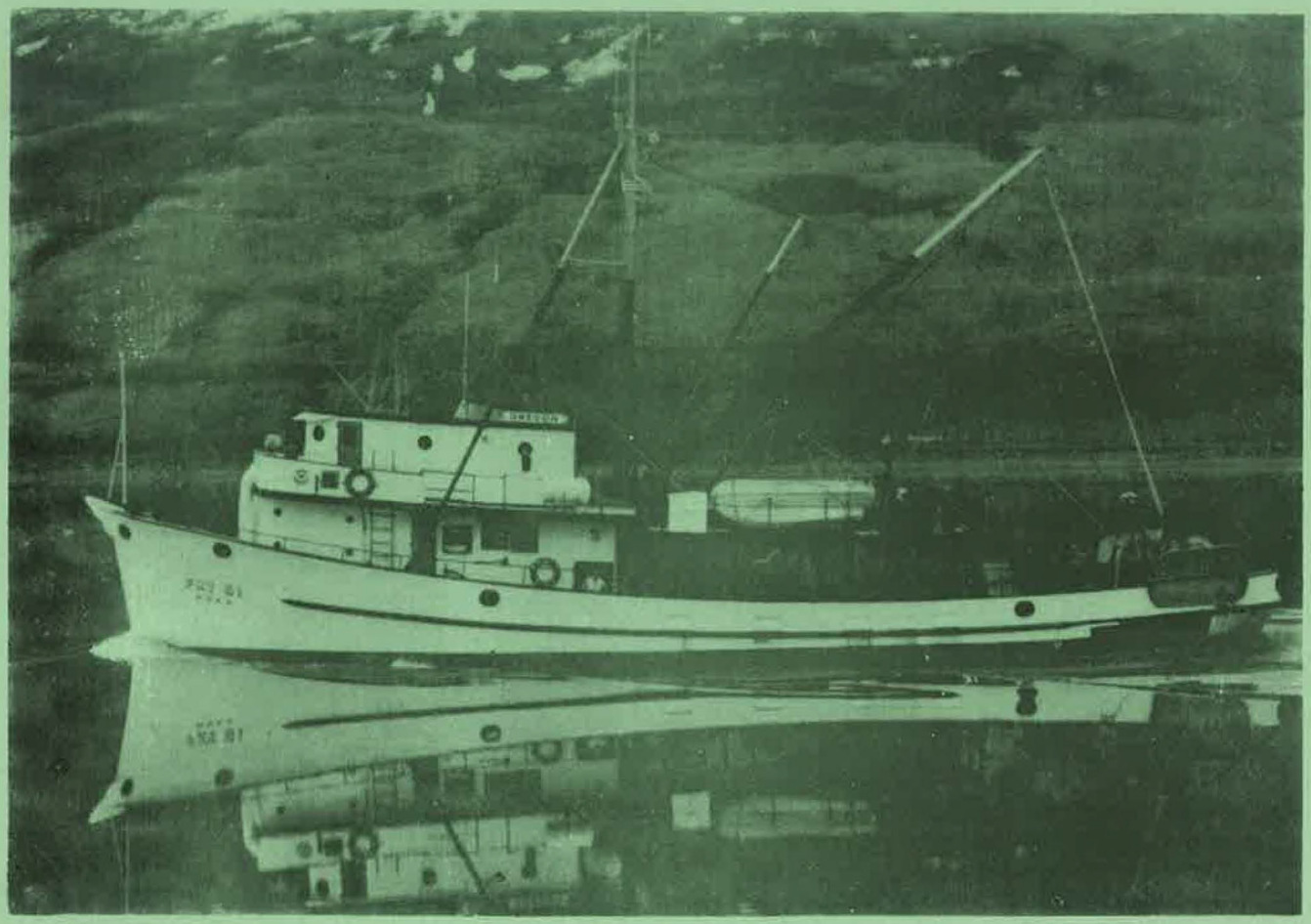
NORTHWEST AND ALASKA FISHERIES CENTER
PROCESSED REPORT
DECEMBER 1977
Report to industry on
1977
EASTERN BERING SEA SURVEY
TANNER CRAB



SURVEY VESSEL R/V OREGON

Northwest and Alaska Fisheries Center

Kodiak Facility

Kodiak, Alaska

NOTICE

Northwest and Alaska Fisheries Center Processed Report

Report to Industry on

1977

Eastern Bering Sea Survey

Tanner Crab

by

J. A. Burns

National Marine Fisheries Service
Northwest and Alaska Fisheries Center
Kodiak Facility
P. O. Box 1638
Kodiak, Alaska 99615

November 1977

The 1977 Eastern Bering Sea Crab Survey

Annual trawl surveys by the National Marine Fisheries Service (NMFS) are conducted in the eastern Bering Sea to obtain information on condition, distribution and abundance of several species of crabs. Information from these surveys provides fishermen and processors help in locating productive fishing areas and judging the overall availability of crabs. Survey-derived data are further used as a source of technical information by management agencies. This report deals with results from the 1977 survey conducted aboard the NOAA RV Oregon and presents information on Tanner crabs in the eastern Bering Sea during June, July, and August. Similar survey information for king crabs has been compiled in a separate report.

A questionaire is provided at the end of this report so that readers may express their preference for the chart type considered most useful or comment on other aspects of this report. A postage free address form is also included for readers who wish to be added to our mailing list.

Survey Area and Methods

The area covered by the 1977 survey extended from inner Bristol Bay west to the Pribilof Islands and from Cape Newenham south to Unimak Pass. Survey coverage of the Pribilof Island region in 1977 was extended 40 nautical miles westward of the area covered in 1976 so that a greater portion of the geographic range of Tanner crab stocks could be examined. The survey area and locations of the sampling stations are shown in the accompanying charts.

Sampling stations were located 20 nautical miles apart in a grid pattern and at each station, a half-hour tow was made with a standard 400-mesh Eastern Otter Trawl having a 94-ft footrope and 71-ft headrope. The net was constructed of 4-inch (stretched mesh measure) web in the wings and 3½-inch web in the remainder of the net with a 1¼-inch liner in the codend. Eighteen (18) 8-inch floats were attached along the headrope and the trawl was fished with 5 x 7 ft "V" design trawl doors and 25-fathom dandylines (15 fathom single, 10 fathom double).

Trawl gear used during the 1977 survey differed somewhat from that used in 1976. Smaller trawl doors were used in 1977 (5 x 7 ft versus 6 x 9 ft in 1976) and the footrope of the trawl was not weighted with extra chain. Gear comparison studies conducted during the initial portion of the 1977 survey indicated that crab catch rates were equivalent for the weighted trawl with 6 x 9 ft doors and the unweighted trawl with 5 x 7 ft doors.

Once the trawl was aboard, crabs were separated from the rest of the catch and pertinent data such as numbers caught, size, shell condition, sex, and egg condition were obtained. Depth profiles were recorded with an echo sounder during each tow, and measurements of surface to bottom water temperature were obtained with an expendable bathythermograph (XBT) at selected stations throughout the survey region.

Survey information was processed to provide estimates of stock size and descriptions of crab distribution by sex-size grouping. Estimates of the number of crabs per sampling station were obtained by calculating the number of crabs caught per square nautical mile and expanding this figure to account for the entire 20 x 20 nautical mile area. Estimated stock size was obtained by computing the average number of crabs per square mile at each survey station and expanding this figure over the entire survey area. Distribution of crabs has been denoted on the accompanying charts in terms of numbers caught per half-hour trawl haul.

Results

One or more species of Tanner crabs were caught at 145 of 159 stations sampled during the 1977 survey. This incidence of occurrence (91%) is quite similar to levels encountered in earlier surveys (89% and 94% in 1975 and 1976, respectively).

Population estimates from the 1975 survey data for all species of Tanner crabs are presented by sex-size group in Table 1; numbers of crabs per square nautical mile trawled are given for each station in Table 2; and, specific position information for stations where Tanner crabs were caught are presented in Table 3. Information presented in Table 3 includes station position in both latitude-longitude and Loran C, depth (fathoms), and bottom temperature (C°).

Bairdi Tanner Crab

The estimated population of legal-sized male bairdi Tanner crabs in the eastern Bering Sea in 1977 was about 92 million crabs. This amount was smaller than that estimated for 1976 and continued a 3-year trend of declining abundance for large-sized crabs (Table 1). Although the abundance of large (legal) crabs continued downward, the estimated population of pre-recruits in 1977 was somewhat higher than in 1976 and suggests a probable increase in numbers of legal-sized males in future years.

Station catch rates for legal male (≥5.5" carapace width), pre-recruit male (4.0-5.5"), and female bairdi Tanner crabs are shown on Charts 1, 2, and 3, respectively. As in the past years, highest concentrations of legal and pre-recruit males occurred in the Amak Island and Pribilof Islands areas. Female bairdi Tanner crabs were found in highest abundance in these same areas and also north of Port Moller and west of the Pribilofs.

Station catches with high percentages of legal bairdi crabs were located mainly in the Amak Island and Pribilof Islands areas (Chart 4). In the Pribilof Islands area, these stations also had large catches of legal crabs; however, in the Amak area, stations with high percentages of legal crabs were more northerly than those with large catches.

Opilio Tanner Crab

The estimated population of large (≥4.3") male opilio Tanner crabs in the 1977 survey region was about 137 million crabs (Table 1). This amount is considerably lower than the survey estimate for 1976; however, it probably does not reflect an actual stock size decline. Recent energy-related Outer Continental Shelf (OCS) studies have indicated that a substantial segment of the opilio population may exist north of our current survey area. Since a segment of the population occurs outside the area covered by the survey, our survey estimate should not be interpreted as applying to the entire stock.

The distribution of large male opilio Tanner crabs was widespread throughout the survey area with the exception of inner Bristol Bay (Chart 5). The distribution of large males in the survey area in 1977 appears to be more northerly than in 1976. A northward shift was most noticeable north of the Pribilof Islands and in the region between the Pribilofs and Cape Newenham.

Hybrid Tanner Crab

The abundance of large (≥4.3") male hybrid crabs in 1977 does not appear significantly different from 1976 (Table 1). Results of this year's survey indicate that most of the population of large hybrids appears located south of the 57°-20' (Chart 6), with a more widespread distribution than in 1976, extending eastward to inner Bristol Bay.

Bottom water temperature was measured only at selected stations during the 1977 survey (Chart 7). This limited number of observations indicates that water temperatures near the sea bottom in the eastern Bering Sea

were somewhat warmer during the 1977 survey than during 1976. In 1976, temperatures lower than 2°C were encountered at over 40% of the 122 trawl stations where temperature information was obtained. Temperatures lower than O°C were recorded at 12% of the 1976 stations. During the 1977 survey, temperatures below 2°C were encountered at only 10% of the 69 stations where XBT casts were performed and sub-zero temperatures were not encountered at any stations.

Table 1.--Population estimates of Tanner crab in the eastern Bering Sea by species and size from NMFS annual surveys, 1973-1977 (sizes are carapace widths).

	MILLIONS OF CRAB BY YEAR				
	1973	1974	1975	1976	1977
BAIRDI MALES					
Large (over 5.0")	66.9	130.5	209.6	157.8	111.1
Legal (over 5.5")[1]				109.5	92.1[2]
Pre-recruit (3.3"-5.0")	140.5	255.0	207.5	131.7	159.6
Pre-recruit (3.9"-5.5")					116.3
OPILIO MALES					
Large (over 4.2")	84.7	246.7	274.8	181.6	137.3
Small (under 4.3")	115.2	1480.3	1916.7	2221.1	1850.9
HYBRID MALES					
Large (over 4.2")			33.8	16.5	15.4
Small (under 4.3")			47.5	27.8	141.2

[1] Legal size for calendar year 1977.

[2] This estimate is lower than the population estimate presented (Nov. 77) in the International North Pacific Fishery Commission (INPFC) Document Number 2024 due to revised statistical computations. Document 2024 is under revision.

Table 2.--Numbers of pre-recruit and large or legal male Tanner crabs per area trawled and percent legal or large by station and species (sizes are carapace widths in inches).[1]

	C. BAIRDI			C. OPILIO		HYBRID	
	Legal (≥5.5")		Pre-recruit (3.9"-5.3")	Large (≥4.2")		Large (≥4.2")	
	no/sqmi	%legal	no/sqmi	no/sqmi	%large	no/sqmi	%large
A-3	1316	9	5395	132	100	789	37
A-4	2424	43	526	455	11		
A-5	1970	33	1667	1212	2		
B-1		0	1579				
B-2	1447	13	1053		0	526	21
B-3	455	5	2576	152	50		
B-4	1053	20	1053	263	12		
B-5	2703	29	1622	541	2	270	100
B-6		0	1600	4267	1	533	67
B-7[2]	14933	7	14800	267	18		0
B-8[3]	35634	15	57183				
C-1		0	1970			303	100
C-2	658	25	789	395	12		
C-3	1212	10	1515	455	13	455	25
C-4		0	658	395	50		0
C-5	2368	21	1842	789	11	395	100
C-6	1974	10	2237	1184	11	526	12
C-7[4]	12879	18	4545	758	8	152	20
C-8	7200	10	12000	267	2	267	10
C-9		0	446				
C-18		0	395				
D-1	152	1	1667				
D-2	758	20	758	1515	7	455	60
D-3	1364	26	1061	3182	12		
D-4	1579	67	263	1579	30	526	100
D-5	4932	45	2740	18630	24	1096	40
D-6	3684	15	2368	8421	8	2105	100
D-7	6667	34	1667	2879	2		0
D-8	13333	29	4242	303	2	303	25
D-9	6849	38	4795		0		

Table 2.--Continued

	C. BAIRDI			C. OPILIO		HYBRID	
		Legal (≥5.5")	Pre-recruit (3.9"-5.3")	Large (≥4.2")		Large (≥4.2")	
	no/sqmi	%legal	no/sqmi	no/sqmi	%large	no/sqmi	%large
D-10	1918	17	3562	137	20	137	50
D-11		0		188	60		
D-18		0			0		
E-1				267	1		
E-2	1061	64	303	4394	1	455	100
E-3	1200	43	400	2667	2		
E-4		0	909	8182	20		
E-5	758	26	1389	14242	27	303	50
E-6	822	7	6849	16027	41	685	38
E-7	3939	11	2273	909	12		0
E-8	530	13	3289	379	6	76	11
E-9	408	5	2755	408	16	204	33
E-10	636	10	2000	455	50	273	50
E-11	727	21	1545	636	30	182	40
E-12	137	3	1233				
E-18		0	102	3367	2		0
E-19	3151	19	4110	1096	0	2055	17
E-20		0			0		0
E-21	822	8	548	274	11		0
E-22	2740	5	10857		0		0
E-23		0					0
F-1	1733	57	933	4800	8	1733	72
F-2	331	56	263	1523	17	265	100
F-3		0	133	5059	0		
F-4	909	32	789	3333	1	152	13
F-5		0	267	8800	8		0
F-6		0	303	15152	14		0
F-7	152	4	1288	4848	8	152	67
F-8	364	5	1636	1909	5	364	36
F-9	545	8	1182	3273	9	273	75
F-10	4000	14	7727	2000	7	800	33
F-11	4932	3	10959		0		0
F-12	479	33	921		0		
F-13	455	23	606	152	100		
F-18	1061	10	658	1515	1		
F-19	1818	44	1364	606	0	758	63

Table 2.--Continued

	C. BAIRDI			C. OPILIO		HYBRID	
		Legal (≥5.5")	Pre-recruit (3.9"-5.3")	Large (≥4.2")		Large (≥4.2")	
	no/sqmi	%legal	no/sqmi	no/sqmi	%large	no/sqmi	%large
F-20	8356	75	1233	548	3	411	27
F-21	918	18	2551	3673	7	1020	59
F-22	1735	12	1633	1122	23	204	0
F-23	909	3	1970	1515	15	152	1
F-24	137	0	411	2055	6	411	0
F-25		0			0		0
G-1		0	303	1212	0		0
G-2	533	100		4800	2		0
G-3		0		2817	2	282	50
G-4		0	400	2667	4		0
G-5				5303	1		0
G-6		0	667	8000	7		0
G-7	278	1	5278	5000	2		0
G-8	404	2	5067	8267		800	50
G-9	1818	4	13182	9394	26	1364	12
G-10	1867	9	8400	1867	40	1600	34
G-11	2121	10	6667	1364	38	152	33
G-12	1869	33	2243	93	50	93	50
G-13	7727	24	8182			606	50
G-14	986	18	2676				
G-18				5000	1		
G-19		0	152	455	0	303	17
G-20	1817	1	2056	2336	0	1038	0
G-21	2143	62	204	204	7	306	23
G-22	412	15	1031	3402	20		
G-23		0		4697	2	758	100
G-24				1267	21	133	28
G-25	102	1		4286	31	408	2
H-1		0		2424	1	606	29
H-2		0		909	1		0
H-8		0	3333	7222	28	556	29
H-9	152	8	2121	1742	40	227	43
H-10	1212	29	1364	303	17	758	100
H-11	1667	9	7576	152	17	152	100
H-12	1600	14	3467		0		
H-13	1121	17	2243		0	187	67
H-14	282	18	986				

Table 2.--Continued

	C. BAIRDI			C. OPILIO		HYBRID	
		Legal (≥5.5")	Pre-recruit (3.9"-5.3")	Large (≥4.2")		Large (≥4.2")	
	no/sqmi	%legal	no/sqmi	no/sqmi	%large	no/sqmi	%large
H-15	133	33	267				
H-18		0		152	0	76	100
H-19	133	3	933	4800	5	400	3
H-20		0		2817	3	845	14
H-21	103	100		206	9		
H-22	18169	80	3380	8451	15	423	25
H-23	1067	44	1333	8800	1	1733	4
H-24	800	21	2133	9733	66	3067	100
H-25	133	2	800	2667	29	133	10
I-1				2727	1		
I-2		0		637	1		0
I-9	133	33					
I-10		0	152				
I-11	933	39	667		0	133	50
I-12	619	55	309				0
I-13	515	18	1649		0		0
I-14	282	11	1690				
I-15		0	133				
I-18				1867	0		0
I-19				515	0		0
I-20					0		0
I-21					0	845	0
I-22	3380	96	141	986		6761	11
I-23					0	5556	34
I-24	722	39	928	412		10722	45
I-25	309	5	515	206	100	2680	59
J-8	133	100					
J-12		0					
J-20					0	64	0
J-21						284	0
J-22						4597	10
J-23				133	17	3467	7
J-24	95	17	286		0	3238	12
J-25				104	14	3958	53
K-20							0
K-21							0

Table 2.--Continued

	C. BAIRDI			C. OPILIO		HYBRID	
		Legal (≥5.5")	Pre-recruit (3.9"-5.3")	Large (≥4.2")		Large (≥4.2")	
	no/sqmi	%legal	no/sqmi	no/sqmi	%large	no/sqmi	%large
K-22						714	0
K-23						1571	27
K-24					0	4286	50
K-25			286		0	7429	47
L-20							0
L-21							0
L-22							0
L-23						286	0
L-24						1238	50
L-25				104	33	2917	51
Z-5	1000	44	789				

[1] "0" in the percent column indicates no large crabs of that species were caught. A blank indicates no crab of that species were caught.
[2] The results are an average of six separate tows.
[3] The results are an average of three separate tows.
[4] The results are an average of twelve separate tows.

Table 3.--Information on stations where Tanner crabs were caught during the 1977 eastern Bering Sea survey.

Station	Date	Position		Loran C		Depth (FMS)	Bottom Temp. (C°)
		Latitude	Longitude				
A03	6/18	55-00	166-20	Y34737	Z48466	76	3.6
A04	6/18	55-00	165-45	Y34655	Z48273	68	
A05	6/18	55-00	165-09	Y34566	Z48057	57	
B01	7/9	55-20	167-32	Y34877	Z48930	77	3.8
B02	7/8	55-20	166-58	Y34796	Z48732	74	3.7
B03	6/12	55-19	166-20	Y34702	Z48508	69	4.0
B04	6/12	55-19	165-46	Y34615	Z48309	62	
B05	6/12	55-20	165-10	Y34516	Z48083	58	
B06	6/12	55-20	164-35	Y34426	Z47872	54	4.0
B07	5/27	55-20	163-59	Y34333	Z47649	40	
B08	5/25	55-27	163-33	X18498	Z34242	38	
C01	7/9	55-40	167-35	Y34853	Z48996	70	
C02	7/8	55-40	166-59	Y34759	Z48785	71	
C03	6/19	55-40	166-23	Y34662	Z48567	67	3.7
C04	6/19	55-40	165-48	Y34566	Z48350	61	4.1
C05	6/20	55-40	165-11	Y34462	Z48110	58	4.0
C06	6/20	55-40	164-35	Y34367	Z47889	52	4.5
C07	5/30	55-40	164-00	Y34271	Z47664	50	4.2
C08	6/4	55-40	163-25	Y34168	Z47433	43	3.9
C09	6/4	55-40	162-50	Y34076	Z47204	20	
C18	7/11	55-40	168-11	Y34938	Z49194	70	
D01	7/9	56-00	167-37	Y34820	Z49056	69	
D02	7/8	56-00	167-00	Y34716	Z48834	70	
D03	6/19	56-00	166-24	Y34609	Z48602	66	
D04	6/19	56-00	165-47	Y34501	Z48365	58	
D05	6/20	56-00	164-11	Y34399	Z48136	51	
D06	6/20	56-00	165-11	Y34399	Z48136	51	
D07	6/21	56-00	164-00	Y34197	Z47671	48	
D08	6/11	56-00	163-24	Y34097	Z47435	46	3.1
D09	4/4	56-00	162-48	Y33906	Z47200	42	
D10	6/4	56-00	162-13	Y33905	Z46969	31	
D11	6/5	56-01	161-36	Y33811	Z47833	17	
D18	7/11	56-00	168-13	Y34916	Z49268	78	

Table 3.--Continued

Station	Date	Position		Loran C		Depth (FMS)	Bottom Temp. (C°)
		Latitude	Longitude				
E01	7/9	56-20	167-39	Y34775	Z49108	68	3.9
E02	7/8	56-20	167-02	Y34658	Z48868	60	3.9
E03	7/4	56-20	166-26	Y34547	Z48634	54	3.6
E04	7/4	56-20	165-48	Y34434	Z48392	48	
E05	7/3	56-20	165-12	Y34324	Z48151	46	
E06	7/3	56-20	164-35	Y34215	Z47910	46	2.9
E07	6/21	56-20	164-00	Y34114	Z47677	46	
E08	6/11	56-20	163-24	Y34013	Z47435	45	3.1
E09	6/10	56-20	162-47	Y33917	Z47198	42	3.0
E10	6/10	56-20	162-12	Y33822	Z46963	41	
E11	6/5	56-20	161-39	Y33725	Z46731	34	3.2
E12	6/5	56-20	161-00	Y33634	Z46482	28	
E18	6/11	56-20	168-14	Y34880	Z49328	81	3.7
E19	7/30	56-20	168-52	X18532	Z49550	67	3.8
E20	7/30	56-20	169-28	X18484	Z49740	80	
E21	7/30	56-20	170-04	X18405	Z49897	57	
E22	7/29	56-20	170-42	X18272	Z50011	63	
E23	7/29	56-20	171-18	X18100	Y35106	74	
F01	7/7	56-40	167-40	Y34706	Z49140	55	
F02	7/6	56-40	167-04	Y34593	Z48905	51	3.5
F03	7/5	56-40	166-26	Y34547	Z48634	44	3.1
F04	7/4	56-40	165-50	Y34348	Z48410	41	
F05	7/3	56-40	165-13	Y34235	Z48162	40	
F06	7/2	56-40	164-36	Y34124	Z47916	39	2.9
F07	6/21	56-40	164-00	Y34018	Z47679	40	1.5
F08	6/22	56-40	163-23	Y33917	Z47430	40	2.0
F09	6/22	56-40	162-47	Y33816	Z47188	39	
F10	6/10	56-40	162-11	Y33723	Z46948	38	
F11	6/10	56-40	161-34	Y33628	Z46704	47	2.4
F12	6/5	56-40	161-00	Y33535	Z46471	35	
F13	6/6	56-40	160-22	Y33448	Z47224	32	3.2
F18	7/10	56-40	168-67	Y34830	Z49378	56	3.5
F19	7/10	56-41	168-53	Y34945	Z49612	53	3.6
F20	7/18	56-40	169-28	X18602	Y49832	41	4.5
F21	7/30	56-40	170-08	X18546	Z50012	51	3.8
F22	7/29	56-40	170-44	X18410	Z50105	59	3.7
F23	7/29	56-40	171-20	X18208	Y35071	62	3.7
F24	7/28	56-40	171-58	X17985	Y34996	64	3.8
F25	7/28	56-40	172-34	X17751	Y34912	70	
G01	7/7	57-00	167-42	Y34620	Z49159	41	

Table 3.--Continued

Station	Date	Position Latitude	Longitude	Loran C		Depth (FMS)	Bottom Temp. (C°)
G02	7/5	57-00	167-05	Y34496	Z48916	39	
G03	7/5	57-00	166-28	Y34370	Z48667	39	
G04	7/4	57-00	165-51	Y34252	Z48413	38	3.0
G05	7/3	57-00	165-13	Y34133	Z48160	37	2.6
G06	7/2	57-00	164-36	Y34020	Z47916	36	
G07	7/7	57-00	163-59	Y33916	Z47668	36	
G08	7/2	57-00	163-23	Y33810	Z47420	35	1.7
G09	6/22	57-00	162-47	Y33712	Z47182	32	
G10	6/23	57-00	162-10	Y33616	Z46936	32	
G11	6/9	57-00	161-34	Y33522	Z46696	36	
G12	6/9	57-00	160-56	Y33432	Z46441	34	
G13	6/6	57-00	160-20	Y33341	Z47204	35	
G14	6/6	57-00	159-43	Y33256	Z45944	30	
G18	7/10	57-00	168-20	Y34752	Z49410	42	
G19	7/10	57-00	168-57	Y34885	Z49656	41	
G20	7/19	57-00	169-31	Y35016	Z49892	32	3.2
G21	7/19	57-00	170-10	X18689	Z50114	36	
G22	7/19	57-00	170-46	X18507	Y35092	50	
G23	7/27	57-00	171-24	X18280	Y34999	57	3.6
G24	7/28	57-00	172-02	X18034	Y34896	61	3.9
G25	7/28	57-00	172-39	X17794	Y34816	64	
H01	7/7	57-20	167-44	Y34504	Z49152	38	3.1
H02	7/5	57-20	156-07	Y34376	Z48905	37	2.0
H08	7/1	57-20	163-23	Y33688	Z47412	27	
H09	6/22	57-20	162-46	Y33591	Z47167	26	2.7
H10	6/23	57-20	162-09	Y33496	Z46920	26	
H11	6/23	57-20	161-32	Y33404	Z46670	30	
H12	6/9	57-20	160-56	Y33319	Z46426	34	
H13	6/9	57-20	160-20	Y33231	Z46173	33	4.3
H14	6/6	57-20	159-40	Y33141	Z45920	30	
H15	6/7	57-20	159-04	Y33066	Z45680	26	
H18	7/6	57-20	168-22	Y34643	Z49408	39	3.0
H19	7/20	57-20	168-59	Y34772	Z49654	36	
H20	7/20	57-20	169-36	Y34904	Z49897	34	
H21	7/20	57-20	170-13	Y35004	Z50103	29	4.7
H22	7/19	57-20	170-51	X18515	Y34957	43	3.8
H23	7/27	57-20	171-28	X18294	Y34864	53	
H24	7/27	57-20	172-06	X18048	Y34781	58	
H25	7/27	57-20	172-43	X17808	Y34686	60	3.3
I01	7/6	57-40	167-46	Y34360	Z49123	36	
I02	7/6	57-40	167-08	Y34236	Z48888	36	2.0

Table 3.--Continued

Station	Date	Position Latitude	Longitude	Loran C		Depth (FMS)	Bottom Temp. (C°)
I09	6/27	57-40	162-45	Y33468	Z47150	22	2.8
I10	6/26	57-40	162-08	Y33375	Z46905	24	3.2
I11	6/23	57-40	161-30	Y33280	Z46654	27	3.6
I12	6/24	57-40	160-54	Y33196	Z46407	30	2.1
I13	6/8	57-40	160-16	Y33113	Z46155	28	
I14	6/8	57-40	159-38	Y33031	Z45901	26	
I15	6/7	57-40	159-01	Y32949	Z45667	24	
I18	7/6	57-40	168-24	Y34481	Z49368	37	
I19	7/20	57-40	169-02	Y34603	Z49603	36	3.2
I20	7/21	57-40	169-39	Y34702	Z49804	37	2.7
I21	7/21	57-40	170-16	Y34758	Z49963	38	
I22	7/21	57-40	170-54	Y34744	Z50045	44	
I23	7/26	57-40	171-32	X18263	Y34680	51	
I24	7/26	57-40	172-10	X18032	Y34603	56	
I25	7/26	57-40	172-48	X17808	Y34526	62	3.0
J08	6/27	58-00	163-23	Y33428	Z47380	22	2.7
J12	6/26	58-00	160-51	Y33064	Z46388	23	3.6
J20	7/22	58-00	169-44	634480	Z49702	36	2.7
J21	7/22	58-00	170-20	X18523	Z49842	39	
J22	7/21	58-00	170-59	Y34509	Z49937	45	2.5
J23	7/26	58-00	171-36	X18201	Y34472	51	2.5
J24	7/25	58-00	172-14	X18001	Y34418	55	2.5
J25	7/25	58-00	172-52	X17782	Y34352	57	
K20	7/23	58-20	169-44	Y34242	Z49592	36	2.0
K21	7/22	58-20	170-24	Y34264	Z49726	39	
K22	7/22	58-20	171-02	Y34272	Z49827	45	1.4
K23	7/24	58-20	171-38	Y34248	Z49888	50	
K24	7/24	58-20	172-18	Y34207	Z49936	54	
K25	7/25	58-20	172-56	X17746	Y34152	58	
L20	7/23	58-40	169-47	Y33992	Z49474	35	
L21	7/23	58-40	170-26	Y34024	Z49603	39	
L22	7/23	58-40	171-05	Y34028	Z49708	44	0.5
L23	7/24	58-40	171-43	Y34019	Z49784	49	1.4
L24	7/24	58-40	172-22	Y33984	Z49842	54	1.7
L25	7/25	58-40	173-00	X17704	Y33947	58	2.5
Z05	6/18	55-04	165-09	Y34608	Z48027	44	5.5

CHART NO. 1

Number of legal size Bairdi Tanner Crab caught at each station

1977

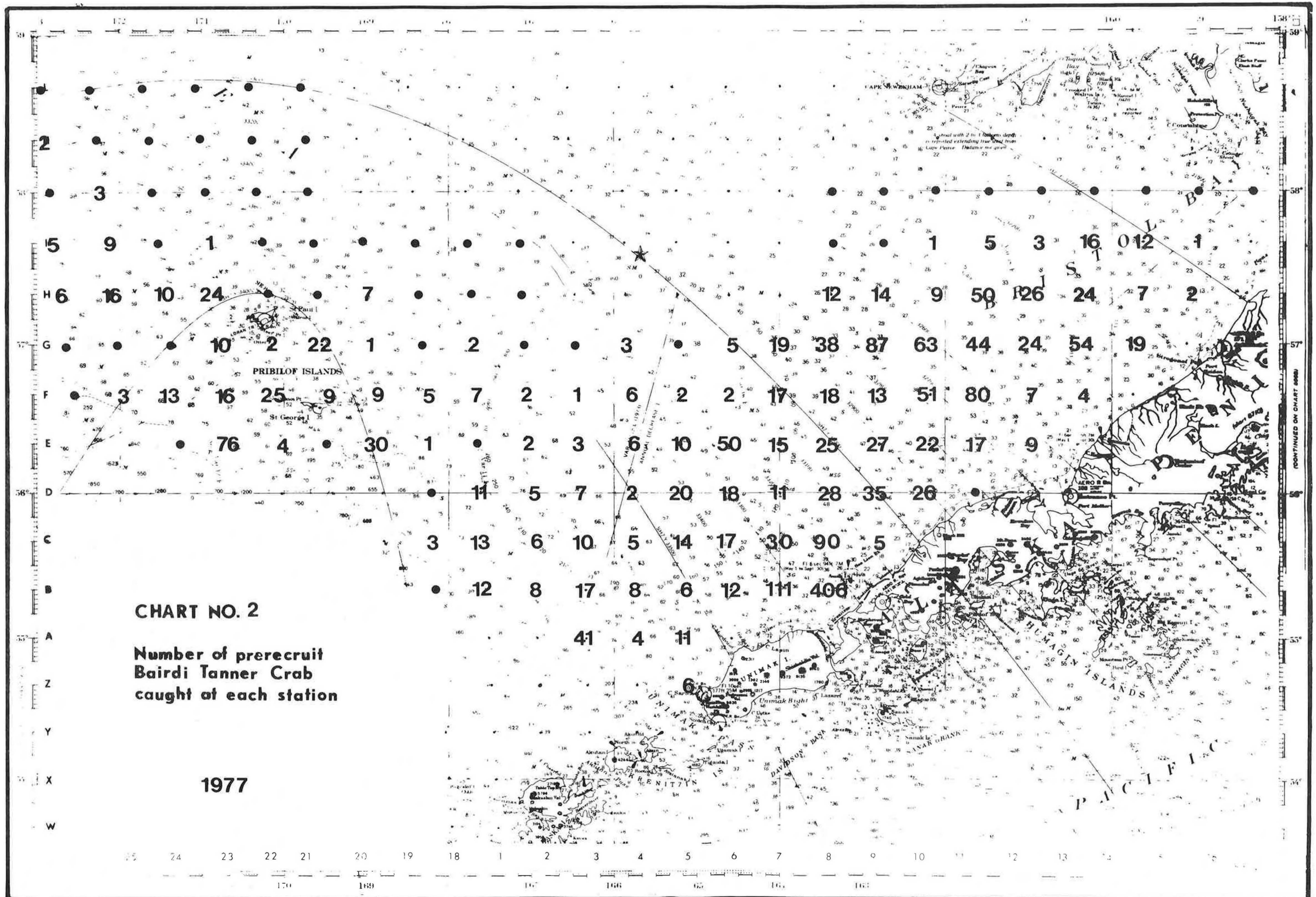


CHART NO. 2

Number of prerecruit Bairdi Tanner Crab caught at each station

1977

CHART NO. 3

Number of female Bairdi Tanner Crab caught at each station

1977

CHART NO. 4

Percent legals of all Bairdi Tanner Crab caught at each station

1977

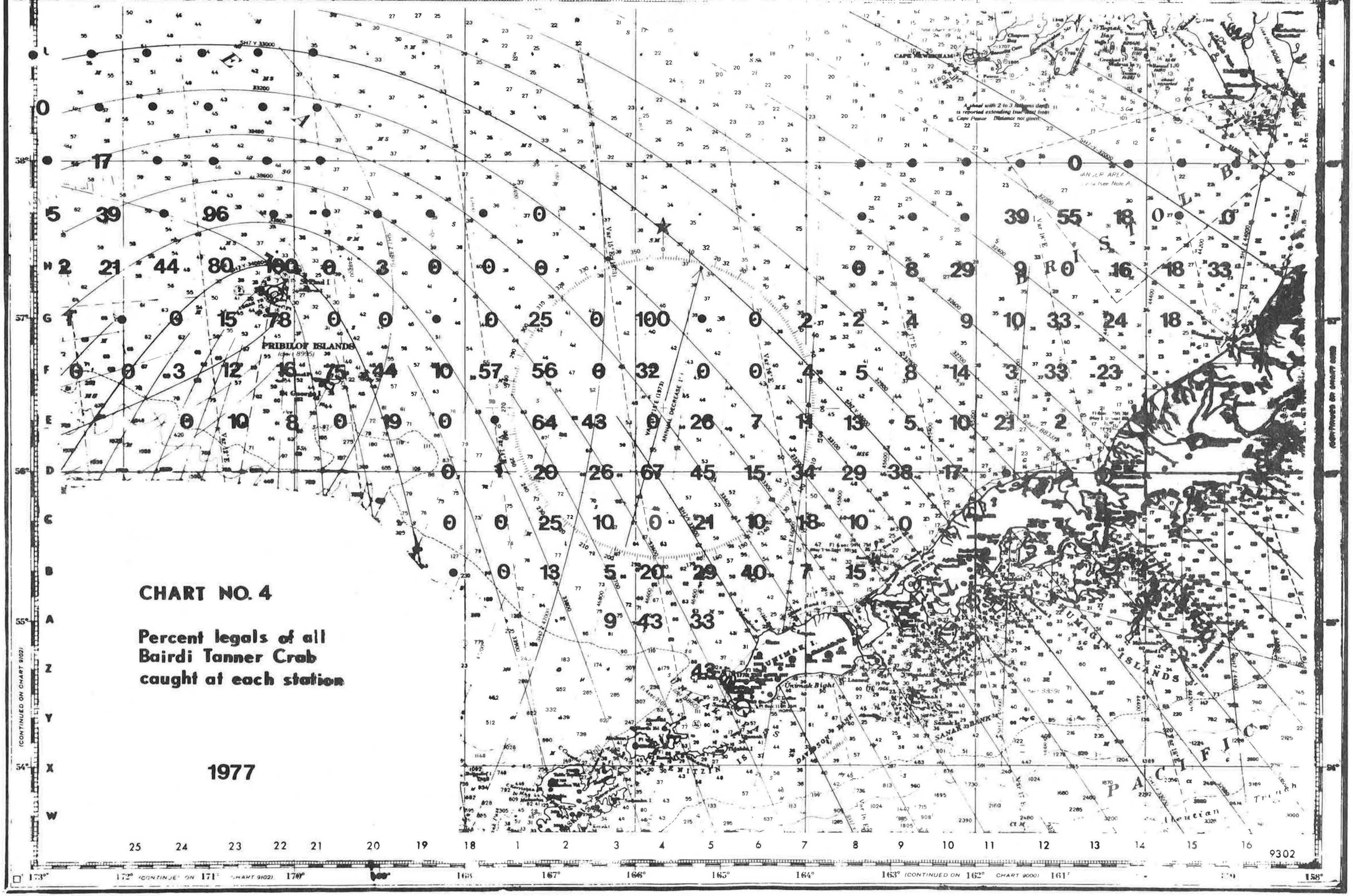


CHART NO. 5

Number of large male Opilio Tanner Crab caught at each station

1977

(CONTINUED ON CHART 9102)

172° CONTINUED ON 171° (CHART 9102) 170° 169° 168° 167° 166° 165° 164° 163° (CONTINUED ON 162° CHART 9000) 161 160 159 158°

59° 58° 57° 56° 55° 54°

A B C D E F

W X Y Z A B C D E F

25 24 23 22 21 20 19 18 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

9302

CHART NO. 6

Number of large male Hybrid Tanner Crab caught at each station

1977

PRIBILOF ISLANDS

UNIMAK ISLAND

PACIFIC

(CONTINUED ON CHART 9102)

(CONTINUED ON CHART 9000)

9302

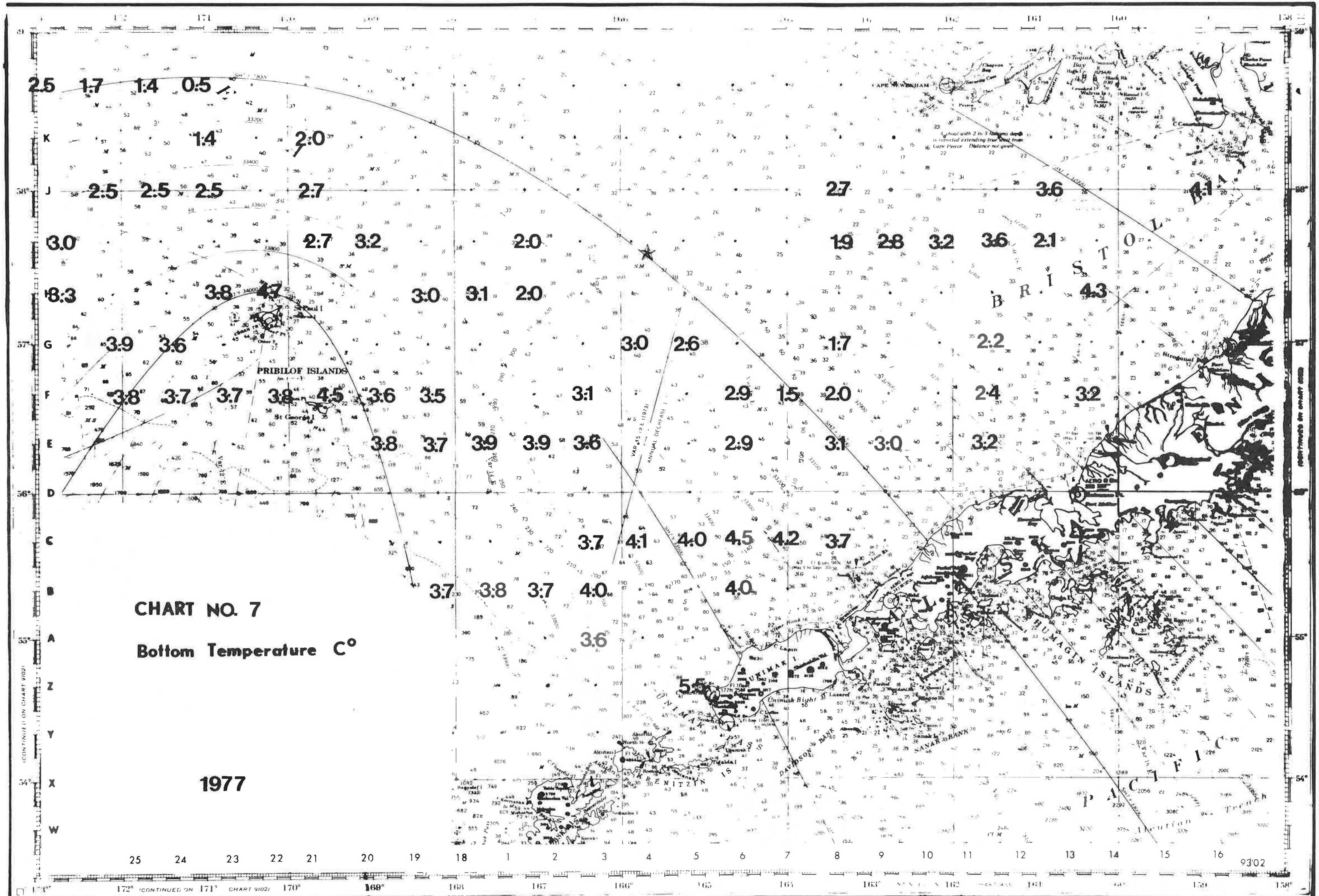


CHART NO. 7
Bottom Temperature C°
1977
PRIBILOF ISLANDS
St Paul I
St George I
CAPE NEWENHAM
B R I S T O L
P A C I F I C
UNIMAK I.
Unimak Bight
K R E N I T Z I N IS
DAVIDSON BANK
SANAK BANK
SHUMAGIN ISLANDS
9302

QUESTIONNAIRE

The purpose of this report is for use by the fishing and processing industries. This questionnaire is provided to help determine the type of report that is desired. Any comment or suggestion would be appreciated.

1. Several types of charts have been used in this and previous reports. Which of the following do you prefer:

a) Numbers of percentages per tow
b) Estimated numbers or percentages per square nautical mile
c) Symbols representing categories of b (above)
d) No preference
e) Other_____

2. Several charts have been excluded in this report which were present in previous reports. They include (1) the number of small C. opilio and small hybrid crabs and (2) the percentages of large C. opilio and large hybrid crab per area towed. These charts were excluded because their merit is questionable. Please indicate which of the following you prefer (circle as many as needed):

a) All size classes included on charts
b) Large and legal sizes only included on charts
c) Pre-recruits included on charts
d) Females included on charts
e) Percentages of large and legal
f) Percentages of C. bairdi only
g) No preference
h) Other_____

3. If there is data which you would like to be included in this report or changes you feel would be desirable, please comment on ways it may be improved:

_____

_____

_____

_____

To return this questionnaire, remove it from the report, fold so that the address shows and mail. No postage is necessary.

Thank you for your comments.

Postage and Fees Paid
U. S. Dept. of Commerce
COM 210

Northwest and Alaska Fisheries Center
Kodiak Facility
P. O. Box 1638
Kodiak, Alaska 99615

Please Print:

Name _____

Street Address _____

City _____

State _____

Zip Code _____