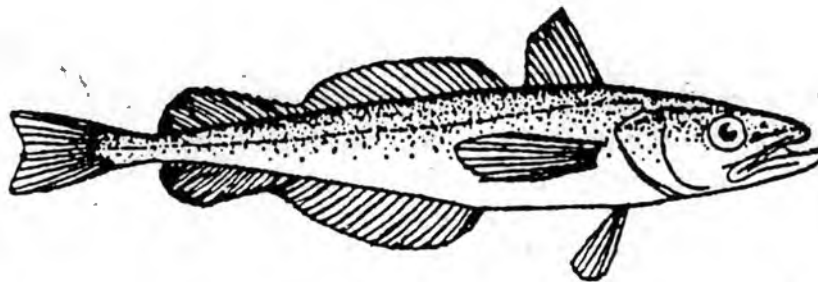


SUPPLEMENTAL  
Attachment G.5.c.  
November 1993

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THE PACIFIC WHITING SHORESIDE OBSERVATION PROGRAM



Prepared by

William H. Barss  
and  
Mark Saelens

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The Pacific Whiting  
Shoreside Observation

Oregon Department of Fish and Wildlife  
November 1993

## THE PACIFIC WHITING SHORESIDE OBSERVATION PROGRAM

### INTRODUCTION

Bycatch of sensitive and prohibited species continues to be a management concern in the Pacific whiting fishery. Information from the fishery is needed to determine the impacts of directed fishing on whiting and other species caught as bycatch to this fishery. Information is also needed to determine the results of catch restrictions implemented to protect salmon and other prohibited or sensitive species, such as seasons and area closures.

The Oregon fishing and processing industry in cooperation with the Oregon Department of Fish and Wildlife (ODFW) have made a commitment to provide an accurate accounting of shoreside landings of whiting and whiting bycatch. To carry out this commitment, following a pilot observation program in 1991, Oregon conducted a shoreside Pacific whiting observation program during 1992-93 and intends to conduct a program again during 1994. The Washington Department of Fisheries (WDF) and California Department of Fish and Game (CDFG) along with their fishing industries, participated in this program during 1993 and have also committed to provide observations on shoreside landings of whiting in Ilwaco, WA and Crescent City, CA. The National Marine Fisheries Service (NMFS), Pacific Fishery Management Council (PFMC) and Pacific States Marine Fisheries Commission (PSMFC) have provided valuable assistance to the program.

This report summarizes some of the results of the 1993 shoreside observation program, describes plans for an observation program in 1994, and provides discussion and recommendations for program improvement. For more detailed information on 1992-93 bycatch results refer to Supplemental Attachment G.5.b.

### Results of The 1993 Oregon Shoreside Whiting Observation Program

In 1993, whiting catch and landings were observed in the Ilwaco, Astoria, Newport and Crescent City areas. No observations were obtained in the Eureka area. Most vessels targeting whiting and most of the plants processing whiting throughout the season participated in the observation program. Our 20% at-sea and 30% shoreside observation goals were not obtained at all locations (Table 1).

Table 1. Percentage of Pacific whiting landings observed by state in 1993.

State	Observed at-sea	Observed shoreside	Total Observed
Washington	4.6%	24.6%	29.2%
Oregon	18.5%	23.1%	41.6%
California	7.3%	32.3%	39.6%

There were some shortcomings to the observation program that are notable. Two processors from California received significant landings of whiting in 1993, but they did not allow or facilitate observations nor did they report bycatch. This was especially unfortunate in an area of high concern for salmon bycatch. There were no at-sea observation of vessels landing in Washington on a regular basis, and at-sea observation in California was also low.

In 1993, about 22 midwater trawlers targeted on Pacific whiting and subsequently delivered 41,926 mt of whiting to shoreside processors in Washington, Oregon and California (Table 2). Overall 16.2% of the whiting trips targeting whiting were observed at sea (including the offload), and an additional 24.4% of the whiting landings were observed on shore. The cumulative salmon bycatch rate was 0.01 salmon per metric ton of Pacific whiting. Although relatively low, the salmon bycatch rate was highest off California and Oregon (Table 3). The highest bycatch rates were seen for Pacific and jack mackerel, especially from fishing grounds near the mouth of the Columbia River and off Newport. Yellowtail bycatch was high off the Columbia River.

**Table 2. CUMULATIVE WHITING REPORT**

Oregon, Washington and California Shoreside Fishery Only  
(Best Available Data as of 11/6/93)

**All Ports**

	Observed At-Sea	Observed* Shoreside	Observed Total	Fish Ticket Total
Whiting Harvest (mt)	7,332	10,027	17,421	41,926
Number of Deliveries	141	211	352	870
Salmon Catch (no)	55	125	180	N/A
Misc Rockfish (lb)	10,267	10,778	21,044	141,778
Yellowtail Rockfish (lb)	52,872	67,228	120,100	303,999
Widow Rockfish (lb)	25,923	29,159	55,082	365,174
Sablefish (lb)	7,064	6,716	13,781	56,219
Mackerel (lb)	196,965	280,833	477,797	1,289,754
Misc. Other Fish (lb)	4,673	7,613	12,284	46,435
Salmon Rate (no/mt)	0.008	0.012	0.010	N/A
Misc Rockfish Rate (lb/mt)	1.400	1.075	1.208	3.382
Yellowtail Rate (lb/mt)	7.211	6.705	6.894	7.251
Widow Rate (lb/mt)	3.536	2.908	3.162	8.710
Sablefish Rate (lb/mt)	0.963	0.670	0.791	1.341
Mackerel Rate (lb/mt)	26.864	28.008	27.427	30.763
Other Fish Rate (lb/mt)	0.637	0.759	0.705	1.108
% of Deliveries Observed	16.2%	24.4%	40.5%	

Table 3. Bycatch rates by State by Species in observed landings, 1993

Species	State		
	Washington	Oregon	California
Salmon, nbr per mt	0.000	0.010	0.018
Misc. rockfish, lb/mt	1.563	1.279	0.275
Yellowtail RF, lb/mt	24.767	6.575	0.006
Widow RF, lb/mt	9.681	3.086	0.227
Sablefish, lb/mt	0.774	0.867	0.013
Mackerel, lb/mt	48.790	28,475	4.408
Other Fish, lb/mt	1.320	0.723	0.174

The cost of the Oregon portion of the shoreside observation program in 1993 was about \$82,854. Costs for Washington and California are not known at this time. Oregon industry funded 1/2 the coordinator, observers, supplies and travel at a cost of \$42,029. Industry hired six observers during the season to provide observations from four processors and their vessels. Government funded 1/2 the coordinator, three months of staff time for data analysis, etc., and a month of data entry at a total cost of about \$40,825. Under the category of government funding, ODFW general fund provided \$12,537 for the program, NMFS specifically earmarked \$8,243 for the program, and \$20,045 of NMFS, IJFA funds were redirected to the program.

#### The Shoreside Observation Program for Pacific Whiting in 1994

The 1994 Shoreside Observation Program for Pacific Whiting will be a continuation of the 1993 program with minor modifications. In 1994, we expect a longer shoreside whiting season and more industry participation, due to the expected increased shoreside allocation. The program will again be a cooperative project between the fishing industry and management/enforcement agencies. PFMC, NMFS, PSMFC, OSP, WDF, ODFW, and CDFG will continue to cooperate with the shoreside observation program. Industry participation is expected to be similar to 1993, except one additional Oregon processor plans to join the program.

In 1994, the program will require additional observers and support staff to maintain the desired observation rates of 30% shoreside and 20% observed at-sea. Participation is expected from processors and vessels catching or processing significant quantities of unsorted whiting.

At the September PFMC meeting, ODFW stated its commitment to provide active support for a whiting observer program for Oregon in 1994. ODFW proposes to take the lead by assigning coordination and some data entry and analysis duties to Marine Region staff at Newport, OR. Funding for the coordinator position will again be shared by ODFW, NMFS and the Oregon fishing industry. ODFW's funding support

will be less than in 1993 because of budget cuts in the overall department budget. Duties of the coordinator will include the responsibility for liaison between the fishing industry and government agencies, supplying observers with proper sampling equipment and training, collecting Oregon vessel logbooks and observer reports, summarizing data and reporting selected information to program participants. The coordinator will actively work in this position from April through November.

The increase in shoreside allocation in 1994 will result in increased participation by industry and the need for more observers who will be observing whiting landings for a longer period of time. Increased observations will in turn produce more data and therefore require a data entry position. The duties of a data entry position will include checking on observers, and collecting, entering and compiling data. Duties should start in June when the fishery is expected to be in full production, and the position should have a duration of six months. We suggest that this position be jointly funded by industry and NMFS at the EBA level. Hiring this person as a temporary ODFW employee would improve recruitment and retention.

After canvassing Oregon shoreside processors, we estimate that Oregon could land up to 203,712,000 pounds of Pacific whiting or 92,403 mt in a 6 month season. This catch level will require six full time observers to provide observations at the 20% at-sea and 30% shoreside level. The overall program will cost approximately \$133,000 with \$109,700 (82.5%) funded by industry and the remaining \$23,300 coming from ODFW and NMFS (Table 4). We feel that the cost of the observation program continues to be held at a modest level, although a decreasing level of government funding support is expected (Table 5).

Table 4. Oregon budget for a six month shoreside Whiting Observation Program, 1994

Funding Source	Budget Category	Cost
Oregon Industry	Observer	\$63,464
	Supplies	625
	Travel	750
	2/3 Coordinator (8 months)	30,653
	Data entry (6 months)	14,204
	Sub Total	109,695
ODFW/NMFS	1/3 Coordinator (8 months)	15,319
	Data entry (1 month of existing staff)	3,111
	Data analysis (1 month of existing staff)	4,524
	Sub Total	22,954
Grand Total		\$132,649

**Table 5. Estimated Costs & Exvessel value of Oregon's Pacific Whiting**

Year	Whiting Landings	Cost of Observer Program		Participating Exvessel Value in Dollars	Observer Program Cost to Industry as percent of Exvessel value
		Industry	ODFW/NMFS		
1992	49,092mt	\$77,500	\$49,500	\$5,195,545	1.49%
1993	35,800mt	\$42,000	\$41,000	\$2,286,000	1.84%
1994*	105,000mt	\$108,000	\$26,000	\$7,523,000	1.44%

*\*estimates for 1994 with exvessel value of whiting @\$0.0325 per pound*

### Discussion and Recommendations

We expect that California participation will be similar to that found in 1993 unless improvements are directed by PFMC and facilitated by NMFS. We suggest that observation activity be concentrated in any directed whiting fishing occurring off California before April 15, since this would be our only source of data from that time period from that critical area.

We expect that Washington participation will be similar to that found in 1993 unless improvements are directed by PFMC and facilitated by NMFS. Overall observations need to be increased. There was very little at-sea observation conducted in 1993, and although landings were observed in 1992 and 1993, the processor who received significant landings of whiting did not contribute financially to the program. Washington should ask its industry to increase the at-sea observation level and financial support of that level.

We are concerned that bycatch is not always reported, especially from processors not cooperating with the observer program. We recommend that NMFS and state enforcement agencies work with processors to insure that bycatch landed at processors, especially those that are not cooperating with the shoreside observation program, be recorded on fish tickets and reported to the state.

We recommend that to facilitate analysis of the coastwide shoreside observation program, California and Washington provide copies of observation reports and fish ticket data feeds on whiting landings to ODFW on a monthly basis during the whiting season. We recommend that CDFG and WDF should be responsible for reporting timely data on whiting catch to NMFS for harvest guideline monitoring.

We recommend that in 1994, each state summarize observation and landing data on a monthly basis and forward this information to the ODFW coordinator on a routine monthly schedule. We suggest that ODFW staff provide program data entry until the data entry position is filled and that person is up to speed. We recommend

that ODFW provide monthly summaries of whiting landings, bycatch and observation coverage to agency participants that are actively cooperating in the program.

We recommend that NMFS, Seattle should continue to issue and coordinate action on Experimental Fishing Permits for vessels participating in the whiting observation program. We recommend that EFP's not be issued to vessels delivering to non participating processors and that if plants stop participating in the observer program, permits be revoked. We also recommend that NMFS develop and issue participation permits that would be required for processors to receive unsorted whiting from vessels holding EFP's. Such a permit could state the conditions under which landings of unsorted whiting could be purchased. We recommend that these conditions include funding for shoreside observers, allowing observers to conduct necessary observations at the point of landing, and weighing and reporting all catch and bycatch by species at the point of landing in a timely manner. This permit could provide NMFS with a better handle to obtain accountability from processors and result in better participation in the observation program.

We suggest that PFMC continue to offer direction to the observer program. It would be helpful if EFP's and special "considerations" were withheld from non-cooperating areas, such as the Eureka area which is scheduled to have an early season. We note that this is the same area with potential critical salmon bycatch problems, but no history of accountability for bycatch from the shoreside whiting fishery.

We recommend that the program coordinator continue to be responsible for determining industry funding shares on a monthly basis for billings issued by PSMFC. We suggest that program funding shares be based on gross poundage of whiting and bycatch received by a processor participating in the program. We suggest that industry continue to funnel contributions through an account administered by PSMFC. We recommend that the program coordinator and ODFW receive a monthly summary of the whiting account activity from PSMFC because they need to know the amount of money received by PSMFC, date received, source and the overall account balance. In turn, we suggest that the coordinator report to PSMFC on a monthly basis and account for program expenditures against the whiting account by date and item.

We recommend that procesors be required to weigh all Pacific whiting and bycatch on either a certified scale or a hopper scale at the location and time of the landing and that this weight be reported to the state of landing in a timely manner.

Bycatch of prohibited species and trip limit overages are unavoidable in unsorted whiting catches. In 1992 and 1993, we found that one observer could cover about 3 vessels at the required observation rate. We suggest that processors receiving whiting from less than three vessels per day consider sharing an observer with an additional plant(s) as a cost savings measure.

Vessels and Processors catching/receiving Pacific whiting who do not have Experimental Fishing Permits nor participate in the observer program must be reminded

that it is illegal for them to land/receive prohibited species and that they are expected to adhere to groundfish trip limits in effect during the whiting season.

A final general suggestion is that agencies desiring special reports of the Observation Program seriously consider helping to fund the program data entry and analysis. NMFS has made significant contributions in the past seasons which has been gratefully appreciated. PFMC might consider providing travel funds when the coordinator or project staff is needed to travel to report program and fishery status to the council or one of its sponsored groups.



**Status Report on Oregon's Pacific Whiting Shoreside  
Observation Program for 1994**

**Prepared by  
Bill Barss**

**Oregon Department of Fish and Wildlife  
2040 S.E. Marine Science Drive  
Newport, Oregon 97365-5294**

**October 1994**

# Status Report on Oregon's Pacific Whiting Shoreside Observation Program for 1994

## Introduction

Pacific whiting is the most abundant species pursued by U.S. commercial fishermen off the Pacific coast states. This species is primarily harvested by large and moderate sized vessels using large midwater trawls. These trawls can also capture non targeted species swimming with or near the dense schools of whiting. The incidental bycatch in the whiting fishery, particularly of sensitive species, is a management concern. This is especially true in recent years when unpopular management measures have been suggested or imposed on sport and commercial species to restrict the harvest of salmon and rockfish.

Since 1991, when the domestic whiting fishery was completely established, a voluntary bycatch observer program has been in place. Initially, the at-sea processor component supplied observers as an extension of arrangements the fleet operated under in compliance with the North Pacific Councils mandatory observer program. In 1992, a large increase in shoreside processing was expected, and a voluntary program to provide observations on catches destined for shoreside processing was established. Information from this fishery was needed to determine the results of catch restrictions, such as, prohibition of night fishing, area closures, and seasons implemented to protect salmon. This observation program, which was called The Pacific Whiting Shoreside Observation Program, was successfully conducted during 1992 and has continued with minor modifications through 1994.

Since 1992, the Oregon Department of Fish and Wildlife (ODFW) and Oregon fishermen and processing industry, has made a commitment to take an active roll in observing whiting catches, because it was apparent that most of the whiting destined for shoreside processors would be delivered to Oregon ports. In 1994, the Oregon fishing industry hired observers for the Astoria area, Newport and Charleston. They also provided direct supervision to their observers and increased their funding roll over 1993. In 1994, the Washington Department of Fish and Wildlife (WDFW) made a commitment to observe shoreside landings of whiting at Ilwacco, WA, and the California Department of Fish and Game (CDFG) committed to provide observation of whiting landings at Crescent City, CA and Eureka, CA

The Pacific whiting shoreside observation program was established for the purpose of providing data on bycatch from catches delivered shoreside, and bycatch discarded at sea. ODFW's expectation during 1992, was that the observation program serve as a pilot project. The objectives were to determine the feasibility of conducting a cooperative observation program between industry and government, to determine an appropriate sampling rate for the shoreside whiting fishery, and to confidently show whether directed whiting fishing can maintaining a salmon bycatch rate less than .05 salmon per metric ton of whiting. The impact of regulation on fish catch and industry, and the manpower and funding needed to conduct a successful program were also

major objectives during 1992. The 1993 and 1994 programs were designed to take advantage of what was learned during 1992, and to add additional years of target whiting fishery bycatch data to try to get some sense of interannual variation in bycatch.

### **Program Development and Implementation**

In November 1993, staff and funding needs for the continuation of the Pacific Whiting Shoreside Observation Program for 1994 were estimated. Needs were based on sampling rate, expected location of landings and length of season. As in 1992, a sampling rate of 20% for at-sea observations and 30% for shoreside observations were selected. Initial planning and budget called for sampling sites at Newport and Astoria, and an average operation period of 6 months for processors.

Meetings were held with industry representatives in Newport, Astoria, Eureka and Crescent City to describe and discuss participation in the 1994 Pacific whiting bycatch shoreside observation program. Industry participants from Oregon and Washington preferred to have the fishing industry hire and supervise all observers. These observers were to be funded by the participating processors and vessels.

WDFW and CDFG assisted in the overall shoreside observation program by providing observations in their states and funneling observation reports and landing information to the program coordinator in Oregon. The Oregon Department of Fish and Wildlife (ODFW) provided overall program coordination, served as a depository for all data, and provided data analysis. ODFW also provided monthly reports on whiting catch, bycatch and observer coverage. WDFW observed landings at Ilwaco, WA, and provided data on landings to the Oregon coordinator. CDFG provided observers for vessels operating out of Crescent City, CA and attempted to provide observations on the limited fishery out of Eureka, CA. California provided whiting and bycatch data to the Oregon coordinator. The Pacific States Marine Fisheries Commission (PSMFC) provided services for billing the industry participants and holding their contributions for costs incurred in program coordination, data processing, and for sampling equipment.

### **Program accomplishments through September**

Funding the Oregon program continues to be a cooperative undertaking. Most of the cost has been provided by the fishing industry. Participating processors generally paid for observer wages at their plants while participating vessels paid for observer wages when observers were assigned to their vessels. Through September 30, about \$36,000 has been provided by participating processors to pay for about four and a half months of the coordinator's salary, four months of the Data Entry EBA's salary, the coordinator's travel expenses, and observer's supplies and sampling equipment. Total cost of the program to industry including observer wages should approach \$100,000 by the seasons end. The cost share for an individual processor was determined by its percentage of the overall landings to participating plants of

whiting and whiting bycatch. Through September ODFW contributed one and a half months of the coordinator salary (about \$8,600) and some data analysis and training and consulting at no charge to the program. PSMFC provided bookkeeping on funds provided by industry for the coordinator, travel expenses, supplies and equipment.

To approach the target of 30% shoreside and 20% at-sea observation coverage, a minimum of six Oregon observers were needed to cover seven Oregon participating processors and their vessels. Two surimi plants and their vessels found that they needed two observers to achieve adequate observer coverage. One of these plants was permitted to split deliveries and share observers with a second processor.

From April through September 1994, a total of fifteen observers were employed and twelve of these worked in Oregon. One observer left after about two months and was replaced. Ten observers had extensive observation training and experience. All observers received initial training and periodic checks.

All Oregon participating processors started employing observers at or shortly after starting production. This was also true for two processors in California and one in Washington. Experimental Fishing Permits (EFP's) were issued to their vessels at that time. Although some Pacific whiting landings were made into California in Mid March, most shoreside plants did not receive whiting until mid May when production rose to about 3,000 mt per week (Figure 1). Some Oregon processors maintained that the quality of Pacific whiting was not adequate for surimi until about the first of June. Since September, availability of Pacific whiting off Oregon has not been dependable, and the Oregon whiting fleet has fished off the coast of Washington to obtain good catches of whiting. This has resulted in two day trips for the large Newport fleet compared to the usual one day fishing trip for whiting.

The approach of our sampling program in 1994 was similar to the approach used for 1992. Please refer to our report as submitted to the Pacific Fishery Management Council (Report G.2.a) dated November 3, 1992. Only minor changes were made in our methods. As in 1993, the EFP's required that no sorting take place at-sea, therefore all sorting and bycatch data was done on shore.

Throughout the season, we had mixed success obtaining our overall goal of 20% at-sea and 30% shoreside observer coverage for participating vessels landing in California, Oregon and Washington. Through September, overall observer coverage for all whiting landings was about 43% with at-sea coverage at 18% and shoreside coverage at 25% (Table 1). Preliminary Observation numbers by plant through September 1993 for processors participating in the shoreside observation program are shown in Table 2. It is noteworthy that no observations were made in California until mid April, so we have no observer information on the early California whiting season.

**Catch Statistics and observations:** Through September, there were 60,424 mt of whiting delivered to shoreside processors (Table 1). The weekly whiting catch is

Table 1. Summary of shoreside landings of Pacific whiting in 1994, including landings reported on Fish Tickets and landings observed through September 1994.

**Cumulative Whiting Report**

Washington, Oregon and California Shoreside Fishery, Midwater Trawl Only  
(Best Available Data as of 10/10/94)



**\*All Ports and Plants Cumulative Whiting Report, 4/15/94 - 9/30/94**

	Observed At-Sea	Observed Shoreside	Observed Total	Fishery Total
Whiting Harvest (mt)	10,204	15,698	25,901	60,424
Number of Deliveries**	249	353	602	1,391
Salmon Catch (no)	47	103	150	
Misc Rockfish (lb)	7,885	19,127	27,012	71,879
Yellowtail Rockfish (lb)	105,617	179,876	285,494	499,941
Widow Rockfish (lb)	94,862	123,957	218,819	718,468
Sablefish (lb)	17,841	20,996	38,837	73,574
Mackerel (lb)	144,791	150,649	295,440	641,765
Misc. Other Fish (lb)	15,007	18,793	33,800	87,907
Salmon Rate (no/mt)	0.005	0.007	0.006	
Rockfish Rate (lb/mt)	0.773	1.218	1.043	1.190
Yellowtail Rate (lb/mt)	10.351	11.459	11.022	8.274
Widow Rate (lb/mt)	9.297	7.896	8.448	11.890
Sablefish Rate (lb/mt)	1.748	1.338	1.499	1.218
Mackerel Rate (lb/mt)	14.190	9.597	11.406	10.621
Other Fish Rate (lb/mt)	1.471	1.197	1.305	1.455
% of Deliveries Observed	18	25	43	

\* Includes all trips with whiting lbs > 0

\*\* Number of deliveries based on number of fish tickets

Table 2. Observation coverage by participating plant in the 1994 Pacific whiting shoreside observation program through September.

State	Plant	Number of trips	Observations at-sea		Observations Shoreside	
			Number	%	Number	%
CA						
	Plant 1	8	0	0	1	13
	Plant 2	26	5	19	7	27
	Plant 3	35	5	14	5	14
OR						
	Plant 4	151	26	17	34	23
	Plant 5	423	77	18	120	28
	Plant 6	80	10	13	5	6
	Plant 7	191	46	24	47	25
	Plant 8	347	70	20	109	31
	Plant 9	15	2	13	0	0
	Plant 10	14	2	14	1	7
WA						
	Plant 11	85	6	7	24	28
	Total <sup>1</sup>	1375	249	18.1	353	25.7

<sup>1</sup> There were 16 additional trips by non participating vessels to non participation plants.

summarized in Figure 1. At-sea observers saw Pacific whiting catches totaling 10,204 mt and additional shoreside observations were made on whiting catches totaling 15,698 mt. Length frequency samples were taken from 31 Newport landings through October 13, and a total of nearly 3,100 whiting were measured (Figure 2). Although many Oregon fishermen have reported large numbers of young of the year whiting falling out of their groundfish trawls or in their shrimp trawl catches, very few whiting under 39 cm fork length have been sampled.

The majority of the observed bycatch consisted of Jack and Pacific mackerel (approximately 134 mt), yellowtail rockfish (129 mt) and widow rockfish (99 mt). Catch by week of these species is shown in Figure 3.

Through September, there were 162 situations involving overages which were reported by Oregon whiting processors from vessels holding EFP's. These landings were permitted for these vessels while fishing for whiting under their 1994 EFP. Overages were reported for yellowtail rockfish widow rockfish, sablefish and Pacific ocean perch as shown in Table 3. Yellowtail rockfish overages were reported from about 19% of the Pacific whiting landings to Astoria area.

Table 3. Bycatch overages (number of overages and pounds) from the Oregon shoreside Pacific whiting fishery in 1994.

Species	Astoria area		Newport		Total	
	Number	Pounds	Number	Pounds	Number	Pounds
Yellowtail RF	105	159,126	0	0	105	159,126
Widow RF	14	2,579	22	23,564	36	26,143
Pac Ocean Perch	1	865	0	0	1	865

There were 150 salmon from 602 observed trips. This gives an overall rate of 0.006 salmon per mt of Pacific whiting. Salmon catch rate (pounds per mt of whiting) was highest at the beginning of the whiting season (Figure 4). Most of the salmon seen by observers were Chinook, and 114 or 76% were landed at Newport. There were 3 coho observed; two landed at Hammond, OR, and one landed at Crescent City, CA. A summary of Chinook lengths is given in Figure 4.

There were four halibut from observed trips; therefore, the overall catch rate for halibut was .0002 halibut per mt of Pacific whiting. Three were landed at Newport and one was landed in Hammond, OR.

## Discussion

Our Pacific whiting observation pilot program has accomplished most of its objectives. We have conducted an observer program throughout the season which included participation by a majority of the fishing industry vessels and processors taking whiting. Three years of observations have shown that bycatch is relatively low on prohibited species during most of the fishing season. Bycatch of yellowtail rockfish, widow rockfish and sablefish is a problem only in certain areas and/or at certain times.



# 1994 PACIFIC WHITING SHORESIDE FISHERY FOR WASHINGTON, OREGON, AND CALIFORNIA

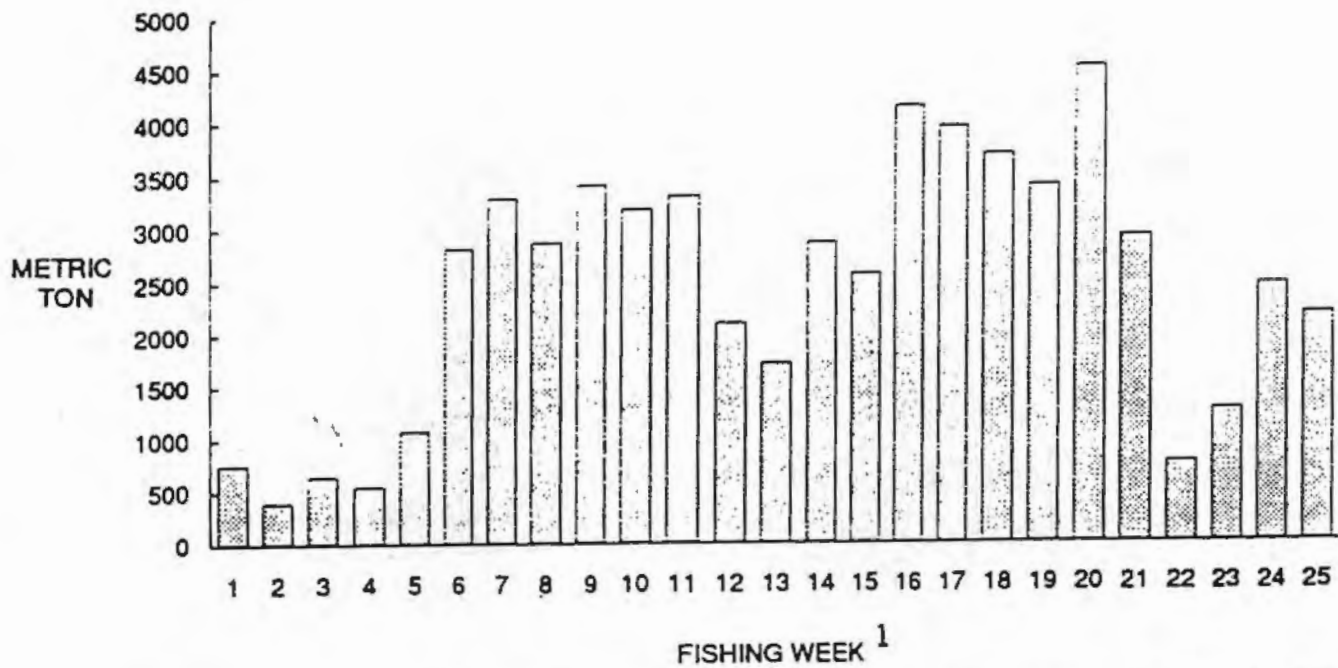


Figure 1. Shoreside landings of Pacific whiting in metric tons by fishing week for Washington, Oregon and California in 1994.

<sup>1</sup> FISHING WEEKS:

#1	4/10/94	to	4/16/94	10	6/12/94	to	6/18/94	18	8/07/94	to	8/13/94
2	4/17/94	to	4/23/94	11	6/19/94	to	6/25/94	19	8/14/94	to	8/20/94
3	4/24/94	to	4/30/94	12	6/26/94	to	7/02/94	20	8/21/94	to	8/27/94
4	5/01/94	to	5/07/94	13	7/03/94	to	7/09/94	21	8/28/94	to	9/03/94
5	5/08/94	to	5/14/94	14	7/10/94	to	7/16/94	22	9/04/94	to	9/10/94
6	5/15/94	to	5/21/94	15	7/17/94	to	7/23/94	23	9/11/94	to	9/17/94
7	5/22/94	to	5/28/94	16	7/24/94	to	7/30/94	24	9/18/94	to	9/24/94
8	5/29/94	to	6/04/94	17	7/31/94	to	8/06/94	25	9/25/94	to	10/01/94
9	6/05/94	to	6/11/94								

LENGTH FREQUENCY OF PACIFIC WHITING BY SEX  
UNWEIGHTED NEWPORT SAMPLE

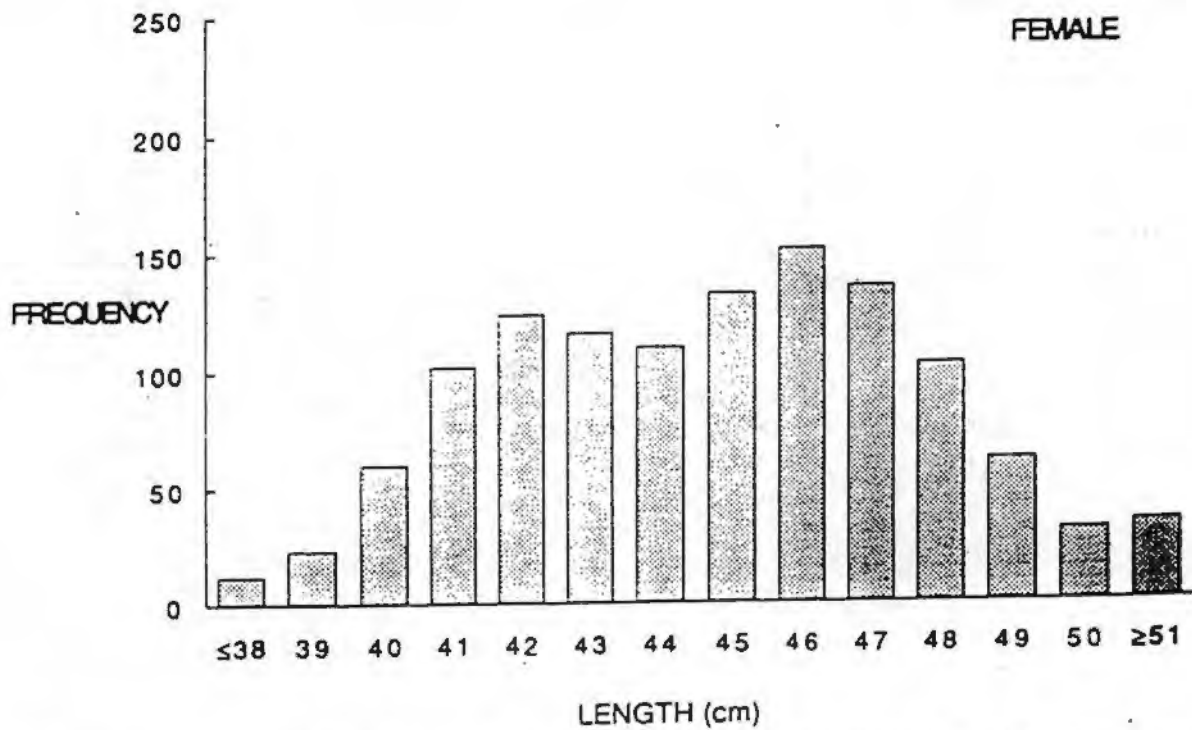
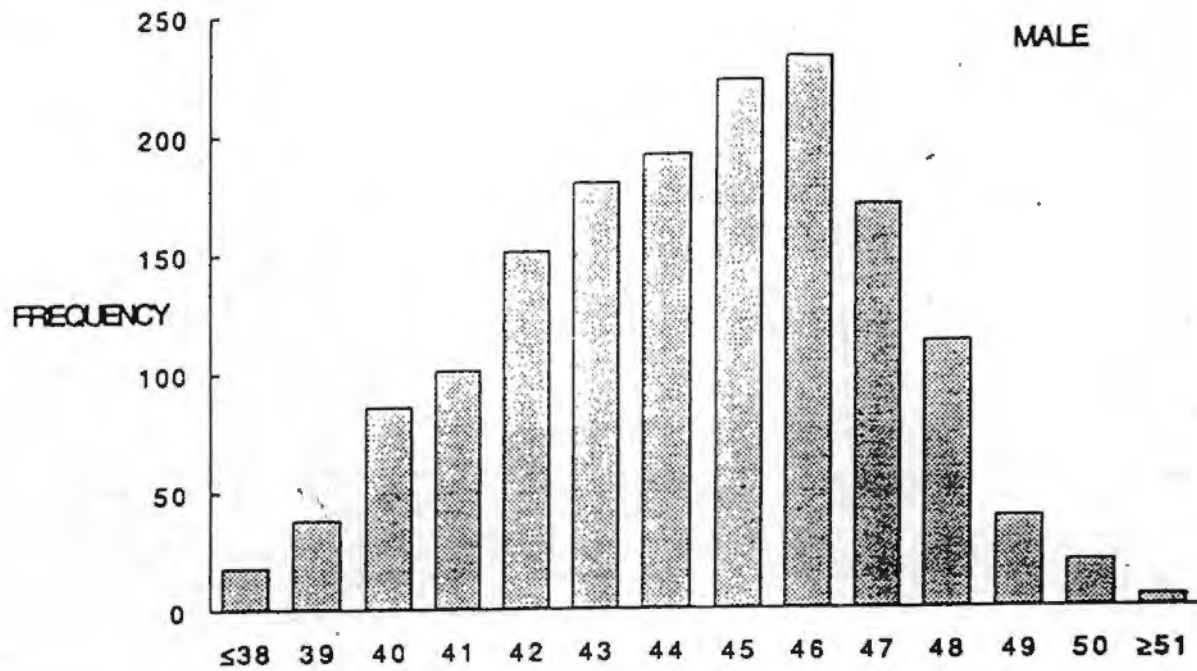


Figure 2. Length Frequency summary of Pacific whiting sampled from landings in Newport, Oregon in 1994.

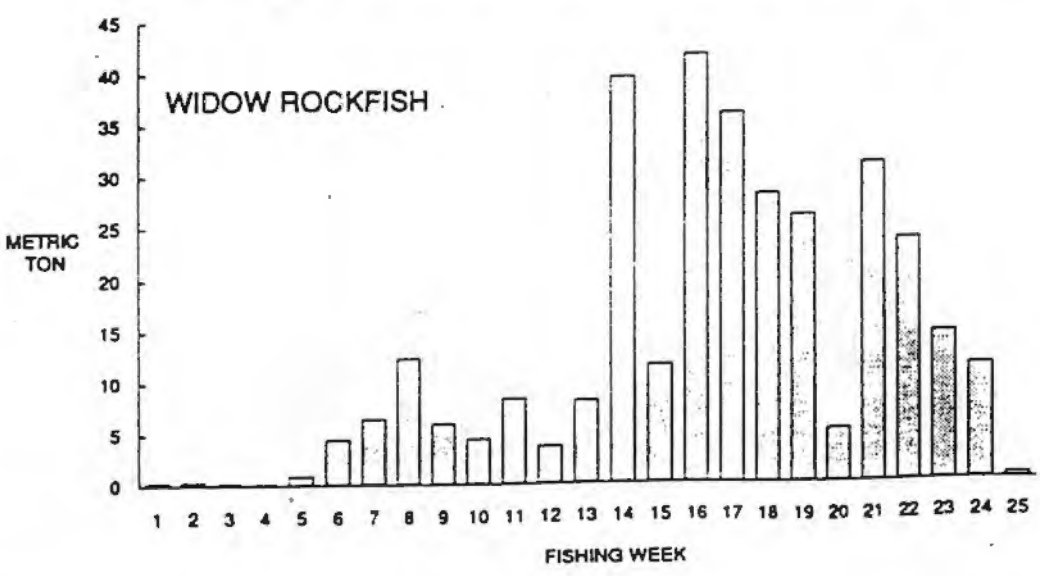
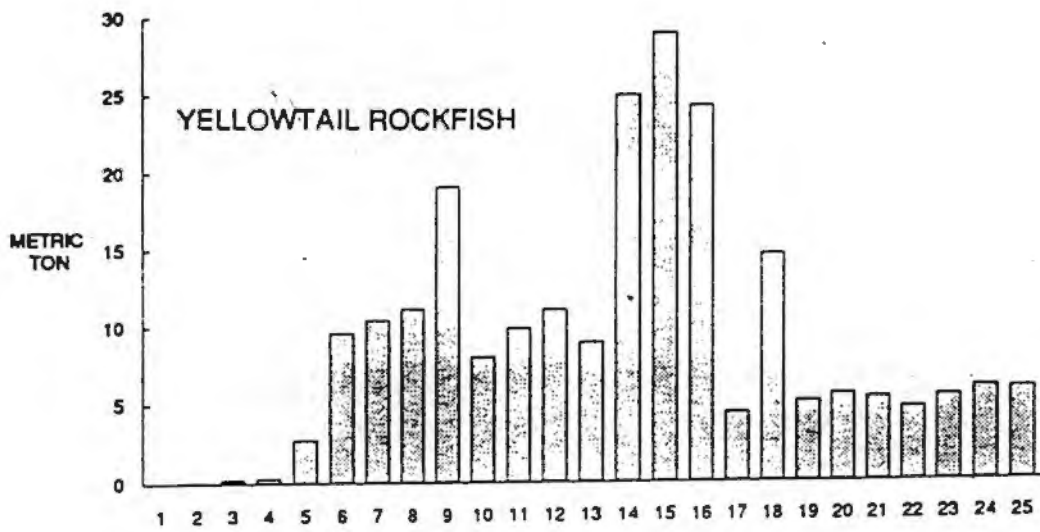
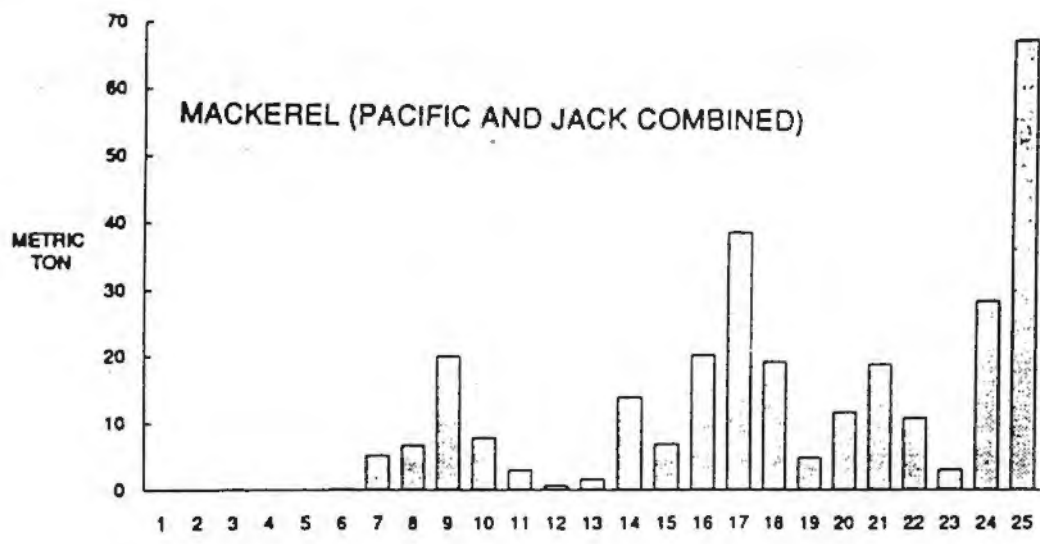


Figure 3. Bycatch of selected species from the Pacific whiting shoreside fishery as reported by the fishing industry in 1994.

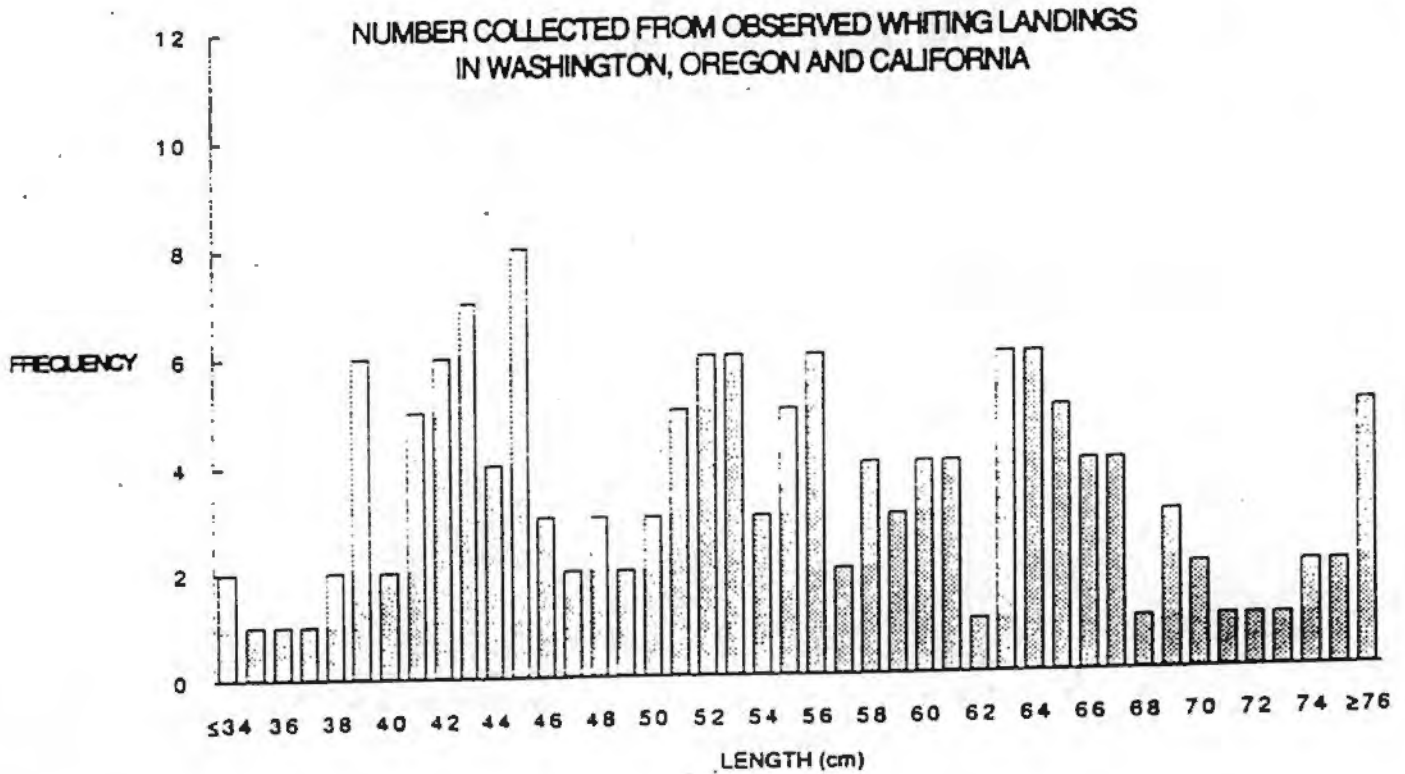
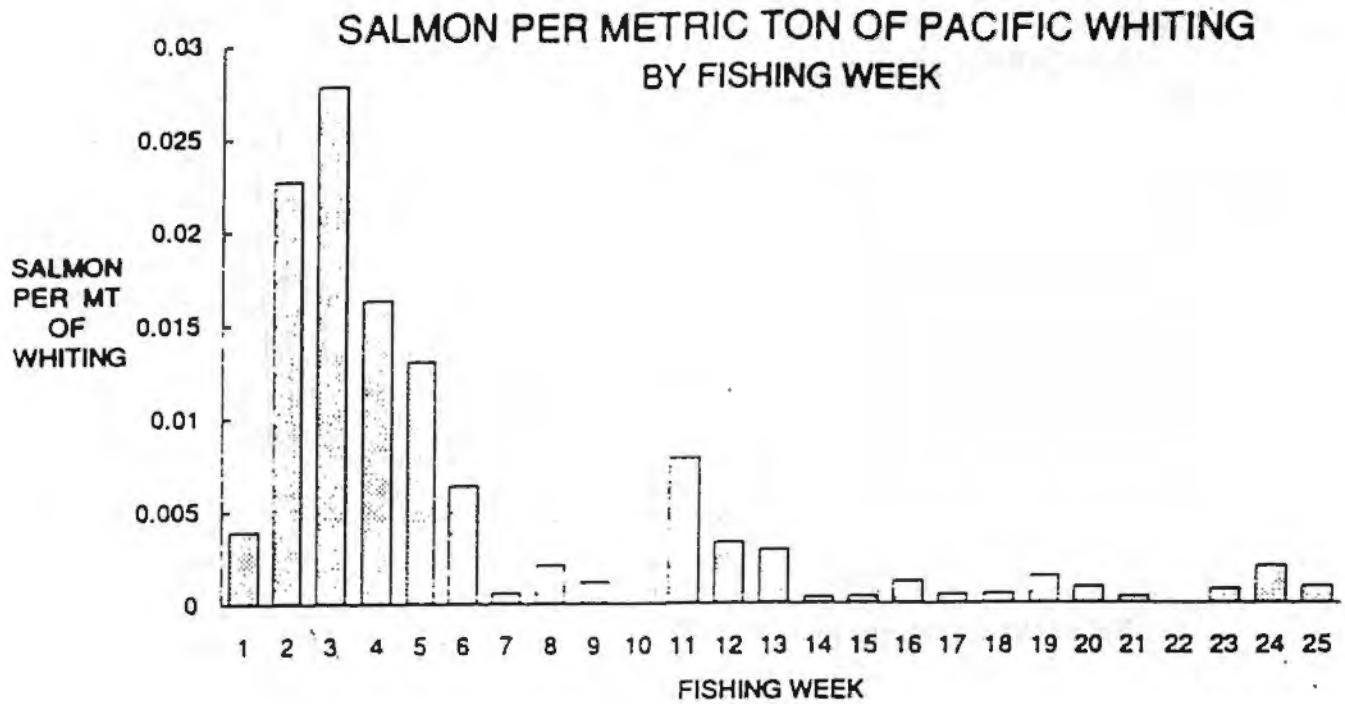


Figure 4. Salmon bycatch rates (number of salmon per mt of Pacific whiting) and length frequency of salmon from observed landings from the 1994 shoreside Pacific whiting fishery.