

BOTTOM FISH AND SHELLFISH EXPLORATIONS IN THE PRINCE WILLIAM SOUND AREA, ALASKA, 1954

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CONTENTS

Page		Page	
Summary	6	Fishing Results Obtained in Prince William Sound Proper (Contd.):	
Background Information	7	Esther Passage	15
Gear Used	9	College Fiord	15
Fishing Results	11	Port Wells Area	15
Fishing Results Obtained in Prince William Sound Proper:	11	Montague Strait Area	15
Orca Bay Area	11	Middle Prince William Sound	16
Port Gravina Area	13	Fishing Results Obtained in Offshore Waters Adjacent to Prince William Sound	16
Port Fidalgo	13	Weather Conditions	17
Port Valdez and Valdez Arm	15		

SUMMARY

Explorations in the Prince William Sound Area of Alaska for bottom fish and shellfish were conducted by the Service's exploratory fishing vessel John N. Cobb

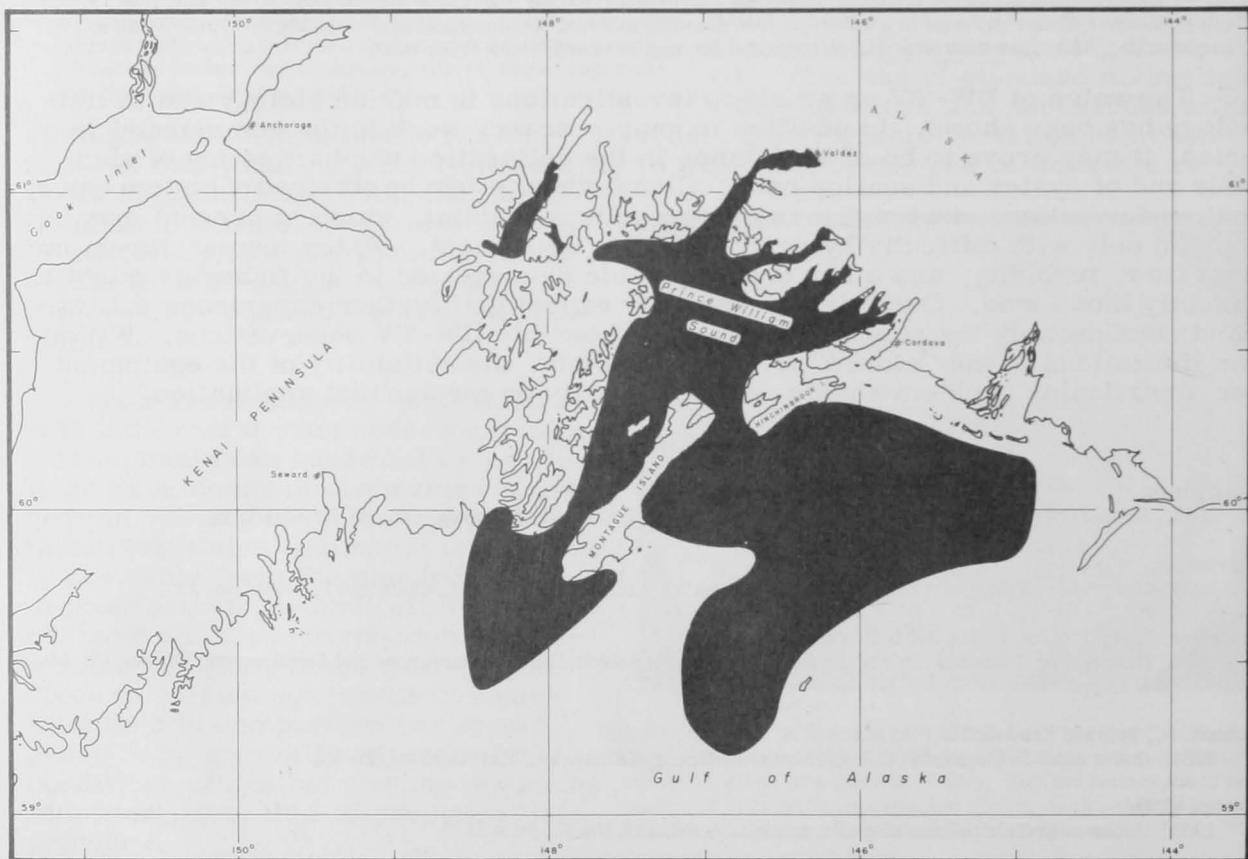


Fig. 1 - Northern Gulf of Alaska. Shaded portion indicates area of fishing operations.

during two periods in 1954. Gear used during the first period (February 26 to April 6) included otter trawls and beam trawls. Gear used during the second period (July 13 to September 8) included otter trawls, beam trawls, king-crab pots, and shrimp traps.

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Commercial quantities of Pacific ocean perch and sablefish were taken in otter-trawl drags in the offshore waters adjacent to Prince William Sound during the second period. The best catches of Pacific ocean perch were made in the vicinity of Middleton Island and south of Point Elrington. The best catches of sablefish were also made south of Point Elrington. Starry flounder were taken in amounts up to 1,800 pounds per drag from near Cape Hinchinbrook to off Cottonwood Point. Otter-trawl drags in Prince William Sound proper during both periods caught only small amounts of commercially-desirable species of bottom fish. King-crab catches were also small.



Fig. 2 - Collapsible king-crab pot with catch of crabs.

Favorable shrimp catches were made by beam trawl in Orca Bay, Port Gravina, and Montague Strait during the second period. Only a few shrimp were taken by traps.

The best results with king-crab pots were obtained in College Fiord and Esther Passage.

Inclement weather interfered with operations during the initial two weeks of the first period. During the second period, weather conditions were generally favorable.

BACKGROUND INFORMATION

Explorations for bottom fish and shellfish in the Prince William Sound area (fig. 1), Alaska, were undertaken by the U. S. Fish and Wildlife Service's exploratory fishing vessel John N. Cobb during 1954. Fishing operations were carried out from February 26 to April 6 and from July 13 to September 8.



Fig. 3 - Removing king crab from pot. Four collapsed pots are stacked near stern.

The Prince William Sound explorations were part of the Service's long-range plan to explore the untapped fishery resources of waters in and near Alaska. The explorations were scheduled at this time in an attempt to locate commercial quantities of bottom fish, shrimp, and king crab, the utilization of which would help to replace the revenue lost as the result of the depletion of pink salmon in this area.

During the first period of the explorations (February 26 to April 6), 102 otter-trawl drags were made for bottom fish and king crab, and 18 beam-trawl drags were made for shrimp. During the second period of the explorations (July 13 to September 8), 88 otter-trawl drags and 90 beam-trawl drags were made, and, in addition, 93 king-crab pots and 69 shrimp traps were set.

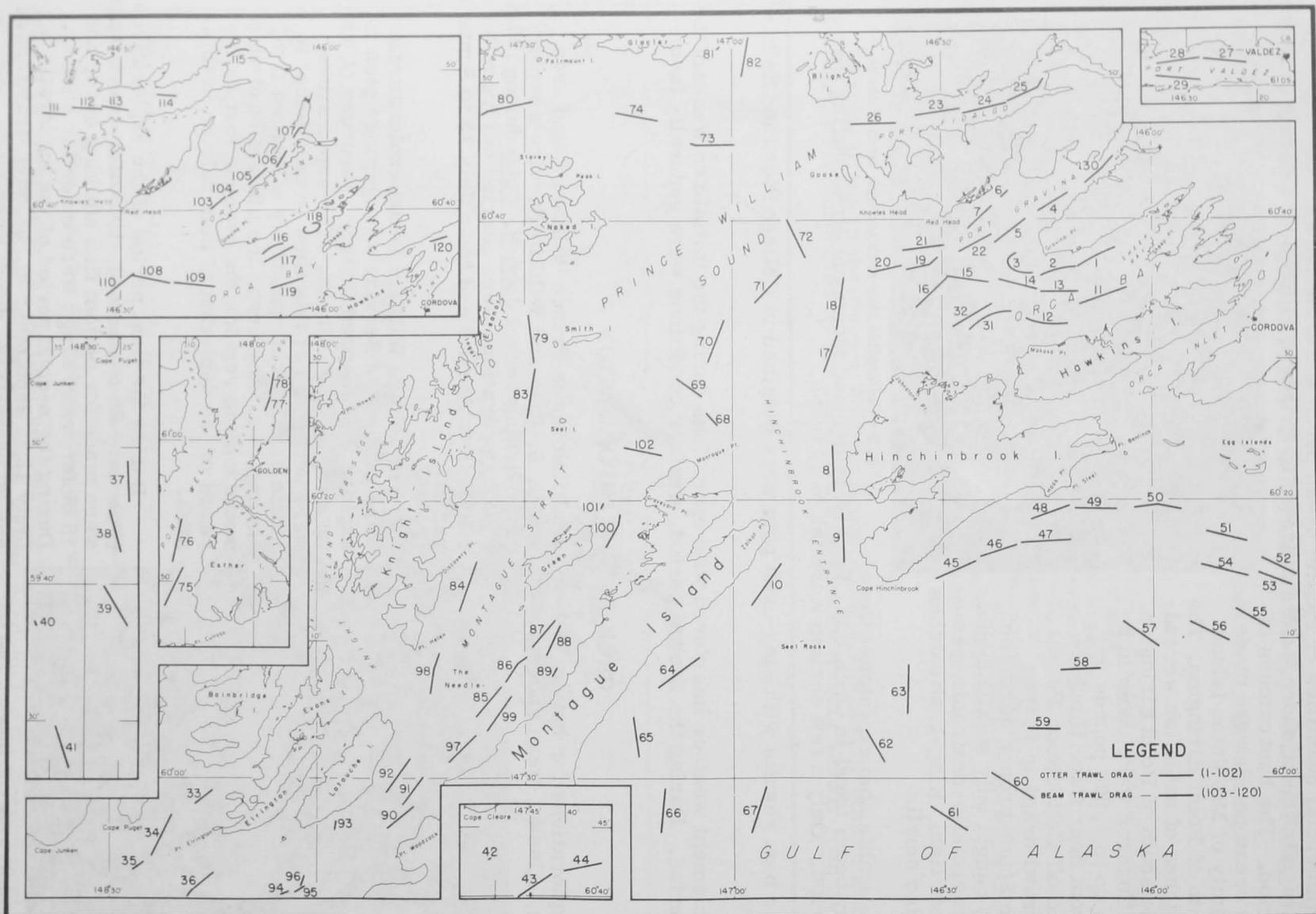


Fig. 4 - Location of otter-trawl drags and beam-trawl drags, first period (February 26 to April 6, 1954).

In 1931, small quantities of shrimp were processed experimentally at Cordova, but no statistics on the amounts are available (Bower 1932). During most of the succeeding years from 1931 to 1940, limited quantities of shrimp were processed in connection with the canning of dungeness crab. Fishing boats outfitted with beam trawls have landed limited amounts of shrimp at Cordova in recent years, but no consistent shrimp fishery has been established there (Wigutoff 1953).

During the spring of 1941, otter trawls were experimentally fished in certain parts of Prince William Sound by the Alaska King Crab Investigation of the Fish and Wildlife Service (Anonymous 1942). At that time, catches of bottom fish, which were taken incidental to the king-crab fishing, were usually small. Except for two drags in Simpson Bay, each of which caught approximately 1,500 pounds, not more than 660 pounds of bottom fish were taken per drag. Because only small numbers of king crab were caught in the experimental fishing, the area was not thoroughly explored.

GEAR USED

OTTER TRAWL: All drags for bottom fish and king crab were made with a standard 400-mesh western trawl. (Details of the trawl are described by Alverson 1951.) The wings, body, and intermediate of the trawl were $4\frac{1}{4}$ -inch mesh.^{1/} A 5-inch-mesh cod end was used exclusively during the first period. During the second period, a 5-inch-mesh cod end was used for all drags made in Prince William Sound proper, and a $3\frac{1}{2}$ -inch-mesh cod end was used for most drags made in offshore areas likely to be inhabited by Pacific ocean perch (*Sebastodes alutus*). The smaller-mesh cod end was used to prevent excessive gilling and possible loss of marketable-size individuals of this species.

As it was desired to sample the bottom-fish and king-crab populations simultaneously, the use of standard commercial king-crab trawls, which have a 12-inch-mesh cod end, was not feasible.

BEAM TRAWL: All drags for shrimp were made with a 20-foot beam trawl. The net was constructed with 36-thread $1\frac{1}{2}$ -inch-mesh cotton webbing, 150 meshes deep. (Details of the beam trawl are described by Ellson and Livingstone 1952.)

KING-CRAB POTS: A patented box-shaped collapsible-type king-crab pot was used (figs. 2 and 3). The bottom frame was 36 inches wide and 72 inches long, and the top frame was 36 inches wide and 60 inches long. Each end frame was shaped like an inverted "U" and had 30-inch sides and a 34-inch top. Eyes were bent in the tips of the end frames to secure them to the bottom frame. These eyes hinged the end frames to the bottom frame to provide for setting up or collapsing the pot. Hooks welded to the sides of the end frames, near the corners, supported the top frame when the pot was set up for fishing. All of the frames were made of $\frac{5}{8}$ -inch-diameter galvanized mild-steel rods.

The sides and ends of the pot were covered with 96-thread $4\frac{1}{2}$ -inch-mesh tarred cotton webbing lashed to the top and bottom frames, which were covered with 2-inch by 4-inch (open mesh) 15-gauge galvanized wire netting. A rectangular-shaped tunnel-entrance frame at each end was 7 by 14 inches and was made of $\frac{1}{4}$ -inch-diameter galvanized mild steel. The tunnel indentations were formed by pulling the tun-

^{1/}All mesh sizes in this report refer to stretched measure.

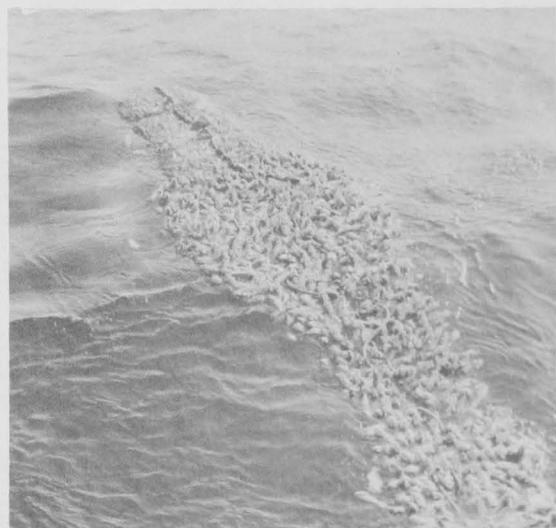


Fig. 5 - A "floater" (full cod end) of Pacific ocean perch being brought alongside the exploratory fishing vessel John N. Cobb.

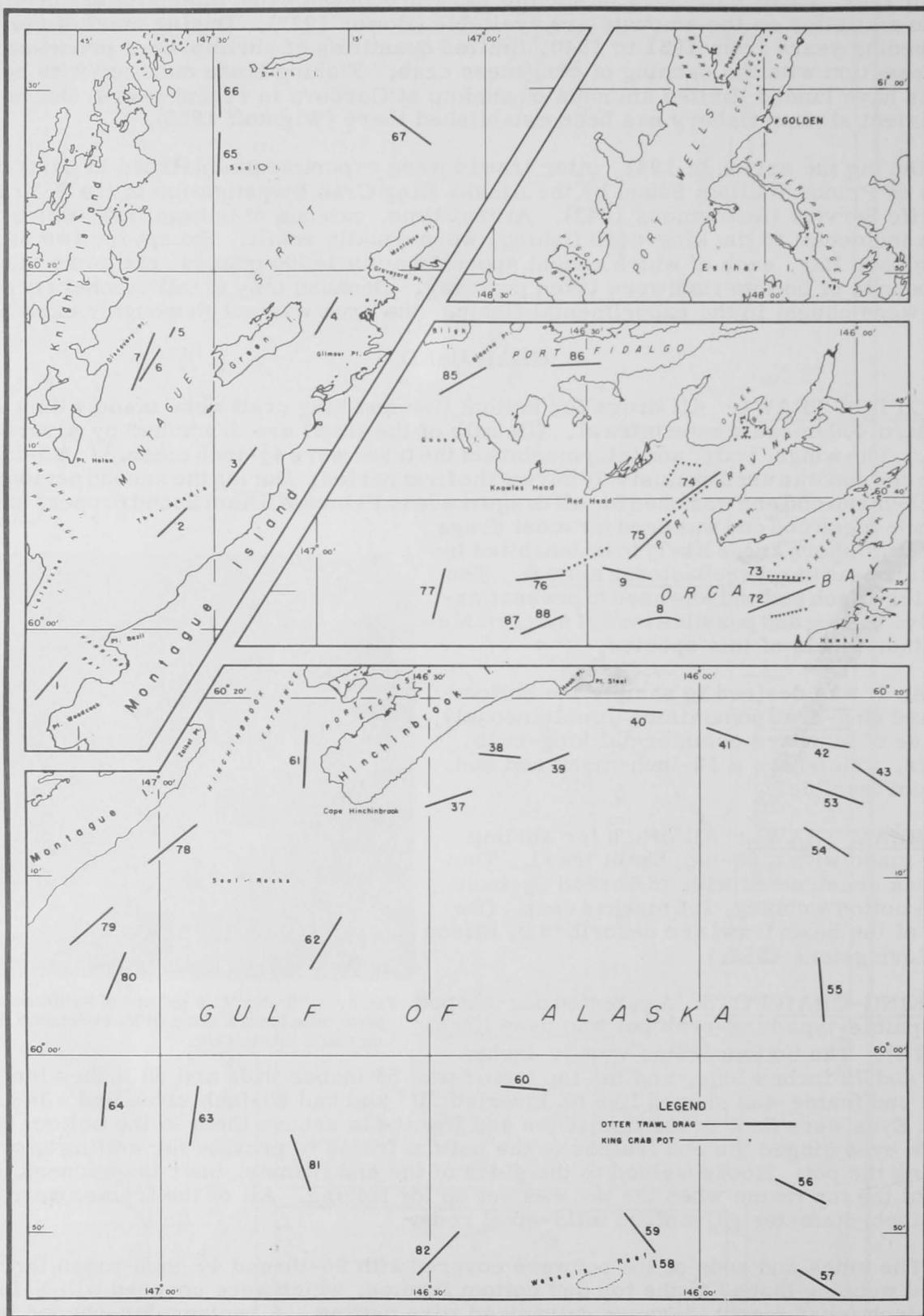


Fig. 6 - Location of otter-trawl drags and king-crab pots in Prince William Sound proper and otter-trawl drags in offshore waters from off Montague Island to off the Egg Islands, second period (July 13 to September 8, 1954).

nel entrance frames toward each other and then tying them in place with tarred lines. Triggers were made of 16-gauge wire.

Access to the inside of the pot for baiting and removing the catch was through a semicircular opening in the top. A lid of galvanized wire netting framed with 8-gauge galvanized wire covered this opening.

Bait was cut into small pieces and placed in a net bait bag that was then suspended between the tunnel entrance frames. Except for the first few sets in which only frozen herring was used, frozen herring and fresh scrap fish were always used simultaneously in the same pot.

SHRIMP TRAPS: Both two-tunnel galvanized-iron shrimp traps were fished. These traps were of the same types as those used during the 1952 (Schaefers 1953) and 1953 (Schaefers and Smith 1954) shellfish explorations of the John N. Cobb.

FISHING RESULTS

Detailed results of otter-trawl and beam-trawl drags for the first period are tabulated in tables 1 and 3, respectively; and the location of each drag is diagrammatically illustrated in figure 4. Detailed results of otter-trawl and beam-trawl drags for the second period are tabulated in tables 2 and 4, respectively; and the location of each otter-trawl drag is diagrammatically illustrated in figures 6 and 8, and of each beam-trawl drag in figure 10. Results of the king-crab-pot sets and the shrimp-trap sets are tabulated in tables 5 and 6, respectively. The location of each king-crab pot is diagrammatically illustrated in figure 6.

FISHING RESULTS OBTAINED IN PRINCE WILLIAM SOUND PROPER

ORCA BAY AREA: First Period: Fifteen otter-trawl drags at depths of 28 to 84 fathoms yielded small catches. Starry flounder (Platichthys stellatus), flathead "sole" (Hippoglossoides elassodon), and lemon "sole" (Pleuronectes quadrituberculatus) were taken in amounts up to 75 pounds, 50 pounds, and 30 pounds per drag, respectively. English "sole" (Parophrys vetulus), rock "sole" (Lepidopsetta bilineata), and true cod (Gadus macrocephalus) were taken in trace^{2/} amounts. Halibut (Hippoglossus stenolepis)^{3/} were taken in amounts ranging from 0 to 58 individuals per drag. Six king crab (Paralithodes camtschatica),^{4/} the majority of which were in the soft-shell state, were also taken.

Shrimp operations were of a preliminary nature, and only a limited number of drags were made with the beam trawl. The best drag caught 109 pounds^{5/} of pink shrimp (Pandalus borealis) and 27 pounds of side-stripe shrimp (Pandalopsis dispar) per hour.^{6/}

^{2/} A trace is less than 20 pounds of fish.

^{3/} Halibut were measured and released at the request of the International Pacific Halibut Commission.

^{4/} Unless otherwise noted, only legal-size king crab (hard-shell males not less than $6\frac{1}{2}$ inches in greatest width of shell) are referred to in the text. Complete tabulations of all male and female king crab caught during these explorations are given in tables 1 to 5.

^{5/} Complete details of number of whole (heads on) shrimp per pound for all beam-trawl drags are given in tables 3 and 4.

^{6/} Shrimp-catch results have been converted to a rate-per-hour basis to permit catch comparison of shrimp drags made for different lengths of time.



Fig. 7 - Emptying the beam trawl on the deck of the John N. Cobb. Mostly trash and few shrimp were caught in this drag.

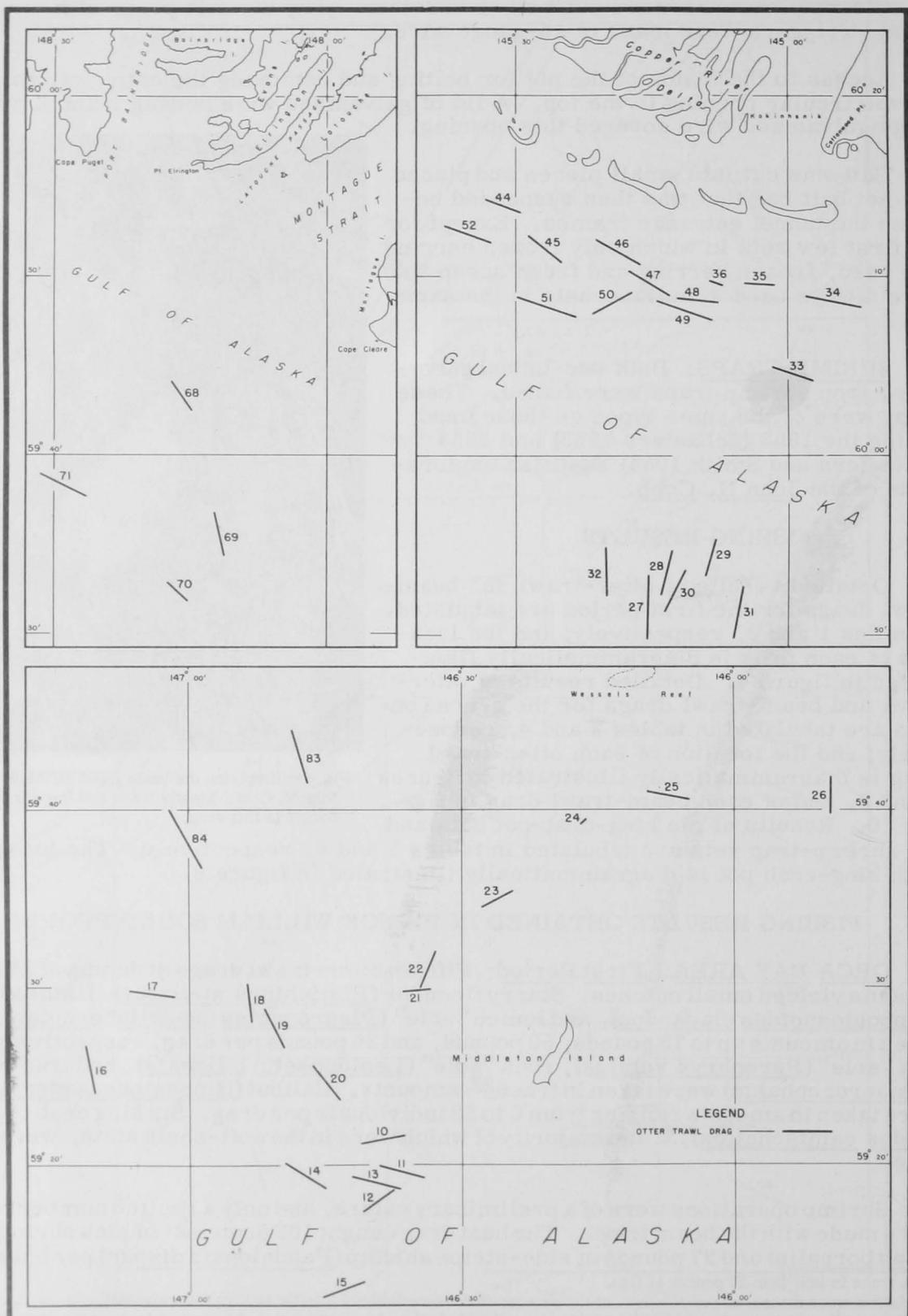


Fig. 8 - Location of otter-trawl drags off Point Elrington, off the Copper River Delta, and in the vicinity of Middleton Island, second period (July 13 to September 8, 1954).

Second Period: Seven otter-trawl drags^{7/} were made at depths of 52 to 88 fathoms. Catches per drag ranged from 35 to 500 pounds for true cod, from 50 to 250 pounds for flathead "sole," and from 0 to 8 individuals for halibut, and from 1 to 12 individuals for king crab.

The best catches of pink shrimp were obtained from off Canoe Passage to off Makaka Point, where 10 drags at depths of 58 to 86 fathoms caught from 96 to 262 pounds and averaged 154 pounds per hour. Catches of side-stripe shrimp in these drags were insignificant. The largest catch of side-stripe shrimp was taken off Windy Bay, where a single drag at 116 to 122 fathoms caught 84 pounds of small side-stripe shrimp and 120 pounds of pink shrimp per hour. In outer Orca Bay, pink shrimp were taken at the rate of 194 pounds per hour in a drag at 69 to 75 fathoms. Small numbers of king crab (up to 5 per drag) were taken in the beam trawl. Dragging bottom that was free of obstructions and suitable for drags of several hours' duration was prevalent. Side-slope drags yielded poor results, and the best shrimp catches occurred on relatively flat bottom or in slight depressions.

King-crab pot sets in Orca Bay and Sheep Bay averaged from less than 1 to 2.6 king crab per pot. The best catch was taken in a set of 9 pots off Canoe Passage at depths of 82 to 85 fathoms.

PORt GRAVINA AREA: First Period: Five otter-trawl drags in Port Gravina resulted in poor catches.

Shrimp catches in 5 beam-trawl drags were less than 70 pounds of shrimp per hour.

Second Period: Only one otter-trawl drag was made. It resulted in a poor catch.

The best shrimp catches were made from near the entrance to off Olsen Bay, where 4 drags at depths of 70 to 83 fathoms averaged 199 pounds of predominately pink shrimp per hour, with the best catch yielding 310 pounds of pink shrimp and 20 pounds of side-stripe shrimp. The dragging bottom was good in this vicinity, and catches were quite clean. A single drag near the head of Port Gravina at 54 to 71 fathoms caught 114 pounds of pink shrimp, 16 pounds of side-stripe shrimp, and 16 pounds of coon-stripe shrimp (Pandalus hypsinotus) per hour. Considerable amounts of small fish, kelp, and bottom debris were present in this drag.

A set of 9 king-crab pots in 68 to 78 fathoms near the entrance of Port Gravina yielded catches ranging from 0 to 6 individual king crab per pot, with an average catch of 2.6. King-crab pots set east of Red Head and in Olsen Bay at shallower depths were much less productive. Shrimp traps set in Olsen Bay at 11 to 34 fathoms caught only a few pink shrimp.

PORt FIDALGO: First Period: With the exception of small areas near the entrance and near the head, favorable dragging bottom was limited to depths of slightly over 100 fathoms. Four otter-trawl drags at 84 to 116 fathoms resulted in negligible catches of bottom fish and king crab.

Beam-trawl drags produced shrimp, but even the best drag yielded only 65 pounds of pink shrimp per hour.

Second Period: In two drags made during this time, the best catch of bottom fish and king crab was taken in a drag at 83 to 98 fathoms near the entrance. This drag caught 225 pounds of true cod, 50 pounds of flathead "sole," 1,200 pounds of pollock (Theragra chalcogramma), and 14 king crab. Drags for shrimp yielded less than 90 pounds per hour. Although no snags were encountered, beam-trawl catches^{7/} Drag No. 87, which was made near the entrance of Orca Bay, hung up and therefore is not included.

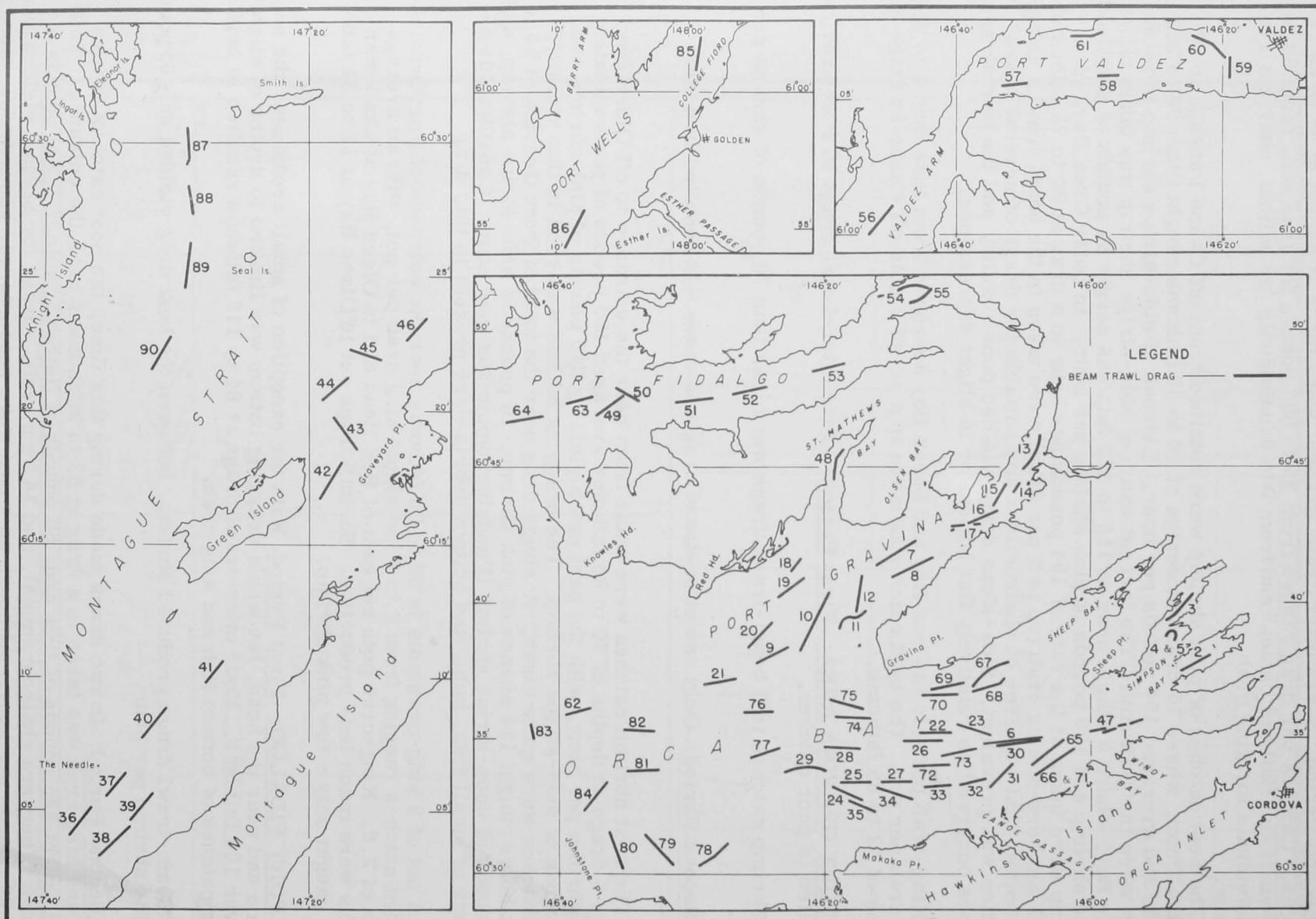


Fig. 10 - Location of beam-trawl drags, second period (July 13 to September 8, 1954).

(except those near the head) contained considerable amounts of trash--mainly shells, pieces of wood, kelp, and basket stars. With the exception of pieces of wood and kelp, otter-trawl catches were cleaner because of the larger mesh size.

PORT VALDEZ AND VALDEZ ARM: First Period: Three otter-trawl drags in Port Valdez at depths of 120 to 138 fathoms resulted in negligible catches. The bottom was strewn with debris and trash. Two drags were made near the entrance of Valdez Arm at depths of 200 to 206 fathoms with negligible results. In Valdez Arm, the bottom was more uneven and the depths were greater than in Port Valdez.

Second Period: Five beam-trawl drags in Port Valdez and one beam-trawl drag in Valdez Arm produced negligible shrimp catches. These drags were made at depths of 97 to 209 fathoms.

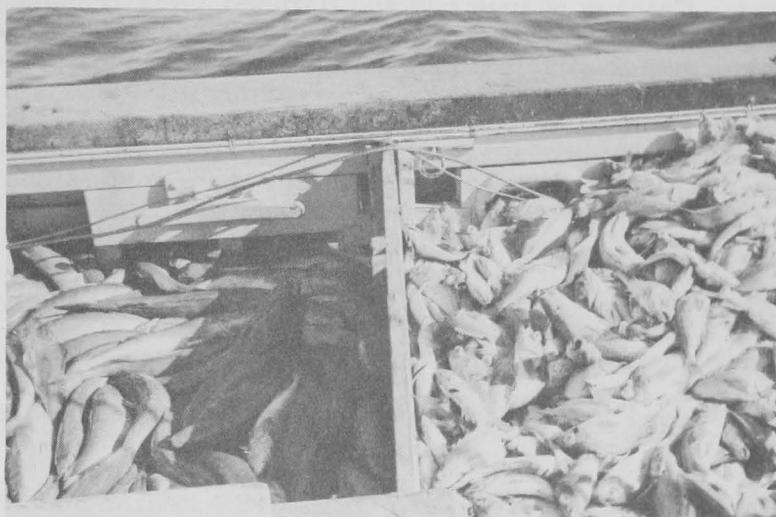


Fig. 9 - A good catch of Pacific ocean perch (right) and sablefish (left) in deck bins aboard the John N. Cobb.

ESTHER PASSAGE: First Period: The bottom in Esther Passage was too irregular for trawling.

Second Period: Nine king-crab pots set at depths of 52 to 90 fathoms for 20 hours caught a total of 30 king crab. The number of king crab in each pot ranged from 0 to 8.

COLLEGE FIORD: First Period: Two otter-trawl drags made in this area encountered snags, and catches were negligible.

Second Period: A single beam-trawl drag resulted in a broken beam. Despite this difficulty, 212 pounds of shrimp per hour were taken. The catch consisted of 62 percent pink, 36 percent coon-stripe, and 2 percent spot shrimp (Pandalus platyceros). The spot shrimp were large, averaging 7 whole (heads-on) shrimp per pound.

The best results from king-crab-pot sets were obtained here. A set of 9 pots at 43 to 68 fathoms for $23\frac{1}{2}$ hours caught 41 king crab.^{8/} The number of individuals per pot ranged from 0 to 14.

PORT WELLS AREA: First Period: Two otter-trawl drags at depths of 220 to 228 fathoms yielded poor results.

Second Period: A single beam-trawl drag at depths of 209 to 215 fathoms resulted in a torn net. In Pigot Bay, a set of 9 king-crab pots caught 22 king crab of which 20 were Paralithodes camtschatica and 2 were Paralithodes platypus.

MONTAGUE STRAIT AREA: First Period: Twenty-one otter-trawl drags were made from near the entrance of Montague Strait to off Montague Point and Eleanor Island at depths of 18 to 150 fathoms. The largest catch of king crab taken in any one drag during either period was made in drag number 85 at 68 to 74 fathoms near The Needle. Thirty-two legal-size male king crab, all in the soft-shell state, were caught.

^{8/}This catch consisted of 23 Paralithodes camtschatica, averaging 9.4 pounds each, and 18 Paralithodes platypus, averaging 6.4 pounds each.

The other drags at this time caught a total of only 8 legal-size male king crab, all in the soft-shell state. The average catch of halibut was 11.0 individuals per drag. Usually only trace catches of other desirable species of bottom fish were made. Dragging bottom was generally favorable, except near the entrance, where 4 drags hung up.

Second Period: Nine otter-trawl drags were made at depths of 40 to 155 fathoms. Catches of true cod and flathead "sole" ranged up to 300 pounds per drag, and halibut averaged 4.4 individuals per drag. Catches of arrow-toothed flounder (Atheresthes stomias) ranged up to 1,600 pounds per drag. King-crab catches were insignificant.

The best shrimp catches were obtained in 3 drags from off the northeast end of Green Island to off Graveyard Point at 67 to 85 fathoms. These drags caught up to 310 pounds of shrimp per hour and averaged 207 pounds of predominately pink shrimp per hour.

MIDDLE PRINCE WILLIAM SOUND: First Period: Otter-trawl drags from off Montague Point to off Storey Island at depths of 90 to 274 fathoms produced negligible results.

Second Period: Results of two widely-separated drags also yielded negligible results.

FISHING RESULTS OBTAINED IN OFFSHORE WATERS ADJACENT TO PRINCE WILLIAM SOUND

FIRST PERIOD: In the area off Cape Puget, otter-trawl drags were made at depths of 43 to 110 fathoms. The best drag caught only 125 pounds of true cod. Between Cape Cleare and the Egg Islands, 27 drags were made at depths of 10 to 152 fathoms, with poor results. Starry flounder (up to 50 pounds per drag) were present in all drags at 10 to 32 fathoms, and halibut (up to 21 individuals per drag) were present in nearly all drags at these depths. The rest of the drags were made at 34 to 152 fathoms and usually caught only trace amounts of true cod and arrow-toothed flounder, along with small numbers of halibut.

SECOND PERIOD: Good quantities of Pacific ocean perch (Sebastodes alutus) and sablefish (Anoplopoma fimbria) were taken in the offshore waters adjacent to Prince William Sound.

In the area 12 to 24 miles south of Point Elrington, 4 drags produced catches of 2,300 to 3,800 pounds of Pacific ocean perch and up to 1,000 pounds of sablefish. These drags were made at depths of 90 to 122 fathoms. The bottom dragged was predominately gray mud and sand and was generally good, although the drag that caught the most Pacific ocean perch snagged after 30 minutes. From 700 to 1,700 pounds of arrow-toothed flounder were also taken in these drags. Pacific ocean perch from this area averaged 15.6 inches in length. Sablefish averaged 25.7 inches in length and 6.7 pounds in weight.

Pacific ocean perch grounds were also located in the area southwest to west of Middleton Island. The best drag (number 15) at 108 to 112 fathoms yielded 6,000 pounds of Pacific ocean perch. A slight tear was noted in the net after this drag. Several other drags in this area encountered snags and resulted in badly torn nets. However, the bottom dragged was generally favorable, and in no instance did the gear hang up. Pacific ocean perch averaged 15.5 inches in length. Most of the sablefish taken in this area were small and only 15 percent of the best catch (625 pounds) were of marketable size.

Approximately 10 miles east of Wessels Reef, 2 drags at 52 to 59 fathoms yielded 200 pounds and 1,000 pounds of Pacific ocean perch.

Two of a series of drags at 53 to 95 fathoms that were made approximately 30 miles off the Copper River Delta yielded catches of 600 pounds and 1,500 pounds of Pacific ocean perch. The dragging bottom in this area was generally clear.

Drags off the east side of Montague Island at depths of 81 to 154 fathoms usually yielded poor results, although drag number 63, which was made at 81 to 84 fathoms, caught 1,000 pounds of Pacific ocean perch.

Other drags in the offshore waters were generally made at depths of less than 50 fathoms. In the region between Cape Hinchinbrook and the Egg Islands, starry flounder was the dominant commercially-desirable species taken. The two best catches (1,300 and 1,800 pounds per drag) of this species were made between Cape Hinchinbrook and Hook Point at 20 to 28 fathoms. These starry flounder averaged 19.8 inches in length. Other catches were dominated by trash fish, mostly skates (Rajidae).

Catches from drags at 10 to 55 fathoms between the Egg Islands and Cottonwood Point consisted mostly of skates and of dogfish (Squalus suckleyi), although the catch of drag number 47 at 24 to 26 fathoms caught 900 pounds of starry flounder and only a few trash fish.

WEATHER CONDITIONS

During the initial two weeks of the first period gale-force winds occurred frequently, hampering operations in Prince William Sound proper and preventing operations in adjacent offshore waters. After this time, weather conditions were generally favorable in all areas.

During the second period, weather conditions were generally favorable.

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Note: The fishing logs of otter-trawl drags, beam-trawl drags, king-crab-pot catches, and shrimp-trap catches are shown in tables 1, 2, 3, 4, 5, and 6 (pp. 18-28).

Table 1 - Fishing Log of Otter-Trawl Drags Made During the First Period (February 26 to April 6, 1954)

Drag No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Date	2/26/54	2/26/54	2/26/54	2/27/54	2/27/54	2/27/54	2/28/54	2/28/54	2/28/54	3/3/54	3/3/54	3/3/54	3/3/54
Latitude N. Longitude W.	60°37.9' 116°16.5'	60°36.6' 116°11.0'	60°36.2' 116°11.1'	60°36.6' 116°15.2'	60°36.0' 116°15.1'	60°36.2' 116°20.6'	60°36.9' 116°22.9'	60°36.9' 116°25.9'	60°36.1' 116°27.1'	60°36.1' 116°27.1'	60°36.6' 116°27.1'	60°36.6' 116°27.1'	60°36.9' 116°27.5'
Course, magnetic 1/	214°	226°	291°	209°	205°	194°	190°	151°	149°	009°	221°	218°	221°
Tide	Flood	High	Ebb	Ebb	Low	Flood	Ebb	Low	Ebb	Low	Ebb	Ebb	Low
Depth range in fathoms	46-56	46-52	76-80	70-71	25-28	24-26	14-16	100-112	76-84	46-50	76-84	76-78	76-78
Type of bottom	bu. M.	Muddy down	gy. M.	gy. M.	bu. M.	bu. M.	Clear						
Trawling bottom	Clear												
Time on bottom in minutes	60	60	57	60	55	60	60	60	60	60	60	60	60
Estimated total catch in pounds	225	100	125	100	50	---	70	100	60	400	100	150	100
Catch in pounds (% marketable):													
Flat fish													
Dover	---	---	Trace	---	---	---	---	Trace	---	---	Trace	---	---
English	---	Trace	Trace	---	---	---	Trace	Trace	---	Trace	Trace	Trace	Trace
Flathead	50(60)	30(60)	25(50)	25(50)	20(50)	---	Trace	(2)	(5)	50(60)	25(50)	40(20)	40(20)
Hallibut	(10)	(10)	(10)	(10)	(10)	---	---	(2)	(4)	(10)	(10)	(10)	(10)
Lemon	25(85)	---	Trace	---	---	---	---	---	---	---	30(75)	---	---
Rex	Trace	---	---	Trace	---	Trace	---	---	---	---	---	---	---
Rock	Trace	---	---	Trace	---	Trace	---	---	Trace	---	Trace	---	---
Sand	---	---	---	Trace	---	Trace	---	---	---	---	Trace	---	---
Starry flounder	75(50)	20(65)	---	Trace	Trace	Trace	---	---	---	30(100)	20(40)	Trace	Trace
Arrow-toothed flounder (turbot)	---	---	Trace	Trace	Trace	Trace	---	---	---	---	---	---	---
Round fish													
Pollack	---	---	Trace	---	---	---	---	---	---	---	---	---	---
Sablefish	Trace	---	Trace	---	---	---	---	50(80)	Trace	100(100)	Trace	---	---
True cod	---	---	Trace	---	---	---	---	---	Trace	Trace	Trace	---	---
Rockfish	---	---	---	---	---	---	---	---	---	---	---	---	---
Pacific ocean perch	---	---	---	---	---	---	---	---	---	---	---	---	---
Red	Trace	---	---	Trace	---	---	Trace	---	Trace	Trace	Trace	---	---
King crab 1/													
Legal-size males	---	(2)	---	---	---	---	OO	---	---	---	---	---	---
Small males	---	(2)	---	---	---	---	(2)	---	---	---	---	---	---
Females	---	(2)	---	---	---	---	---	---	---	---	---	---	OO
Drag No.	14	15	16	17	18	19	20	21	22	23	24	25	26
Date	3/4/54	3/4/54	3/4/54	3/4/54	3/4/54	3/6/54	3/6/54	3/6/54	3/6/54	3/7/54	3/7/54	3/7/54	3/7/54
Latitude N. Longitude W.	60°35.0' 116°16.5'	60°35.5' 116°23.3'	60°35.8' 116°29.1'	60°29.2' 116°29.1'	60°32.2' 116°29.1'	60°37.3' 116°30.7'	60°36.7' 116°35.8'	60°37.8' 116°35.8'	60°37.7' 116°27.8'	60°47.5' 116°33.8'	60°47.6' 116°26.9'	60°48.4' 116°20.6'	60°48.9' 116°36.5'
Course, magnetic 1/	258°	249°	198°	353°	340°	222°	237°	055°	032°	054°	049°	029°	210°
Tide	Flood	Flood	High	Ebb	Ebb	Flood	High	Ebb	Flood	High	Low	Low	Low
Depth range in fathoms	46-76	46-72	72-76	200-204	48-52	50-54	28-34	44-50	106-110	98-114	84-96	84-96	84-96
Type of bottom	bu. M.	bu. M.	bu. M.	gy. M.	gy. M.	bu. M.	bu. M.	Clear	bu. M.	bu. M.	Clear	Clear	Clear
Trawling bottom	Clear												
Time on bottom in minutes	60	60	60	60	60	60	60	60	60	60	60	60	60
Estimated total catch in pounds	40	60	50	120	40	60	90	30	65	50	60	80	55
Catch in pounds (% marketable):													
Flat fish													
Dover	---	---	---	---	---	---	---	---	---	---	---	---	---
English	---	---	---	---	---	---	---	---	---	Trace	Trace	Trace	Trace
Flathead	20(25)	Trace	Trace	Trace	---	Trace	---	Trace	Trace	Trace	Trace	Trace	Trace
Hallibut	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)
Lemon	---	---	---	---	---	---	---	---	---	---	---	---	---
Rex	Trace												
Rock	---	---	---	---	---	---	---	---	---	---	---	---	---
Sand	---	---	---	---	---	Trace	---	Trace	---	Trace	Trace	Trace	Trace
Starry flounder	Trace	---	---	Trace									
Arrow-toothed flounder (turbot)	---	---	---	30(80)	Trace	---	---	---	Trace	Trace	Trace	Trace	Trace
Round fish													
Pollack	Trace	Trace	Trace	Trace	60(70)	Trace	Trace	Trace	Trace	30(90)	20(50)	50(60)	20(80)
Sablefish	Trace	Trace	Trace	Trace	---	---	---	---	Trace	Trace	Trace	Trace	Trace
True cod	---	---	---	---	---	Trace	---	Trace	---	Trace	Trace	Trace	Trace
Rockfish	---	---	---	---	---	Trace	---	Trace	---	Trace	Trace	Trace	Trace
Pacific ocean perch	---	---	---	---	---	Trace	---	Trace	---	Trace	Trace	Trace	Trace
Red	Trace	---	---	Trace	---	Trace	---	Trace	Trace	Trace	Trace	Trace	Trace
King crab 1/													
Legal-size males	---	---	---	---	---	OO	---	(2)	(2)	---	---	---	---
Small males	---	---	---	---	---	OO	---	(2)	(2)	---	---	---	---
Females	---	---	---	---	---	OO	---	(2)	(2)	---	---	---	---

Note: For explanation of footnotes, see p. 21.

Table 1 - Fishing Log of Otter-Trawl Drags Made During the First Period (February 26 to April 6, 1954) (Continued)

Drag No.	27	28	29	30	31	32	33	34	35	36	37	38	39
Date	3/9/54	3/9/54	3/9/54	3/10/54	3/10/54	3/10/54	3/13/54	3/13/54	3/13/54	3/13/54	3/11/54	3/14/54	3/14/54
Latitude N. Longitude W.	61°06.7' 116°21.5'	61°07.0' 116°28.1'	61°05.8' 116°34.1'	60°44.5' 116°05.6'	60°32.1' 116°26.2'	60°32.3' 116°28.5'	59°59.1' 116°15.1'	59°57.3' 116°20.9'	59°53.9' 116°25.1'	59°53.2' 116°11.8'	59°49.0' 116°23.8'	59°45.5' 116°26.5'	59°39.9' 116°27.4'
Course, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	247° Low 120-136 bu. M. Clear 60	235° Flood 136-138 bu. M. Clear 60	067° Flood 136-138 bu. M. Clear 60	203° Ebb 80-104 hrd. Clear 60	040° Flood 44-56 hrd. Clear 60	031° Ebb 92-104 hrd. Clear 60	206° Flood 68-92 hrd. Clear 60	181° Ebb 70-92 hrd. Snag 27	207° Flood 72-76 M. Clear 60	201° High M. Clear 60	152° Ebb 78-84 M. Clear 60	139° Ebb 106-110 M. Clear 61	121°
Estimated total catch in pounds Catch in pounds (% marketable):	25	45	10	220	170	285	100	65	25	25	30	150	50
Flat fish													
Dover	---	---	---	---	---	---	---	---	---	---	---	---	---
English	---	---	---	---	Trace	---	---	---	---	---	Trace	---	---
Flathead	---	---	---	Trace	Trace	Trace	---	---	---	---	(2)	---	---
Halibut	---	(2) 2/	---	(5)	(58)	(3)	(9)	(2)	(1)	(7)	(2)	---	---
Lemon	---	---	---	Trace	---	Trace	---	---	---	---	---	---	---
Rex	---	Trace	---	---	---	Trace	---	Trace	---	---	---	---	---
Rock	---	---	---	Trace	Trace	Trace	---	Trace	---	---	Trace	---	---
Sand	---	---	---	---	---	---	---	---	---	---	---	---	---
Starry flounder	---	---	---	Trace	Trace	Trace	---	---	---	---	Trace	---	---
Arrow-toothed flounder (turbot)	---	Trace	---	Trace	Trace	---	20(80)	Trace	---	Trace	Trace	Trace	Trace
Round fish													
Pollack	Trace 3/	Trace	Trace	Trace	---	---	25(50)	---	Trace	---	---	---	Trace
Sablefish	Trace	Trace	---	---	---	---	40(75)	20(100)	Trace	---	---	---	20(100)
True cod	---	Trace	Trace	Trace	---	---	---	---	---	---	---	125(100)	20(100)
Rockfish													
Pacific ocean perch	---	---	---	---	---	---	---	---	---	---	---	---	---
Red	---	Trace	---	110(100)	---	---	Trace	Trace	---	---	---	---	Trace
King crab 4/													
Legal-size males	---	---	---	---	---	---	---	---	---	---	---	---	---
Small males	---	---	---	---	---	---	---	---	---	---	---	---	---
Females	---	---	---	---	---	---	---	---	---	---	---	---	---
Drag No.	40	41	42	43	44	45	46	47	48	49	50	51	52
Date	3/11/54	3/14/54	3/15/54	3/15/54	3/15/54	3/17/54	3/17/54	3/17/54	3/18/54	3/18/54	3/18/54	3/18/54	3/18/54
Latitude N. Longitude W.	59°37.3' 116°37.4'	59°29.6' 116°34.3'	59°42.6' 116°39.9'	59°39.9' 116°41.7'	59°41.7' 116°40.3'	60°14.3' 116°31.4'	60°15.9' 116°21.6'	60°16.9' 116°18.9'	60°18.6' 116°17.5'	60°19.4' 116°11.3'	60°19.3' 116°02.6'	60°17.7' 116°02.3'	60°15.8' 116°04.5'
Course, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	128° Ebb 48-49 56-64 hrd. Sng 5	130° Flood 56-64 hrd. Sng 60	034° High 44-44 M. & G. Clear 2	029° High 63-66 M. & G. Clear 60	052° Ebb 24-28 M. & S. Clear 60	038° Ebb 20-24 bu. M. & S. Clear 60	016° Low 22-27 S. Clear 60	060° Flood 11-11 S. Clear 60	046° Flood 12-12 S. Clear 60	061° Flood 10-10 S. Clear 60	044° Flood 10-10 S. Clear 60	072° High 20-22 M. Clear 60	089°
Estimated total catch in pounds Catch in pounds (% marketable):	0	80	0	50	50	250	60	55	150	110	40	75	45
Flat fish													
Dover	---	---	---	---	---	---	---	---	---	---	---	---	---
English	---	---	---	---	---	Trace	---	---	---	---	Trace	---	---
Flathead	---	Trace 3/ Q1 2/	---	---	---	Trace	(2)	(2)	(1)	(1)	(1)	(1)	(1)
Halibut	---	---	---	---	---	Trace	---	---	---	---	---	---	---
Lemon	---	---	---	---	---	---	---	---	---	---	---	---	---
Rex	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock	---	---	---	---	---	Trace	---	---	---	---	Trace	---	---
Sand	---	---	---	---	---	---	---	---	---	---	Trace	---	---
Starry flounder	---	---	---	---	---	---	50(65)	40(50)	30(10)	Trace	20(30)	Trace	25(30)
Arrow-toothed flounder (turbot)	---	Trace	---	Trace	Trace	---	---	---	---	---	---	Trace	Trace
Round fish													
Pollack	---	---	---	---	Trace	Trace	---	---	---	---	---	---	---
Sablefish	---	---	---	---	---	Trace	---	---	---	---	---	---	---
True cod	---	Trace	---	---	---	Trace	---	Trace	---	---	---	---	---
Rockfish													
Pacific ocean perch	---	---	---	---	---	---	---	---	---	---	---	---	---
Red	---	---	---	---	---	---	---	---	---	---	---	---	---
King crab 4/													
Legal-size males	---	---	---	---	---	---	---	---	---	---	(1)	---	---
Small males	---	---	---	---	---	---	---	---	---	---	---	---	---
Females	---	---	---	---	---	---	---	---	---	---	---	---	---

Note: For explanation of footnotes, see p. 21.

Table 1 - Fishing Log of Otter-Trawl Drags Made During the First Period (February 26 to April 6, 1954) (Continued)

Note: For explanation of footnotes, see p. 21.

Table 1 - Fishing Log of Otter-Trawl Drags Made During the First Period (February 26 to April 6, 1954) (Continued)

Drag No.	79	80	81	82	83	84	85	86	87	88	89	90
Date	3/26/54	3/27/54	3/27/54	3/27/54	3/28/54	3/28/54	3/29/54	3/29/54	3/29/54	3/29/54	3/29/54	3/30/54
Latitude N. Longitude W.	60°29.9' 117°28.6'	60°45.7' 117°28.8'	60°52.2' 117°02.3'	60°50.3' 117°28.4'	60°29.4' 117°39.3'	60°12.0' 117°37.2'	60°04.4' 117°32.8'	60°06.9' 117°29.1'	60°09.5' 117°25.0'	60°11.1' 117°25.4'	60°08.0' 117°25.0'	59°56.4' 117°50.0'
Course, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	326° Flood 10 hr-112 bus. M. & G. Clear 60	226° Ebb 272-274 bus. M. & G. Clear 60	007° Flood 206-206 bus. M. Mud 5	342° Low 80-94 bus. Cl. Clear 60	161° Flood 112-118 bus. Cl. Clear 60	352° Ebb 68-74 bus. Cl. Clear 60	015° Ebb 60-68 bus. M. Clear 60	011° Ebb 68-74 bus. M. Clear 60	012° Ebb 68-74 bus. M. Clear 60	356° Low 32-44 bus. M. Clear 11	185° Flood 18-24 bus. M. Snag 60	023° Flood 90-118 bus. Cl. Clear 60
Estimated total catch in pounds	90	425	0	200	40	200	350	250	200	35	20	150
Catch in pounds (% marketable):												
Flat fish												
Dover	---	Trace	---	---	---	---	---	---	---	---	---	---
English	---	---	---	---	---	---	---	---	---	---	---	Trace
Flathead	---	---	---	---	---	---	---	---	---	---	---	---
Halibut	---	(3) 2/	---	(11)	(1)	(11)	(17)	(16)	(56)	(2)	(1)	(50)
Lemon	---	---	---	---	---	---	---	---	Trace	Trace	---	---
Rex	---	---	---	---	---	---	---	---	---	---	---	---
Rock	---	---	---	---	---	---	---	---	---	---	---	---
Sand	---	---	---	---	---	---	---	---	---	---	---	---
Starry flounder	---	---	---	---	---	---	---	---	Trace	---	---	---
Arrow-toothed flounder (turbot)	Trace 3/	---	---	25(60)	---	---	---	---	---	---	---	Trace
Round fish												
Pollack	50(85)	150(85)	---	60(80)	Trace	150(0)	Trace	Trace	---	---	---	---
Sablefish	---	---	---	Trace	---	---	---	---	---	---	---	Trace
True cod	---	---	---	Trace	---	---	---	---	---	---	---	Trace
Rockfish												
Pacific ocean perch	Trace	---	---	Trace	---	---	---	---	---	---	---	Trace
Red	Trace	---	---	---	---	---	Trace	---	---	---	---	---
King crab 4/												
Legal-size males	---	---	---	---	---	---	(32)	---	---	(3)	---	---
Small males	---	---	---	---	---	---	(6)	---	---	(1)	---	---
Females	---	---	---	---	---	---	(3)	---	(1)	(2)	---	---
Drag No.	91	92	93	94	95	96	97	98	99	100	101	102
Date	3/30/54	3/30/54	3/30/54	3/31/54	3/31/54	3/31/54	3/31/54	3/31/54	4/1/54	4/1/54	4/1/54	4/1/54
Latitude N. Longitude W.	59°58.2' 117°47.5'	60°01.4' 117°45.5'	59°56.9' 117°57.2'	59°51.6' 118°05.2'	59°51.7' 118°03.2'	59°52.2' 118°02.3'	60°01.1' 117°40.9'	60°09.0' 117°35.5'	60°03.4' 117°18.5'	60°16.6' 117°18.8'	60°19.4' 117°18.5'	60°53.1' 117°10.1'
Course, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	011° High 120-126 bus. Cl. Clear 60	008° Ebb 110-150 bus. Cl. Clear 60	163° Ebb 76-80 hrd. X doors 06	040° Flood 62-66 hrd. Snag 07	031° Flood 76-76 hrd. Snag 03	353° Ebb 61-78 bus. Cl. Snag 07	016° Flood 134-150 bus. Cl. Snag 07	168° Ebb 60-72 bus. Cl. Snag 05	010° Flood 62-76 bus. M. & G. Clear 55	355° Ebb 68-70 bus. M. & Co. Clear 57	357° Ebb 60-66 bus. M. Snag 03	
Estimated total catch in pounds	25	100	0	0	0	0	45	120	60	150	0	40
Catch in pounds (% marketable):												
Flat fish												
Dover	---	Trace 2/	---	---	---	---	---	---	---	---	---	---
English	---	Trace	---	---	---	---	Trace	Trace	Trace	Trace	---	Trace
Flathead	---	(3) 2/	---	---	---	---	Trace	(7)	(12)	(15)	20(100)	---
Halibut	---	(6)	---	---	---	---	---	---	---	---	---	---
Lemon	---	---	---	---	---	---	---	---	---	---	---	---
Rex	---	---	---	---	---	---	---	---	---	---	---	---
Rock	---	---	---	---	---	---	---	---	---	---	---	---
Sand	---	---	---	---	---	---	---	---	---	---	---	---
Starry flounder	---	---	---	---	---	---	---	---	Trace	---	---	---
Arrow-toothed flounder (turbot)	---	---	---	---	---	---	---	---	---	---	---	---
Round fish												
Pollack	Trace	Trace	---	---	---	---	Trace	---	---	---	---	---
Sablefish	Trace	Trace	---	---	---	---	Trace	---	---	---	---	---
True cod	Trace	Trace	---	---	---	---	Trace	Trace	Trace	---	---	---
Rockfish												
Pacific ocean perch	---	---	---	---	---	---	---	---	Trace	---	---	---
Red	---	---	---	---	---	---	Trace	Trace	Trace	---	---	---
King crab 4/												
Legal-size males	---	---	---	---	---	---	---	---	(1)	(1)	---	---
Small males	---	---	---	---	---	---	---	---	(10)	(10)	---	---
Females	---	---	---	---	---	---	---	---	(10)	(5)	---	---

1/ Course given is between starting point and end point.

2/ Bracketed figures indicate number of individuals instead of pounds.

3/ "Trace" = less than 20 pounds of fish.

4/ Most king crab taken during the first period were soft-shelled.

Symbols for Types of Bottom
 bk. G. = black gravel | Gv. M. = gray mud | Cl. = clay | hrd. = hard | S. = sand | Sh. = shell
 bu. M. = blue mud | bld. = boulders | Co. = coral | rky. = rocky | sft. = soft

Table 2 - Fishing of Otter-Trawl Drags Made During the Second Period (July 13 to September 8, 1954)

Drag No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Date	7/13/54	7/13/54	7/14/54	7/14/54	7/14/54	7/14/54	7/15/54	7/16/54	7/16/54	7/17/54	7/17/54	7/18/54	7/18/54	7/18/54	
Latitude N. Longitude W.	59°56'1" 117°49.8'	60°06'8" 117°33.0'	60°07'9" 117°26.7'	60°16.4" 117°18.7'	60°16.9" 117°34.4'	60°15.7" 117°36.0'	60°13.3" 117°39.2'	60°33.3" 116°19.7'	60°35.6" 116°22.9'	59°21.7" 116°36.3'	59°19.3" 116°34.1'	59°18.7" 116°37.2'	59°18.6" 116°36.7'	59°18.7" 116°45.0'	59°18.4" 116°40.8'
Courses, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	013° Ebb 81-114 bu. M. Clear 60	200° Low 60-72 bu. M. Clear 60	011° Flood 40-50 bu. M. Clear 60	005° High 60-75 bu. M. Clear 60	180° Ebb 118-155 bu. M. Clear 60	187° Flood 114-152 bu. M. Clear 15	354° Ebb 61-67 bu. M. Clear 60	237° Flood 52-62 bu. M. Clear 60	255° Ebb 69-71 bu. M. Clear 60	232° Flood 61-67 bu. M. Clear 60	258° Ebb 81-83 bu. M. Snag 60	207° Flood 69-92 bu. M. & hrd. Snag 60	257° Flood 99-101 bu. M. & hrd. Clear 60	275° Ebb 108-112 bu. M. S. & G. Catchy 60	
Estimated total catch in pounds Catch in pounds (% marketable):	2200	1500	400	500	Gear fouled	I doors	500	600	1100	120	350	1200	2600	300	6600
Flat fish															
Dover	---	---	---	---	---	---	---	20(100)	---	---	---	---	---	---	Trace
English	---	---	---	---	---	---	---	50(95)	50(95)	---	---	---	---	---	---
Plaicehead	200(25) (2) 2/	300(50) (3)	75(85) (23)	80(50) (3)	---	---	23(100) (2)	40(100)	40(75) (6)	25(50) (2)	40(75) (3)	20(50)	20(50)	20(50)	Trace
Halibut	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Trace
Lemon	---	---	---	---	---	---	---	40(100)	---	---	---	---	---	---	20(50)
Rex	Trace 3/	---	---	---	---	---	---	---	Trace	Trace	---	---	---	---	---
Rock	---	---	---	Trace	---	---	---	Trace	---	---	---	---	---	---	---
Sand	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Starry flounder	---	---	---	---	---	---	---	Trace	---	---	---	---	---	---	---
Arrow-toothed flounder (turbot)	1600(90)	450(85)	20(100)	20(100)	---	---	350(65)	100(60)	60(75)	Trace	75(90)	125(80)	100(90)	160(75)	50(50)
Round fish															
Pollack	---	50(100)	Trace	40(90)	---	---	Trace	100(70)	150(70)	---	Trace	150(75)	Trace	150(20)	60(65)
Sablefish	---	---	---	---	---	---	---	35(100)	150(90)	500(85)	---	300(10)	625(15)	Trace	20(100)
True cod	250(90)	300(90)	50(75)	220(100)	---	---	---	---	100(100)	190(100)	600(95)	1500(95)	50(10)	125(95)	6000(95)
Rockfish															
Pacific ocean perch	Trace	180(100)	---	Trace	---	---	Trace	25(100)	100(100)	190(100)	600(95)	1500(95)	50(10)	125(95)	95(55)
Red	---	Trace	---	Trace	---	---	---	---	---	---	---	---	---	---	---
King crab															
Legal-size males	(5)	(1)	---	---	---	---	(1)	(1)	(1)	---	---	---	---	---	---
Small males	(1)	---	(6)	---	---	---	---	---	---	---	---	---	---	---	---
Females	(11)	---	(8)	---	---	---	---	---	(11)	---	---	---	---	---	---
Drag No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Date	7/19/54	7/19/54	7/19/54	7/19/54	7/20/54	7/20/54	7/20/54	7/20/54	7/21/54	7/21/54	7/21/54	7/21/54	7/21/54	7/21/54	7/22/54
Latitude N. Longitude W.	59°21.1" 117°01.4'	59°29.4" 117°01.6'	59°28.0" 116°53.1'	59°26.6" 116°51.5'	59°23.7" 116°53.5'	59°29.9" 116°53.6'	59°30.0" 116°53.6'	59°31.5" 116°52.8'	59°31.2" 116°51.6'	59°31.0" 116°50.5'	59°39.8" 115°15.6'	59°49.8" 115°14.4'	59°52.2" 115°08.1'	59°55.4" 115°13.7'	59°51.4" 115°13.7'
Courses, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	321° Flood 110-117 120-122 bu. M. & S. Clear 60	251° Flood 99-106 bu. M. & S. Clear 60	328° High 120-122 bu. M. & S. Clear 60	308° Ebb 58-61 bu. M. & S. Snag 60	295° Flood 120-122 bu. M. & S. Clear 60	238° Flood 61-64 bu. M. & S. Snag 58	356° Ebb 52-55 bu. M. & S. Snag 35	039° Ebb 61-64 bu. M. & S. Snag 60	019° Ebb 61-64 bu. M. & S. Snag 60	074° Flood 11-12 bu. M. & S. Snag 29	334° Flood 11-12 bu. M. & S. Snag 60	333° Flood 11-12 bu. M. & S. Snag 29	346° Flood 72-75 bu. M. & S. Snag 60	167° Ebb 78-80 bu. M. & S. Clear 60	359°
Estimated total catch in pounds Catch in pounds (% marketable):	1300	1000	2100	1700	250	150	450	20	0	150	100	1900	950	90	700
Flat fish															
Dover	Trace 3/	---	---	---	---	---	---	---	---	---	---	---	---	Trace	---
English	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Trace
Plaicehead	Trace (1) 2/	Trace (1)	Trace (2)	50(50)	50(50)	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace
Halibut	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lemon	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rex	Trace	Trace	Trace	25(90)	---	---	---	---	---	---	---	---	---	---	---
Rock	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sand	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Starry flounder	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Arrow-toothed flounder (turbot)	175(85)	40(85)	500(80)	150(80)	25(85)	Trace	200(75)	Trace	Trace	20(75)	Trace	100(75)	100(85)	20(75)	200(90)
Round fish															
Pollack	---	---	---	---	---	---	---	---	---	---	---	200(0)	60(50)	25(10)	50(25)
Sablefish	150(80)	25(80)	20(50)	Trace	Trace	Trace	Trace	Trace	Trace	20(100)	35(100)	20(100)	20(100)	Trace	Trace
True cod	75(100)	Trace	90(100)	Trace	Trace	Trace	Trace	Trace	Trace	20(100)	35(100)	20(100)	20(100)	Trace	Trace
Rockfish															
Pacific ocean perch	450(95)	700(95)	800(95)	1100(100)	50(100)	Trace	40(100)	Trace	Trace	Trace	1500(95)	600(95)	25(90)	20(100)	Trace
Red	50(95)	40(90)	20(75)	50(85)	---	Trace	40(100)	Trace	Trace	Trace	1500(95)	600(95)	25(90)	20(100)	Trace
King crab															
Legal-size males	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Small males	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Females	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Note: For explanation of footnotes, see p. 24.

Table 2 - Fishing of Otter-Trawl Drags Made During the Second Period (July 13 to September 8, 1954) (Continued)

Drag No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45		
Date	7/23/54	7/22/54	7/23/54	7/23/54	7/23/54	7/23/54	7/25/54	7/25/54	7/25/54	7/26/54	7/26/54	7/26/54	7/26/54	7/26/54	7/26/54		
Latitude N. Longitude W.	59°49.9' 145°06.1'	59°52.2' 145°20.1'	60°04.2' 145°57.2'	60°08.3' 145°51.9'	60°09.6' 145°01.5'	60°09.5' 145°07.1'	60°14.2' 146°30.5'	60°17.4' 146°24.6'	60°16.5' 146°19.1'	60°19.3' 146°10.0'	60°18.3' 145°59.1'	60°17.8' 145°49.6'	60°16.3' 145°43.1'	60°14.3' 145°33.3'	60°12.3' 145°28.7'		
Course, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	341° Low Flood 53-95 EV. M. Clear 60	330° High Ebb 53-55 EV. M. Clear 60	260° 244° 20-24 bu. M. & S. Clear 60	252° Ebb 11-12 bu. M. Mud 33	244° Ebb 11-15 bu. M. & S. Clear 60	261° Low 26-28 S. & hrd. Clear 60	050° Low 11-14 bu. M. & S. Clear 60	059° Low 26-28 S. & hrd. Clear 60	039° Low 11-14 bu. M. & S. Clear 60	066° Flood 20-22 S. & hrd. Clear 60	080° Flood 21-21 EV. M. & S. Clear 60	073° Flood 12-13 EV. M. & S. Clear 60	097° Ebb 12-14 EV. M. & S. Clear 60	083° Flood 25-27 EV. M. & S. Clear 60	100° Ebb 25-27 EV. M. & S. Clear 60		
Estimated total catch in pounds Catch in pounds (% marketable):	300	300	300	650	650	100	2000	700	2300	1000	2000	1600	1100	1950	1800		
Flat fish																	
Dover	Trace 3/	---	---	---	---	---	---	---	Trace	---	---	---	---	---	---		
English	---	---	---	---	Trace	---	50(90)	40(90)	Trace	---	Trace	---	Trace	---	---		
Flathead	Trace	25(50) (4) 2/	Trace	25(75) (14)	---	---	50(50)	50(50)	Trace	25(90) (1)	Trace	25(90) (2)	Trace	25(90) (3)	Trace		
Halibut	---	---	---	Trace	---	Trace	---	Trace	---	---	---	---	---	---	---		
Lemon	---	---	---	---	---	---	---	Trace	---	---	---	---	---	---	---		
Rex	---	---	---	---	---	---	---	Trace	---	---	---	---	---	---	---		
Rock	---	---	---	---	---	---	---	Trace	---	---	---	---	---	---	---		
Sand	---	---	---	---	Trace	Trace	30(95)	40(90)	20(80)	20(80)	Trace	100(95)	Trace	800(95)	Trace		
Starry flounder	---	---	---	35(90) 100(95)	50(95)	40(90)	1300(90) 100(90)	50(90)	1800(90) 400(90)	600(90)	50(95)	100(95)	Trace	35(100)	Trace		
Arrow-toothed flounder (turbot)	75(90)	100(90)	50(90)	---	---	---	---	20(90)	---	---	---	---	---	---	---		
Round fish																	
Pollock	Trace	---	Trace	30(5)	---	---	25(0)	---	---	Trace	---	75(50)	---	Trace	---		
Sablefish	60(65)	Trace	Trace	---	---	---	---	---	---	Trace	---	50(85)	---	Trace	---		
True cod	50(75)	Trace	Trace	30(5)	---	---	50(50)	---	---	Trace	---	---	---	---	---		
Rookfish																	
Pacific ocean perch	Trace	50(100)	Trace	---	---	---	---	---	---	---	---	---	---	---	---		
Red	Trace	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
King crab																	
Legal-size males	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Small males	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Females	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Drag No.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60		
Date	7/26/54	7/27/54	7/27/54	7/27/54	7/27/54	7/27/54	7/27/54	7/28/54	7/28/54	7/28/54	7/28/54	7/29/54	7/29/54	7/29/54	7/29/54		
Latitude N. Longitude W.	60°12.1' 145°21.1'	60°10.3' 145°17.5'	60°08.8' 145°12.3'	60°07.6' 145°08.3'	60°09.1' 145°17.2'	60°07.8' 145°23.3'	60°11.8' 145°32.8'	60°11.1' 145°42.1'	60°11.2' 145°43.5'	60°11.9' 145°46.1'	59°51.7' 145°45.9'	59°16.5' 145°44.4'	59°18.0' 145°41.8'	59°18.9' 145°41.9'	59°18.0' 145°16.9'		
Course, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	093° Flood 10-12 EV. M. & S. Clear 60	094° Flood 24-26 EV. M. & S. Clear 60	070° Flood 25-25 EV. M. & S. Clear 60	261° Ebb 34-36 EV. M. & S. Clear 60	205° Ebb 51-54 EV. M. Clear 60	261° Ebb 36-40 EV. M. Clear 60	263° Flood 40-42 EV. M. Clear 60	263° Flood 40-42 EV. M. Clear 60	263° Flood 40-42 EV. M. Clear 60	276° Flood 52-54 EV. M. Clear 60	328° Flood 52-54 EV. M. Clear 60	269° Ebb 51-54 EV. M. Clear 60	274° Flood 52-54 EV. M. Clear 60	320° Ebb 46-48 EV. M. Clear 60	295° Ebb 49-52 EV. M. Clear 60	247° Ebb 36-38 G. & Sh. Clear 60	
Estimated total catch in pounds Catch in pounds (% marketable):	1900	2000	1500	650	450	600	125	325	1000	450	500	2100	75	900	200		
Flat fish																	
Dover	---	---	125(95) Trace 3/ (25) 2/	35(95) Trace (51)	Trace	Trace	Trace	25(85) (7)	20(90) (9)	Trace	20(75) (5)	Trace	100(75) (7)	Trace	50(75) (23)	---	
English	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Flathead	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Halibut	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Lemon	---	---	Trace	Trace	---	---	---	---	---	---	---	---	---	---	---	---	
Rex	---	---	---	---	Trace	---	---	---	---	---	---	---	---	---	---	25(95)	
Rock	---	---	---	---	Trace	---	---	---	---	---	---	---	---	---	---	---	
Sand	Trace	50(75)	900(85)	500(80)	Trace	35(90)	30(90)	35(95)	100(95)	100(95)	100(95)	300(95)	Trace	150(95)	50(95)	---	
Starry flounder	50(95)	50(95)	25(95)	---	---	---	---	---	---	---	---	---	---	---	---	---	
Arrow-toothed flounder (turbot)	50(95)	50(95)	25(95)	---	---	---	---	---	---	---	---	---	---	---	---	---	
Round fish																	
Pollock	---	Trace	---	---	---	40(25)	30(75)	30(75)	120(90)	Trace	25(0)	175(100)	---	100(75)	---	---	
Sablefish	---	---	75(90)	---	20(0)	Trace	150(70)	75(100)	65(75)	50(90)	Trace	25(50)	60(90)	75(0)	25(75)	---	---
True cod	---	---	---	20(0)	Trace	150(70)	75(100)	65(75)	50(90)	Trace	20(100)	200(100)	1100(100)	---	---	---	---
Rookfish																	
Pacific ocean perch	---	---	---	---	---	Trace	---	---	30(100)	20(100)	20(100)	200(100)	1100(100)	---	---	---	---
Red	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
King crab																	
Legal-size males	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Small males	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Females	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Note: For explanation of footnotes, see p. 24.

Table 2 - Fishing of Otter-Trawl Drags Made During the Second Period (July 13 to September 8, 1954) (Continued)

Drag No.	61	62	63	64	65	66	67	68	69	70	71	72	73	74
Date	8/22/54	8/22/54	8/22/54	8/22/54	8/21/54	8/21/54	8/21/54	8/21/54	8/25/54	8/25/54	8/25/54	8/25/54	8/25/54	8/30/54
Latitude N. Longitude W.	60°18.3' 116°43.4'	60°07.8' 116°39.7'	59°54.9' 116°56.5'	59°56.0' 117°29.5'	60°25.2' 117°29.5'	60°31.4' 117°10.5'	60°28.6' 118°17.1'	59°44.1' 118°11.2'	59°34.4' 118°15.2'	59°31.8' 118°26.5'	59°37.7' 118°12.1'	60°32.7' 116°42.1'	60°32.4' 116°42.1'	60°39.7' 116°20.0'
Course, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	156° Fbb 96-101 EV. M. & S. Clear 60	183° Ebb 62-66 EV. M. Clear 60	342° Flood 81-84 EV. M. Clear 60	335° Flood 82-95 EV. M. Clear 60	152° Ebb 96-106 EV. M. Clear 60	100° Flood 101-111 EV. M. Clear 60	118° Flood 90-94 EV. M. Clear 60	322° Ebb 110-122 EV. M. & S. Clear 60	287° Flood 106-117 EV. M. & S. Snag 30	272° Ebb 113-118 EV. M. & S. Clear 60	041° Flood 79-88 EV.-bu. M. Clear 60	245° Ebb 69-83 EV.-bu. M. Clear 60	027° Flood 66-77 EV. M. Clear 60	
Estimated total catch in pounds Catch in pounds (% marketable):	600	300	1800	1100	450	400	400	4500	5000	5000	6800	1200	750	900
Flat fish:														
Dover	---	---	---	Trace	---	---	---	---	Trace	Trace	Trace	---	---	---
English	Trace 3/	---	---	---	---	---	---	---	---	---	Trace	---	---	Trace
Flathead	50(100)	50(85)	50(60)	150(90)	60(50)	35(50)	20(50)	100(70)	75(50)	50(50)	50(60)	50(80)	75(65)	100(75)
Halibut	(4) 2/	(5)	(1)	(3)	(1)	(1)	(1)	(4)	(1)	(2)	(1)	(2)	(1)	---
Lemon	---	---	---	---	---	---	---	---	---	---	Trace	---	---	---
Rex	---	---	---	---	---	---	---	---	---	---	---	---	Trace	---
Rock	---	---	---	---	---	---	---	---	---	---	---	---	---	Trace
Sand	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Starry flounder	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Arrow-toothed flounder (turbot)	60(70)	150(75)	400(80)	500(70)	25(30)	125(65)	100(95)	700(85)	1100(90)	700(85)	1700(90)	300(85)	100(70)	100(70)
Round fish:														
Pollack	75(60)	trace	30(25)	50(60)	Trace	25(25)	75(50)	225(25)	100(50)	90(60)	150(65)	450(70)	150(75)	350(75)
Sablefish	---	trace	Trace	50(100)	75(100)	---	---	40(95)	625(95)	---	1000(95)	---	---	Trace
True cod	65(100)	50(100)	50(85)	75(100)	60(95)	Trace	50(95)	55(100)	100(95)	90(100)	200(100)	100(95)	35(95)	40(90)
Rockfish:														
Pacific ocean perch	Trace	70(100)	1000(100)	60(100)	70(100)	Trace	Trace	3100(100)	2300(100)	3800(100)	3200(100)	Trace	Trace	Trace
Red	---	---	Trace	---	Trace	---	---	Trace	Trace	Trace	Trace	---	Trace	---
King crab:														
Legal-size males	---	---	---	---	---	---	---	---	---	---	(12)	(1)	(6)	---
Small males	---	---	---	---	---	---	---	---	---	---	(3)	---	---	---
Females	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drag No.	75	76	77	78	79	80	81	82	83	84	85	86	87	88
Date	8/30/54	8/30/54	8/30/54	8/31/54	8/31/54	8/31/54	8/31/54	9/1/54	9/1/54	9/1/54	9/2/54	9/2/54	9/2/54	9/2/54
Latitude N. Longitude W.	60°26.7' 116°25.3'	60°35.5' 116°37.9'	60°36.2' 116°45.7'	60°36.7' 117°01.2'	60°06.2' 117°10.0'	60°05.8' 117°03.8'	59°55.5' 116°45.4'	59°50.1' 116°26.8'	59°44.1' 116°47.0'	59°36.7' 116°55.5'	60°15.7' 116°46.3'	60°17.3' 116°33.9'	60°32.9' 116°38.5'	60°32.6' 116°37.4'
Course, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	016° Flood 72-73 EV. M. Clear 60	058° High 69-73 bu. M. Clear 60	167° Ebb 219-233 EV. M. Clear 60	029° Flood 116-150 EV. M. & S. Clear 60	020° Flood 116-121 EV. M. & S. Clear 60	176° High 137-151 EV. M. & S. Clear 60	135° Ebb 36-37 EV. M. & S. Clear 60	196° Low 36-40 EV. M. & S. Clear 60	318° Flood 116-118 EV. M. & S. Snag 60	304° Flood 83-98 EV. M. & S. Clear 60	062° Flood 101-108 EV. M. & S. Clear 60	063° High 55-62 EV. M. & S. Clear 60	012° Ebb 61-75 EV. M. Clear 60	
Estimated total catch in pounds Catch in pounds (% marketable):	2000	1600	900	1000	1500	1700	225	150	50	1600	2200	400	---	500
Flat fish:														
Dover	---	---	Trace	---	---	Trace	---	---	---	---	---	---	---	---
English	Trace 3/	---	---	---	---	---	---	---	---	---	---	---	---	---
Flathead	125(80)	250(95)	50(95)	75(90)	50(85)	75(95)	---	(3)	(20)	Trace	Trace	50(85)	Trace	50(80)
Halibut	---	(2)	---	---	---	---	---	---	(1)	---	---	---	---	(8)
Lemon	---	Trace	---	---	---	Trace	---	Trace	---	Trace	---	Trace	Trace	Trace
Rex	---	---	---	---	---	Trace	Trace	Trace	Trace	Trace	---	---	---	---
Rock	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sand	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Starry Flounder	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Arrow-toothed flounder (turbot)	150(65)	300(75)	250(95)	200(85)	900(90)	1200(90)	---	Trace	Trace	700(85)	75(95)	70(95)	---	50(75)
Round fish:														
Pollack	900(60)	600(75)	50(65)	50(85)	75(85)	50(85)	50(85)	50(85)	50(85)	20(80)	1200(90)	140(75)	---	300(50)
Sablefish	---	---	25(25)	75(90)	60(85)	45(100)	---	---	---	20(80)	80(90)	---	---	35(95)
True cod	250(85)	75(95)	---	225(95)	200(75)	85(100)	---	Trace	---	25(95)	100(90)	---	---	Trace
Rockfish:														
Pacific ocean perch	Trace	Trace	Trace	Trace	20(90)	Trace	---	Trace	---	225(95)	50(95)	Trace	---	Trace
Red	---	---	---	---	Trace	Trace	---	---	---	175(75)	Trace	---	---	Trace
King crab:														
Legal-size males	(10) 2/	(1)	(1)	---	---	---	---	---	---	---	(4)	(5)	(3)	---
Small males	(8)	(2)	(2)	---	---	---	---	---	---	---	(2)	(3)	(3)	---
Females	(30)	(2)	(2)	---	---	---	---	---	---	---	(4)	(3)	(3)	---
1/ Course given is between starting point and end point. 2/ Brackets figures indicate number of individuals instead of pounds. 3/ "Trace" = less than 20 pounds of fish.	Symbols For Types of Bottom													
	bk. M. = black mud	EV. M. = gray mud	hrd. = hard	sh. = shell	bu. M. = blue mud	G. = gravel	S. = sand							

Table 3 - Fishing Log of Beam-Trawl Drags Made During the First Period (February 26 to April 6, 1954)

Drag No.	103	104	105	106	107	108	109	110	111
Date	4/3/54	4/3/54	4/3/54	4/3/54	4/3/54	4/4/54	4/4/54	4/4/54	4/5/54
Latitude N. Longitude W.	60°40.1' 146°17.4'	60°41.0' 146°14.7'	60°41.8' 146°11.7'	60°43.1' 146°08.6'	60°45.2' 146°05.2'	60°45.3' 146°28.5'	60°44.8' 146°22.3'	60°45.3' 146°28.5'	60°47.1' 146°41.6'
Course, magnetic ^{1/}	022°	032°	021°	018°	021°	075°	069°	205°	068°
Tide	Flood	Flood	High	Ebb	Ebb	Flood	Flood	Ebb	Flood
Depth range in fathoms	74-80	80-88	91-104	88-104	48-66	68-72	68-76	70-74	85-101
Type of bottom	bu. M.	M.	M.	M.	M.	hrd.	stk.	sft.	stk.
Trawling bottom	Clear								
Time on bottom in minutes	30	30	60	60	30	60	68	60	60
Shrimp catch in pounds:									
Pink	4(102) ^{2/}	18(123)	36(120)	20(123)	8(118)	36(87)	123(94)	42(95)	25(105)
Side-stripe	3(48)	16(41)	28(31)	13(35)	3(39)	Trace	31(41)	13(40)	5(31)
Coonstripe	---	Trace ^{3/}	Trace	4(44)	1(47)	Trace	---	---	---
Total shrimp catch in pounds	7	34	64	37	12	36	154	55	30
Total shrimp catch hourly basis	14	68	64	37	24	36	136	55	30
King crab ^{4/}									
Legal-size males	---	---	---	(1) ^{5/}	---	---	---	---	---
Small males	---	---	---	---	---	---	(4)	---	---
Females	---	---	---	---	---	---	(2)	---	---
Remarks	---	---	---	---	Curved	---	---	---	---
Drag No.	112	113	114	115	116	117	118	119	120
Date	4/5/54	4/5/54	4/5/54	4/5/54	4/6/54	4/6/54	4/6/54	4/6/54	4/6/54
Latitude N. Longitude W.	60°47.4' 146°37.3'	60°47.5' 146°33.0'	60°48.3' 146°25.0'	60°51.0' 146°14.7'	60°37.6' 146°06.5'	60°37.4' 146°05.0'	60°39.0' 146°02.0'	60°35.1' 146°03.5'	60°37.7' 145°45.0'
Course, magnetic ^{1/}	066°	072°	068°	048°	216°	221°	Circular	225°	047°
Tide	Flood	Flood	Flood	Ebb	Flood	Ebb	High	Ebb	High
Depth range in fathoms	94-106	104-108	112-113	54-88	44-52	42-60	22-48	80-88	30-40
Type of bottom	stk.	stk.	M.	M.	sft. M.	sft. M.	stk.	sft. M.	M. & G.
Trawling bottom	Clear								
Time on bottom in minutes	60	60	60	60	60	60	30	60	31
Shrimp catch in pounds:									
Pink	4(85) ^{2/}	7(83)	---	65(74) ^{3/}	76(69)	---	---	18(88)	---
Side-stripe	6(37)	5(36)	---	Trace ^{3/}	---	---	7(34)	---	---
Coonstripe	---	---	---	Trace	---	---	---	---	---
Total shrimp catch in pounds	10	12	---	65	76	---	25	25	25
Total shrimp catch hourly basis	10	12	---	65	76	---	25	25	25
King crab ^{4/}									
Legal-size males	---	---	(1) ^{5/}	---	---	---	---	---	---
Small males	---	---	(2)	---	---	---	---	---	---
Females	---	---	(2)	---	---	---	---	---	---
Remarks	---	---	Curved	---	Curved	---	---	---	---

^{1/} Course given is between starting point and end point.^{2/} Figures in parentheses indicate number of whole shrimp per pound.^{3/} "Trace" - less than one pound of shrimp.^{4/} Most king crab taken during the first period were soft-shelled.^{5/} Bracketed figures indicate number of individuals instead of pounds.

Symbols for Types of Bottom
 bu. M. = blue mud M. & G. = mud and gravel stk. = sticky
 M. = mud hrd. = hard sft. = soft

Table 4 - Fishing Log of Beam-Trawl Drags Made During the Second Period (July 13 to September 8, 1954)

Drag No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Date	8/1/54	8/1/54	8/1/54	8/1/54	8/1/54	8/2/54	8/2/54	8/2/54	8/3/54	8/3/54	8/3/54	8/3/54	8/4/54	8/4/54	
Latitude N. Longitude W.	60°35.2' 115°59.1'	60°38.1' 115°51.0'	60°40.3' 115°52.2'	60°38.7' 115°54.3'	60°38.7' 115°54.3'	60°35.0' 115°53.6'	60°32.3' 115°51.2'	60°31.7' 115°51.9'	60°37.8' 115°52.2'	60°33.2' 115°51.8'	60°32.0' 115°51.7'	60°32.7' 115°51.6'	60°34.1' 115°53.7'	60°34.1' 115°55.4'	60°34.1' 115°56.4'
Course, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	043° Flood 114-121 gy. M. Clear 30	216° Flood 37-44 bu. M. Clear 30	198° High Ebb 22-27 gy. M. Clear 30	Circular Ebb 81-85 gy. M. Clear 30	Circular Ebb 76-81 gy. M. Clear 30	235° Low 81-85 gy. M. Clear 30	210° Ebb 78-83 gy. M. Clear 30	215° Low 59-71 gy. M. & S. Clear 30	037° Flood 70-72 gy. M. & S. Clear 30	000° Flood 50-58 gy. M. & S. Clear 60	024° Flood 54-58 gy. M. Clear 30	342° High 69-77 bu. gy. M. Clear 30	179° Flood 90-93 gy.-bu. M. Clear 30	184° Flood 90-101 gy.-bu. M. Clear 30	
Shrimp catch in pounds: Pink Side-stripe Coon-stripe Total shrimp catch in pounds Total shrimp catch hourly basis	---	54(67) 2/ ---	55(91) ---	---	Trace ---	---	63(90) 12(40) Trace ---	59(74) 11(35) 2(40) Trace 75 72 76 150 144	72(84) 11(43) 2(40) Trace 173 152 173	166(76) 7(35) Trace 173 173	Trace Trace 165 330	155(80) 10(58) Trace 165 330	57(54) 8(44) 8(22) 25 116	16(59) 9(55) 7(74) 35 290	28(88) 7(74) -- 70
King crab Legal-size males Small males Females	---	00 2/ (6) (3)	---	---	---	---	---	00 (2) 10 10	(2) 10 10	(1) 10 10	---	00 00	00 00	00 00	--
Remarks	Net off bottom	---	Net off bottom	---	Net off bottom	---	Net off bottom	---	Net off bottom	---	Net off bottom	---	Curved	Abrupt rise	--
Drag No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Date	8/4/54	8/4/54	8/5/54	8/5/54	8/5/54	8/5/54	8/5/54	8/5/54	8/6/54	8/6/54	8/6/54	8/6/54	8/6/54	8/6/54	
Latitude N. Longitude, W.	60°43.4' 115°57.0'	60°42.8' 115°58.5'	60°41.7' 115°59.8'	60°41.0' 115°60.5'	60°39.3' 115°62.1'	60°35.3' 115°62.6'	60°35.5' 115°62.8'	60°32.8' 115°61.0'	60°33.4' 115°61.5'	60°34.9' 115°61.2'	60°34.7' 115°61.5'	60°34.7' 115°61.2'	60°35.8' 115°62.0'	60°35.0' 115°62.3'	
Course, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	220° High 99-107 gy.-bu. M. Clear 30	057° Ebb 97-106 gy.-bu. M. Kelp 30	189° Ebb 22-25 gy.-bu. M. Clear 30	207° Low 41-48 gy.-bu. M. Clear 30	196° Flood 52-56 gy.-bu. M. Clear 30	233° Low 32-38 gy.-bu. M. Clear 30	060° Flood 78-80 gy.-bu. M. Clear 30	061° High 79-81 gy.-bu. M. Clear 30	267° Ebb 58-60 gy.-bu. M. Clear 30	242° Ebb 76-77 gy.-bu. M. Clear 30	241° Low 73-75 gy.-bu. M. Clear 30	066° Flood 59-65 gy.-bu. M. Clear 30	066° Ebb 81-86 gy.-bu. M. Clear 30		
Shrimp catch in pounds: Pink Side-stripe Coon-stripe Total shrimp catch in pounds Total shrimp catch hourly basis	---	48(78) 2/ 18(66)	Trace Trace Trace Trace 132	Trace Trace Trace Trace ---	14(66) Trace 14 28	73(89) 2(104)	84(86) 4(91)	9(68) Trace 89(74) Trace 176	89(74) Trace 9 89 178	54(90) 4(75)	57(86) 2(72)	53(84) 5(38)	28(83) --	78(84) 3(64)	
King crab Legal-size males Small males Females	---	---	---	---	---	---	---	00 (2) 2/	---	00 00	00 00	00 (2)	00 00	00 00	(2)
Remarks	Net off bottom	---	Net bogged down	---	---	---	---	---	---	---	---	---	Curved	---	--
Drag No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Date	8/8/54	8/8/54	8/8/54	8/8/54	8/8/54	8/9/54	8/9/54	8/10/54	8/10/54	8/10/54	8/10/54	8/10/54	8/10/54	8/10/54	
Latitude N. Longitude, W.	60°34.1' 115°05.9'	60°33.6' 115°07.9'	60°33.3' 115°10.5'	60°33.2' 115°16.2'	60°32.7' 115°20.1'	60°31.1' 115°28.1'	60°29.5' 115°35.4'	60°30.3' 115°36.0'	60°30.6' 115°33.5'	60°29.7' 115°32.6'	60°29.8' 115°29.8'	60°28.8' 115°29.1'	60°20.5' 115°16.3'	60°22.4' 115°19.0'	
Course, magnetic 1/ Tide Depth range in fathoms Type of bottom Trawling bottom Time on bottom in minutes	199° Ebb 81-85 gy.-bu. M. Clear 30	228° Low 80-83 bu.-gy. M. Clear 30	239° Flood 78-80 bu.-gy. M. Clear 30	079° Flood 60-63 bu. M. Clear 30	087° Flood 40-44 bu. M. Clear 30	018° Flood 75-78 bu. M. Clear 30	015° Flood 68-71 bu. M. Clear 30	020° Flood 70-72 bu. M. Clear 30	014° High 68-72 bu. M. Clear 30	012° Ebb 61-63 gy. M. Clear 30	006° Ebb 67-73 gy. M. Clear 30	298° Ebb 77-85 gy. M. Clear 26	022° Low 63-67 gy. M. Clear 30		
Shrimp catch in pounds: Pink Side-stripe Coon-stripe Total shrimp catch in pounds Total shrimp catch hourly basis	27(79) 2/ 4(69)	45(86) 8(73)	48(91) 6(68)	19(82) --	Trace Trace Trace Trace 30	47(82) 2(102)	33(84) 2(102)	18(72) Trace Trace Trace 70	11(75) 3(19)	9(73) Trace Trace Trace 22	9(74) Trace Trace Trace 21	53(62) 4(32)	75(75) 2(24)	141(76) 14(55)	
King crab Legal-size males Small males Females	(2) 2/ (2)	(2) (2)	---	---	---	---	---	---	---	---	---	---	---	(2) (2)	(2) (2)
Remarks	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--

Note: For explanation of footnotes, see p. 27.

Table 4 - Fishing Log of Beam-Trawl Drags Made During the Second Period (July 13 to September 8, 1954) (Continued)

Drag No.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Date	8/10/54	8/11/54	8/11/54	8/12/54	8/12/54	8/12/54	8/12/54	8/12/54	8/13/54	8/13/54	8/13/54	8/13/54	8/13/54	8/14/54	8/14/54
Latitude, N. Longitude, W.	60°22.7' 114°12.6'	60°35.3' 114°00.0'	60°15.8' 114°18.6'	60°16.9' 114°37.2'	60°18.0' 114°35.7'	60°17.4' 114°31.2'	60°17.7' 114°26.9'	60°18.5' 114°20.9'	60°15.5' 114°11.9'	60°10.0' 114°14.8'	61°05.4' 114°29.7'	61°05.8' 114°29.3'	61°05.7' 114°19.6'	61°06.4' 114°19.8'	
Course, magnetic ^{1/}	016°	052°	170°	026°	091°	056°	051°	019°	058°	211°	191°	055°	333°	276°	
Tide	Flood	High	Ebb	Ebb	Ebb	Ebb	Ebb	Low	Flood	Ebb	Ebb	Ebb	Flood	Flood	
Depth range in fathoms	60-64	116-122	20-24	96-100	95-108	106-107	111-117	108-112	60-76	54-76	197-209	140-141	138-139	97-104	
Type of bottom	Gy. M.	Gy. M.	bu. M.	bu.-gy. M.	bu.-gy. M.	bu.-gy. M.	bu.-gy. M.	gy. M.	gy. M.	bu.-gy. M.	bu. M.	bu. M.	gy. M.	gy. M.	
Trawling bottom	Clear	Clear													
Time on bottom in minutes	30	30	30	30	30	30	30	30	30	30	30	30	30	15	30
Shrimp catch in pounds:															
Pink	Trace ^{2/}	60(90) ^{2/}	---	32(58)	33(70)	24(88)	15(55)	13(61)	8(58)	17(61)	4(74)	Trace	3(73)	3(71)	
Side-stripe	Trace	42(57)	---	8(39)	11(40)	17(45)	6(35)	6(35)	Trace	4(48)	4(48)	2(50)	1(29)	3(30)	
Coon-stripe	Trace	---	---	Trace	10	11	30	19	Trace	---	---	---	Trace	---	
Total shrimp catch in pounds	---	102	204	80	88	82	60	38	8	17	8	2	4	6	
Total shrimp catch hourly basis	---	---	---	---	---	---	---	34	16	4	---	15	12		
King crab															
Legal-size males	---	(1)	---	(1)	---	(1)	---	(1)	---	---	---	---	---	---	---
Small males	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Females	(2) ^{3/}	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---
Remarks	---	---	Curved	---	---	---	---	---	Curved	Curved	---	---	---	Curved	---
Drag No.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Date	8/14/54	8/14/54	8/15/54	8/15/54	8/17/54	8/17/54	8/17/54	8/17/54	8/17/54	8/17/54	8/18/54	8/18/54	8/18/54	8/18/54	8/18/54
Latitude, N. Longitude, W.	61°07.4' 114°29.0'	60°36.0' 114°39.5'	60°47.6' 114°37.4'	60°46.9' 114°41.1'	60°34.1' 114°01.5'	60°33.6' 114°00.8'	60°36.9' 114°08.9'	60°36.7' 114°09.6'	60°37.1' 114°10.1'	60°36.7' 114°04.0'	60°33.7' 114°13.4'	60°34.4' 114°11.3'	60°35.8' 114°19.7'	60°36.5' 114°19.1'	
Course, magnetic ^{1/}	236°	048°	228°	235°	025°	027°	027°	040°	230°	240°	032°	061°	052°	065°	
Tide	Flood	Ebb	Flood	Flood	Flood	Flood	Flood	High	Ebb	Flood	Flood	Flood	Flood	082°	
Depth range in fathoms	138-139	58-64	85-87	87-105	94-110	56-66	50-56	40-45	50-51	75-78	61-66	61-66	61-66	61-66	
Type of bottom	bu.-gy. M.	Gy. M.	gy. M.	gy. M.	gy. M.	bu.-gy. M.	bu.-gy. M.	gy. M.	gy. M.	gy. M.	gy. M.	gy. M.	gy. M.	gy. M.	
Trawling bottom	Clear	Clear	Clear	---	Clear	Clear									
Time on bottom in minutes	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Shrimp catch in pounds:															
Pink	6(74) ^{2/}	2(63)	39(83)	1(17)	11(54)	1(67)	33(62)	22(62)	31(64)	44(63)	41(67)	131(96)	103(99)	7(74)	
Side-stripe	5(68) ^{2/}	Trace	1(17)	---	2(50)	1(78)	Trace	Trace	Trace	Trace	7(52)	1(22)	1(22)	Trace	Trace
Coon-stripe	---	---	---	---	13	5	33	22	44	48	131	107	8	8	8
Total shrimp catch in pounds	11	2	10	80	26	10	66	62	88	96	262	214	16	16	16
Total shrimp catch hourly basis	22	4	80	---	---	---	---	---	---	---	---	---	---	---	---
King crab															
Legal-size male	---	(5) ^{3/}	---	---	(5)	(1)	---	---	---	(3)	(1)	(1)	(1)	---	---
Small males	---	(3)	---	---	(1)	(1)	---	---	---	(1)	(1)	(1)	(1)	---	---
Females	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Remarks	Curved	---	---	Net off bottom	---	Gear fouled	Curved	Curved	Curved	---	---	---	---	---	---
Drag No.	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Date	8/18/54	8/18/54	8/18/54	8/19/54	8/19/54	8/19/54	8/19/54	8/19/54	9/6/54	9/7/54	9/8/54	9/8/54	9/8/54	9/8/54	9/8/54
Latitude, N. Longitude, W.	60°26.0' 114°23.9'	60°44.7' 114°23.4'	60°31.2' 114°31.3'	60°30.4' 114°35.1'	60°30.2' 114°35.1'	60°33.9' 114°34.9'	60°35.4' 114°35.2'	60°35.5' 114°36.1'	60°32.4' 114°36.1'	61°02.1' 114°35.2'	60°55.7' 114°27.9'	60°30.6' 114°29.3'	60°28.4' 114°29.2'	60°26.3' 114°30.6'	
Course, magnetic ^{1/}	213°	226°	204°	288°	312°	060°	065°	113°	012°	181°	151°	151°	158°	183°	
Tide	Ebb	Ebb	Ebb	Flood	Flood	Flood	Flood	High	High	High	Ebb	Ebb	Ebb	183°	
Depth range in fathoms	69-75	72-73	17-52	63-66	73-78	74-76	68-72	109-120	209-215	105-106	93-102	76-81	88-96	Ey. M.	
Type of bottom	Gy. M.	Gy. M.	Gy. M. & S.	bu.-gy. M.	Gy. M.	Gy. M.	Gy. M.	gy. M. & bld.	gy. M. & bld.	gy. M. & S.	Clear				
Trawling bottom	Clear	Mud	Clear	Clear	Clear	Clear	Clear	Clear	Clear						
Time on bottom in minutes	30	30	30	30	30	30	30	26	30	30	30	30	30	30	30
Shrimp catch in pounds:															
Pink	97(66) ^{2/}	14(77)	Trace ^{4/}	17(80)	32(68)	13(66)	11(56)	5(57)	26(89)	66(83)	8(66)	34(103)	38(105)	41(67)	24(72)
Side-stripe	3(35) ^{2/}	2(32)	Trace	Trace	13(31)	14(32)	11	11	Trace	12(52)	1(22)	12(52)	13(58)	Trace	23(52)
Coon-stripe	---	---	---	---	15	17	11	22	28	18	16	51	102	41	47
Total shrimp catch in pounds	100	16	92	---	94	90	94	56	56	18	92	82	94	82	
Total shrimp catch hourly basis	200	---	---	---	---	---	---	---	---	---	---	---	---	---	---
King crab															
Legal-size male	(2) ^{3/}	---	---	---	---	---	---	---	---	(1)	---	---	---	---	---
Small males	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Females	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Remarks	---	---	Curved	---	---	---	---	---	Beam broke	Net torn	Curved	---	---	---	---

^{1/} Course given is between starting point and end point.
^{2/} Figures in parentheses indicate number of whole shrimp per pound.
^{3/} Bracketsed figures indicate number of individuals instead of pounds.

^{4/} "Trace" - less than one pound of shrimp.
^{5/} Includes two pounds of spot shrimp.

Symbols for Types of Bottom
 bu. M. = blue mud bld. = boulders Sh. = shell
 Gy. M. = gray mud S. = sand St. = stones

Table 5 - King-Crab-Pot Catches--Second Period (July 13 to September 8, 1954)

Vicinity	Set Number	Date Out	Date In	Tide	Depth in Fathoms	Number of Pots	Total Hours Out	Bait	King Crab Catch			Tanner Crab Catch	
									Legal Males		Small Males	Females	
									No.	Avg. Wt. Lbs.			
Olsen Bay	1	8/2/54	8/4/54	Ebb	11-38	10	15 $\frac{1}{2}$	Herring	1	7.00	---	28	23
Port Gravina, east of Red Head	2	8/4/54	8/5/54	Flood	32-45	10	27	Herring	6	9.75	8	8	42
Sheep Bay	3	8/5/54	8/6/54	Flood	22-61	10	26 $\frac{1}{2}$	Herring	3	8.75	33	46	88
Orca Bay, off Canoe Passage	4	8/8/54	8/11/54	Flood	82-85	9	65	Herring and scrap fish	23	10.47	3	17	30
Port Gravina, near entrance	5	8/11/54	8/14/54	Ebb	68-73	9	75	Herring and scrap fish	23	11.72	2	26	40
Orca Bay, off Red Head	6	8/14/54	8/15/54	High	56-70	9	24	Herring and scrap fish	13	9.91	2	38	104
Orca Bay, off entrance of Sheep Bay	7	8/15/54	8/17/54	Flood	56-78	9	16 $\frac{1}{2}$	Herring and scrap fish	5	11.66	4	10	96
Esther Passage	8	9/4/54	9/5/54	Ebb	52-90	9	20	Herring and scrap fish	30	7.88	8	28	17
College Fiord, near Golden	9	9/5/54	9/6/54	High	43-68	9	23 $\frac{1}{2}$	Herring and scrap fish	41	8.10	15	34	6
Pigot Bay	10	9/6/54	9/7/54	Flood	16-72	9	20	Herring and scrap fish	22	7.10	16	5	68

Table 6 - Shrimp-Trap Catches--Second Period (July 13 to September 8, 1954)

Vicinity	Set Number	Date Out	Date In	Tide	Depth in Fathoms	Number of Traps	Total Hours Out	Bait	Shrimp Catch			Total Shrimp Catch in Pounds	Remarks
									Spot		Coon-Stripe		
									Pounds	No. of Whole Shrimp Per Pound	Pounds	No. of Whole Shrimp Per Pound	
Olsen Bay	1	8/2/54	8/4/54	Ebb	11-34	17	12	Herring	---	---	---	---	---
Landlocked Bay	2	8/12/54	8/15/54	Flood	9-60	40	77	Herring	---	---	1	49	1
College Fiord, near Golden	3	9/5/54	9/6/54	Ebb	30-56	12	22 $\frac{1}{2}$	Herring and scrap fish	4 $\frac{1}{2}$	5 $\frac{1}{2}$	42 $\frac{1}{2}$	29	46-3/4