CHAPTER II

CHINOOK SALMON MANAGEMENT

CENTRAL VALLEY CHINOOK STOCKS

Central Valley Chinook stocks include fall, late-fall, winter, and spring stocks of the Sacramento and San Joaquin rivers and their tributaries. Two of these stocks are listed under the ESA: (1) Sacramento River winter Chinook, listed as endangered in January 1994; and (2) Central Valley spring Chinook, listed as threatened in September 1999.

Management Objectives

The following objectives guided Council management of Central Valley Chinook salmon stocks in the 2012 fisheries: (1) for SRFC, an escapement goal of 245,800 hatchery and natural area adults; and (2) for SRWC, the ESA consultation standard specifying a maximum predicted age-3 impact rate of 13.7 percent and restrictions concerning the duration, timing, and minimum size limits for commercial and recreational ocean salmon fisheries south of Point Arena. Harvest impacts on Central Valley Chinook were a primary management concern in fisheries south of Point Arena.

Regulations to Achieve Objectives

In 2012, fishing opportunity south of Cape Falcon was constrained by the California Coastal Chinook consultation standard that limited the KRFC age-4 ocean harvest rate to a maximum of 16 percent and the exploitation rate limit on ESA-listed tule Chinook. Fisheries south of Point Arena were also constrained by the SRWC consultation standard. Season and size limit details are presented in Tables I-1 and I-3.

Commercial

Harvest impacts on SRWC were a primary management concern in fisheries south of Point Arena. To meet the terms of the SRWC ESA consultation standard, the commercial season south of Point Arena opened on May 1 and closed on September 30 (with a closure for part of June between Point Arena and Point Sur). In addition, an October 1-12 fishery was open Monday through Friday. Commercial fisheries south of Point Arena had a 27-inch minimum size limit through August, reducing to 26 inches during September and October. No specific restrictions were required for ocean salmon fisheries to meet the escapement goal for SRFC. Under the 2012 regulations, the projected hatchery and natural area adult escapement of SRFC was 455,800, which exceeded the escapement goal, defined by the control rule, of 245,800 hatchery and natural area adults.

Recreational

Recreational seasons and size limits were structured to meet the SRWC ESA consultation standard. To meet the 2012 age-3 impact rate cap of 13.7 percent, the minimum size limit for recreational fisheries south of Point Arena was 24 inches through July 5, and 20 inches thereafter. Recreational fisheries opened on April 7 south of Horse Mountain, May 1 in the KMZ, and March 15 between Cape Falcon and Humbug Mt. Recreational fisheries in the KMZ continued through September 9, while fisheries north and south of the KMZ extended later into the fall.

Inside Harvest

Recreational angling for salmon in Central Valley rivers was expected to result in a catch of 74,200 adult SRFC. Harvest of SRFC in 2012 Central Valley river fisheries totaled 62,189 adults.

Since 1990, regulations have closed the mainstem Sacramento River to retention of salmon from January 15 to July 15, a period when winter Chinook adults are thought to be most abundant. Beginning in 2004, the retention closure was enacted earlier, on January 1 from the Carquinez Bridge to Red Bluff, in response to recovery of winter Chinook coded-wire-tags (CWTs) in the sport fishery. Owing to low Chinook escapement to the Stanislaus, Tuolumne, and Merced rivers during the last decade, the majority of the San Joaquin River has been closed to recreational salmon fishing.

Escapement and Management Performance

Chinook catch in commercial and recreational fisheries south of Cape Falcon were generally at or below preseason expectations. Overall, commercial Chinook fisheries caught approximately 62 percent of preseason expectations and recreational Chinook fisheries caught approximately 85 percent of preseason expectations (Table I-7).

Sacramento River Fall Chinook

Under the 2012 regulations, the projected spawning escapement in the Sacramento River Basin was 455,800 hatchery and natural area fall Chinook adults. A total of 283,871 hatchery and natural area SRFC adults were estimated to have returned to the Sacramento River basin for spawning in 2012 (Table II-1, Figure II-1).

Fall Chinook returns to Sacramento River hatcheries in 2012 totaled 120,956 adults, and escapement to natural areas was 162,915 adults. Available data indicate hatchery-produced fish constitute a large portion of the Sacramento River naturally spawning fall Chinook population. Table II-1 and Figure II-1 display historical natural area and hatchery fall spawner escapement estimates. For a more detailed breakdown of the historical escapement see Appendix B, Tables B-1 and B-2.

Under the terms of Amendment 16 to the salmon FMP, SRFC are considered to be overfished when the 3-year geometric mean spawning escapement falls below the minimum stock size threshold (MSST) of 91,500 hatchery and natural area adult spawners. The stock was considered overfished in 2012, as the 2009-2011 geometric mean was 83,530 spawners. In April 2012, the Council adopted a rebuilding plan for SRFC which specified that the stock will be considered rebuilt when the 3-year geometric mean spawning escapement exceeds S_{MSY} = 122,000, and specified a rebuilding period of one year. The 2010-2012 geometric mean spawners is 161,471 (Table II-6), which exceeds the SRFC S_{MSY}. As a result, the SRFC stock should be considered rebuilt, achieving this status within the one-year rebuilding period.

An estimate of the 2012 SRFC exploitation rate is not yet available. However, fisheries in 2011 resulted in an exploitation rate of 0.42, well below the MFMT (0.78). Thus, overfishing did not occur in 2011 (Table II-6).

Sacramento River Winter and Spring Chinook

Spawner escapement of endangered winter Chinook salmon in 2012 was estimated to be 2,529 adults and 145 jacks. This estimate was derived from a carcass survey conducted on the upper Sacramento River and includes winter Chinook captured in the Keswick trap, which provides brood stock to Livingston Stone National Fish Hatchery. Spawner escapement estimates derived from Red Bluff Diversion Dam counts began in 1967, and from 1987 to 2008 the estimates were derived by expanding counts made during the period of dam operation (which overlaps with approximately 15 percent of the winter run migration period). Escapement estimates from the carcass survey are considered to better represent winter run spawner escapement owing to the small proportion of the winter run migration sampled during the Red Bluff Diversion Dam operation period. Red Bluff Diversion Dam gates were permanently removed in 2012, and escapement estimates based on dam passage will no longer be available.

Escapement of spring Chinook to the Sacramento River system in 2012 totaled 22,432 fish (jacks and adults), most of which (an estimated 18,694 fish) returned to upper Sacramento River tributaries; the remaining 3,738 fish returned to the Feather River Hatchery. No estimate of spring Chinook escapement to the upper mainstem Sacramento River could be made in 2012 due to changes in Red Bluff Diversion Dam operations; removal of the Red Bluff Diversion Dam gates in 2012 will prevent estimation of spring Chinook escapement to the upper mainstem Sacramento River in the future. The method used to estimate the spring Chinook return to the Feather River Hatchery was modified in 2005. In previous years, the estimate was equal to the number of Chinook that entered the hatchery during the early period of Chinook spawning. Since 2005, prior to the spring run spawning period, fish that entered the hatchery were tagged and returned to the river; the number of tagged fish that re-entered the hatchery during the spring run spawning period was used as the estimate of spring Chinook escapement in the Feather River. The fish that were tagged at the hatchery and returned to the river but did not re-enter the hatchery during the spawning period were counted in the natural fall run survey and reported as Feather River fall Chinook. The natural area spawner surveys in the Feather River are not currently capable of separating the spring and fall runs.

Historical spawner escapements for Sacramento River winter and spring Chinook salmon are presented in Appendix B, Table B-3.

San Joaquin River Fall Chinook

San Joaquin River spawning areas are used primarily by fall Chinook. The estimated San Joaquin River fall Chinook spawning escapement in 2012 totaled 13,714 jacks and adults in natural areas and 7,557 jacks and adults to hatcheries (Appendix B, Tables B-1 and B-2 provide historical spawner escapements). Salmon production in the San Joaquin River is determined largely by spring outflows three years earlier. Since 1986, spawner returns to the San Joaquin River have constituted less than 10 percent of the total Central Valley escapement for fall run Chinook.

NORTHERN CALIFORNIA COAST CHINOOK STOCKS

Northern California stocks include fall and spring stocks north of the entrance to San Francisco Bay. Primary river systems in this area are (from north to south) the Smith, Klamath, Mad, Eel, Mattole, and Russian rivers. Coastal Chinook stocks south of the Klamath River were listed as threatened under the ESA in September 1999.

Management Objectives

The NMFS ESA consultation standard for California Coastal Chinook influenced management of 2012 Chinook fisheries south of Cape Falcon, Oregon. KRFC provided the basis for the NMFS ESA consultation standard for California Coastal Chinook, which limits the ocean harvest rate on age-4 KRFC to no more than 16.0 percent. KRFC were managed in accordance with their control rule specifying a

maximum adult natural spawner reduction rate of 68 percent, resulting in a spawner escapement of 86,300 adults in natural areas. The available harvest of KRFC was shared equally between non-tribal and Klamath River tribal fisheries (tribes with federally-recognized fishing rights).

Regulations to Achieve Objectives

To achieve the management objectives for California coastal Chinook and KRFC, the adopted regulations were designed to result in: (1) a Klamath River run of 381,000 fall Chinook adults, resulting in a spawner escapement of 86,300 adults to natural areas, taking into account projected river fishery impacts of 242,900 adults and returns to basin hatcheries; (2) 50 percent (160,000) of the allowable adult harvest for tribal subsistence and commercial fisheries; (3) 42.3 percent (67,600) of the non-tribal harvest to the Klamath River recreational fishery; and (4) 10.3 percent (approximately 9,500 fish) of the ocean harvest to the KMZ recreational fishery. The age-4 ocean harvest rate resulting from the above configuration was forecast to be 16.0 percent. Season and size limit details are presented in Tables I-1 and I-3.

Commercial

Commercial fisheries south of Cape Falcon were constrained during the spring and summer months primarily to meet the California Coastal Chinook ESA consultation standard of a maximum KRFC age-4 ocean harvest rate of 16.0 percent. Several quota fisheries in the Oregon and California KMZ were open in 2012, and the Oregon KMZ was open without a quota for the months of April and May. Commercial fishing opportunity in areas north and south of the KMZ were generally more extensive relative to the recent years. Oregon held two fall state-waters-only terminal area fisheries in 2012 (Table I-1).

Recreational

Recreational fisheries were permitted in the KMZ from May 1 through September 9. Fisheries both north and south of the KMZ began earlier in the spring; March 15 for the area between Cape Falcon and Humbug Mountain and April 7 for the area south of Horse Mountain. These fisheries also extended later into the fall than recreational fisheries in the KMZ. Fall state-waters-only terminal recreational fisheries were allowed for two areas in Oregon (Table I-3).

Inside Harvest

Yurok and Hoopa tribes shared a federally-reserved right of 50 percent (160,000) of the available harvest surplus of adult Klamath fall Chinook. The State of California managed the river recreational fishery under a 67,600 adult fall Chinook quota. Tribal adult harvest was 101,476, which was 63 percent of the quota (Appendix B, Table B-5). The estimated recreational fishery harvest was 13,574 adult fish, which was 20 percent of the quota. Harvest estimates from streams outside the Klamath River Basin were not available.

Escapement and Management Performance

In the Oregon portion of the KMZ, commercial quotas were largely attained. In June, 76 percent of the quota was caught, while in July the quota was exceeded by 29 percent. An impact-neutral adjustment to the August quota that accounted for both the June underage and the July overage resulted in a reduction of the August quota from 1,000 to 915 Chinook. The September California KMZ commercial fishery caught 87 percent of the quota (Table I-6).

Threatened California Coastal Chinook

Historical indices of spawner abundance, or actual spawning escapement estimates, for Chinook salmon in California coastal streams outside of the Klamath River Basin are limited. Cursory, nonsystematic surveys are conducted on one tributary of the Mad River and two tributaries of the Eel River. Video

counts of Chinook passage at Mirabel Dam on the Russian River have been conducted since 2000 (Appendix B, Table B-7).

The 2012 preseason forecast of the KRFC age-4 ocean harvest rate was 16.0 percent (the ESA consultation standard for California Coastal Chinook is no more than 16.0 percent). The postseason evaluation of the 2012 KRFC age-4 ocean harvest rate was not available.

Klamath River Fall Chinook

The 2012 preliminary postseason river run size estimate for KRFC was 302,108 adults compared to the preseason-predicted ocean escapement (river run size) of 381,000 adults. The escapement to natural spawning areas was 122,018 adults, which was 1.4 times the preseason prediction of 86,300. The estimated hatchery return was 55,939 adults. Jack returns to the Klamath Basin totaled 21,473, including 15,705 that escaped to natural spawning areas. Table II-2, Figure II-2, and Appendix B, Table B-4 present historical harvest and escapement data for KRFC.

Spawning escapement to the upper Klamath River tributaries (Salmon, Scott, and Shasta Rivers), where spawning was only minimally affected by hatchery strays, totaled 38,723 adults. The Shasta River has historically been the most important Chinook salmon spawning stream in the upper Klamath River, supporting a spawning escapement of 30,700 adults as recently as 1964, and 63,700 in 1935. The escapement in 2012 to the Shasta River was 27,593 adults, which is the highest adult escapement since 1964. Escapement to the Salmon and Scott Rivers was 3,561 and 7,569 adults, respectively (Appendix B, Table B-6).

The geometric mean of KRFC natural area adult escapement in 2010, 2011, and 2012 was 59,665, which exceeded both the MSST (30,525) and the MSY spawner escapement level. Estimates of the KRFC exploitation rate are not yet available for 2012. Fisheries in 2011 resulted in an exploitation rate of 0.38, which is well below the MFMT (0.71). Therefore, KRFC should not be considered overfished or subject to overfishing (Table II-6).

OREGON COAST CHINOOK STOCKS

Oregon Coast Chinook stocks include all fall and spring stocks from Oregon streams south of the Columbia River. These stocks are categorized into two major subgroups based on ocean migration patterns. Although ocean harvest distributions overlap somewhat, they are categorized as either north or south/local migrating. North migrating Chinook stocks include stocks from the Elk River north, with the exception of Umpqua River spring Chinook. South/local migrating Chinook stocks include Rogue River spring and fall Chinook, Umpqua River spring Chinook, and fall Chinook from smaller rivers south of the Elk River.

Based on CWT analysis, the populations from 10 major north Oregon Coast (NOC) river systems from the Nehalem through the Siuslaw Rivers are harvested primarily in PSC ocean fisheries off B.C., SEAK and Oregon terminal area fisheries. NOC stocks are harvested to a much lesser degree in Council area fisheries off Washington and Oregon. Analysis of CWTs indicates the populations from five major mid-Oregon Coast (MOC) systems between the Coos and the Elk Rivers are harvested primarily in ocean fisheries off B.C., Washington, Oregon, and in terminal area fisheries. Minor catches occur in California fisheries and variable catches in SEAK troll fisheries. South/local stocks are important contributors to ocean fisheries off Oregon and northern California. Another central Oregon stock, Umpqua River spring Chinook, contributes primarily to ocean fisheries off Oregon and California, and to a lesser degree, off Washington, B.C., and SEAK.

Management Objectives

The conservation objective for Oregon Coast Chinook was an aggregate of 150,000 to 200,000 natural adult spawners, as indicated by peak spawner counts of 60 to 90 fish per mile in standard index surveys. This stock has been an abundant stock historically; therefore, preseason abundance estimates were not developed for this stock, and it has not been of critical management concern. ESA consultation standards for OCN coho, LCN coho, and California Coastal Chinook, and KRFC management objectives generally result in reduced Council-area ocean fishery impacts on Oregon south/local migrating Chinook stocks. Council area Chinook fisheries have minor impacts on most of the stocks originating from the NOC and MOC, which have a northerly marine distribution pattern.

Regulations to Achieve Objectives

The areas of primary management concern for ocean fisheries impacting Oregon Coast Chinook vary between the north and south/local migrating stocks, although there is some overlap. Preseason abundance estimates were not available for Oregon Coast Chinook; however, based on postseason abundance indicators, Council area fisheries impacts on these stocks have not significantly affected achievement of management objectives in recent years.

Oregon State waters terminal area fisheries in 2012 were adopted to provide additional harvest on robust hatchery or naturally produced fall Chinook. Special regulations for each of these seasons were implemented to maintain fishery impacts within conservation objectives. These regulations included season quotas, daily and weekly landing limits in commercial fisheries, and reduced daily and season bag limits and partial mark-selective restrictions in recreational fisheries. Season and size limit details are presented in Tables I-1 and I-3.

Inside Harvest

Inside recreational harvest of fall and spring Chinook occurred in most Oregon coastal estuaries and rivers. For the 2012 fisheries, conservative regulations were adopted with the intention of reducing impacts on some of these stocks. Complete estimates of the 2012 recreational Chinook harvest in freshwater areas were not available. Historical estimates of the recreational harvest of fall and spring Chinook, derived from Oregon Department of Fish and Wildlife (ODFW) salmon and steelhead angler catch record cards, are reported in Table II-3.

Escapement and Management Performance

The catch estimate for the two fall terminal area commercial fisheries was 738 Chinook.

Under the 2012 regulations, the STT expected the aggregate conservation objective for this stock would be met with the constraints required for California Coastal Chinook, KRFC, and LCN coho. Actual escapement was not estimated for the Oregon Coast Chinook stock aggregate; achievement of the aggregate 150,000 to 200,000 naturally spawning adults was assessed through peak spawner index counts of 60 to 90 adults per mile in nine index streams and included both spring and fall Chinook. Peak spawner index counts were based on traditional non-random surveys (e.g., stream surveys, dam counts, etc.). The aggregate Oregon coast goal of 150,000 to 200,000 naturally spawning Chinook adults was likely met in 2012. ODFW is developing alternate methodologies for establishing escapement goals for Oregon coastal Chinook stocks, including fall Chinook PSC indicator stocks. Upon completion of this process, the escapement goals and assessments for these stocks will likely change.

North Migrating Chinook

Index counts of adult spawners (peak count per index mile) were conducted for seven of the nine standard streams and used to measure natural spawner escapement trends for north migrating fall Chinook in 2012.

Data have been collected since about 1950 for most systems. Overall peak Chinook adult index spawner counts in 2012 were preliminarily estimated at 146 adults per mile, higher than the MSY spawner escapement level of 60 adults per mile.

The geometric mean of north migrating Oregon Coast Chinook adult escapement in 2010, 2011, and 2012 was 111 fish per mile, which exceeded both the MSST (30) and the MSY spawner escapement level. Estimates of exploitation rates were not available for 2011 or 2012, but earlier fisheries resulted in exploitation rates that were lower than the MFMT (0.78). Therefore, north migrating Oregon Coast Chinook should not be considered overfished or subject to overfishing (Table II-6).

South/Local Migrating Chinook

Standard fall Chinook spawning index escapement data for the smaller southern Oregon coastal rivers (south of the Elk River) were available for the Winchuck, Chetco, and Pistol Rivers (Appendix B, Table B-8). The estimated adults per mile in 2012 were preliminarily estimated at 39 adults per mile, lower than the MSY spawner escapement level of 60 adults per mile.

Rogue River carcass counts were used as an indicator of trends in escapement for naturally produced fall Chinook, but these surveys have not been conducted since 2004 (Table II-4). Two trend indicators of escapement for naturally produced spring Chinook were utilized: (1) Rogue River counts at Gold Ray Dam, and (2) Umpqua River counts at Winchester Dam (Table II-4). Gold Ray Dam was removed in October, 2010. For 2012 an estimate of natural spring Chinook escapement above the Gold Ray Dam site was made using the relationship of 2004-10 spawning ground surveys to the Gold Ray Dam passage. This estimate of 14,400 includes an unknown number jacks. Escapements based on these indicators continued an increasing trend in recent year's returns and the highest since 2003 (Figures II-3 and II-4).

The geometric mean of south/local migrating Oregon Coast Chinook adult escapement in 2010, 2011, and 2012 was 41 fish per mile, which exceeded the MSST (30); therefore, south/local migrating Oregon Coast Chinook should not be considered overfished. Estimates of exploitation rates were not available so an assessment of overfishing status was not possible, but based on exploitation rates for KRFC, it is unlikely that south/local migrating Oregon coast Chinook were subject to overfishing (Table II-6).

COLUMBIA RIVER BASIN CHINOOK STOCKS

Columbia River Basin Chinook salmon stocks include fall, summer, and spring stocks. NMFS has listed five Chinook ESUs within the Columbia Basin under the ESA, (1) SRW fall Chinook listed as threatened April 1992; (2) Snake River spring/summer listed as threatened April 1992; (3) upper Columbia River spring listed as endangered March 1999; (4) LCR Chinook listed as threatened March 1999; and (5) upper Willamette River spring listed as threatened March 1999.

The assessment below focuses on the five major stock groups of Columbia Basin fall Chinook: lower river hatchery (LRH) tule stock and lower river wild (LRW) bright stock, both of which are part of the ESA-listed LCR Chinook ESU; Spring Creek Hatchery (SCH) tule stock; upriver bright (URB) stock, which includes the ESA-listed SRW Chinook ESU; and mid-Columbia bright (MCB) hatchery stock. A brief assessment of Columbia River upper river summer Chinook is also included. Management details for Columbia River spring Chinook stocks are not discussed. Council-managed ocean salmon fisheries have very limited impacts on these stocks (less than a 2 percent exploitation rate in base-period fisheries); as a result, mid-Columbia spring stocks were removed from the FMP under Amendment 16 in December 2011. Appendix B, Tables B-12 through B-19, contain historical harvest and escapement data for fall, summer, and spring stocks. Appendix B, Table B-20 summarizes catch information for all three Chinook runs in the Columbia Basin. Additional information on these stocks and inriver fisheries can be found in the *Joint Staff Report: stock status and fisheries for spring Chinook, summer Chinook, sockeye, steelhead,*

and other species and miscellaneous regulations and the Joint *Staff Report concerning the fall in-river commercial harvest of Columbia River fall Chinook, summer steelhead, coho salmon, chum salmon, and sturgeon* published annually by the joint staffs of ODFW and WDFW.

Management Objectives

Council-area fisheries north of Cape Falcon in 2012 were managed to access SCH and LRH stocks while meeting the NMFS ESA consultation standards for the ESA-listed LCR Chinook ESU (both LCR natural tules and LRW) and SRW fall Chinook ESU. The standard for ESA-listed LCR natural tules was a total (ocean plus inriver) AEQ exploitation rate of no more than 41.0 percent, an increase from the ceiling rate of 37.0 percent in 2011. For preseason modeling, the estimated total exploitation rate on a composite of Washougal, Kalama, Cowlitz, and Big Creek hatchery tules was used as a surrogate for LCR natural tules. The NMFS ESA consultation standard for LRW was a North Lewis River fall Chinook spawning escapement of 5,700; the preseason forecast was for an escapement of 16,200. The standard for the SRW ESU was no less than a 30.0 percent reduction in the Snake River Fall Index (SRFI) from the 1988 through 1993 base period AEQ exploitation rate for all ocean fisheries combined.

No specific escapement goal was established for the ESA-threatened Snake River wild fall Chinook stock. However, in the Proposed Recovery Plan for Snake River Salmon, NMFS proposed a delisting goal for Snake River fall Chinook of an eight-year (approximately two generation) geometric mean of at least 2,500 natural origin spawners in the mainstem Snake River annually.

The NMFS ESA consultation standard for the threatened LCR natural tule Chinook was the primary constraint on Council-area Chinook fisheries north of Cape Falcon, and to a lesser extent, south of Cape Falcon.

Regulations to Achieve Objective

Fisheries north of Cape Falcon are managed with quotas to help ensure impacts to stocks do not exceed allowable limits and to ensure allocation objectives are met. The 2012, abundance of URB, Fraser River origin, and other stocks contributing to the southeast Alaska and British Columbia AABM fisheries and the corresponding allowable catch were similar to that in 2011. The 2012 preseason forecast of Columbia River stocks were also similar to that in 2011. The 2012 total allowable catch (TAC) in fisheries north of Cape Falcon was greater than in 2011.

The 2012 overall non-Indian Chinook total allowable catch (TAC) was 99,000 including an 8,000 mark-selective Chinook quota for a portion of the recreational fishery (non-mark-selective equivalent of 95,000). These compare to a 2011 non-Indian TAC of 64,600, including a 4,800 mark selective Chinook quota for a portion of the recreational fishery; the equivalent non-mark-selective TAC was 61,800. The 2012 overall TAC was divided into 47,500 commercial and 51,500 recreational (non-mark-selective equivalent of 47,500). The treaty Indian ocean troll TAC was 55,000 Chinook, and is applicable to the May-September period. This compares to a 2011 treaty Indian TAC of 41,000. Season and size limit details are presented in Tables I-1, I-2, and I-3.

Commercial

Non-Indian commercial fisheries north of Cape Falcon included a Chinook-directed fishery in May and June initially open seven days per week with no landing limit. Two-thirds of the overall non-Indian commercial Chinook quota north of Cape Falcon was allotted to the May-June time period to increase opportunity when Chinook were more available to the fishery. Inseason action was taken to limit the days per week and institute landing and possession limits toward the end of the season to ensure the quota of 31,700 Chinook was not exceeded.

The non-Indian commercial all-salmon fishery was scheduled for July 1 through September 17 with preseason quotas of 15,800 Chinook and 13,280 marked coho. The fishery was open Friday through Tuesday most weeks with various landing and possession limits for each open period. In addition, vessels were restricted to fishing and landing catch either north or south of Leadbetter Point during any one open period.

Recreational

The recreational fisheries north of Cape Falcon included a June mark-selective Chinook fishery and an all-salmon fishery (mark-selective for coho except in September in the areas south of the Queets River) during the late June-September time period.

The June mark-selective Chinook fishery was open in Areas 3 and 4 June 16 through June 30; Area 2 was open June 9 through 23, and the Columbia River Area was open June 9 through 22. The fishery operated as scheduled with a total catch of 7,700marked Chinook. The summer all-salmon fisheries north of Cape Falcon opened July 1 in Areas 3 and 4, June 24 in Area 2, and June 23 in the Columbia River area through the earlier of the coastwide quotas of 43,500 Chinook or 71,220mark-selective coho (modified from a preseason quota of 69,720 coho by impact-neutral transfers from the non-Indian commercial troll fishery and between sub-areas) or the automatic closure date of September 23 north of Leadbetter point and September 30 south of Leadbetter Point. The coho mark-selective restriction was lifted in the area between the Queets River and Leadbetter Point on September 1, and in the Columbia River area on September 3. The fishery closed as scheduled on the automatic closure dates with total catches of 27,800 Chinook and 33,100 marked and unmarked coho.

Treaty Indian

Treaty Indian ocean fisheries were similar in structure to recent years, with a May-June Chinook-directed fishery and a July to mid-September all-salmon fishery. Chinook quotas were 27,500 for the May-June fishery, 27,500 for the July-September fishery, and the coho quota in the all-salmon fishery was 47,500. The Chinook directed fishery ran through all of May and June and took 96% of the 27,500 Chinook sub-quota. The all species fishery had an impact neutral transfer from the Chinook directed fishery of 902 Chinook. This increased the sub-quota to 28,402 Chinook. The all species fishery ran the entire period (July1 to September 15), taking 99% of the Chinook quota and 78% of the coho quota.

Inside Harvest

Since the Columbia River Fishery Management Plan expired on December 31, 1998, fall Chinook in Columbia River fisheries were managed through 2007 under the guidance of annual management agreements among the *U.S.* v. *Oregon* parties. In 2008, a new 10-year management agreement was negotiated through the *U.S.* v. *Oregon* process, which included revisions to some inriver objectives. In particular, the *"2008-2017 U.S. v Oregon Management Agreement"* (2008-2017 MA) specified that with run sizes of at least 200,000 URB, including at least 6,000 SRW fall Chinook, the allowable URB impact rate would be 38.0 percent. NMFS used the URB impact rate as a proxy in the SRW consultation standard.

In 2012, the fall fisheries were managed to achieve the NMFS ESA consultation standards for threatened LCR natural tule and SRW Chinook, and the 2012 URB and SRW preseason forecast run sizes were both large enough to allow a 38.0 percent harvest rate in inriver fisheries per the 2008-2017 MA.

Within the ESA limitations there were harvestable numbers of salmon available for all major stocks in 2012. The postseason fall Chinook run reconstruction, however, was not completed in time for this

report. The preliminary catch estimates (adults) for the non-Indian commercial gillnet fisheries were 16,675 spring, 1,715 summer, and 58,050 fall Chinook, which included 10,057 spring, 23 summer, and 21,220 fall Chinook in Select Area (terminal) fisheries. The preliminary catch estimates (adults) for the treaty Indian fisheries were 16,302 spring, 7,824 summer, and 129,940 fall Chinook. The preliminary catch estimate (adults) for the recreational fisheries included 18,110 fall Chinook in the Buoy 10 fishery, and 14,122 spring, 3,281 summer, and 24,350 fall Chinook in mainstem fisheries below Bonneville Dam, 886 spring Chinook in mainstem fisheries above Bonneville Dam, and 12,510 fall Chinook in the Hanford Reach fishery above McNary Dam (Appendix B, Table B-20).

Escapement and Management Performance

All Columbia River summer and fall stocks met their escapement objectives (Table II-5). Preliminary estimates of river mouth returns based on inseason run updates were: 58,300 summer, 129,420 LRH; 16,240 LRW; 60,800 SCH; 295,800 URB; and 75,200 MCB. Estimates for SRW were unavailable. The total ocean escapement of the five fall stocks was 595.560 fall Chinook (Figure II-5). The estimated escapement for summer Chinook in 2012 was 52,528, exceeding the MSY spawner escapement objective of 12,143 adults established under FMP Amendment 16. The preliminary estimated natural area escapement (Hanford Reach, Yakima River, and above Priest Rapids Dam) for URB Chinook in 2012 was 94,615 exceeding the MSY spawner escapement level of 39,625 adults established under FMP Amendment 16.

The preliminary 2012 URB inriver harvest rate estimate was 45.5 percent. The total adult SRW, hatchery, and supplementation fall Chinook count at Lower Granite Dam in 2012 was 34,688, up from 25,249 in 2011. Estimates of SRW and supplementation fall Chinook spawning escapement in 2012 were not available. The eight-year mean of SRW natural origin spawners through 2011 was 3,125 fish.

Postseason estimates of exploitation rate on LCR natural tule or SRW for ocean fisheries were unavailable.

The overall ocean TACs for treaty Indian and non-Indian Chinook fisheries were not exceeded. All Council area fisheries north of Cape Falcon were closed before exceeding their final quotas.

The geometric mean of Columbia upper river summer Chinook adult escapement in 2010, 2011, and 2012 was 47,944, which exceeded the MSST threshold (6,072); therefore, Columbia upper river summer Chinook should not be considered overfished (Table II-6). Estimates of combined ocean and inriver exploitation rates were not available for 2011 and 2012, but the previous three years' exploitation rates were less than the MFMT (0.75); therefore, Columbia upper river summer Chinook should not be considered subject to overfishing (Table II-6).

The geometric mean of Columbia URB fall Chinook adult escapement in 2010, 2011, and 2012 was 100,354, which exceeded the MSST threshold (19,182); therefore, Columbia URB fall Chinook should not be considered overfished (Table II-6). Estimates of combined ocean and inriver exploitation rates were not available for 2011 and 2012, but the previous three years' exploitation rates were less than the MFMT (0.86); therefore, Columbia URB fall Chinook should not be considered subject to overfishing (Table II-6).

WASHINGTON COASTAL CHINOOK STOCKS

Washington coastal Chinook stocks include all fall, summer, and spring stocks from coastal streams north of the Columbia River through the western Strait of Juan de Fuca (west of the Elwha River, inclusive). This complex consists of several natural stocks, generally of small to medium-sized populations, and

some hatchery production (primarily Willapa Bay and Quinault River). Coastal stocks are not impacted significantly by Council-area ocean fisheries.

Management Objectives

Willapa Bay natural fall Chinook did not have a defined conservation objective in the Salmon FMP during the preseason process, although WDFW has a spawning escapement objective of 4,350 natural Chinook, which is based on peak density estimates and watershed area. Amendment 16 to the Salmon FMP, adopted in December 2011, included an MSY spawning escapement objective of 3,393, which was based on the WDFW objective.

Spawning escapement goals for natural stocks managed within this complex north of Willapa Bay, established in U.S. District Court by WDFW and the treaty Indian tribes, were recognized in the Council's FMP conservation objectives. Objectives for Grays Harbor and the North Coast river systems were established pursuant to the U.S. District Court order in *Hoh* v. *Baldrige*. However, annual natural spawning escapement targets may vary from the FMP conservation objectives if agreed to by WDFW and the treaty Indian tribes under the provisions of *Hoh* v. *Baldrige* and subsequent U.S. District Court orders. After agreement is reached on the annual targets, ocean fishery escapement objectives are established for each river, or region of origin, which include provisions for treaty Indian allocation and inside non-Indian fishery needs. No agreements on annual spawning targets for Washington coastal Chinook other than those in the FMP were made in 2012.

Regulations to Achieve Objectives

Preseason abundance forecasts for some Washington coastal Chinook stocks were available for the first time in 2008 for the Council preseason management process. Because Council area fishery impacts to Washington coastal Chinook stocks are negligible, ocean regulations are not generally used to manage these stocks. Season and size limit details are presented in Tables I-1, I-2, and I-3.

Willapa Bay Chinook

Inside Harvest

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

No Chinook-directed non-Indian gillnet fishery was conducted during July 2012 but there was an 84-hour marked Chinook-directed fishery in early August 2012. These fisheries, prior to August 16, are commonly referred to as the "summer dip-in" fishery; they occur irregularly because historically they were dependent on Columbia River tule abundance, which now includes the ESA-listed LCR natural tule stock. This fishery was generally assumed to harvest Columbia River tule stocks in a mix similar to adjacent ocean area catches; however, in light of recent catch composition information (>70 percent local Willapa Bay and Grays Harbor origin stock) this assumption has been questioned.

The 2012 pre-season forecast of Chinook returning to Willapa Bay was 45,739 fish (5,221 natural and 40,518 hatchery). There were eight 12-hour marked Chinook-directed non-Indian gillnet fisheries beginning August 21 through September 13. Retention of unmarked Chinook was prohibited. Total Chinook harvest in the non-Indian gillnet fisheries during 2012 was 9,726 fish, based on preliminary data. Recreational fisheries in the marine waters of Willapa Bay were open from June 9 through July 31, 2012, concurrent with the Ocean Marine Area 2 (ocean rules applied). From August 1, 2012 through January 31, 2013, Willapa Bay was open to recreational fishing with no more than three adults allowed to be harvested daily. Barbless hooks were required when fishing for salmon. Retention of chum and

unmarked Chinook was prohibited. Anglers were allowed to fish with two poles if they had a Two-Pole Endorsement.

Recreational salmon fisheries in tributaries to Willapa Bay varied in duration but were generally open August 1 through January 31, 2013. Retention of unmarked Chinook was prohibited. Single-point, barbless hooks were required in all areas. Recreational harvest estimates for 2012 were not available.

Escapement and Management Performance

During 2011, Chinook returning to hatcheries in the Willapa Bay watershed totaled 28,367 fish. Based on current hatchery production, this return was sufficient to achieve the goal of 9,800 total Chinook escapement to Willapa Bay hatchery facilities. An escapement estimate was unavailable for 2012.

An estimate of the 2012 natural spawning escapement was not available; the 2011 natural escapement was 3,119 Chinook, slightly below the FMP objective of 3,393. An estimated 2,855 natural Chinook were harvested in commercial and recreational fisheries in 2011, above the preseason expectation of 1,270.

The geometric mean of Willapa fall Chinook adult escapement in 2009, 2010, and 2011 was 2,638, which exceeded the MSST (1,696); therefore, Willapa Bay fall Chinook should not be considered overfished (Table II-6). Exploitation rate estimates were not available for 2011 and 2012. Estimates of exploitation rates for all Washington Coast fall Chinook are based on Queets River fall Chinook CWT analyses, and while ocean impacts for these fall stocks may be assumed to be similar, inside impacts may vary substantially. The estimated total exploitation rate for Queets fall Chinook in 2007 was 0.81, which exceeded the MFMT for Willapa Bay fall Chinook (0.78); however in 2008, 2009, and 2010 exploitation rates were 0.53, 0.59, and 0.64 respectively; therefore, Willapa Bay fall Chinook should not be considered subject to overfishing (Table II-6). The MFMT for Willapa Bay fall Chinook is also based on a proxy derived from an average value of other Chinook stocks; therefore, overfishing status based on total exploitation rates for Willapa Bay fall Chinook are less certain than for some other Washington Coast Chinook stocks.

Grays Harbor Chinook

Inside Harvest

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

The Quinault Indian Nation conducted a spring/summer commercial gillnet fishery on the Chehalis River and in Gray Harbor commercial fishing Areas 2A, 2A-1, C, and D in 2012. Mesh restrictions were imposed to allow targeting of spring/summer Chinook and White sturgeon. Six spring Chinook were reported in the harvest during these fisheries.

The non-Indian recreational season allowed a modified spring Chinook fishery in the Chehalis River during the spring Chinook management period. The non-Indian recreational season was open for the retention of one Chinook per day from May 1 through June 30 in the mainstem Chehalis River. Harvest of spring Chinook during this fishery is not available at this time. The report on harvest of spring Chinook by the Chehalis Tribe fishery is not available at this time. No summer non-Indian gillnet fishery directed at non-local Chinook stocks occurred in 2012.

The Quinault Indian Nation conducted a fall gillnet fishery harvesting a total of 3,988 fall Chinook in two separately scheduled areas: the first in the lower Humptulips River and adjacent Area 2C of Grays Harbor

and the second in the lower Chehalis River and adjacent areas of Grays Harbor, Areas 2D, 2A, and 2A-1. Fishing was restricted to east of Stearns Bluff in the Chehalis River, and Areas 2D, 2A, and 2A-1 to limit catch of Chinook, which tend to concentrate in deep areas off the mouths of the Johns and Elk rivers. The Chehalis area treaty Indian fishery caught 3,203 Chinook, which was about half of what was expected. The Humptulips area treaty Indian fishery reported harvest was also about half of what was expected. A total of 784 Chinook where caught. The combined Grays Harbor treaty Indian Chinook catch was 50.6 percent of what was expected.

The non-Indian gillnet fishery in Humptulips commercial Area 2-C was open for six days in mid-August through mid-September. Retention of all fall Chinook, coho, and chum was allowed. The Chinook harvest totaled 1,139, which was 64 percent higher than the expected harvest. The non-Indian gillnet fishery in the Chehalis River commercial Areas 2A and 2D was open for six 12-hour and one 24-hour periods in October. The retention on marked Chinook and all coho was allowed. A total of 80 Chinook were harvested during this fishery. This is 64 percent less than the expected harvest. The use of live boxes was required.

The recreational fishery in Marine Area 2-2 was open from September 16 through November 30. From September 16 to October 7, one Chinook and up to 2 wild coho per day were allowed. From October 8 to the end of the season, only coho retention was allowed. The fall recreational fishery in the Chehalis River was closed to Chinook and chum retention. In the fall recreational Humptulips River fishery from the mouth to confluence of the East and West forks, a daily limit of 3 adults, of which only one could be a Chinook, was allowed from September 16 through November 30. From December 1 through January 31, the daily limit was 2 adults, of which only one Chinook could be retained. Recreational harvest estimates were not available at this time.

Escapement and Management Performance

Chehalis River spring Chinook are of natural origin and managed for an escapement goal of 1,400 adults. The 2012 terminal run forecast for spring Chinook was 2,301 adult fish. The preliminary escapement estimate for 2012 is 959 spring Chinook.

Grays Harbor fall Chinook were managed for a natural spawning escapement goal of 14,600 adults. The 2012 Grays Harbor fall Chinook forecast was 25,621 natural and 4,086 hatchery adults. The return of hatchery-origin fall Chinook to Grays Harbor hatchery programs were sufficient to provide for 2013 fall Chinook production goals. The natural spawning escapement estimates for 2012 are not available at this time. The 2011 spawning ground escapement estimate for the Grays Harbor was 20,317, including 2,006 hatchery-origin fish. The natural escapements to the Chehalis River were 15,033 and to the Humptulips River it was 5,248.

Quinault River Chinook

Inside Harvest

Historical terminal gillnet harvest data for Quinault River Chinook stocks are presented in Appendix B, Table B-27.

A run of natural spawning spring/summer Chinook enters the river from April through July. The spring/summer Chinook run is typically small and any harvest is taken incidentally during fisheries directed at sockeye and steelhead. The tribal fishery harvested 15 spring/summer Chinook in 2012 primarily during its sockeye directed fishery.

The 2012 harvest of Quinault River fall Chinook was mostly hatchery-origin fish taken in September and October. The treaty Indian net catch totaled 5,090 fall Chinook.

Escapement and Management Performance

Quinault fall Chinook were managed for hatchery production. The 2012 fall Chinook spawning escapement estimate was not available. Hatchery fall Chinook egg-take goals for the Quinault River were attained at the Lake Quinault tribal hatchery.

Queets River Chinook

Inside Harvest

Historical terminal run size, catch, and escapement data for Queets River spring/summer and fall Chinook are presented in Appendix B, Tables B-29 and B-30, respectively.

The 2012 treaty Indian gillnet harvest of spring/summer Chinook remained closed during the spring/summer period through the last week of August. The non-Indian inriver recreational fishery was closed to retention of Chinook.

Fall Chinook were harvested from August 29 through November 4 by the treaty Indian fall gillnet fishery. The treaty Indian fishery was structured to target hatchery and natural coho while also harvesting Chinook at a total tribal plus non-tribal harvest rate of 40 percent. The treaty Indian gillnet fishery harvested 2,722 fall Chinook in the commercial fishery compared to a preseason expected catch of 2,392. Recreational fisheries targeted coho and Chinook during standard September 1 through November 30 schedules in the Queets and Clearwater Rivers. The on-reservation Salmon River recreational harvest was limited to retention of coho. Only coho and mark-selective Chinook retention was allowed for recreational fisheries within Olympic National Park waters (Queets mainstem upstream of the Quinault Indian Reservation, and lower section of the Salmon River). Catch estimates for 2012 recreational salmon fisheries were not available.

Escapement and Management Performance

The 2011 spawning escapement estimate for Queets River spring/summer Chinook was 373 adults, about 50 percent of the MSY spawner escapement goal of 700. The 2012 spawning escapement estimate was not available.

The geometric mean of Queets River spring/summer Chinook adult spawning escapement in 2009, 2010, and 2011 was 363, which is above the MSST (350); therefore, Queets River fall Chinook should not be considered overfished (Table II-6). Estimates of exploitation rates were not available for Washington coastal spring/summer Chinook stocks, but based on the limited inriver harvest rate and ocean harvest rates of Queets fall Chinook, it is unlikely that Queets River spring/summer Chinook were subject to overfishing in recent years (Table II-6).

The 2011, Queets River fall Chinook spawner survey estimate was 3,710. The 2012, fall Chinook spawner survey escapement estimate was not available; however, total fall Chinook escapement is expected to meet the minimum escapement goal of 2,500. The indicator Chinook originate from wild brood stock taken each year in the river.

The geometric mean of Queets River fall Chinook adult spawning escapement in 2009, 2010, and 2011 was 3,642, which exceeded the MSST (1,250); therefore, Queets River fall Chinook should not be considered overfished (Table II-6). More recent estimates were not available. Estimates of exploitation rates were not available for 2010 and 2011, but estimates from 2007, 2008, and 2009 were below the

MFMT (0.87); therefore, Queets River fall Chinook should not be considered subject to overfishing (Table II-6).

Hoh River Chinook

Inside Harvest

Historical terminal run size, catch, and escapement data for Hoh River spring/summer and fall Chinook are presented in Appendix B, Tables B-32 and B-33, respectively.

The 2012 Hoh River spring/summer Chinook terminal abundance forecast was 1,005 fish, 105 fish above the escapement goal of 900. The treaty Indian gillnet fishery occurred between the weeks of April 30 and August 13, and was scheduled for two days per week in weeks 19-23 and one day per week in weeks 24, 25, 27, 28, 31, and 33. Fishing was closed in weeks 26, 29, 30, 32, 34, and 35. Preseason targeted harvest rate (including ceremonial and subsistence catch), was 6 percent of the forecasted run Tribal regulation in 2012 required a minimum of an 8-inch stretch mesh during the first four weeks in order to minimize incidental take of steelhead kelts. The treaty Indian commercial gillnet fishery harvested 405 Chinook. Results of mark sampling and scales indicated that 272 of these were of hatchery origin (133 natural). An additional 11 hatchery and 9 native wild Chinook were harvested by the Hoh Tribe for Ceremonial and Subsistence purposes.

The non-Indian recreational fishery operated from May 16 through August 31, Wednesdays through Sundays, with a bag limit of one marked adult per day from the mouth to Willoughby Creek. A preliminary estimate of Chinook taken in the sport fishery was not available. Retention of unmarked fish was not allowed this year.

Hoh River fisheries for fall Chinook were based on an expected terminal run size of 2,683 adults, allowing for a terminal harvest rate of 34 percent. The spawning escapement was expected to be 1,772 adults.

The treaty Indian fishery targeted 21.5 percent of the terminal run. The treaty Indian gillnet fishery was scheduled for three days per week during weeks 36 through 45, and two days per week in weeks 46 through 49. The Hoh treaty commercial fishery caught approximately 586 wild Chinook out of an expected catch of 577, an estimated 10 Chinook were harvested for Ceremonial and Subsistence purposes. Results of mark sampling indicated that 74 hatchery Chinook were also harvested by the Hoh treaty commercial fishery.

The non-Indian recreational fishery extended from September 1 through November 30, with the river below Willoughby Creek open and a daily-bag-limit of six salmon, two of which could be adults. The portion of the river between Willoughby Creek and Morgan's Crossing was open October 16 through November 30. The delayed opening was to reduce impacts on spawning spring/summer Chinook in that reach. The river above Morgan's Crossing was closed to recreational salmon fishing. The sport fishery harvested an estimated 400 wild Chinook.

Escapement and Management Performance

The 2012 spawning escapement for Hoh River spring/summer Chinook is 915. The geometric mean of Hoh River spring/summer Chinook spawner escapement in 2009, 2010, and 2011 was 856, which exceeded the MSST (450); therefore, Hoh River summer Chinook should not be considered overfished (Table II-6). Estimates of exploitation rates were not available for Washington coastal spring/summer Chinook stocks, but based on the limited inriver harvest rate and ocean harvest rates of Queets fall

Chinook, it is unlikely that Hoh River spring/summer Chinook were subject to overfishing in recent years (Table II-6).

The preliminary 2012 spawning escapement estimate for Hoh River fall Chinook is 1,800. The geometric mean of Hoh River fall Chinook adult spawning escapement in 2009, 2010, and 2011 was 1,867, which exceeded the MSST (600); therefore, Hoh River fall Chinook should not be considered overfished (Table II-6). Estimates of exploitation rates were not available for Hoh River fall Chinook, but Queets River fall Chinook were used as a proxy. Exploitation rate estimates were not available for 2010 and 2011, but earlier estimates were below the MFMT (0.90); therefore, Hoh River fall Chinook should not be considered subject to overfishing (Table II-6).

Quillayute River Chinook

Inside Harvest

Historical terminal run size, catch, and escapement data for Quillayute River spring, summer, and fall Chinook are presented in Appendix B, Tables B-35 and B-36 respectively. Spring and summer Chinook are currently managed separately, but data for both are combined in Table B-35. All hatchery-origin fish are considered to be spring Chinook, and all natural spawners and tribal brood stock collections are considered to be summer Chinook. The management of these stocks is currently under review by the WDFW and Quileute Tribal co-managers.

The recreational and tribal fisheries for spring and summer Chinook were established by a preseason management agreement between WDFW and the Quileute Tribe. The total tribal catch for 2012 was 777 spring and 83 summer Chinook plus 19 spring and 1 summer Chinook for ceremonial and subsistence use. Estimates of 2012 recreational spring and summer Chinook harvest were unavailable.

The total 2012 Quileute Tribal harvest of fall natural Chinook was 2,785. Fall Hatchery Chinook was 35, and no uncounted catch for ceremonial and subsistence use. An estimate of the 2012 recreational catch was unavailable.

As in past years, WDFW required release of unmarked Chinook during July and August to reduce impacts of the recreational fishery on the natural summer Chinook stock. The fall recreational fishery from September through November proceeded with normal bag limits and schedule. The Quileute Tribe did not have a closure in their fishery this year, but as in past years, reduced their fishery to 29 hours per week during July and August to reduce impacts to summer Chinook.

Escapement and Management Performance

The 2012 management agreement called for an escapement goal of 200 hatchery spring Chinook. The actual rack return was 437, which exceeded hatchery requirements.

The summer Chinook run was managed to achieve an MSY spawner escapement of 1,200 adults, jacks, and brood stock collection combined. The preliminary estimated natural spawning summer Chinook escapement of 731 was under the escapement goal.

The geometric mean of Quillayute River summer Chinook spawner escapement in 2010, 2011, and 2012 was 685, which exceeded the MSST threshold (600); therefore, Quillayute River summer Chinook should not be considered overfished (Table II-6). Estimates of exploitation rates were not available for Washington coastal spring/summer Chinook stocks, but based on the limited inriver harvest rate and ocean harvest rates of Queets fall Chinook, it is unlikely that Quillayute River summer Chinook were subject to overfishing in recent years (Table II-6).

Terminal area fisheries on fall Chinook were managed for a target 40 percent harvest rate, and an MSY spawner escapement goal of 3,000 adults. The preliminary escapement estimate of 3,181 fall Chinook was above the escapement goal.

The geometric mean of Quillayute River fall Chinook adult spawning escapement in 20010, 2011, and 2012 was 3,880, which exceeded the MSST threshold (1,500); therefore, Quillayute River fall Chinook should not be considered overfished (Table II-6). Estimates of exploitation rates were not available for Quillayute fall Chinook, but Queets River fall Chinook was used as a proxy. Exploitation rate estimates were not available for 2010 and 2011, but earlier estimates were below the MFMT (0.87); therefore, Quillayute River fall Chinook should not be considered subject to overfishing (Table II-6).

Hoko River Chinook

Inside Harvest

Hoko River Chinook are primarily harvested in fisheries in southeast Alaska and northern British Columbia with minimal harvest in Council area and inside waters. Tribal and recreational fisheries in the Hoko River for Chinook salmon have not occurred since the early 1980's, although some catch is occasionally reported by anglers on WDFW Catch Record Cards.

Escapement and Management Performance

The preliminary escapement estimate of 603 Chinook was below the MSY spawner escapement goal of 850 and included 444 from the supplementation program (Appendix B, Table B-38).

The geometric mean of Hoko River summer/fall Chinook spawner escapement in 2009, 2010, and 2011 was 920, which exceeded the MSST threshold (425); therefore, Hoko River summer/fall Chinook should not be considered overfished (Table II-6). Estimates of exploitation rates were not available for 2010 and 2011, but estimates from 2007, 2008, and 2009 were well below the MFMT (0.78); therefore, Hoko River summer/fall Chinook should not be considered subject to overfishing (Table II-6).

PUGET SOUND CHINOOK STOCKS

Puget Sound Chinook stocks include all fall, summer, and spring stocks originating from U.S. tributaries in Puget Sound and the eastern Strait of Juan de Fuca (east of Salt Creek, inclusive). This stock complex consists of numerous natural Chinook stocks of small to medium-sized populations and significant hatchery production. The Puget Sound ESU was listed under the ESA as threatened in March 1999.

Management Objectives

Puget Sound Chinook stocks are listed under the ESA and were managed pursuant to the provisions of a WDFW/Tribal management plan approved under an ESA Section 4(d) rule promulgated by NMFS. This plan contains exploitation rate ceilings for ESA-listed Puget Sound stocks expressed in terms of constraints on total fishery rebuilding exploitation rates (RER) or of exploitation rates on fisheries south of the Canadian border for those stocks without RERs. The Council's annual management objectives for ESA-listed stocks are to meet the ESA consultation standards set forth by NMFS.

Regulations to Achieve Objectives

Puget Sound stocks contribute to fisheries off B.C., are present to a lesser degree off SEAK, and are impacted to a minor degree by Council-area ocean fisheries. Because Council-area fishery impacts to

Puget Sound Chinook stocks are negligible, ocean regulations are not generally used to manage these stocks. The only Council-area regulation affecting any of these stocks was closing the Cape Flattery Control Zone for the non-Indian commercial troll fishery. Season and size limit details are presented in Tables I-1, I-2, and I-3.

Inside Harvest

Commercial inside fishery harvest of Puget Sound Chinook was managed on the basis of six regional stock management units or, in some cases, component stocks within management units: Strait of Juan de Fuca, Nooksack-Samish, Skagit, Stillaguamish-Snohomish, South Puget Sound, and Hood Canal. Harvest was regulated according to the natural spawning escapement goal or hatchery program escapement goal for that unit. Commercial net and troll harvest (treaty Indian and non-Indian) is presented in Appendix B, Table B-39. These catches included some fish of non-Puget Sound origin. The total commercial harvest in Puget Sound in 2012 was 120,117 Chinook, compared to 111,082 Chinook caught in 2011. The 2012 non-Indian net catch was 9,053 Chinook, compared to 10,296 Chinook caught in 2011. The 2012 treaty Indian net and troll harvest was 111,064 Chinook, compared to 100,786 Chinook caught in 2011.

Chinook catches in the Puget Sound recreational fishery for years beginning in 1971 are presented in Appendix B, Table B-40. Catch estimates for the 2012 Puget Sound recreational fishery were unavailable.

Escapement and Management Performance

Puget Sound Chinook management goals for fishery planning processes in 2012 were compared to predicted exploitation rates to assess compliance with ESA consultation standards (Table II-5). Information to evaluate performance against these constraints was unavailable.

Historical hatchery and natural run component escapements and net catches for summer/fall Chinook for each Puget Sound region of origin are presented in Appendix B, Table B-40. Historical spring Chinook escapement data are presented in Appendix B, Table B-43.

Preliminary data suggest most Puget Sound hatcheries met their summer/fall Chinook goals.

Naturally spawning Puget Sound spring and summer/fall Chinook remained depressed in 2012. Preliminary data suggest no Puget Sound spring Chinook natural stocks met their escapement goals. Preliminary information on 2012 natural spawning escapements for summer/fall Chinook stocks indicate escapement goals were met in some areas, but not in many others. Escapement estimates for 2012 were not available for most runs. In many natural spawning areas, hatchery-origin Chinook comprise a large component of the natural spawning population.

COASTWIDE GOAL ASSESSMENT SUMMARY

FMP Conservation objectives for Council managed Chinook stocks in effect during the preseason planning process of 2012 were met for stocks with available estimates except for Quillayute summer, and Grays Harbor spring/summer Chinook. (Table II-5). Information to assess compliance with FMP conservation objectives and ESA consultation standards in 2012 was unavailable for LCR natural tule Chinook, SRW fall Chinook, several Washington coast Chinook stocks, and all Puget Sound natural Chinook stocks.

SRFC and KRFC are managed to meet or exceed annual catch limit spawner abundance (S_{ACL}) levels. In 2012, escapement goals for these stocks were equal to the preseason S_{ACL} as a result of large abundance

forecasts. It is not yet possible to evaluate spawner escapement estimates for SRFC and KRFC against postseason S_{ACL} values; this evaluation will be made in the Preseason I report.

Stock Status Determinations

In 2011 the Council adopted new SDC for overfishing, overfished, not overfished/rebuilding, and rebuilt under FMP Amendment 16. These criteria, approved and implemented in December 2011, were:

- Overfishing occurs when a single year exploitation rate exceeds the MFMT (F_{MSY});
- Overfished status occurs when a 3-year geometric mean spawning escapement is less than the MSST;
- Not overfished/rebuilding status occurs when the most recent a 3-year geometric mean spawning escapement is greater than the MSST but less than S_{MSY};
- A stock is rebuilt when the most recent a 3-year geometric mean spawning escapement exceeds S_{MSY}.

All criteria rely on the most recent estimates available, which in some cases may be a year or more in the past because of incomplete broods or data availability. The above criteria for rebuilt status are the default criteria provided in the FMP; however, alternative criteria may be developed through a rebuilding plan if warranted by stock specific circumstances. While the Amendment 16 SDC may not have been in place for all stocks during the preseason process, all relevant stocks were evaluated relative to these new SDC as required by the FMP. Stock specific reference points and recent year estimates for relevant stocks are presented in Table II-6.

The 2010-2012 geometric mean spawning escapement for Sacramento River fall Chinook was 161,471 which is above the S_{MSY} estimate of 122,000. This stock, which was considered overfished in 2012, should now be considered rebuilt. All other relevant Chinook stocks, except Queets River spring/summer Chinook, were not overfished, and no stocks were subject to overfishing. Exploitation rate estimates were not made for most Washington coast stocks, but based on the exploitation rates for Queets River fall Chinook, overfishing was considered unlikely.

TABLE II-1. Sacramento River natural and hatchery adult fall Chinook escapement in numbers of fish.

	Upper River[a/]			Lower River			Total		Grand
Year	Hatchery	Natural[b/]	Subtotal	Hatchery	Natural[b/]	Subtotal	Hatchery	Natural[b/]	Total
1970	3,010	61,160	64,170	10,266	82,230	92,496	13,275	143,390	156,666
1971	1,728	67,586	69,314	11,011	74,556	85,567	12,739	142,143	154,882
1972	1,259	36,485	37,744	6,766	47,647	54,413	8,025	84,132	92,157
1973	1,679	48,948	50,627	18,010	151,422	169,433	19,689	200,371	220,060
1974	1,984	66,304	68,288	11,799	121,930	133,729	13,783	188,234	202,017
1975	3,289	72,986	76,275	10,781	68,564	79,346	14,071	141,550	155,621
1976	3,017	80,263	83,280	8,612	75,975	84,586	11,628	156,238	167,866
1977	6,083	60,967	67,050	14,896	82,065	96,961	20,978	143,032	164,011
1978	2,717	66,991	69,708	9,937	47,303	57,240	12,654	114,295	126,948
1979	6,407	81,332	87,739	12,359	72,299	84,658	18,766	153,632	172,398
1980	10,271	45,504	55,775	14,725	71,608	86,333	24,996	117,113	142,108
1981	5,883	51,831	57,714	25,115	92,129	117,245	30,998	143,960	174,958
1982	17,117	39,694	56,811	15,229	92,600	107,829	32,347	132,293	164,640
1983	6,112	42,570	48,682	12,735	48,831	61,566	18,847	91,401	110,248
1984	19,594	51,772	71,366	19,873	67,733	87,607	39,467	119,505	158,972
1985	15,869	103,698	119,566	13,987	105,753	119,740	29,856	209,450	239,306
1986	11,283	113,875	125,158	12,511	102,434	114,945	23,793	216,310	240,103
1987	9,981	76,861	86,842	10,291	97,930	108,222	20,273	174,791	195,063
1988	12,594	128,725	141,319	16,921	69,228	86,149	29,515	197,953	227,468
1989	10,212	67,296	77,508	15,668	59,387	75,055	25,880	126,683	152,563
1990	13,464	50,225	63,689	8,428	32,973	41,401	21,892	83,198	105,090
1991	10,031	35,259	45,290	17,435	56,144	73,579	27,466	91,403	118,869
1992	6,257	31,734	37,991	15,831	27,723	43,554	22,088	59,457	81,545
1993	7,056	55,144	62,200	19,778	55,412	75,190	26,834	110,556	137,390
1994	11,585	66,383	77,968	20,972	66,647	87,619	32,556	133,030	165,586
1995	24,810	112,235	137,045	17,017	141,252	158,269	41,827	253,487	295,314
1996	18,848	131,268	150,116	15,712	135,803	151,516	34,561	267,071	301,632
1997	44,590	167,353	211,943	20,651	112,246	132,897	65,241	279,599	344,840
1998	42,400	60,713	103,113	35,364	107,431	142,795	77,763	168,144	245,908
1999	23,194	256,629	279,823	22,917	97,089	120,006	46,112	353,718	399,830
2000	20,793	152,923	173,716	27,530	216,291	243,821	48,323	369,214	417,537
2001	23,710	179,198	202,908	35,650	358,217	393,867	59,360	537,415	596,775
2002	61,895	474,812 [c/]	536,707	25,278	207,883	233,161	87,173	682,695	769,868
2003	82,882	164,802	247,684	26,696	248,636	275,332	109,578	413,438	523,016
2004	52,145	70,548	122,693	31,262	132,930	164,192	83,407	203,478	286,885
2005	139,979	96,716	236,695	45,320	113,990	159,310	185,299	210,706	396,005
2006	56,819	89,933	146,752	23,087	105,191	128,278	79,906	195,124	275,030
2007	11,543	36,079	47,622	9,833	33,919	43,752	21,376	69,998	91,374
2008	10,181	36,274	46,455	8,331	10,578	18,909	18,512	46,852	65,364
2009	5,433	12,277	17,710	12,103	11,060	23,163	17,536	23,337	40,873
2010	8,666	25,682	34,348	31,036	58,886	89,922	39,702	84,568	124,270
2011	19,312	20,466	39,778	23,559	56,005	79,564	42,871	76,471	119,342
2012[d/]	76,304	66,771	143,075	44,652	96,144	140,796	120,956	162,915	283,871
Goal									122,000-180,000

a/ Above the Feather River; 1971-1985 estimates include Tehama-Colusa Spawning Channel.

b/ Fish spawning in natural areas are the result of hatchery and natural production; estimates generally based on carcass surveys.

c/ Estimation methodology was changed due to an extremely high Battle Creek escapement in 2002.

d/ Preliminary.

TABLE II-2. Klamath River adult inriver fall Chinook run size, spawning escapement, recreational catch, Indian gillnet harvest, and non-landed fishing mortalities in numbers of fish and percent of the total inriver run size.

	Spawning Escapement				Inriver Recreational Catch		Indian Net Catch		Non-landed Fishing Mortality		Inriver Run Size
Year	Hatchery	Natural	Total	Percent	Numbers	Percent	Numbers	Percent	Numbers	Percent	Numbers
1981	4,425	33,857	38,282	48%	5,983	7%	33,033	41%	2,994	4%	80,292
1982	10,411	31,951	42,362	64%	8,339	13%	14,482	22%	1,429	2%	66,612
1983	13,865	30,784	44,649	78%	4,235	7%	7,890	14%	772	1%	57,546
1984	7,496	16,064	23,560	50%	3,340	7%	18,670	40%	1,691	4%	47,261
1985	22,534	25,677	48,211	75%	3,582	6%	11,566	18%	1,079	2%	64,438
1986	32,891	113,360	146,251	75%	21,027	11%	25,127	13%	2,614	1%	195,019
1987	29,123	101,717	130,840	63%	20,169	10%	53,096	25%	5,029	2%	209,134
1988	33,458	79,386	112,844	59%	22,203	12%	51,651	27%	4,944	3%	191,642
1989	21,991	43,868	65,859	53%	8,775	7%	45,565	37%	4,141	3%	124,340
1990	8,067	15,596	23,663	66%	3,553	10%	7,906	22%	760	2%	35,882
1991	6,484	11,649	18,133	56%	3,383	10%	10,198	31%	956	3%	32,670
1992	7,360	12,028	19,388	73%	1,002	4%	5,785	22%	523	2%	26,698
1993	21,643	21,858	43,501	76%	3,172	6%	9,636	17%	903	2%	57,212
1994	17,072	32,333	49,405	77%	1,832	3%	11,692	18%	1,054	2%	63,983
1995	37,859	161,794	199,653	90%	6,081	3%	15,557	7%	1,477	1%	222,768
1996	20,033	81,326	101,359	58%	12,766	7%	56,476	32%	5,172	3%	175,773
1997	18,662	46,144	64,806	77%	5,676	7%	12,087	14%	1,167	1%	83,736
1998	29,219	42,488	71,707	79%	7,710	9%	10,187	11%	1,043	1%	90,647
1999	14,327	18,457	32,784	64%	2,282	4%	14,660	29%	1,322	3%	51,048
2000	97,611	82,728	180,339	83%	5,650	3%	29,415	13%	2,673	1%	218,077
2001	55,112	77,834	132,946	71%	12,134	6%	38,645	21%	3,608	2%	187,333
2002	27,183	65,635	92,818	58%	10,495	7%	24,574	15%	2,351	1%	160,788 [a/]
2003	61,782	87,642	149,424	78%	9,680	5%	30,034	16%	2,810	1%	191,948
2004	22,982	23,831	46,813	59%	4,003	5%	25,803	33%	2,325	3%	78,944
2005	27,699	26,789	54,488	84%	1,985	3%	8,016	12%	738	1%	65,227
2006	19,522	30,163	49,685	81%	62	0%	10,283	17%	1,344	2%	61,374
2007	35,050	60,670	95,720	72%	6,312	5%	27,573	21%	2,526	2%	132,131
2008	13,552	30,850	44,402	63%	1,919	3%	22,259	31%	2,118	3%	70,698
2009	19,614	44,409	64,023	64%	5,651	6%	28,387	28%	2,583	3%	100,644
2010	18,052	37,225	55,277	61%	3,035	3%	29,887	33%	2,661	3%	90,860
2011	22,337	46,763	69,100	68%	4,147	4%	26,353	26%	2,377	2%	101,977
2012[b/]	55,939	122,018	177,957	59%	13,574	4%	101,476	34%	9,101	3%	302,108
Goal		≥40,700[c/d/]									

a/ Inriver run size includes a USFWS estimate of 30,550 fish (19% of the run) that died prior to spawning in September 2002.

b/ Preliminary.

c/ In December 2011, Amendment 16 to the Salmon Fishery Management Plan was approved, which replaced the 35,000 spawning escapement floor with an S_{MSY} management objective of 40,700 natural area adult spawners. The 35,000 spawner floor was in effect from 1989-2007 and in 2011. In 2008-2010, fisheries were managed for a natural area spawning escapement of 40,700 adults under requirements of a rebuilding plan.

d/ Annual escapement goals may be more or less than S_{MSY} in some years due to meeting S_{ACL} requirements and de minimis fishing provisions.

TABLE II-3. Oregon coastal spring and fall Chinook hatchery return and harvest in estuary and freshwater fisheries.

	Return to Facilities				
	Public Hatchery[a/]		Private	Estuary and Freshwater Harvest[b/]	
Year	Spring	Fall	All	Spring	Fall
			THOUSANDS OF CHINOOK		
1976	2.9	0.5	-	13.5	24.3
1977	2.4	4.2	-	13.8	35.6
1978	4.4	1.6	-	13.1	42.7
1979	7.0	2.0	0.4	16.4	30.8
1980	7.9	1.8	3.4	11.9	22.1
1981	2.5	1.8	5.1	11.2	29.6
1982	4.1	2.3	12.1	11.6	24.7
1983	3.9	4.0	6.1	4.9	21.1
1984	5.6	3.3	6.3	4.1	29.0
1985	8.7	3.5	34.6	9.0	29.5
1986	30.6	5.8	70.8	17.3	36.5
1987	22.8	7.1	38.7	20.2	54.8
1988	22.0	6.4	25.0	28.9	61.4
1989	32.7	4.3	14.7	23.7	53.9
1990	6.3	3.4	7.8	15.5	39.9
1991	5.4	3.1	4.1	11.1	47.7
1992	2.7	4.4	-	8.0	44.7
1993	10.6	2.8	-	16.4	54.7
1994	4.8	3.0	-	9.2	46.7
1995	55.0	3.3	-	31.1	54.3
1996	26.7	3.6	-	25.6	51.0
1997	29.1	2.0	-	14.7	37.0
1998	11.0	2.6	-	8.2	31.5
1999	18.1	3.3	-	8.2	29.3
2000	24.5	3.1	-	11.4	37.4
2001	26.8	5.7	-	18.6	53.3
2002	24.7	2.9	-	30.9	58.8
2003	17.2	3.9	-	33.1	72.3
2004	20.1	2.9	-	19.4	78.4
2005	11.7	2.6	-	14.6	51.6
2006	7.5	2.7	-	7.1	47.7
2007	6.3	2.1	-	5.7	29.0
2008	6.1	2.7	-	6.9	21.9
2009	7.2	4.2	-	10.9	30.9
2010	10.9	5.0	-	18.0	54.5
2011	7.8	4.0	-	NA	NA
2012[c/]	13.6	5.4	-	NA	NA

a/ Adults only.

b/ Freshwater harvests are derived from ODFW salmon/steelhead angler catch record card information and represent fish larger than 24 inches (i.e., adults). Includes both hatchery and natural fish.

c/ Preliminary.

TABLE II-4. Spawner indices for naturally produced Oregon coastal fall Chinook and south migrating/localized spring Chinook.[a/]

	Fall Chinook Spawner Indices		South/local Migrating Spring Chinook Spawner Indices	
Year	North Migrating Peak Count Adults Per Mile	Rogue River (South/local migrating) Adult Carcass Counts	Rogue River Gold Ray Dam Counts	Umpqua River Winchester Dam Counts
1976	45	-	20	6
1977	71	1,356	15	7
1978	73	9,174	40	5
1979	81	8,272	29	6
1980	89	2,221	24	6
1981	82	5,228	13	5
1982	90	2,812	23	7
1983	42	2,737	10	3
1984	98	3,267	8	5
1985	132	5,486	28	8
1986	109	17,177	40	8
1987	121	25,918	37	8
1988	214	31,613	39	8
1989	138	7,408	8	8
1990	121	1,868	18	6
1991	150	2,799	9	2
1992	138	2,366	2	3
1993	63	5,447	13	4
1994	125	7,366	4	3
1995	103	3,958	21	6
1996	147	2,448	10	4
1997	105	1,643	10	3
1998	99	3,601	4	4
1999	124	2,493	6	3
2000	85	3,366	3	3
2001	203	6,380	9	6
2002	269	11,836	7	7
2003	279	14,620	19	8
2004	198	5,326 [b/]	13	5
2005	118	d/	6	4
2006	76	d/	5	3
2007	42	d/	3	2
2008	40	d/	4	3
2009	61	d/	5	5
2010	87	d/	10	6
2011	109	d/	10[e/]	9
2012[c/]	146	d/	14[e/]	8
Goal	60-90			

a/ North migrating peak counts are taken on nine miles of standard index surveys over nine river systems (see Appendix B, Table B-11 for individual system counts). Complete carcass counts are listed in Appendix B, Table B-10. Complete counts for Gold Ray and Winchester dams are listed in Appendix B, Table B-9.

b/ In 2004 one of the standard survey sections was not sampled. In the previous two years this section accounted for 33% of the total adult carcass counts.

c/ Preliminary.

d/ Surveys were not conducted.

e/ Gold Ray Dam removed October, 2010. Natural estimate derived using relationship of 2004-2010 spawning ground surveys to Gold Ray Dam passage. Estimate includes an unknown number of jacks.

TABLE II-5. Performance of Chinook salmon stocks in relation to 2012 preseason conservation objectives (preliminary data). (Page 1 of 2)

System and Stock	2012 Conservation Objective(s)	Achievement
Sacramento River Chinook		
Fall	122,000-180,000 natural and hatchery adults.	Preliminary estimate of 283,871 natural and hatchery adult fall Chinook, 58% above the upper end of the escapement goal range.
Winter (Endangered)	Age-3 impact rate for the area south of Point Arena, CA no greater than 13.7% (NMFS ESA consultation standard).	Preseason projection of 13.7%; no postseason estimate was available at time of printing.
Spring (Threatened)	Same objective as for winter Chinook.	Preseason projection of 13.7%; no postseason estimate was available at time of printing.
California North Coast Chinook		
Klamath River Fall	Minimum escapement of 40,700 natural adult spawners.	Preliminary estimate of 122,018 is 300% of the conservation objective.
California Coastal (Threatened)	No greater than 16.0% ocean harvest rate on age-4 Klamath River fall Chinook.	Preseason projection of 16.0%; no postseason estimate was available at time of printing.
Oregon Coast Chinook		
North Migrating Stocks South/Local Migrating Stocks	150,000-200,000 natural adult spawners (equivalent to peak spawner index counts of 60-90 adults per mile).	119 natural adult spawners per mile, above the upper bound of the aggregate stock index range.
Columbia River Basin Fall Chinook		
LRW (Component of threatened lower Columbia River Chinook ESU)	MSY objective of 5,700 natural North Lewis River adult spawners.	Preliminary estimate of 11,430 is 201% of the conservation objective.
LCR natural tules (Component of threatened lower Columbia River Chinook ESU)	Total (ocean plus inriver) AEQ exploitation rate on ESA-listed natural tules of no more than 41.0%.	Preseason projection of 40.9%. No postseason estimate was available.
LRH	12,600 adult hatchery spawners.	Preliminary projection of 56,740 adult hatchery spawners, 450% of goal.
SCH	7,000 adult hatchery spawners.	21,040 adult hatchery spawners, 301% of goal.
MCB	No FMP objective; target of 7,750 hatchery adults.	20,270 adult hatchery spawners, 262% of goal.
URB	40-45,000 natural and hatchery adults above McNary Dam, plus meet treaty Indian obligations. *U.S. v. Oregon* parties agreed to 60,000 in 2011.	132,610 natural and hatchery adults over McNary Dam, 332% of MSY target in FMP.

TABLE II-5. Performance of Chinook salmon stocks in relation to 2012 preseason conservation objectives (preliminary
(Page 2 of 2)

System and Stock	2012 Conservation Objective(s)	Achievement
Columbia River Basin Fall Chinook (continued)		
Snake River Fall Chinook (Threatened; component of URB)	SRFI ≤0.700 for all ocean fisheries combined (i.e., no less than a 30.0% reduction from the 1988-1993 base period exploitation rate).	Preseason SRFI projection of 0.510. Postseason estimate was not available.
Washington Coastal Chinook		
Fall	Natural spawner escapement objectives as provided in state-tribal agreements; meet hatchery egg-take goals and meet treaty Indian obligations.	Based on preliminary estimates, Quillayute natural, and Hoko River natural objectives were met. Other estimates were not available.
Spring/Summer	Natural spawner escapement objectives as provided in state-tribal agreements; meet hatchery egg-take goals and meet treaty Indian obligations.	Based on preliminary estimates, the objective was met for Hoh spring Chinook, Quillayute and Grays Harbor spring/summer natural; estimates were not available for Queets spring/summer natural Chinook.
Puget Sound Chinook		
(Threatened)	Minor part of Washington ocean harvest; Council ocean management not directed at these stocks. Adult equivalent exploitation rate standard developed for some stocks:	Postseason estimates were not available. Preseason predictions of adult equivalent exploitation rates and spawner objectives were:

	Exploitation Rate	Spawner Esc.	ISBM	Exploitation Rate	Spawner Esc.	ISBM
· Nooksack spring	· 7% SUS	-	≤60%	7.0%	-	38%
· Skagit summer/fall	·15% SUS	-	≤60%	14.3%	-	56%
· Skagit spring	·38% Total	-	≤60%	33.1%	-	35%
· Stillaguamish summer/fall	· 15% SUS	-	≤60%	13.5%	-	24%
· Snohomish summer/fall	· 15% SUS	-	≤60%	9.1%	-	18%
· Lake Wash. summer/fall	· 20% SUS	-	≤60%	17.8%	-	41%
· White River spring	· 20% total	-	-	19.2%	-	-
· Green River summer/fall	· 15% pre-term SUS	5,800	≤60%	9.6%	1,911	29%
· Puyallup summer/fall	· 50% Total		-	48.5%	-	-
· Nisqually summer/fall	· 56% Total	-	-	55.3%	-	-
· Skokomish summer/fall	· 50% total	-	-	47.9%	-	-
· Mid-Hood Canal fall	· 12% pre-term SUS	-	-	12.0%	-	-
· Dungeness spring	· 10% SUS	-	-	3.4%	-	-
· Elwha summer/fall	· 10% SUS	-	-	3.4%	-	-

TABLE II-6. Chinook stock status relative to overfished and overfishing criteria. A stock is overfished if the 3-year geometric mean spawning escapement is less than the minimum stock size threshold (MSST); a stock experiences overfishing if the total annual exploitation rate exceeds the maximum fishing mortality threshold (MFMT).

	Spawning Escapement									Total Exploitation Rate						
Chinook Stock	2007	2008	2009	2010	2011	2012	3-yr Geo	MSST	S_{MSY}	2007	2008	2009	2010	2011	2012	MFMT
Sacramento Fall	91,374	65,364	40,873	124,270	119,342	283,871	161,471	91,500	122,000	0.65	0.06	0.01	0.17	0.42	NA	0.78
Klamath River Fall	60,670	30,850	44,409	37,225	46,763	122,018	59,665	30,525	40,700	0.40	0.45	0.37	0.42	0.38	NA	0.71
Southern Oregon	29	13	66	52	35	39	41	30-45	150,000 to	NA	NA	NA	NA	NA	NA	0.78
Central and Northern	42	40	61	87	109	146	111	fish/mile	200,000	0.64	0.50	0.68	0.69	NA	NA	0.78
Upper River Bright -	34,201	51,757	62,428	114,230	93,510	94,615	100,354	19,182	39,625	0.61	0.54	0.70	0.42	NA	NA	0.86
Upper River - Summer[a/]	28,222	38,171	44,295	47,220	44,432	52,528	47,944	6,072	12,143	0.49	0.53	0.50	0.55	NA	NA	0.75
Willapa Bay - Fall[b/]	2,346	1,900	2,847	3,395	NA	NA	2,638	1,696	3,393	0.81	0.53	0.59	0.64	NA	NA	0.78
Grays Harbor Fall[b/]	11,264	13,570	7,215	14,531	18,311	NA	12,429	5,694	11,388	0.81	0.53	0.59	0.64	NA	NA	0.78
Grays Harbor Spring	651	995	1,132	3,495	2,563	959	2,048	546	1,092	NA	NA	NA	NA	NA	NA	0.78
Queets - Fall[a/]	878	3,082	3,106	4,031	3,857	NA	3,642	1,250	2,500	**0.81**	0.53	0.59	0.64	NA	NA	0.87
Queets - Sp/Su	352	305	495	259	373	NA	363	350	700	NA	NA	NA	NA	NA	NA	0.78
Hoh - Fall[b/]	1,556	2,999	2,081	2,599	1,293	1,937	1,867	600	1,200	0.81	0.53	0.59	0.64	NA	NA	0.90
Hoh Sp/Su	810	671	880	828	827	915	856	450	900	NA	NA	NA	NA	NA	NA	0.78
Quillayute - Fall[b/]	3,066	3,612	3,130	4,635	3,963	3,181	3,880	1,500	3,000	0.81	0.53	0.59	0.64	NA	NA	0.87
Quillayute - Sp/Su	502	949	555	772	569	731	685	600	1,200	NA	NA	NA	NA	NA	NA	0.78
Hoko -Su/Fa[a/]	568	483	385	793	1,504	653	920	425	850	0.40	0.55	0.28	0.12	NA	NA	0.78

a/ CWT based exploitation rates from PSC-CTC 2012 Exploitation Rate Analysis and Model Calibration.

b/ Queets River fall Chinook coded-wire-tag (CWT) exploitation rates used as a proxy. Exploitation rates in the terminal fisheries will differ from those calculated for Queets fall CWTs.

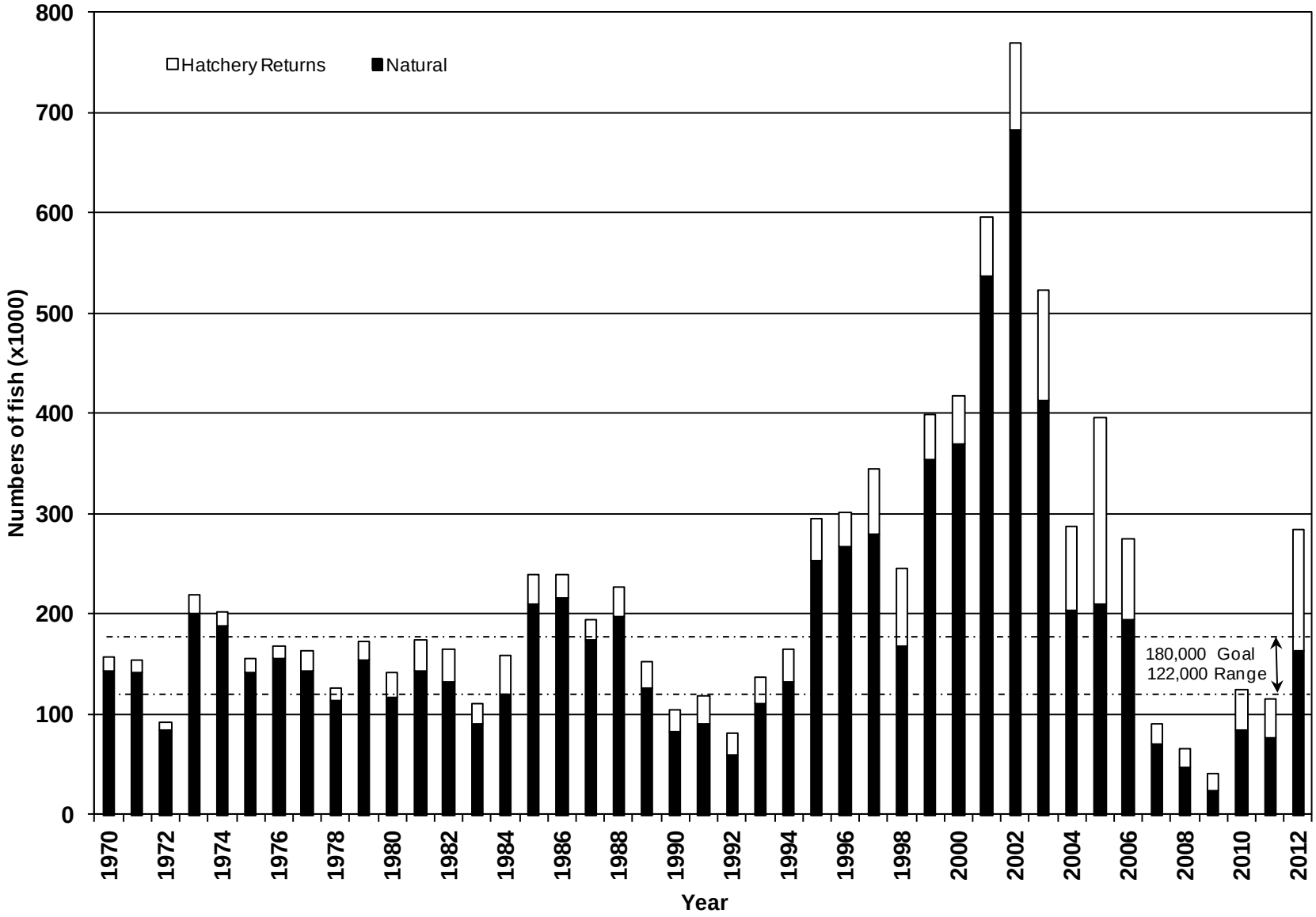

Figure II-1. Sacramento River adult fall Chinook spawning escapement, 1970-2012.

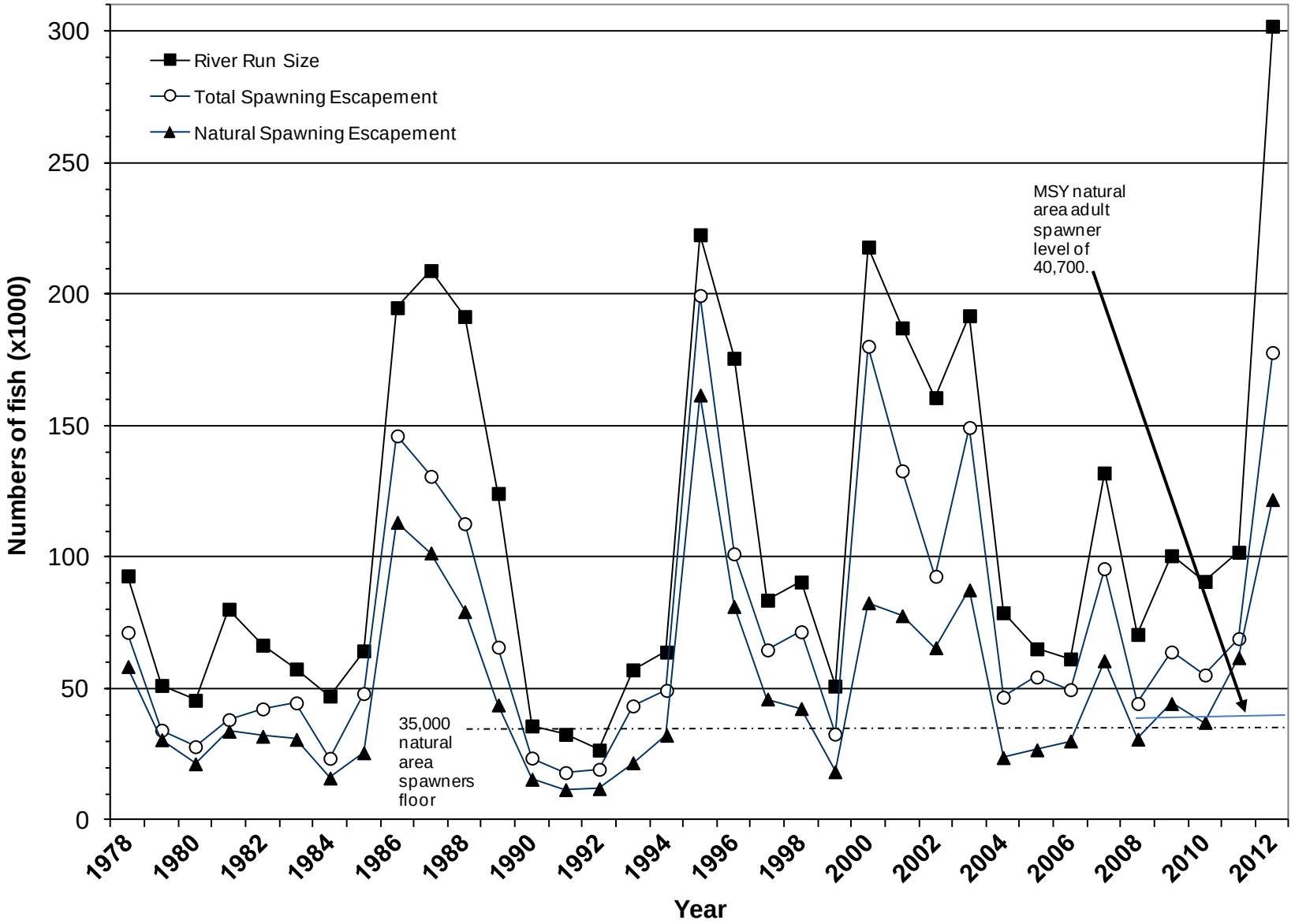

Figure II-2. Klamath River adult fall Chinook returns and spawning escapement, 1978-2012.

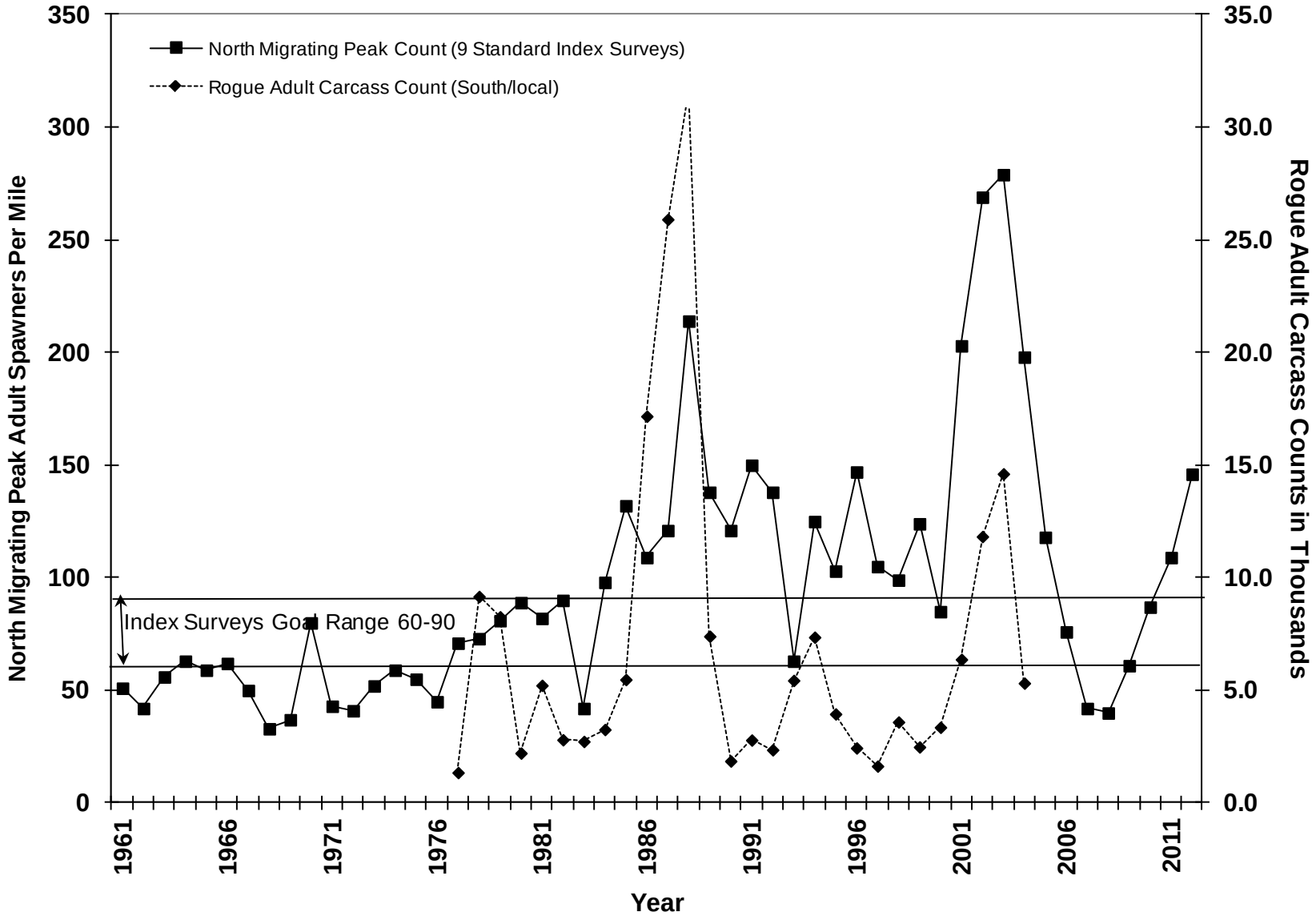

Figure II-3. Spawner indices for naturally produced Oregon coastal fall Chinook, 1961-2012.

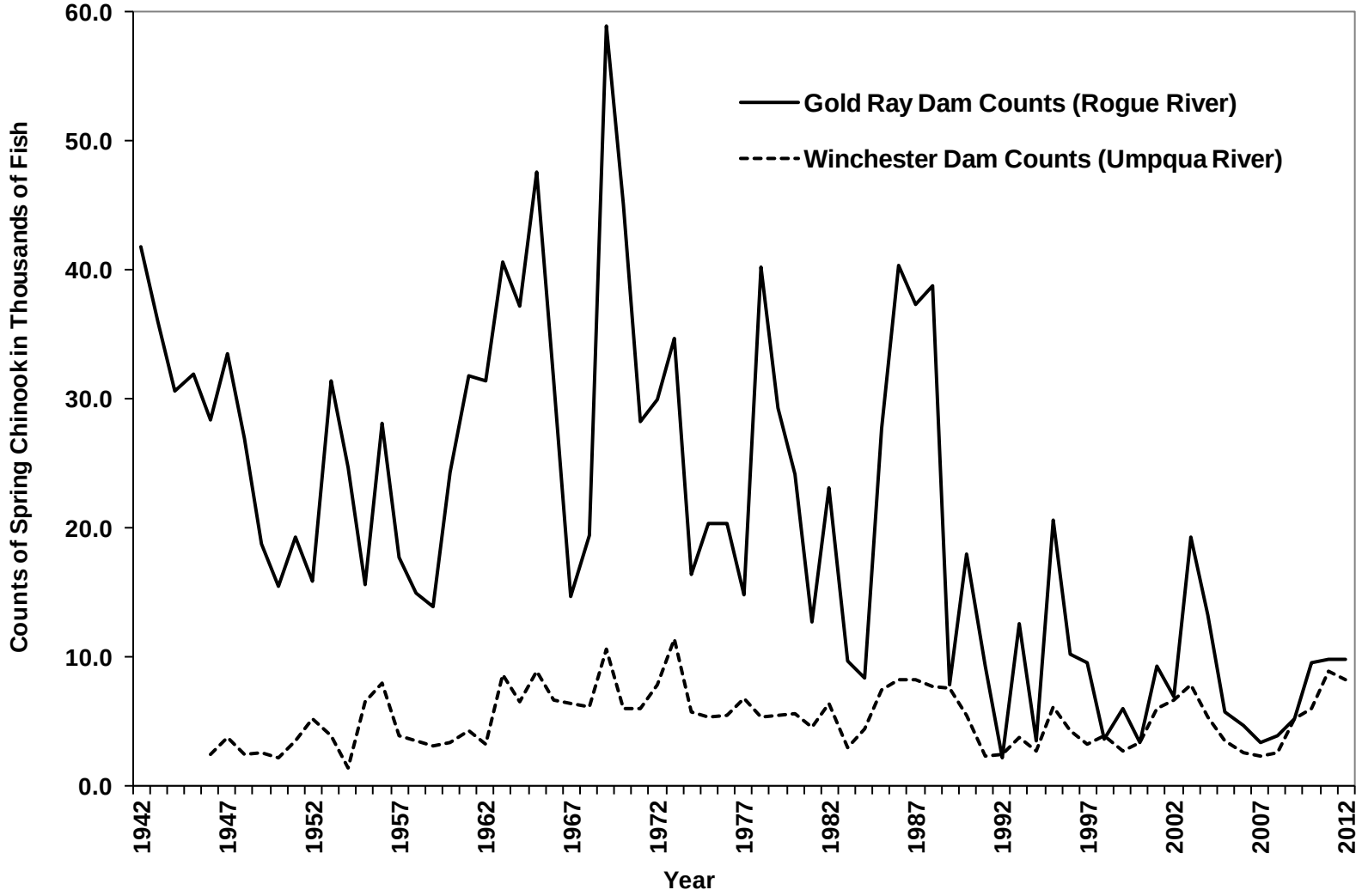

Figure II-4. Escapement indices for naturally produced Oregon coastal south/local migrating spring Chinook, 1942-2012.

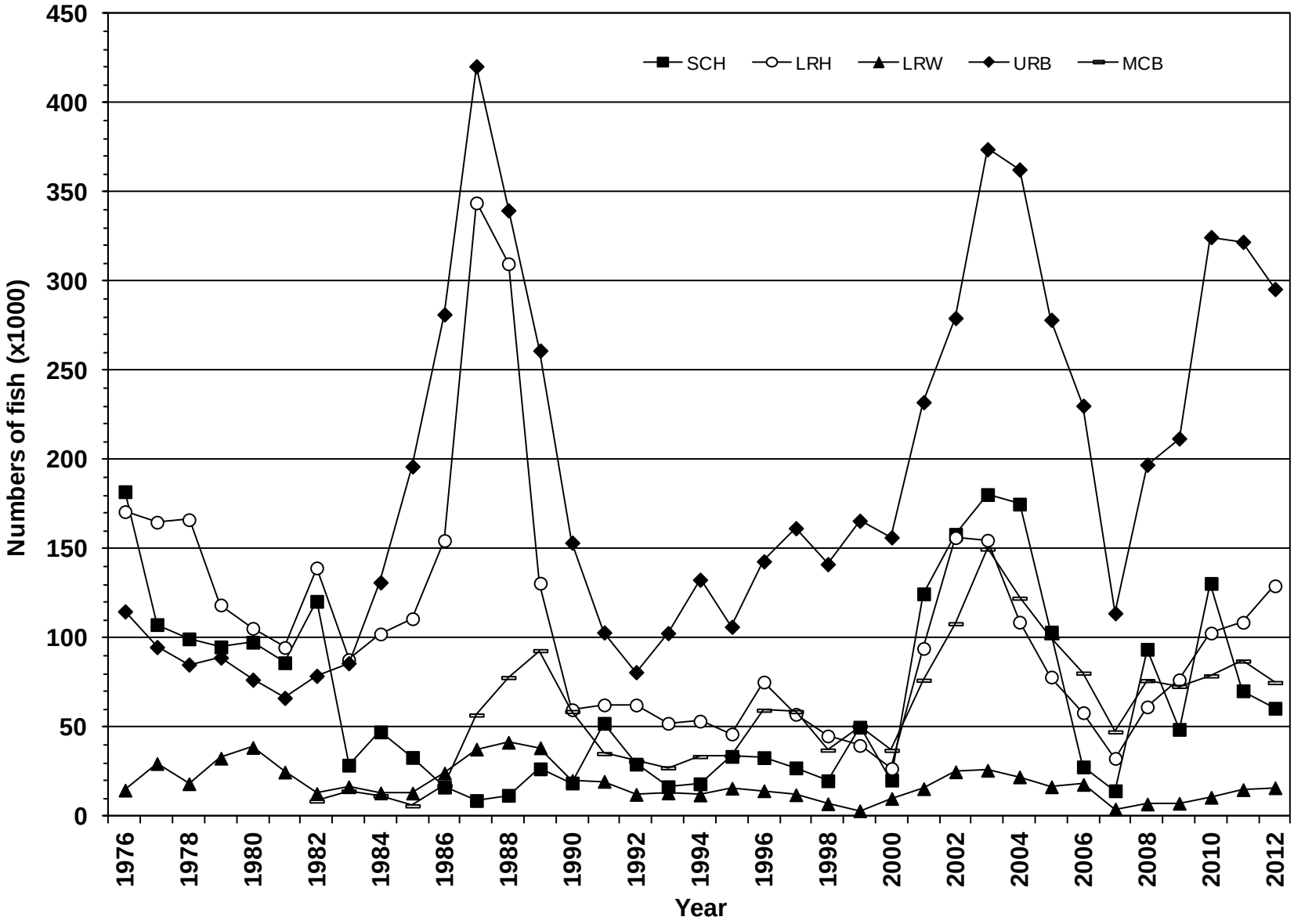

Figure II-5. Columbia River mouth adult returns of the five major fall Chinook stock groups, 1976-2012.

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