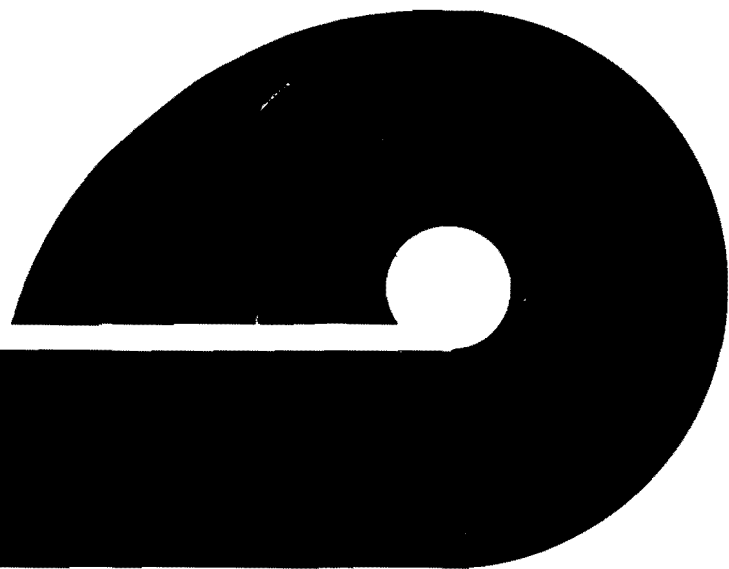


FISH COMMISSION OF OREGON

# CHETCO AND ROGUE RIVER ESTUARIES

A STUDY IN RESOURCE USE  
DIVISION OF MANAGEMENT AND RESEARCH



# 1971 CHETCO AND ROGUE RIVER ESTUARIES RESOURCE USE STUDY

by  
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Fish Commission of Oregon  
Division of Management and Research

Funded by  
State of Oregon  
General Fund

U.S. Army Corps of Engineers  
Contract No. DACW 57-72-C-0138

National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
PL 88-309 Contract Nos. N208-0073-72(N) and NO4-3-208-55

August 1973

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January 17, 1974

TO: Recipients of Fish Commission of Oregon's publication "Chetco and Rogue River Estuary Resource Use Study" dated August 1973

SUBJECT: Errata

Page 2 - Under CONTENTS, 1971 Chetco River Estuary Resource Use Study, Results Section, delete reference to Commercial Fishery.

Page 7 - Under Procedure section, the fourth paragraph should read:

"No commercial fishery exists in the Chetco River Estuary."

Page 9 - Delete Commercial Fishery section. (Anchovy landings, as reported under this section, were harvested immediately outside of the Chetco River Estuary.)

# **1971 Chetco and Rogue River Estuaries Resource Use Study**

## **INTRODUCTION**

In 1971 the Fish Commission of Oregon conducted a comprehensive study of the recreational use of marine food fish, shellfish, and other miscellaneous invertebrates in 16 Oregon estuaries. The anadromous sport fisheries in the upper portions of most estuaries were not included in the study due to the lack of manpower to adequately sample those areas. The study was supported by state general funds and by the National Marine Fisheries Service under the Commercial Fisheries Research and Development Act. The U.S. Army Corps of Engineers funded portions of the data processing, preparation of a series of marine resource maps, and a special report for each estuary. This report summarizes the results of the Chetco and Rogue River estuaries study.

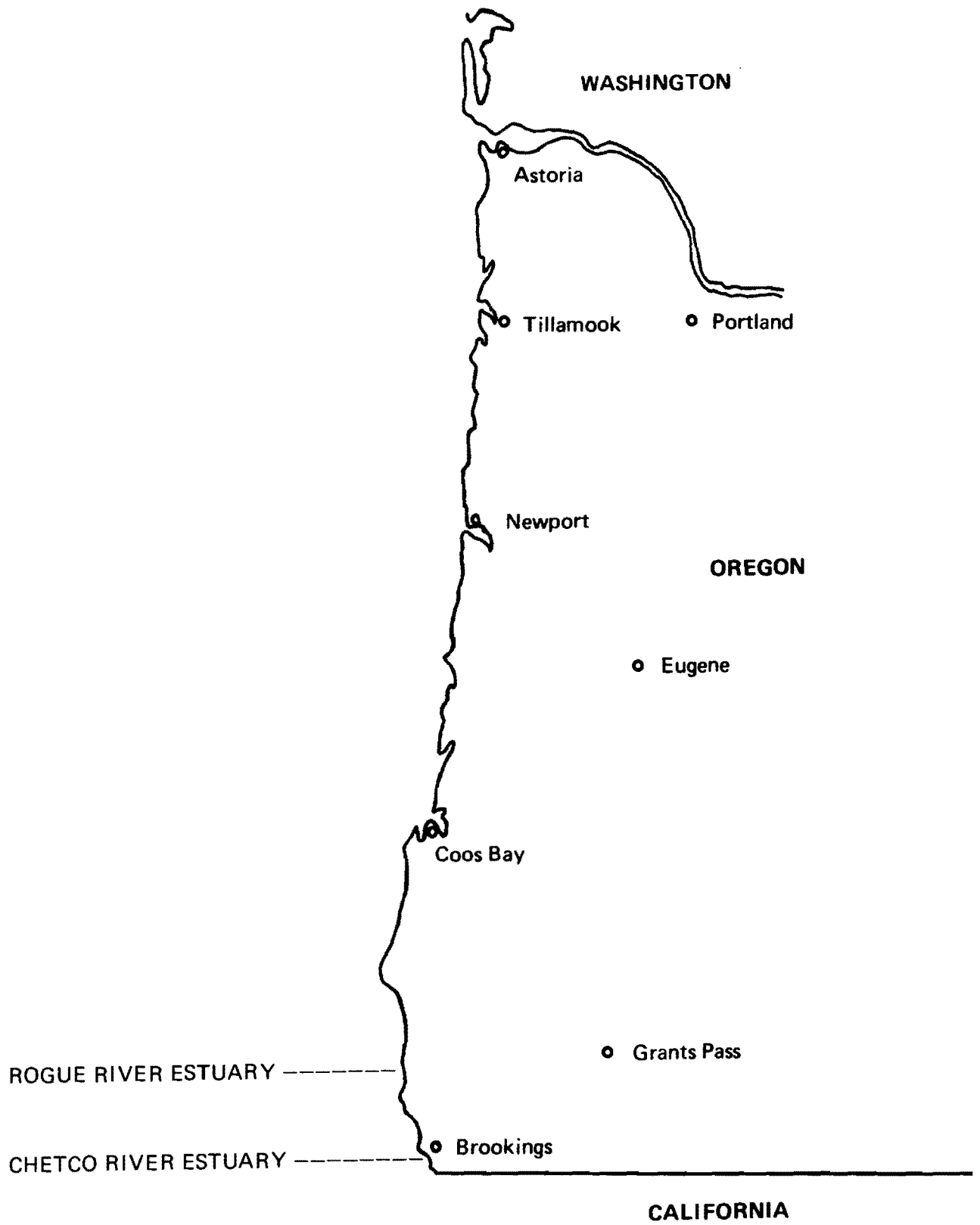


Figure 1. Location of Chetco and Rogue River Estuaries.



# 1971 CHETCO RIVER ESTUARY RESOURCE USE STUDY

## PROCEDURE

The Chetco River Estuary is located 388 miles south of the Columbia River and 5 miles north of the California border (Figure 1). The 102 acre bay, the smallest estuary surveyed in 1971, contains 12 acres of tidelands.

From March 1 through October 31, 1971, boat and shore anglers were interviewed for catch, effort, and origin data in a program designed for statistical analysis. No tideflat users or scuba divers were encountered during the study. Resource users were categorized as: (1) county, those people that reside within the county where the sampled estuary is found, but west of the coast range summit; (2) state, those people who are residents of Oregon, but are not classified as county; and (3) non-state, those people that are not residents of Oregon.

The study area extended from the seaward ends of the two jetties upstream 1 mile to the Highway 101 bridge. Survey areas and their station numbers are outlined in Table 1 and are shown in Figure 2.

The 1971 Chetco River Estuary commercial landings of fish and their value, taken from Fish Commission catch statistic reports, are included as supplemental information.

The following maps were prepared using information collected in previous Fish Commission studies and the 1971 survey.

1. Principal boat fishing areas.
2. Food production areas, fish feeding areas, and fish migration routes.

## RESULTS

During the study 2,412 boat and shore angler interviews were obtained to estimate catch and effort values and angler origin. The values presented in the tables are estimates and have been rounded off when used in the text.

### Boat Fishery

Figure 3 shows the principal boat fishing areas of the Chetco River Estuary. Both sport and commercial boat fishing areas are combined on the map. Principal species of fish caught and peak periods of fishing activity are outlined.

An estimated 1,600 boat angler trips were expended on the Chetco River Estuary (Table 2). These boat anglers spent 6,100 hours fishing (Table 3). The peak month of activity was October which coincided with the occurrence of large numbers of chinook salmon in the estuary.

Five species of fish and one species of crab were identified in the boat anglers' catch (Table 4). Northern anchovy and chinook salmon were the principal species taken and accounted for 92% of the total number of animals caught. The major catches of anchovy occurred during July and August; October was the peak month for chinook salmon (Table 5).

**Shore Fishery**

Interview data revealed that 21,600 shore angler trips were expended on the Chetco River Estuary (Table 6). The north and south jetties were the principal fishing areas; 99% of the anglers fished there. Shore anglers spent 47,000 hours fishing (Table 7). The peak month of activity was July.

Thirty species of fish and one species of crab were identified in the shore anglers' catch (Table 8). Northern anchovy was the principal species taken, accounting for 68% of the total number of animals caught. The peak catch occurred during July (Table 9). Fishing success was highest during June.

**Angler Origin**

Nearly half (49%) of the anglers interviewed were residents of Oregon living outside of Curry County as shown below. Thirty per cent of the resource users were from Curry County and 21% were nonresidents. The high proportion of nonresidents reflects the heavy use of this estuary by Californians. During the study no other estuary had as high a nonresident use.

	Angler Origin		
	County	State	Non-State
Boat	869	178	558
Shore	6,071	11,257	4,294
<b>Total</b>	<b>6,940</b>	<b>11,435</b>	<b>4,852</b>
<b>Percentage</b>	<b>29.9</b>	<b>49.2</b>	<b>20.9</b>

**Combined Recreational Fisheries**

A total of 23,200 resource user trips (1,600 boat and 21,600 shore) were expended on the Chetco River Estuary during the study (Table 10). These trips represent 53,100 hours of effort (6,100 boat and 47,000 shore). The peak month of activity was October for the boat fishery and July for the shore fishery (Table 11). Combining all fisheries, Table 11 shows that July was the peak month of activity. Areas receiving the principal use for the boat and shore fishery were below the Highway 101 bridge (100%) and the north jetty (51%), respectively.

Anglers of the two fisheries harvested 42,800 marine animals (42,600 fish and 200 crabs). Northern anchovy comprised 79% and 68% of the boat and shore anglers' catch, respectively. Comparing the catch for the two fisheries revealed that shore anglers

harvested 37,500 or 88% of the total animals taken. Boat anglers caught 5,300 marine animals. Peak month of catch was July for the boat and shore fisheries.

### **Commercial Fishery**

Commercial landings of marine food fish caught in the Chetco River Estuary in 1971 totaled 5,108 pounds valued at \$2,554 (fisherman's level) according to Fish Commission landing statistics. Northern anchovy was the only species landed.

### **Food Production Areas, Fish Feeding Areas, and Fish Migration Routes**

Figure 4 shows the food production areas, fish feeding areas, and fish migration routes in the Chetco River Estuary.

Estuaries are some of the most productive lands on earth. The productivity of estuarial areas is directly related to length of shore line, depth of water, and geographical location. Within each estuary tidelands are generally more productive than deep water channel areas.

In the Chetco River Estuary, the production of food organisms occurs throughout the entire estuary. These food organisms include the microscopic phytoplankton and other algae, zooplankton, small crustaceans, mollusks, annelids, and fish which are all important in the estuarine food chain.

The fish feeding areas of the Chetco River Estuary (for finfish and shellfish) include all areas of the estuary under tidal influence. Tidelands as well as deep water channels and rocky areas provide a variety of rearing habitat. Species of fish, numbers, and distribution within each area are generally related to type of food organisms, bottom type, water depth, and water quality.

Fish and shellfish typically found associated with tideflats include flounder, sole, perch, salmon, and crabs. In addition to those species found on tideflats, herring, anchovy, and smelt reside in the estuary channels; period of residency is dependent on species, season, and location. A taxonomic list of the species of marine animals observed in this study is contained in Table 12.

Rocky areas in the Chetco River Estuary are the preferred rearing areas of perch, rockfish, greenling, and cabezon. These fish reside near the jetties of the lower bay.

Fish migration routes are those areas traveled by fish to and from spawning, feeding, or rearing areas. Fish migration routes through the Chetco River Estuary are as varied as the fish that use them. Species and age class of fish, season, water depth, and water quality all play an important role in fish migration patterns.

The use of channel areas throughout the estuary by salmon, trout, perch, flounder, and baitfish is well known. In addition, during high tide, these same fish frequently swim across tideflats to reach their destination.

**Table 1. LOCATION OF SAMPLING STATIONS  
Chetco River Estuary, 1971**

Fishing Activity	Station Number	Location
Boat	B-1	Entire estuary area below Highway 101 bridge
Shore	S-1	North Jetty
	S-2	Port Dike -- all docks -- Coast Guard Station
	S-3	South Jetty

**Table 2. NUMBER OF BOAT ANGLER TRIPS  
By Month and Area, Chetco River Estuary  
March 1 through October 31, 1971**

Month	Boat Fishing Area and Station Number		Total	Percentage
	Mouth to Highway 101 Bridge	B-1		
March		25	25	1.6
April		2	2	0.1
May		18	18	1.1
June		28	28	1.7
July		193	193	12.0
August		128	128	8.0
September		22	22	1.4
October		1,189	1,189	74.1
Total		1,605	1,605	100.0
Percentage		100.0	100.0	

**Table 3. HOURS OF BOAT ANGLER USE  
By Month and Area, Chetco River Estuary  
March 1 through October 31, 1971**

Month	Boat Fishing Area and Station Number		Total	Percentage
	Mouth to Highway 101 Bridge			
	B-1			
March	123		123	2.0
April	10		10	0.2
May	89		89	1.5
June	137		137	2.2
July	932		932	15.3
August	617		617	10.1
September	110		110	1.8
October	4,074		4,074	66.9
Total	6,092		6,092	100.0
Percentage	100.0		100.0	

**Table 4. MARINE ANIMALS CAUGHT BY BOAT ANGLERS  
Chetco River Estuary, By Species and Area  
March 1 through October 31, 1971**

Species	Boat Fishing Area and Station Number		Total	Percentage
	Mouth to Highway 101 Bridge			
	B-1			
Dungeness crab	138		138	2.6
Northern anchovy	4,164		4,164	79.0
Chinook salmon (adult)	660		660	12.5
Cutthroat trout	244		244	4.6
Redtail surfperch	32		32	0.6
Kelp greenling	32		32	0.6
Total	5,270		5,270	99.9
Percentage	100.0		100.0	

**Table 5. SPORT BOAT FISHING DATA  
Chetco River Estuary, All Areas  
1971**

	March	April	May	June	July	Aug.	Sept.	Oct.	Total	Percentage
Angler trips (number)	25	2	18	28	193	128	22	1,189	1,605	--
Fishing effort (hours)	123	10	89	137	932	617	110	4,074	6,092	--
Fishing success (catch/hr.)	2.28	2.30	2.26	2.28	2.29	2.27	2.26	0.16	0.87	--
Catch (number)										
Dungeness crab	8	0	6	9	65	43	7	0	138	2.6
Northern anchovy	254	22	183	284	1,922	1,272	227	0	4,164	79.0
Chinook salmon (adult)	0	0	0	0	0	0	0	660	660	12.5
Cutthroat trout	15	1	10	16	114	75	13	0	244	4.6
Redtail surfperch	2	0	1	2	16	10	1	0	32	0.6
Kelp greenling	2	0	1	2	16	10	1	0	32	0.6
Total	281	23	201	313	2,133	1,410	249	660	5,270	99.9
Percentage	5.3	0.4	3.8	5.9	40.5	26.7	4.7	12.5	99.8	

**Table 6. NUMBER OF SHORE ANGLER TRIPS  
By Month and Area, Chetco River Estuary  
March 1 through October 31, 1971**

Month	Shore Fishing Area and Station Number			Total	Percentage
	North Jetty S-1	Docks S-2	South Jetty S-3		
March	34	0	57	91	0.4
April	30	0	188	218	1.0
May	828	7	468	1,303	6.0
June	672	249	1,843	2,764	12.8
July	6,560	12	3,553	10,125	46.8
August	2,306	0	2,984	5,290	24.5
September	348	0	287	635	2.9
October	142	0	1,054	1,196	5.5
Total	10,920	268	10,434	21,622	99.9
Percentage	50.5	1.2	48.3	100.0	

**Table 7. HOURS OF SHORE ANGLER USE  
By Month and Area, Chetco River Estuary  
March 1 through October 31, 1971**

Month	Shore Fishing Area and Station Number			Total	Percentage
	North Jetty S-1	Docks S-2	South Jetty S-3		
March	69	0	115	184	0.4
April	62	0	391	453	1.0
May	1,711	14	966	2,691	5.7
June	1,514	561	4,152	6,227	13.2
July	14,114	26	7,645	21,785	46.3
August	5,104	0	6,604	11,708	24.9
September	727	0	600	1,327	2.8
October	317	0	2,353	2,670	5.7
Total	23,618	601	22,826	47,045	100.0
Percentage	50.2	1.3	48.5	100.0	

**Table 8. MARINE ANIMALS CAUGHT BY SHORE ANGLERS  
Chetco River Estuary, by Species and Area  
March 1 through October 31, 1971**

Species	Shore Fishing Area and Station Number			Total	Percentage
	North Jetty S-1	Docks S-2	South Jetty S-3		
Dungeness crab	10	10	95	115	0.3
Northern anchovy	3,270	2,316	19,920	25,506	67.9
Silver surfperch	986	0	1,870	2,856	7.6
Striped seaperch	1,780	0	120	1,900	5.1
Surf smelt	131	1,453	304	1,888	5.0
Redtail surfperch	403	0	1,083	1,486	4.0
Starry flounder	103	10	683	796	2.1
Chinook salmon (adult)	693	0	78	771	2.1
Pacific herring	10	191	445	646	1.7
Kelp greenling	276	0	111	387	1.0
Pacific staghorn sculpin	106	10	156	272	0.7
Shiner perch	20	161	28	209	0.6
Pile perch	105	0	11	116	0.3
Pacific tomcod	15	0	75	90	0.2
Wolf-eel	11	0	31	42	0.1
Walleye surfperch	11	30	0	41	0.1
Lingcod	0	0	41	41	0.1
Black rockfish	33	0	0	33	0.1
Coho salmon (adult)	32	0	0	32	0.1
Buffalo sculpin	25	0	0	25	0.1
Cabezon	21	0	0	21	0.1
Pacific hake	0	10	11	21	0.1
American shad	0	20	0	20	0.1
Sand sole	0	0	20	20	0.1
Jacksmelt	8	0	11	19	0.1
Rock greenling	16	0	0	16	<0.1
Cutthroat trout	8	5	0	13	<0.1
Rainbow trout	0	0	11	11	<0.1
Chinook salmon (juvenile)	0	0	8	8	<0.1
Big skate	8	0	0	8	<0.1
White seaperch	5	0	0	5	<0.1
Rock gunnel	4	0	0	4	<0.1
Unidentified fish	34	0	92	126	0.3
<b>Total</b>	<b>8,124</b>	<b>4,216</b>	<b>25,204</b>	<b>37,544</b>	<b>100.0</b>
<b>Percentage</b>	<b>21.6</b>	<b>11.2</b>	<b>67.1</b>	<b>99.9</b>	



**Table 9. SHORE FISHING DATA**  
**Chetco River Estuary, All Areas**  
**1971**

	March	April	May	June	July	August	Sept.	Oct.	Total	Percentage
Angler trips (number)	91	218	1,303	2,764	10,125	5,290	635	1,196	21,622	—
Fishing effort (hours)	184	453	2,691	6,227	21,785	11,708	1,327	2,670	47,045	—
Fishing success (catch/hr.)	0.14	0.20	0.73	1.16	1.05	0.42	0.27	0.06	0.80	—
Catch (number)										
Dungeness crab	0	0	0	60	0	47	0	8	115	0.3
Northern anchovy	0	0	0	2,684	20,695	2,127	0	0	25,506	67.9
Silver surfperch	0	0	785	90	326	1,655	0	0	2,856	7.6
Striped seaperch	0	0	891	201	706	94	8	0	1,900	5.1
Surf smelt	0	0	0	1,836	52	0	0	0	1,888	5.0
Redtail surfperch	5	65	171	827	10	224	176	8	1,486	4.0
Starry flounder	0	0	22	444	178	152	0	0	796	2.1
Chinook salmon (adult)	0	0	0	0	579	141	0	51	771	2.1
Pacific herring	0	0	0	594	52	0	0	0	646	1.7
Kelp greenling	5	16	22	50	94	152	40	8	387	1.0
Pacific staghorn sculpin	0	0	41	40	0	117	32	42	272	0.7
Shiner perch	0	0	0	201	0	0	8	0	209	0.6
Pile perch	0	0	0	0	94	22	0	0	116	0.3
Pacific tomcod	0	4	5	0	0	81	0	0	90	0.2
Wolf-eel	0	0	0	20	0	22	0	0	42	0.1
Walleye surfperch	0	0	0	30	0	11	0	0	41	0.1
Lingcod	0	0	11	30	0	0	0	0	41	0.1
Black rockfish	0	0	0	0	0	0	8	25	33	0.1
Coho salmon (adult)	0	0	0	0	21	11	0	0	32	0.1
Buffalo sculpin	5	0	0	20	0	0	0	0	25	0.1
Cabezon	0	0	0	0	21	0	0	0	21	0.1
Pacific hake	0	0	0	0	10	11	0	0	21	0.1
American shad	0	0	0	20	0	0	0	0	20	0.1
Sand sole	0	0	0	20	0	0	0	0	20	0.1
Jacksmelt	0	0	0	0	0	11	8	0	19	0.1
Rock greenling	5	0	0	0	0	11	0	0	16	<0.1
Cutthroat trout	0	0	5	0	0	0	8	0	13	<0.1
Rainbow trout	0	0	0	0	0	11	0	0	11	<0.1
Chinook salmon (juvenile)	0	0	0	0	0	0	0	8	8	<0.1
Big skate	0	0	0	0	0	0	8	0	8	<0.1
White seaperch	0	0	5	0	0	0	0	0	5	<0.1
Rock gunnel	0	4	0	0	0	0	0	0	4	<0.1
Unidentified fish	5	0	5	30	0	22	64	0	126	0.3
Total	25	89	1,963	7,197	22,838	4,922	360	150	37,544	100.0
Percentage	0.1	0.2	5.2	19.2	60.8	13.1	1.0	0.4	100.0	

**Table 10. SUMMARY**  
**Number of Angler Trips, Hours of Effort, and Animals Caught**  
**Chetco River Estuary, by Station**  
**March 1 through October 31, 1971**

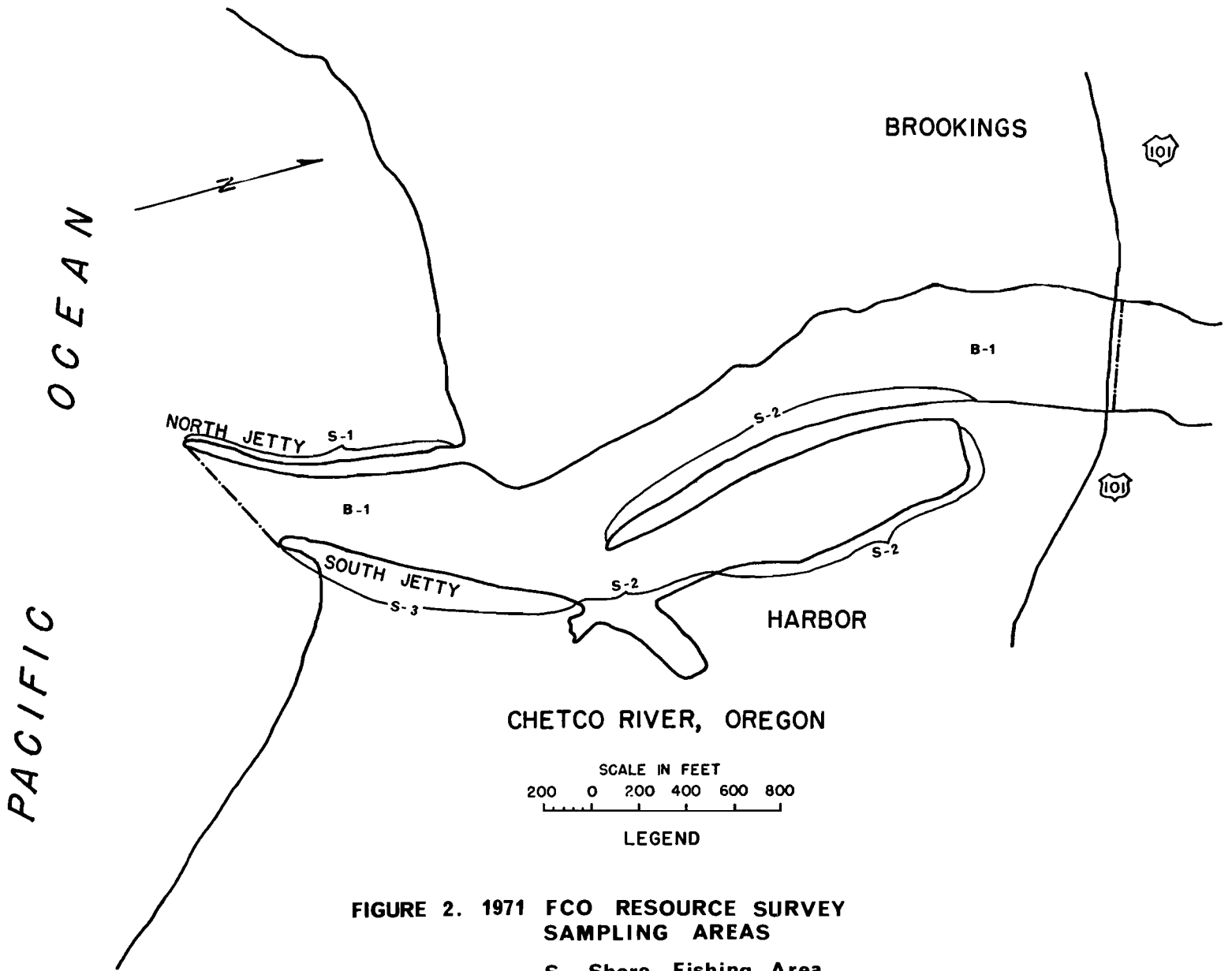
Station Number	No. Angler Trips	Angler Hours	Catch		Total
			Finfish	Crabs	
B-1	1,605	6,092	5,132	138	5,270
Total	1,605	6,092	5,132	138	5,270
S-1	10,920	23,618	8,114	10	8,124
S-2	268	601	4,206	10	4,216
S-3	10,434	22,826	25,109	95	25,204
Total	21,622	47,045	37,429	115	37,544
Grand Total	23,227	53,137	42,561	253	42,814

**Table 11. SUMMARY**  
**Number of Angler Trips, Hours of Effort, and Animals Caught**  
**Chetco River Estuary, by Month**  
**March 1 through October 31, 1971**

Fishery	Month	No. Angler Trips	Angler Hours	Catch		Total
				Finfish	Crabs	
Boat	March	25	123	273	8	281
	April	2	10	23	0	23
	May	18	89	195	6	201
	June	28	137	304	9	313
	July	193	932	2,068	65	2,133
	August	128	617	1,367	43	1,410
	September	22	110	242	7	249
	October	1,189	4,074	660	0	660
	Total	1,605	6,092	5,132	138	5,270
	Shore	March	91	184	25	0
April		218	453	89	0	89
May		1,303	2,691	1,963	0	1,963
June		2,764	6,227	7,137	60	7,197
July		10,125	21,785	22,838	0	22,838
August		5,290	11,708	4,875	47	4,922
September		635	1,327	360	0	360
October		1,196	2,670	142	8	150
Total		21,622	47,045	37,429	115	37,544
Combined		March	116	307	298	8
	April	220	463	112	0	112
	May	1,321	2,780	2,158	6	2,164
	June	2,792	6,364	7,441	69	7,510
	July	10,318	22,717	24,906	65	24,971
	August	5,418	12,325	6,242	90	6,332
	September	657	1,437	602	7	609
	October	2,385	6,744	802	8	810
	Grand Total	23,227	53,137	42,561	253	42,814

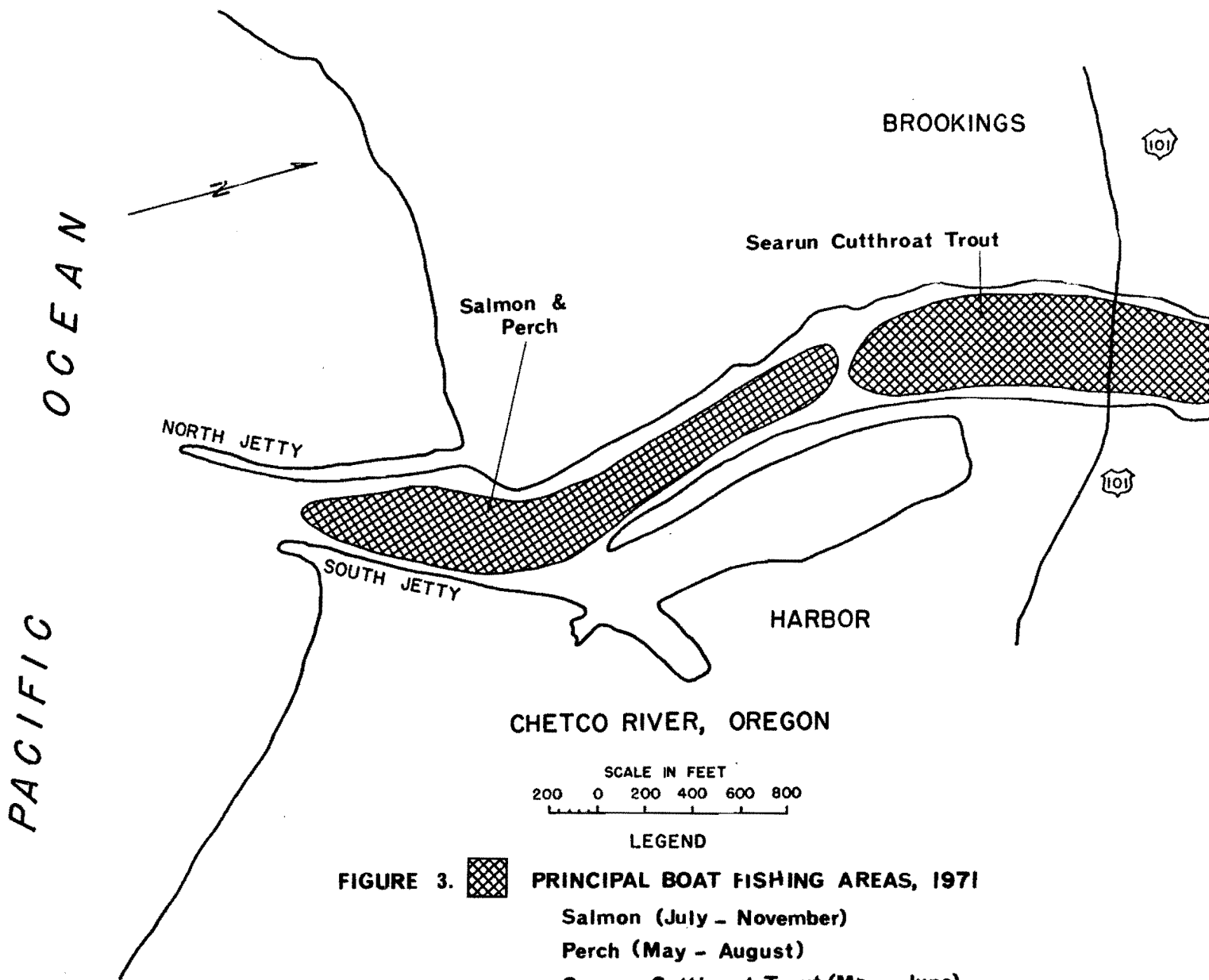
**Table 12. TAXONOMIC LIST OF SPECIES HARVESTED  
By Estuarine Resource Users, Chetco River Estuary  
March 1 through October 31, 1971**

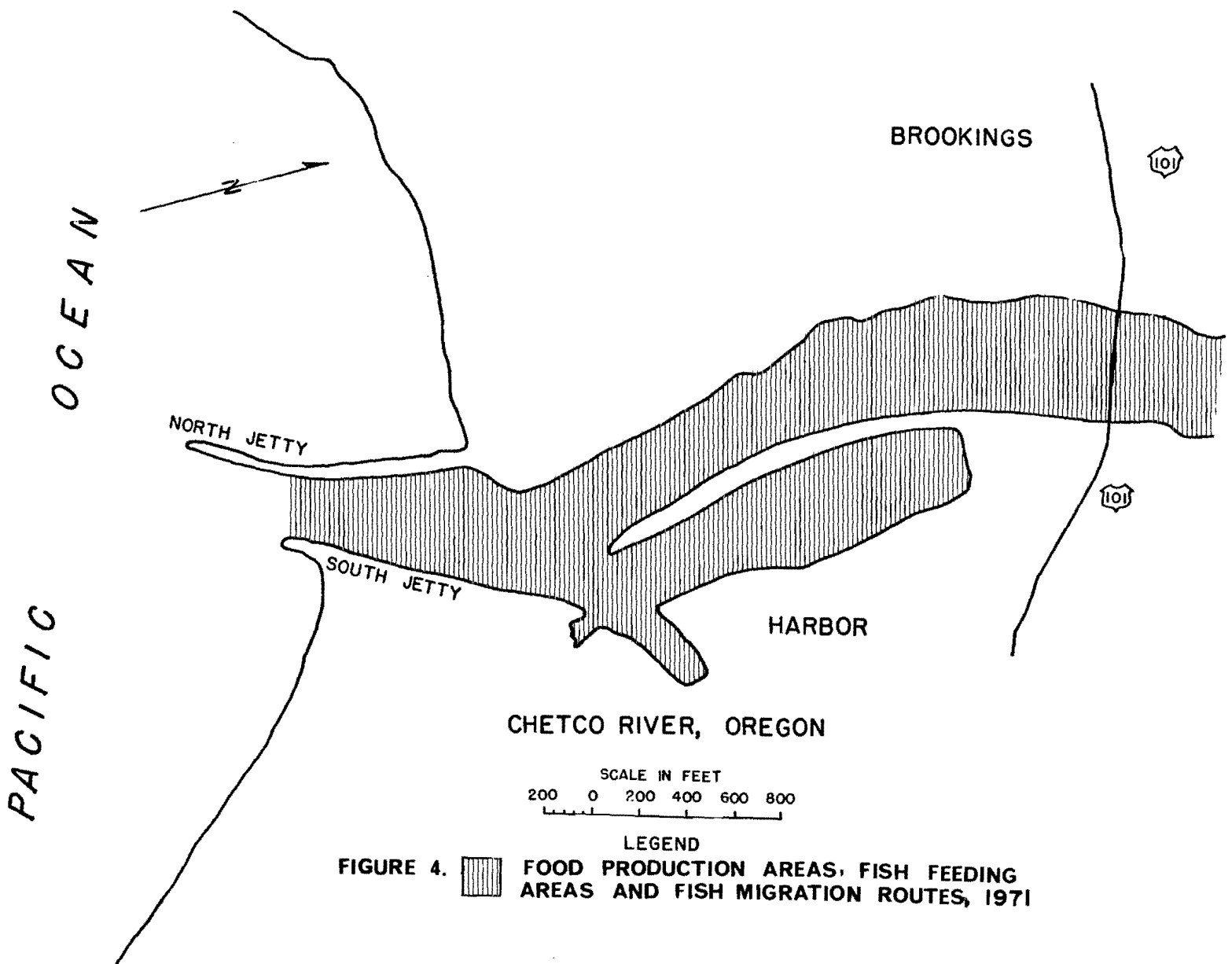
Common Name	Local Names	Scientific Name
<b>Fish</b>		
American shad		<i>Alosa sapidissima</i>
Big skate		<i>Raja binoculata</i>
Black rockfish	Black sea bass, black snapper	<i>Sebastes melanops</i>
Buffalo sculpin	Bullhead	<i>Enophrys bison</i>
Cabezon	Bullhead, rock cod	<i>Scorpaenichthys marmoratus</i>
Chinook salmon	King salmon, salmon	<i>Oncorhynchus tshawytscha</i>
Coho salmon	Silver salmon	<i>Oncorhynchus kisutch</i>
Cutthroat trout	Blueback, harvest trout, sea runs	<i>Salmo clarki</i>
Jacksnelt		<i>Atherinopsis californiensis</i>
Kelp greenling	Seatrout	<i>Hexagrammos decagrammus</i>
Lingcod		<i>Ophiodon elongatus</i>
Northern anchovy		<i>Engraulis mordax</i>
Pacific hake		<i>Merluccius productus</i>
Pacific herring		<i>Clupea harengus pallasi</i>
Pacific staghorn sculpin	Bullhead	<i>Leptocottus armatus</i>
Pacific tomcod		<i>Microgadus proximus</i>
Pile perch		<i>Rhacochilus vacca</i>
Rainbow trout		<i>Salmo gairdneri</i>
Redtail surfperch		<i>Amphistichus rhodoterus</i>
Rock greenling	Seatrout	<i>Hexagrammos lagocephalus</i>
Rock gunnel	Rock eel	<i>Pholis gunnellus</i>
Sand sole		<i>Psettichthys melanostictus</i>
Shiner perch	Shiners	<i>Cymatogaster aggregata</i>
Silver surfperch		<i>Hyperprosopon ellipticum</i>
Starry flounder		<i>Platichthys stellatus</i>
Striped seaperch	Rainbow perch	<i>Embiotoca lateralis</i>
Surf smelt		<i>Hypomesus pretiosus</i>
Walleye surfperch		<i>Hyperprosopon argenteum</i>
White seaperch		<i>Phanerodon furcatus</i>
Wolf-eel		<i>Anarrhichthys ocellatus</i>
<b>Crab</b>		
Dungeness crab	Market crab	<i>Cancer magister</i>



**FIGURE 2. 1971 FCO RESOURCE SURVEY SAMPLING AREAS**

- S - Shore Fishing Area**
- B - Boat Fishing Area**





**FIGURE 4.** FOOD PRODUCTION AREAS, FISH FEEDING AREAS AND FISH MIGRATION ROUTES, 1971

# 1971 ROGUE RIVER ESTUARY RESOURCE USE STUDY

## PROCEDURE

The Rogue River Estuary is located 349 miles south of the Columbia River (Figure 1). The 627 acre bay contains 149 acres of tidelands.

From March 1 through April 30, 1971, shore anglers were interviewed for catch, effort, and origin data in a program designed for statistical analysis. No boat anglers, tideflat users, or scuba divers were encountered during the study. Resource users were categorized as: (1) county, those people that reside within the county where the sampled estuary is found, but west of the coast range summit; (2) state, those people who are residents of Oregon, but are not classified as county; and (3) non-state, those people that are not residents of Oregon. The study was terminated prematurely due to the transfer of project personnel.

The study area extended from the seaward ends of the two jetties upstream 1 mile to the Rogue River Resort. Survey areas and their station numbers are outlined in Table 13 and are shown in Figure 5.

No food fish or shellfish were harvested commercially from the estuary in 1971.

The following maps were prepared using information collected in previous Fish Commission studies and the 1971 survey.

1. Principal boat fishing areas.
2. Food production areas, fish feeding areas, and fish migration routes.

## RESULTS

During the study 41 shore angler interviews were obtained to estimate catch and effort values and angler origin. The values presented in the tables are estimates and have been rounded off when used in the text.

### Boat Fishery

Figure 6 shows the principal boat fishing areas of the Rogue River Estuary. Only sport boat fishing areas are shown on the map since no commercial boat fishing exists in the bay. Principal species of fish caught and peak periods of fishing activity are outlined. Since no boat anglers were interviewed during the study period, information on this map was based on incidental observations made by Game Commission and Fish Commission biologists stationed in Curry County.

## **Shore Fishery**

Interview data revealed that 350 shore angler trips were expended on the Rogue River Estuary (Table 14). These shore anglers spent 600 hours fishing (Table 15). The south jetty was the principal fishing area; 85% of the anglers fished there.

Redtail surfperch (*Amphistichus rhodoterus*) was the only fish identified in the shore anglers' catch (Table 16). Of the 600 fish caught, 99% were taken in April (Table 17).

## **Angler Origin**

Approximately 59% of the anglers interviewed were residents of Curry County. Twenty-six percent of the anglers were residents of Oregon living outside of Curry County and 15% were nonresidents.

## **Food Production Areas, Fish Feeding Areas, and Fish Migration Routes**

Figure 7 shows the food production areas, fish feeding areas, and fish migration routes in the Rogue River Estuary.

Estuaries are some of the most productive lands on earth. The productivity of estuarial areas is directly related to length of shore line, depth of water, and geographical location. Within each estuary tidelands are generally more productive than deep water channel areas.

In the Rogue River Estuary, the production of food organisms occurs throughout the entire estuary. These food organisms include the microscopic phytoplankton and other algae, zooplankton, small crustaceans, mollusks, annelids, and fish which are all important in the estuarine food chain.

The fish feeding areas of the Rogue River Estuary (for finfish and shellfish) include all areas of the estuary under tidal influence. Tideflats as well as deep water channels and rocky areas provide a variety of rearing habitat. Species of fish, numbers, and distribution within each area are generally related to type of food organisms, bottom type, water depth, and water quality.

Fish typically found associated with tideflats include flounder, perch, salmon, and trout. These same species reside in the estuary channels; period of residency is dependent on species, season, and location.

Rocky areas in the Rogue River Estuary are the preferred feeding and rearing areas of perch, rockfish, greenling, and cabezon. These fish reside near the jetties of the lower bay.

Fish migration routes are those areas traveled by fish to and from spawning, feeding, or rearing areas. Fish migration routes through the Rogue River Estuary are as varied as the fish that use them. Species and age class of fish, season, water depth, and water quality all play an important role in fish migration patterns.

The use of channel areas throughout the estuary by salmon, trout, perch, and flounder is well known. In addition, during high tide, these same fish frequently swim across tideflats to reach their destination.



**Table 13. LOCATION OF SAMPLING STATIONS  
Rogue River Estuary, 1971**

Fishing Activity	Station Number	Location
Boat	B-1	Head of tide downstream to westward end of jetties
Shore	S-1	North Jetty
	S-2	All other shore areas
	S-3	South Jetty

**Table 14. NUMBER OF SHORE ANGLER TRIPS  
By Month and Area, Rogue River Estuary  
March 1 through April 30, 1971**

Month	Shore Fishing Area and Station Number			Total	Percentage
	North Jetty S-1	Docks S-2	South Jetty S-3		
March	5	11	39	55	15.8
April	16	21	257	294	84.2
Total	21	32	296	349	100.0
Percentage	6.0	9.2	84.8	100.0	

**Table 15. HOURS OF SHORE ANGLER USE  
By Month and Area, Rogue River Estuary  
March 1 through April 30, 1971**

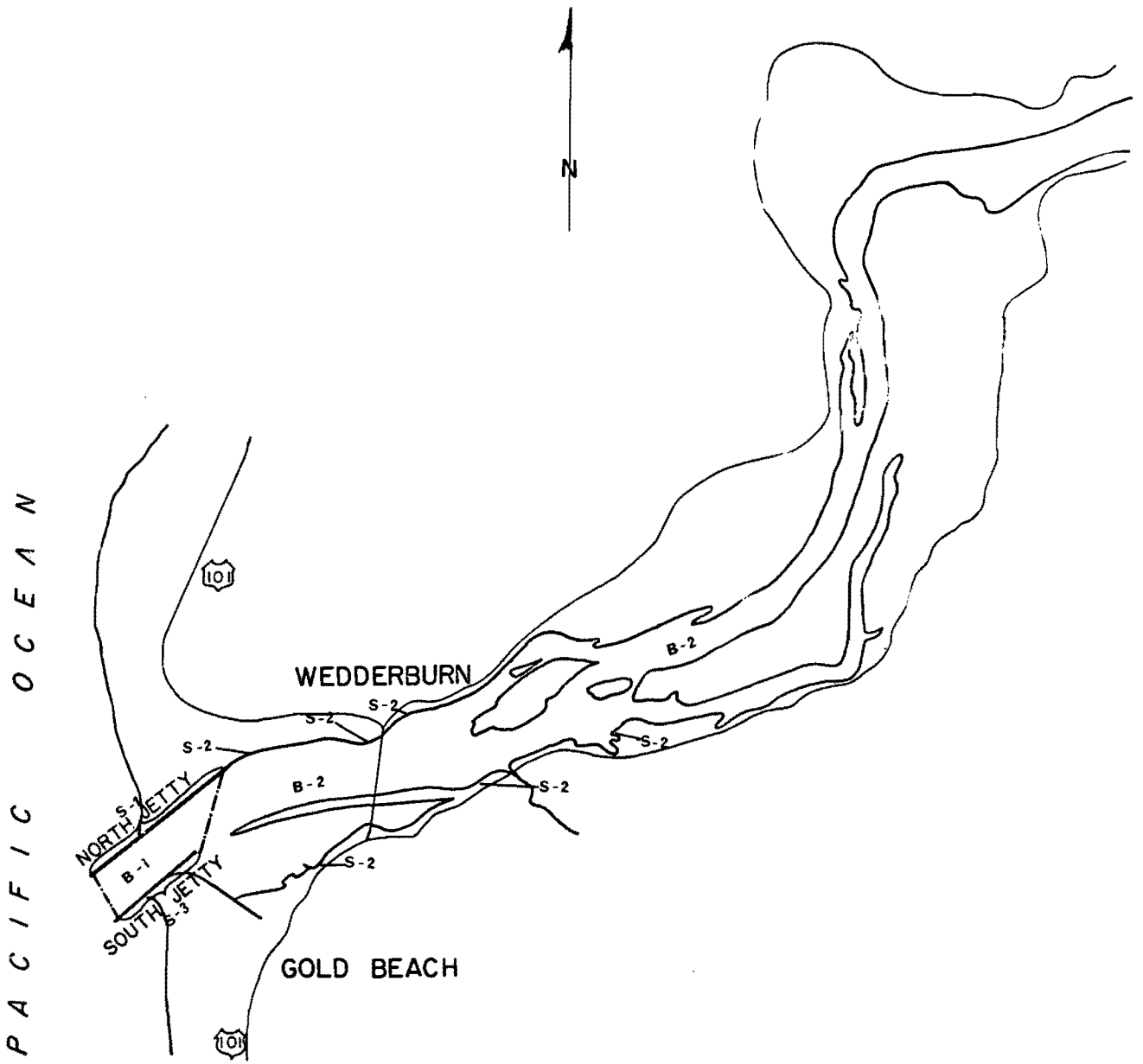
Month	Shore Fishing Area and Station Number			Total	Percentage
	North Jetty S-1	Docks S-2	South Jetty S-3		
March	19	39	139	197	34.3
April	21	27	329	377	65.7
Total	40	66	468	574	100.0
Percentage	7.0	11.5	81.5	100.0	

**Table 16. MARINE ANIMALS CAUGHT BY SHORE ANGLERS  
Rogue River Estuary, by Species and Area  
March 1 through April 30, 1971**

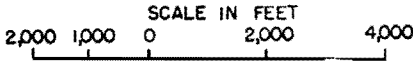
Species	Shore Fishing Area and Station Number			Total	Percentage
	North Jetty S-1	Docks S-2	South Jetty S-3		
Redtail surfperch	108	0	485	593	100.0
Total	108	0	485	593	100.0
Percentage	18.2	0	81.8	100.0	

**Table 17. SHORE FISHING DATA  
Rogue River Estuary, All Areas  
1971**

	March	April	Total	Percentage
Angler trips (number)	55	294	349	—
Fishing effort (hours)	197	377	574	—
Fishing success (catch/hr.)	0.05	1.55	1.03	—
Catch (number)				
Redtail surfperch	9	584	593	100.0
Total	9	584	593	100.0
Percentage	1.5	98.5	100.0	



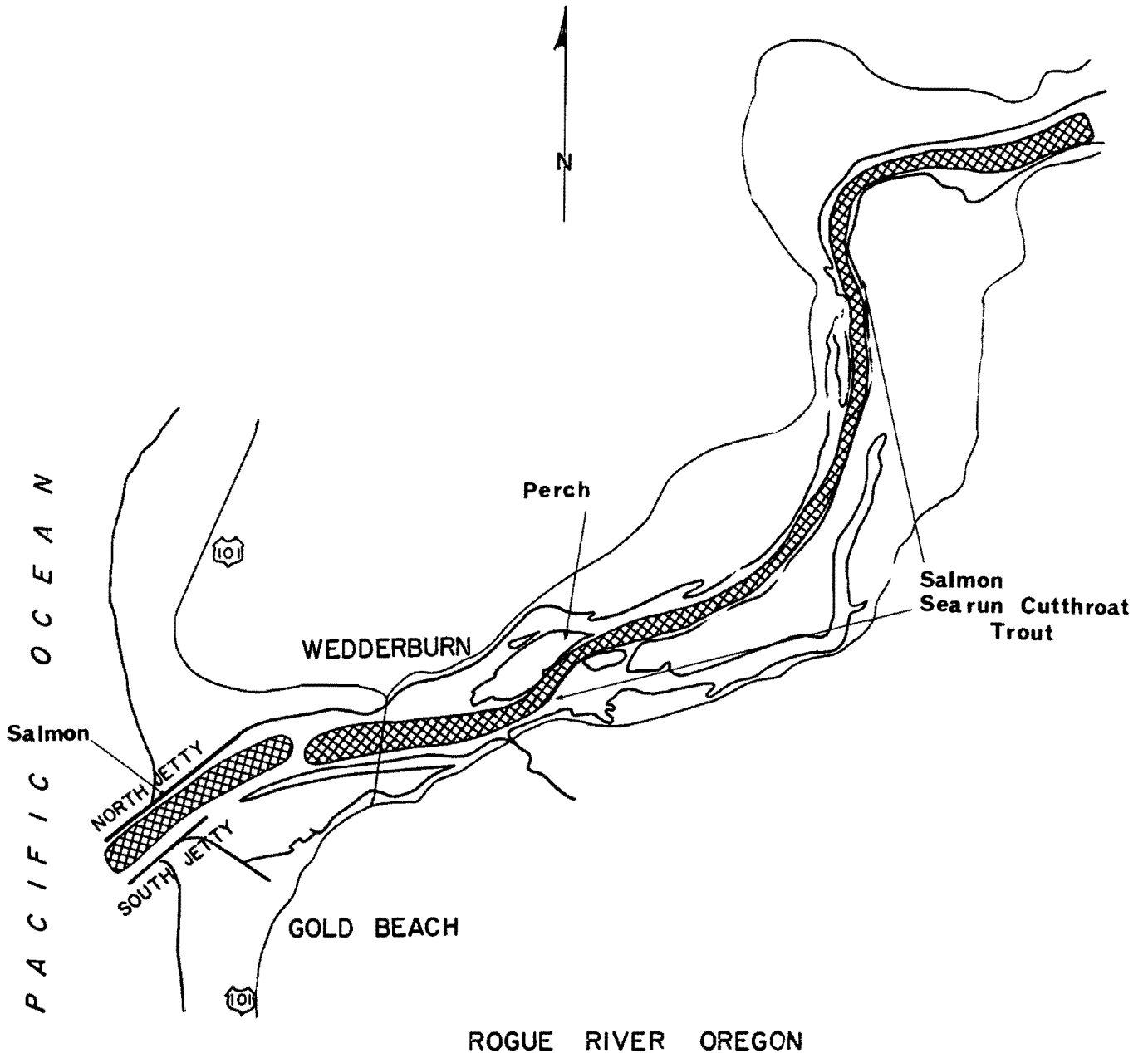
ROGUE RIVER OREGON




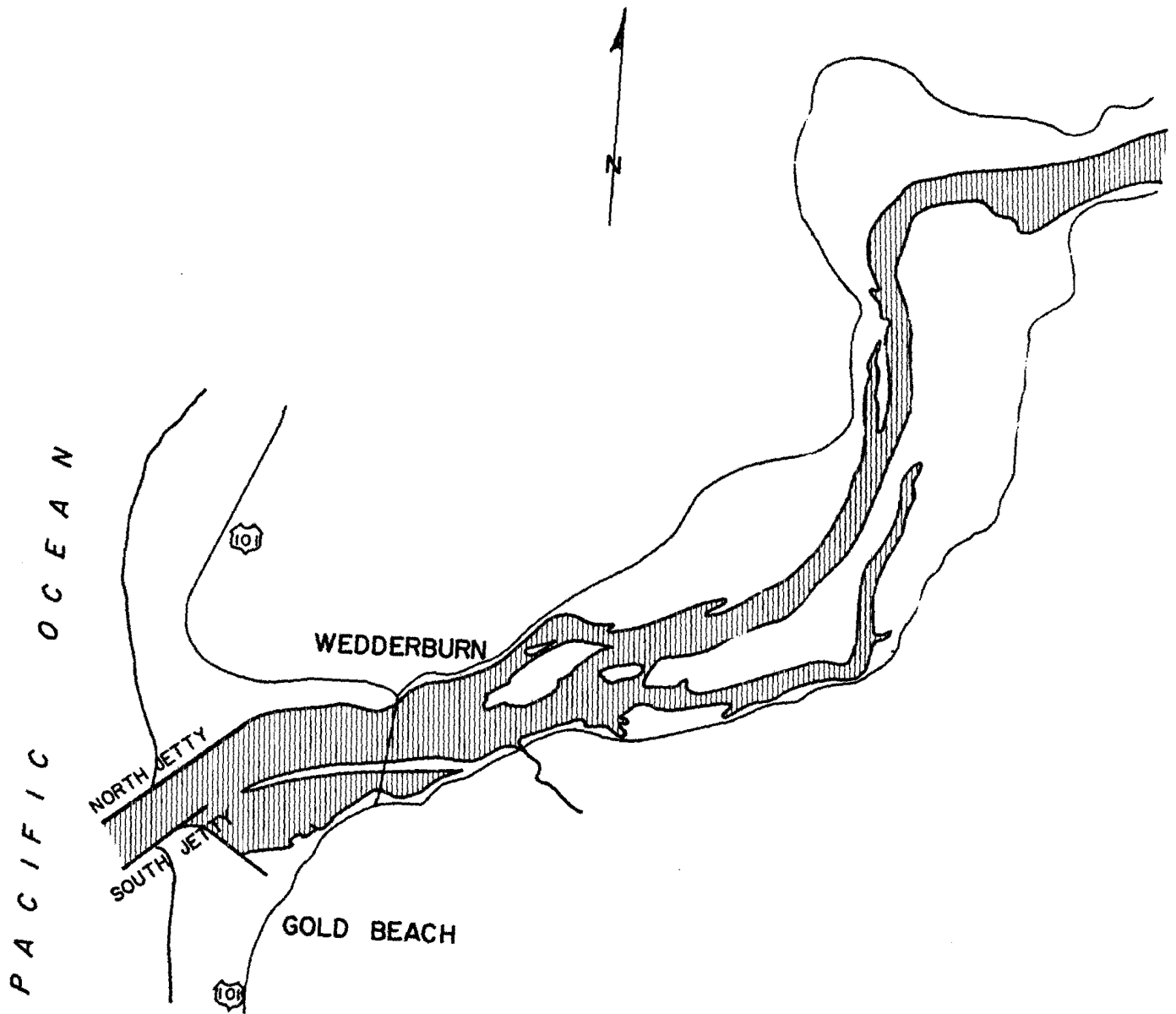
LEGEND

FIGURE 5. 1971 FCO RESOURCE SURVEY SAMPLING AREAS

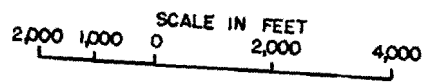
- S - Shore Fishing Area
- B - Boat Fishing Area



**FIGURE 6.**  **PRINCIPAL BOAT FISHING AREAS, 1971**  
 Salmon (March - October)  
 Perch (May - June)  
 Searun Cutthroat Trout (July - September)



ROGUE RIVER OREGON



LEGEND

FIGURE 7.  FOOD PRODUCTION AREAS, FISH FEEDING AREAS AND FISH MIGRATION ROUTES, 1971

### **ACKNOWLEDGMENTS**

Many Fish Commission of Oregon personnel contributed in the gathering, compiling, analyzing of data, typing, and editing of the estuary reports. Special thanks are due Mrs. Linda Karlik for preparing the resource maps and Mr. Louis Fredd for his assistance in analyzing the data.

