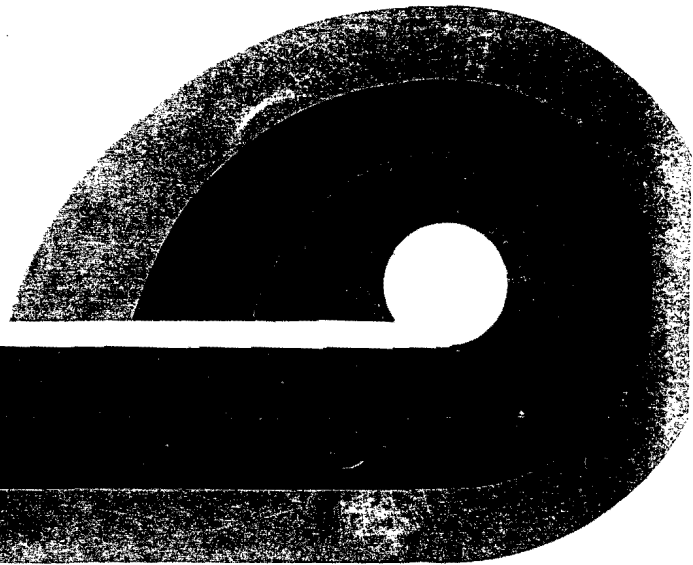


FISH COMMISSION OF OREGON

COOS BAY ESTUARY

A STUDY IN RESOURCE USE
DIVISION OF MANAGEMENT AND RESEARCH



1971 COOS BAY RESOURCE USE STUDY

by
Tom Gaumer
Darrell Demory
Laimons Osis

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

March 1973

TABLE OF CONTENTS

	Page No.
INTRODUCTION	6
PROCEDURE	6
RESULTS	8
Boat Fishery	8
Shore Fishery	8
Tideflat Fishery	8
Scuba Fishery	9
Angler Origin	9
Combined Recreational Fisheries	9
Commercial Fishery	10
Eel Grass Beds	10
Commercial Oyster Leases and Potential Oyster Growing Areas	10
Food Production Areas, Fish Feeding Areas, Fish Migration Routes, and Known Herring Spawning Areas	10
ACKNOWLEDGMENTS	11
LITERATURE CITED	11

LIST OF FIGURES

Figure No.		Page No.
1	Location of Coos Bay Estuary	7
2	1971 FCO Resource Survey Sampling Areas	23
3	Principal Boat Fishing Areas	24
4	Clam Beds	25
5	Eel Grass Beds	26
6	Commercial Oyster Leases and Potential Oyster Growing Areas	27
7	Food Production Areas, Fish Feeding Areas, Fish Migration Routes, and Known Herring Spawning Areas	28

LIST OF TABLES

Table No.		Page No.
1	Location of Sampling Stations, Coos Bay, 1971	12
2	Number of Boat Angler Trips, by Month and Area, Coos Bay, March 1 through October 31, 1971	12
3	Hours of Boat Angler Use, by Month and Area, Coos Bay, March 1 through October 31, 1971	13
4	Marine Animals Caught by Boat Anglers, Coos Bay, by Species and Area, March 1 through October 31, 1971	13
5	Sport Boat Fishing Data, Coos Bay, All Areas, 1971	14
6	Number of Shore Angler Trips by Month and Area, Coos Bay, March 1 through October 31, 1971	15
7	Hours of Shore Angler Use by Month and Area, Coos Bay, March 1 through October 31, 1971	15
8	Marine Animals Caught by Shore Anglers, Coos Bay, by Species and Area, March 1 through October 31, 1971	16
9	Shore Fishing Data, Coos Bay, All Areas, 1971	17
10	Number of Tideflat User Trips by Month and Area, Coos Bay, March 1 through October 31, 1971	18
11	Hours of Tideflat Use by Month and Area, Coos Bay, March 1 through October 31, 1971	18
12	Marine Animals Caught by Tideflat Users, Coos Bay, by Species and Area, March 1 through October 31, 1971	19
13	Summary of Numbers of Angler Trips, Hours of Effort, and Animals Caught, Coos Bay, by Station, March 1 through October 31, 1971	20
14	Summary of Numbers of Angler Trips, Hours of Effort, and Animals Caught, Coos Bay, By Month, March 1 through October 31, 1971	21
15	Taxonomic List of Species Harvested by Estuarine Resource Users, Coos Bay, March 1 through October 31, 1971	22

1971 COOS BAY 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 Coos Bay study.

PROCEDURE

Coos Bay is located 253 miles south of the Columbia River (Figure 1). The 9,543 acre bay is the second largest estuary in Oregon and contains 4,569 acres of tidelands.

From March 1 through October 31, 1971, boat and shore anglers, tideflat users, and scuba divers were interviewed for catch, effort, and origin data in a program designed for statistical analysis. 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 13 miles to and including the Coos Bay city docks. Also included were South Slough up to Collver Point, Joe Ney Slough up to the highway bridge, and Haynes Inlet up to Palouse Creek. The north jetty was not included in the shore sample due to limited access to anglers and samplers. Survey areas and their station numbers are outlined in Table 1 and are shown in Figure 2.

The 1971 Coos Bay commercial landings of fish and shellfish and their value, taken from Fish Commission catch statistic reports, are included in the results as supplemental information.

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

1. Principal boat fishing areas.
2. Clam beds.
3. Eel grass beds.
4. Commercial oyster leases and potential oyster growing areas.
5. Food production areas, fish feeding areas, fish migration routes, and known herring spawning areas.

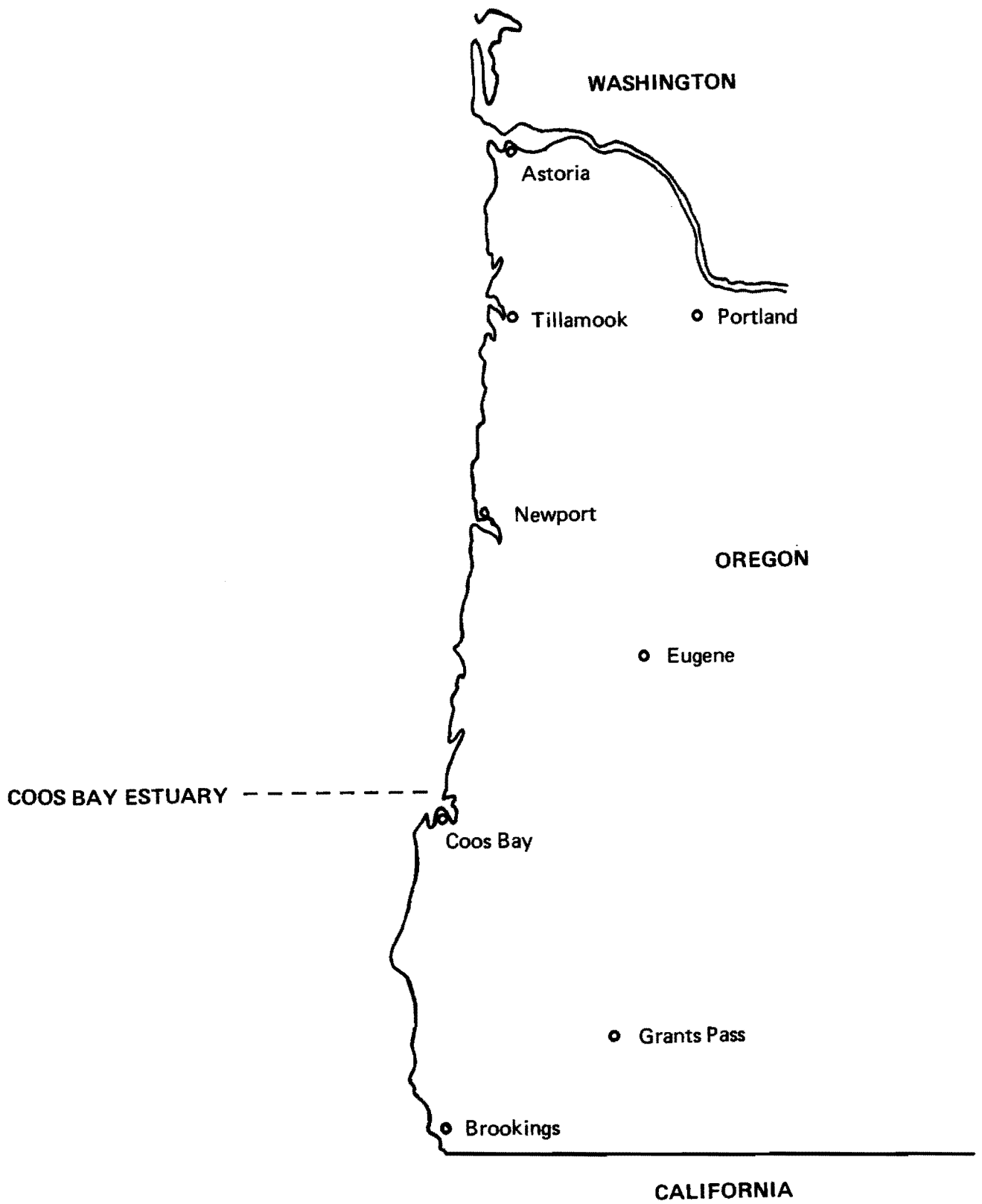


Figure 1. Location of Coos Bay Estuary.

RESULTS

During the study 6,497 boat, shore, tideflat, and scuba resource user 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 Coos Bay. Both sport and commercial boat fishing areas are combined on the map. Principal species of fish and shellfish caught and peak periods of fishing activity are outlined.

An estimated 11,500 boat angler trips were expended on Coos Bay (Table 2). Of this total 80% occurred on the lower bay. Boat anglers spent 32,800 hours fishing (Table 3). The peak month of activity was August.

Twenty-two species of fish and two species of crabs were identified in the angler catch (Table 4). Dungeness crab, black rockfish, red rock crab, and redbait surfperch were the principal species taken and accounted for 95% of the total number of animals caught. The lower bay was the principal area of catch, providing 42,100 animals or 95% of the harvest. The major catches occurred during the months of May through August (Table 5).

Shore Fishery

Interview data revealed that 37,100 shore angler trips were expended on Coos Bay (Table 6). The Charleston waterfront was the principal fishing area; 46% of the anglers fished there. Shore anglers spent 87,800 hours fishing (Table 7).

Twenty-seven species of fish, two species of crabs, and two species of other invertebrates were identified in the shore anglers' catch (Table 8). Shiner perch, Pacific staghorn sculpin, tube worms, and red rock crab were the principal species taken, accounting for 58% of the total number of animals caught. The peak catch occurred during the month of June (Table 9).

Tideflat Fishery

Figure 4 shows the distribution of bay clams in Coos Bay. Several species of clams, including gaper, cockle, littleneck, piddock, and butter clams are found in the intertidal and subtidal zones of the lower bay and lower portion of South Slough. Softshell, bentnose, and tellina clams are found scattered throughout the upper portions of Coos Bay to river mile 15. Principal areas of digging are outlined on the map.

Table 10 shows that 19,300 tideflat user trips were expended to harvest clams, miscellaneous invertebrates, and fishes from Coos Bay. Of this total 92% were clam digger trips. Tideflat users spent 31,400 hours collecting marine animals (Table 11). The peak month of activity was July. The major digging effort (31%) was expended in the Pigeon Point area where 6,000 tideflat users spent 9,700 hours collecting tideflat animals.

Seven species of clams and 10 species of miscellaneous invertebrates and fishes were harvested by tideflat users (Table 12). Gaper clam (called Empire clam in Coos Bay), cockle, butter, and softshell clams were the principal species collected, accounting for 94% of the total number of clams dug. The North Spit was the principal area of catch providing 81,600 animals or 27% of the harvest. Of this total 79,500 or 98% were clams.

Scuba Fishery

The small number of scuba divers interviewed on Coos Bay precluded making an estimate of catch and effort for this fishery.

Angler Origin

Over half (52%) of the anglers interviewed were Coos County residents, as shown below.

	Angler Origin		
	County	State	Non-State
Tideflat	12,172	5,233	1,881
Boat	6,551	4,253	753
Shore	16,638	13,616	6,838
Total	35,361	23,102	9,472
Percentage	52.1	34.0	13.9

This is a high proportion compared to findings in other bays and probably due to the large number of people living within easy driving distance of the estuary. Also, 34% of the resource users were state residents from outside Coos County and 14% were nonresidents.

Combined Recreational Fisheries

Analysis of Coos Bay data revealed that 67,900 resource user trips (11,500 boat, 37,100 shore, and 19,300 tideflat) were expended in the estuary during the study (Table 13). Approximately 52% of the resource users for the three fisheries were from Coos County. The 67,900 user trips represent 152,000 hours of effort (32,800 boat, 87,800 shore, and 31,400 tideflat). The peak month of activity was August for the boat and shore fishery, and July for the tideflat fishery (Table 14). Combining all fisheries, Table 14 shows that August is the peak month of activity. Areas receiving the principal use for boat, shore, and tideflat fishery were lower bay (80%), Charleston waterfront (46%), and Pigeon Point (31%), respectively.

Anglers of the three fisheries harvested 416,000 marine animals (277,500 clams, 51,100 crabs, 49,400 fish, and 38,000 miscellaneous invertebrates). Crabs comprised 82% of the boat anglers total catch. Dungeness crab was the principal species caught. Finfish were the principal marine animals harvested by shore anglers and represented 62% of the total take. Shiner perch was the principal species of fish caught. Clams comprised 91% of the tideflat users total take. Gaper clam was the principal species of clam dug making up 35% of the harvest. Cockle clam, the second most important clam harvested, made up 18% of the take. Ghost shrimp was the principal species of miscellaneous invertebrates

collected by the tideflat users. Comparing the catch for all three fisheries revealed that tideflat users harvested 305,500 or 73% of the total animals taken. Peak month of catch was July for the boat and tideflat fishery and June for the shore fishery. Combining all fisheries, July was the principal month of catch.

Commercial Fishery

Commercial landings of marine food fish and shellfish caught in Coos Bay in 1971 totaled 99,440 pounds valued at \$16,266, according to Fish Commission landing statistics, listed below. Shad was the principal species landed, followed by Dungeness crab.

Species	Pounds	Value
Shad	54,973	\$8,000
Dungeness crab	24,339	6,085
Bay clams	10,893	1,000
Striped bass	8,984	1,000
Oysters	208	169
White sturgeon	41	10
Herring	2	2
Total	99,440	\$16,266

Eel Grass Beds

Eel grass beds are found scattered throughout Coos Bay and South Slough(Figure 5). These beds are usually found in areas of shallow water and high salinities. Clams and other important marine fauna are usually an integral part of the eel grass beds.

Commercial Oyster Leases and Potential Oyster Growing Areas

Pacific oysters are grown commercially only in South Slough. Figure 6 shows the commercial oyster leases, totaling 77.29 acres. An estimated 1,000 acres of South Slough are suitable for oyster culture. Although oysters can be grown in other parts of Coos Bay, sanitation regulations prevent the harvest and sale of oysters from these areas.

Food Production Areas, Fish Feeding Areas, Fish Migration Routes, and Known Herring Spawning Areas

Figure 7 shows the food production areas, fish feeding areas, and fish migration routes in Coos Bay. Also outlined on the map are the known herring spawning areas.

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 Coos Bay, 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 Coos Bay (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.

Sixty-six species of fish have been identified in Coos Bay (Cummings and Schwartz, 1971). Sixty species were observed in the first 5 miles; 39 to mile 10; 24 to mile 15; and 17 at mile 20. A taxonomic list of the species of marine animals observed in this study is contained in Table 15.

Fish and shellfish typically found associated with tideflats include flounder, sole, perch, rockfish, salmon, crabs, shrimp, and clams. In addition to those species found on tideflats, striped bass, shad, sturgeon, herring, anchovy, and smelt reside in the estuary channels; period of residency is dependent on species, season, and location.

Rocky areas in Coos Bay are the preferred feeding and rearing areas of perch, rockfish, greenling, and cabezon. These fish reside near the jetties and rock groins 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 Coos Bay 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, striped bass, shad, sturgeon, perch, flounder, and baitfish is well known. In addition, during high tide these same fish frequently swim across tideflats to reach their destination.

During the months of January through March, herring eggs can be found adhered to pilings, rocks, or eel grass in those areas outlined in Figure 7. More complete observations in the future will no doubt reveal other areas used by these fish.

ACKNOWLEDGMENTS

The Fish Commission of Oregon personnel who contributed in the gathering, compiling, analyzing of data, typing, and editing of this report are too numerous to mention by name. However, a special thanks is due Mrs. Linda Karlik for the work she did on the resource maps.

LITERATURE CITED

Cummings, Ed and Ed Schwartz. 1971. Fish in Coos Bay, Oregon, with Comments on Distribution, Temperature, and Salinity of the Estuary. Coastal Rivers Investigations Information Report 70-11 22 p.

**Table 1. LOCATION OF SAMPLING STATIONS
Coos Bay, 1971**

Fishing Activity	Station Number	Location
Boat	B-1	Below Coos Head to westward end of jetties
	B-2	South Slough
	B-3	101 Bridge downstream to South Slough. Area B-3 includes boats in North Slough and Haynes Inlet.
Shore	S-1	South Jetty
	S-2	Charleston Waterfront
	S-3	Charleston Bridge
	S-4	Joe Ney Bridge
	S-5	Fossil Point to Pony Point
	S-6	Menasha Dike (roadway to Menasha pulpmill)
	S-7	Haynes Inlet
	S-8	Coos Bay Waterfront
Tideflat	T-1	Boat Basin
	T-2	Charleston Flat
	T-3	South Slough
	T-4	Peterson's Flat
	T-5	Barview Flat
	T-6	Pigeon Point
	T-7	North Spit
	T-8	Empire Flat
	T-9	Airport Flat
	T-10	Pony Point
	T-11	Menasha Dike
	T-12	North Bend
	T-13	Haynes Inlet

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

Month	Boat Fishing Area and Station Number			Total	Percentage
	Below Coos Head B-1	South Slough B-2	Lower Bay B-3		
March	56	23	506	585	5.1
April	36	15	729	780	6.8
May	27	91	1,507	1,625	14.1
June	159	73	1,225	1,457	12.6
July	399	40	1,913	2,352	20.4
August	777	19	1,686	2,482	21.5
September	300	93	1,141	1,534	13.3
October	53	150	539	742	6.4
Total	1,807	504	9,246	11,557	100.2
Percentage	15.6	4.4	80.0	100.0	

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

Month	Boat Fishing Area and Station Number			Total	Percentage
	Below Coos Head B-1	South Slough B-2	Lower Bay B-3		
March	175	72	1,517	1,764	5.4
April	105	53	2,316	2,474	7.5
May	89	290	4,801	5,180	15.8
June	394	181	3,036	3,611	11.0
July	970	102	4,728	5,800	17.7
August	2,582	63	5,606	8,251	25.1
September	843	262	3,185	4,290	13.1
October	71	233	1,163	1,467	4.5
Total	5,229	1,256	26,352	32,837	100.1
Percentage	15.9	3.8	80.3	100.0	

**Table 4. MARINE ANIMALS CAUGHT BY BOAT ANGLERS
Coos Bay, by Species and Area
March 1 through October 31, 1971**

Species	Boat Fishing Area and Station Number			Total	Percentage
	Below Coos Head B-1	South Slough B-2	Lower Bay B-3		
Crabs					
Dungeness crab	154	25	33,943	34,122	76.7
Red rock crab	13	0	2,161	2,174	4.9
Fish					
Black rockfish	213	0	3,714	3,927	8.8
Redtail surfperch	0	1,346	750	2,096	4.7
Kelp greenling	40	0	456	496	1.1
Striped seaperch	36	27	195	258	0.6
White seaperch	0	100	117	217	0.5
Coho salmon (adult)	155	0	8	163	0.4
Pacific tomcod	117	0	36	153	0.3
Starry flounder	69	0	75	144	0.3
Copper rockfish	0	0	137	137	0.3
Shiner perch	0	0	131	131	0.3
Lingcod	35	0	89	124	0.3
Pacific staghorn sculpin	11	0	99	110	0.3
Pile perch	0	0	50	50	0.1
Chinook salmon (adult)	45	0	0	45	0.1
Rock greenling	0	0	43	43	0.1
Silver surfperch	0	0	23	23	0.1
Cabazon	0	0	14	14	<0.1
English sole	11	0	0	11	<0.1
Walleye surfperch	0	0	10	10	<0.1
Longnose skate	0	0	9	9	<0.1
Jacksmelt	0	0	5	5	<0.1
Pacific sanddab	0	0	5	5	<0.1
Unidentified fish	6	0	20	26	0.1
Total	905	1,498	42,090	44,493	100.0
Percentage	2.0	3.4	94.6	100.0	

Table 5. SPORT BOAT FISHING DATA
Coos Bay, All Areas
1971

	March	April	May	June	July	Aug.	Sept.	Oct.	Total	Percentage
Angler trips (number)	585	780	1,625	1,457	2,352	2,482	1,534	742	11,557	—
Fishing effort (hours)	1,764	2,474	5,180	3,611	5,800	8,251	4,290	1,467	32,837	—
Fishing success (catch/hr.)	1.48	1.71	1.70	1.69	1.54	0.94	1.01	1.19	1.36	—
Catch (number)										
Dungeness crab	2,323	3,678	5,077	4,175	7,960	6,010	3,476	1,423	34,122	76.7
Red rock crab	20	98	450	144	299	641	371	151	2,174	4.9
Black rockfish	141	362	1,240	902	383	632	142	125	3,927	8.8
Redtail surfperch	0	0	1,634	453	9	0	0	0	2,096	4.7
Kelp greenling	15	45	111	64	46	121	63	31	496	1.1
Striped seaperch	63	33	57	42	46	17	0	0	258	0.6
White seaperch	5	0	105	0	28	0	79	0	217	0.5
Coho salmon (adult)	0	0	0	0	22	106	35	0	163	0.4
Pacific tomcod	0	0	0	116	20	17	0	0	153	0.3
Starry flounder	0	0	40	61	20	23	0	0	144	0.3
Copper rockfish	0	5	0	0	46	86	0	0	137	0.3
Shiner perch	0	0	0	5	0	0	126	0	131	0.3
Lingcod	40	0	40	37	0	0	7	0	124	0.3
Pacific staghorn sculpin	0	0	0	42	11	34	23	0	110	0.3
Pile perch	0	0	20	21	9	0	0	0	50	0.1
Chinook salmon (adult)	0	0	0	0	22	23	0	0	45	0.1
Rock greenling	0	0	15	16	0	0	0	12	43	0.1
Silver surfperch	0	0	0	0	0	0	23	0	23	0.1
Cabezon	0	0	5	0	9	0	0	0	14	<0.1
English sole	0	0	0	0	0	11	0	0	11	<0.1
Walleye surfperch	0	0	0	10	0	0	0	0	10	<0.1
Longnose skate	0	0	0	0	9	0	0	0	9	<0.1
Jacksmelt	0	0	0	5	0	0	0	0	5	<0.1
Pacific sanddab	0	0	0	5	0	0	0	0	5	<0.1
Unidentified fish	6	0	20	0	0	0	0	0	26	0.1
Total	2,613	4,221	8,814	6,098	8,939	7,721	4,345	1,742	44,493	100.0
Percentage	5.8	9.5	19.8	13.7	20.1	17.4	9.8	3.9	100.0	

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

Month	Shore Fishing Area and Station Number								Total	Percentage
	South Jetty S-1	Charleston Waterfront S-2	Charleston Bridge S-3	Joe Ney Bridge S-4	Fossil Pt. to Pony Pt. S-5	Menasha Dike S-6	Haynes Inlet S-7	Coos Bay Waterfront S-8		
March	254	1,452	553	313	133	97	11	157	2,970	8.0
April	185	888	746	141	405	225	13	0	2,603	7.0
May	472	2,530	1,370	108	569	362	0	0	5,411	14.6
June	807	2,267	1,864	192	492	312	49	0	5,983	16.1
July	1,665	2,909	1,573	162	273	173	33	0	6,788	18.3
August	1,926	5,235	1,746	0	329	100	39	0	9,375	25.3
September	302	931	986	0	122	213	59	17	2,630	7.1
October	225	776	249	8	42	17	0	15	1,332	3.6
Total	5,836	16,988	9,087	924	2,365	1,499	204	189	37,092	100.0
Percentage	15.7	45.8	24.5	2.5	6.4	4.0	0.6	0.5	100.0	

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

Month	Shore Fishing Area and Station Number								Total	Percentage
	South Jetty S-1	Charleston Waterfront S-2	Charleston Bridge S-3	Joe Ney Bridge S-4	Fossil Pt. to Pony Pt. S-5	Menasha Dike S-6	Haynes Inlet S-7	Coos Bay Waterfront S-9		
March	609	3,499	1,230	718	337	265	24	406	7,088	8.1
April	472	2,215	1,876	339	913	507	38	0	6,360	7.3
May	1,058	6,081	3,024	228	1,186	782	0	0	12,359	14.1
June	1,789	5,396	4,567	521	1,135	728	100	0	14,236	16.2
July	3,738	6,787	3,774	388	703	412	94	0	15,896	18.1
August	4,651	12,984	4,241	0	840	252	79	0	23,047	26.3
September	672	2,188	2,183	0	262	518	119	34	5,976	6.8
October	480	1,576	520	24	112	48	0	32	2,792	3.2
Total	13,469	40,726	21,415	2,218	5,488	3,512	454	472	87,754	100.1
Percentage	15.4	46.4	24.4	2.5	6.3	4.0	0.5	0.5	100.0	

Table 8. MARINE ANIMALS CAUGHT BY SHORE ANGLERS
Coos Bay, by Species and Area
March 1 through October 31, 1971

Species	Shore Fishing Area and Station Number								Total	Percentage
	South Jetty S-1	Charleston Waterfront S-2	Charleston Bridge S-3	Joe Ney Bridge S-4	Fossil Pt. to Pony Pt. S-5	Menasha Dike S-6	Haynes Inlet S-7	Coos Bay Waterfront S-8		
Red rock crab	0	4,247	3,606	0	30	0	0	0	7,883	11.9
Dungeness crab	89	5,054	602	0	76	89	0	0	5,910	9.0
Shiner perch	0	6,407	2,898	1,062	863	622	157	0	12,009	18.2
Pacific staghorn sculpin	578	3,177	3,318	890	1,358	699	0	0	10,020	15.2
Redtail surfperch	1,777	666	1,893	0	1,604	160	0	0	6,100	9.2
Striped seaperch	326	362	952	115	2,558	132	80	81	4,606	7.0
Pacific tomcod	757	724	110	0	0	47	0	0	1,638	2.5
White seaperch	0	243	636	0	361	26	0	60	1,326	2.0
Pile perch	26	15	93	0	611	227	8	101	1,081	1.6
Starry flounder	238	148	432	0	0	111	8	40	977	1.5
Kelp greenling	529	43	116	0	72	26	0	0	786	1.2
Prickly sculpin	0	0	0	0	0	0	650	0	650	1.0
Walleye surfperch	13	0	167	0	45	169	0	0	394	0.6
Silver surfperch	0	0	244	0	60	0	0	0	304	0.5
Buffalo sculpin	83	0	63	0	44	0	0	0	190	0.3
Lingcod	73	0	58	0	0	0	0	0	131	0.2
Black rockfish	43	84	0	0	0	0	0	0	127	0.2
Jacksmelt	0	0	53	67	0	0	0	0	120	0.2
Rock greenling	96	0	0	0	0	0	0	0	96	0.2
Sand sole	72	17	0	0	0	0	0	0	89	0.1
Chinook salmon (adult)	15	45	0	0	0	0	0	0	60	0.1
Whitespotted greenling	13	45	0	0	0	0	0	0	58	0.1
Brown Irish lord	26	0	0	0	0	0	0	0	26	<0.1
Surf smelt	0	20	0	0	0	0	0	0	20	<0.1
Pacific sanddab	17	0	0	0	0	0	0	0	17	<0.1
Boccacio rockfish	0	17	0	0	0	0	0	0	17	<0.1
English sole	15	0	0	0	0	0	0	0	15	<0.1
Cabezon	0	11	0	0	0	0	0	0	11	<0.1
Coho salmon (adult)	9	0	0	0	0	0	0	0	9	<0.1
Unidentified fish	0	306	17	0	0	0	0	0	323	0.5
Tube worms	0	8,598	0	0	0	0	0	0	8,598	13.0
Sea stars	157	0	0	0	0	0	0	0	157	0.2
Unidentified invert.	0	2,251	0	0	0	0	0	0	2,251	3.4
Total	4,952	32,480	15,258	2,134	7,682	2,308	903	282	65,999	100.0
Percentage	7.5	49.2	23.1	3.2	11.6	3.5	1.4	0.4	99.9	

Table 9. SHORE FISHING DATA
Coos Bay, All Areas
1971

	March	April	May	June	July	Aug.	Sept.	Oct.	Total	Percentage
Angler trips (number)	2,970	2,603	5,411	5,983	6,788	9,375	2,630	1,332	37,092	—
Fishing effort (hours)	7,088	6,360	12,359	14,236	15,896	23,047	5,976	2,792	87,754	—
Fishing success (catch/hr.)	1.53	0.66	0.62	1.12	0.64	0.53	0.61	0.52	0.75	—
Catch (number)										
Red rock crab	213	903	634	957	1,377	2,091	1,454	254	7,883	11.9
Dungeness crab	498	357	1,045	772	898	1,532	316	492	5,910	9.0
Shiner perch	0	115	556	3,005	2,850	4,268	895	320	12,009	18.2
Pacific staghorn sculpin	138	0	1,202	3,903	1,587	2,558	553	79	10,020	15.2
Redtail surfperch	385	311	2,470	1,427	1,002	408	0	97	6,100	9.2
Striped seaperch	278	2,067	663	523	359	415	259	42	4,606	7.0
Pacific tomcod	0	0	0	464	763	363	33	15	1,638	2.5
White seaperch	181	0	512	285	236	15	16	81	1,326	2.0
Pile perch	169	220	129	252	249	41	21	0	1,081	1.6
Starry flounder	178	131	159	208	136	141	24	0	977	1.5
Kelp greenling	39	27	32	96	378	123	36	55	786	1.2
Prickly sculpin	0	0	0	650	0	0	0	0	650	1.0
Walleye surfperch	0	0	45	272	0	77	0	0	394	0.6
Silver surfperch	0	21	60	223	0	0	0	0	304	0.5
Buffalo sculpin	24	0	15	99	52	0	0	0	190	0.3
Lingcod	0	0	0	63	68	0	0	0	131	0.2
Black rockfish	0	0	17	48	0	62	0	0	127	0.2
Jacksmelt	0	0	102	18	0	0	0	0	120	0.2
Rock greenling	0	0	0	52	31	13	0	0	96	0.2
Sand sole	0	17	0	0	63	0	9	0	89	0.1
Chinook salmon (adult)	0	0	0	45	15	0	0	0	60	0.1
Whitespotted greenling	0	0	0	45	0	13	0	0	58	0.1
Brown Irish lord	0	0	0	26	0	0	0	0	26	<0.1
Surf smelt	0	0	0	0	20	0	0	0	20	<0.1
Pacific sanddab	0	0	17	0	0	0	0	0	17	<0.1
Boccacio rockfish	0	0	17	0	0	0	0	0	17	<0.1
English sole	0	0	0	0	15	0	0	0	15	<0.1
Cabezon	0	0	0	0	0	0	0	11	11	<0.1
Coho salmon (adult)	0	0	0	0	0	0	9	0	9	<0.1
Unidentified fish	0	0	34	289	0	0	0	0	323	0.5
Tube worms	8,598	0	0	0	0	0	0	0	8,598	13.0
Sea stars	157	0	0	0	0	0	0	0	157	0.2
Unidentified invert.	0	0	0	2,251	0	0	0	0	2,251	3.4
Total	10,858	4,169	7,709	15,973	10,099	12,120	3,625	1,446	65,999	100.0
Percentage	16.5	6.3	11.7	24.2	15.3	18.4	5.5	2.2	100.1	

**Table 10. NUMBER OF TIDEFLAT USER TRIPS
By Month and Area, Coos Bay
March 1 through October 31, 1971**

Month	Tideflat and Station Number													Total	Percentage
	Boat Basin T-1	Charleston Flat T-2	South Slough T-3	Peterson's Flat T-4	Barview Flat T-5	Pigeon Point T-6	North Spit T-7	Empire Flat T-8	Airport Flat T-9	Pony Point T-10	Menasha Dike T-11	North Bend T-12	Haynes Inlet T-13		
March	21	88	88	21	0	51	23	13	73	0	10	22	156	566	2.9
April	44	198	180	0	183	758	554	68	18	0	88	77	0	2,168	11.3
May	214	509	153	21	390	559	840	113	5	9	122	5	0	2,940	15.3
June	193	328	209	6	275	1,444	1,214	156	15	56	67	0	0	3,963	20.6
July	204	665	138	26	162	1,634	1,329	270	18	27	348	0	0	4,821	25.0
August	244	401	273	79	175	1,329	1,171	296	27	5	86	0	0	4,086	21.2
September	50	26	2	3	23	181	171	41	15	0	72	0	0	584	3.0
October	4	18	0	0	9	35	44	48	0	0	0	0	0	158	0.8
Total	974	2,233	1,043	156	1,217	5,991	5,346	1,005	171	97	793	104	156	19,286	100.1
Percentage	5.1	11.6	5.4	0.8	6.3	31.0	27.8	5.2	0.9	0.5	4.1	0.5	0.8	100.0	

**Table 11. HOURS OF TIDEFLAT USE
By Month and Area, Coos Bay
March 1 through October 31, 1971**

Month	Tideflat and Station Number													Total	Percentage
	Boat Basin T-1	Charleston Flat T-2	South Slough T-3	Peterson's Flat T-4	Barview Flat T-5	Pigeon Point T-6	North Spit T-7	Empire Flat T-8	Airport Flat T-9	Pony Point T-10	Menasha Dike T-11	North Bend T-12	Haynes Inlet T-13		
March	35	144	144	35	0	84	38	22	120	0	16	36	256	930	3.0
April	66	300	273	0	277	1,149	839	103	28	0	133	116	0	3,284	10.5
May	362	863	260	36	661	947	1,424	191	8	16	207	8	0	4,983	15.9
June	301	512	327	9	430	2,257	1,897	243	23	88	105	0	0	6,192	19.7
July	329	1,073	223	42	261	2,592	2,144	435	29	43	561	0	0	7,732	24.6
August	421	692	471	137	302	2,291	2,019	511	47	8	148	0	0	7,047	22.5
September	82	43	3	5	38	296	280	67	24	0	118	0	0	956	3.0
October	7	29	0	0	14	58	72	79	0	0	0	0	0	259	0.8
Total	1,603	3,656	1,701	264	1,983	9,674	8,713	1,651	279	155	1,288	160	256	31,383	100.0
Percentage	5.1	11.7	5.4	0.8	6.3	30.8	27.8	5.3	0.9	0.5	4.1	0.5	0.8	100.0	

Table 12. MARINE ANIMALS CAUGHT BY TIDEFLAT USERS
Coos Bay, by Species and Area
March 1 through October 31, 1971

Species	Tideflat and Station Number													Total	Percentage
	Boat Basin T-1	Charleston Flat T-2	South Slough T-3	Peterson's Flat T-4	Barview Flat T-5	Pigeon Point T-6	North Spit T-7	Empire Flat T-8	Airport Flat T-9	Pony Point T-10	Menasha Dike T-11	North Bend T-12	Haynes Inlet T-13		
Clams															
Gaper clam	5,145	7,120	5,248	736	7,900	24,547	52,685	4,526	0	0	0	0	0	107,907	35.3
Cockle clam	9,690	14,310	7,663	221	5,232	1,067	13,805	1,532	0	0	0	0	0	53,520	17.5
Butter clam	844	1,005	2,080	44	1,768	37,833	9,714	0	0	0	0	0	0	53,288	17.4
Softshell clam	0	935	371	0	195	4,911	1,963	243	0	2,330	24,866	9,287	0	45,101	14.8
Native littleneck clam	4,041	3,799	46	88	495	5,753	1,226	34	0	0	0	0	0	15,482	5.1
Bentnose clam	113	654	0	0	6	1,225	102	0	0	0	0	0	0	2,100	0.7
Piddock clam	0	0	0	0	0	134	0	0	0	0	0	0	0	134	<0.1
Other Invertebrates and Fish															
Ghost shrimp	16	3,554	566	0	208	1,618	2,045	8,983	0	2,330	899	0	0	20,219	6.6
Kelp worm	0	222	9	0	79	291	0	34	0	0	3,737	0	0	4,372	1.4
Shore crab	32	0	0	0	0	899	0	0	0	0	0	0	0	931	0.3
Sea star	0	0	0	0	12	44	0	139	0	0	0	0	0	195	0.1
Bay mussel	0	70	0	0	0	67	0	0	0	0	0	0	0	137	<0.1
Mud shrimp	16	46	37	0	6	11	0	0	0	0	0	0	0	116	<0.1
Red rock crab	0	0	0	0	18	22	20	0	0	0	0	0	0	60	<0.1
Oyster	0	0	37	0	0	0	0	0	0	0	0	0	0	37	<0.1
Dungeness crab	0	11	0	0	0	22	0	0	0	0	0	0	0	33	<0.1
Pacific staghorn sculpin	0	0	0	0	6	0	0	0	0	0	0	0	0	6	<0.1
Unidentified species	0	0	18	0	935	22	0	0	928	0	0	0	0	1,903	0.7
Total	19,897	31,726	16,075	1,089	16,860	78,466	81,560	15,491	928	4,660	29,502	9,287	0	305,541	100.0
Percentage	6.5	10.4	5.3	0.4	5.5	25.7	26.7	5.1	0.3	1.5	9.7	3.0	0.0	100.1	

Table 13. SUMMARY
Numbers of Angler Trips, Hours of Effort, and Animals Caught
Coos Bay, by Station
March 1 through October 31, 1971

Station Number	No. Angler Trips	Angler Hours	Catch				Total Catch
			Finfish	Crabs	Clams	Misc. Invert.	
B-1	1,807	5,229	738	167	0	0	905
B-2	504	1,256	1,473	25	0	0	1,498
B-3	9,246	26,352	5,986	36,104	0	0	42,090
Total	11,557	32,837	8,197	36,296	0	0	44,493
S-1	5,836	13,469	4,706	89	0	157	4,952
S-2	16,988	40,726	12,330	9,301	0	10,849	32,480
S-3	9,087	21,415	11,050	4,208	0	0	15,258
S-4	924	2,218	2,134	0	0	0	2,134
S-5	2,365	5,488	7,576	106	0	0	7,682
S-6	1,499	3,512	2,219	89	0	0	2,308
S-7	204	454	903	0	0	0	903
S-8	189	472	282	0	0	0	282
Total	37,092	87,754	41,200	13,793	0	11,006	65,999
T-1	974	1,603	0	32	19,833	32	19,897
T-2	2,233	3,656	0	11	27,823	3,892	31,726
T-3	1,043	1,701	0	0	15,408	667	16,075
T-4	156	264	0	0	1,089	0	1,089
T-5	1,217	1,983	6	18	15,596	1,240	16,860
T-6	5,991	9,674	0	943	75,470	2,053	78,466
T-7	5,346	8,713	0	20	79,495	2,045	81,560
T-8	1,005	1,651	0	0	6,335	9,156	15,491
T-9	171	279	0	0	0	928	928
T-10	97	155	0	0	2,330	2,330	4,660
T-11	793	1,288	0	0	24,866	4,636	29,502
T-12	104	160	0	0	9,287	0	9,287
T-13	156	256	0	0	0	0	0
Total	19,286	31,383	6	1,024	277,532	26,979	305,541
Grand Total	67,935	151,974	49,403	51,113	277,532	37,985	416,033

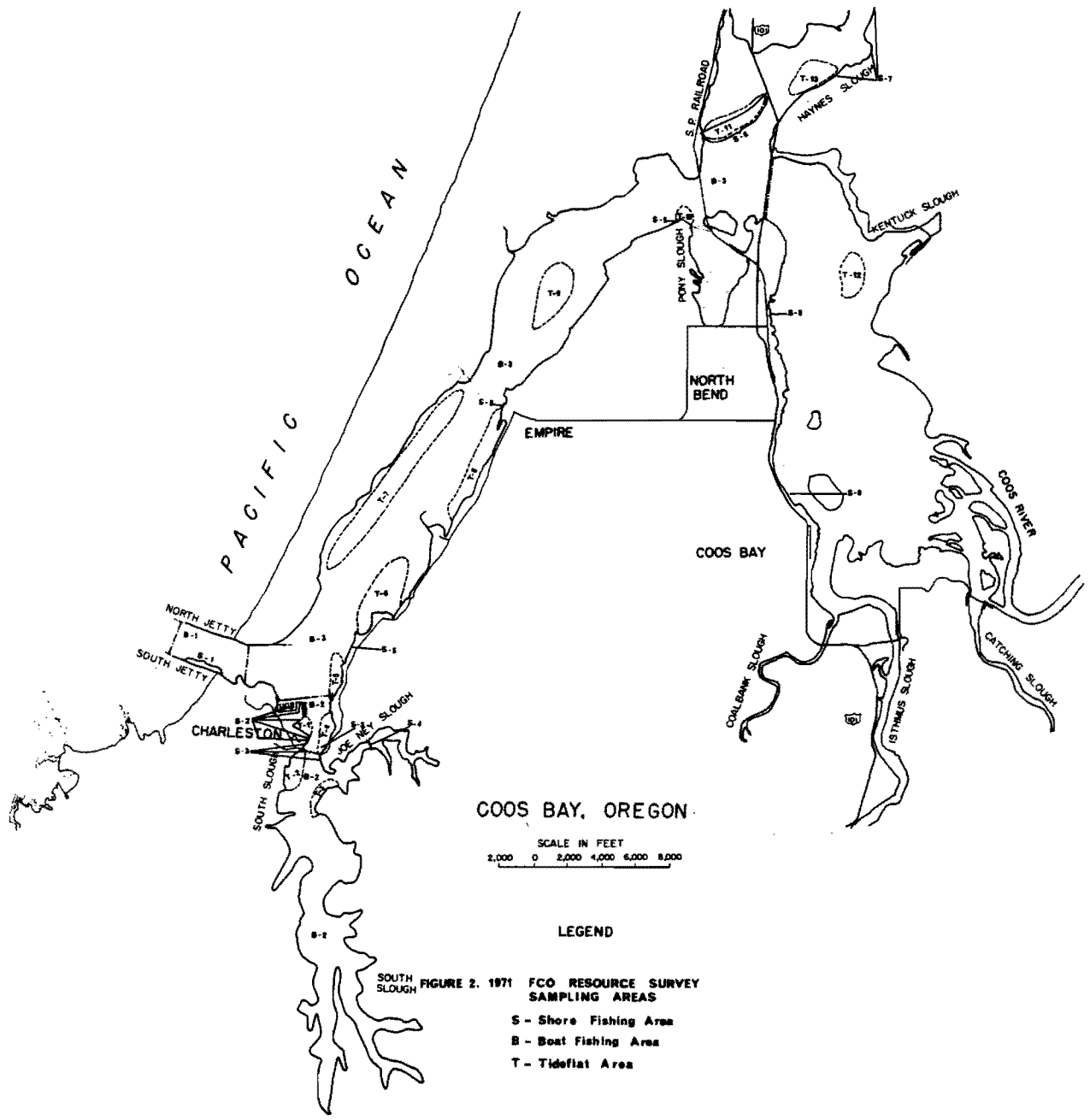
Table 14. SUMMARY
Numbers of Angler Trips, Hours of Effort, and Animals Caught
Coos Bay, by Month
March 1 through October 31, 1971

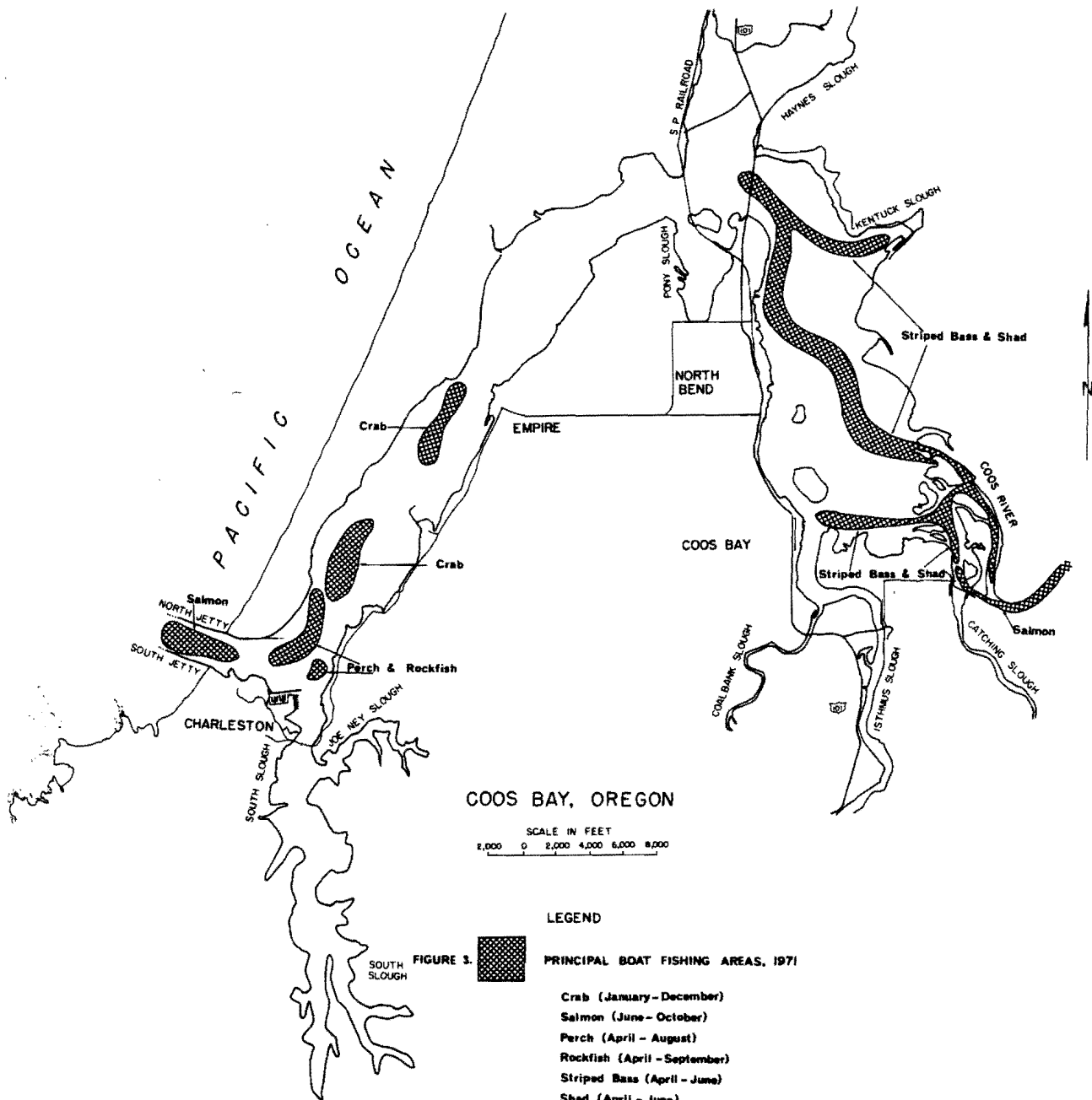
Fishery	Month	No. Angler Trips	Angler Hours	Catch				Total
				Finfish	Crabs	Clams	Misc. Invert.	
Boat	March	585	1,764	270	2,343	0	0	2,613
	April	780	2,474	445	3,776	0	0	4,221
	May	1,625	5,180	3,287	5,527	0	0	8,814
	June	1,457	3,611	1,779	4,319	0	0	6,098
	July	2,352	5,800	680	8,259	0	0	8,939
	August	2,482	8,251	1,070	6,651	0	0	7,721
	September	1,534	4,290	498	3,847	0	0	4,345
	October	742	1,467	168	1,574	0	0	1,742
	Total	11,557	32,837	8,197	36,296	0	0	44,493
Shore	March	2,970	7,088	1,392	711	0	8,755	10,858
	April	2,603	6,360	2,909	1,260	0	0	4,169
	May	5,411	12,359	6,030	1,679	0	0	7,709
	June	5,983	14,236	11,993	1,729	0	2,251	15,973
	July	6,788	15,896	7,824	2,275	0	0	10,099
	August	9,375	23,047	8,497	3,623	0	0	12,120
	September	2,630	5,976	1,855	1,770	0	0	3,625
	October	1,332	2,792	700	746	0	0	1,446
	Total	37,092	87,754	41,200	13,793	0	11,006	65,999
Tideflat	March	566	930	0	30	8,200	790	9,020 ¹
	April	2,168	3,284	0	110	31,200	3,040	34,350
	May	2,940	4,983	0	150	42,400	4,120	46,670
	June	3,963	6,192	0	200	57,100	5,550	62,850
	July	4,821	7,732	0	240	69,100	6,710	76,050
	August	4,086	7,047	0	200	58,900	5,720	64,820
	September	584	956	0	30	8,400	820	9,250
	October	158	259	0	10	2,300	220	2,530
	Total	19,286	31,383	0	970	277,600	26,970	305,540
Combined	March	4,121	9,782	1,662	3,084	8,200	9,545	22,491
	April	5,551	12,118	3,354	5,146	31,200	3,040	42,740
	May	9,976	22,522	9,317	7,356	42,400	4,120	63,193
	June	11,403	24,039	13,772	6,248	57,100	7,801	84,921
	July	13,961	29,428	8,504	10,774	69,100	6,710	95,088
	August	15,943	38,345	9,567	10,474	58,900	5,720	84,661
	September	4,748	11,222	2,353	5,647	8,400	820	17,220
	October	2,232	4,518	868	2,330	2,300	220	5,718
	Grand Total		67,935	151,974	49,397	51,059	277,600	37,976

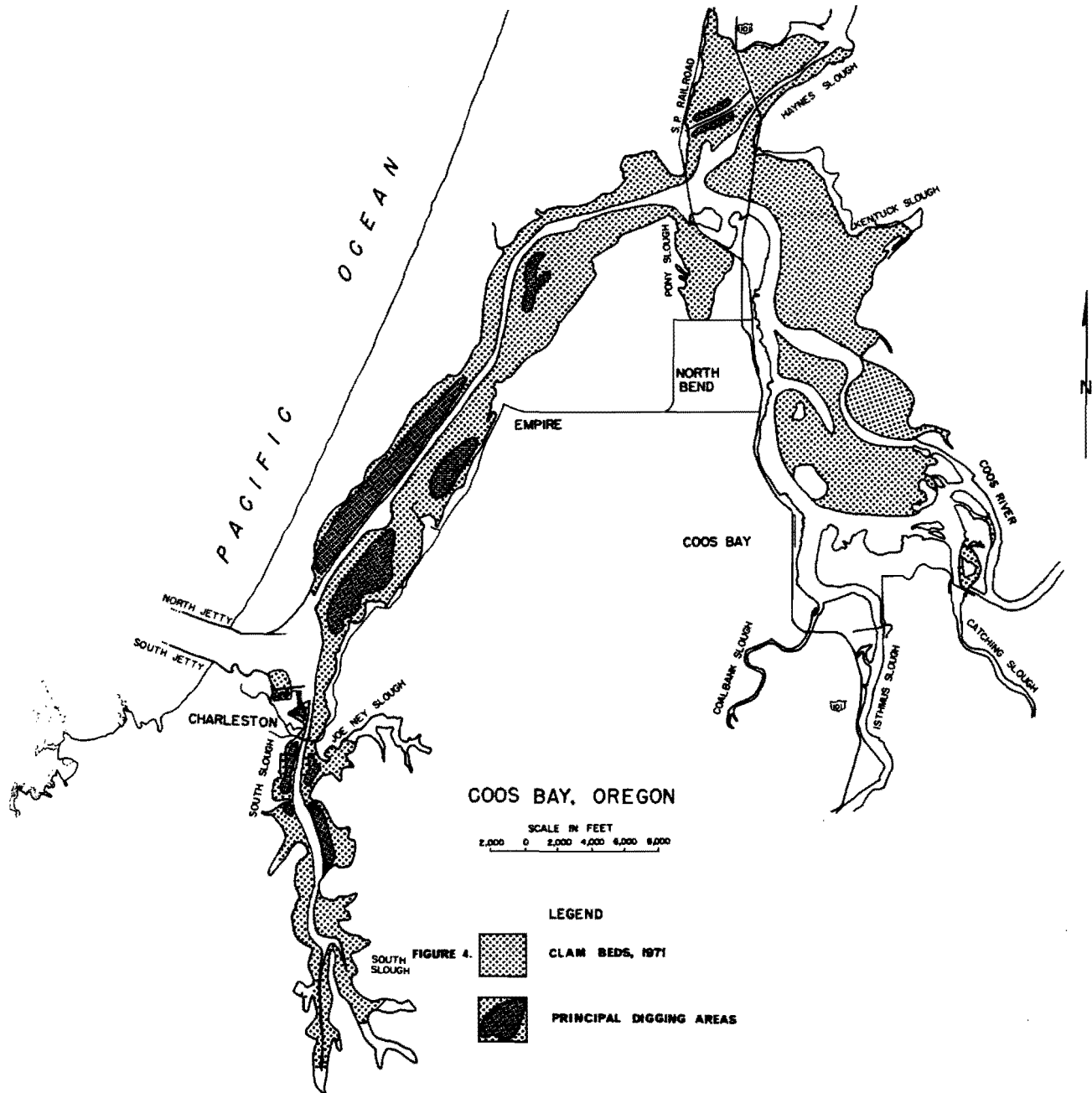
¹ Catch data for the tideflat fishery determined by multiplying the average catch per year times the number of angler trips per month. Catch data totals consequently differ from those shown in Table 13.

TABLE 15. TAXONOMIC LIST OF SPECIES HARVESTED
By Estuarine Resource Users, Coos Bay
March 1 through October 31, 1971

Common Name	Local Names	Scientific Names
Fish		
Black rockfish	Black sea bass, black snapper	<i>Sebastes melanops</i>
Boccacio rockfish	Bass, snapper	<i>Sebastes paucispinis</i>
Brown Irish lord	Bullhead	<i>Hemilepidotus spinosus</i>
Buffalo sculpin	Bullhead	<i>Enophrys bison</i>
Cabezon	Rock cod, bullhead	<i>Scorpaenichthys marmoratus</i>
Chinook salmon	King salmon, salmon	<i>Oncorhynchus tshawytscha</i>
Coho salmon	Silver salmon	<i>Oncorhynchus kisutch</i>
Copper rockfish	Red snapper, bass	<i>Sebastes caurinus</i>
English sole		<i>Parophrys vetulus</i>
Jacksmeelt		<i>Atherinopsis californiensis</i>
Kelp greenling	Seatrout	<i>Hexagrammos decagrammus</i>
Lingcod		<i>Ophiodon elongatus</i>
Longnose skate		<i>Raja rhina</i>
Pacific sanddab		<i>Citharichthys sordidus</i>
Pacific staghorn sculpin	Bullhead	<i>Leptocottus armatus</i>
Pacific tomcod		<i>Microgadus proximus</i>
Pile perch		<i>Rhacochilus vacca</i>
Prickly sculpin	Bullhead	<i>Cottus asper</i>
Redtail surfperch		<i>Amphistichus rhodoterus</i>
Rock greenling	Seatrout	<i>Hexagrammos lagocephalus</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>
Whitespotted greenling	Seatrout	<i>Hexagrammos stelleri</i>
Crabs		
Dungeness crab	Market crab	<i>Cancer magister</i>
Red rock crab	Japanese crab, rock crab	<i>Cancer productus</i>
Clams		
Bentnose clam		<i>Macoma nasuta</i>
Butter clam	Washington clam, quahog, Coney Island, beef steak clam, giant Oregon clam	<i>Saxidomus giganteus</i>
Cockle clam	Basket cockle, steamer	<i>Clinocardium nuttallii</i>
Gaper clam	Blue clam, Empire clam, horse clam, horseneck clam, bluneck	<i>Tresus capax</i>
Native littleneck clam	Steamer clam, butter clam	<i>Venerupis staminea</i>
Piddock clam	Rock oyster	<i>Zirfaea pilsbryi</i> , and <i>Penitella penita</i>
Softshell clam	Mud clam, bay clam	<i>Mya arenaria</i>
Miscellaneous Invertebrates		
Bay mussel		<i>Mytilus edulis</i>
Ghost shrimp	Sand shrimp	<i>Callinassa californiensis</i>
Kelp worm	Clam worm, mussel worm	<i>Nereis</i> sp.
Mud shrimp	Sand shrimp	<i>Upogebia pugettensis</i>
Pacific oyster	Japanese oyster	<i>Crassostrea gigas</i>
Shore crab	Mud crab	<i>Hemigrapsus oregonensis</i> and <i>Hemigrapsus nudus</i>







COOS BAY, OREGON

SCALE IN FEET
 2,000 0 2,000 4,000 6,000 8,000

LEGEND



-  CLAM BEDS, 1971
-  PRINCIPAL DIGGING AREAS

FIGURE 4.

