

Shoreside Hake Observation Program: 2007 Annual Report

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INTRODUCTION

Shoreside Hake Observation Program

The Shoreside Hake Observation Program (SHOP) was established in 1992 to provide information for monitoring catch in the shoreside component of the directed Pacific hake – also called Pacific whiting – (*Merluccius productus*) fishery, and for evaluating conservation measures adopted to limit the catch of salmon, other groundfish, and other prohibited species. Though instituted as an experimental maximized retention monitoring program, it has been continued annually to account for all catch landed at shoreside processors by targeted hake trips; tracking potential discards, and accommodating the landing and disposal of unsorted catch from these trips until permanent federal regulations can be developed.

The SHOP is a cooperative effort between the fishing industry and state and federal management agencies. Participants in the SHOP include mid-water trawlers carrying Exempted Fishing Permits (EFP), designated shoreside processing plants in California, Oregon, and Washington, the Pacific Fishery Management Council (PFMC), the National Marine Fisheries Service (NMFS), the Pacific States Marine Fisheries Commission (PSMFC), the Oregon Department of Fish and Wildlife (ODFW), the California Department of Fish and Game (CDFG), and the Washington Department of Fish and Wildlife (WDFW).

In 1995, the SHOP's required observation rate was reduced from 50 percent of landings to 10 percent, as studies indicated that fish tickets were a good representation of what was actually landed (ODFW 1995). This lower observation rate allowed for increased collection of biological information (*e.g.*, otoliths, length, weight, sex, and maturity) from Pacific hake and bycatch species such as yellowtail rockfish (*Sebastes flavidus*), widow rockfish (*S. entomelas*), yelloweye rockfish (*S. ruberrimus*), darkblotched rockfish (*S. cramerii*), bocaccio (*S. paucispinis*), canary rockfish (*S. pinniger*), sablefish (*Anoplopoma fimbria*), Pacific (chub) mackerel (*Scomber japonicus*), and jack mackerel (*Trachurus symmetricus*). In response to increased interest in the overfished species of rockfish, there has been an increase in the required minimum observation rate to 20 percent in recent years.

Shoreside Hake Fishery Overview

The shoreside hake fishery primarily consists of mid-water trawl vessels delivering unsorted catch to shoreside processors, and is one of four sectors in the Pacific hake fishery. The remaining sectors are catcher-processor vessels, vessels delivering to motherships, and tribal vessels. Vessels participating in the shoreside fishery apply for and carry an EFP issued by NMFS, Northwest Region, Sustainable Fisheries Division. Permit terms require vessels to land unsorted catch at designated shoreside processing plants. Permitted vessels are not penalized for landing prohibited species (*e.g.*, Pacific salmon, Pacific halibut, Dungeness crab), nor are they held liable for overages of

groundfish trip limits. The recent increase in the ex-vessel value of hake stimulated a few vessels to experiment with sorting their bycatch while still at-sea and therefore not falling under the umbrella of the EFP requirements.

Overall limits for bycatch of Chinook salmon (*Oncorhynchus tshawytscha*) in the Pacific hake fishery were set in 1991 under NMFS's Biological Opinion for groundfish management (NMFS 1991) at 0.05 salmon per metric ton (mt) of captured hake for all sectors. High salmon bycatch in 1995 resulted in the 1996 revision of the Biological Opinion under Section 7 of the Endangered Species Act (ESA). This revision resulted in a clarification that the total catch limit of 11,000 Chinook for the coastwide Pacific hake fishery would apply to all sectors (NMFS 1996). The bycatch rate remained limited to 0.05 Chinook salmon per mt of Pacific hake. The fishery is required to re-initiate consultation under ESA if either of these Chinook bycatch thresholds is exceeded.

Beginning in 1999, written agreements were made with designated processors to provide a better understanding of the roles and responsibilities of the parties involved in the fishery and to provide a mechanism to enforce bycatch reduction measures, specifically for yellowtail rockfish. The agreement set a vessel-specific maximum rate for yellowtail rockfish bycatch at 12 kilogram (kg) of yellowtail rockfish per mt of hake. In 2003, an analysis of single tow trips between 1995 and 2002 was conducted.¹ Because there was no relationship between the weight of hake and the weight of yellowtail caught in a tow, the bycatch rate cap specified in the agreement was changed to a trip average of 800 kg (1,764 lbs.) of yellowtail (hereinafter penalty box standard). When the total shoreside hake catch reached the 30 and 55 percent checkpoints, the average yellowtail bycatch rate for each vessel was compared against the penalty box standard. Vessels exceeding the standard were penalized one day of fishing for each 66 kg increment over the standard (e.g., if a vessel's yellowtail rockfish trip average was 1,064 kg, then they would be required to remain docked for 4 days before they could fish again). The use of this penalty for exceeding yellowtail and widow bycatch rates was discontinued for the 2007 hake season as a result of enforcement difficulties and necessity.

Since 2005, bycatch of certain overfished species is managed using bycatch caps. The expected bycatch of canary rockfish and widow rockfish for the shoreside sector of the hake fishery was based on the level observed during the 2004 through 2006 hake seasons. In 2005, hard bycatch caps of 4.7 mt of canary rockfish and 200 mt of widow rockfish were established pre-season via federal regulation. The widow rockfish bycatch cap has been increased inseason by the PFMIC each year since 2005. In advance of the 2007 fishery, the widow cap was increased to 220 mt and increased again in September to 275 mt. Prior to the opening of the primary shoreside fishery on June 15, 2006, the at-sea fishery encountered much higher rates of darkblotched rockfish than average. The PFMIC was concerned with exceeding the total allowed harvest of darkblotched rockfish for all fishery sectors, and in June 2006 established a darkblotched rockfish bycatch cap of 25 mt. The cap of 25 mt was continued for the 2007 season. The projected attainment of a

¹ Wiedoff, B.L. and Parker, S.J. 2004. Spatial distribution of widow rockfish bycatch in the shoreside Pacific hake fishery in relation to the rockfish conservation area. Poster presented at the 2004 Western Groundfish Conference. Victoria, BC. February 9 – 13.

soft bycatch cap could result in additional restrictions on the fishery. Fortunately, this cap has not been reached.

Electronic Monitoring Program

Since the SHOP's inception in 1992, vessels have been subject to State and Federal observer coverage to document and estimate bycatch while fishing under the EFP. At-sea observers have not been present since 1994. Since 2004, NMFS has maintained a contract with Archipelago Marine Research Ltd. (Archipelago) to verify compliance with the EFP's full retention requirements and to help characterize daily process of the fishery. To achieve this, electronic monitoring systems (EM) were installed on all vessels operating under the EFP, consisting of video cameras, a global positioning system, winch rotation and hydraulic pressure sensors, and a data storage unit. The use of EM was continued during the 2007 season with a portion of the cost shifting to industry.

2007 SHORESIDE HAKE FISHERY

The PFMC's optimum yield (OY) for Pacific hake decreased by ten percent compared to the previous two years (269,069 mt down to 242,591 mt) (Table 1). The 2007 assessment indicated uncertainty in the harvestable biomass of upcoming year classes, the uncertainty in these estimates as well as concerns of bycatch of overfished rockfish species, resulted in the decision to decrease the 2007 harvest. Allocations of the OY among the four Pacific hake sectors are set in regulation and were as follows:

- Shoreside sector—87,398 mt (42 percent of non-tribal OY)
- Catcher/processor sector—70,751 mt (34 percent of non-tribal OY)
- Mothership sector—49,942 mt (24 percent of non-tribal OY)
- Tribal sector—32,500 mt (based on a sliding scale)
- Research catch and non-groundfish fisheries bycatch – 2,000 mt

All skippers and processor representatives participating in the shoreside hake EFP fishery were required to attend a pre-season educational meeting prior to the issuance of the EFP. In 2007, one meeting was held in Eureka, California on March 15, 2007. Two meetings were conducted in Oregon ports, one in Newport (May 3), and the other in Astoria (May 4).

Early Southern Fishery (California Only)

Six EFPs were approved in 2007 for the early California portion (southern component) of the shoreside fishery (south of 42° North Lat.) which opened on April 1, 2007. Throughout the duration of the fishery, the number of weekly landings and the average landings per week were sporadic. Total landings for the southern component were limited to five percent of the shoreside allocation prior to the opening of the primary fishery. In 2007, the southern component did not catch the five percent shoreside

allocation so the fishery remained open throughout the spring and closed with the primary season however no landings were made in California after May 29.

Primary Fishery

On May 17, the NMFS published a temporary rule prohibiting vessels without sector-specific history from participating in the 2007 hake fishery (NMFS 2007a). Thirty-nine vessels participated in the primary fishery (Washington, Oregon, and California waters), with 37 vessels making landings under the EFP - including 6 vessels that also participated in the southern component. Two vessels elected to sort at sea thus did not participate in the EFP fishery.

The primary fishery opened as scheduled on June 15, and after a slow start with small fish, scattered schools and high bycatch, industry organized a voluntary stand-down that lasted approximately 6 days. Fishing resumed in mid-July and lasted a total of 42 calendar days before the widow bycatch cap was exceeded and the fishery closed on July 26 at 6:00 p.m., harvesting 67,889 mt of hake (77.68 percent of the initial allocation). During the course of the season, enforcement discovered an incident where a vessel discarded a tow due to high bycatch. An estimate of catch in the discard event was provided by enforcement and the skipper and is incorporated into the text and tables of this report. During the September PFMC meeting, the widow cap was increased to 275 mt and was reopened on October 7, 2007 (NMFS, 2007b). Interest was limited during this late season opener. Only sixteen vessels participated and by November 2nd only three vessels were still targeting hake. On November 28th 6,000 mt of hake were reapportioned to the catcher/processor sector. No EFP hake landings were made after December 13th. The 2007 shoreside hake fishery closed on December 31 landing a total of 72,751 mt in the EFP fishery and 529 mt in the non-EFP fishery for a total of 73,280 mt (90 percent of the quota after reallocation) (Tables 2 and 3).

A total of 856 landings were made under EFP provisions coastwide (Table 3). Twenty non-EFP landings occurred during the season by vessels using at-sea heading and gutting operations or vessels landing under 4,000 lbs which do not meet the minimum weight requirements of the EFP. Unsorted EFP Pacific hake landings were observed at 12 processing plants, including Eureka (1), Crescent City (1), Charleston (1), Newport (3), Astoria (4), Westport (1), and Ilwaco (1). The average weight of a landing was 85 mt of hake (Figure 1). The majority of shoreside Pacific hake was landed in Oregon (58 percent), while the remaining was landed in Washington and California (Table 4). Twenty-nine percent of the total shoreside hake was landed in Newport, Oregon.

The rate of landing averaged 10,427 mt per week for EFP participants during the five full weeks of the primary season, decreased to 1,199 mt during the first four weeks after the October 7th opener and dropped to 98.99 mt November 4 to December 31. (Table 3). The fleet reported scattered hake and high bycatch for the entire season.

The proportion of hake landings observed by samplers varied among processors from 14 percent to 100 percent observed (Table 5). Overall, 39 percent of hake (by weight) and

44 percent of EFP landings were observed by SHOP observers in 2007, thereby exceeding the SHOP observation goal of 20 percent (Table 4).

Hake with no marketable value due to inappropriate size or quality (hereinafter weighback) were recorded on fish tickets for 837 shoreside hake landings in 2007 as hake with zero value. Landings with the greatest percentage of weighback occurred in Oregon (13 percent of hake landed), followed by Washington (8percent) and California (7percent) (Figure 2). Weighback comprised eleven percent of the coastwide shoreside hake landings. California data is not complete as weighback reporting on fish tickets is inconsistent.

2007 BYCATCH

Rockfish

The bycatch of rockfish in the fishery has been a concern for many years. Since 1998, yellowtail rockfish and widow rockfish bycatch in the shoreside hake fishery have been reduced as a result of proactive measures taken by industry and agencies. Most of the bycatch reduction can be attributed to: 1) voluntary efforts to avoid higher bycatch areas; 2) sharing information between vessels on the specific location of high bycatch areas; 3) a website that presents vessel specific bycatch rates (peer pressure); and 4) the penalty box system described previously. More recently, the bycatch of several overfished species of rockfish (bocaccio rockfish, canary rockfish, darkblotched rockfish, Pacific Ocean perch, and yelloweye rockfish) has been the greatest concern, and the anticipated bycatch for several of these species has constrained the fishery.

Bycatch of yellowtail rockfish increased from a low of 41 mt in 2002 to 186 mt in 2007 (Figure 3). The highest landings of yellowtail rockfish occurred in 1996, when 522 mt were landed in the fishery. Although landings in the years since have remained substantially lower, they are beginning to increase again. As in previous years, yellowtail rockfish bycatch was higher in ports to the north than in those to the south (Table 6). Westport had the highest average yellowtail rockfish bycatch rate (703 kg per trip), followed by Astoria (202 kg per trip) and Ilwaco (85 kg per trip). The increased bycatch of yellowtail rockfish in recent years may be caused by higher hake allocations, but could also be influenced by pressure for vessels to actively avoid bycatch of overfished rockfish species and Chinook salmon.

In January 2001, the stock of widow rockfish was declared ‘overfished’ (NMFS 2001). Since 2005, the PFMC has set the widow bycatch cap at 200 mt. During each September Council meeting since 2005, the industry requested – and the PFMC approved – increasing the widow rockfish bycatch cap in each of those years. The 2007 fishery is the first that actually resulted in a season closure, due to exceeding a bycatch cap, prior to attaining the hake OY. The season was reopened with limited interest after the September Council meeting. In 2007, the shoreside sector landed 89 mt of widow rockfish, an increase of 40 mt from 2006 (Figure 3). The ports of Ilwaco, Astoria and Westport exhibited the highest average widow rockfish bycatch rates, 225, 224 and 118 kg per trip respectively (Table 6). Current trends in widow rockfish population statistics

could reduce constraints on the Pacific hake fishery in upcoming seasons by eliminating the bycatch cap or increasing the cap to a level that would no longer constrain the fishery.

Canary rockfish was designated an ‘overfished’ stock in January 2000 (NMFS 2000). As with widow rockfish, the status of canary rockfish presented a significant constraint to the Pacific hake fishery in 2005 when the bycatch of canary rockfish was limited to 4.7 mt for all sectors combined (NMFS 2005b). Since 2005, this canary rockfish cap of 4.7 mt has been maintained. In 2007, the shoreside sector landed 2.02 mt of canary rockfish, of which the ports of Westport and Astoria exhibited the highest average bycatch rate (Table 6). This is different than the historical trend which indicates the majority of shoreside hake tows with high canary rockfish bycatch rates were between Newport and Charleston (Wiedoff and Parker 2004).

Bycatch of other overfished rockfish species in the shoreside fishery were also monitored by SHOP, including the following (Table 3):

- Boccacio—1.01 mt landed
- Darkblotched —0.95 mt
- Pacific ocean perch—23.14 mt landed
- Yelloweye—0.04 mt landed`

Sablefish

The bycatch of sablefish in 2007 totaled 9.04 mt, a decrease of 2 mt from the prior year, and the lowest since 2000 (Figure 3). As in previous years, Newport contributed the largest amount of sablefish toward this total. Sablefish bycatch rates varied greatly within individual weeks of the 2007 shoreside fishery, and such variable bycatch rates have been observed by SHOP in most years. The 2000 sablefish stock assessment predicted a strong year class to enter the fishery in 2001 (Schirripa and Methot 2001). The progression of this year class from 2001 through 2007 is shown by length-frequency histograms for sablefish specimens collected in Oregon only (Figure 4).

Jack and Pacific (chub) Mackerel

Since the start of the fishery, jack mackerel and Pacific (chub) mackerel have been two of the largest bycatch components in the shoreside hake fishery. Though little work has been done examining patterns in mackerel bycatch in the fishery, the recent low bycatch rates of mackerel are likely related to the lack of strong El Nino events. Jack mackerel bycatch totaled only 7.07 mt in 2007 (Table 3). Pacific (chub) mackerel became a minor bycatch species in 2002 has remained less than 5.0 mt since then (Figure 3). Total Pacific (chub) mackerel bycatch in the 2007 fishery was 4.18 mt.

Salmon

A total of 2763 salmon were landed as bycatch in the 2007 shoreside hake fishery, including 2462 Chinook, 141 coho, and 113 chum, and 47 pink. No sockeye salmon were landed in the fishery (Table 7). Sixty six percent of the Chinook measured were less than 60 cm, generally representing fish two or less years in age (Figure 5). Of the 2763 salmon landed, 795 were landed in Oregon, 1390 in Washington, and 578 in California. Salmon were surrendered to state agencies and donated to charity when in suitable condition, or disposed of if unsuitable for human consumption.

Although salmon bycatch rates increased from 2006, bycatch rates were still significantly lower than 2004 and 2005 (table 7). The rate of salmon bycatch exceeded the guideline specified in the biological opinion (0.05 salmon per mt of hake) during weeks 1, 4 and 6 of the early California season. During the primary season (Figure 6) the bycatch rate exceed 0.05 during the first days of the fishery (weeks 11 and 12) and again in week 36. The peak rate of Chinook bycatch was 1.24 salmon per mt of hake. The overall rate of Chinook bycatch was 0.034 Chinook per mt of hake (Table 7), which is far less than the threshold rate of 0.05 prescribed in the 1996 Biological Opinion (NMFS 1996).

The bycatch of salmon in 2005 represented the second largest number since the inception of SHOP. In August 2005, following the closure of the shoreside hake fishery, an emergency rule was implemented by NMFS to further reduce the potential for salmon bycatch. This rule established a salmon conservation zone (NMFS 2005a) prohibiting fishing for hake shoreward of a defined boundary line approximating the 100 fathom depth contour when NFMS projects the Pacific hake fishery may take in excess of 11,000 Chinook within a calendar year.

While observing offloads of vessels at shoreside processors, samplers observed 639 salmon or 23 percent of all salmon landed (Table 4). The un-observed salmon were held at processing plants until the fish could be examined by samplers. Agency samplers collected biological data and checked for clipped adipose fins on 2714 salmon landed. Snouts were collected from 433 salmon (including 392 Chinook) (Table 8). CWT data for 2007 are not yet available.

Pacific Halibut and Dungeness Crab

The 2007 shoreside hake fishery landed 44 Pacific halibut (*Hippoglossus stenolepis*) (Table 3), 29 less than the peak in 2006 (Saelens and Jesse 2007). Two hundred and eighty-nine Dungeness crab (*Cancer magister*) were landed in the fishery (Table 3), compared to 65 in 2005 (Nottage and Parker 2005) and 43 in 2006 (Saelens and Jesse 2007).

Other Fish and Invertebrate Species

The SHOP continues to document landings data for other fish species of interest for management, including lingcod (*Ophiodon elongatus*), walleye pollock (*Theragra chalcogramma*), Pacific herring (*Clupea harengus pallasii*), American shad (*Alosa sapidissima*), and spiny dogfish (*Squalus ancanthias*) (Table 3). All of these species,

with the exception of spiny dogfish, were landed in lower quantities during the 2007 fishery when compared with 2006 (Saelens and Jesse 2006). One hundred and sixty-three mt of Humboldt squid was landed during the late part of the season (Table 3). Quantities of this size have not been previously documented in the shoreside hake fishery; although anecdotal evidence suggests that the presence of late season Humboldt squid is not unheard of, explanations for the presence of the squid have not been explored. Miscellaneous species such as Pacific cod (*Gadus macrocephalus*), sardine (*Sardinops sagax*), market squid, sharks, skates, octopus, jellyfish and flatfish other than Pacific halibut constitute the "other" category (Table 3). These "other" species totaled 13.02 mt in 2007, an increase of 4.09 mt compared to the 8.93 mt landed during 2006.

Marine Mammals

Reporting of incidental mortalities and injuries of marine mammals in commercial fisheries is mandated under the Marine Mammal Protection Act of 1972, and all fishers in the shoreside sector have been provided with forms for reporting such incidents. During the 2007 shoreside hake fishery, there were two mortalities. One harbor seal mortality occurred on July 21, 2007 and one California sea lion on July 22, 2007. Both were reported to the NMFS Marine Mammal Authorization Program by the vessel.²

² Personal communication, Patricia Lawson, NOAA Fisheries, Office of Protected Resources, February 15, 2008.

2006 BIOLOGICAL SAMPLING

Prior to the opening of the shoreside hake fishery and following consultation with each state, sampling goals were established by SHOP for each processor. In addition to documenting bycatch and species composition of hake landings, SHOP industry and agency samplers collected biological information from several species that will be used in stock assessment analyses. Biological sampling included acquiring otoliths and length-frequency data for hake as well as a variety of primary bycatch species (Tables 10 and 11).

Samplers measured 5,857 hake for length-frequency data alone, and collected 1,398 hake otolith samples, accompanied with length and weight data. Sampled hake exhibit a larger length when progressing toward northern ports (Figure 7). The coastwide average length of 45 cm for hake landed in 2007 is similar to that landed in 2006, and the average length of fish landed in each port ranged from 37 to 47 cm reflecting the market size for hake (Figure 8).

Biological samples acquired by SHOP during the fishing season were sent to the following locations:

- Pacific hake—Omar Rodriguez, NOAA Fisheries, Fishery Resource Analysis and Monitoring Division (Newport, Oregon)
- Yellowtail rockfish—Sandra Rosenfeld, WDFW, Marine Fish & Shellfish Division (Olympia, Washington)
- Widow rockfish—Don Pearson, NOAA Fisheries, NMFS (Santa Cruz, California)
- Other species—Sablefish, jack and Pacific chub mackerel, darkblotched, bocaccio, canary rockfish, and other bycatch species data have been retained by respective state agencies where specimens were landed for analysis (WDFW, ODFW, CDFG).

PROGRAM COSTS

In 2007, the cost of the Oregon, Washington and California portion of the SHOP was approximately \$161,153 (Table 12). Since 1995, most program funding has been provided by industry through the PSMFC. Government costs, including agency sampling personnel, infrastructure, summary and analysis during winter months, and PFMC support on bycatch issues, are not included in the previously indicated cost. These costs have become more substantial over time due to the increasing attention paid to bycatch issues, and have amounted to months of staff time at a cost approaching \$70,000.

Participating processors in the program in 2007 were Alber Seafoods, Bandon Pacific, Bornstein Seafoods, Da Yang Seafoods, Jessie's Ilwaco Fish, Ocean Beauty, Ocean Gold

Seafood, Pacific Choice Seafood, Pacific Coast Seafood, Pacific Shrimp, Point Adam's Packing and Trident Seafood.

AREAS FOR IMPROVEMENT IN 2008

As a transition year, 2008 will see the SHOP come to an end as the EFP fishery is transformed into a federally regulated fishery monitored by the NMFS. The federally regulated fishery will be implemented in the Fishery Management Plan under Amendment 10, Maximized Retention and Monitoring Program for Pacific Hake Shoreside Fishery. As a means to continue improving the catch accounting for the hake fishery:

- The NMFS and PSMFC will continue to work with processors to improve the electronic ticket system.
- Explore the possibility of implementing an incentive/penalty system for processors that fail to provide timely and accurate inseason and post season catch accounting.
- The NMFS will work with industry to implement the Amendment 10 monitoring program as a means to improve catch accounting and verification.
- The NMFS will explore implementation of a permanent permit issuing system that will replace the current vessel EFP.
- Vessels should continue to work to improve communication at-sea as a tool to reduce bycatch as well as explore other bycatch reduction options.
- Explore options to continue communicating inseason catch data to industry.
- Continue to work towards improving the effectiveness of the Electronic Monitoring Systems on vessels.
- Continue to explore methods of bycatch avoidance, focusing on this year's hot button species (overfished rockfish and salmon).

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Note: Visit the SHOP website for further information about the program, as well as access to annual reports and data; available at:

www.dfw.state.or.us/mrp/hake

Table 1. Summary of allocations and total catch for Pacific hake fishery, 1998 - 2007.

Year	US Optimum Yield (mt)	Shoreside		Catcher-Processor		Mothership		Tribal	
		Allocation	Catch	Allocation	Catch	Allocation	Catch	Allocation	Catch
1998	232,000	86,900	87,627	70,400	70,365	49,700	50,087	25,000	24,509
1999	232,000	83,800	83,388	67,800	67,679	47,900	47,580	32,500	25,844
2000	232,000	83,790	85,653	67,830	67,815	47,880	46,840	32,500	6,251
2001 ¹	190,400	72,618	73,326	58,786	58,628	41,496	41,903	17,500	6,080
2002 ²	129,600	44,906	45,276	36,353	36,341	25,661	26,593	22,680	22,793
2003	148,200	50,904	51,061	41,208	41,214	29,088	26,021	25,000	23,454
2004	250,000	90,510	89,251	73,270	73,175	51,720	24,102	32,500	28,648
2005	269,069 ³	97,469	97,378	78,903	78,147	55,696	39,599	35,000	34,357
2006	269,069	97,469	97,296	78,903	78,864	55,696	55,355	35,000	35,441
2007 ⁴	242,591	87,398	73,280	70,751	73,263	49,942	47,809	32,500	25,013

Note: Shoreside data provided by SHOP, at-sea data based on preliminary NMFS observer program. Allocation shows original (preseason) allocation.

¹ In 2001, the fishery closed on 8/21/01. The Makah tribe then returned 10,000 mt of its initial 27,500 mt allocation to NMFS, which reallocated it to the other fishery sectors. The shoreside component then reopened from 9/17 - 9/26/01.

² The Pacific hake stock was officially declared overfished in 2002.

³ 2005 - 2007, 2000 mt was reserved for scientific research.

⁴ On 11/28/07, 6,000 mt of hake was reallocated from the shoreside sector to the catcher-processor sector resulting in a final allocation of 81,398 mt and 76,751 mt respectively, and 76,751 mt respectively.

Table 2. Summary of the shoreside sector¹ of the Pacific hake fishery, 1992 - 2007.

Year	Shoreside Allocation (mt)	Hake Landed (mt)	Percent Under/Over	Total Vessels with EFP Landings	Total Number of Vessels Targeting Hake	Start Date*	End Date	Number of Participating Processors
1992	80,000	49,092	-38.64	23		4/15	10/30	7
1993	42,000	41,926	-0.18	24		4/15	8/24	13
1994	97,000	72,367	-25.39	33		4/15	11/23	8
1995	75,776	73,397	-3.14	35		4/15	7/25	15
1996	87,001	84,680	-2.67	37		5/15	9/10	11
1997	86,900	87,499	+0.69	38		6/15	8/22	12
1998	86,900	87,627	+0.84	35		6/15	10/13	13
1999	83,800	83,388	-0.49	36		6/15	9/13	14
2000	83,790	85,653	+2.22	36		6/15	9/15	14
2001 ²	72,618	73,326	+0.97	29		6/15	9/26	13
2002	44,906	45,276	+0.82	29		6/15	7/17	8
2003 ³	50,904	51,061	+0.31	35	35	6/15	7/14	9
2004 ⁴	90,510	89,251	-1.39	26	26	6/15	8/14	9
2005 ⁵	97,469	97,378	-0.09	29	29	6/15	8/18	10
2006 ⁶	97,469	97,296	-0.18	35	37	6/15	8/2	14
2007 ⁷	81,398	73,280	-9.97 ⁸	37	39	6/15	12/31	14

* Between 1997 - 2007, the shoreside fishery south of 42° N latitude opened April 1st.

¹ Includes both EFP and non-EFP landings.

² In 2001, the fishery closed on 8/21/01. The Makah tribe then returned 10,000 mt of its allocation to NMFS, which reallocated it to the other fishery sectors. The shoreside component then reopened from 9/17 - 9/26/01.

³ In 2003, the shoreside fishery closed on 7/14/03 at 12:00 p.m.

⁴ In 2004, the California fishery closed on 5/22 12:00 p.m. then reopened on 6/15. The shoreside fishery closed on 8/14/2004 at 4:00 p.m.

⁵ In 2005, the shoreside fishery closed on 8/18/2005 at 9:00 p.m.

⁶ In 2006, the California fishery closed on 5/25 at 6:00 p.m. then reopened with the primary season on 6/15/06. The shoreside fishery closed on 8/2/06 at 6:00 p.m.

⁷ In 2007, the shoreside fishery closed on 07/26/07 at 6:00 p.m., reopened on 10/07/07 and remained open until 12/31/07.

⁸ Percent under was calculated after 6,000 mt was reallocated to the catcher/processor sector.

**Table 3A. Weekly landings and bycatch for California during the southern component of the shoreside hake fishery (south of 42°N).
Best available data as of 02/07/08.**

Week Number	1	2	3	4	5	6	7	8	9	10
Week Ending Date*	4/7	4/14	4/21	4/28	5/5	5/12	5/19	5/26	6/2	6/9
Num. of EFP Hake Landings	3	2	2	6	6	12	17	2	2	0
EFP Hake Landed (mt)	19.28	6.47	159.52	425.07	483.58	692.68	1099.31	16.06	57.49	0
Cumulative Hake Landed (mt)	19.28	25.74	185.26	610.33	1,093.90	1,786.58	2,885.89	2,901.95	2,959.43	2,959.43
% of Hake Quota Landed	0.02	0.03	0.21	0.70	1.25	2.04	3.30	3.32	3.39	3.39
Num. of Landings Observed	1	0	0	3	2	0	2	0	2	0
Num. of Salmon	24	0	4	26	2	469	51	0	2	0
Num. of Chinook Salmon	24	0	4	26	2	469	51	0	2	0
Num. of Pacific Halibut	0	0	0	0	0	0	0	0	0	0
Num. of Dungeness Crab	0	0	0	0	0	0	0	0	0	0
Yellowtail Rockfish(mt)	0	0	0	0	0	0	0	0	0	0
Widow Rockfish (mt)	0.03	0	0.01	0.09	0.04	0.28	0.47	0	0.10	0
Yelloweye Rockfish (mt)	0	0	0	0	0	0	0	0	0	0
Canary Rockfish (mt)	0	0	0	0	0	0	0	0	t	0
Darkblotched Rockfish (mt)	0	0	0	0.04	0.18	0.02	0.53	0	0	0
Bocaccio Rockfish (mt)	0	0	0	0	0	0.00	0	0	0	0
Pacific Ocean Perch (mt)	0	0	0	0	0	0	0	0	0	0
Chilipepper Rockfish (mt)	0.08	0.01	t	0.30	0	2.05	3.01	0.01	0.13	0
Sablefish (mt)	0	0	0	0	0	0	0.01	0	0	0
Pacific Mackerel (mt)	0	0	0	0	0	0	0	0	0	0
Jack Mackerel (mt)	0	0	0	0	0	0	0	0	0	0
Lingcod (mt)	0.01	0	0	0.04	0	0.03	0.01	0	0	0
Walleye Pollock (mt)	0	0	0	0	0	0	0	0	0	0
Herring (mt)	0	0	0	0	0	0	0	0	0	0
American Shad (mt)	0	0	0	0	0	t	t	0	0	0
Spiny Dogfish (mt)	0	0	0	0.04	t	t	0	0	0	0
Misc Rockfish (mt)	0	0	0	0.01	0.26	0	14.59	0	0	0
Humboldt Squid (mt)	0	0	0	0	0	0	0	0	0	0
Other Species (mt)	0.00	0.00	t	0.16	0.26	0.29	0.00	0.00	0.00	0.00

* Primary component of fishery opened 6/15/06 (week 11) and is included in Table 3B.

t = trace; less than 0.005 mt

Table 3B. Weekly landings and bycatch for the primary shoreside hake fishing season (coastwide).
Best available data as of 02/07/08.

Week Number	11	12	13	14	15	16	17	28	29	30	31	32	33	34	35	36	37	FFP	Non-FFP ¹	Fishery
Week Ending Date	6/16	6/23	6/30	7/7	7/14	7/21	7/28	10/13	10/20	10/27	11/3	11/10	11/17	11/24	12/1	12/8	12/15	Total	Total	Total
Num. of Hake Landings	25	146	151	107	55	148	104	22	16	9	10	4	1	1	1	1	3	856	20	876
EFP Hake Landed (mt)	2,160.20	13,960.45	13,150.03	7,262.33	4,506.82	13,255.79	10,105.68	1,324.97	1,316.47	1,104.66	1,050.51	119.52	25.92	77.56	92.22	59.78	218.92	72,751.26	528.97	73,280.23
Cumulative Hake Landed (mt)	5,119.63	19,080.09	32,230.12	39,492.44	43,999.26	57,255.05	67,360.73	68,685.70	70,002.17	71,106.83	72,157.34	72,276.85	72,302.77	72,380.33	72,472.55	72,532.34	72,751.26	72,751.26	528.97	73,280
% of Hake Quota Landed	5.86	21.83	36.88	45.19	50.34	65.51	77.07	78.59	80.10	81.36	82.56	82.70	82.73	82.82	82.92	82.99	83.24	83.24	0.61	83.85
Num. of Landings Observed	8	67	69	49	26	64	51	9	5	5	5	1	1	1	1	1	3	374	0	374
Num. of Salmon	197	811	525	109	48	317	139	0	1	0	1	1	0	0	2	20	14	2,763	0	2,763
Num. of Chinook Salmon	146	749	468	98	44	243	97	0	1	0	1	1	0	0	2	20	14	2,462	0	2,462
Num. of Pacific Halibut	0	2	14	9	5	10	3	0	1	0	0	0	0	0	0	0	0	44	0	44
Num. of Dungeness Crab	9	23	24	21	29	55	128	0	0	0	0	0	0	0	0	0	0	289	0	289
Yellowtail Rockfish (mt)	1.24	31.90	46.53	21.45	8.56	16.38	56.40	†	0.05	0.29	0.38	0.78	0	0.01	0.19	0.18	0.01	184.35	1.80	186.16
Widow Rockfish (mt)	30.71	11.23	3.09	5.58	3.39	15.00	18.65	†	†	0	0.10	0.01	0	0	0.03	0	0.16	88.97	0	88.97
Yelloweye Rockfish (mt)	†	0.02	0.01	†	0	†	0	†	0	0	0	0	0	0	0	0	0	0.04	0	0.04
Canary Rockfish (mt)	0.01	0.14	0.45	0.23	0.14	0.22	0.81	0	0	†	†	0.01	0	0	0	0	0	2.01	†	2.01
Darkblotched Rockfish (mt)	0	0	0.00	0.01	0	0.01	0	0.01	†	†	0	0	0	0	0	0	0	0.95	0	0.95
Bocaccio Rockfish (mt)	0	0.48	0.01	0	0.11	0.13	0.01	0	0.17	0.01	0.01	0	0	0.01	0.01	0.01	0.04	1.01	0	1.01
Pacific Ocean Perch (mt)	0	0.01	†	†	†	0.02	†	0.01	0.66	0.33	0.61	0	0	0	0.24	0	21.26	23.14	0	23.14
Chilipepper Rockfish (mt)	†	0	0	†	0	0	0	0	†	0	0	0	0	0	0	0	0	5.59	0	5.59
Stablefish (mt)	†	0.02	6.99	1.48	0.03	0.18	0.15	0.02	†	0.13	0.02	0	0	0	0	0	0	9.04	0	9.04
Pacific Mackerel (mt)	0	0.02	2.09	0.21	0.03	1.64	0.19	0	0	0	0	0	0	0	0	0	0	4.18	0	4.18
Jack Mackerel (mt)	†	0.04	0.21	0.13	0.29	2.13	3.00	0.98	0	0.29	0	0	0	0	0	0	0	7.07	0	7.07
Lingcod (mt)	0.17	1.35	1.26	0.48	0.45	0.99	0.20	0	0	0	0.01	0	0	0	0	0	†	5.01	0	5.01
Walleye Pollock (mt)	0	0	†	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0.00
Herring (mt)	†	†	0.01	†	0.02	†	0	0	0	0	0	0	0	0	0	0	0	0.03	0	0.03
American Shad (mt)	1.47	2.32	0.54	1.41	0.47	4.31	3.63	0	0	0	0	0	0	0	0	0.26	0	14.42	†	14.42
Spy Dogfish (mt)	0.27	10.33	7.88	1.54	0.81	1.44	0.03	3.78	2.31	0.89	0.80	1.37	0.02	0.40	13.69	2.94	2.83	51.38	0.01	51.38
Misc Rockfish (mt)	0.02	0.01	0.01	0.12	0.09	0.95	†	0.29	0.13	1.75	1.38	0.09	0	0.08	0.05	0.02	0.08	19.97	0	19.97
Humboldt Squid (mt)	0	0	0	0	0	0	0	75.48	21.42	41.04	15.97	5.42	0.74	2.10	0.39	0.01	0.15	162.72	0	162.72
Other Species (mt) ²	0.26	1.14	2.45	0.99	0.61	2.11	0.89	3.48	0.18	0.05	0.27	0	0.01	0.03	0.15	0.01	0.01	13.35	†	13.35

¹Includes 18 deliveries sorted at-sea and two deliveries under 10,000 lbs.

²Other species includes flatfish (other than halibut - 4.07 mt), market squid (3.74), shark (2.01 mt), pacific cod,skates, sardines, octopus, sunfish, jellyfish, regfish, ratfish, and king of the salmon.

† = trace; less than 0.005 mt

Table includes estimates of atsea dumping

Table 4. Cumulative shoreside hake fishery report for Oregon, 2007.

Washington and California data are not listed individually for processor confidentiality. Best available data as of 02/07/2008.

	Oregon Fishery Total	CA/OR/WA Fishery Total	Oregon Observed	CA/OR/WA Observed	Percent Landing Observed
EFP Hake (mt)	42,278.62	72,751.26	18,956.42	28,684.38	39.43
Number of Landings	561	856	285	374	43.69
No. of Salmon	795	2763	318	639	23.13
No. of Chinook Salmon	670	2462	251	537	21.81
No. of Pacific Halibut	41	44	26	28	63.64
No. of Dungeness Crab	274	289	208	222	76.82
Yellowtail (kg)	46,143.94	184,351.25	14,840.18	93,115.69	50.51
Widow (kg)	53,398.25	88,966.69	9,015.15	22,505.44	25.30
Yelloweye (kg)	27.67	39.46	27.67	30.39	77.01
Canary (kg)	829.62	2,014.86	379.66	1,327.66	65.89
Darkblotched (kg)	18.60	954.81	12.25	212.28	22.23
Bocaccio (kg)	197.77	1,007.88	22.68	161.48	16.02
POP (kg)	8.62	23,142.73	3.18	21,587.82	93.28
Sablefish (kg)	8,812.39	9,040.55	3,464.54	3,485.40	38.55
Pacific Mackerel (kg)	2,594.55	4,178.95	2,036.18	2,037.08	48.75
Jack Mackerel (kg)	5,533.83	7,074.23	2,667.12	3,218.69	45.50
Lingcod (kg)	1,834.33	5,009.02	679.93	2,040.26	40.73
Spiny Dogfish (kg)	7,548.23	51,378.40	2,568.24	28,233.40	54.95
Chilipepper Rockfish (kg)	0.45	5,592.79	0.45	433.63	7.75
Nearshore Rockfish (kg)	42.64	944.38	6.80	248.57	26.32
Shelf Rockfish (kg)	39.46	68.49	12.25	40.82	59.60
Slope Rockfish (kg)	258.09	18,744.25	129.27	1,654.70	8.83
Misc Rockfish ¹ (kg)	206.38	211.83	176.45	179.62	84.80
Pacific Herring (kg)	7.71	34.47	5.90	32.21	93.42
American Shad (kg)	9,435.17	14,416.07	4,371.27	5,199.98	36.07
Walleye Pollock (kg)	0.00	1.36	0.00	1.36	100.00
Other Species ² (kg)	3,578.39	7,607.65	1,803.03	3,753.48	49.34

¹ Misc. rockfish includes shortspine thornyhead

² Other species includes shark (1.99 mt), flatfish (other than halibut), pacific cod, skates, sardines, octopus, sunfish, jellyfish, ragfish, rattfish, king of the salmon, and market squid.

Table 5. Percentage of EFP trips observed by SHOP at each processor for the 2007 fishery.

Processor	Port	Number of Trips	Number of Trips Observed	Percentage of Trips Observed
Alber Seafoods	Crescent City	14	2	14.29
Bandon Pacific	Charleston	44	43	97.73
Bornstein Seafoods	Astoria	43	13	30.23
Da Yang Seafoods	Astoria	33	14	42.42
Jessie's Ilwaco	Ilwaco	54	16	29.63
Ocean Beauty	Newport	29	9	31.03
Ocean Gold Seafoods	Westport	190	62	32.63
Pacific Choice Seafoods	Eureka	38	8	21.05
Pacific Coast Seafoods	Warrenton	114	40	35.09
Pacific Shrimp Seafoods	Newport	132	132	100.00
Point Adams Packing Co.	Hammond	24	9	37.50
Trident Seafoods	Newport	141	25	17.73

Table 6. Average bycatch rate by port and vessel for species of interest in 2007. Vessel rates are calculated as the average weight of bycatch (kg) per EFP trip.

Port	Vessel	% Landings								Pacific Ocean Perch	Sablefish
		Observed	Yellowtail Rockfish	Widow Rockfish	Yelloweye Rockfish	Canary Rockfish	Darkblotched Rockfish	Bocaccio Rockfish			
Astoria	Annette	41.18	89.25	59.74	0.00	0.29	0.00	0.00	0.00	0.00	0.03
	Collier Brothers	54.55	81.15	56.25	1.07	2.00	0.00	0.00	0.00	0.02	0.52
	George Allen	25.00	19.43	0.89	0.00	0.60	0.00	0.00	0.00	0.00	0.32
	Nicole	26.09	75.12	36.78	0.00	0.47	0.00	0.00	0.00	0.00	1.20
	Nordic Fury	44.44	237.35	1443.66	0.00	4.66	0.00	0.00	0.00	0.00	0.55
	Pacific Future	40.00	340.78	127.66	0.00	1.81	0.00	7.96	0.20	0.00	0.05
	Perseverance	30.77	124.34	57.24	0.00	2.13	0.00	0.00	0.00	0.00	0.35
	Raven	36.84	114.64	434.61	0.00	3.89	0.00	0.95	0.00	0.00	0.86
	Seadawn	37.50	749.59	262.79	0.00	2.49	0.00	0.64	0.00	0.00	0.36
	Seeker	23.81	130.09	3.67	0.00	1.49	0.00	0.00	0.00	0.00	3.20
Astoria Average			202.17	223.50	0.11	1.94	0.00	0.90	0.02	0.74	
Newport	Bay Islander	31.03	0.48	1.14	0.00	0.03	0.00	0.00	0.00	0.00	20.13
	Blue Fox	10.71	1.64	4.73	0.00	1.36	0.00	0.00	0.00	0.00	75.30
	Collier Brothers	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Excalibur	100.00	2.37	0.83	0.00	0.11	0.10	0.00	0.00	0.00	7.86
	Fishwish	100.00	0.00	0.11	0.00	1.76	0.00	0.06	0.00	0.00	3.40
	Last Straw	100.00	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Lisa Melinda	12.90	2.69	1.62	0.00	1.96	0.01	0.00	0.00	0.00	39.37
	Miss Berdie	100.00	1.74	2.19	0.00	2.97	0.50	0.03	0.05	0.00	54.51
	Miss Sarah	23.33	3.01	145.07	0.00	2.09	0.03	0.00	0.02	0.00	80.57
	Miss Sue	100.00	5.13	2.49	0.00	1.68	0.00	0.00	0.09	0.00	14.70
	Pacific	100.00	1.53	0.49	0.15	1.29	0.00	0.00	0.03	0.00	19.62
	Pacific Ram	15.63	4.18	17.97	0.00	1.13	0.17	0.00	0.01	0.00	10.67
	Pegasus	30.00	93.03	2.93	0.00	3.67	0.00	0.00	0.02	0.00	1.09
Warrior II	100.00	2.89	0.96	0.00	1.47	0.00	0.00	0.00	0.00	2.38	
Newport Average			8.09	17.59	0.01	1.35	0.06	0.00	0.01	28.53	
Charleston	Jeanette Marrie	95.65	1.32	1.08	0.00	0.16	0.00	0.16	0.00	0.89	
	Last Straw	100.00	9.68	0.48	0.00	0.11	0.00	0.00	0.00	0.71	
Charleston Average			5.31	0.79	0.00	0.13	0.00	0.08	0.00	0.80	
Westport	Cape Kiwanda	0.00	58.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Chellissa	36.00	485.91	309.93	0.00	5.21	0.00	0.56	22.19	0.16	
	Jamie Marie	48.39	454.41	70.94	0.00	2.18	0.04	3.01	696.78	0.26	
	Marathon	25.93	564.29	63.13	0.03	0.91	0.03	0.66	0.77	0.30	
	MARK-1	30.00	1088.35	162.50	0.27	23.41	0.00	1.95	0.00	0.00	
	Ocean Hunter	26.32	427.71	163.10	0.00	0.93	0.00	0.00	0.00	0.00	
	Pacific Challenger	42.11	2392.65	160.33	0.14	17.02	0.74	5.87	0.53	0.00	
	Predator	24.00	326.84	9.04	0.00	3.90	0.00	18.72	22.95	5.86	
	Sea Clipper	42.86	154.38	45.49	0.19	0.23	10.37	1.98	26.28	0.32	
	Traveler	11.11	713.60	57.66	0.00	1.86	0.05	3.73	0.76	0.00	
Westport Average			703.36	118.05	0.06	6.05	0.85	4.24	121.76	0.90	
Ilwaco	Collier Brothers	100.00	48.08	4.54	0.00	7.26	0.00	0.00	0.00	0.91	
	Defiant	22.22	12.80	89.00	0.00	0.05	0.00	0.00	0.00	0.18	
	Grumpy J	37.50	9.95	88.62	0.00	0.62	0.00	0.00	0.00	0.37	
	Muir Milach	26.32	217.46	478.90	0.00	0.88	0.00	0.00	0.00	2.01	
Ilwaco Average			84.62	224.51	0.00	0.65	0.00	0.00	0.00	0.89	
Crescent City	Grumpy J	25.00	0.00	19.73	0.00	0.00	45.36	0.00	0.00	0.00	
	Miss Sue	10.00	0.00	6.86	0.00	0.00	0.64	0.00	0.00	0.36	
Crescent City Average			0.00	17.40	0.00	0.00	14.06	0.00	0.00	0.62	
Eureka	Fishwish	25.00	0.00	44.00	0.00	0.00	0.09	0.00	0.00	0.00	
	Miss Berdie	22.22	0.00	4.43	0.00	0.00	15.59	0.00	0.00	0.00	
	Pacific	0.00	0.00	31.21	0.00	0.00	0.00	0.00	0.00	0.00	
	Warrior II	28.57	0.00	33.24	0.00	0.19	0.00	0.71	0.00	0.00	
Eureka Average			0.00	20.33	0.00	0.04	15.20	0.13	0.00	0.00	

Note: Best available data as of 02/07/2008. Port rates are calculated as the average weight of landings for each port.

Table 7. Annual salmon bycatch in the shoreside hake fishery, 1992-2007.

Year	Hake Landed (mt)	Number of Chinook	Rate of Chinook ¹	Number of Coho	Number of Pink	Number of Chum	Number of Sockeye
1992	49,092	491	0.010	0	0	0	0
1993	41,926	419	0.010	0	0	0	0
1994	72,367	581	0.008	4	0	0	0
1995	73,397	2,954	0.040	2	15	1	0
1996	84,680	651	0.008	0	0	0	0
1997	87,499	1,482	0.017	2	0	0	0
1998	87,627	1,699	0.019	8	0	5	1
1999	83,388	1,696	0.020	5	11	0	0
2000	85,653	3,306	0.039	23	0	1	0
2001	73,326	2,627	0.036	35	303	32	0
2002	45,276	1,062	0.023	14	0	72	0
2003	51,061	425	0.008	0	0	0	0
2004	89,670	4,206	0.047	8	0	43	0
2005	97,378	4,018	0.041	37	49	6	0
2006	97,296	839 ²	0.009	18	0	3	0
2007	73,280	2462 ³	0.034	141	47	113	0

Note: For 1992 - 1996, refer to Weeks and Kaiser (1997). For years following 1997, refer to annual Shoreside Hake Observation Program reports

¹Rate is calculated as number of fish per mt hake.

² Of these salmon, 4 were not identified by State Samplers but were recorded on fish tickets as Chinook.

³ Includes estimate of at-sea dumping

Table 8. Number of Chinook salmon with coded wire tags recovered by the Shoreside Hake Observation Program, 1992-2007.

Year	Number of Chinook Landed	Number of Snouts Collected	Number of Chinook with CWT	Percent of Landed Chinook with CWT
1992	491	17	0	0.0
1993	419	14	13	3.1
1994	581	31	0	0.0
1995	2954	122	0	0.0
1996	651	25	31	4.8
1997	1557	50	67	4.3
1998	1695	70	55	3.2
1999	1695	111	99	5.8
2000	3306	301	211	6.4
2001	2,672	215	130	4.9
2002	1,062	87	65	6.1
2003	425	55	25	5.9
2004	4,206	436	255	6.1
2005	4017*	260	154	3.8
2006	839	84	36	4.3
2007	2,462	392	N/A	N/A

Note: For 1992 - 1996, refer to Weeks and Kaiser (1997). For years 1997 - 2006, best available data as of 02/05/2008 (RMIS 2008 and respective state agencies).

* 783 fish were not scanned for clipped adipose fins due to being excluded during sub-sampling. An additional two fish were determined missing from landings. With eight percent of scanned salmon in 2005 having clipped adipose fins, had these 785 fish also been scanned it is estimated that 63 would have had an adipose clip.

Table 9. Recoveries of coded wire tags from Chinook recovered by Shoreside Hake Observation Program Samplers by release basin 1993, 1996 - 2006.

Region Name	1993	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
Georgia Strait		3	1	1	5		1						11
Fraser R – Thompson R		6	4	9	21	14	5	9		3	2	2	75
Puget Sound Mid				1	2	4	1				1	1	10
Puget Sound South			1		8	4	2			1		4	20
Coastal Washington, North													0
Skagit R				1									1
Stillaguamish R – Snohomish R					1	1		1					3
Upper Columbia R (abv. McNary Dam; excl. Snake R)		1	1		2	20	14	5	1	5		2	51
Central Columbia R (Bonneville Dam to McNary Dam)					2	19	19	5		3	3	2	53
Lower Columbia R (mouth to Bonneville Dam)	6	3	11	2	16	43	30	20	5	58	23	9	226
Columbia R, general			1		1					1			3
Snake R			7	1	13	40	18	10	1	46	18	9	163
Hood Canal				3	3	4					5	1	16
Coastal Oregon, North					1	1		1		1			4
Klamath R – Trinity R	2	3	11	9	2	9	4	1	2	22	32		97
Coastal Oregon, South	4	9	10	4	7	36	11	8	6	18	18	4	135
Sacramento R	1	4	10	28	13	10	18	4	9	82	45	2	226
San Joaquin R		2	9	5	2	5	7	1	1	13	4		49
Nooksack R						1					2		3
Coastal California, Central				1						2	1		4
Coastal California, South													1
Total	13	31	67	65	99	211	130	65	25	255	154	36	1151

Notes:

Data downloaded from RMIS 02/05/08
 Some data provided directly from respective state agencies
 In 1993, 1996 and 1997 only Oregon data is available
 No CWT recovered in 1994 or 1995
 California data only available for 1998, 2000, 2001 and 2003
 Washington data missing for 2003

Table 10. Biological sampling (otoliths, length, weight, and sex) of bycatch species in Oregon and Washington ports conducted by the Shoreside Hake Observation Program during the 2006 fishery.

	Westport			Ilwaco			Astoria			Newport			Charleston		
	No. Fish	No. Samples	Total Fish	No. Fish	No. Samples	Total Fish	No. Fish	No. Samples	Total Fish	No. Fish	No. Samples	Total Fish	No. Fish	No. Samples	Total Fish
Pacific Hake (age sample)	20	17	320	20	4	80	20	24	458	20	20	400	20	3	60
Pacific Hake (lgh/wt only)	97 - 130	17	1,824	93 - 110	4	411	100	20	2,022	100	11	1,100	100	2	200
Jack Mackerel	-	-	-	-	-	-	30	1	30	30	1	30	-	-	-
Yellowtail Rockfish (age)	16 - 50	16	764	50	1	50	3 - 50	3	73	-	-	-	-	-	-
Yellowtail Rockfish (lgh/wt only)	16 - 50	34	796	20 - 25	5	105	2 - 20	37	713	-	-	-	-	-	-
Widow Rockfish	26 - 50	9	383	50	2	100	1 - 50	8	351	50	1	50	-	-	-
Canary Rockfish	1 - 50	23	201	1 - 4	7	15	1 - 24	32	92	2 - 7	5	19	1	4	4
Darkblotched Rockfish	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yelloweye Rockfish	-	-	-	-	-	-	1 - 3	2	4	-	-	-	-	-	-
Bocaccio	-	-	-	-	-	-	4	1	4	-	-	-	1	1	1
Sablefish	-	-	-	-	-	-	-	-	-	30	2	60	-	-	-
Spiny Dogfish (fms)	25 - 50	15	636	-	-	-	-	-	-	-	-	-	-	-	-
Spiny Dogfish (lengths)	31 - 75	7	371	-	-	-	-	-	-	-	-	-	-	-	-
Total		131	4,924		23	761		128	3,747		40	1,659		10	265

Table 11. Biological sampling (otoliths, length, weight, and sex) of bycatch species in California ports conducted by the Shoreside Hake Observation Program during the 2007 fishery.

	Eureka			Crescent City		
	No. Fish	No. Samples	Total Fish	No. Fish	No. Samples	Total Fish
Pacific Hake (age sample)	20	3	60	20	1	20
Pacific Hake (lgh/wt only)	100	2	200	100	1	100
Widow Rockfish	-	-	-	-	-	-
Darkblotched Rockfish	-	-	-	-	-	-
Spiny Dogfish	-	-	-	-	-	-
Chilipepper Rockfish	-	-	-	-	-	-
Bocaccio	-	-	-	-	-	-
Total		5	260		2	120

Table 12. In-season budget for the Shoreside Hake Observation Program, 1995 - 2007.

Year	Length of Primary Season (days)	Shoreside Hake Allocation (mt)	Oregon Cost (\$)	Industry funds to Oregon	Washington and California Cost (\$)	Estimated Industry Samplers ¹ (\$)	Total Cost (\$)	Cost per mt Hake (\$/mt)
1995	102	75,776	~20,000	~30,000	18,000	25,000	93,000	1.23
1996	119	87,001	~20,000	~30,000	18,000	29,000	97,000	1.11
1997	69	86,900	17,706	30,294	27,000	30,000	105,000	1.21
1998	121	86,900	19,000	30,000	27,000	30,000	106,000	1.22
1999	91	83,800	18,000	33,339	27,000	32,544	110,883	1.32
2000	93	83,790	18,000	38,371	27,000	32,544	115,696	1.38
2001	76	72,618	18,000	46,734	27,000	35,770	127,508	1.76
2002	31	44,906	17,926	38,371	27,000	29,808	113,105	2.52
2003	30	50,904	18,000	40,519	18,000	29,808	106,327	2.09
2004	60	90,510	22,000	53,467	18,000	27,000	120,467	1.33
2005	65	97,469	28,693	67,867	18,000	27,000	141,560	1.45
2006	49	97,469	25,000	79,881	27,000	27,000	158,881	1.63
2007	128	81398 ²	27,000 ³	80,153	27,000	27,000	161,153	1.98 ⁴

Note:

¹Estimated observer costs are for 15% observer coverage for all ports.

²Quota after November 28th reallocation.

³ODFW typically contributes approximately \$70,000 for off-season management, not included above.

⁴Cost per mt hake based on quota after reallocation. Cost per mt hake before reallocation is 1.84 \$/mt. Cost of vessel electronic monitoring not included.

Total fixed costs include costs for supplies, travel, vehicle use, and salaries.

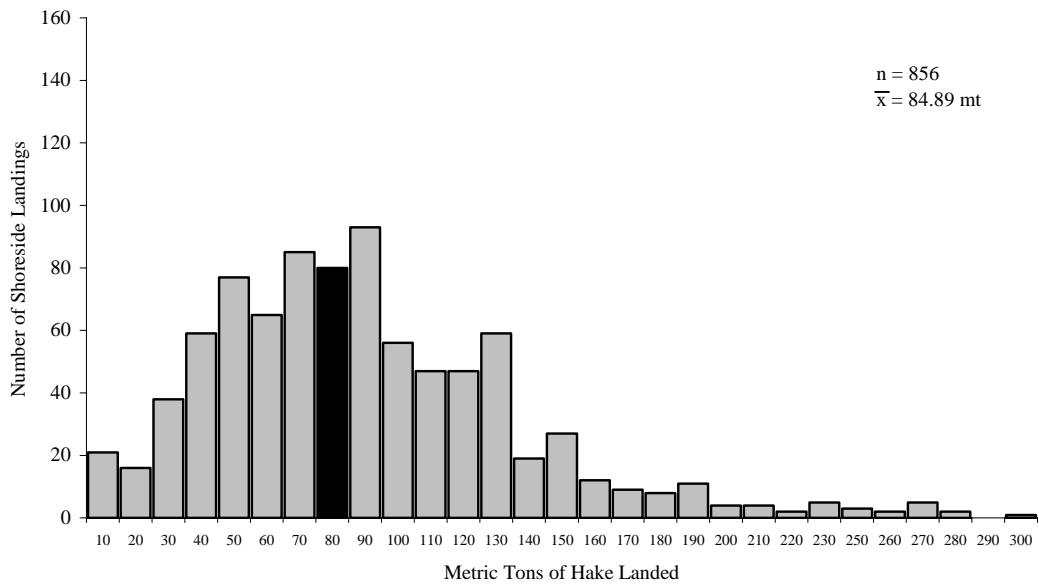


Figure 1. Frequency distribution of hake landing weights in the 2007 shoreside hake fishery.
 Note: Black bar indicates mean landing weight.

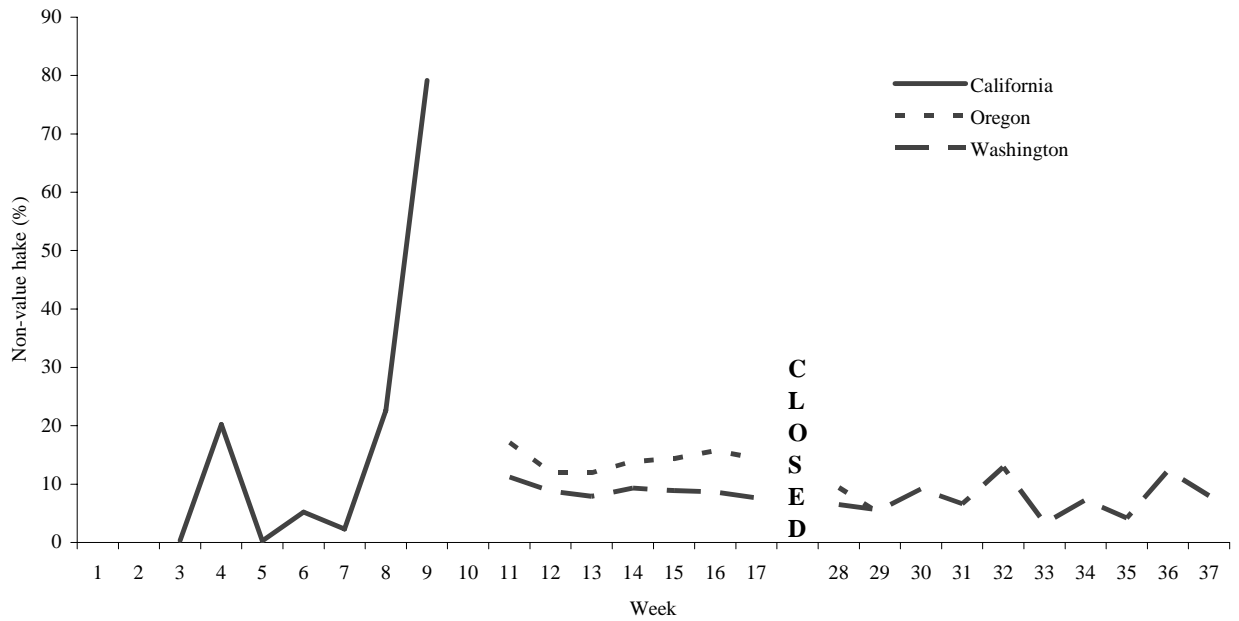


Figure 2. Percentage of hake identified as no value on fishtickets by fishery week in the 2007 shoreside hake fishery.
 Note: Calculated using 837 of 856 shoreside hake landings where weighback was reported.

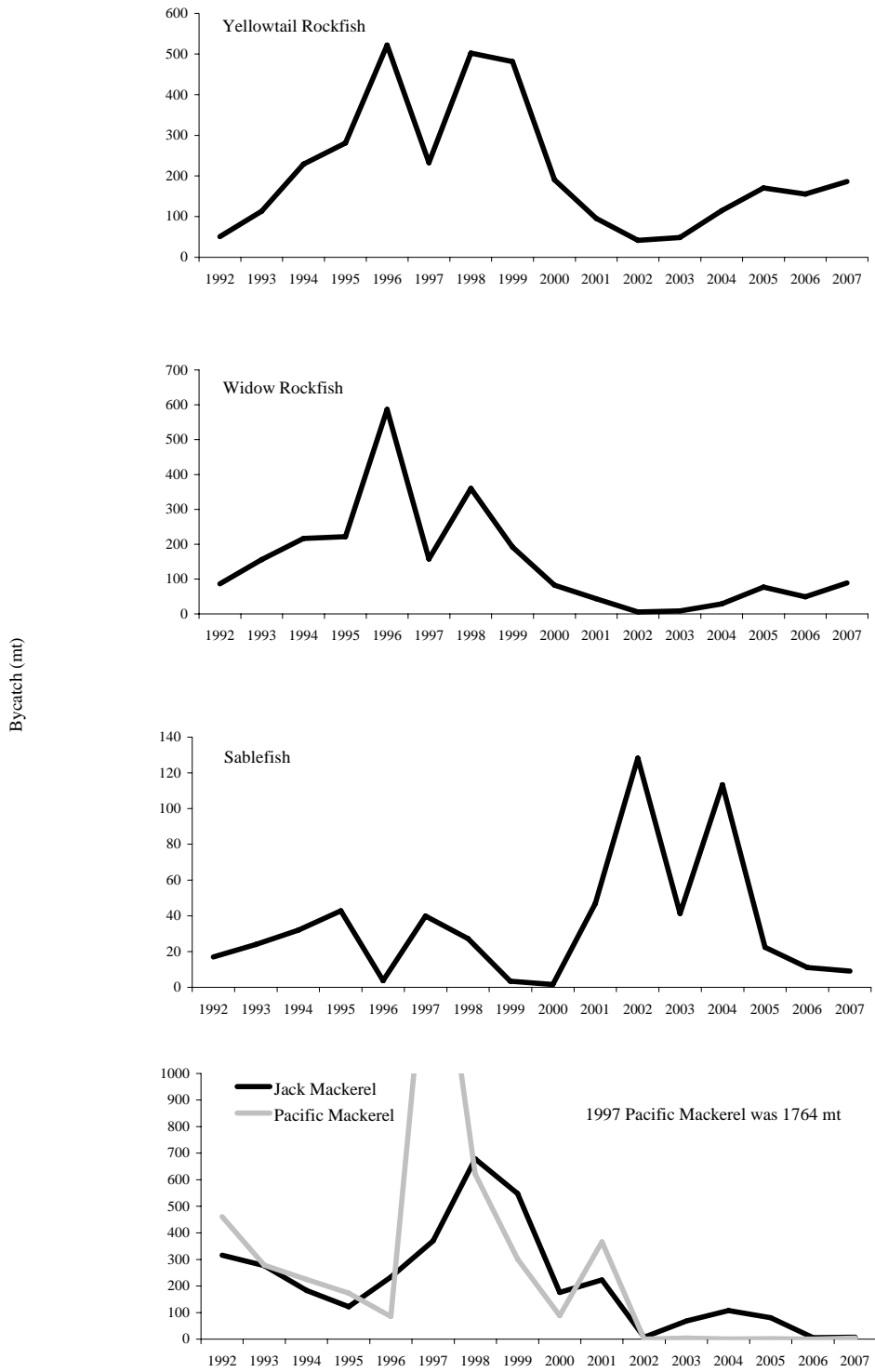


Figure 3. Trends in major bycatch components of the shoreside hake fishery, 1992 - 2007.
 Note: 1992 allowed sorting of bycatch

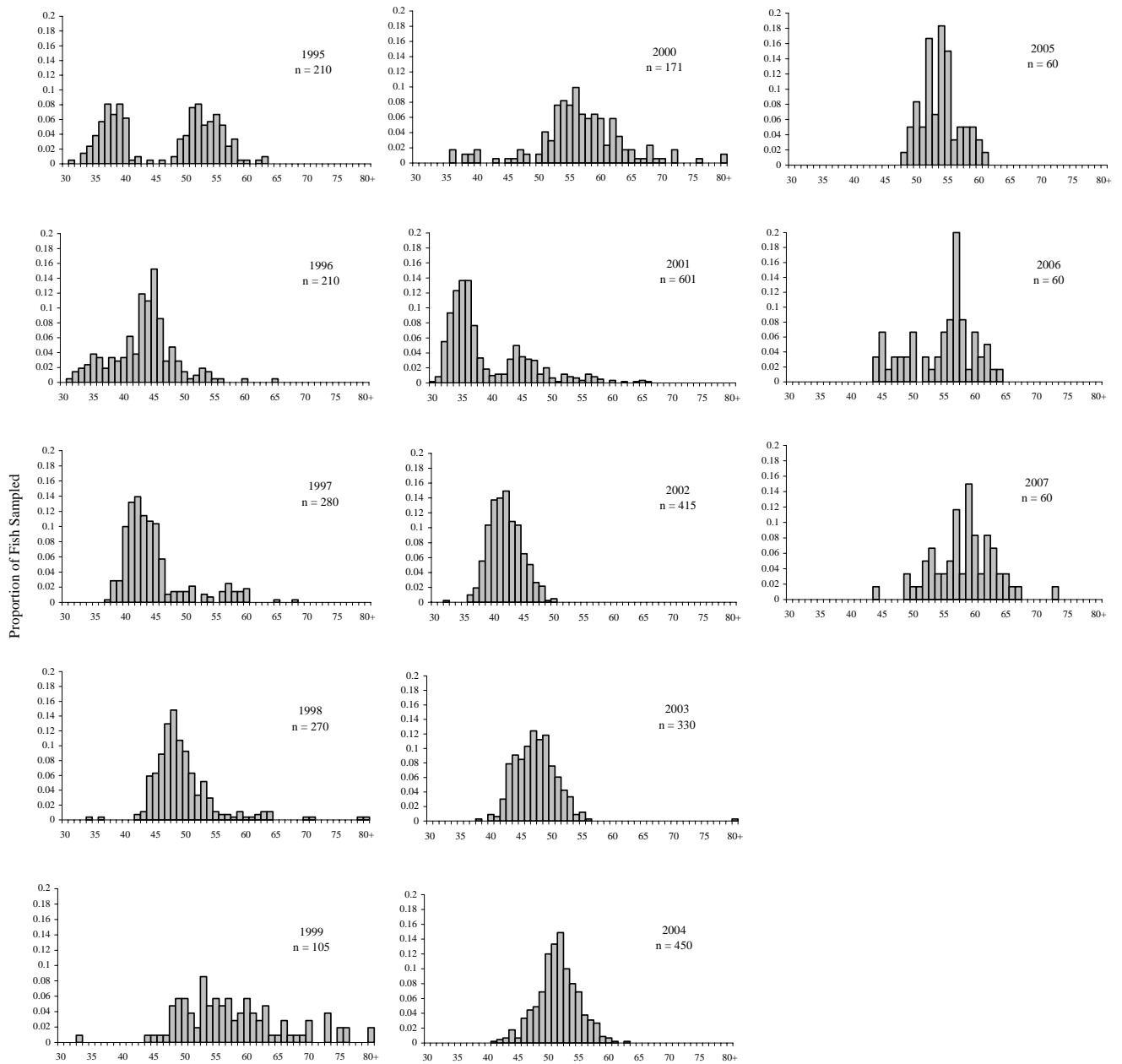


Figure 4. History of length-frequency distributions for sablefish observed by the Shoreside Hake Observation Program in Oregon, 1995 - 2007.

Note: Biological samples of sablefish not taken in Washington or California.

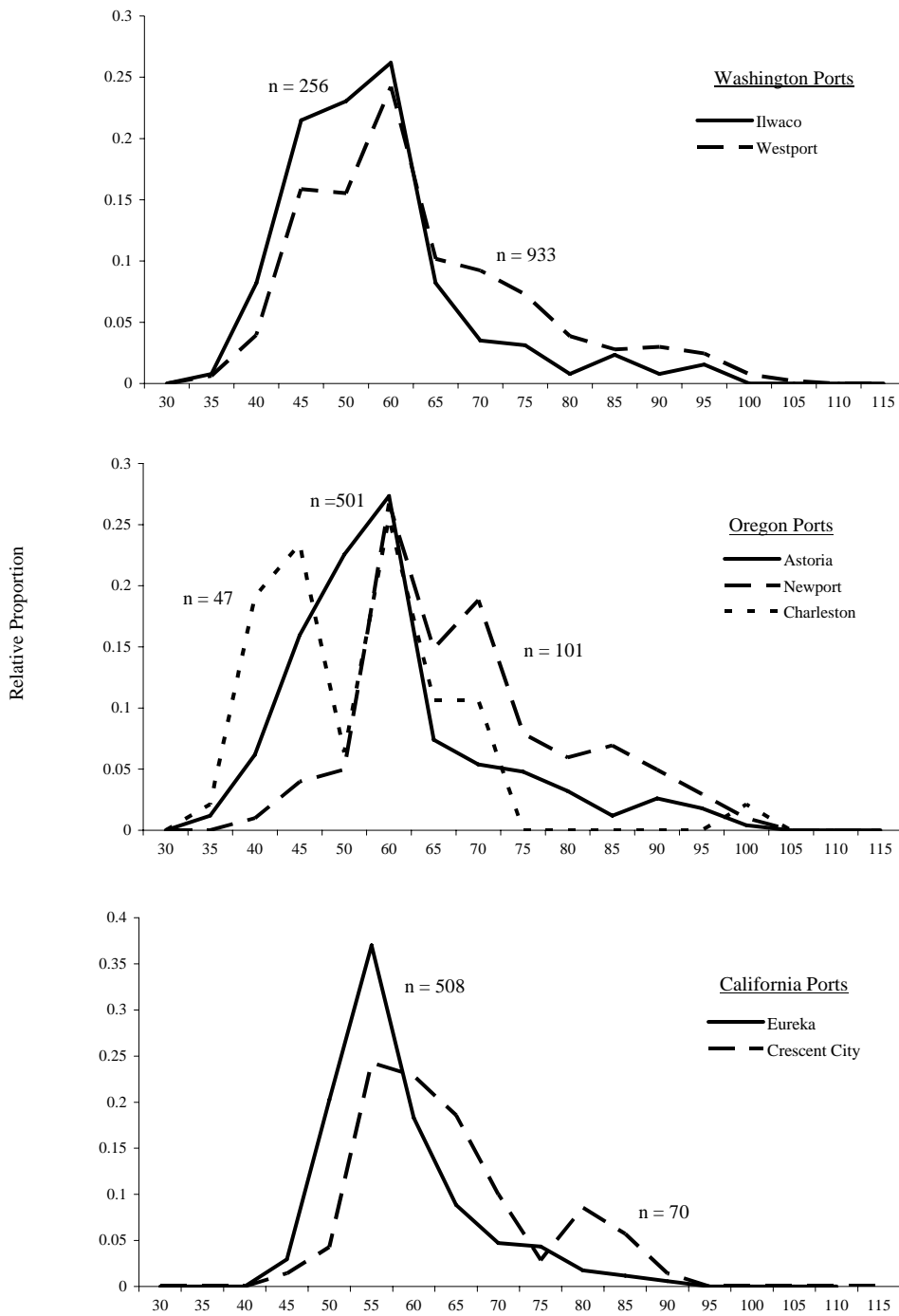


Figure 5. Length frequency histogram (in cm) for Chinook salmon bycatch in the shoreside hake fishery, 2007.

Note: Chinook salmon less than 24 inches (60cm) in length are generally 2 years of age or less. Length data was unavailable for 46 Chinook salmon.

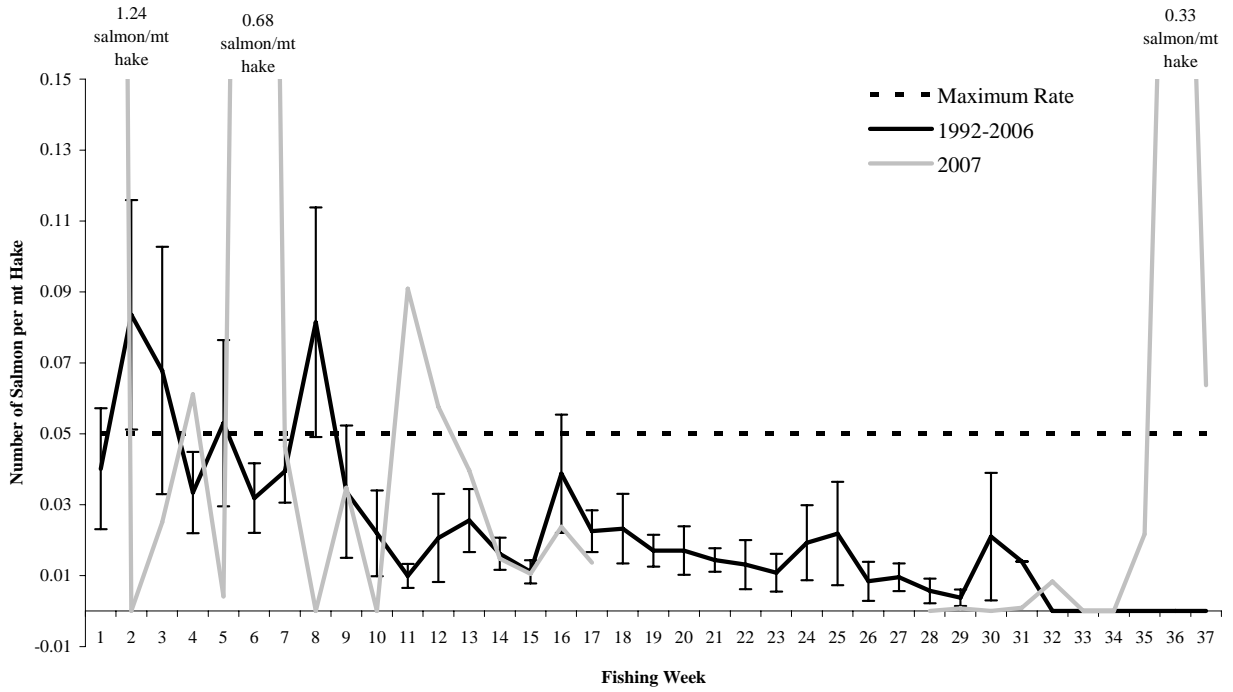


Figure 6. Weekly bycatch rate of salmon in the 2007 shoreside hake fishery compared to average rates (\pm SEM) for 1992-2006.

Note: Maximum rate is stipulated by the 1996 NMFS Biological Opinion (NMFS 1996)
 The primary season opened on 15 June 2007, in Week 11

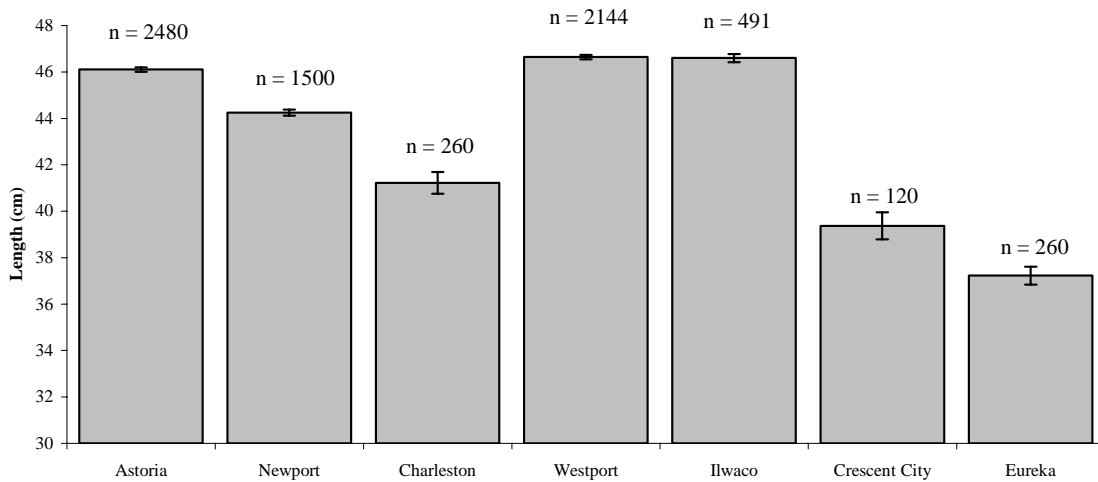


Figure 7. Mean length (\pm SEM) of Pacific hake by port in the shoreside hake fishery, 2007.

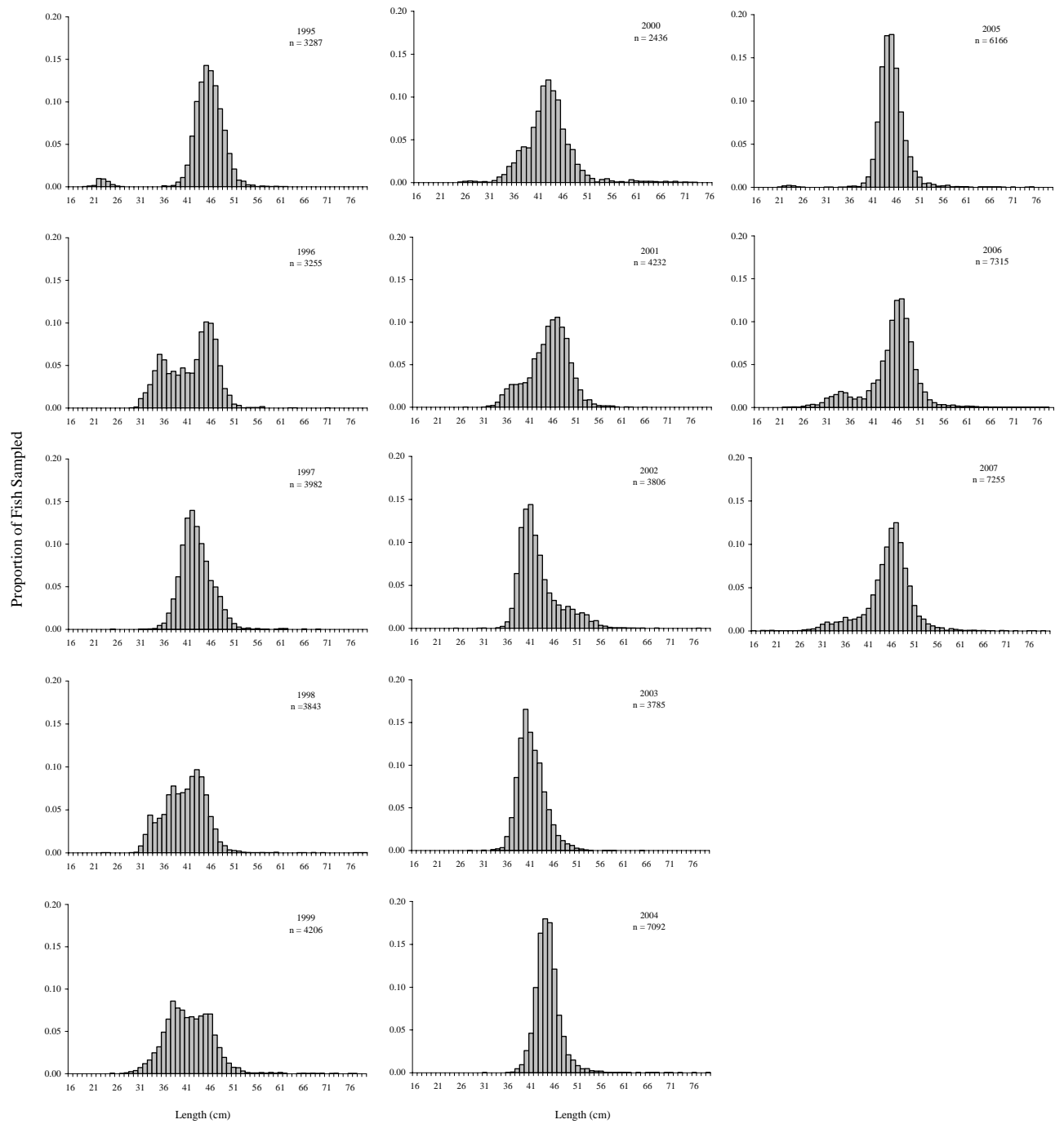


Figure 8. History of length-frequency distributions of Pacific hake in the shoreside hake fishery, 1995 - 2007.

Note: 1995 - 2001 includes data from Oregon only. Washington, Oregon, and California included in 2002 - 2007.