Year	Fishery	Fishery Period	Regulations	Estimated Catch (retention)	Estimated Mark Rate
2003	Area 5,6 sport ^{a/}	Jul 1 – Sep 30	2 fin clipped coho	38,778	35.4%
	Area 7 sport ^{b/}	Aug 1 – Sep 30	2 fin clipped coho	916	34.0%
	Area 7 Reef Net	July 1 – Oct 6 during sockeye	fin clipped coho only	Not provided	Not provided
	Area 13 sport ^{b/}	July 1 – Oct 31	2 fin clipped coho	818	87.9%
2004	Area 5,6 sport ^{a/}	Jul 1 – Sep 30	2 fin clipped coho	41,647	42.3%
	Area 7 sport ^{b/}	Aug 1 – Sep 30	2 fin clipped coho	480	39.0%
	Area 7 Reef Net	July 1 – Oct 6 during sockeye	fin clipped coho only	Not provided	Not provided
	Area 13 sport ^{b/}	July 1 – Oct 31	2 fin clipped coho	1,096	83.2%

^{a/} For the Areas 5 and 6 selective coho fishery, the retained catch was estimated via creel surveys, and the mark rate was estimated from the test fishery encounter data.

^{b/} For the Areas 7 and 13 selective coho fisheries, the retained catch was estimated via preliminary Catch Record Card estimates, and the mark rate was estimated from in-sample encounter data obtained during angler interviews.

3.3.6 Coastal Washington

2003 and 2004 Coastal Washington Coho Mark-Selective Fisheries.

Year	Fishery	Fishery Period	Regulations	Estimated Catch (retention)	Estimated Mark Rate
2003	Area 1 sport	Jun 29 – Sep 30	2 fin clipped coho	76,673	57%
	Area 2 sport	Jun 22 – Sep 14	2 fin clipped coho	39,267	53%
	Area 3 sport	Jun 22 – Sep 14;	2 fin clipped coho	3,407	31%
		Sep 20 – Oct 5			
	Area 4 sport	Jun 22 – Sep 14	2 fin clipped coho	19,749	39%
Area 1 troll	Aug 1 – Sep 8	fin clipped coho only	1,290	48%	
2004	Area 1 sport	Jun 27 – Sep 30	2 fin clipped coho	51,037	58%
	Area 2 sport	Jun 27 – Aug 28	2 fin clipped coho	18,717	46%
	Area 3 sport	Jun 27 – Sep 19;	2 fin clipped coho	3,163	28%
		Sep 25 - Oct 10			
	Area 4 sport	Jun 27 – Sep 2; Sep 10 – Sep 19	2 fin clipped coho	29,400	36%
Area 1 troll	Aug 1 – Sep 8	fin clipped coho only	1,130	31%	

3.3.7 Coastal Oregon

Ocean MSF coho sport fisheries occurred in ocean areas from Leadbetter Point (WA) to Humbug Mountain in 2003 and from Leadbetter Point (WA) to the Oregon/California border in 2004. Limited MSF for coho also occurred in both 2003 and 2004 in some coastal rivers including: Nehalem River and Bay, Salmon River, Tillamook Bay, Tillamook River, Trask River, Wilson River, Coos Bay, Coos River, Coquille River, Rogue River, and Umpqua River. Commercial troll fisheries for marked coho occurred in the ocean north of Cape Falcon.

2003 and 2004 Coastal Oregon Coho Mark-Selective Fisheries.

Year	Fishery	Fishery Period	Regulations	Estimated Catch (retention)	Estimated Mark Rate
2003	Sport - North of Cape Falcon	June 29 – Sept. 30	2 adipose fin clipped coho	29,771	46.8%
	Sport - Cape Falcon to Humbug Mt.	June 21 – Aug. 19	2 adipose fin clipped coho	83,837	43.5%
	Troll – North of Cape Falcon	July 3 –Sept. 14	adipose fin clipped coho, vessel open period limits, 5 day open periods	6,700	n/a
2004	Sport – North of Cape Falcon	June 27-Sept. 30	2 adipose fin clipped Coho	22,498	51.5%
	Sport – Cape Falcon to OR/CA Border	June 19 – Aug. 31	2 adipose fin clipped Coho	49,331	50.6%
	Troll – North of Cape Falcon	July 8 – Aug. 29	adipose fin clipped Coho, restricted open periods	1,486	n/a
	Troll North of Cape Falcon	Sept. 1 – 5	All Coho, open period landing limit	4,811	n/a

* Mark rate from total legal sized coho encountered

3.3.8 Columbia River

Selective sport fisheries occurred in the Columbia River.

2003 and 2004 Columbia River (OR/WA) Coho Mark-Selective Fisheries.

Year	Fishery	Fishery Period	Regulations	Estimated Catch (retention)	Estimated Mark Rate
2003	Lower River Sport	August-October	2 adults, adipose clipped only	1,145	71%
	Buoy 10 Sport	Aug 1 – Dec 31	2 fin clipped Coho	54,440	74%
2004	Lower River Sport	August-October	2 adults, adipose clipped only	1,273	75%
	Buoy 10 Sport	Aug 1 – Dec 31	2 fin clipped Coho	15,123	66%

4 CHINOOK

4.1 Releases of Mass Marked Chinook in 2003 (2001 and 2002 Broods) and 2004 (2002 and 2003 Broods)

4.1.1 Summary of Mass Marking

Mass marking of 2001 to 2003 brood Chinook from southern U.S. hatcheries occurred largely as planned. Beginning with 2003 brood, mass marking increased over previous levels. Most of this increase was for yearling Chinook. These fish will be released in 2005 and will be summarized in a subsequent report. There is no Chinook mass marking in California, British Columbia or Alaska.

Adipose mark numbers do not include adipose-clipped coded-wire tagged releases. Details of individual releases can be found in the Regional Mark Information System (RMIS) database maintained by the Pacific States Marine Fisheries Commission.

Regional Summary of Mass Marked Chinook Yearling Smolts Released in 2003 (2001 Brood) and 2004 (2002 Brood).

Area	Agency	2002 Releases		2003 Releases		2004 Releases	
		Total (millions)	Adipose Marks	Total (millions)	Adipose Marks	Total (millions)	Adipose Marks
Puget Sound	WDFW	2.5	1.6	2.2	1.3	1.9	0.8
	NWIFC	0.2	0.1	0.1	0.0	0.3	0.2
	USFWS	0.0	0.0	0.0	0.0	0.0	0.0
Coastal Washington	WDFW	0.2	0.2	0.2	0.2	0.2	0.2
	NWIFC	0.0	0.0	0.0	0.0	0.0	0.0
	USFWS	0.0	0.0	0.0	0.0	0.0	0.0
Columbia River	WDFW	6.4	1.2	6.1	2.0	6.6	2.0
	USFWS	5.1	1.2	5.6	2.4	5.3	2.1
	ODFW	7.5	6.2	8.1	5.7	8.2	5.9
Snake River	USFWS	1.6	1.3	1.1	0.9	1.7	1.4
Coastal Oregon	ODFW	1.5	0.0	0.4	0.4	0.3	0.3
TOTAL ALL AREAS		25.0	11.8	23.8	12.9	24.2	12.9

Regional Summary of Mass Marked Chinook Sub-Yearlings Released in 2003 (2002 Brood) and 2004 (2003 Brood).

Area	Agency	2002 Releases		2003 Releases		2004 Releases	
		Total (millions)	Adipose Marks	Total (millions)	Adipose Marks	Total (millions)	Adipose Marks
Puget Sound	WDFW	34.0	18.0	31.0	15.6	30.6	17.2
	NWIFC	13.0	8.4	10.7	5.8	11.4	6.2
	USFWS	0.0	0.0	0.0	0.0	0.0	0.0
Coastal Washington	WDFW	0.2	0.0	7.3	0.0	7.3	0.1
	NWIFC	1.0	0.0	1.2	0.0	1.1	0.0
	USFWS	3.4	0	3.2	0	2.5	0.1
Columbia River	WDFW	33.1	0.0	35.6	0.3	35.6	0.3
	USFWS	19.1	0	17.2	0	16.7	0
	ODFW	0.0	0.0	1.1	1.0	1.1	1.0
Snake River	USFWS	0.0	0.0	0.0	0.0	0.0	0.0
Coastal Oregon	ODFW	1.5	0.0	2.5	2.2	2.5	2.2
TOTAL ALL AREAS		105.3	26.4	109.8	24.9	108.8	27.1

4.1.2 Summary of Chinook DIT Releases

Region	Natural/Unmarked Stock Representation	DIT Stock	Hatchery	Release Year	Clipped Tag code	Unclipped Tag code	
Southern B.C.	Lower Fraser	Chilliwack	Chilliwack	2003	185533 185535	185534 185536	
				2004	185161 185162 185163	185532 185537	
	Interior Fraser	Lower Shuswap	Shuswap	2003	185148 185204 185205 185206	185144 185145 185146 185147	
				2004		No DIT	
	Puget Sound	Nooksack River spring	Nooksack spring fingerlings	WDFW Kendall Creek	2003	631546	631557
					2004	631789	631790
Skagit River springs		Skagit spring yearlings	WDFW Marblemount	2003	631411	631412	
				2004	631414	630874	
White River springs		(none)					
North Puget Sound summer/fall		Skykomish summer fingerlings	WDFW Wallace River	2003	630993	631388	
				2004	631387 632281	631541 632280	
North Puget Sound fall		Samish fall fingerlings	WDFW Samish	2003	631774	631775	
				2004	632383	632384	
Mid Puget Sound fall		Grovers Cr. fall fingerlings	Suquamish Grovers Cr	2003	210479	631776	
				2004	632283	210544	
		Green R. fall fingerlings	WDFW Soos Cr	2003	631784	631783	
South Puget Sound fall		Nisqually fall fingerlings	Nisqually Hatchery at Clear Creek	2003	210483 210484	631443 631445	
				2004	210547 210548	631895 631896	
Hood Canal fall		George Adams fall fingerlings	WDFW George Adams	2003	631371	631372	
	2004			632375	632374		
Strait of Juan de Fuca	(none)						
Washington Coast	Washington Coast fall fingerling	(none)					
Columbia River	Lower Columbia spring	Lewis R spring yearlings	WDFW Lewis River	2003	630679	630680	
				2004	630682	631385	
	Willamette River spring	Clackamas spring yearlings	ODFW Clackamas River	2003	093558	093559	
				2004	093843	093845	
	Willamette River spring	McKenzie spring yearlings	ODFW McKenzie River	2003	093613	093614	
				2004	093753	093854	
Upper Columbia spring/summer	(none)						
Snake R spring/summer	(none)						
Oregon Coast	South OR Coast	Rogue River Sub-yearlings	ODFW Cole M Rivers	2003	093763	093804	
				2004	094011	094012	

4.2 Fisheries Sampling for Coded-Wire Tagged Chinook in 2003 and 2004

This section summaries all fisheries (MSF and non-MSF) and the associated coded-wire tag sampling programs.

4.2.1 Alaska

ADFG continues traditional (adipose-mark) visual CWT sampling for Chinook salmon, with no plans to convert to electronic sampling.

2003 and 2004 Chinook Fishery Sampling for CWT for Southeast Alaska.

Year	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed
2003	Net	24,072	3,722 (15%)	Direct	Visual	All
	Summer Troll	291,427	90,539 (31%)	Direct	Visual	All
	Spring Troll	35,415	16,358 (46%)	Direct	Visual	All
	Sport	51,580	13,254 (26%)	Direct	Visual	All
2004	Net	50,990	7,750 (15%)	Direct	Visual	All
	Summer Troll	297,815	78,928 (27%)	Direct	Visual	All
	Spring Troll	52,577	21,861 (42%)	Direct	Visual	All
	Sport	65,817	16,708 (25%)	Direct	Visual	All

4.2.2 Canada

The Mark Recovery Program (MRP) conducted electronic sampling in B.C. Chinook fisheries. Electronic sampling for both coho and Chinook is currently possible in most cases because of restricted fisheries. If there is an improvement in commercial fisheries (i.e. more liberal catches of either coho or Chinook) the equipment and infrastructure presently in place will be inadequate to support electronic sampling. The program will require an infusion of capital to maintain electronic sampling capability. Even with the current fisheries, the equipment support systems in the north will require enhancement, including the purchase or manufacture of support/grading tables and possibly additional sampling technicians.

Recreational Chinook fisheries in southern B.C. were sampled by Creel Survey staff for effort and mark rate. Anglers were requested to submit heads from marked Chinook to the Voluntary Head Recovery Program (VHRP) for all areas of B.C. A sport awareness factor is used to expand CWTs turned in to estimate CWTs in the recreational catch. The sport awareness factor is the ratio of the total marked catch to heads submitted.

2003 and 2004 Chinook Fishery Sampling for CWT for Canada.

Year	Region	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed	
2003	North	Net	12,826	4,848 (37.8%)	Direct	Electronic	AdCWT only	
		Troll	250,293	18,172 (7.3%)	Direct	Electronic	Day/Ice Boats: AdCWT only Freezer Troll: All	
		Sport	n/a	n/a	Voluntary	Visual	All	
	Outside	Net	9,251	2,517 (27.2%)	Direct	Electronic	AdCWT only	
		Troll	161,664	31,724 (19.6%)	Direct	Electronic	Day/Ice Boats: AdCWT only Freezer Troll: All	
		Sport	170,644	* (3.0%)	Voluntary	Visual	All	
		Inside	Net	11,456	5,850 (51.1%)	Direct	Electronic	All
			Troll	412	43 (10.4%)	Direct	Electronic	AdCWT only
			Sport	27,372	* (12.6%)	Voluntary	Visual	All
2004	North	Net	14,863	2,853 (19.2%)	Direct	Electronic	AdCWT only	
		Troll	158,922	75,417 (47.5%)	Direct	Electronic	Day/Ice Boats: AdCWT only Freezer Troll: All	
		Sport	n/a	n/a	Voluntary	Visual	All	
	Outside	Net	12,399	2,703 (21.8%)	Direct	Electronic	AdCWT only	
		Troll	166,890	56,939 (34.1%)	Direct	Electronic	Day/Ice Boats: AdCWT only Freezer Troll: All	
		Sport		* (14.4%)	Voluntary	Visual	All	
		Inside	Net	13,807	5,698 (42.3%)	Direct	Electronic	All
			Troll	376	30 (8.0%)	Direct	Electronic	AdCWT only
	Sport		* (17.0%)	Voluntary	Visual	All		

* VHRP Participation Rate

4.2.3 Puget Sound & Washinton Coast

Only two mark selective fisheries for Chinook salmon were conducted in the Puget Sound region in 2003. The single MSF conducted in marine waters was a pilot fishery in Areas 5-6. The single freshwater MSF conducted in 2003 was in a portion of the Skykomish River adjacent to WDFW's Wallace River hatchery. Sampling in both of these fisheries for CWTs was conducted using electronic tag detection.

2003 and 2004 Chinook Fishery Sampling for CWT for Puget Sound¹.

Year	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed
2003	Skykomish River sport	177 adults	CWT not sampled	N/A	N/A	N/A
	Marine Sport	30,936	22.4	Direct	Electronic	All
	Net	95,371	33.0	Direct	Electronic	All
	Freshwater Sport	Not provided	Not provided	Direct	Electronic	All
2004	Skykomish River sport	240	CWT not sampled	N/A	N/A	N/A
	Marine Sport	27,128	26.1	Direct	Electronic	All
	Net	83,787	39.0	Direct	Electronic	All
	Freshwater Sport	Not provided	Not provided	Direct	Electronic	All

2003 and 2004 Chinook Fishery Sampling for CWT for Washington Coast².

Year	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed
2003	Coastal Net	7,830	24.8	Direct	Electronic	All
	Coastal Sport	1,612	20.5	Direct	Electronic	All
	Ocean Sport	34,163	40.1	Direct	Electronic	All
	Troll	91,831	31.5	Direct	Electronic	All
2004	Coastal Net	4,454	34.6	Direct	Electronic	All
	Coastal Sport	4,722	37.8	Direct	Electronic	All
	Ocean Sport	24,913	43.8	Direct	Electronic	All
	Troll	105,854	33.7	Direct	Electronic	All

4.2.4 Oregon Coast

Electronic detection is utilized in Oregon to sample hatchery and spawning areas where mass marked spring Chinook return. On some spawner surveys, snouts from all carcasses are removed for electronic detection in the lab. Oregon does not employ full electronic sampling of Chinook salmon and in some areas visual sampling was used. Visual detection, followed by electronic detection is used to sample landings of ocean caught Chinook, from fisheries which are not selective for fin mark and largely occur after maturing spring Chinook have entered terminal areas. Mouth wanding was employed on all Chinook over 11 lbs in weight. The bulk of Oregon's catch is comprised of Chinook stocks originating from California and to a lesser degree Columbia River and Oregon coastal streams, which are generally not mass marked.

¹ All catch values are preliminary. PS sport catch is based on catch record cards only (no creel survey).

² All catch values are preliminary. Coastal net is non-treaty only. Coastal sport is Grays Harbor and Willapa Bay areas only. Ocean sport is areas 1,2,3,4. Troll is non-treaty and treaty, includes Juan de Fuca.

2003 and 2004 Chinook Fishery Sampling for CWT for Oregon Coast.

Year	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed
2003	Sport	40,654	33.9%	Direct	Visual	All
	Troll	333,699	31.3%	Direct	Visual	All
2004	Sport	56,438	34.5%	Direct	Visual + ETD	All
	Troll	261,231	30.6%	Direct	Visual + ETD	All

4.2.5 Columbia River

Selective recreational fisheries for spring run Chinook occurred in the Columbia River from the mouth upstream to McNary Dam (January through mid-May), Willamette River (January through June), and in the Snake River (late April through May). Selective non-Indian commercial spring Chinook fisheries occurred downstream of Bonneville Dam during late February through March.

Recreational summer Chinook fisheries occurred in the mainstem Columbia River upstream of Tongue Point to the Oregon/Washington border above McNary Dam.

2003 and 2004 Chinook Fishery Sampling for CWT in the Columbia River.

Year	Region	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed
2003	Lower Columbia R. (WA)	Buoy 10 – Fall Chinook	8,049	1,855 (23%)	Direct	Not provided	Visual
	Lower Columbia R. (OR)	Buoy 10 – Fall Chinook	7,950	2,266 (29%)	Direct	Visual	All
	Lower Willamette R.	Spring Chinook Sport	13,150	2,200 (17%)	Direct	Electronic	All
	Lower Columbia R. (OR/WA)	Spring Chinook Sport	16,892	3,570 (21%)	Direct	Electronic	All
	Lower Columbia R. (OR/WA)	Summer Chinook Sport	1,854	135 (7%)	Direct	Electronic	All
	Lower Columbia R. (OR/WA)	Fall Chinook Sport	26,195	3,612 (14%)	Direct	Visual	All
	Lower Columbia R. (OR/WA)	Non-Treaty Commercial (Gillnet/Tangle Net) – Spring Chinook	3,046	1,475 (48%)	Direct	Electronic	All
	Lower Columbia R. (OR/WA)	Non-Treaty Commercial (Gillnet) – Fall Chinook	58,428	18,392 (31%)	Direct	Visual	All
	Select Areas (OR/WA)	Non-Treaty Commercial (Gillnet) - Spring Chinook	7,404	3,723 (50%)	Direct	Electronic	All
	Select Areas (OR/WA)	Non-Treaty Commercial (Gillnet) – Fall Chinook	9,511	1,486 (16%)	Direct	Visual	All
	Columbia R. (BON to MCN)	Treaty Indian Commercial (Set Net – Fall Chinook	94,822	35,291 (37%)	Direct	Visual	All
	Columbia R. (BON to MCN)	Treaty Indian Commercial (Set Net) – Spring Chinook	6,646	2,032 (31%)	Direct	Electronic	All

Year	Region	Fishery	Estimated Catch	# Sampled (%) for CWT	CWT Sample Method	Detection Method	Tags Processed
2004	Lower Columbia R. (WA)	Buoy 10 – Fall Chinook	6,806	1,967 (29%)	Direct	Visual	All
	Lower Columbia R. (OR)	Buoy 10 – Fall Chinook	9,210	3,430 (37%)	Direct	Visual	All
	Lower Willamette R.	Spring Chinook Sport	11,740	1,475 (13%)	Direct	Electronic	All
	Lower Columbia R. (OR/WA)	Spring Chinook Sport	23,740	4,349 (18%)	Direct	Electronic	All
	Lower Columbia R. (OR/WA)	Summer Chinook Sport	1,119	139 (12%)	Direct	Electronic	All
	Lower Columbia R. (OR/WA)	Fall Chinook Sport	17,719	3,740 (21%)	Direct	Visual	All
	Lower Columbia R. (OR/WA)	Non-Treaty Commercial (Gillnet/Tangle Net) – Spring Chinook	13,158	7,558 (57%)	Direct	Electronic	All
	Lower Columbia R. (OR/WA)	Non-Treaty Commercial (Gillnet) – Fall Chinook	41,057	20,794 (51%)	Direct	Visual	All
	Select Areas (OR/WA)	Non-Treaty Commercial (Gillnet) - Spring Chinook	10,447	4,592 (44%)	Direct	Electronic	All
	Select Areas (OR/WA)	Non-Treaty Commercial (Gillnet) – Fall Chinook	12,249	3,526 (29%)	Direct	Visual	All
	Columbia R. (BON to MCN)	Treaty Indian Commercial (Set Net – Fall Chinook	111,833	43,832 (39%)	Direct	Visual	All
	Columbia R. (BON to MCN)	Treaty Indian Commercial (Set Net) – Spring Chinook	5,865	2,206 (38%)	Direct	Electronic	All
	Columbia R. (BON to MCN)	Treaty Indian Commercial (Set Net) – Summer Chinook	5,178	1,065	Direct	Electronic	All

4.2.6 Chinook Mouth Wanding

Agencies continued to broaden their use of the recommended mouth wanding technique for sampling Chinook with wands. However, not all Chinook were sampled with this method. The protective shields for wands became available in May of 2003, and retrofitting was limited during 2003 and 2004 by logistics and costs. As a compromise to minimize the number of missed tags while keeping wear on wands to a reasonable level,

in Washington and British Columbia, samplers using wands without shields used mouth wanding to sample the majority of Chinook > 80 cm FL (approx. 20 lbs). Mouth wanding was not used to sample smaller chinook.

4.3 Summary of 2003 and 2004 Chinook Mark-Selective Fisheries

This section summarizes sampling and monitoring conducted for Mark-Selective Fisheries. Non-MSF fisheries are not included in these tables. There are no Chinook MSFs in Alaska or Canada. See Section 3.3 for a description of table headings.

4.3.1 2003 Monitoring of Chinook Mark-Selective Fisheries.

Region	Fishery	Sampling & Monitoring Conducted				
		CWT	Encounter	Observers	Mortality	Compliance
Puget Sound	Skykomish River Sport	Not sampled	Yes	N/A	Yes	Normal enforcement activity, no emphasis patrols
	Area 5-6	Creel & test fishery	Test fishery	No	Yes	Yes
Coastal Washington	none					
Coastal Oregon	none					
Columbia R. (OR)	Sport Below BON - Spring Chinook	Creel @ 21 %	Creel	No	No	Yes
	Sport Below BON - Summer Chinook	Creel @ 7%	Creel	No	No	Yes
Columbia R. (WA)	Sport Above BON - Spring Chinook	Creel @ 2.2%	Creel	No	No	Yes
	Sport Above BON - Summer Chinook	Creel @ 30%	Creel	No	No	Yes
Columbia R. (OR)	Sport Willamette River – Spring Chinook	Creel	Creel	No	No	Yes

4.3.2 2004 Monitoring of Chinook Mark-Selective Fisheries.

Region	Fishery	Sampling & Monitoring Conducted				
		CWT	Encounter	Observers	Mortality	Compliance
Puget Sound	Skykomish River Sport	Not Sampled	Yes	N/A	Yes	Normal enforcement activity, no emphasis patrols
	Area 5-6	Creel & test fishery	Test Fishery	No	Yes	Yes
Coastal Washington	none					
Coastal Oregon	none					
Columbia R. (OR/WA)	Sport Below BON – Spring Chinook	Creel @ 18 %	Creel	No	No	Yes
	Sport Below BON - Summer Chinook	Creel @ 12%	Creel	No	No	Yes
Columbia R. (OR/WA)	Sport Above BON - Spring Chinook	Creel @ 2.2%	Creel	No	No	Yes
	Sport Above BON - Summer Chinook	Creel @ 30%	Creel	No	No	Yes
Columbia R. (OR)	Sport Willamette River – Spring Chinook	Creel	Creel	No	No	No

4.3.3 Puget Sound

2003 and 2004 Puget Sound Chinook Mark-Selective Fisheries.

Year	Fishery	Fishery Period	Regulations	Estimated Catch (retention)	Estimated Mark Rate
2003	Skykomish River	Jun 1 – Jul 31	2 fin clipped Chinook	177 (does not include jacks)	51.0 in the fishery
2004	Skykomish River	Jun 1 – Jul 31	2 fin clipped Chinook	189 (does not include jacks)	78.8% in fishery

4.3.4 Coastal Oregon

With the single exception of a very limited area adjacent to Tillamook Bay for spring Chinook salmon, there were no other mark selective fisheries for Chinook in ocean waters off of Oregon in 2003 or 2004. The estimated catch and mark rate in the fishery were unable to be determined, as the catch is mixed with adjacent ocean area catches before available for sampling.

In-stream MSF for spring Chinook salmon occurred in the Tillamook Basin (including the Kilchis, Miami, Tillamook, Trask, and Wilson rivers), and Nestucca River and Bay (including Little Nestucca River and Three Rivers) in both 2003 and 2004.

No MSF for fall Chinook occurred in any coastal Oregon streams

2003 and 2004 Coastal Oregon Chinook Mark-Selective Fisheries.

Year	Fishery	Fishery Period	Regulations	Estimated Catch (retention)	Estimated Mark Rate
2003	Tillamook Area Spring Chinook Terminal Area	Mar. 15 – July 31	2 fin clipped Chinook	n/a	n/a
2004	Tillamook Area Spring Chinook Terminal Area	Mar. 15 – July 31	2 fin clipped Chinook	n/a	n/a

4.3.5 Columbia River

Oregon and Washington held recreational mark-selective fisheries for spring Chinook salmon in the Columbia River and various tributaries including the Willamette River. Oregon and Washington also held an experimental mark-selective fishery for spring Chinook in the Columbia River using tangle-net (or tooth-net) gear.

2003 and 2004 Columbia River Chinook Mark-Selective Fisheries.

Year	Region	Fishery	Fishery Period	Regulations	Estimated Catch (retention)	Estimated Mark Rate
2003	Columbia R. (OR/WA)	Sport Below BON	Jan. 1 – May 15	2 fin clipped Chinook	16,892	65%
		Sport Above BON	Feb 1 – May 15		1,206	60%
	Columbia R. (OR/WA)	Sport Below BON	June 16 – July 31	2 fin clipped Chinook	1,854	53%
		Sport Above BON	Jun 16 – 30		239	50%
			–			
	Columbia R. (OR/WA)	Tangle Net	Feb 17 - Mar 21	fin clipped Chinook only	3,175	56%
	Columbia R. (OR)	Sport Willamette R	Jan. 1 – July 31	2 fin clipped Chinook	13,150	81%
2004	Columbia R. (OR/WA)	Sport Below BON	Jan. 1 – May 15	2 fin clipped Chinook	23,740	77%
		Sport Above BON	Mar 16 – May 6		1,299	70%
	Columbia R. (WA)	Sport Below BON	June 16 – July 31	2 fin clipped Chinook	1,738	58%
		Sport Above BON	June 16 – 30		12	50%
	Columbia R. (OR/WA)	Tangle Net	Feb 4- Mar 30	fin clipped Chinook	13,581	73%
	Columbia R. (OR)	Sport Willamette R	Jan 1 – July 31	2 fin clipped Chinook	11,740	80%

5 ELECTRONIC DETECTION RESEARCH

There was no research conducted and reported on electronic detection of CWTs by any agency during 2003 and 2004.

6 MASS MARKING MACHINE DEVELOPMENTS

Northwest Marine Technology (NMT) continued work on development and production of Auto Fish Systems, formerly known as MATS trailers. Prior to 2003, these trailers were owned and operated by WorldMark Inc. for contract tagging/marking. Beginning in 2003, NMT began selling these trailers to agencies. In 2003, two trailers were delivered to WDFW. In 2004 seven trailers were purchased by agencies: two by IDFG, three by ODFW, and two by WDFW.

7 DATA QUALITY CONTROL / QUALITY ASSURANCE ISSUES

A PSC workshop entitled “Future of the CWT Program – Challenges and Options” was held by a panel of eight experts in June 2004. Their report is available at <http://www.psc.org/>. Among other issues, the Expert Panel Report highlighted the need for improvements in the quality and reliability of CWT data collected. PSMFC’s Regional Mark Processing Center (Mark Center) houses the coastwide CWT data and acknowledged that problems continue to persist in the accuracy of the data. This includes instances of fish being reported released after being recovered, mis-matched species associated with the same tag code on release and recovery records, weights out of range, incorrect reporting of DIT tags, and incomplete conversion of historical data to the latest PSC data exchange format 4.0. The majority of these errors relate to historical release data prior to the major conversion from Format 3.0 to 4.0 in 2000. However, errors continue to slip through, even with ongoing upgrades to the data validation checks.

On the positive side, there are over six million CWT records in the database, with known errors on the order of five thousand records. Allowing for an additional estimated 15,000 records with unknown errors, this still represents less than 0.003% of the records.

A substantial number of errors reported by data users were corrected by the Mark Center in 2004 by working with the reporting agencies and adding additional validation tests as new types of errors came to light. However, reporting agencies did not always respond to requests for data corrections and the errors have thus persisted. A primary reason is that the responsible data management staff have other competing duties. Correcting historical CWT records have a lower priority.

One specific error not yet fully corrected, involves inaccurate reporting of the number of fish released with an adipose clip prior to the implementation of mass marking in 1996. The fin clip associated with a CWT was not included in the data until Format 4.0 was adopted. The conversion of historical release records to Format 4.0 required the assumption that CWT marked chinook and coho also had an adipose clip. Given that the adipose clip was sequestered coast-wide as a required flag for CWT fish during that period, this was a safe assumption. As such, CWT releases were given either a mark code ‘5000’ (Ad clip; no other marks) or ‘5009’ (Ad clip; unknown other marks). If the release was untagged, the release groups were given the mark code ‘0000’ (no Ad clip; no other marks) or ‘0009’ (no Ad clip; unknown other marks).

Unfortunately, two other mark codes are also available: ‘9000’ (Ad clip unknown; no other external marks) and ‘9009’ (Ad clip unknown; other marks unknown). Not surprisingly, many historical release groups, representing millions of fish, were assigned mark codes ‘9000’ or ‘9009’ by the reporting agencies. Given the sequestering of the adipose clip as an identifier of a CWT, it is recommended that reporting agencies re-assign releases to the ‘0000’ or ‘0009’ mark codes.

In light of the heavy emphasis on the presence or absence of the adipose clip, further discussion is needed on whether or not the ‘9nnn’ mark code series is even necessary. In

most cases, it seems that such releases could simply be handled with the '0000' or '0009' categories.

8 RECOMMENDATIONS AND ISSUES

The timeliness of this report on mass marking and mark-selective fisheries conducted continues to be an issue. It proved very difficult to compile fishery sampling information, including regulations, total catch and mark encounter rates. Without this information, the effectiveness of MSF regulations to conserve wild stocks while providing fishing opportunities cannot be evaluated.

- It is recommended that post-season fishery information be reported to the PSC by Fishery Managers in their Annual Post-Season Reports. Templates for three fishery tables have been developed and will be provided to Fishery Managers for reporting of 2006 fisheries. Since these templates were not provided for reporting of 2005 fisheries, SFEC will compile and report 2005.

Reduced ocean harvest rates place greater emphasis on sampling of spawning escapements (both hatchery and natural spawning streams), since the majority of tags will be recovered at these locations.

- It is recommended that sampling information for escapement of indicator stock programs be included in future reports. A template will be developed.

Mass marking programs, DIT programs, and CWT sampling programs are no longer synchronized between agencies. These differences reduce the ability to estimate impacts from MSFs and will impact analyses by PSC technical committees. These issues will be described in more detail in the SFEC review of mass marking & mark selective fishery proposals for 2006.

- It is recommended that the PSC support the establishment of a policy level process to develop formal agreements to clarify responsibilities for maintaining a functional CWT system.