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THE OREGON GROUND FISH FISHERY AND ITS INVESTIGATION IN 1986

by
Robert L. Demory
Jerry Butler
James T. Golden

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I. REVIEW OF GROUND FISH PROGRAM

A. Activities in 1986

In 1986, the restructuring of Agency Marine Resources Programs resulted in certain organizational changes effective January 1, 1986. Shrimp Investigations staff and functions were placed under the Shellfish Program together with Scallop and Squid projects. A list of the Groundfish staff is shown in Appendix 1.

Monitoring of the groundfish fisheries/resources continued much as in the past. Major emphasis continued on the dominant trawl fisheries, especially species composition of rockfish. A somewhat revived salmon troll fishery helped encourage effort switch from rockfish to salmon. Good markets for sablefish helped spur increasing effort on that species. Most activities remained fairly routine and unchanged in substance from previous years, however.

In 1986 there were 1,038 biological samples taken, slightly less than in 1985 (Table 1). In most cases the sampling rate for age composition achieved or exceeded the 2 samples per 100 mt guideline. Rockfish species composition samples exceeded the guideline of 5 per 100 mt and made up 73% of the total number of samples. Age composition sampling of widow rockfish and Dover sole made up 8% and 3% of the samples respectively.

The Groundfish Program also had the responsibility of monitoring the new gillnet fishery for thresher shark (Alopias vulpinis). Since this species was excluded from the Fishery Management Plan, thus no federal involvement, management responsibility rested with the state. Because gillnets are not a legal gear in ocean waters north of 38°N. Lat., ODFW issued permits that allowed their use and fish to be landed into Oregon ports.

Table 1. Number of biological samples by PMFC Area in 1986.

Species ^{1/}	2A	2B	2C	3A	3B	Total
Dover sole	5	14	1	10		30
English sole		4	3	11		18
Petrale sole		4	1	9		14
Rockfish						
<u>S. alutus</u>			11	12		23
<u>S. entomelas</u>	3	22	38	20		83
<u>S. flavidus</u>		6		11		17
<u>S. pinniger</u>		6		5	3	14
Species composition	25	211	295	194	37	762
Subtotal	33	267	349	272	40	961
Sablefish						<u>772/</u>
TOTALS						1,038

^{1/} See Appendix 2 for a list of common and scientific names.

^{2/} By INPFC larea these were: Columbia, 73 and Eureka, 4

Permits were issued to 38 vessels of which 32 actually participated. The fishery developed slowly but by late summer about 206 mt had been landed into Oregon ports, mainly Astoria. Biological sampling was limited to obtaining carcass weight and length (cm) from insertion of first dorsal to insertion of the second dorsal since fish are dressed at sea.

Major analytical tasks in 1986 involved stock assessment of English sole in the Columbia-Vancouver area and an extensive trip analysis of the Oregon trawl fleet in conjunction with the cooperative OSU Sea Grant/ODFW observer program. Tasks of this sub-project were: (1) summarize management regulations, (2) summarize recent trends in the Oregon groundfish fishery, (3) develop groundfish trawl database retrieval programs, (4) evaluate effects of recent management measures on the groundfish fishery, and (5) describe vessel, gear, and skipper experience in the Oregon trawl fishery. Also in conjunction with the OSU/ODFW program is a sub-project involving age-specific retention rates for Dover, English, and petrale sole. To this end we have aged about 2,600 fish, in the aggregate, of both discarded and retained fish.

Staff also participated in Pacific Fishery Management Council activities as members of the Groundfish Management Team, Groundfish Select Group and ad hoc stock assessment group.

B. Reports Completed in 1986

Golden, J. T. 1986. Status of English sole (Parophrys vetulus) in the INPFC Columbia and Vancouver areas and recommended ABC for 1987. In status of the Pacific Coast Groundfish Fishery through 1986 and Recommended Acceptable Biological Catches for 1987. Pacific Fishery Management Council. Portland, OR

Golden, J. T., R. L. Demory and W. H. Barss. 1986. Results of virtual population analysis of English sole in the INPFC Columbia-Vancouver areas. Oregon Department of Fish and Wildlife. Processed Report, 16 p.,

Golden, J. T. 1986. Recent Trends in the Oregon Groundfish Fishery: An analysis of effects of regulation under the Magnuson Fishery Conservation and Management Act of 1976. Oregon Department of Fish and Wildlife, Annual Progress Report. 7 p.

II. REVIEW OF 1986 FISHERY

A. Commercial Fisheries

1. Total Landings. The total landed catch of groundfish (excluding Pacific halibut) by commercial gear types in 1986 was 24,904 mt (Table 2). This represents a decline of 14% from the 1985 landings of 28,992 mt^{1/}.

The trawl fishery accounted for 20,841 mt or 84% of the landed commercial catch. This represents a decline of 24% from the 1985 trawl landings of 25,790 mt (Table 3). Trawl effort in 1986 was 55,109 hrs compared to the 76,994 hrs expended in 1985, a reduction of 28%. This was due to a greatly expanded shrimp fishery which provided an above average economic alternative for many trawl vessels. As in previous years major species/species groups present in the trawl fishery were rockfish, Dover sole, and sablefish which contributed 50%, 23%, and 8% respectively.

^{1/} See Appendix 4 for commercial catch by gear type and international statistical area.

Table 2. Oregon landed catch (mt) of groundfish by gear type in 1986^{1/}.

Species	Trawl ^{2/}	Shrimp Trawl	Pot	Jig	Long Line	Troll	Other Gear ^{3/}	Recreational	Total
English sole	551	1							552
Rock sole	6								6
Petrале sole	707	2			Tr	Tr			709
Dover sole	4,770	47	Tr		Tr				4,817
Rex sole	285	1							286
Starry flounder	97	Tr		Tr	Tr	Tr	Tr	Tr	97
Arrowtooth flounder	478	20	Tr		3	Tr			501
Other flatfish	392	Tr	Tr		1	Tr	Tr	3	396
Pacific cod	26	4			Tr				30
Lingcod	489	42	Tr	38	34	48	Tr	43	694
Sablefish	2,125	28	1,414		1,082	Tr	21	Tr	4670
Rockfish (all species)	10,485	750	12	161	262	72	Tr	252	11,994
Misc. species	11	Tr	Tr	3	4	Tr	13	14	45
Dogfish (see misc. sp.)	Tr				Tr				Tr
Pacific whiting (hake)	419	Tr		Tr				Tr	419
Total	20,841	895	1,426	202	1,386	120	34	312	25,216

Pacific halibut Tr 138 3 5 146

^{1/} See appendix 4 for commercial gear catch by international statistical area

^{2/} Includes midwater trawl

^{3/} Includes scallop dredge, set net, crab pots, and other nets

Table 3. Oregon trawl landings (mt) of groundfish, total effort (hr) and CPUE (mt/hr), 1976-85. Landings include bottom and midwater trawl but exclude shrimp trawl.

Species	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1976-85 Mean
English sole	1,643	1,001	1,041	1,084	718	724	990	914	450	468	551	903
Rock sole	7	10	12	6	13	9	30	4	2	1	6	9
Petrale sole	793	822	1,000	1,040	850	880	1,504	1,105	688	577	707	926
Dover sole	2,262	1,818	3,374	5,066	4,008	5,228	8,083	8,459	6,103	5,695	4,770	5,010
Rex sole	477	425	642	734	524	606	841	645	549	397	285	584
Starry flounder	773	283	489	284	193	400	218	196	107	358	97	330
Arrowtooth flounder	30	87	170	319	188	588	721	534	416	688	478	374
Other flatfish	536	348	394	569	427	483	642	574	507	415	392	490
Total flatfish	6,521	4,794	7,122	9,102	6,921	8,918	13,029	12,431	8,822	8,599	7,286	8,626
Pacific cod	277	364	398	401	156	44	116	81	78	38	26	195
Lingcod	439	381	445	686	652	904	1,345	1,621	978	946	489	840
Sablefish	442	326	958	1,493	1,026	1,304	2,951	2,771	2,775	2,843	2,125	1,689
Pacific ocean perch	567	424	486	848	1,128	859	543	1,138	752	797	660	754
Other rockfish	2,528	2,398	4,388	8,450	15,354	22,699	19,587	13,865	11,713	11,676	9,827	11,266
Misc. species	294	153	185	187	92	197	45	98	58	7	9	132
Dogfish	6	122	56	40	23	5	1	1	Tr	Tr	Tr	25
Minkfood	56	85	3	0	0	0	0	0	0	0	0	14
Pacific whiting (hake)	218	450	383	129	257	162	1	58	338	884	419	288
Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Total Landings	1,348	9,497	14,424	21,336	25,609	35,092	37,618	32,064	25,514	25,790	20,841	23,829
Hours, bottom trawl	3,259	26,683	38,447	56,444	46,606	68,297	94,997	101,517	80,859	74,726	52,785	62,184
Hours, pelagic trawl	-	-	-	-	-	-	-	-	1,780	2,268	2,324	-
CPUE, bottom trawl	0.341	0.356	0.375	0.366	0.362	0.303	0.302	0.298	0.261	0.345	0.324	0.383
CPUE, pelagic trawl	-	-	-	-	-	-	-	-	2.459	1.889	1.604	-

Tr = less than 0.1 mt

Landed catch (excluding halibut) by all other gear types in 1986 was 4,063 mt, a 27% increase over 1985. Pot and longline gear types were most important, accounting for 35% and 34% respectively. Sablefish was the most important species landed by these gear types. Landings of halibut were 146 mt.

2. Trawl Landings of Major Species

a. Dover sole. Trawl landings of Dover sole in 1986 were 4,770 mt, 19% less than landings in 1985 and 5% less than the 10-year mean. The major reason for the decline was reduced effort. Areas of major production were PMFC area 1C-2A, 2B and 3A.

b. English sole. Trawl landings of English sole were 551 mt, an increase of 18% from 1985 landings of 468 mt. Although English sole landings remain relatively low, stock condition has improved slightly. PMFC area 3A was the major production area.

c. Petrале sole. Trawl landings of petrale sole were 707 mt in 1986, 23% greater than 1985 but still 31% less than the 10-year mean landings. PMFC areas 2B and 3A remain the principal areas of production.

d. Lingcod. Trawl landings of lingcod were 489 mt, a decline of 48% from 1985 landings and 42% less than the 10-year mean. PFMC areas 3A, 2B and 2C accounted for most of the landings.

e. Sablefish. Trawl landings of sablefish in 1986 were 2,125 mt, 25% less than in 1985 but 26% greater than the 10-year mean. Landings were suppressed by regulatory action after trawl vessels were placed on trip limits of 8,000 pounds per trip in late August. Trip limits were revised upward in late October to 12,000 pounds per trip.

f. Rockfish. Trawl landings of all rockfish species in 1986 amounted to 10,846 mt, a reduction of 16% from 1985. Bottom trawls accounted for 68% of the landed catch. Major species landed were widow rockfish, 41%; yellowtail rockfish, 15%; canary rockfish, 8%, and thornyheads, 6% (Table 4). Most landings were from PMFC areas 2C, 3A, and 2B.

B. Recreational Fisheries

The 1986 recreational fishery out of Oreogn's ports resulted in a catch of 202,541 fish (Table 5); this was an increase of 25% over that of 1985. Some of this increased catch was due to the longer sampling season in 1986, approximately 14% longer than the 1985 season.

The number of bottomfish-directed trips in 1986 increased by 36% over 1985, from 19,720 angler trips to 26,153 trips. Charter boat anglers made 54% of the total trips, while private boat anglers made 46%. Anglers targeting on bottomfish caught an average of 5.7 fish per trip, compared to 5.8 fish per trip in 1985.

Black rockfish (Sebastes melanops) was again the main species in the recreational catch comprising 61% of the total (Table 6). Combined rockfish species accounted for 88% of the total catch.

PMFC area 2C again produced the most fish, 200 mt (Table 7). This area includes the ports of Newport, Garibaldi, and Depoe Bay, that ranked first, third, and fourth, respectively, in the state's landings.

Black Rockfish Tagging Study

During May 1985, Oregon tagged black rockfish on a study funded by the National Marine Fisheries Service under the Saltonstall-Kennedy Act. We released 3,850 tagged fish out of Garibaldi, and 3,908 out of Newport. Through December, 1986, we had recovered 192 tags, a recovery rate of 2.5%.

Table 4. Species composition (mt) in 1986 for Oregon landed rockfish in the trawl fishery (includes pelagic and bottom trawls but excludes shrimp trawl).

	1C	2A	2B	2C	3A	3B	Total
<u>S. brevispinus</u>	Tr	Tr	38	65	144	28	275
<u>S. crameri</u>	2	46	234	227	84	21	614
<u>S. diploproa</u>	Tr	12	14	78	8	7	119
<u>S. flavidus</u>	4	12	248	61	939	264	1,528
<u>S. goodei</u>	Tr	1	1	0	0	0	2
<u>S. melanops</u>	0	0	0	0	68	0	68
<u>S. paucispinus</u>	1	8	168	43	50	9	279
<u>S. pinniger</u>	3	39	223	282	260	49	856
<u>S. proriger</u>	Tr	1	63	92	51	7	214
<u>S. reedi</u>	Tr	Tr	4	224	34	12	274
<u>S. ruberrimus</u>	1	4	38	11	6	1	61
<u>S. zacentrus</u>	Tr	3	71	21	74	4	173
Other <u>Sebastes</u>	2	16	69	91	57	71	306
Total <u>Sebastes</u> Complex	13	142	1,171	1,195	1,775	473	4,769
<u>S. alutus</u>	Tr	6	43	242	278	91	660
<u>S. entomelas</u>	54	121	698	2,057	1,351	41	4,322
<u>S. jordani</u>	Tr	Tr	1	Tr	0	0	1
Unspecified Rockfish	Tr	Tr	20	19	13	14	66
Total <u>Sebastolobus</u>	11	103	239	171	91	54	669
Total All Rockfish	78	372	2,172	3,684	3,508	673	10,487

Rounding error = 2 mt when compared to Table 2 and Appendix 4.

Table 5. Estimated 1986 Oregon Recreational Catch by Ocean Boat Fishery^{1/}

Port	Rockfish	Flatfish	Lingcod	Misc	Total
Astoria ^{2/}	1,778	56	126	238	2,198
Garibaldi ^{3/}	41,363	114	2,115	814	44,406
Pacific City ^{3/}	4,707	69	800	16	5,592
Depoe Bay ^{3/}	20,668	229	1,201	2,285	24,383
Newport ^{3/}	42,806	3,614	3,088	2,490	51,998
Florence ^{3/}	4	63	0	2	69
Winchester Bay ^{3/}	1,323	61	22	82	1,488
Coos Bay ^{3/}	11,879	47	667	693	13,286
Gold beach ^{4/}	9,067	13	890	241	10,211
Brookings ^{5/}	45,390	394	1,616	1,510	48,910
Total	178,985	4,660	10,525	8,371	202,541

^{1/} Catch in numbers of fish

^{2/} Sampling period: June 29 through August 19

^{3/} Sampling period: May 24-26 and June 28 through September 2

^{4/} Sampling period: May 24 through September 13

^{5/} Sampling period: May 24 through October 31

Table 6. Species Composition of the 1986 Oregon Recreational Bottomfish Ocean Boat Fishery

Species	Percent of catch	Number of fish	Total Weight (mt)
<u>Sebastes melanops</u>	61.4	124,424	170.5
<u>S. pinniger</u>	9.9	19,981	26.2
<u>S. flavidus</u>	6.9	13,993	23.5
<u>Ophiodon elongatus</u>	5.2	10,525	43.0
<u>Sebastes spp.</u>	4.8	9,646	9.2
<u>S. ruberrimus</u>	3.5	7,054	19.7
<u>Scorpaenichthys marmoratus</u>	2.1	4,163	6.3
<u>S. mystinus</u>	1.9	3,887	2.8
<u>Hexagrammos decagrammus</u>	1.5	3,004	2.8
Other fish	2.8	5,864	12.9
Total	100.0	202,541	316.9

Table 7. Estimated 1986 Oregon Recreational Bottomfish Catch (mt) by PMFC Area.

	P M F C Area				State Total
	2A	2B	2C	3A	
Lingcod	10.2	2.8	29.5	0.5	43.0
Rockfish	76.6	18.6	154.2	2.5	251.9
Flatfish	0.7	0.3	7.0	0.1	8.1
Other Fish	2.9	1.3	9.3	0.4	13.9
Total	90.4	23.0	200.0	3.5	316.9

Most recoveries have been from near the area of release. However, three fish have shown substantial movement. One fish released out of Garibaldi was recaptured 408 days later 41 miles to the south. Two of the Newport-released fish were recovered 346 and 396 days later just north of the Columbia River; they had traveled approximately 100 miles north.

Charterboat anglers are the largest user group to recover tagged fish, with 57% of the total. Commercial jig fishermen have made 8% of the recoveries. Trawl vessels have accounted for 1% of the recovered tags.

C. Canada-U.S. Domestic Groundfish Regulations-Oregon

Numerous changes in trip limits for Sebastes complex, widow rockfish, Pacific ocean perch, and sablefish occurred in response to Pacific Fishery Management Council (PFMC) recommendations and to match similar changes in federal regulations during 1986. These are shown in Appendix 3.

Effective January 1, 1986 an angling license was required for all marine finfish. In addition, the daily bag limit was liberalized for perch and flatfish. The new bag limit is 25 fish in the aggregate. Rockfish and lingcod bag limits were unchanged.

III. GROUND FISH RESEARCH

A. Stock Assessments

English sole catch-at-age data spanning 1966-1983 from the INPFC Columbia area and PMFC area 3B were used to conduct virtual population analysis (VPA). Estimated recruitment of three-year-old females was used in a dynamic pool model to estimate maximum sustainable yields (MSY) and equilibrium biomass for a range of fishing mortality rates, recruitments, and assumed stock recruitment parameters using a Beverton and Holt recruitment model.

Recruitment estimated by VPA has been lower than average and has had a declining trend since 1979. Using the low recruitment scenario, acceptable biological catch (ABC) for 1987 ranged from 551 to 1,088 mt in the INPFC Vancouver and Columbia areas. Recent catches have fallen within this range and there appears to be no point of concern at this time. Recent biomass levels appear to be capable of producing recruitment near the low recruitment scenario level of 4.51 million fish with the assumed stock recruitment relationship. The effects of the El Nino need to be monitored in the future to determine if recruitment of three-year-old fish falls below the low recruitment scenario levels.

B. Related Studies

1. Biological Risks and Economic Consequences of Alternative Management Strategies

This project is the OSU Sea Grant/ODFW discard study, as it has come to be called, headed by Dr. Ellen Pikitch. Observer trips began in July 1985 and have continued without letup since then. Through February 1987, 92 trips have been made aboard 31 different trawlers engaged in five fishing strategies from the ports of Astoria, Newport, and Charleston. Over 1,000 tows representing 6,670 trawling hours and nearly three million pounds of catch have been sampled.

IV. FISHERY ASSESSMENT

There were 130 trawlers that delivered groundfish into Oregon ports in 1986 compared to 137 that delivered into Oregon ports in 1985. Deliveries amounted to 3,431 and 3,568 mt respectively (Table 8). The number of vessels using hook and line gear and pot gear were 298 and 264 in 1985 and 1986, respectively.

Table 8. Number of vessels by gear type, fishing for groundfish and shrimp and landing in Oregon in 1985 and 1986.

Vessel Type	1985		1986	
	Number	Deliveries	Number	Deliveries
Jig	226	2,433	211	2,008
Longline ^{1/}	48	400	37	359
Trawl ^{2/}				
Bottom	131	3,131	123	2,247
Midwater	31	310	25	321
Total	137	3,431	130	3,568
Pot	24	497	16	304
Shrimp trawl	96	956	152	2,324

^{1/} Excludes Pacific halibut.

^{2/} Most midwater trawl vessels also make bottom trawl landings, thus vessel classes are not additive.

The most significant change occurred in the shrimp fishery. In 1985, 96 vessels participated but in 1986, 152 vessels participated, an increase of 58% while the number of shrimp deliveries increased from 956 in 1985 to 2,324 in 1986.

For bottom trawl trips, CPUE measured as either mt/trip or mt/hr, was greater in 1986 than in 1985. In 1985 mt/trip was 6.87 (15, 146 lb) as opposed to 1986 which was 7.62 (16,800 lb), an increase of 11%. CPUE measured as mt/hr showed a similar increase, i.e., 14% (Table 9). This generally reflects the reduced effort competing for a given exploitable biomass.

For midwater trips mt/trip was 16% less in 1986 than in 1985. CPUE measured as mt/hr was 17% less. The major reason was due to a regulatory change that occurred in late April 1985 that rescinded the 60,000 lb/biweekly trip limit option. This restriction was carried over into 1986.

Table 9. Landings per trip and landings per hour of Oregon trawl vessels in 1985 and 1986.

Statistic	<u>Bottom Trawl</u>		<u>Midwater Trawl</u>	
	1985	1986	1985	1986
Trips	3,131	2,247	310	321
Hours	74,919	52,785	2,227	2,324
mt landed	21,504	17,114	4,285	3,727
mt/trip	6.87	7.62	13.82	11.61
mt/hr	0.28	0.32	1.92	1.60

Appendix 1

MARINE FINFISH PROGRAM

Jack Robinson, Program Leader	Newport
Clay Creech, Consultant	Newport
Jim Golden, Project Leader, Management	Newport
Dave Douglas, Biologist	Astoria
Michael Hosie, Biologist	Charleston
Gary Hettman, Technician	Newport
Suzanne Rock, Administrative Assistant	Newport
Kathy Raymond (0.5 FTE), FW Tech	Newport
Robert Demory, Project Leader, Resource Assessment	Newport
William Barss, Biologist	Newport
Jerry Butler, Project Leader, Sportfish/Baitfish	Newport
Elaine Stewart, Biologist (PFMC)	Tillamook
Carol Madden, Technician (PFMC)	Newport
Phyllis Shelly, Technician (PFMC)	Charleston
Larry Hreha, Laboratory Head/Sablefish/Pelagic Fish	Astoria

Appendix 2. Common and scientific names of species reported in the groundfish catch.

ROCKFISH

Aurora rockfish	<u>Sebastes aurora</u>
Bank rockfish	<u>S. rufus</u>
Black rockfish	<u>S. melanops</u>
Blackgill rockfish	<u>S. melanostomus</u>
Blue rockfish	<u>S. mystinus</u>
Bocaccio rockfish	<u>S. paucispinis</u>
Canary rockfish	<u>S. pinniger</u>
Chillipepper	<u>S. goodii</u>
China rockfish	<u>S. nebulosus</u>
Dark-blotched rockfish	<u>S. crameri</u>
Greenspotted rockfish	<u>S. chlorostictus</u>
Greenstriped rockfish	<u>S. elongatus</u>
Longspine thornyhead	<u>Sebastolobus altivelis</u>
Pacific ocean perch	<u>S. alutus</u>
Pygmy rockfish	<u>S. wilsoni</u>
Quillback rockfish	<u>S. maliger</u>
Redbanded rockfish	<u>S. babcocki</u>
Redstripe rockfish	<u>S. proriger</u>
Rosethorn rockfish	<u>S. helvonauculatus</u>
Rougheye rockfish	<u>S. aleutianus</u>
Sharpchin rockfish	<u>S. zacentrus</u>
Shortbelly rockfish	<u>S. jordani</u>
Shortraker rockfish	<u>S. borealis</u>
Shortspine thornyhead	<u>Sebastolobus alascanus</u>
Silvergray rockfish	<u>S. brevispinis</u>
Speckled rockfish	<u>S. ovalis</u>
Splitnose rockfish	<u>S. diploproa</u>
Stripetail rockfish	<u>S. saxicola</u>
Tiger rockfish	<u>S. nigrocinctus</u>
Vermilion rockfish	<u>S. miniatus</u>
Widow rockfish	<u>S. entomelas</u>
Yelloweye rockfish	<u>S. ruberrimus</u>
Yellowmouth rockfish	<u>S. reedi</u>
Yellowtail rockfish	<u>S. flavidus</u>

FLATFISH

Arrowtooth flounder	<u>Artheresthes stomias</u>
Butter sole	<u>Isopsetta isolepis</u>
Curlfin turbot	<u>Pleuronichthys decurrens</u>
Dover sole	<u>Microstomus pacificus</u>
English sole	<u>Parophrys vetulus</u>
Flathead sole	<u>Hippoglossoides elassodon</u>
Pacific halibut	<u>Hippoglossus stenolepis</u>
Pacific sanddab	<u>Citharichthys sordidus</u>
Petrale sole	<u>Eopsetta jordani</u>
Rex sole	<u>Glyptocephalus zachirus</u>
Rock sole	<u>Lepidopsetta bilineata</u>
Sand sole	<u>Psettichthys melanostictus</u>
Slender sole	<u>Lyopsetta exilis</u>
Starry flounder	<u>Platichthys stellatus</u>

OTHER FISH

Cabezon	<u>Scorpaenichthys marmoratus</u>
Green sturgeon	<u>Acipenser medirostris</u>
Pacific cod	<u>Gadus macrocephalus</u>
Pacific whiting	<u>Merluccius productus</u>
Lingcod	<u>Ophiodon elongatus</u>
Sablefish	<u>Anoplopoma fimbria</u>
Skates	<u>Raja spp.</u>
Souppin shark	<u>Galeorhinus zyopterus</u>
Spiney dogfish	<u>Squalus acanthias</u>

Appendix 3. Regulations recommended by the Pacific Fishery Management Council and subsequently adopted by the Oregon Department of Fish and Wildlife in 1986.

Effective January 1, 1986

- Recommended coastwide widow rockfish (trip limit of 30,000 pounds per week; no biweekly option [coastwide OY = 10,200 mt; ABC = 9,300 mt]).
- HG for Sebastes complex north of Coos Bay, Oregon (43°22'N) fixed at 10,100 mt.
- For Sebastes complex north of Coos Bay; recommended 25,000 pound weekly trip limit of which no more than 10,000 pounds may be yellowtail rockfish (or 50,000 pounds biweekly of which no more than 20,000 pounds may be yellowtail rockfish; or 12,500 pounds twice per week of which no more than 5,000 pounds may be yellowtail rockfish--biweekly and twice weekly landings require appropriate declaration to state in which fish are landed).
- For Sebastes complex south of Coos Bay: recommended 40,000 pound trip limit; no trip frequency.
- Recommended landings of Sebastes complex and widow rockfish be unrestricted if less than 3,000 pounds.
- Recommended that fishermen fishing the Sebastes complex on both sides of the Coos Bay line during a trip must conform with the northern (more restrictive) trip limit.
- Recommended continuance of 22-inch size limit on sablefish in all areas north of Point Conception; retain 5,000 pound incidental landing limit for sablefish smaller than 22 inches; coastwide OY = 13,600 mt; ABC = 10,300 mt.
- Recommended the Pacific ocean perch limit in the area north of Cape Blanco (42°50'N) should be 20 percent (by weight) of all fish on board or 10,000 pounds whichever is less; landings of Pacific ocean perch be unrestricted if less than 1,000 pounds regardless of percentage on board; Vancouver OY = 600 mt; Columbia OY 950 mt.
- Recommended an ABC and OY of 227,500 mt for Pacific whiting.
- Recommended an ABC of 3,900 mt for yellowtail rockfish.

Effective April 11, 1986

- Recommended increasing Pacific whiting ABC and OY to 295,000 mt, up 30 percent from 227,500 mt established at the beginning of 1986.
- Recommended increasing yellowtail rockfish ABC to 4,000 mt, up 100 mt from 3,900 mt established at beginning of 1986. (Yellowtail rockfish is in the multispecies Sebastes complex and does not have a numerical OY.) The 100 mt increase is assigned entirely to the Columbia area north of Coos Bay.

Automatic Action (See September 28, 1986 below)

- Recommended in April to impose a 3,000 pound trip limit without a trip frequency to be implemented when the widow rockfish AUC is reached.

Effective August 22, 1986 (Emergency Regulation)

- Recommended allocating the estimated remaining sablefish OY between trawl and fixed gear at 55 and 45 percent, respectively.
- Recommended an 8,000 pound sablefish trip limit on trawl gear.
- Recommended retention of the current regulation of a 5,000 pound trip limit on sablefish smaller than 22 inches.
- Recommended prohibition of any further landings of sablefish by trawl gear after trawl quota is reached.
- Recommended prohibition of any further landings of sablefish by fixed gear after fixed gear quota is reached.
- Recommended prohibition of any further landings of sablefish after the coastwide OY is reached.

Effective August 31, 1986

- For Sebastes complex north of Coos Bay, Oregon: recommended the following increase in trip limits: weekly--30,000 pounds of which no more than 12,500 pounds may be yellowtail rockfish; biweekly--60,000 pounds of which no more than 25,000 pounds may be yellowtail rockfish; and twice-weekly--15,000 pounds of which no more than 6,500 pounds may be yellowtail rockfish.

Effective September 28, 1986

- Widow rockfish ABC reached; coastwide 3,000 pound trip limit without trip frequency imposed (see Automatic Action above).

Effective October 23, 1986 (See August 22, 1986 Emergency Regulation)

- Fixed gear sablefish quota reached; fixed gear fishery closed.
- Trawl gear trip limit increased to 12,000 pounds for remainder of year or until trawl gear quota is reached.