

### III. COHO AND PINK SALMON MANAGEMENT ASSESSMENT

#### Oregon Production Index (OPI) Area Coho Management

##### Management Goals and Preseason Expectations

The Council manages coho as a unit from Leadbetter Point, Washington south to the U.S.-Mexico border (the OPI area). Columbia River and Oregon coastal coho are the principal stocks caught in this area. North of Cape Falcon the Columbia River hatchery and Washington coastal natural stocks are of primary management consideration. California and Oregon fisheries south of Cape Falcon are managed for maximum utilization of hatchery production while achieving the annual escapement goal for Oregon coastal natural (OCN) stocks. The OCN stock spawning escapement goal for 1985 was 175,000 adults, an increase of 36 percent over the 1982 brood year escapement of 129,000.

The preseason abundance estimate for principal OPI coho stocks and the determination of allowable harvest involved consideration of a proposed alternative to the established methodology. The total 1985 coho stock abundance was predicted to be a record low. The usual procedure utilized by the SPDT (see discussion in Chapter V and the Council's 1985 preseason reports) showed that achievement of the OCN escapement goal would essentially require complete closure of OPI area ocean fisheries. The proposed alternative methodology by ODFW utilized a separate abundance estimate for OCN coho that showed the escapement goal could be nearly achieved with an OPI area ocean harvest of 356,000 fish. While the major emphasis of coho management in this region was the Oregon coastal coho stock, concern was also expressed over expected poor abundance of late returning Columbia River hatchery stock.

An estimation of 1985 private hatchery stock size and catch contribution to the OPI area was made independently. The total estimated preseason abundance of private hatchery fish was 96,800 adults.

The Council adopted regulations for a total allowable harvest impact on coho in the OPI area of 356,000 fish, consisting of 332,000 public hatchery and wild fish and 24,000 private hatchery fish. The catch was distributed with 131,000 coho provided in the Columbia River area (Leadbetter Point to Cape Falcon) and 225,000 coho south of Cape Falcon. The Council adopted framework amendment was used to allocate coho between user groups within management units.

The SPDT, using procedures described in the framework plan, estimated the OCN coho escapement would be 105,200 fish to Oregon coastal streams; 60 percent of the 1985 rebuilding goal. The alternative analysis, suggested by the ODFW and WDF, indicated that the OCN coho escapement would be 172,600 coho, nearly equaling the 1985 OCN rebuilding goal of 175,000.

##### Ocean Fisheries

Troll - The fishery between Cape Blanco and Cape Falcon opened for coho (all salmon) on July 1 under a total coho quota south of Cape Falcon of 45,000 harvestable fish and a provision for an additional 10,000 fish hooking mortality for both the all-salmon and chinook seasons. The all-salmon season operated under a special regulation which limited the retention of coho to

only one coho for each legal chinook retained, plus one additional coho, per landing. This season closed July 26, when the coho quota was reached. An all-species-except-coho troll season extended from July 27 through October 31.

The coho fishery south of Point Delgada opened June 1 and terminated on September 30. This fishery was not required to close when the coho quota for the area south of Cape Falcon was reached.

The total ocean troll landings south of Cape Falcon were 54,900 coho, 22 percent above the preseason quota of 45,000. The majority of the harvest, 43,800 coho, came from the Cape Blanco to Cape Falcon area. The remainder, 11,100 coho, was harvested in California south of Point Delgada. No troll fishery was allowed in the area between Point Delgada and Cape Blanco.

For all ocean troll fisheries south of Cape Falcon, the total 1985 harvest impact was 98,900 coho (54,900 harvest plus an ODFW postseason estimate of 44,000 hooking mortality), 80 percent above the preseason projected impact. A major factor in the higher postseason impact assessment was the 328 percent increase in troll effort over 1984 in the Cape Falcon to Cape Blanco area, which increased the troll hooking mortality estimate.

Ocean landings in the Columbia River area troll fishery (Leadbetter Point to Cape Falcon) were 32,800 coho, 228 percent above the inseason adjusted quota of 10,000 fish (see discussion in the north of Cape Falcon coho assessment section for details of the Columbia River area fishery).

Recreational - The ocean recreational salmon season opened February 16 in California. Oregon, from Cape Blanco to the Oregon-California border was open May 25 through May 31. All of Oregon south of Cape Falcon opened on July 1. Oregon closed its south of Cape Falcon ocean coho recreational fishery on September 2 and California closed its fishery on November 17. California initiated a Monday and Tuesday closure on salmon fishing north of Point Delgada, effective July 19 through August 31, due to higher than expected catches of chinook and concern for the depressed Klamath River chinook stock.

The ocean recreational fishery south of Cape Falcon landed a total of 166,700 coho, 2 percent below the quota of 170,000. Oregon landings totaled 151,500 and California landings totaled 15,200.

The total recreational harvest in the Columbia River area was 110,800 coho, 12 percent above the preseason quota. Details of this fishery are discussed in the north of Cape Falcon assessment section.

Table III-1 details the ocean troll and recreational harvest and impacts for the OPI area.

Ocean Catch of Private Hatchery Stock - Private hatchery coho contribution to OPI area fisheries was estimated postseason at 54,900 fish compared to a preseason expected harvest of 24,000 fish. The postseason catch does not include an estimate of private hatchery troll hooking loss evaluated to be approximately 6,900 fish of the total troll "shaker" mortality of 44,000 coho for south of Cape Falcon. This estimate was primarily based on coded-wire tags using procedures similar to those employed in 1984.

Table III-1. Ocean harvest and hooking mortality impacts for coho salmon by all fisheries in the OPI area during the 1985 season with comparable catches for 1984 and 1983 in thousands of fish.

Fishery by Management Area	1985 Preseason Quota	Ocean Catch (thousands of fish)			
		1985 <sup>a/</sup>	Percent of 1985 Preseason Quota	1984	1983
<u>Troll</u>					
Leadbetter Point-Cape Falcon	10.0 <sup>b/</sup>	32.8	328 <sup>b/</sup>	20.6	23.2
South of Cape Falcon	45.0 <sup>c/</sup>	54.9 <sup>d/</sup>	122	64.0 <sup>e/</sup>	374.9 <sup>e/</sup>
Oregon	-	43.8	NA	17.0	316.7
California <sup>f/</sup>	-	11.1	NA	47.0 <sup>e/</sup>	59.9 <sup>e/</sup>
Troll Total	55.0 <sup>c/</sup>	87.7 <sup>d/</sup>	159	84.6 <sup>e/</sup>	398.1 <sup>e/</sup>
<u>Recreational</u>					
Leadbetter Point-Cape Falcon	99.0	110.8 <sup>f/</sup>	112	44.8 <sup>g/</sup>	123.3
Cape Falcon-U.S.-Mexico Border	170.0	166.7	98	131.5 <sup>e/</sup>	136.6 <sup>e/</sup>
Oregon	-	151.5	NA	112.5	109.7
California <sup>f/</sup>	-	15.2	NA	19.0 <sup>e/</sup>	26.9 <sup>e/</sup>
Recreational Total	269.0	277.5 <sup>f/</sup>	103	176.3 <sup>g/e/</sup>	259.9 <sup>e/</sup>
Total OPI Ocean Fisheries	324.0 <sup>c/b/</sup>	365.2 <sup>d/f/</sup>		260.9	658.8

a/ Preliminary.

b/ Adjusted downward inseason from 32,000 preseason quota.

c/ Adjusted downward for preseason estimate of 10,000 coho hooking mortality south of Cape Falcon during all-species-except coho and 1 to 1 chinook to coho ratio troll fishery.

d/ Does not include the postseason hooking mortality estimated at 44,000 coho in south of Cape Falcon chinook and coho troll fisheries.

e/ California has updated 1983 and 1984 ocean troll and sport catch.

f/ Includes fishery catch of 10,500 coho from Buoy 10 fishery in the mouth of Columbia River, August 18-22, until Columbia River area ocean fishery closed plus 300 fish caught illegally in the ocean north of Klipsan Beach.

g/ Includes a postseason estimate of 800 coho from May chinook-only fishery, Klipsan Beach to Queets River.

## Inside Fisheries

Since the ocean recreational salmon season remained open through Labor Day, estuarine fisheries did not develop to any extent in 1985 until after the ocean closure. Harvest information for the inside fisheries is not yet available except for Tillamook Bay where sport anglers accounted for 18,700 trips and caught 400 coho and 1,400 chinook from September through October 31.

Oregon coastal inriver sport coho catches are not available for 1985, but probably approximate the 1978-1980 average catch of 4,400 coho.

The total Buoy 10 (Columbia River mouth) season effort amounted to 32,200 angler trips with a total catch of 2,700 chinook and 25,400 coho. In 1984, when the inriver fishery opened August 8, effort totaled 67,400 trips and anglers caught 12,200 chinook and 74,400 coho. Details of this fishery are provided in the north of Cape Falcon coho assessment and in Table III-2.

## Spawning Escapement

Public Hatchery Escapements - Preliminary estimates of coastal hatchery stock returns to Oregon facilities (south of Cape Falcon) and to the Klamath River hatcheries stand at 26,400 adults (Table III-3), 28 percent below the 1984 return. For the Oregon coast, approximately 16,500 adult coho returned to hatchery facilities, 52 percent below the 1984 level. An additional 7,900 hatchery fish (preliminary) are estimated to have returned to Oregon coastal locations from off station releases (Table III-4). For Klamath River hatcheries, about 9,900 adults returned (Table III-3).

Private Hatchery Escapements - Total adult coho returns to Oregon private aquaculture facilities were 309,700 (Table II-4).

OCN Escapements - Spawning surveys have not yet been completed on the Oregon coast. A preliminary assessment of surveys through January 20 indicates an escapement of 166,700 naturally spawning adults.

## Goal Assessment

It is estimated that the 1985 Oregon coastal natural escapement goal of 175,000 will be approached or exceeded following completion of spawning surveys.

Postseason evaluations indicate that enough coho escaped to inland areas to meet Klamath River and Oregon coastal public hatchery goals, and provide inriver harvest.

All coho quotas in the OPI area were exceeded with the exception of the south of Cape Falcon recreational fishery. A comparison of 1985 quotas and catches with comparison to 1984 and 1983 catches appears in Table III-1. A review of OPI catch and escapement since 1970 is shown in Table III-5.

Table III-2. Estimated effort and catch in the 1985 Buoy 10 sport fishery by weekly and open fishing periods.

Week No.	Ending Date or Period	Angler Trips	Catch		Catch/ Trip
			Chinook	Coho	
<u>WEEKLY SUMMARY</u>					
33	Aug. 18	2,535	630	2,520	1.24
34	Aug. 25	6,134	1,467	7,675	1.49
35	Sept. 1	11,579	235	7,982	0.70
36	Sept. 8	5,543	176	2,983	0.56
37	Sept. 15	2,306	70	2,341	1.04
38	Sept. 22	1,057	3	868	0.82
39	Sept. 29	579	0	407	0.70
Clatsop Spit (bank fishing)		<u>2,423</u>	<u>74</u>	<u>611</u>	<u>0.28</u>
Total		32,156	2,655	25,387	0.87
<u>FISHING PERIOD SUMMARY</u>					
Aug. 18-22		8,669	2,097	10,195	
Aug. 31-Sept. 2		15,093	303	10,082	
Sept. 6-30		<u>5,971</u>	<u>181</u>	<u>4,499</u>	
		29,733	2,581	24,776	
Clatsop Spit (bank fishing)		<u>2,423</u>	<u>74</u>	<u>611</u>	
Grand Total		32,156	2,655	25,387	

Table III-3. Preliminary 1985 adult escapement (thousands of fish) to ODFW salmon hatcheries on the Columbia River and Oregon coastal streams and CDFG hatcheries on the Klamath River compared with recent escapements from 1972-1984 and the 1985 management goal.

Hatchery Location and Species	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985 <sup>a/</sup>	Management Goal <sup>b/</sup>
<u>Columbia River (ODFW)</u>															
Above Bonneville															
Spring-Summer Chinook	-	-	-	-	-	0.1	0.2	0.1	0.1	0.4	0.4	0.7	0.4	2.2	1.4
Fall Chinook	-	-	-	3.0	3.9	4.9	4.1	1.1	1.8	3.4	5.7 <sup>c/</sup>	9.4 <sup>d/</sup>	7.0 <sup>d/</sup>	5.4	10.8 <sup>d/</sup>
Coho	1.1	2.6	6.0	0.8	3.6	0.2	2.9	2.4	1.7	0.3	1.4	0.4	0.6	1.0	-
Below Bonneville <sup>e/</sup>															
Spring Chinook	5.8	9.2	16.4	5.9	6.6	12.7	14.1	7.7	7.0	9.8	14.0	12.3	18.0	11.3	10.0
Fall Chinook	21.2	32.3	20.6	18.8	37.5	25.9	40.2	24.7	22.1	33.0	31.4	18.5	12.6	19.5	22.0
Coho	22.1	15.4	52.0	20.6	39.3	10.2	57.6	38.8	39.2	19.2	51.8	20.5	43.1	44.8	14.5
<u>Oregon Coastal (ODFW)</u>															
Spring Chinook	-	-	-	-	2.9	2.4	4.4	7.0	7.9	2.5	4.1	3.9	5.6	8.7	3.0
Fall Chinook	4.1	4.2	1.6	2.1	0.5	4.2	1.6	2.0	1.8	1.8	2.3	4.0	3.3	3.4	3.5
Coho	12.9	18.4	35.1	4.9	38.7	6.5	5.6	23.0	22.4	21.5	15.8	12.8	34.7	16.5	18.0 <sup>f/</sup>
<u>Klamath River (California)</u>															
Coho	0.1	8.0	0.5	0.3	4.3	0.9	1.8	3.0	3.6	2.9	4.9	4.0	2.0	9.9	2.3

a/ Preliminary returns through January 20, 1986.

b/ Hatchery escapement goals include number of adult fish needed to meet 1985 agency production (Salmon/Trout Enhancement Program and Department Hatchery production goals) and do not include private hatchery needs.

c/ Includes 4,900 upriver bright fall chinook at Bonneville and Cascade hatcheries.

d/ All fish are upriver bright fall chinook at Bonneville and Cascade hatcheries.

e/ Includes Willamette River hatcheries.

f/ Includes 2,000 excess adults for distribution in priority streams and 6,000 to provide eggs for coho fingerling releases to augment natural production.

Table III-4. Estimated escapement (thousands of fish) of Oregon coastal adult coho, 1971-1985.

Year	Hatchery Escapement		Tenmile Lakes Escapement	Natural Spawning Escapement <sup>a/</sup>	Total Estimated Escapement to Coast
	Total Returns to Facility	Returns from Off-Station Releases			
1971	29.1	-	28.0	302.4	-
1972	12.9	5.7	8.0	120.6	147.2
1973	18.4	4.5	13.0	148.0	183.9
1974	35.1	7.5	4.5	130.4	177.5
1975	4.9	0.9	2.5	157.8	166.1
1971-75 Average	20.1	-	11.2	171.8	-
1976	38.7	16.8	3.5	161.7	220.7
1977	6.5	2.5	4.0	62.9	75.9
1978	5.6	2.0	3.0	74.5	85.1
1979	23.0	15.8	2.5	172.2	213.5
1980	22.4	13.8	4.0	107.5	147.7
1981	21.5	9.5	4.5	72.7	108.2
1982	15.8	13.3	4.1 <sup>a/</sup>	128.6	161.8
1983	12.8	7.0	2.5	57.2	79.5
1984	34.7	5.5	5.0	200.1	245.3
1985 <sup>b/</sup>	16.5	7.9	4.5	166.7 <sup>c/</sup>	195.6
Goal	18.0	-	-	175.0 <sup>d/</sup>	-

a/ May include some private hatchery strays after 1978.

b/ Preliminary (as of January 30, 1986).

c/ Preliminary peak count estimate of spawning adults expanded from index stream surveys through approximately February 1, 1986.

d/ Interim 1985 goal; long-term goal 200,000.

Table III-5. OPI adult coho returns (thousands of fish), 1970-1985.<sup>a/</sup>

Year	Ocean Fisheries		Inland Escapement		Total OPI	Private Hatchery Fish in OPI Ocean Catches (estimate)	OPI Excluding Private Hatchery Fish <sup>c/</sup>
	Troll	Sport	Coastal <sup>b/</sup>	Col. R.			
1970	1,394.0	475.2	52.7	872.2	2,794.1		
1971	2,422.1	681.7	29.7	524.3	3,657.8		
1972	1,214.9	533.6	19.0	269.0	2,036.5		
1973	1,257.4	422.1	31.3	286.8	1,997.6		
1974	1,995.3	636.8	43.5	452.9	3,128.5		
1975	1,027.8	441.6	6.6	292.2	1,768.2		
1976	2,793.5	931.1	59.8	326.3	4,110.7		
1977	632.8	392.5	10.3	87.0	1,122.6		
1978	1,051.6	503.0	10.2	297.3	1,862.1		
1979	1,005.8	319.6	41.7	264.3	1,631.4	63.0	1,568.4
1980	482.8	502.4	39.4	284.8	1,309.4	53.6	1,255.8
1981 <sup>d/</sup>	783.3	328.0	33.6	162.4	1,307.3	142.0	1,165.3
1982 <sup>d/</sup>	689.3	270.6	35.6	435.9	1,431.4	122.1	1,309.3
1983 <sup>d/</sup>	398.1	259.9	18.2	97.1	773.3	110.3 <sup>e/</sup>	663.0
1984 <sup>d/</sup>	88.1 <sup>f/</sup>	174.9	37.9	392.8 <sup>g/</sup>	693.7	35.0 <sup>e/</sup>	658.7
1985 <sup>d/</sup>	131.7 <sup>h/</sup>	264.3	36.3	349.7 <sup>i/</sup>	782.0	54.9 <sup>e/</sup>	727.1

a/ Components are Troll: California, Oregon, and Ilwaco.

Sport: California, Oregon, and Ilwaco.

Columbia: Gillnet catch, hatchery, and dam escapements.

Oregon Coast: Hatchery escapements and Winchester Dam counts (Umpqua).

California: Klamath River hatchery escapements.

Excludes: Natural spawning escapements and private hatchery returns.

This table differs from the previous year as California has updated and finalized ocean catch statistics for 1977-1980. Also, minor adjustments made in Columbia River escapement data base.

b/ Includes estimates of adult returns from off-station hatchery releases and the number of fish entering hatchery facilities and Winchester Dam counts.

c/ Adjusted OPI excludes catch of private hatchery fish and is identical to total OPI for 1970-1978.

d/ Data are preliminary.

e/ Based on ocean recoveries of coded-wire tags corrected for marked/unmarked ratio of fish returning to private hatchery facilities.

f/ Includes estimated hooking mortality of 24,000 coho during all-species-except-coho troll fishery south of Cape Falcon, including California.

g/ Includes lower Columbia River estuary catch of 74,400 fish, Buoy 10-Astoria-Megler Bridge, Oregon and Washington catch combined.

h/ Includes estimated hooking mortality of 44,000 coho during all-species-except-coho troll fishery from Cape Falcon to Cape Blanco.

i/ Includes lower Columbia River estuary catch of 25,400 fish, Buoy 10-Astoria-Megler Bridge, Oregon and Washington catch combined.

## Coho Management North of Cape Falcon

### Management Goals and Preseason Expectations

Management goals for fisheries which impact coho in the area north of Cape Falcon are described in the Council's framework plan (Section 3.1.1.2, page 3-3). The stock composition in this area is complex, varying by time and area according to stock specific migration patterns and abundance. Annually the total allowable coho impact is determined based upon the status of particular critical, or relatively depressed, stocks which are significantly affected by recreational and troll fisheries.

In the area north of Leadbetter Point, primary consideration is given to Washington coastal and Puget Sound origin stocks. In the Columbia River management area, south of Leadbetter Point, contribution to the catch made by stocks originating from the Columbia River and Oregon coastal rivers increases significantly, and management emphasis changes accordingly.

Preseason estimates of stock abundance for 1985 indicated that the escapement goal for natural coho from the Skagit River would not be achieved without complete elimination of U.S. ocean and Puget Sound fishery impacts. The Council adopted an overall ocean fishery regulatory scheme which, coupled with inside fishery harvest agreements, would result in a minimum spawning escapement for Skagit River coho of 18,000 adults. Generally, seasons were structured to avoid the relatively higher concentration of Skagit River coho in the northern areas while maintaining opportunities for the various participating fisheries.

Other stocks identified as having critically low abundance and affecting management in the area north of Cape Falcon were Columbia River late hatchery and Oregon coastal natural coho (see Coho South of Cape Falcon).

While these critical stocks were the primary focus for management in this area in 1985, the impact on other stocks was considered in terms of the affect on allowable harvest in other fisheries (e.g., Grays Harbor, coastal rivers, and Puget Sound) and spawning escapement objectives. Additionally, the allowable harvest in this area was influenced by fishery regulatory plans south of Cape Falcon.

### Ocean Fisheries

Non-treaty Troll - Non-treaty troll fishery opportunity for coho harvesting occurred in two separate, all-species fisheries. The total fishery impact was measured by combining catch and an estimate of hooking mortality in an all-species-except-coho fishery directed at pink salmon.

The July 15 through July 18 all-species fishery between Cape Alava and Leadbetter Point was restricted by a harvest quota of 78,500 coho and was scheduled to operate until July 31 or until the quota was reached. The total coho catch after just four fishing days was 136,300 fish. Unexpectedly high effort and extremely good catch success resulted in the quota being rapidly achieved. To compensate for this overharvest, the Council adjusted planned regulations for the pink directed fishery, scheduled to be opened August 3 through August 31 north of Carroll Island, and the all-species fishery in the

Columbia River catch area. For the pink fishery, the originally adopted harvest quota of 31,200 coho was eliminated and coho landings were not allowed. Fishery induced mortality (hook and release) was estimated postseason at 3,500 based on pink landings, incidence of coho per pink from a 1983 pink fishery gear study, and a mortality rate of 30 percent. Actual coho incidence in the fishery was not measured.

The all-species troll fishery, scheduled to begin August 21 in the Columbia River area with a coho harvest quota of 32,000, was altered by the Council by (1) reducing the fishery area to that part of the Columbia River area between the red buoy line and Cape Falcon; (2) reducing the quota to 10,000 coho; and (3) limiting the duration of the fishery to one 24 hour period. This adjusted season represents the smallest, distinctly identified salmon troll fishery on record in terms of time (planned or inseason) or allowable harvest. Ocean landings in this one-day troll fishery were 32,800, 228 percent above the inseason adjusted quota of 10,000 fish.

Treaty Indian Troll - The treaty Indian ocean troll fishery was constrained by a 75,000 coho quota for May through September. This quota was apportioned by tribal fishery managers into separate periods to control the rate of coho and chinook harvest. The Makah, Quileute, Hoh, and Quinault tribes closed their ocean troll fisheries on September 4 upon attainment of the quota. A fishery was conducted in ocean management areas by the Makah Tribe from September 10 through September 11 and a coho-only ceremonial and subsistence fishery in area 4B during three weeks in September harvested approximately 700 coho. The total May through September coho harvest by treaty Indian ocean troll fisheries was 87,200 fish. In areas east of 4B, treaty Indian troll fisheries conducted by the Makah and Klallam tribes harvested an estimated 800 coho during 1985.

Recreational - The recreational fishery north of Cape Falcon was managed on the basis of three subareas, the total allowable coho harvest being subdivided according to a historical (1979-1982) harvest pattern. Inseason actions were primarily directed at controlling the rate of chinook harvest, as planned during the preseason period.

The coho harvest quota for the Neah Bay-LaPush area (28,400) was reduced by 3,000 fish on August 14, in exchange for 750 chinook from the non-treaty troll quota. Without such a quota transfer, the recreational fishery would have been stopped on the basis of the chinook quota, with approximately half the coho quota remaining uncaught. This fishery harvested a total of 25,400 coho, within 100 fish of the quota and was closed on September 2.

The Westport area recreational fishery harvested a total of 73,600 coho, about 400 fish less than the quota amount. No inseason actions directed at coho were enacted.

The Columbia River area recreational fishery was constrained by a coho harvest quota of 99,000 fish. Stock specific fishery impacts estimated preseason did not include impacts of a Buoy 10 area recreational fishery. On August 18, the Buoy 10 area (Columbia River mouth to the Astoria-Megler Bridge) was opened to recreational fishermen under an agreement that coho harvested in that area would be included in the ocean quota. The ocean and Buoy 10 area fisheries were closed concurrently at midnight on August 22 when it was estimated the

coho quota was reached. The combined coho catch was 11,800 fish in excess of the quota. Following the closure, a small number of illegal landings were made of fish caught in the ocean area south of Leadbetter Point. The total coho harvest, including the Buoy 10 area catch for the period August 18 through August 22 (10,200) and illegal ocean catches, was 110,800 fish.

#### Columbia River Coho

Inside Fisheries - Coho harvest statistics for Columbia River commercial and recreational fisheries are presented in Appendix B, Table B-20. The Columbia River non-treaty gillnet fishery harvested 190,000 coho compared to 189,100 coho caught in the 1984 season and an average of 199,400 taken during the 1971-1975 period. The treaty Indian mainstem commercial setnet coho catch was 4,600 fish compared to 1,600 taken in 1984 and an average of 9,100 during the period 1971-1975. The recreational fishery in the area between Buoy 10 and the Megler-Astoria Bridge reopened following closure of the adjacent ocean area; first, for three days over the Labor Day weekend (August 31 through September 2) and then again from September 6 through September 29. Total harvest in this area for these openings was 14,600 coho. Including the earlier, August 18 through August 22 opening catch, the total Buoy 10 coho harvest was 25,400, much less than the 1984 Buoy 10 catch of 74,400. Angler trips for the 1985 fishery totaled 32,200 compared to 67,400 in 1984 (Table III-2). An additional 600 coho were taken in upriver mainstem recreational fisheries.

Spawning Escapement - The Columbia River coho ocean escapement of late and early stock components combined was 353,700 adults, eight percent less than the 1984 total run size (Appendix B, Table B-20). The actual total return in 1985 was approximately double the preseason expected return. The late stock component abundance estimate is 128,900 adults and the early stock return is estimated to be 224,800 adults.

Goal Assessment - Ocean escapement for both late and early production components of Columbia River coho was sufficient to meet hatchery production goals and provide for significant inside fisheries.

#### Washington Coastal Coho

Inside Fisheries and Spawning Escapements - A stock by stock description of inside fisheries and spawning escapements is provided below. Cold, dry weather conditions during the late fall affected run entry patterns and timing for spawning of natural stocks along the Washington coast and in Puget Sound. Estimates presented are preliminary and are likely to be changed when spawning ground survey data are completed. Annual estimates of total inriver run size, harvest, and escapement for each coastal river are provided in Appendix B, Tables B-22, B-24, and B-25.

Willapa Bay - Total Willapa Bay gillnet catch was 34,800 coho compared to 50,600 in 1984 and the recent five-year average harvest of 36,900. Sport fishery harvest for 1985 is unavailable at this time. Catches were well below expected levels due to the lower than predicted return to Willapa Bay. Willapa Bay coho are managed for hatchery production. Escapement of hatchery coho to Willapa Bay facilities in 1985 was 24,900 adults which met all program requirements.

Grays Harbor - Grays Harbor coho runs returned well below predicted levels in 1985. The total gillnet catch was 10,600 including 9,200 by the Quinault Tribe, 900 by the Chehalis Tribe, and 500 by the non-Indian fishery. This compares with 13,200 harvested in 1984 and the recent five-year catch average of 29,500. Estimates of sport catch are not available at this time, but were well below the record high level of 1984.

Escapement of hatchery coho to Grays Harbor facilities totaled only 7,900, well below the goal of 14,000 adults. Estimates of naturally spawning coho are not yet available but evidence suggests they will be well below the escapement goal.

Quinault River - The Quinault River treaty Indian gillnet fishery, directed at hatchery coho, operated from late September through mid-November. Total gillnet harvest was 7,300 coho, one-third of the 1984 record high harvest and 40 percent below the 1980-1984 average harvest. A few coho were caught by a treaty Indian commercial hook and line fishery. Estimates of hatchery and natural coho escapement in the Quinault River are not presently available.

Queets River - The estimated total return of fall coho to the Queets River was 9,500. The preliminary estimate of natural run size was 6,100, 5,200 (46 percent) below expectations. The gillnet fishery operated in accordance with a management agreement between WDF and the Quinault Tribe. The gillnet fishery shifted emphasis to fall chinook at the conclusion of the inseason evaluation period. The season total harvest of fall coho by the net fishery was 3,800, about 70 percent above the 1980-1984 average harvest. Of this catch, 1,900 were natural and 1,900 were hatchery. The river sport fishery was projected to take 300 adults.

The preliminary estimate of Queets River natural coho escapement is 4,000 adults, about 29 percent below the 1980-1984 average.

Hoh River - The return of fall coho to the Hoh River is predominantly natural fish. Due to the poor reliability of the inseason run-size estimator, the preseason forecast of 6,400 fish was used for management purposes. The gillnet fishery operated in accordance with an agreement between the WDF and the Hoh Tribe. This run size allowed a season long Indian gillnet fishery ranging from two to five days per week. The season catch was 3,400, about three times the recent five-year average. The river sport fishery took approximately 100 adults.

The preliminary estimate of Hoh River wild coho escapement is 2,100 adults, 36 percent below the 1980-1984 average.

Quillayute River - The summer coho run in the Quillayute River was managed primarily for its hatchery component. The treaty gillnet fishery targeted on this run from mid-August through mid-September. The total gillnet harvest was 1,800, 29 percent of the recent five-year average catch. The non-treaty river sport catch was 100 adults.

The Quillayute River fall coho run was managed for natural stock production objectives. The gillnet fishery operated in accordance with a management agreement between WDF and the Quileute Tribe. The total terminal run size for

Quillayute fall coho is estimated at 16,900, comprised of 15,300 natural and 1,600 hatchery fish. This run size allowed a season long fishery ranging from two to five days per week. Treaty gillnet catch was 8,800 coho, nearly three times the recent five-year average. The gillnet natural coho catch was 7,700, and the hatchery coho catch was 1,100. The river sport catch was expected to be 300 adults.

Preliminary spawning ground counts indicate that escapement of Quillayute River natural summer coho was 300, the lowest on record. Preliminary estimates for fall coho indicate a natural escapement of 7,500 adults, equal to the average escapement for the 1980-1984 period.

Goal Assessment - Natural coho spawning escapement goals were not achieved for Queets River and Grays Harbor stocks. Ocean escapement of all natural stocks was less than preseason expectations.

### Puget Sound Coho

Inside Fisheries - Puget Sound coho stocks are utilized in both commercial and recreational inside fisheries.

Commercial Fishery - Commercial inside fishery harvest of Puget Sound coho is managed on the basis of six regional management stock units: Strait of Juan de Fuca, Nooksack-Samish, Skagit, Stillaguamish-Snohomish, South 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 harvest (treaty Indian and non-treaty) of coho in Puget Sound is presented in Appendix B, Table B-29. On the average, the coho harvest has increased over the last 15 years. The 1985 commercial catch was 38 percent greater than the 1984 harvest and 31 percent greater than the average catch for the period 1971-1980. Non-treaty net harvest was 422,200 coho compared to 296,900 caught in 1984 and an average catch of 468,500 coho for the period 1971-1980. Treaty Indian net fisheries harvested 733,300 coho compared to 482,700 in 1984 and an average catch of 356,600 for the period 1971-1980. A total of 1,500 coho were caught in Puget Sound waters east of the Sekiu River by treaty Indian and non-treaty troll fisheries.

Recreational Fishery - Recreational coho harvest data for Puget Sound during 1985 are unavailable at this time. Historical recreational harvests are presented in Appendix B, Table B-30.

Spawning Escapement - Estimates of the 1985 natural spawning escapements are unavailable at this time. Hatchery and natural run component escapements and catches for all Puget Sound origin stock units, for the years 1976-1985 are presented in Appendix B, Table B-31. The Skagit and Stillaguamish-Snohomish units are managed for natural run escapement goals of 30,000 and 87,000 adult spawners, respectively.

Goal Assessment - Generally, hatchery egg take goals were achieved during 1985. While total escapements appear relatively constant during the last nine years, individual units may have mixed patterns of achieving their escapement goals. For example, wild run escapement goals have only been achieved three times in the last nine years for the Skagit River stock but have been achieved in six of the last nine years for the Stillaguamish-Snohomish stock unit.

## Coastwide Summary for Coho

A summary of 1985 performance for coho salmon by river system and stock in relation to escapement goals is presented in Table III-6.

### Pink Salmon Management

Council ocean fisheries, in particular the non-treaty troll, intercept a relatively small portion of the total returning pink salmon run destined primarily for the Fraser River and Puget Sound tributaries. Fraser River stock abundance was forecast at 16,000,000 and the Puget Sound run at 1,900,000. Escapement goals for 1985 were 5,000,000 and 900,000 for the two stocks, respectively. No specific inside-ocean fishery harvest sharing objective was defined for preseason planning.

The Council's 1985 regulations with respect to pink salmon harvest in the area off the northern Washington coast focused on the need to protect Skagit River natural coho. The ability to selectively harvest pink salmon, demonstrated for the troll fishery during the 1983 season, was critical to the acceptability of non-treaty troll fishing regulations (see Coho Management North of Cape Falcon, Chapter III, page III-9). The non-treaty troll fishery was expected to harvest approximately 250,000 pink salmon.

A pink salmon directed non-treaty troll fishery operated in the area between Carroll Island and the U.S.-Canada border from August 3 through August 31. Terminal gear was restricted to bare, blued hooks and flashers. Inseason Council action altered preseason adopted harvest controls for this fishery in an attempt to provide additional protection for coho stocks. A harvest guideline of 200,000 pinks replaced the coho quota under the coho non-retention regulation instituted inseason. Inseason action by the State of Washington further modified regulations for this fishery, restricting landing of chinook to not more than one per 20 pink salmon. This action was necessary to prevent targeting on chinook, which was considered to be contradictory to the management objectives of the fishery (see Chinook Management Assessment, Chapter II, page II-18). Total catch of pinks in the directed fishery was 95,500 and the total catch in all non-treaty troll fisheries north of Cape Falcon was 106,000 pinks. Less than 100 pinks were caught during IPSFC fisheries operating in the Strait of Juan de Fuca.

The treaty Indian troll fishery included a pink-only season conducted August 15 through August 31. The total treaty Indian troll fishery pink harvest, including catches during all-species seasons was 6,600.

The recreational fishery historically harvests only a small number of pink salmon. Total pink catch for the 1985 season was 3,100 or approximately one percent of the all-species salmon catch.

Puget Sound commercial net catch of pink salmon in 1985 totaled 4,170,500, including 2,185,900 taken by treaty Indian fisheries and 1,974,600 by non-treaty fisheries.

Escapement information for pink salmon is not available.

Table III-6. Summary of 1985 performance for coho salmon by river system and stock in relation to escapement goals (1985 data preliminary).

System	1985 Goal	Was goal met in 1985?
Columbia River and Oregon Coastal Coho (OPI)	Oregon coastal natural escapement of 175,000 (200,000 long-term).	Natural escapement is likely to meet or exceed the goal. Current peak-count estimate is 166,700.
Washington Coastal Coho	Natural spawning escapements within 1983 court-ordered range for Queets, Hoh, and Quillayute. Grays Harbor escapement of 35,400; meet treaty obligations.	Mixed. Grays Harbor and Queets River natural escapements below goals. All other Washington coastal coho stocks within their respective ranges.
Puget Sound Coho	Meet escapement objectives, treaty allocation requirements, and inside non-Indian fishery needs for six management units.	Data not available.