FISH COMMISSION OF OREGON
TRAWL INVESTIGATION

Cruise Report 66-2, Shrimp Cruise, Phase B-Fish

Vessels: MV Faymar and MV Columbia, chartered trawl vessels.

Dates: March 1 - April 1, 1966.

Objectives: Phase A. To determine distribution and abundance of pink shrimp (Pandalus jordani) off Oregon and determine size, sex ratio, and age composition of shrimp caught.

Phase B. 1. To collect age and length data from lover (especially juveniles), English, and petrale soles as time permits.

2. To identify, count, and weigh incidentally caught fish as time permits.

3. To collect incidentally caught fish and molluscs as requested.

Methods: Two hundred and seven tows were made in five subareas with a 41-foot headrope Gulf semi-balloon shrimp trawl with a 1-1/8 inch stretch mesh in the body and intermediate, 1-1/2 inch mesh in the codend, and an innerlining in the codend of 1/2-inch knotless netting. Tows were approximately 15 minutes each.

The area surveyed was the Oregon coastal waters between 50 and 125 fathoms. The coastal area was divided into five subareas of three depth strata each: (1) Oregon-California border - Cape Blanco; (2) Cape Blanco-Umpqua River; (3) Umpqua River-Cape Perpetua; (4) Cape Perpetua-Cape Lookout; and (5) Cape Lookout-Columbia River. Depth strata within each subarea were 50-69 fathoms, 70-89 fathoms, and 90 or more fathoms.

Tables 1 through 5 show the incidentally caught fish by area and depth strata. Table 6 shows the common and scientific names of fishes and invertebrates caught. Since it was impossible to weigh or count all fish from every tow, estimates, based on average weight, were made for numbers and/or pounds. Numbers and pounds are listed for those species which were most numerous and numbers only for some species that occurred less frequently.

Results: Smelt, anchovies, and shiner perch predominated in most tows. Sand dabs, rex sole and slender sole were present in nearly every tow and of all fishes caught they had the widest distribution with regard to depth.

Area 1. Smelt were the most commonly caught species occurring mostly at depths of less than 90 fathoms. Shiner perch were next in prominence occurring mainly at depths less than 70 fathoms. Rockfish were caught mostly at depths greater than 90 fathoms, but they were also caught in the other two depth strata. Most frequently caught flat fishes were sand dabs, slender sole, and rex sole. Sand dabs and rex sole were caught mainly at depths less than 90 fathoms while slender sole were common at all depths.

Area 2. The most common species caught in this area was smelt. Most of them were caught in depths over 70 fathoms. Sand dabs, slender sole, and rex sole were the most common flat fishes caught. Sand dabs and rex sole were caught mostly at depths less than 70 fathoms while slender sole were common throughout the three depth strata fished.

Area 3. Sablefish occurred more frequently than other species in area 3. They were nearly all 13-15 inches in size and were caught at depths between 70 and 80 fathoms. Rockfish were also common at shallower depths, being found mostly at depths less than 70 fathoms. Sand dabs, rex sole, and slender sole were again the most common flat fishes caught.

Area 4. Smelt and slender sole were the most common species in this area with smelt having slightly greater numbers. The catch of these two species occurred mostly at depths from 70-80 fathoms. Rockfish were absent from depths less than 70 fathoms and were caught mostly at depths greater than 90 fathoms. Shiner perch were also fairly common at depths of 70-80 fathoms.

Area 5. Anchovie predominated in total numbers caught. However, most of them were from one tow off the Columbia River which was estimated to contain 500 pounds. Smelt were also common in this area occurring mainly at depths less than 90 fathoms. Rockfish were common at depths greater than 90 fathoms. Sand dabs, rex sole, and slender sole were again the most commonly caught flat fishes. Sand dabs and rex sole were caught mostly at depths less than 90 fathoms while slender sole were caught mostly at depths greater than 90 fathoms.

Age structures were collected from 467 Dover sole (3 from unassigned tows), 99 English sole, and 47 petrale sole. Dover sole ranged in length from 53 mm to 530 mm and English sole from 102 mm to 341 mm. Only one juvenile petrale sole was caught. Juvenile Dover sole were caught primarily at depths less than 90 fathoms. The largest catch of 25 juveniles was made in 58 fathoms off Coos Bay.

Because of time limitations it was not possible to take length-frequency samples from the most commonly caught species. This was unfortunate because there were definite differences in juvenile distribution of sand dabs, slender sole, and rex sole.

Personnel: MV Columbia

Robert Demory, Party Chief 3/1-30/66
Melvin Wick, Jr., Vessel Captain
Gary Milburn, Aquatic Biologist 3/1-30/66
Basil Warnock, Crewman
Matt Huckler, Crewman

MV Faymar
Jack Robinson, Party Chief 3/1-4/1/66
Max Carlson, Vessel Captain
Halbert Bailey, Aquatic Biologist 3/1-25/66
Terry Link, Biologist Aide 3/26-4/1/66
Ray Weaver, Crewman

Robert L. Demory
August 2, 1966

Distribution

Astoria Lab - 12
Newport Lab
Charleston Lab
Library
OFC - Portland
BCF - Seattle
Alverson
Moore - 4
WDF - Olympia
PMFC
Pearcy - OSU
Jow - CFG

Table 1. Fish Caught in Area 1 (Cape Blanco to Oregon-California Border), March 1966 Shrimp Cruise.

	Depth in Fathoms					
	≤69		70-89		≥ 90	
	20 Tows		16 Tows		9 Tows	
Species	No.	Lbs.	No.	Lbs.	No.	Lbs.
Hagfish	2	-	-	-	-	-
Lamprey	1	-	-	-	-	-
Shark	1	-	-	-	-	-
Dogfish	1	-	1	-	-	-
Skate	4	-	3	-	3	-
Ratfish	228*	200*	8	-	3	-
Herring	-	-	1	-	-	-
Anchovies	15	-	5	-	-	-
Smelt	2,679*	90*	670*	24*	76	3*
Lantern fish	-	-	1	-	-	-
Hake	-	-	2	-	3	-
Pacific cod	-	-	-	-	-	-
Tomcod	271*	39*	5	-	-	-
Shiner perch	1,025*	35*	158*	5*	2	tr
Rockfish	20	38*	190	71*	771*	404*
Sablefish	4	2	1	1	7	7*
Lingcod	1	3	1	-	-	-
Sculpin	-	-	-	-	-	-
Sea Poacher	4	-	5	-	1	-
Blenny	1	-	-	-	-	-
Eel pout	7	-	113	-	52	-
Sand dab	223*	40*	57*	11*	-	-
Arrowtooth flounder	31*	20*	40	26*	33	22*
Petrale sole	11	-	5	-	-	-
Rex sole	347*	89*	127*	32*	20	5*
Sand sole	-	-	-	-	-	-
Rock sole	-	-	-	-	-	-
Slender sole	399*	33*	136*	12*	196*	16*
Dover sole	41	-	28	-	1	-
English sole	146	105*	45	32*	-	-
Turbot, curlfin	1	-	-	-	-	-
Sandlance	-	-	-	-	-	-
Wolf eel	-	-	-	-	-	-

* Calculated numbers and/or pounds.

Table 2. Fish Caught in Area 2 (Umpqua River to Cape Blanco), March 1966 Shrimp Cruise.

	Depth in Fathoms					
	≤69		70-89		≥90	
	15 Tows		15 Tows		11 Tows	
Species	No.	Lbs.	No.	Lbs.	No.	Lbs.
Hagfish	-	-	1	-	2	-
Lamprey	-	-	-	-	-	-
Shark	-	-	-	-	-	-
Dogfish	-	-	-	-	-	-
Skate	1	-	1	-	1	-
Ratfish	24	-	5	-	23	-
Herring	11	-	-	-	-	-
Anchovies	1	-	-	-	-	-
Smelt	488*	16*	2,967*	98*	1,476*	49*
Lantern fish	1	-	-	-	-	-
Hake	4	-	6	-	12	-
Pacific cod	-	-	-	-	-	-
Tomcod	186*	15*	-	-	1	-
Shiner perch	823*	36*	1	-	-	-
Rockfish	143*	93*	210*	126*	248*	119*
Sablefish	5	3	4	2	27	14
Lingcod	2	-	-	-	-	-
Sculpin	3	-	-	-	-	-
Sea poacher	4	-	3	-	-	-
Blenny	-	-	-	-	-	-
Eel pout	16	-	29	-	46	-
Sand dab	435*	79*	36*	7*	26*	5*
Arrowtooth flounder	53	35*	56	37*	37	22*
Petrale sole	16	-	4	-	3	-
Rex sole	345*	86*	50	13*	9	2*
Sand sole	-	-	-	-	-	-
Rock sole	-	-	-	-	-	-
Slender sole	494*	41*	152*	13*	302*	25*
Dover sole	52	-	12	-	10	-
English sole	44	-	1	-	-	-
Turbot, curlfin	-	-	-	-	-	-
Sandlance	-	-	-	-	-	-
Wolf eel	-	-	-	-	-	-

* Calculated numbers and/or pounds.

Table 3. Fish Caught in Area 3 (Cape Perpetua to Umpqua River), March 1966 Shrimp Cruise.

Species	Depth in Fathoms: ≤69, 10 Tows		70-89, 7 Tows		≥90, 9 Tows	
	No.	Lbs.	No.	Lbs.	No.	Lbs.
Hagfish	-	-	-	-	-	-
Lamprey	-	-	-	-	-	-
Shark	-	-	-	-	-	-
Dogfish	-	-	-	-	-	-
Skate	2	-	5	-	-	-
Ratfish	9	-	4	-	3	-
Herring	-	-	-	-	-	-
Anchovies	-	-	-	-	-	-
Smelt	-	-	-	-	201*	7*
Lantern fish	-	-	-	-	-	-
Hake	5	-	-	-	3	-
Pacific cod	-	-	-	-	-	-
Tomcod	7	-	-	-	-	-
Shiner perch	291*	10*	-	-	-	-
Rockfish	506*	332*	66	41*	176	126*
Sablefish	-	-	1,200*	600*	6	3*
Lingcod	1	-	2	-	-	-
Sculpin	4	-	-	-	3	-
Sea poacher	-	-	1	-	17	-
Blenny	-	-	-	-	-	-
Eel pout	-	-	20	-	20	-
Sand dab	193*	35*	-	-	12	5*
Arrowtooth flounder	5	3*	60	40*	41	27*
Petrale sole	1	-	1	-	1	-
Rex sole	262*	65*	713*	178	204*	51*
Sand sole	-	-	-	-	26	3
Rock sole	-	-	-	-	-	-
Slender sole	186*	16*	1,112*	93	589*	49*
Dover sole	-	-	96	-	11	-
English sole	9	-	25	-	1	-
Turbot, curlfin	-	-	-	-	-	-
Sandlance	-	-	-	-	-	-
Wolf eel	-	-	-	-	-	-

* Calculated numbers and/or pounds.

Table 4. Fish Caught in Area 4 (Cape Lookout to Cape Perpetua), March 1966 Shrimp Cruise.

	Depth in Fathoms					
	≤69		70-89		≥90	
	12 Tows		19 Tows		14 Tows	
Species	No.	Lbs.	No.	Lbs.	No.	Lbs.
Hagfish	-	-	-	-	14	-
Lamprey	-	-	-	-	-	-
Shark	-	-	-	-	-	-
Dogfish	1	-	-	-	1	-
Skate	1	-	-	-	4	-
Ratfish	2	-	7	-	3	-
Herring	22	-	1	-	-	-
Anchovies	5	-	-	-	-	-
Smelt	100	4*	1,416*	46*	-	-
Lantern fish	-	-	-	-	-	-
Hake	1	-	-	-	-	-
Pacific cod	-	-	-	-	1	-
Tomcod	260	17*	112*	13*	-	-
Shiner perch	503	18*	481*	16*	166*	6*
Rockfish	4	3*	121*	199*	406*	155*
Sablefish	-	-	8	4	10	5
Lingcod	-	-	2	-	1	-
Sculpin	-	-	1	-	-	-
Sea Poacher	-	-	3	-	12	-
Blenny	-	-	-	-	12	-
Eel pout	-	-	-	-	4	-
Sand dab	184	31*	192*	38*	-	-
Arrowtooth flounder	3	2*	35	15*	45	28*
Petrale sole	2	-	6	-	4	-
Rex sole	94	20*	513*	119*	78	25*
Sand sole	13	4	-	-	-	-
Rock sole	3	-	-	-	-	-
Slender sole	82	5*	1,167*	107*	747*	53*
Dover sole	1	-	14	-	45	-
English sole	7	-	8	-	1	-
Turbot, curlfin	-	-	-	-	-	-
Sandlance	-	-	-	-	-	-
Wolf eel	2	-	-	-	-	-

* Calculated numbers and/or pounds.

Table 5. Fish Caught in Area 5 (Columbia River to Cape Lookout), March 1966 Shrimp Cruise

Species	Depth in Fathoms ≤69 (7 Tows) No.	Lbs.	70-89 (10 Tows) No.	Lbs.	≥90 (13 Tows) No.	Lbs.
Hagfish	-	-	-	-	-	-
Lamprey	-	-	-	-	-	-
Shark	-	-	-	-	-	-
Dogfish	2	-	-	-	-	-
Skate	1	-	2	-	4	-
Ratfish	19	-	3	-	-	-
Herring	-	-	-	-	-	2
Anchovies	11,742*	721	16	1	-	-
Smelt	2,345*	77	2,193*	72	761*	25
Lantern fish	-	-	-	-	-	-
Hake	-	-	-	-	-	-
Pacific cod	-	-	-	-	-	-
Tomcod	63*	5*	8	1*	21	2*
Shiner perch	1,252*	42	10	-	775*	26
Rockfish	51*	40*	67*	43*	614*	389*
Sablefish	18	9*	7	4*	18*	9*
Lingcod	-	-	9	45*	3	15*
Sculpin	-	-	-	-	-	-
Sea poacher	1	-	-	-	-	-
Blenny	-	-	-	-	-	-
Eel pout	-	-	6	-	-	-
Sand dab	259*	48*	61*	11	77*	14
Arrowtooth flounder	8	5*	21	20*	27*	30*
Petrale sole	3	-	5	-	9	-
Rex sole	298*	75	282*	70*	168*	45
Sand sole	1	-	-	-	-	-
Rock sole	-	-	-	-	-	-
Slender sole	98*	8*	401*	33*	1,023*	86*
Dover sole	50	-	66	-	37	-
English sole	41*	24*	57	38*	17	8*
Turbot, curlfin	-	-	-	-	-	-
Sandlance	1	-	-	-	-	-
Wolf eel	-	-	-	-	-	-

* Calculated numbers and/or pounds

Table 6. Common and Scientific Names of Fishes Caught During March 1966 Shrimp Cruise.

Pacific hagfish	*Polistotrema stouti*
Pacific lamprey	*Lampetra tridentata*
Brown smooth hound shark	*Triakis henlei*
Soupfin shark	*Galeorhinus zyopterus*
Spiny dogfish	*Squalus acanthias*
Big skate	*Raja binoculata*
Longnose skate	*R. rhina*
Black skate	*R. kincaidi*
Ratfish	*Hydrolagus colliei*
Pacific herring	*Clupea harengus pallasi*
Northern anchovy	*Engraulis mordax*
Smelts	Osmeridae
Silvery hatchetfish	*Argyropelecus sladeni*
Lanternfishes	Myctophidae
Pacific hake	*Merluccius productus*
Pacific cod	*Gadus macrocephalus*
Pacific tomcod	*Microgadus proximus*
Shiner perch	*Cymatogaster aggregata*
Pacific ocean perch	*Sebastodes alutus*
Silvergray rockfish	*S. brevispinis*
Greenspotted rockfish	*S. chlorostictus*
Splitnose rockfish	*S. diploproa*
Greenstriped rockfish	*S. elongatus*
Widow rockfish	*S. entomelas*
Yellowtail rockfish	*S. flavidus*

Chilipepper	*S. goodei*
Rosethorn rockfish	*S. helvomaculatus*
Black rockfish	*S. melanops*
Boccaccio	*S. paucispinis*
Canary rockfish	*S. pinniger*
Redstripe rockfish	*S. proriger*
Rosy rockfish	*S. rosaceus*
Stripetail rockfish	*S. saxicola*
Sharpchin rockfish	*S. zacentrus*
Blackmouth rockfish	*S. crameri*
Shortspine channel rockfish (idiot)	*Sebastolobus alascanus*
Sablefish	*Anoplopoma fimbria*
Lingcod	*Ophiodon elongatus*
Brown Irish Lord	*Hemilepidotus spinosus*
Threadfin sculpin	*Icelinus filamentosus*
Staghorn sculpin	*Leptocottus armatus*
Sea poachers	Agonidae
Northern ronquil	*Ronquilus jordani*
Eel pouts	Zoarcidae
Pacific sanddab	*Citharichthys sordidus*
Arrowtooth flounder	*Atheresthes stomias*
Petrale sole	*Eopsetta jordani*
Rex sole	*Glyptocephalus zachirus*
Sandsole	*Psettichthys melanostictus*
Rocksole	*Lepidosetta bilineata*
Slender sole	*Lyopsetta exilis*
Dover sole	*Microstomus pacificus*

English sole	Parophrys vetulus
Curlfin turbot	Pleuronichthys decurrens
Petrale sole	Eopsetta jordani
Pacific sandlance	Ammodytes hexapterus
Wolf eel	Anarrhichthys ocellatus
Sponge	Porifera
Sea pens	Pennatulacea
Coral	Coelenterata
Sea Anemones	Anthozoa
Jelly fish	Coelenterata
Comb jelly	Ctenophora
Flat worms	Platyhelmithes
Annelid worms	Annelida
Barnacles	Thoracica
Dungeness crab	Cancer magister
Hermit crab	Pagurus sp.
Pink shrimp	Pandalus jordani
Coonstripe shrimp	P. danae
Gray shrimp	Crago sp.
Shrimp	Spirontocaris sp.
Shrimp	Mundia sp.
Chitons	Amphineura
Snails	Gastropoda
Sea slugs	Holothurioidea
Squid	Loligo opalescens
Octopus	Octopoda
Starfish	Echinodermata
Brittlestars	Ophiura lutkenii

Basket stars	G. orgonocephalus eucnemis
Sea urchins	Echinoidea
Sea cucumbers	Holothurioidea