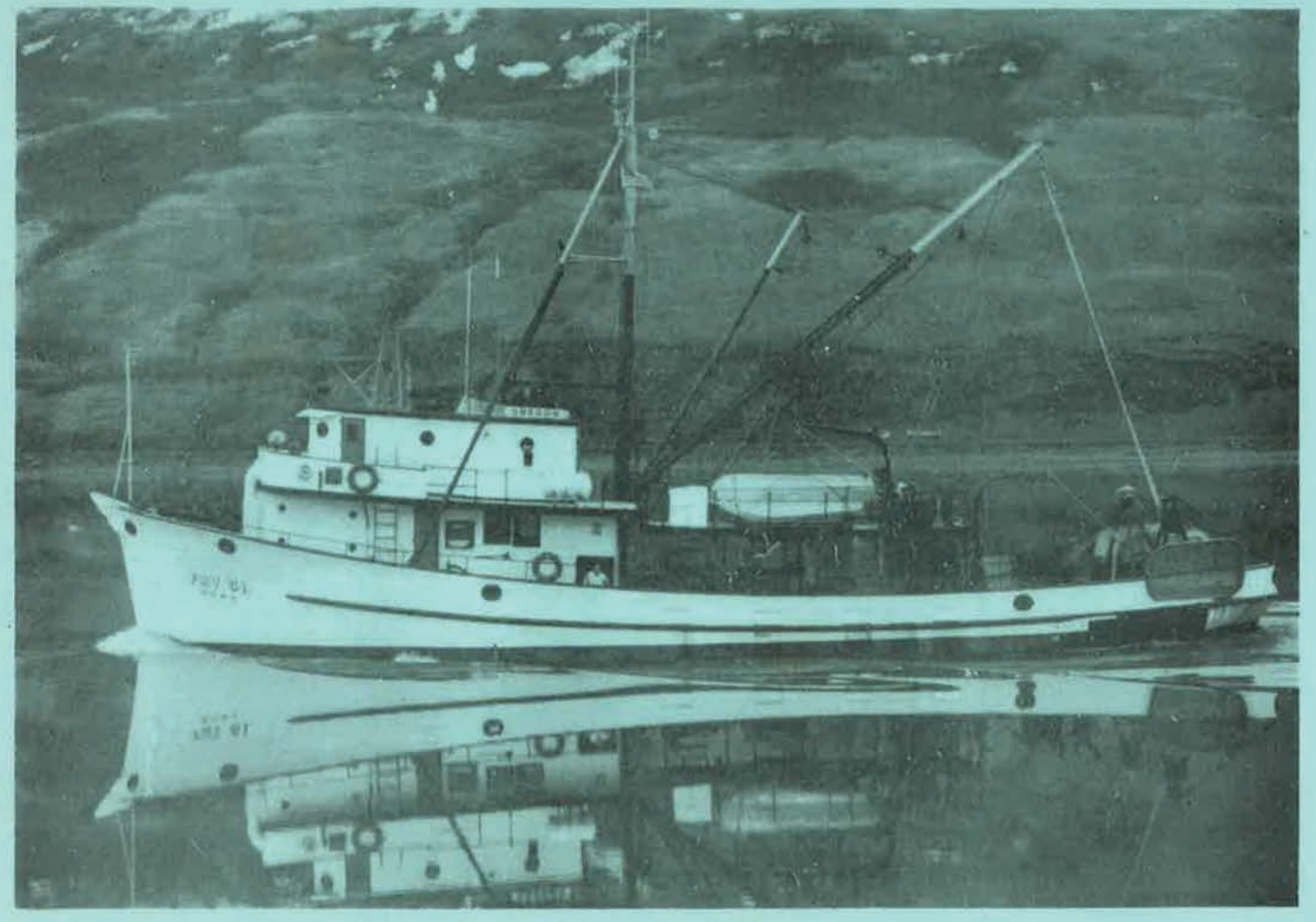
NORTHWEST FISHERIES CENTER
PROCESSED REPORT
FEBRUARY 1976

Report to Industry on

1975

EASTERN BERING SEA SURVEY
TANNER CRAB



SURVEY VESSEL R/V OREGON

Northwest Fisheries Center
Kodiak Facility
Kodiak, Alaska

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Northwest Fisheries Center Processed Report

Report to Industry on

1975

Eastern Bering Sea Survey

Tanner Crab

by

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January 1976

1975 Eastern Bering Sea Tanner Crab Survey

The eastern Bering Sea Tanner crab survey is one of several fishery resource surveys conducted in United States offshore waters by the National Marine Fisheries Service (NMFS). These surveys provide technical information on the condition of fish stocks needed by agencies which have the job of allocating the catch among fishing interests. Annual surveys of the abundance and distribution of the crab stocks of the eastern Bering Sea have been carried out since the late 1960's. These surveys are conducted to determine the yearly changes in stock abundance due to foreign and domestic fishing removals and to environmental changes. Further, the surveys are necessary to monitor the makeup of the stocks in terms of size composition, shell condition, clutch size, and other pertinent factors.

The information obtained has several uses. Survey results are used in the development of negotiating positions for discussions with the Japanese and Soviets concerning eastern Bering Sea crab stocks. Moreover, survey information is used, along with several other factors, by the Alaska Department of Fish and Game (ADF&G) in determining annual guideline harvest levels for crabs. A third use for the survey data is as an aid to fishermen and processors in determining productive areas and general availability of crabs from year-to-year. This report is directed to this latter use and is intended to provide useful information on abundance, and other biological information on Tanner crabs, as determined by the 1975 survey conducted in the eastern Bering Sea by the NOAA RV Oregon.

Survey Area and Methods

The area covered by the 1975 survey of the RV Oregon includes the region from inner Bristol Bay west to the Pribilofs, and in the north-south direction, from Cape Newenham to Unimak Island.[1/] This area is shown in the accompanying charts in which survey station locations are indicated. The early

1/ A survey of this region and additional areas north to 62°N latitude was conducted in September and October by the NOAA RV Miller Freeman and chartered research vessels Anna Marie and the Pat San Marie. The resulting data are still being analyzed and will be reported when the analysis is finished.

NMFS surveys of this region included only the area directly north of Unimak Island and the Alaska Peninsula but were expanded in 1973 to cover a larger area, including the Pribilof Islands. Through this expansion it has become clear that the Tanner crab species, Chionoecetes bairdi and C. opilio, are widespread throughout the eastern Bering Sea, and that prior to 1973 our coverage of these populations was inadequate. Subsequent surveys have shown that current coverage of the population of Bairdi Tanner crabs is adequate. However, large concentrations of Opilio Tanner crabs at the edges of the survey pattern lead us to conclude that a substantial segment of the Opilio population is beyond the area currently surveyed.

Survey procedures used in 1975 are typical of those employed in recent years and are described below. At all station locations, which are 20 miles apart, a one-hour trawl haul is made with a standard 400-mesh Eastern otter trawl. The net is constructed of 3-1/2-inch web throughout and has a 1-1/4-inch codend liner. There are 21 8-inch floats on the headrope, a weighted chain footrope, 15-fathom dandylines and 10-fathom bridles. The doors used are Astoria "V" type, measuring 6 X 9 feet. During each tow, bottom profiles and traces in the water column are recorded with an echo sounder. After the haul is brought aboard a surface-to-bottom water temperature profile is obtained with an expendable bathythermal (XBT) probe. Once aboard, the catch of crabs is separated from groundfish and other species; and important items such as numbers caught, size, sex, and shell conditions are recorded. The survey is usually divided into three legs. Between legs, while the vessel is refueling and taking on provisions at Dutch Harbor the scientific crew is changed and the data are brought back from the field for analysis.

The data are processed to provide stock size estimates, information on distribution by size group, and analyses of the biology of crabs. Crab stock estimates are obtained at each station by calculating the numbers caught per square nautical mile trawled and expanding this figure to the 20 X 20-mile area where the station is located. The estimate for the total stock in the area is made by adding up the estimates for all stations. Distribution of crabs is denoted in terms of numbers caught per square nautical mile trawled.

Special studies conducted during the 1975 field season have provided information on the biology of Tanner crabs. Results concerning the weight-carapace width relationship and size at maturity for Tanner crabs are presented in this report.

Survey Results

Abundance and Distribution

This season 141 trawl hauls were made from June 1 to August 7. Tanner crabs were encountered in 133 of the hauls. The stock size estimates obtained from data from these hauls for large male crabs (Bairdi Tanners over 5.0 and Opilio and hybrid Tanners over 4.2 inches carapace width), pre-recruit, and small crabs are shown in Table 1. With the exception of pre-recruit Bairdi crabs, Tanner crabs have shown an increasing trend of abundance since 1973, especially small Opilio Tanners which are currently very abundant. Data on abundance of hybrid crabs indicate that males make up about 3 percent of the total population of male Tanner crabs.

The 1975 summer distribution of Tanner crabs is widespread over the survey area, as shown in Charts 1-9. The highest concentrations of large male Bairdi Tanner crabs occurred north of Unimak Island (Chart 1). High concentrations of pre-recruits are also seen in this area, as well as at stations further into Bristol Bay and in the Pribilof Islands (Chart 2). Chart 3 indicates that stations showing a high percentage of large male Bairdi crabs are spread out over the survey area.

Highest concentrations of both large Opilio and large hybrid Tanner crabs are in the northwest corner of the survey area, at the northern edge of the area and among the Pribilofs (Charts 4 and 7). Small Opilio Tanner crabs were also most abundant along the northern edge of the station pattern (Chart 5). Small hybrids were found in high concentrations only at a few stations (Chart 8). Most of the stations showing a high percentage of large Opilios or hybrids were outside the areas of highest concentrations.

Catch data and positions of stations and several other details are given for each species in Tables 2 and 3. The station numbers and figures for crabs per square mile correspond to the charts. Station positions are given both in latitude-longitudes and Loran C. Depths and bottom temperatures are also given as well as the date each haul was made.

Weight-Width Relationship

The curved lines of Figure 1 represent the relationship between individual crab weights and carapace widths. These lines are based on many measurements of individual crabs taken during the 1975 survey and can be used to estimate the weight of a Tanner crab if the carapace width is known. These

lines are most appropriately used during the summer period, since it is likely that the relationship changes during the year because of changes in crab condition associated with molting. It is interesting to note that Opilio Tanner crabs are about 40 percent heavier for any given carapace width, at least for the summer period. Thus, while Bairdi Tanner crabs reach a larger maximum size, these curves suggest that for a given size the yield from an Opilio crab may be greater than from a Bairdi crab.

Size at Maturity

The size of maturity for male Tanner crabs can be determined by measuring the claws of a series of crabs over a size range which includes the suspected size of maturity. As with king crabs, male Tanner crabs use their claws for grasping the female during mating. At first maturation the claw increases in size to function for mating. By examining the size of the claw in relation to body size, a noticeable change in claw size can be seen. This change is seen in Figures 2 and 3. From this information it can be concluded that Bairdi crabs in the eastern Bering Sea mature starting at about 3.4 inches (85 mm) carapace width. The average crab is mature at around 4 inches (102 mm). Male Opilio crabs start maturing at a smaller size, around 2.4 inches (60 mm), and the average crab reaches maturity at about 3 inches (76 mm). Using the curves of Figure 1, the size at maturity can be converted to pounds. For Bairdi, the weight at which the average male crab matures is around 0.75 pounds. The corresponding weight for Opilio is about 0.33 pounds.

Table 1.--Population estimates for eastern Bering Sea Tanner crabs, from NOAA/NMFS annual surveys (sizes are carapace widths).

	MILLIONS OF CRABS BY YEAR		
	1973	1974	1975
BAIRDI MALES			
Large (Over 5.0")	66.9	130.5	209.6
Pre-recruit (3.3-5.0")	140.5	255.0	207.5
OPILIO MALES			
Large (Over 4.2")	84.7	246.7	274.8
Small (Under 4.3")	115.2	1,480.3	1,916.7
HYBRID MALES			
Large (Over 4.2")			33.8
Small (Under 4.3")			47.5

Chart No. 1

NOAA R/V Oregon

1975 Survey

June 1 – August 6

Large Bairdi Tanner Crabs

None Caught

□ 1 — 2000 Crabs / Sq. Mi.

2001 — 4000 Crabs / Sq. Mi.

4001 — 8000 Crabs / Sq. Mi.

8001 — 12 000 Crabs / Sq. Mi.

PRIBILOF ISLANDS

St Paul I

St George I

A shoal with 2 to 3 fathoms depth is reported extending true west from Cape Peirce. Distance not given.

(CONTINUED ON CHART 9400)
(CONTINUED ON CHART 9102)
(CONTINUED ON CHART 8502)
(CONTINUED ON CHART 9103)
(CONTINUED ON CHART 9000)
(CONTINUED ON CHART 9102)

9302

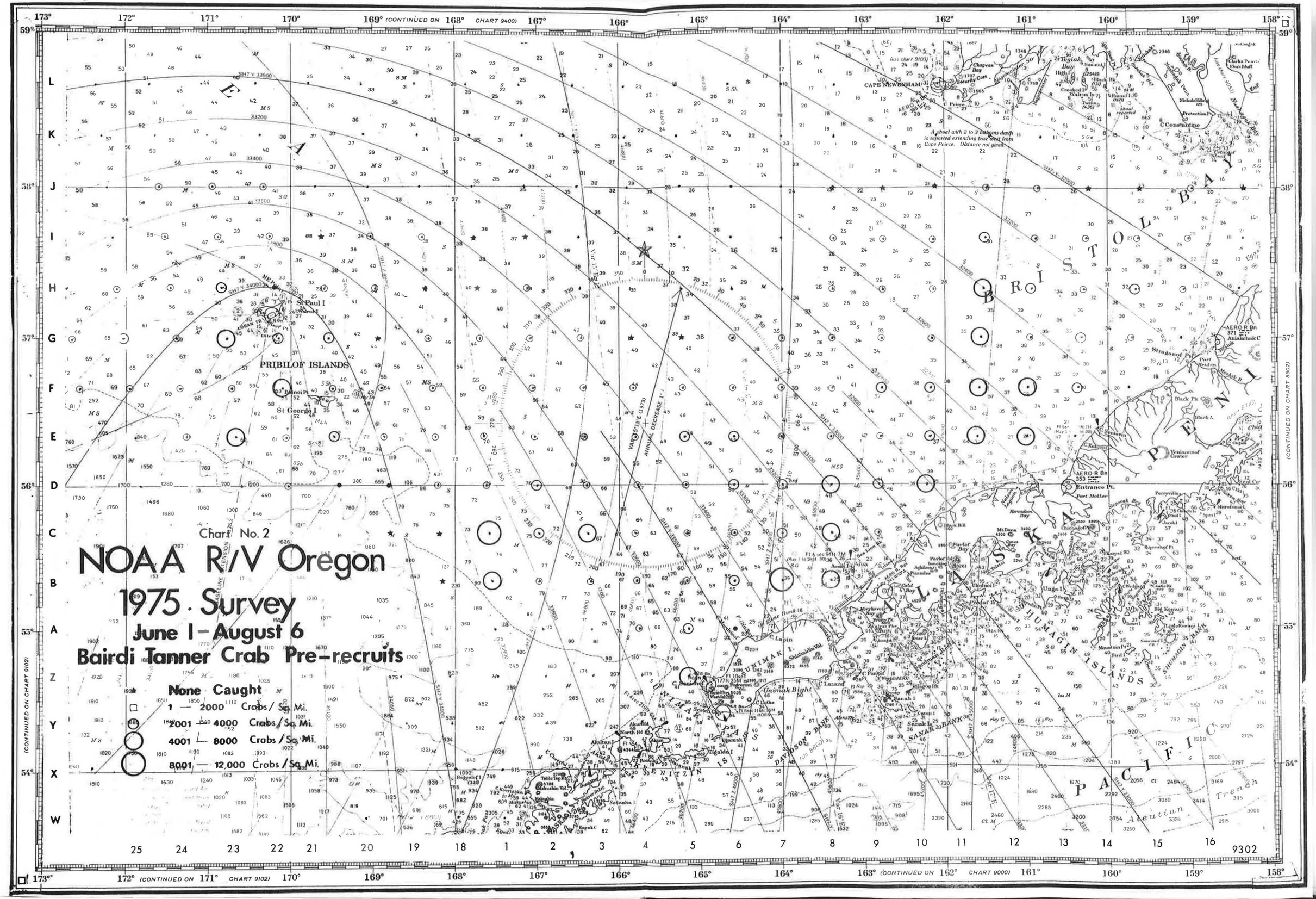
Chart No. 2
NOAA R/V Oregon
1975 Survey
June 1 – August 6
Bairdi Tanner Crab Pre-recruits
None Caught
1 — 2000 Crabs / Sq. Mi.
2001 — 4000 Crabs / Sq. Mi.
4001 — 8000 Crabs / Sq. Mi.
8001 — 12,000 Crabs / Sq. Mi.
PRIBILOF ISLANDS
St Paul I
St George I
CAPE NEWENHAM
BRISTOL BAY
ALASKA PENINSULA
UNIMAK I.
UNIMAK PASS
SHUMAGIN ISLANDS
PACIFIC
Aleutian Trench
A shoal with 2 to 3 fathoms depth is reported extending true west from Cape Peirce. Distance not given.
(CONTINUED ON CHART 9400)
(CONTINUED ON CHART 9102)
(CONTINUED ON CHART 8502)
(CONTINUED ON CHART 9000)
9302

Chart No. 3
NOAA R/V Oregon
1975 Survey
June 1-August 6
Percent Large Bairdi Tanner Crabs
(out of all Bairdi Tanner crabs caught)
None Caught
1 - 25 %
26 - 50 %
51 - 75 %
76 - 100 %
PRIBILOF ISLANDS
St Paul I
St George I
CAPE NEWENHAM
BRISTOL BAY
ALASKA PENINSULA
UNIMAK I.
SHUMAGIN ISLANDS
SHUMAGIN BANK
SANAK BANK
DAVIDSON BANK
UNIMAK PASS
KRENITZIN IS
PACIFIC
Aleutian Trench
169° (CONTINUED ON 168° CHART 9400)
172° (CONTINUED ON 171° CHART 9102)
163° (CONTINUED ON 162° CHART 9000)
(CONTINUED ON CHART 9102)
(CONTINUED ON CHART 8502)
9302

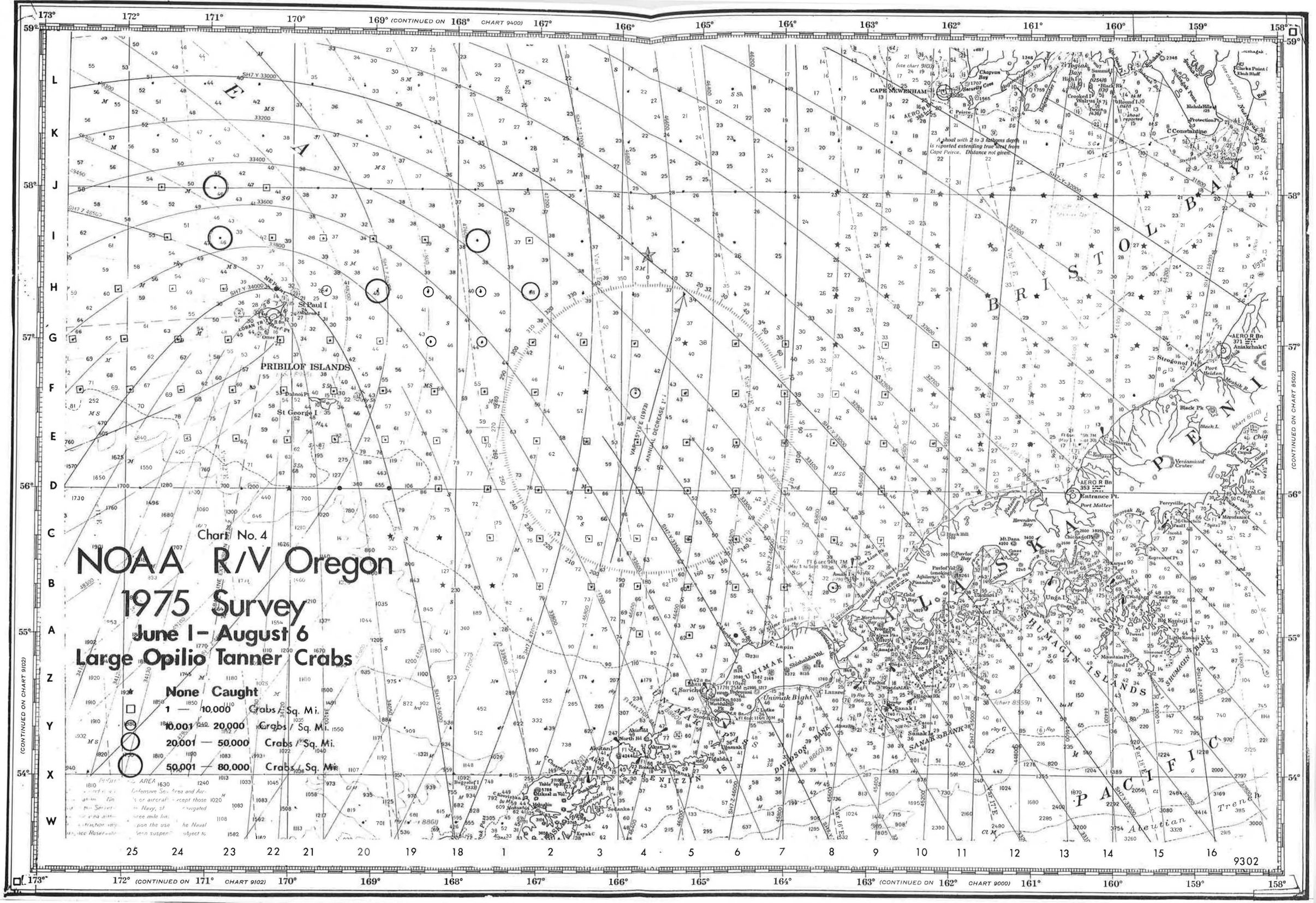
Chart No. 4
NOAA R/V Oregon
1975 Survey
June 1 – August 6
Large Opilio Tanner Crabs
None Caught
1 — 10,000 Crabs / Sq. Mi.
10,001 — 20,000 Crabs / Sq. Mi.
20,001 — 50,000 Crabs / Sq. Mi.
50,001 — 80,000 Crabs / Sq. Mi.
PRIBILOF ISLANDS
St Paul I
St George I
CAPE NEWENHAM
BRISTOL BAY
ALASKA PENINSULA
SHUMAGIN ISLANDS
PACIFIC
Aleutian Trench
Unimak Bight
Entrance Pt.
Port Moller
Strogonof Pt
Port Heiden
Black Pk
Veniaminof Crater
A shoal with 2 to 3 fathoms depth is reported extending true west from Cape Peirce. Distance not given.
(CONTINUED ON CHART 9400)
(CONTINUED ON CHART 9102)
(CONTINUED ON CHART 8502)
(CONTINUED ON CHART 9000)
9302

Chart No. 5

NOAA R/V Oregon

1975 Survey

June 1 – August 6

Small Opilio Tanner Crabs

None Caught

□ 1 — 50,000 Crabs / Sq. Mi.

50,001 — 150,000 Crabs / Sq. Mi.

150,001 — 400,000 Crabs / Sq. Mi.

400,001 — 800,000 Crabs / Sq. Mi.

9302

(CONTINUED ON CHART 9400)
(CONTINUED ON CHART 9102)
(CONTINUED ON CHART 8502)
(CONTINUED ON CHART 9102)
(CONTINUED ON CHART 9000)

Chart No. 6

NOAA R/V Oregon

1975 Survey

June 1 – August 6

Percent Large Opilio Tanner Crabs

(out of all Opilio Tanner crabs caught).

- None Caught
- 1 - 25 %
- 26 - 50 %
- 51 - 75 %
- 76 - 100 %

PRIBILOF ISLANDS

St Paul I

St George I

UNIMAK I.

Unimak Bight

AKUTAN PASS

UNIMAK PASS

DAVIDSON BANK

SANAK BANK

ALASKA PENINSULA

KODIAK I.

SHUMAGIN ISLANDS

PACIFIC

Aleutian Trench

CAPE SARICHEF

Chagvan Bay

Security Cove

Togiak Bay

Nushagak Bay

Clarks Point

Ekuk Bluff

Constantine

Protection Pt

Nicholai Hills

Port Heiden

Black Pk

Black I.

Entrance Pt.

Port Moller

Herendeen Bay

Pavlof Bay

Cold Bay

Unga I

Big Koniuji I

Little Koniuji I

Sanak I

Caton I

Unalaska

Unalga

Akutan

Akun

Tigalda I

Sedanka I

Umnak

Umnak Pass

Tigalda Pass

Sedanka Pass

Ugamak I

Rocky Pt

Table Top Hill

Bogoslof I

Grewingk Glacier

Mt Shishaldin Vol

Mt Pavlof Vol

Mt Isanotski

Mt Roundtop

Mt Dutton

Mt Westdahl

Mt Fisher

Mt Mageik

Mt Veniaminof Crater

Mt Peulik

Mt Chiginagak

Mt Kialagvik

Mt Black Hill

Mt Dana

Mt Kagamil

Mt Tulik

Mt Kaligagan

Mt Kasatochi

Mt Tanaga

Mt Kanaga

Mt Adagdak

Mt Moffett

Mt Recheshnoi

Mt Cleveland

Mt Carlisle

Mt Herbert

Mt Vsevidof

Mt Makushin Vol

Mt Okmok

Mt Westdahl

Mt Fisher

Mt Mageik

Mt Veniaminof Crater

Mt Peulik

Mt Chiginagak

Mt Kialagvik

Mt Black Hill

Mt Dana

Mt Kagamil

Mt Tulik

Mt Kaligagan

Mt Kasatochi

Mt Tanaga

Mt Kanaga

Mt Adagdak

Mt Moffett

Mt Recheshnoi

Mt Cleveland

Mt Carlisle

Mt Herbert

Mt Vsevidof

Mt Makushin Vol

Mt Okmok

AERO R Bn 371 Aninkchak C

AERO R Bn 353

Shoal with 2 to 3 fathoms depth is reported extending true west from Cape Pierce. Distance not given.

(continued on chart 9102)

(continued on chart 9302)

(continued on chart 9000)

(continued on chart 9400)

(late chart 9103)

9302

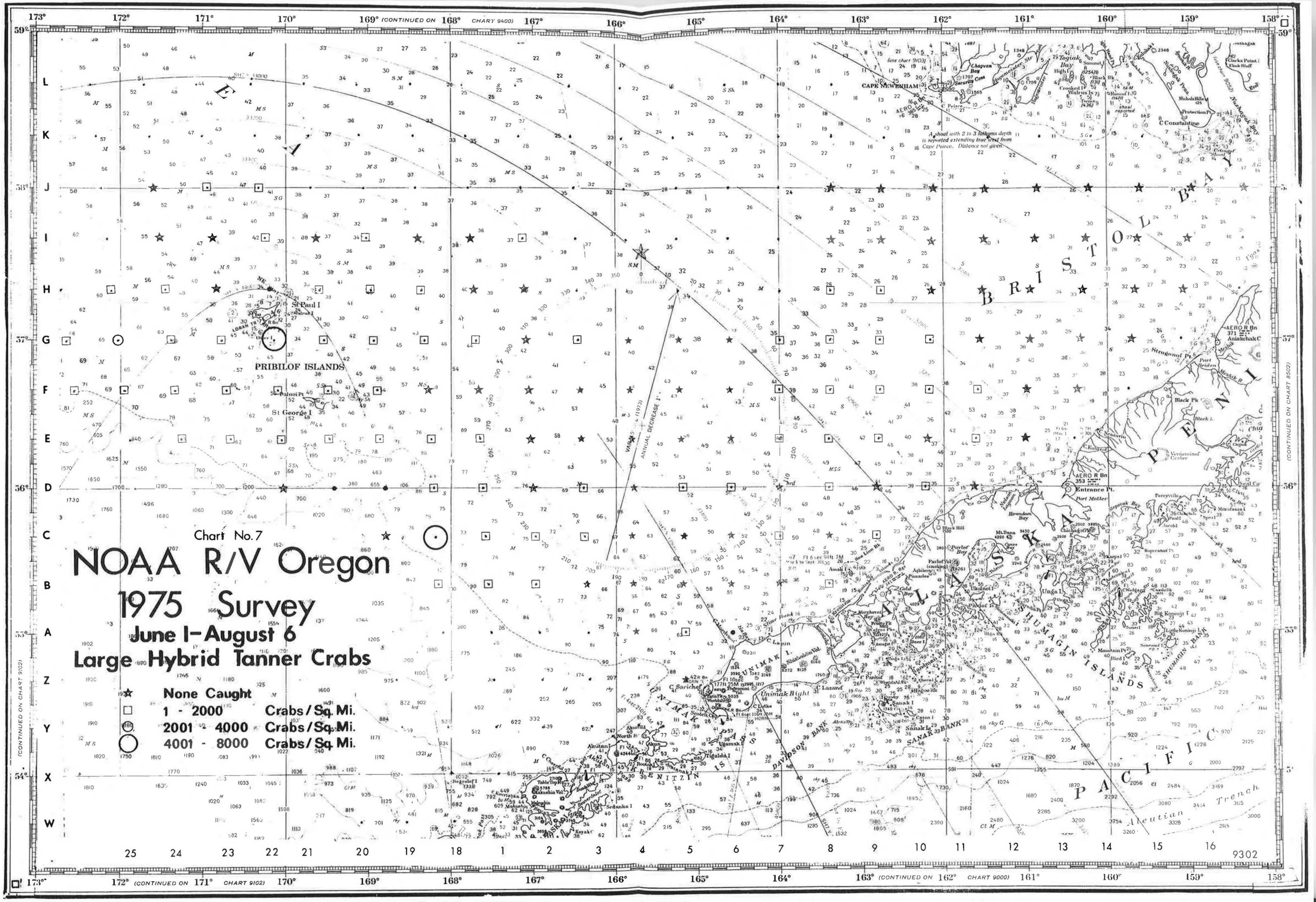
Chart No. 7
NOAA R/V Oregon
1975 Survey
June 1–August 6
Large Hybrid Tanner Crabs
None Caught
1 - 2000 Crabs/Sq. Mi.
2001 - 4000 Crabs/Sq. Mi.
4001 - 8000 Crabs/Sq. Mi.
PRIBILOF ISLANDS
St Paul I
St George I
CAPE NEWENHAM
BRISTOL BAY
ALASKA PENINSULA
SHUMAGIN ISLANDS
UNIMAK I.
UNIMAK PASS
DAVIDSON BANK
SANAK BANK
PACIFIC
Aleutian Trench
9302

Chart No. 8
NOAA R/V Oregon
1975 Survey
June 1–August 6
Small Hybrid Tanner Crabs
None Caught
1-5000 Crabs / Sq. Mi.
5001-10000 Crabs / Sq. Mi.
10001-20000 Crabs / Sq. Mi.
20001-30000 Crabs / Sq. Mi.
PRIBILOF ISLANDS
St Paul I
St George I
BRISTOL BAY
CAPE NEWENHAM
C Constantine
ALASKA PENINSULA
SHUMAGIN ISLANDS
SHUMAGIN BANK
UNIMAK I.
Unimak Bight
DAVIDSON BANK
SANAK BANK
KRENITZIN IS
PACIFIC
Aleutian Trench
(CONTINUED ON CHART 9400)
(CONTINUED ON CHART 9102)
(CONTINUED ON CHART 9000)
(CONTINUED ON CHART 8502)
9302

Chart No. 9
NOAA R/V Oregon
1975 Survey
June 1–August 6
Percent Large Hybrid Tanner Crabs
(out of all Hybrid Tanner crabs caught)
None Caught
1 - 25 %
26 - 50%
51 - 75%
76 - 100%
169° (CONTINUED ON 168° CHART 9400)
172° (CONTINUED ON 171° CHART 9102)
163° (CONTINUED ON 162° CHART 9000)
(CONTINUED ON CHART 9102)
(CONTINUED ON CHART 8502)
PRIBILOF ISLANDS
St Paul I
St George I
CAPE NEWENHAM
BRISTOL BAY
ALASKA PENINSULA
UNIMAK I.
UNIMAK PASS
KRENITZIN IS
DAVIDSON BANK
SANAK BANK
SHUMAGIN ISLANDS
SHUMAGIN BANK
PACIFIC
Aleutian Trench
9302

TABLE 2. TANNER CRABS, 1975 EASTERN BERING SEA. NUMBERS OF SMALL, PRE-RECRUIT AND LARGE (MARKETABLE) MALE CRABS CAUGHT PER AREA TRAWLED AND PERCENT MARKETABLE, BY STATION AND SPECIES. SIZES ARE CARAPACE WIDTHS IN INCHES.

	C. BAIRDI			C. OPILIO			C. HYBRID		
STATION	PRE-RECRUITS (3.3-5.0)	LARGE (OVER 5.0)		SMALL (UNDER 4.3)	LARGE (OVER 4.2)		SMALL (UNDER 4.3)	LARGE (OVER 4.2)	
	NOS/ SQMI	NOS/ SQMI	PRCNT LARGE	NOS/ SQMI	NOS/ SQMI	PRCNT LARGE	NOS/ SQMI	NOS/ SQMI	PRCNT LARGE
B08	4384	846	11	6769	10769	53	4000	0	0
C09	1472	964	29	203	102	18	254	51	14
D09	2318	1589	32	463	1589	77	0	0	0
E09	1908	229	3	2290	687	7	916	0	0
F09	3823	514	3	16618	588	3	735	0	0
F10	3571	285	3	10857	0	0	1000	0	0
E10	3129	1221	21	1145	229	17	0	0	0
D10	5877	2748	25	534	0	0	0	0	0
E11	5312	1062	10	937	0	0	374	0	0
F11	5875	2125	14	750	0	0	500	0	0
G11	4736	116	1	1404	0	0	0	0	0
H11	7720	73	0	294	0	0	441	0	0
H12	2279	147	2	0	0	0	0	0	0
G12	750	50	3	450	0	0	0	0	0
F12	4035	351	6	117	0	0	0	0	0
E12	4265	221	2	0	0	0	0	0	0
F13	2059	74	2	0	0	0	0	0	0
G13	2574	441	6	0	0	0	0	0	0
H13	882	0	0	0	0	0	0	0	0
I13	458	0	0	0	0	0	0	0	0
I14	287	48	8	0	0	0	0	0	0
H14	2901	229	4	0	0	0	0	0	0
G14	809	0	0	0	0	0	0	0	0
H15	406	0	0	0	0	0	0	0	0
I15	118	0	0	0	0	0	0	0	0
J15	45	0	0	0	0	0	0	0	0
J12	74	0	0	0	0	0	0	0	0
I12	449	0	0	0	0	0	0	0	0
I11	3015	147	2	0	0	0	0	0	0
J11	67	0	0	0	0	0	0	0	0
J10	0	0	0	0	0	0	0	0	0
I10	67	0	0	0	0	0	0	0	0
H10	1192	0	0	155	0	0	0	0	0
G10	1871	0	0	12631	526	4	175	0	0
G09	1937	62	0	10937	312	3	2187	0	0
H09	1357	0	0	362	0	0	136	0	0
I09	118	0	0	59	0	0	0	0	0
I08	159	0	0	0	0	0	0	0	0
H08	1243	118	2	42485	0	0	828	0	0
G08	510	0	0	56327	0	0	1224	0	0
F08	1875	0	0	36187	0	0	375	0	0

TABLE 2. (CONTINUED)

STATION	C. BAIRDI PRE-RECRUITS (3.3-5.0) ********* NOS/ SQMI	C. BAIRDI LARGE (OVER 5.0) ********** NOS/ SQMI	C. BAIRDI LARGE (OVER 5.0) ********** PRCNT LARGE	C. OPILIO SMALL (UNDER 4.3) ********** NOS/ SQMI	C. OPILIO LARGE (OVER 4.2) ********** NOS/ SQMI	C. OPILIO LARGE (OVER 4.2) ********** PRCNT LARGE	C. HYBRID SMALL (UNDER 4.3) ********** NOS/ SQMI	C. HYBRID LARGE (OVER 4.2) ********** NOS/ SQMI	C. HYBRID LARGE (OVER 4.2) ********** PRCNT LARGE
E08	1871	643	16	3274	2281	16	351	117	13
E07	1735	822	17	6119	3333	16	137	137	30
D07	3272	2720	18	846	2022	69	0	184	100
D08	5165	1327	13	664	1137	63	284	95	25
Z05	5592	2894	19	855	855	50	0	0	0
B06	3769	5076	21	1385	4692	77	0	0	0
B07	8527	5276	24	245	859	70	0	0	0
C08	6262	12323	60	0	8889	100	0	0	0
C07	3774	5562	27	463	1391	75	66	397	60
C06	735	1912	57	294	2059	88	0	147	100
D06	3602	5220	30	1545	4706	75	147	1176	89
E06	3858	1024	9	2048	4567	63	157	394	63
D05	500	1000	47	550	1650	66	100	0	0
D04	264	2980	90	132	2715	95	0	265	100
C04	814	2500	33	523	1802	77	0	0	0
C05	1472	1779	21	490	2764	85	0	245	100
B05	1617	2058	33	221	1912	90	0	0	0
A05	2335	9489	44	365	1387	79	73	438	86
A04	839	3053	31	0	534	100	0	305	80
B04	232	1046	62	116	523	75	0	58	100
B03	753	2160	37	101	452	75	0	0	0
B02	1046	2848	29	116	988	74	116	465	14
C02	2663	603	14	50	1658	97	352	503	50
C01	8410	331	3	265	1258	79	66	66	2
D01	988	174	11	872	2907	77	58	174	75
D18	239	0	0	231	751	76	4104	0	0
E18	500	375	43	1625	7937	82	249	4437	95
E19	1559	1743	0	5779	7890	19	826	5596	49
E20	2625	312	6	625	937	28	187	250	57
F20	687	4562	54	1062	1437	57	62	1625	96
F19	701	1111	56	2397	5673	4	292	3918	14
G20	3012	1987	29	3718	1859	13	897	1090	55
G21	2011	414	6	32249	3846	10	20118	2367	10
G22	5511	1181	17	5590	4016	39	472	2283	78
G23	534	76	11	4657	2061	2	839	840	1
H23	661	441	33	13382	4118	4	4853	2794	2
H24	1470	220	12	13529	6471	30	4339	1912	24
G24	2500	294	9	18235	4265	10	5735	2206	6
G25	750	50	5	14400	3700	20	3200	1250	28
F25	808	147	13	5221	882	2	2426	1176	3
F24	400	200	21	9067	1800	9	1934	867	7
F23	1015	355	16	3300	1472	6	1015	1269	3
E23	62	0	0	125	187	3	62	62	1
E22	4687	125	1	9187	1250	1	937	4687	1

TABLE 2. (CONTINUED)

STATION	C. BAIRDI			C. OPILIO			C. HYBRID		
	PRE-RECRUITS (3.3-5.0)	LARGE (OVER 5.0)		SMALL (UNDER 4.3)	LARGE (OVER 4.2)		SMALL (UNDER 4.3)	LARGE (OVER 4.2)	
	NOS/ SQMI	NOS/ SQMI	PRCNT LARGE	NOS/ SQMI	NOS/ SQMI	PRCNT LARGE	NOS/ SQMI	NOS/ SQMI	PRCNT LARGE
F22	1375	62	1	4687	1312	15	2437	1312	11
F21	5125	1812	24	3500	2687	43	1562	5812	76
E21	1438	547	15	2054	1918	47	890	1233	55
D21	78	157	40	79	0	0	0	79	25
C18	0	0	0	0	0	0	28768	0	0
B18	0	0	0	0	0	0	66	0	0
B01	4302	4186	29	0	0	0	756	1802	42
C03	5628	2964	28	465	2326	77	50	704	78
D03	301	703	61	302	2211	86	50	101	67
E03	561	612	6	1684	6582	20	0	153	33
E04	1625	937	29	11000	6875	32	0	500	100
E05	2123	12397	82	6849	4795	27	0	0	0
F05	333	0	0	64000	2133	1	0	0	0
F06	1052	467	25	175789	2105	0	0	0	0
F07	913	136	8	56530	1918	1	183	46	20
G07	1073	112	2	176723	339	0	169	56	25
G06	1197	140	6	189015	1056	0	0	0	0
G05	0	56	100	276667	0	0	0	0	0
G04	0	0	0	180000	2535	1	0	0	0
F04	616	68	8	163288	17123	3	0	0	0
F03	342	205	33	0	0	0	0	0	0
G03	1267	845	40	35422	6620	4	70	70	50
G02	512	512	50	57308	7949	4	0	0	0
H02	112	112	50	79657	26096	3	0	0	0
I02	0	0	0	308205	385	0	4487	0	0
I01	0	94	50	783679	68962	4	0	0	0
I18	225	225	50	349718	6441	1	0	0	0
I19	90	0	0	95475	1629	1	1674	271	8
I20	0	0	0	38225	3077	2	0	237	9
I21	675	0	0	65676	3649	3	405	135	25
J21	441	147	20	345809	3971	0	147	147	50
J22	118	59	33	147929	72189	27	592	0	0
J23	177	118	33	8639	5562	35	0	0	0
I23	894	157	12	13000	2632	1	0	0	0
I22	1832	3282	64	159619	70076	28	0	7786	100
H22	3897	1764	30	34412	7941	18	0	0	0
H20	512	256	33	67500	16923	8	769	1795	58
H19	407	90	17	20272	60090	71	724	1448	67
G19	0	52	8	9947	7196	30	635	4656	88
G18	666	133	4	18533	14400	36	600	4200	88
H18	0	59	100	77988	18047	4	296	888	75
H01	0	51	100	81555	10259	2	0	0	0
G01	360	154	30	16031	15464	12	155	1546	91
F18	58	0	0	2105	3567	45	0	585	91

TABLE 2. (CONTINUED)

	C. BAIRDI			C. OPILIO			C. HYBRID		
	PRE-RECRUITS	LARGE		SMALL	LARGE		SMALL	LARGE	
STATION	(3.3-5.0)	(OVER 5.0)		(UNDER 4.3)	(OVER 4.2)		(UNDER 4.3)	(OVER 4.2)	
	NOS/SQMI	NOS/SQMI	PRCNT LARGE	NOS/SQMI	NOS/SQMI	PRCNT LARGE	NOS/SQMI	NOS/SQMI	PRCNT LARGE
F01	51	51	33	5510	9643	63	0	3520	100
F02	1479	561	24	2041	8265	76	0	1429	93
E01	472	551	54	9606	4252	30	157	1024	81
E02	933	1133	27	1267	6267	81	0	733	85
D02	2251	3774	34	530	2450	79	0	596	100

TABLE 3. INFORMATION ON STATIONS WHERE TANNER CRABS WERE CAUGHT DURING THE 1975 EASTERN BERING SEA SURVEY.

STATION	DATE	POSITION				DEPTH (FMS)	BOTTOM TEMP. (C)
		LAT	LONG	LORAN C			
B08	6/01/75	55-20	163-26	Y33242	Z45713	27	2.0
C09	6/02/75	55-39	162-52	Y33086	Z45510	29	1.6
D09	6/02/75	55-58	162-48	Y33008	Z45504	43	1.0
E09	6/02/75	56-19	162-48	Y32914	Z45523	42	1.2
F09	6/03/75	56-39	162-45	Y32817	Z45512	40	0.4
F10	6/03/75	56-41	162-12	Y32716	Z45296	38	0.6
E10	6/03/75	56-21	162-12	Y32815	Z45279	42	0.8
D10	6/04/75	56-00	162-13	Y32903	Z45271	36	2.0
E11	6/04/75	56-19	161-36	Y32730	Z45036	34	1.4
F11	6/06/75	56-40	161-39	Y32630	Z45064	48	1.3
G11	6/06/75	57-00	161-33	Y32521	Z45055	37	-0.1
H11	6/06/75	57-21	161-32	Y32405	Z45063	29	-0.1
H12	6/07/75	57-21	160-55	Y32309	Z44823	33	-1.2
G12	6/07/75	57-02	160-57	Y32421	Z44816	34	-0.1
F12	6/07/75	56-41	161-00	Y32537	Z44805	36	0.8
E12	6/08/75	56-19	161-00	Y32640	Z44792	28	2.0
F13	6/08/75	56-39	160-22	Y32454	Z44556	32	0.9
G13	6/09/75	57-00	160-20	Y32344	Z44560	34	-0.4
H13	6/09/75	57-20	160-19	Y32230	Z44577	33	-1.2
I13	6/09/75	57-40	160-16	Y32108	Z44590	29	-1.1
I14	6/10/75	57-41	159-38	Y32022	Z44340	27	-0.3
H14	6/10/75	57-21	159-40	Y32142	Z44318	30	-0.4
G14	6/10/75	57-00	159-42	Y32255	Z44304	29	1.1
H15	6/11/75	57-19	159-04	Y32067	Z44078	26	0.3
I15	6/11/75	57-40	159-03	Y31956	Z44109	25	0.8
J15	6/12/75	58-00	158-58	Y31827	Z44130	22	1.1
J12	6/12/75	58-00	160-51	Y32060	Z44844	27	1.7
I12	6/13/75	57-41	160-52	Y32185	Z44828	30	0.6
I11	6/13/75	57-40	161-30	Y32280	Z45071	28	1.2
J11	6/13/75	58-01	161-28	Y32141	Z45086	29	1.8
J10	6/13/75	57-59	162-06	Y32233	Z45318	20	2.3
I10	6/14/75	57-41	162-08	Y32358	Z45315	25	2.0
H10	6/14/75	57-21	162-08	Y32491	Z45303	27	0.9
G10	6/14/75	57-01	162-09	Y32602	Z45290	33	0.7
C09	6/15/75	57-00	162-46	Y32709	Z45544	33	0.4
H09	6/15/75	57-20	162-46	Y32588	Z45556	26	0.7
I09	6/15/75	57-40	162-44	Y32460	Z45565	24	1.6
I08	6/16/75	57-41	163-20	Y32551	Z45796	25	1.7
H08	6/16/75	57-21	163-21	Y32683	Z45792	29	-0.2
G08	6/17/75	57-01	163-22	Y32800	Z45785	35	0.0
F08	6/17/75	56-40	163-24	Y32910	Z45782	40	0.3
E08	6/17/75	56-21	163-22	Y33002	Z45752	46	1.0
E07	6/18/75	56-20	163-59	Y33105	Z46004	46	2.3
D07	6/18/75	56-01	163-58	Y33187	Z45979	48	0.5
D08	6/18/75	56-01	163-24	Y33095	Z45738	47	1.9
Z05	6/24/75	54-40	165-08	Y33604	Z46293	43	4.2
B06	6/25/75	55-21	164-35	Y33423	Z46154	54	2.7
B07	6/25/75	55-20	163-59	Y33332	Z45925	39	3.7

TABLE 3. (CONTINUED)

STATION	DATE	POSITION LAT	POSITION LONG	POSITION LORAN C	DEPTH (FMS)	BOTTOM TEMP. (C)
C08	6/26/75	55-41	163-23	Y33163 Z45717	44	2.0
C07	6/26/75	55-41	164-01	Y33265 Z45968	49	2.5
C06	6/26/75	55-41	164-35	Y33360 Z46187	50	2.6
D06	6/27/75	56-01	164-35	Y33288 Z46219	49	0.7
E06	6/27/75	56-21	164-36	Y33211 Z46244	46	1.0
D05	6/30/75	56-01	165-12	Y33397 Z46459	51	1.8
D04	6/30/75	56-00	165-48	Y33502 Z46691	57	2.8
C04	6/30/75	55-41	165-46	Y33561 Z46650	62	3.3
C05	6/30/75	55-41	165-10	Y33456 Z46418	57	3.1
B05	7/01/75	55-20	165-10	Y33516 Z46382	58	3.4
A05	7/01/75	55-00	165-09	Y33563 Z46332	59	3.9
A04	7/02/75	54-59	165-44	Y33656 Z46553	69	3.2
B04	7/02/75	55-20	165-47	Y33612 Z46605	63	2.2
B03	7/03/75	55-21	166-20	Y33700 Z46822	70	3.6
B02	7/03/75	55-21	166-57	Y33795 Z47039	74	2.8
C02	7/03/75	55-40	166-58	Y33756 Z47096	72	4.5
C01	7/03/75	55-40	167-34	Y33853 Z47307	72	3.4
D01	7/04/75	56-01	167-40	Y33817 Z47391	70	3.1
D18	7/04/75	56-00	168-11	Y33913 Z47592	79	2.8
E18	7/04/75	56-21	168-14	Y33875 Z47677	81	3.1
E19	7/04/75	56-20	168-53	Y33988 Z47900	69	2.7
E20	7/05/75	56-21	169-26	Y34064 Z48081	75	2.7
F20	7/05/75	56-40	169-29	RADAR FIX	41	2.7
F19	7/05/75	56-40	168-53	Y33950 Z47975	53	2.9
G20	7/06/75	57-00	169-33	Y34020 Z48273	31	1.2
G21	7/06/75	57-02	170-15	RADAR FIX	35	2.0
G22	7/08/75	57-00	170-48	Y34082 Z48565	51	3.3
G23	7/10/75	57-00	171-24	Y34002 Z48568	57	1.8
H23	7/10/75	57-21	171-29	Y33856 Z48553	53	1.7
H24	7/10/75	57-20	172-05	Y33779 Z48563	58	1.3
G24	7/11/75	57-00	172-02	Y33909 X18031	62	1.5
G25	7/11/75	57-00	172-40	Y33816 X17787	64	2.4
F25	7/11/75	56-40	172-34	Y33914 X17748	70	2.5
F24	7/12/75	56-40	171-58	Y33996 X17975	66	2.1
F23	7/12/75	56-41	171-20	Y34070 X18165	64	2.5
E23	7/12/75	56-20	171-17	Y34106 Z48434	77	2.7
E22	7/13/75	56-20	170-42	Y34135 Z48210	66	2.7
F22	7/13/75	56-40	170-48	Y34129 Z48466	60	2.4
F21	7/13/75	56-41	170-06	RADAR FIX	50	2.7
E21	7/13/75	56-20	170-04	Y34124 Z48246	57	3.1
D21	7/15/75	56-02	169-58	Y34120 Z48134	73	2.9
C18	7/15/75	55-38	168-15	Y33952 Z47525	72	3.0
B01	7/16/75	55-20	167-33	Y33876 Z47235	78	3.2
C03	7/21/75	55-40	166-24	Y33664 Z46885	67	3.2
D03	7/22/75	56-00	166-24	Y33612 Z46928	66	3.5
E03	7/22/75	56-21	166-26	Y33538 Z46982	54	2.8
E04	7/22/75	56-21	165-50	Y33427 Z46732	48	1.6
E05	7/23/75	56-21	165-14	Y33320 Z46498	46	0.5
F05	7/23/75	56-40	165-14	Y33234 Z46520	40	1.1

TABLE 3. (CONTINUED)

STATION	DATE	POSITION			DEPTH (FMS)	BOTTOM TEMP. (C)
		LAT	LONG	LORAN C		
F06	7/25/75	56-40	164-37	Y33123 Z46277	39	1.3
F07	7/25/75	56-40	163-59	Y33014 Z46026	39	1.5
G07	7/26/75	57-00	164-01	Y32911 Z46043	36	1.7
G06	7/26/75	57-00	164-35	Y33015 Z46278	36	0.9
G05	7/26/75	57-00	165-11	Y33127 Z46526	37	0.8
G04	7/27/75	57-00	165-50	Y33243 Z46789	38	0.7
F04	7/27/75	56-42	165-52	Y33344 Z46785	41	0.8
F03	7/27/75	56-40	166-25	Y33458 Z47002	44	0.7
G03	7/28/75	57-00	166-27	Y33366 Z47037	39	1.1
G02	7/28/75	57-00	167-05	Y33483 Z47287	39	1.4
H02	7/28/75	57-20	167-06	Y33370 Z47298	37	0.5
I02	7/29/75	57-40	167-07	Y33229 Z47291	35	0.1
I01	7/29/75	57-40	167-45	Y33351 Z47533	36	-0.5
I18	7/29/75	57-40	168-23	Y33479 Z47780	37	0.0
I19	7/30/75	57-40	169-02	Y33607 Z48016	36	-0.5
I20	7/30/75	57-40	169-39	Y33700 Z48218	38	-0.7
I21	7/30/75	57-40	170-17	Y33765 Z48379	38	1.7
J21	7/31/75	58-00	170-19	Y33516 Z48261	39	0.5
J22	7/31/75	58-00	171-00	Y33510 Z48360	46	1.1
J23	7/31/75	58-00	171-35	Y33469 Z48416	52	1.9
I23	8/01/75	57-38	171-35	Y33693 Z48503	52	2.3
I22	8/01/75	58-40	171-35	Y33737 Z48456	45	2.5
H22	8/01/75	57-21	170-51	Y33943 Z48541	44	3.1
H20	8/03/75	57-21	169-35	Y33887 Z48284	34	-0.5
H19	8/03/75	57-18	168-58	Y33768 Z48035	38	2.7
G19	8/04/75	57-00	168-58	Y33882 Z48044	41	2.6
G18	8/04/75	56-58	168-22	Y33766 Z47795	44	1.8
H18	8/04/75	57-20	168-23	Y33634 Z47804	38	1.8
H01	8/05/75	57-20	167-43	Y33515 Z47564	39	1.6
G01	8/05/75	57-00	167-41	Y33617 Z47534	41	1.6
F18	8/05/75	56-40	168-18	Y33828 Z47748	56	2.2
F01	8/06/75	56-40	167-42	Y33708 Z47505	55	1.6
F02	8/06/75	56-40	167-04	Y33587 Z47260	52	2.1
E01	8/06/75	56-20	167-39	Y33772 Z47450	59	3.1
E02	8/07/75	56-20	167-02	Y33656 Z47212	61	3.0
D02	8/07/75	56-00	167-00	Y33715 Z47156	71	4.0

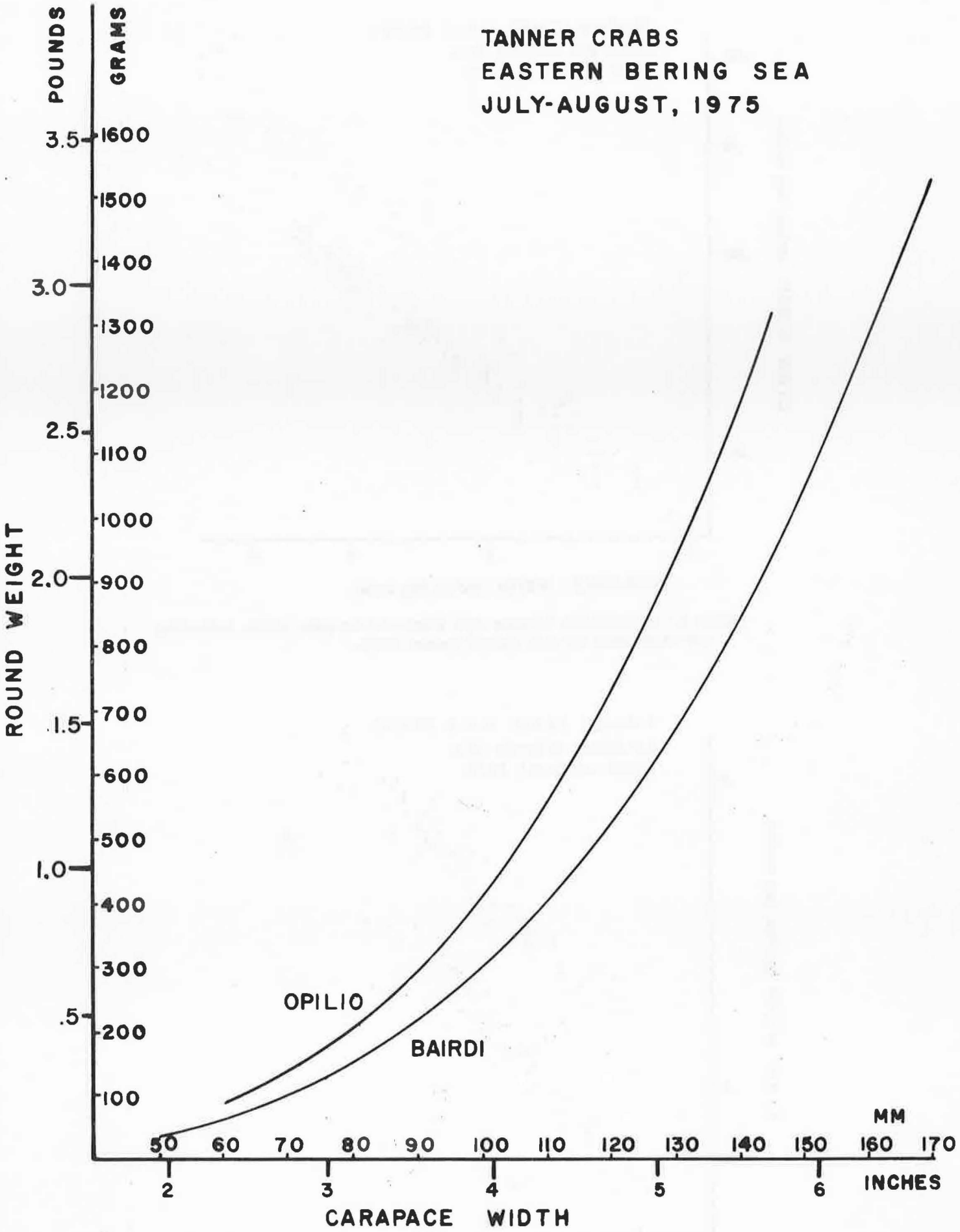

Figure 1.--Weight-carapace width relationships for Bairdi and Opilio Tanner crabs in the eastern Bering Sea.

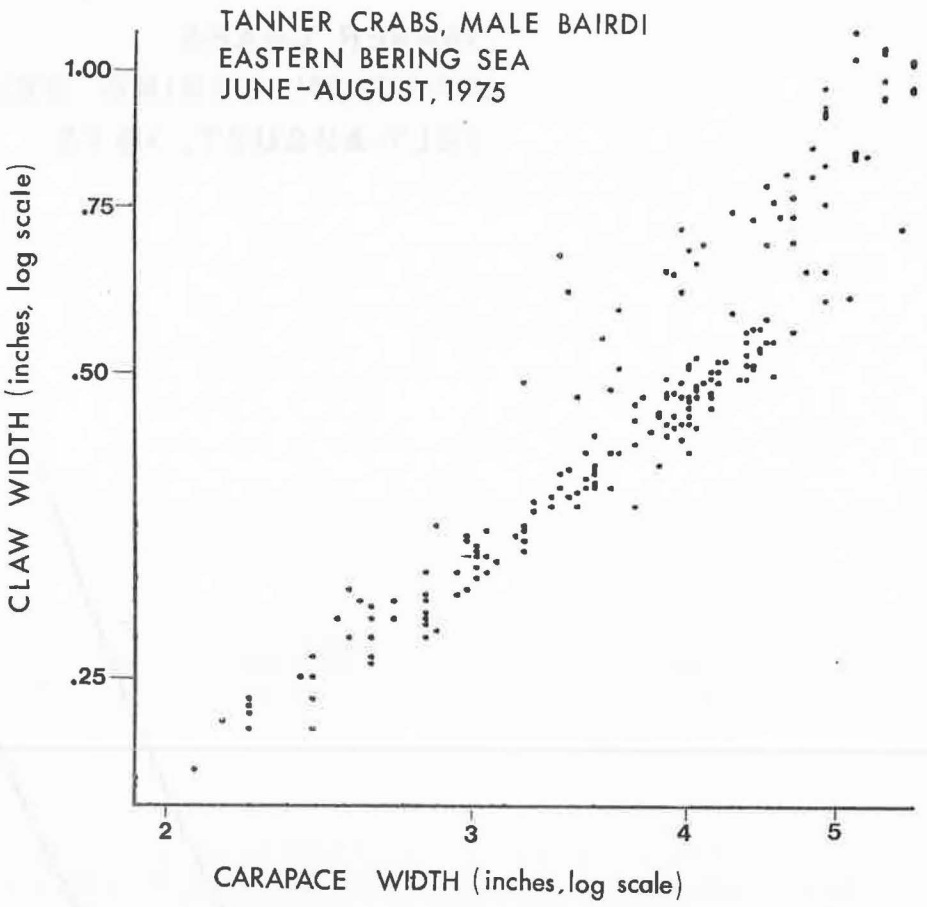
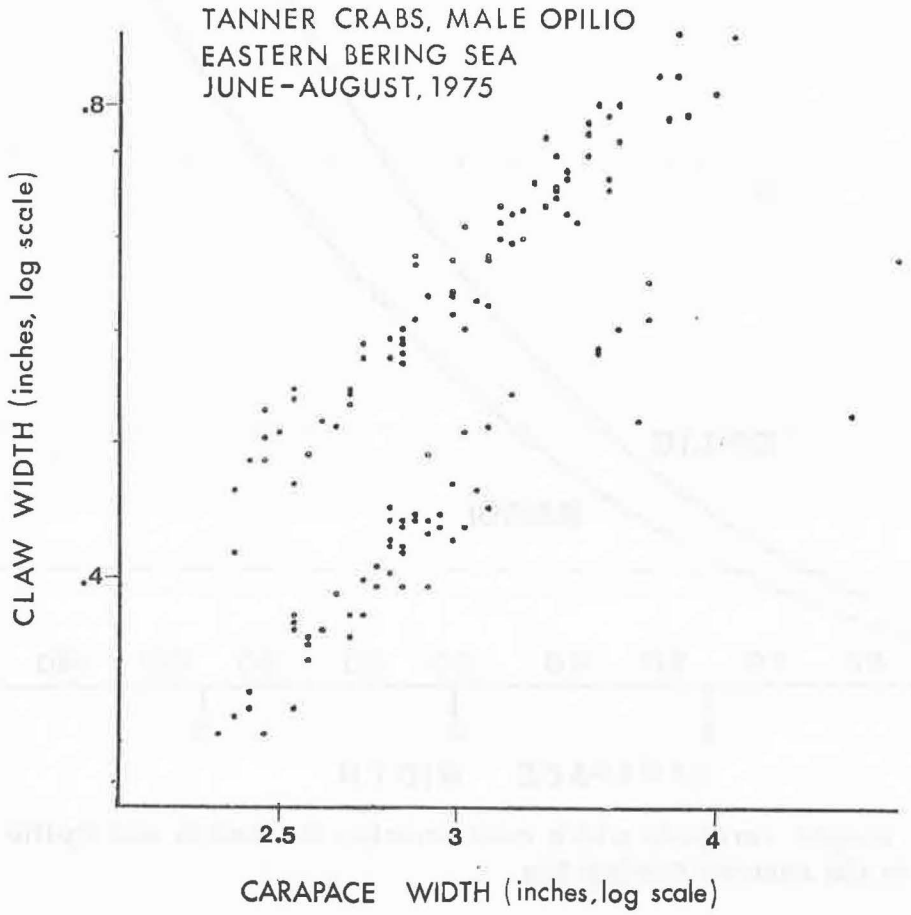
Figure 2.--Relationship between claw width and carapace width, indicating size at maturity for male Bairdi Tanner crabs.