
CHAPTER III

INSIDE COHO SALMON FISHERIES AND SPAWNING ESCAPEMENTS

CALIFORNIA STOCKS

Inside harvest of coho is not available for any river system in California. Spawning escapement estimates are available for Klamath River basin hatcheries, but not for spawning in natural areas. In 1992, coho returns to Iron Gate and Trinity hatcheries were 3,900 adults, compared to a combined goal of 2,300 adult coho.

OREGON COASTAL STOCKS

OCN coho stocks are managed as one stock aggregate that includes coho produced from Oregon rivers south of the Columbia River. The OCN stock aggregate contributes primarily to ocean fisheries off Oregon and California, and to a lesser degree to ocean fisheries off Washington and British Columbia. As discussed in the FMP, ocean fisheries within the OPI area (Leadbetter Point to the U.S.-Mexico border) are managed to achieve OCN coho spawning escapement goals.

Inside Harvest

Inside recreational harvest of coho occurs in most Oregon coastal estuaries and rivers. Estimates of the 1992 recreational coho harvest will not be available until the fall of 1993. The 1991 adult coho harvest in Oregon coastal estuaries and rivers is estimated at 75,400 fish (Table III-1).

Inside commercial coho harvest in recent years has been limited to returns to private aquaculture operations. All Oregon facilities rearing coho and chinook have ceased operations; thus, there were no returns in 1992 (Table II-4 in Chapter II). This table will not be continued after this year.

Escapement and Goal Assessment

OCN coho were managed for a 1992 aggregate index spawning escapement of 135,000 adults as prescribed under FMP Amendment 7 procedures. Because of concern for overestimation of the OCN stock abundance, the Council, by emergency action, adopted a harvest rate target of 42 percent instead of the FMP prescribed 49 percent. Spawner surveys are not complete for Oregon coastal river and lake systems. Therefore, a final analysis is not yet available. A preliminary assessment of 1992 OCN spawning escapement indicates about 131,400 adult spawners (Table III-1). This number of adults is similar to the 1991 escapement of 135,800 fish. Preliminary information based on standard index surveys suggests that the recent trend of disproportionate spawner distribution among coastal rivers continued to be a problem in 1992. The number of spawners observed per mile was much lower in north coast rivers.

A preliminary estimate of total coho returns to Oregon coastal hatcheries is 24,100 adults. Hatchery egg-take goals are expected to be met at all stations.

TABLE III-1. Estimated escapements in thousands of **Oregon coastal** public hatchery and natural adult **coho** stocks. (Page 1 of 1)

Year	Total Returns to Facility	N. F. Umpqua Winchester Dam	Natural Spawning Escapement (OCN) ^{a/}			Total Coastal Freshwater Catch ^{b/}	Total Estimated Ocean Escapement to Oregon Coast ^{c/}
			Lakes	Rivers	Total OCN		
1971-1975	20.1	0.4	14.7	166.6	181.3	16.6	218.5
1971	29.1	0.4	30.8	293.2	324.0	24.1	377.6
1972	12.9	0.3	10.8	116.9	127.7	16.6	157.5
1973	18.4	0.4	18.8	143.5	162.3	15.4	196.5
1974	35.1	0.4	6.9	126.4	133.3	13.5	182.3
1975	4.9	0.5	6.1	153.0	159.1	13.5	178.0
1976	38.7	0.3	5.3	156.8	162.1	19.6	220.7
1977	6.5	0.4	6.8	61.0	67.8	13.5	88.2
1978	5.6	0.5	4.5	72.2	76.7	4.5	87.3
1979	22.2	0.4	6.8	167.0	173.8	1.5	197.9
1980	21.9	0.2	6.5	104.2	110.7	6.3	139.1
1981	21.2	0.1	6.5	70.5	77.0	9.9	108.2
1982	14.8	2.7	7.2	124.7	131.9	14.7	164.1
1983	9.5	1.2	4.3	55.5	59.8	6.8	77.3
1984	28.6	3.2	13.5	194.0	207.5	17.5	256.8
1985	15.8	4.0	7.8	183.4	191.2	15.5	226.5
1986	35.8	9.6	11.8	179.0	190.8	31.3	267.5
1987	12.2	2.2	4.2	78.3	82.5	7.7	104.6
1988	32.5	1.2	5.8	155.0	160.8	13.3	207.8
1989	37.3	3.0	4.8	139.7	144.5	15.1	199.9
1990	15.4	2.3	4.4	99.6	104.0	9.5	131.2
1991	38.7	6.4	7.6	128.2	135.8	75.4	256.3
1992 ^{d/}	24.1	6.6	1.5	129.9	131.4	NA	162.1 ^{e/}

a/ Does not include estimates of private hatchery strays.

b/ Freshwater sport catch from ODFW salmon/steelhead punch card information and represents only those fish greater than 24 inches (i.e., adults).

c/ Does not include private hatchery returns.

d/ Preliminary.

e/ Excludes freshwater harvest.

COLUMBIA RIVER STOCKS

Columbia River Coho

Inside Harvest

Coho harvest statistics for Columbia River commercial and recreational fisheries are presented in Appendix B, Table B-20. The 1992 Columbia River non-Indian commercial gillnet fishery harvest was 57,300 adult coho. This compares to the 1991 catch of 404,700 fish and the 1971-1975 average catch of 199,400 coho. The treaty Indian mainstem commercial gillnet coho catch was 900 fish. This compares to the 1991 catch of 6,700 coho and the 1971-1975 average catch of 9,100 coho.

The mainstem and tributary recreational adult coho catch below Bonneville Dam was 50,900 fish. In 1992, Columbia River managers opened the regular Buoy 10 area fishery on August 1 with a two salmon bag limit through September 7, and a season total catch expectation of 45,000 coho. The bag limit was increased to 3 salmon after September 7. The August 1 opening for this fishery was concurrent with the opening for the mainstem recreational fishery above the Astoria/Megler Bridge, but it was the earliest opening for the Buoy 10 area since this fishery has been managed as an inriver fishery. Fishing effort remained relatively strong through mid-September despite the reduced success compared to last year's record coho catch (Table III-2). The total coho harvest by the Buoy 10 fishery in 1992 was 43,100 fish. Historical Buoy 10 catch and effort data are provided in Appendix B, Table B-21.

Escapement and Goal Assessment

The Columbia River ocean escapement of adult early and late coho stocks was 208,100 fish, down significantly from the 1991 return of 930,300 adults and the fifth lowest return since 1971 (Appendix B, Table B-20). However, ocean escapement for both early and late stock components of Columbia River coho was sufficient to meet all hatchery production goals while providing for normal inriver recreational fishery opportunities and limited inriver commercial harvest.

WASHINGTON COASTAL STOCKS

Willapa Bay Coho

Inside Harvest

Run size, harvest and escapement data for Willapa Bay coho are presented in Appendix B, Table B-23.

The total gillnet catch of coho in Willapa Bay was 10,700 fish. This is a reduction of 89 percent from the 1991 catch of 95,500 coho and 79 percent less than the 1980-1990 average of 52,000 fish. This reduction of catch and run size is consistent with the preseason prediction of a poor run and with the poor marine survivals of coho in many areas in 1992. Recreational catch estimates are not yet available.

TABLE III-2. Estimated weekly **effort** (in angler trips) and **catches** of chinook and coho in the 1992 **Buoy 10 recreational** fisheries.^{a/} (Page 1 of 1)

Week Number	Ending Date or Period	Angler Trips	Catch		Catch Per Trip
			Chinook	Coho	
31	Aug. 2	4,726	179	3,143	0.70
32	Aug. 9	10,162	370	3,499	0.38
33	Aug. 16	20,189	2,037	13,238	0.76
34	Aug. 23	21,828	4,675	3,451	0.37
35	Aug. 30	21,953	2,186	5,625	0.36
36	Sept. 6	14,066	698	3,631	0.31
37	Sept. 13	12,547	393	7,406	0.52
38	Sept. 20	5,626	86	2,178	0.40
39	Sept. 27	2,584	31	427	0.18
40-43	Oct. 25	1,800	0	484	0.27
Total		115,481	10,655	43,082	0.47

a/ Includes boat-based and shore-based fisheries at Clatsop Spit and the jetties of the Columbia River.

Escapement and Goal Assessment

Willapa Bay coho are managed for hatchery production. Escapement to Willapa Bay hatcheries in 1992 was approximately 15,900 fish, well above the program requirements. No estimates of natural spawning escapement are made.

Grays Harbor Coho

Inside Harvest

Run size, harvest and escapement data for Grays Harbor coho are presented in Appendix B, Table B-25.

The 1992 Grays Harbor coho run was predicted to be poor. With this expectation, terminal mixed-species fisheries were designed to minimize coho catches within the constraints of allocation and escapement needs. The total Grays Harbor gillnet catch was 15,700 coho. This included 700 coho in the non-Indian gillnet fishery, 13,900 by the Quinault treaty Indian fishery, and 1,100 by the Chehalis Tribe. The total gillnet catch was only 13 percent of the 1991 catch of 124,900 coho. Recreational catch estimates are not yet available. However, the poor coho run and the failure of the Buoy 13 fishery to develop in 1992 should produce recreational catches much lower than those observed in recent years.

Escapement and Goal Assessment

Grays Harbor coho are managed for natural production. Natural spawning escapement estimates are not yet available, but returns are expected to meet the goal of 35,400 fish.

Final escapements to Grays Harbor hatcheries are not yet available. Escapements are expected to meet on-station needs, but may not be adequate to meet all cooperative rearing program needs.

Quinault River Coho

Inside Harvest

Historical terminal run size, harvest and escapement for Quinault River coho are presented in Appendix B, Table B-27.

Quinault River coho are managed for hatchery production. The treaty Indian gillnet fishery targeted on hatchery coho from early September through mid-November. The total gillnet harvest of 5,200 coho was 24 percent of the 1991 level.

Escapement and Goal Assessment

Preliminary data indicate that hatchery and natural escapements of Quinault River coho in 1992 were 4,200 and 4,100 fish, respectively. Hatchery escapement goals were achieved for Quinault River coho.

Queets River Coho

Inside Harvest

Historical terminal run size, harvest and escapement for Queets River coho are presented in Appendix B, Table B-30.

Queets River fisheries were established by preseason agreement and based on preseason abundance estimates and planned Council ocean fisheries. The treaty Indian gillnet fishery was structured to target on returning hatchery coho during September and early October, followed by a reduced level of fishing to update natural coho and chinook run sizes through mid-October. The inseason updates indicated that the natural coho run was below the preseason forecast. The total harvest of fall coho by the net fishery was 2,050 fish, 20 percent of the catch taken in 1991. A relatively small river recreational fishery operated through November.

Escapement and Goal Assessment

Analysis of spawning escapement survey data for Queets River coho has not yet been completed. Based on the inseason run size and inriver catch estimates, the spawning escapement is estimated at 4,400 adults, below the lower end of the escapement goal range (5,800).

Hoh River Coho

Inside Harvest

Historical terminal run size, harvest and escapement for Hoh River coho are presented in Appendix B, Table B-33.

The preseason terminal run size forecast for Hoh River coho was 4,900 natural fish and 1,400 hatchery fish. Management of fall coho proceeded without a preseason agreement between WDF and the Hoh Tribe regarding the allowable level of fishing and fishing schedule because of uncertainty over the preseason forecast.

The tribal fall fishery on the Hoh River began on a schedule of one day per week, with monitoring of the flow pattern and cumulative catch of coho. The fishery was managed to achieve a harvest rate of approximately 30 percent.

The tribal fishery caught 1,400 coho, compared to 1,300 fish in 1991. The inriver recreational fishery was expected to catch 300 adult coho from this stock.

Escapement and Goal Assessment

Spawning escapement is estimated at 3,000 adults, based on a preliminary assessment of spawning ground survey data, within the management goal range established for this stock (2,000 to 5,000).

Quillayute River Coho

Inside Harvest

Historical terminal run size, harvest and escapement for Quillayute River summer and fall coho are presented in Appendix B, Table B-36.

The summer coho run in the Quillayute River was managed primarily for its hatchery component. The treaty Indian gillnet fishery targeted on this run from mid-August through mid-September, harvesting 1,300 fish.

The Quillayute River fall coho harvest was based on a preseason management agreement. The treaty Indian fall coho fishery commenced in mid-September, catching 7,000 fish. The inriver recreational fishery was expected to harvest 300 fish.

Escapement and Goal Assessment

The preseason agreement provided for a spawning escapement within the established range for Quillayute River coho. The preliminary postseason escapement estimate for the fall coho run was 8,600 fish, a decrease from the 1991 escapement of 9,500 fish, but within the management goal range of 6,300 to 15,800 fish. The escapement goals for summer and fall coho hatchery stocks were all exceeded. The natural summer coho run escapement estimate is not yet available.

PUGET SOUND STOCKS

Puget Sound Coho

Inside Harvest

Commercial inside fishery harvest of Puget Sound coho is managed on the basis of 6 regional management stock units: Strait of Juan de Fuca, Nooksack-Samish, Skagit, Stillaguamish-Snohomish, South Puget Sound and Hood Canal. Harvest of coho for each management unit is regulated according to the natural spawning escapement or hatchery program escapement goal for that unit. Commercial net and troll harvest (treaty Indian and non-Indian) for all coho stocks combined is presented in Appendix B, Table B-37. The 1992 total Puget Sound commercial catch of coho was 386,900 fish, a 35 percent decrease from the 1991 catch of 591,700 coho. This reflects the general decline of Puget Sound coho stocks in 1992 relative to 1991. Non-Indian harvest was 97,900 coho, a decrease of 49 percent from the 193,800 caught in 1991. Treaty Indian net and troll fisheries harvested 289,000 coho, a 27 percent decrease from the 397,900 caught in 1991.

A total of 1,200 coho were caught in the Strait of Juan de Fuca (Washington Areas 5 and 6C) by the treaty Indian troll fishery in 1992. No non-Indian trolling was conducted in Puget Sound waters.

Historic coho recreational catches in the Puget Sound sport fishery for the years from 1976-1991 are listed in Appendix B, Table B-38.

Escapement and Goal Assessment

Estimates of 1992 natural spawning escapements are unavailable at this time. Historic hatchery and natural run component escapements and net catches for each Puget Sound region of origin are presented in Appendix B, Table B-40.

The Hood Canal stock unit is managed for a natural run escapement goal of 19,100 adult spawners. Anticipated low abundance of the Hood Canal natural stock in 1992 and harvests impacting this stock throughout its range were expected to result in a spawning escapement below the goal for this stock in 1992. Similarly, the Skagit River stock was not expected to meet its natural escapement goal of 30,000 adult coho, nor was the Stillaguamish River stock expected to meet its natural escapement goal of 17,000 coho.

Puget Sound hatchery coho escapement and egg-take goals were met in all regions in 1992.

COASTWIDE GOAL ASSESSMENT SUMMARY

A summary of 1992 performance for coho salmon by management system and stock in relation to escapement goals is presented in Table III-3.

TABLE III-3. Summary of 1992 performance for **coho** salmon by management system and stock in relation to escapement goals (preliminary data). (Page 1 of 1)

System and Stock	1992 Escapement Goal	Escapement Goal Assessment
Columbia River and Oregon Coastal Coho (OPI)	OCN spawning escapement of 135,000 adults.	Preliminary OCN escapement is 131,400 adults, 97 percent of the goal. Hatchery egg-take goals achieved.
Washington Coastal Coho	Natural spawning escapements within 1983 court-ordered range for Quillayute, Queets and Hoh rivers. Grays Harbor natural escapement of 35,400; meet hatchery egg-take goals; meet treaty Indian obligations.	Quillayute and Hoh rivers natural escapements within goal range. Queets River natural stock below lower end of escapement range. Grays Harbor natural escapement estimate unavailable, but expected to meet goal. Hatchery egg-take goals achieved. No information available on catch allocation.
Puget Sound Coho	Meet escapement objectives for natural and hatchery stocks. (Preseason expectations were that Hood Canal, Stillaguamish and Skagit rivers natural escapement goals would not be met in 1992.) Meet treaty Indian allocation requirements, and inside non-Indian fishery needs for 6 management units.	Data not available for natural spawning escapement. Hatchery egg-take goals generally met. No information available on catch allocation.