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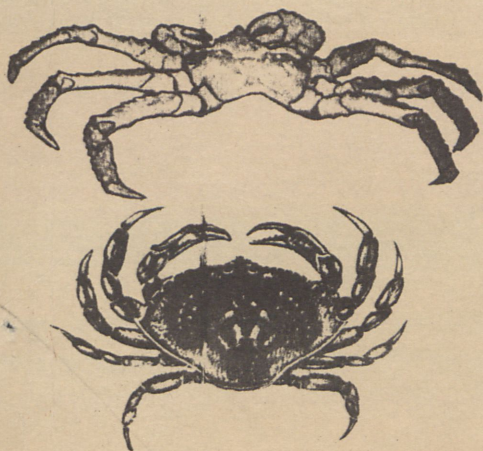
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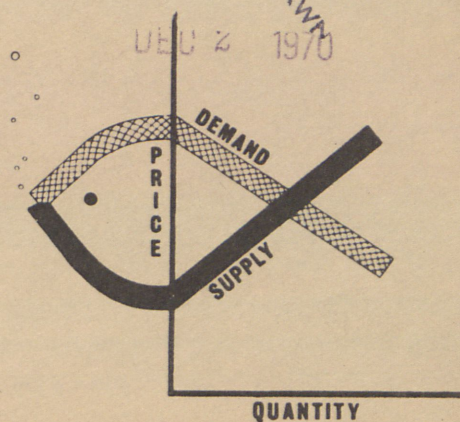
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BASIC ECONOMIC INDICATORS

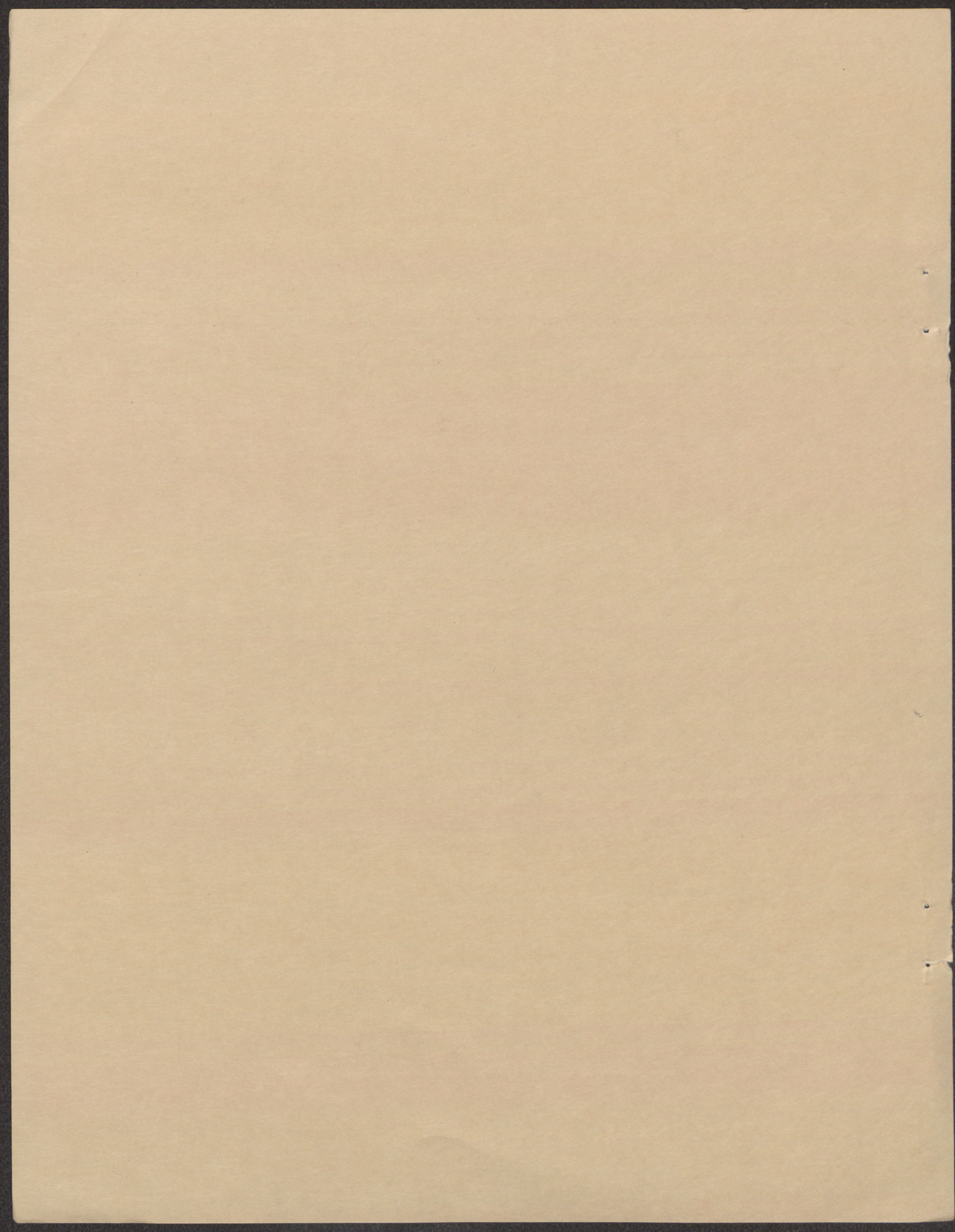
KING AND DUNGENESS CRABS

Master Plan Fishery 50 10 33

Working Paper No. 59

May 1970

US BUREAU OF COMMERCIAL FISHERIES
DIVISION OF ECONOMIC RESEARCH

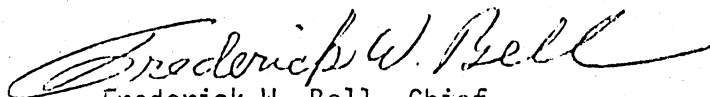


Foreward

The purpose of "Basic Economic Indicators" is to bring together pertinent economic, technological and biological data for each Master Plan fishery. The Division of Economic Research of the Bureau of Commercial Fisheries has consolidated the basic variables which reflect the economic behavior of a fishery. Having this basic data set under one cover will materially aid research and development currently being conducted on each fishery and will serve as a helpful guide to policy decisions. In addition, Basic Economic Indicators reflect a major shift in thinking away from the separate discipline approach and to an interdisciplinary approach to solving many of the problems faced by the U.S. fishing industry. Hopefully, these data will be of great value in furthering quantitative analyses of the nation's fisheries.

It should be noted that data for 1967 and 1968 are preliminary. Some figures are approximations and are subject to revision. Comments and suggestions may be directed to the Division of Economic Research, 7338 Baltimore Avenue, College Park, Maryland 20740.

The "Basic Economic Indicators" were compiled and reviewed by the staff of the Division of Economic Research under the supervision of Richard K. Kinoshita with major contributions from Bruno G. Noetzel and Kenneth E. Koller.



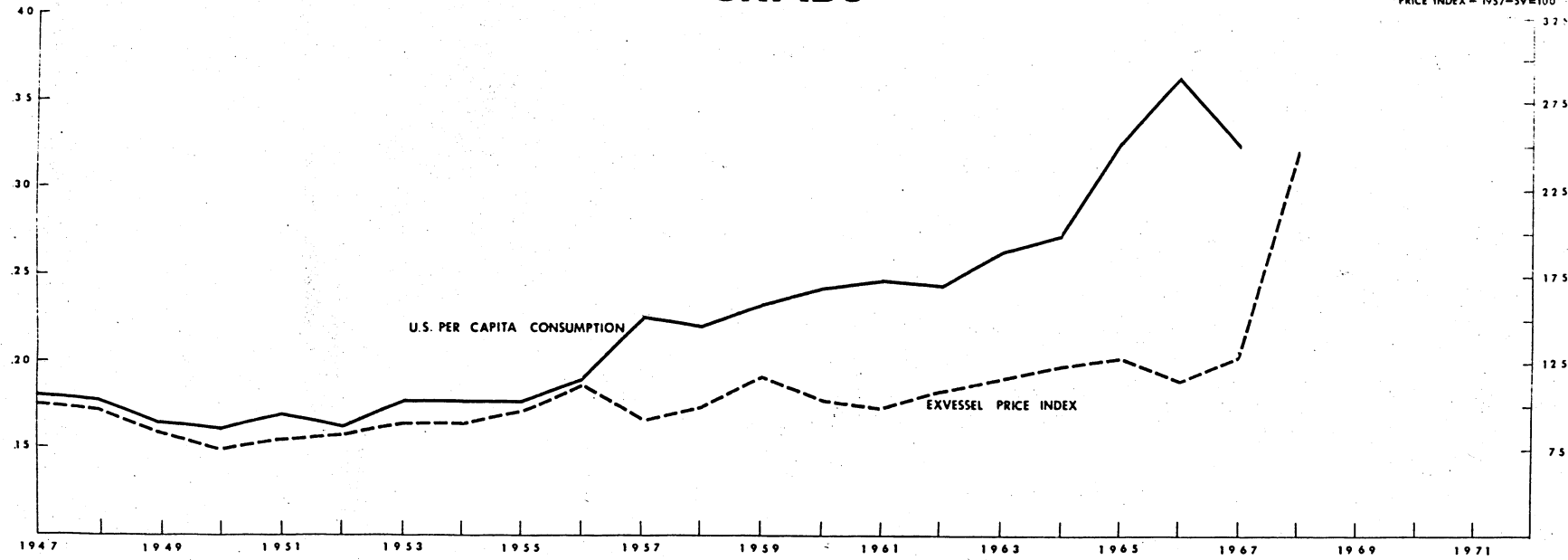
Frederick W. Bell, Chief

Division of Economic Research

CRABS

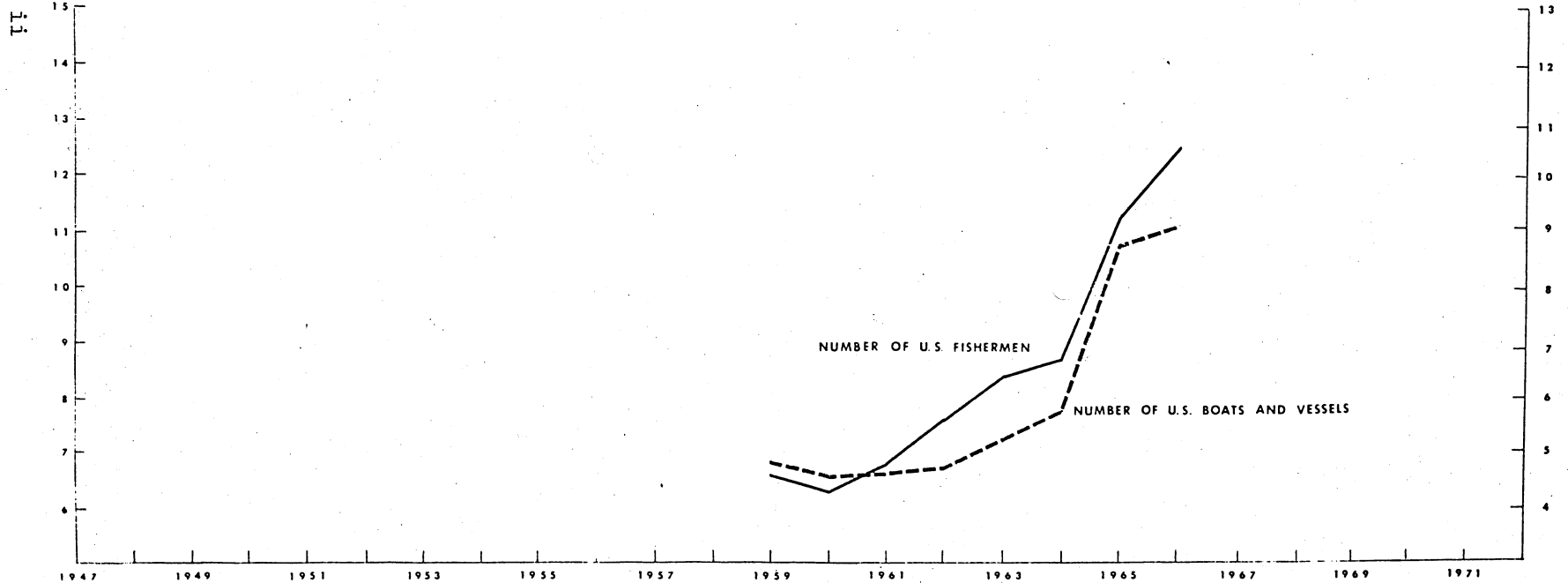
PER CAPITA CONSUMPTION - POUNDS

PRICE INDEX - 1957-59=100



NUMBER OF FISHERMEN - IN 1,000'S

NUMBER OF BOATS AND VESSELS - IN 1,000'S

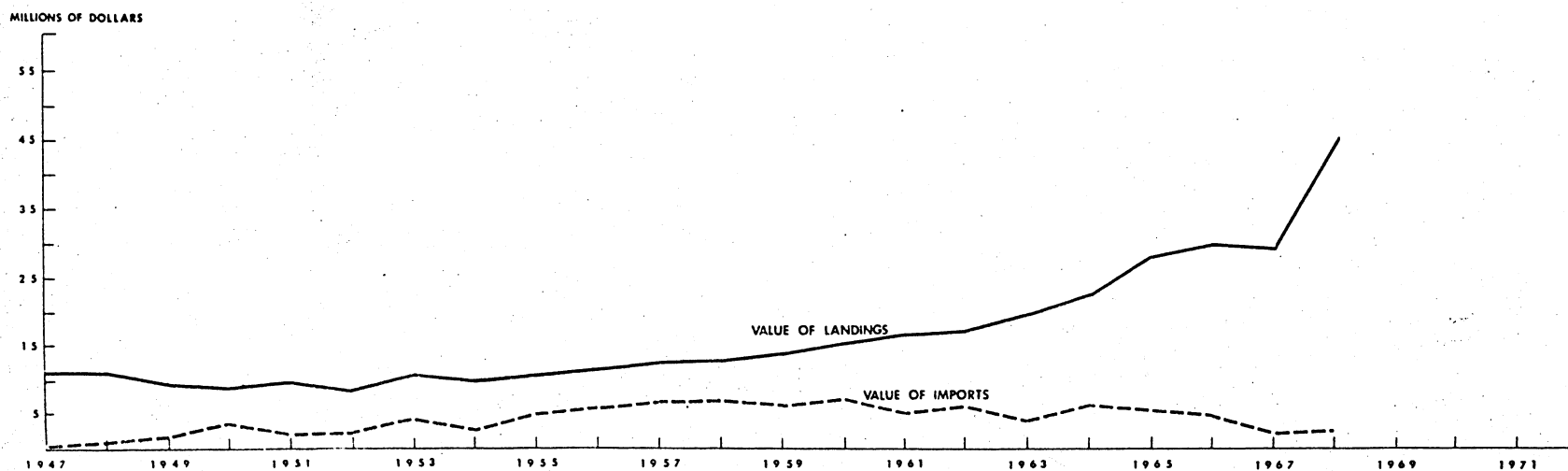
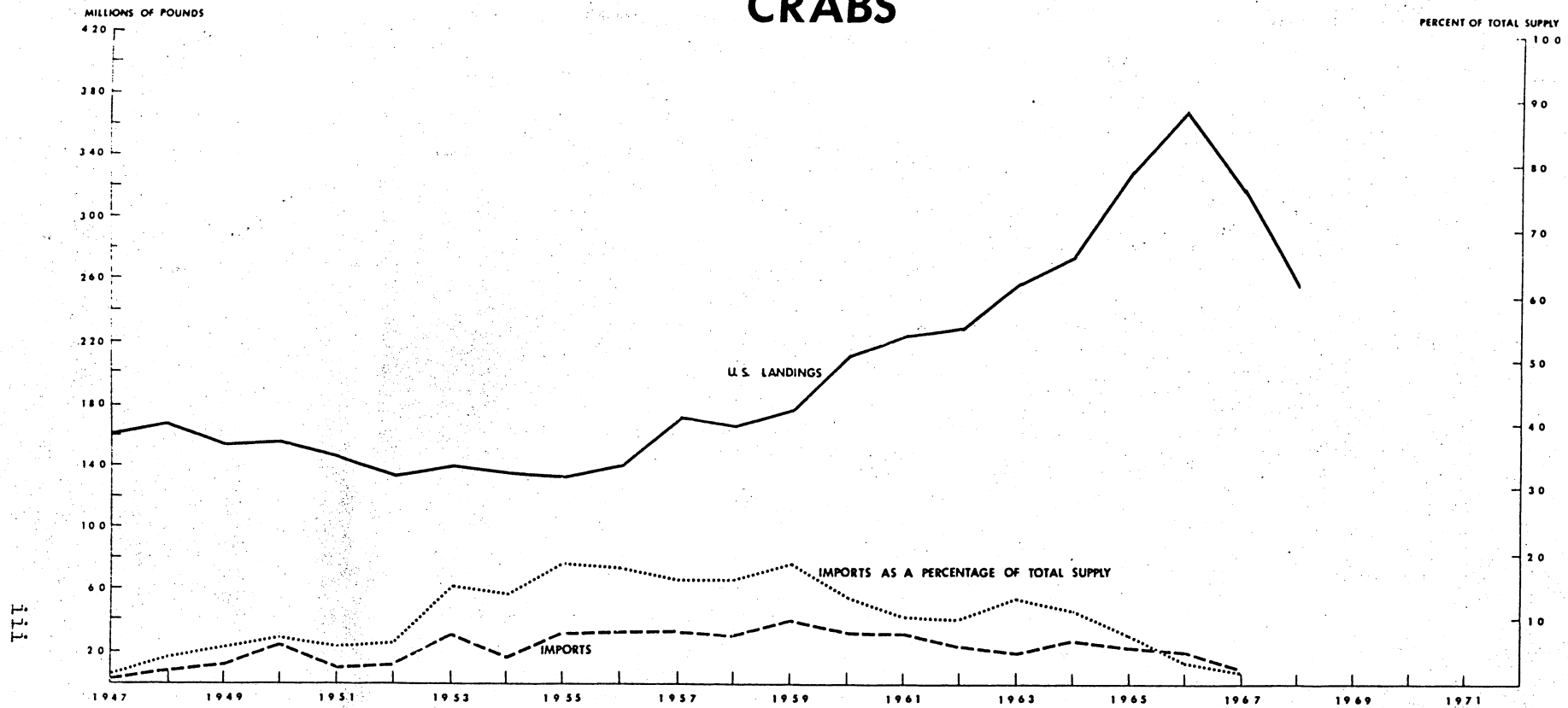


MASTER PLAN FISHERY 50 10 30 AND 50 10 33

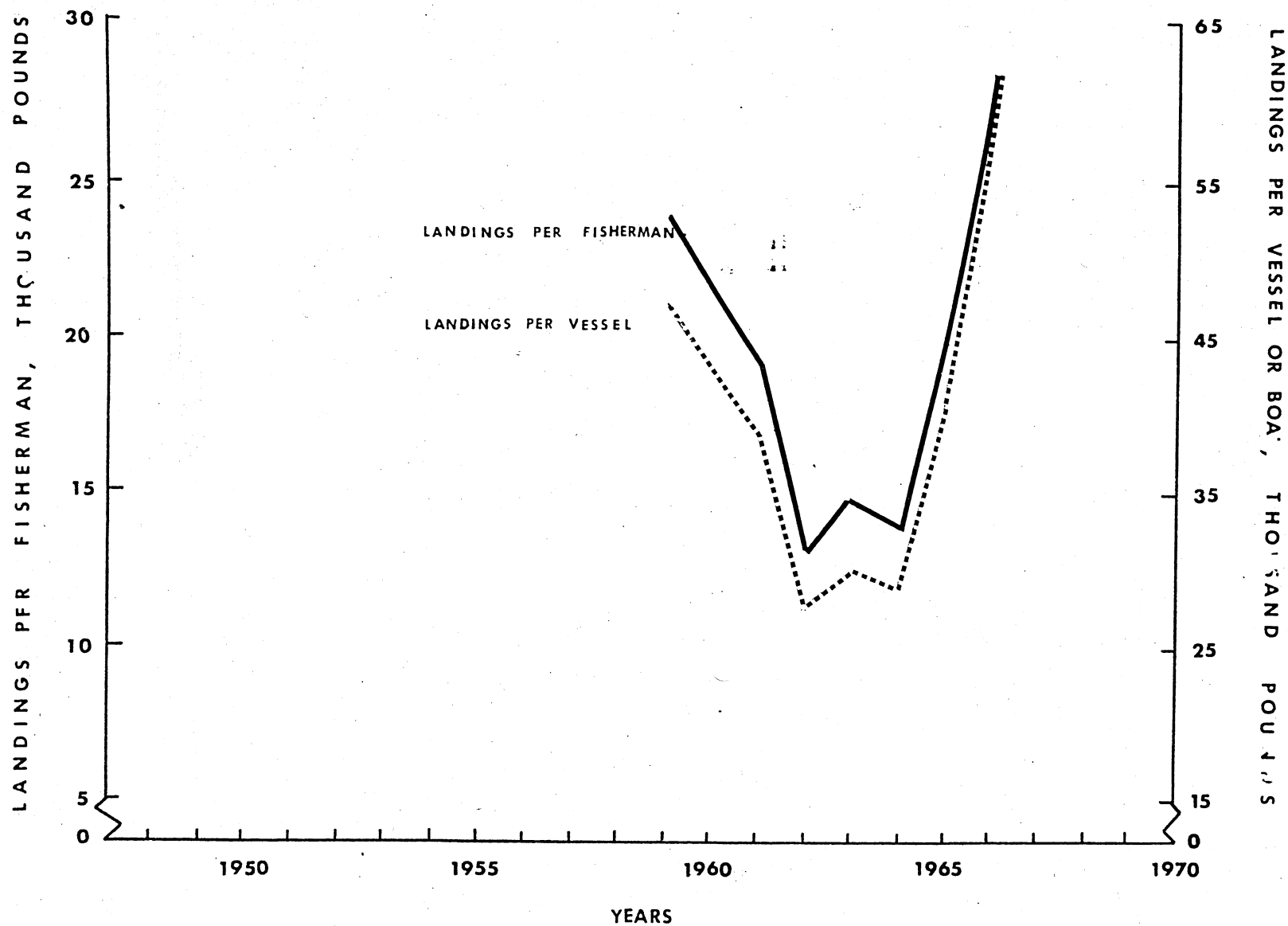
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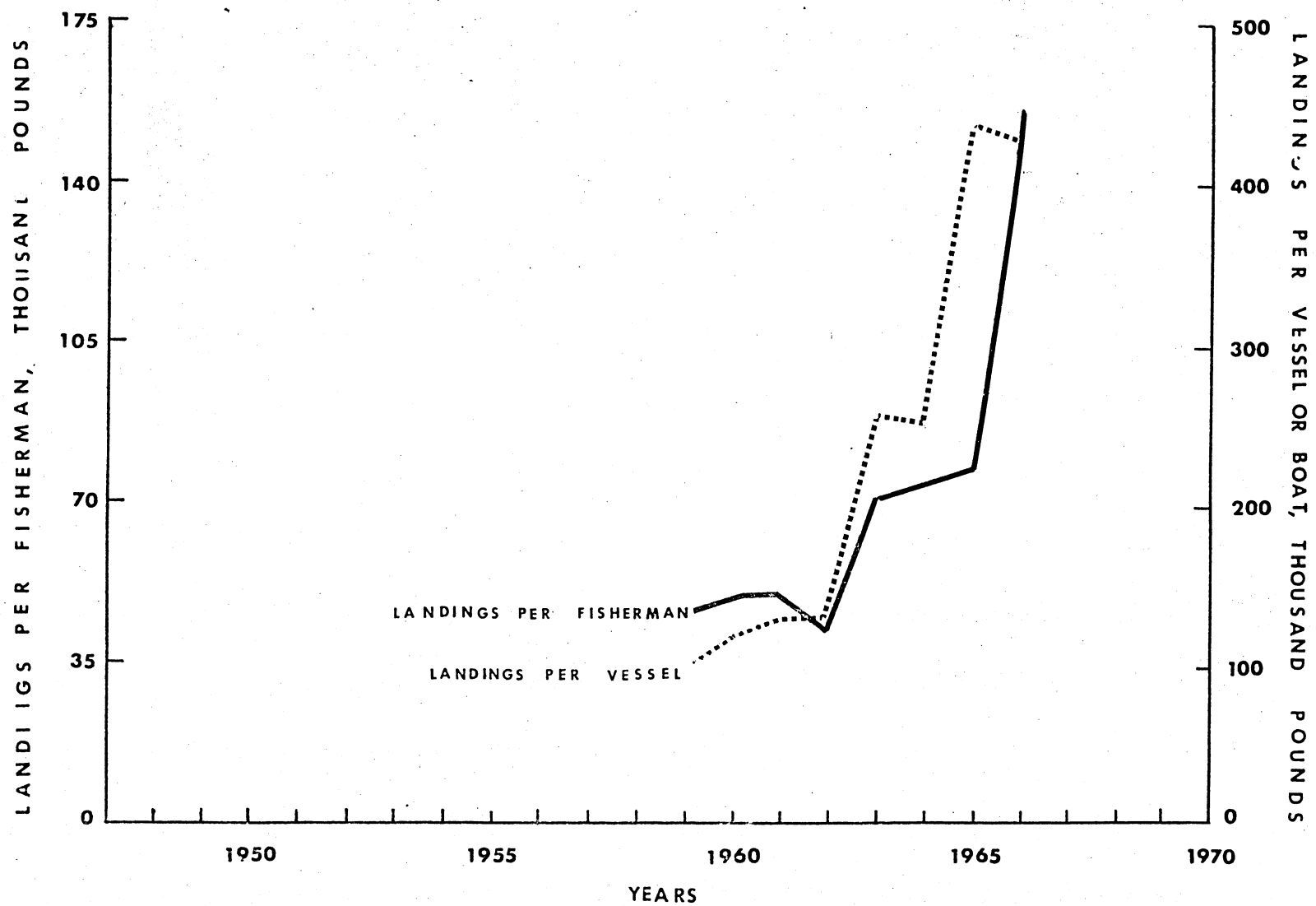
CRABS



PRODUCTIVITY OF DUNGENESS CRAB FISHERMEN AND VESSELS AND BOATS



PRODUCTIVITY OF KING CRAB FISHERMEN AND VESSELS AND BOATS



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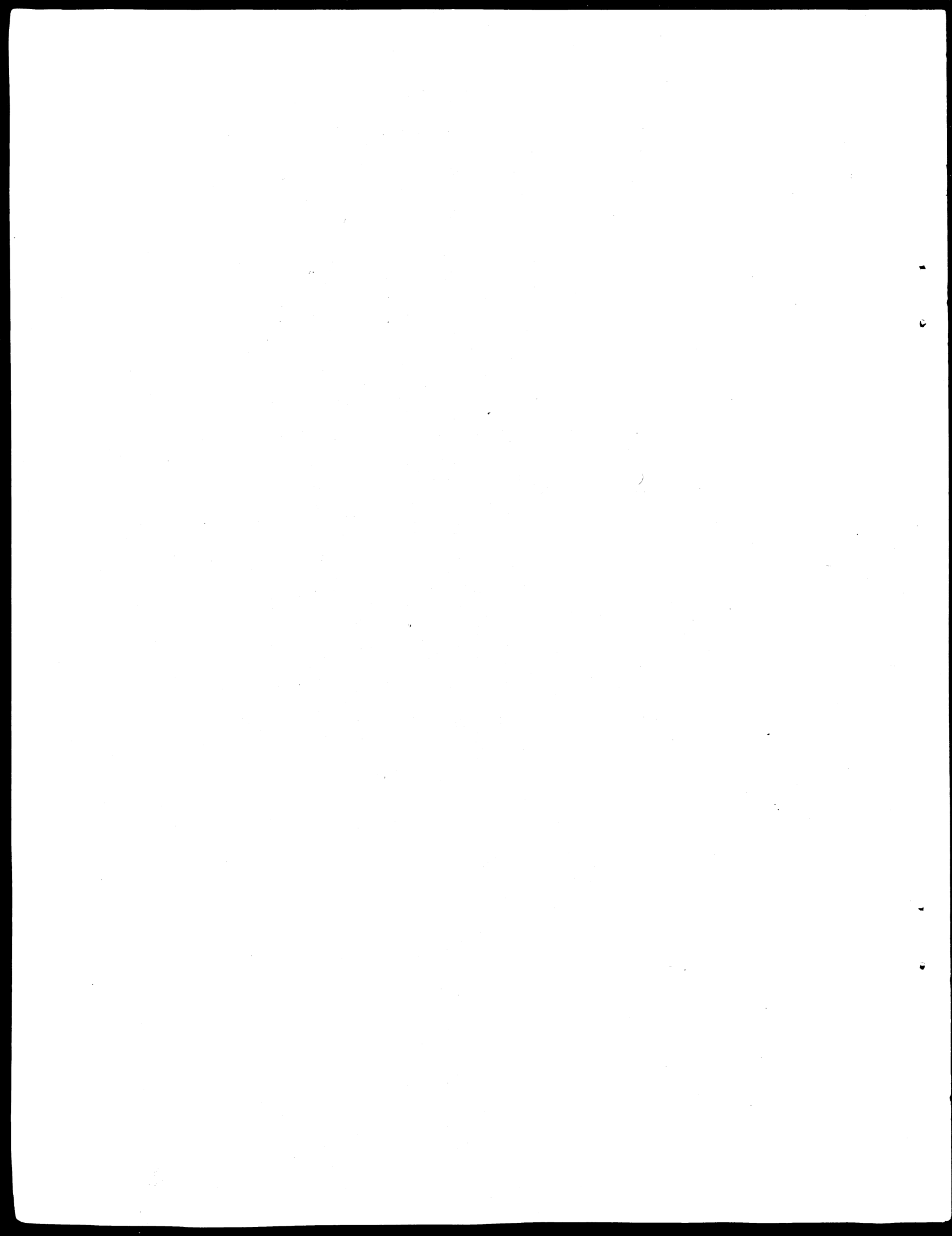
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I INDUSTRY PERFORMANCE INDICATORS

- Cost and earnings of vessels
- Earnings of fishermen
- Productivity
 - Vessels
 - Fishermen
 - Fishing effort
- Costs per pound of fish landed
- Historical growth rates
 - landings
 - fishermen
 - vessels

Table I - 1 --Average cost and earnings of king crab vessels ^{1/}

Item	1966	1967	1968
No. of vessels	21	28	35
Av. length of vessels	63	61	67
No. of trips	N.A.	N.A.	N.A.
Av. length of trip (days)	N.A.	N.A.	N.A.
Crew size	3.6	3.4	3.6
Days at sea	N.A.	N.A.	N.A.
^{2/} Landings (pounds)	837,683	697,227	374,233
Av. price (costs per pound)	9.84	11.72	30.00
Gross receipts (dollars)	82,428	81,715	112,270
Trip expenditure	-----Dollars per vessel-----		
Food	2,387	2,530	2,970
Fuel & lube	5,347	5,150	6,083
Ice & icing	N.A.	N.A.	N.A.
Other	951	1,360	1,744
Subtotal	8,685	9,040	10,797
Repair & maintenance			
Gear	4,324	4,877	8,019
Hull & engine	5,268	5,924	7,870
Subtotal	9,592	10,801	15,889
Fixed charges			
Interest	839	2,782	3,628
Insurance	3,781	5,681	7,609
Taxes (employee)	N.A.	N.A.	N.A.
Administrative	3,274	3,082	3,481
Subtotal	7,894	11,545	14,718
TOTAL CASH EXPENDITURES	26,171	31,386	41,404
TOTAL SHARE EXPENDITURES	56,257	50,329	70,866
Including:			
Wages	33,486	29,910	43,429
Captain's commission	4,548	4,495	6,604
Owner's share	18,223	15,924	20,833
Depreciation	7,210	9,305	10,650
Net return before taxes	11,013	6,619	10,183

Source: BCF, Division of Economic Research Data Bank.

^{1/} A sample of vessels from Seattle, Washington, and Kodiak, Alaska, on which cost and earnings data were made available to BCF. The average values are representative of vessels in the size range from 30 to 85 feet overall length (mean = 60 feet), with 2 - 4 men in crew.

^{2/} estimated.

Table I - 2 -- Earnings of king crab fishermen, 1966-68^{1/}

Item	1966	1967	1968
No. of vessels	21	28	35
Ave. crew size	3.6	3.4	3.6
Gross receipts	82,428	81,715	112,270
Share to labor	38,034	34,405	50,033
Ave. share per man	10,565	10,119	13,898
Food expenditures per man	663	744	825
Ave. share per man including food	11,228	10,863	14,723
Real share ^{2/}			
Wage in U.S. manufacturing	5,842	5,975	6,371
Real wage in U.S. manufacturing ^{2/}	5,165	5,137	5,274

Source: Based on data from Table I - 1

1/ Earnings per job site, for the whole season.

2/ Deflated by CPI.

Table I-3(a).--Productivity of dungeness crab (pot) fishermen and vessels:
Landings per fisherman, landings per vessel and landings
per trap.

	Landings per fisherman	Landings per vessel and boat	Landings per trap Pacific coast states, excl. Alaska	Alaska
		<u>Pounds</u>		
1947	19,807	30,650	362	n.a.
1948	n.a.	n.a.	n.a.	n.a.
1949	n.a.	n.a.	n.a.	n.a.
1950	17,711	31,068	307	n.a.
1951	22,137	40,402	370	n.a.
1952	n.a.	n.a.	383	n.a.
1953	n.a.	n.a.	378	n.a.
1954	n.a.	n.a.	366	n.a.
1955	22,223	38,201	324	n.a.
1956	18,865	30,305	318	n.a.
1957	n.a.	n.a.	583	n.a.
1958	28,774	59,882	564	n.a.
1959	23,821	46,126	404	676
1960	21,207	42,190	382	463
1961	19,233	38,743	340	576
1962	13,111	27,294	179	1,152
1963	14,574	29,813	169	1,007
1964	13,773	28,554	151	565
1965	19,885	40,324	252	426
1966	28,451	61,388	455	285
1967				
1968				
1969				
1970				
1971				
1972				

Source: Fishery Statistics of the U.S.

Table I-3(b).--Productivity of Alaska king crab (pot) fishermen and vessels: Landings per fisherman, landings per vessel and landings per trap

	Landings per fisherman	Landings per vessel and boat	Landings per trap
	<u>Pounds</u>	<u>Pounds</u>	<u>Pounds</u>
1959	49,191	96,122	3,089
1960	49,259	115,202	3,314
1961	50,715	128,438	4,308
1962	43,513	128,737	3,853
1963	71,065	254,822	4,921
1964	77,987	247,774	3,942
1965	152,397	434,558	5,407
1966	149,485	416,759	3,851
1967			4,439
1968			
1969			
1970			
1971			
1972			

Source: Fishery Statistics of the U. S.

Table I - 4 -- Costs per pound of king crab landed, 1966-67

Item	Unit	1966	1967	1968
Landings	pounds	837,683	697,227	374,233
Gross receipts	dollars	82,428	81,715	112,270
Average price	cents per lb.	9.84	11.72	30.00
- - - - <u>cents per pound</u> - - - -				
Trip expenditures		1.03	1.29	2.88
Repair & maintenance		1.14	1.54	4.24
Fixed charges		.94	1.65	3.93
Share to labor		4.54	4.93	13.36
Depreciation		.86	1.33	2.84
Cost per unit of output		8.51	10.74	27.25

Source: Based on data from Table I - 1

Table I-5.--Financial structure of fishing firms:
King crab vessels ^{1/}

Item	All assets sizes		Under \$100,000		Over \$100,000	
	Thou. dollars	Percent of total	Thou. dollars	Percent of total	Thou. dollars	Percent of total
<u>Assets</u>						
Current assets	5.9	6.6	2.6	5.9	9.2	6.9
Net value of vessel	51.4	57.7	35.3	80.4	67.5	50.2
Other non-current assets	31.8	35.7	6.0	13.7	57.7	42.9
Total assets	89.1	100	43.9	100	134.4	100
<u>Liabilities</u>						
Total current liabilities	2.7	3.0	-	-	5.5	4.1
Total long term liabilities	26.3	29.5	27.4	62.6	25.2	18.8
Capital stock and earned surplus	60.1	67.5	16.4	37.4	103.7	77.1
Total liabilities and capital	89.1	100	43.8	100	134.4	100

Source: Data Bank, Division of Economic Research, BCF

^{1/} A sample of 4 firms, for which data for 1968 was available
(not representative for the whole King crab fishing industry)

^{2/} Includes real estate property (home, land)

Table I-6--Estimated market value of a King Crab vessel,
based on present value of future returns.

Mean returns to vessel^{1/}: \$21,584

Discount rate ^{2/}	Expected useful life - Years			
	5	10	15	20
Percent:	Market value in dollars:			
12	77,800	122,000	147,000	161,200
18	67,500	97,000	109,900	115,500
24	59,200	79,500	86,400	88,700

^{1/} Based on data from Table I-1: Net return before taxes, plus depreciation, plus interest paid; average value for 1967-68.

^{2/} Arbitrarily chosen.

Table I-7(a)-Historical growth rate of dungeness crab landings,
fishermen, and vessels.

Landings ^{1/} (1959-1966)	-1.92 percent per year *
Fishermen ^{2/} (1959-1966)	-1.91 percent per year
Vessels ^{3/} (1959-1966)	-3.00 percent per year

^{1/}Log of landings (thou. lbs.) = 4.5169 - .00879 time (0.58)

^{2/}Log of number of fishermen = 3.2461 - .00839 time (1.58)

^{3/}Log of number of vessels = 2.9580 - .01317 time (2.71)

* This data is indicative of the percentage changes for recent years. Landings indicate a +.03 percent per year change when 1947-1968 data is used. The equation for landings for 1947-1968 is Log of landings (thou. lbs.) = 4.49107 + .00154 time.
(.4689)

Table I-7(b) Historical growth rate of king crab landings, fishermen,
and vessels

Landings ^{1/} (1950-1966)	+13.27 percent per year *
Fishermen ^{2/} (1959-1966)	+2.22 percent per year
Vessels ^{3/} (1959-1966)	+6.71 percent per year

^{1/}Log of landings (thou. lbs.) = 3.113 + .1231 time (29.71)

^{2/}Log of number of fishermen = 2.6981 + .0509 time (2.57)

^{3/}Log of number of vessels = 2.3629 + .0284 time (2.19)

* This data is indicative of the percentage changes for recent years. Landings indicate a +12.91 percent per year change when 1947-1968 data is used. The equation for landings for 1947-1968 is Log of landings (thou. lbs.) = 2.86301 + .11105 time. (23.18)

II DEMAND INDICATORS

-Consumption

- Aggregate
- Per capita
- Socio-economic characteristics

-Prices

- Exvessel
- Wholesale
- Retail

-Value

- Landings
- Wholesale
- Retail

-Relative prices

-Seasonal demand

-Price and income elasticities

Table II-1.--U.S. aggregate and per capita consumption of king
and dungeness crabs

	Aggregate ^{1/} million pounds	Per capita ^{2/} pounds
1947	8.1	.056
1948	12.7	.087
1949	10.8	.072
1950	11.1	.073
1951	9.4	.061
1952	9.2	.059
1953	11.6	.073
1954	11.9	.072
1955	13.0	.079
1956	15.9	.094
1957	19.2	.112
1958	18.3	.105
1959	20.9	.118
1960	19.5	.108
1961	21.2	.116
1962	20.2	.109
1963	27.5	.146
1964	27.8	.145
1965	37.7	.195
1966	43.7	.223
1967	38.2	.193
1968	34.3	.172
1969		
1970		
1971		
1972		

Source: Fishery Statistics of the U.S.

1/ Does not reflect changes in stocks as separate data for these two species are not available. (International trade effects are considered meat weight).

2/ The sum of these figures and their corresponding blue crab per capita consumption figures vary slightly from normally reported total crab per capita consumption figures because changes in stocks are not considered meat weight.

Table II-2.--U.S. consumption of crabs (fresh and frozen) by socio-economic characteristics, 1969 1/ 2/

(Retail Weight)					
Socio-Economic Characteristics	1969				
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Total
	-----Pounds per capita-----				
<u>RACE</u>					
Negro	.047	.141	.087	.013	.288
White	.046	.032	.033	.039	.150
Other	.075	.000	.150	.663	.858
Not specified	.080	.000	.000	.029	.109
<u>RELIGION</u>					
Catholic	.046	.027	.047	.028	.148
Jewish	.048	.033	.000	.116	.197
Protestant	.046	.041	.030	.038	.155
Other	.050	.000	.307	.062	.419
Not specified	.042	.000	.000	.000	.042
<u>INCOME PER CAPITA</u>					
Under 1,000	.018	.003	.002	.005	.028
1,000-1,999	.040	.027	.034	.042	.143
2,000-2,499	.020	.046	.014	.017	.097
2,500-2,999	.079	.070	.031	.046	.226
3,000-3,499	.030	.020	.023	.018	.091
3,500 & over	.093	.056	.067	.068	.284
<u>OCCUPATION</u>					
Prof. & semiprofessional	.026	.023	.026	.055	.130
Proprietors, managerial	.052	.046	.030	.039	.167
Clerical & sales	.062	.032	.031	.048	.173
Craftsmen, foremen	.038	.027	.028	.050	.143
Head operative	.034	.028	.035	.007	.104
Service workers, & laborers	.066	.062	.061	.025	.214
<u>EDUCATION</u>					
Less than 4 yr. high school	.045	.033	.034	.042	.154
Less than 4 yr. college	.046	.045	.033	.041	.165
College grad.	.052	.029	.042	.061	.184
Head, not spec.	.000	.000	.030	.018	.048
<u>REGION</u>					
New England	.045	.087	.017	.009	.158
Middle Atlantic	.042	.009	.045	.031	.127
E. North Cent.	.002	.004	.006	.005	.017
W. North Cent.	.004	.000	.001	.000	.005
South Atlantic	.062	.059	.055	.039	.215
E. South Cent.	.083	.036	.063	.024	.206
W. South Cent.	.014	.073	.008	.003	.098
Mountain	.046	.006	.024	.078	.154
Pacific	.152	.103	.100	.176	.531

Source: Division of Economic Research, Bureau of Commercial Fisheries

1/ Purchases by households for home use.

2/ Includes all types of crabs (i.e., king, dungeness, blue, etc.)

Table II-3(a).--Dungeness crab prices: Exvessel, wholesale, and retail

	Exvessel ^{1/}	Wholesale ^{2/}	Retail ^{2/}
	-----Cents per pound-----		
1947	9.84	18.92	36.44
1948	10.40	20.00	38.52
1949	10.11	19.44	37.44
1950	11.14	21.42	41.26
1951	12.53	24.10	46.41
1952	13.01	25.02	48.19
1953	13.89	26.71	51.44
1954	12.66	24.35	46.89
1955	12.69	24.40	47.00
1956	11.68	22.46	43.26
1957	8.25	15.87	30.56
1958	10.56	20.31	39.11
1959	13.62	26.19	50.44
1960	14.75	28.37	54.63
1961	15.22	29.27	56.37
1962	17.38	33.42	64.37
1963	17.32	33.31	64.15
1964	17.32	33.31	64.15
1965	16.25	31.25	60.19
1966	13.97	26.87	51.74
1967	15.67	30.20	58.70
1968	18.64	35.85	69.04
1969			
1970			
1971			
1972			

Source: Fishery Statistics of the U.S. and Division of Economic Research, BCF

1/ Weighted average price obtained by dividing total landings into value.

2/ Estimated by applying marketing margins in 1967 to the exvessel price.

Table II-3(b).--King crab prices: Exvessel, wholesale, and retail

	Exvessel ^{1/}	Wholesale ^{2/}	Retail ^{2/}
	-----Cents per pound-----		
1947	4.25	10.12	20.24
1948	4.50	10.71	21.42
1949	5.97	14.21	28.42
1950	5.99	14.26	28.52
1951	11.43	27.21	54.42
1952	13.99	33.31	66.62
1953	11.86	23.24	46.48
1954	9.92	23.62	47.24
1955	9.91	23.60	47.20
1956	9.82	23.38	46.76
1957	8.00	19.05	38.09
1958	8.00	19.05	38.09
1959	7.85	18.69	37.38
1960	8.00	19.05	38.09
1961	9.02	21.48	42.95
1962	10.00	23.81	47.61
1963	9.66	23.00	46.00
1964	9.44	22.48	44.95
1965	9.67	23.02	46.05
1966	9.84	23.43	46.86
1967	11.72	27.90	55.20
1968	30.00	71.42	142.80
1969			
1970			
1971			
1972			

Source: Fishery Statistics of the U.S. and Division of Economic Research, BCF

1/ Weighted average price obtained by dividing total landings into value.

2/ Estimated by applying marketing margins in 1967 to the exvessel price.

Table II-4(a).--Value of dungeness crab landings, wholesale,
and retail

	Exvessel	Wholesale ^{1/}	Retail ^{1/}
	-----Thousand dollars-----		
1947	3,111	5,983	11,522
1948	4,765	9,163	17,648
1949	3,543	6,813	13,122
1950	3,111	5,983	11,522
1951	3,674	7,065	13,607
1952	3,444	6,623	12,756
1953	3,693	7,102	13,678
1954	3,607	6,937	13,359
1955	3,088	5,938	11,437
1956	3,992	7,677	14,785
1957	3,529	6,787	13,070
1958	4,447	8,552	16,470
1959	5,032	9,677	18,637
1960	5,333	10,256	19,752
1961	4,977	9,571	18,433
1962	4,061	7,810	15,041
1963	4,306	8,281	15,948
1964	3,992	7,677	14,785
1965	4,699	9,037	17,404
1966	5,549	10,671	20,552
1967	6,654	12,796	24,644
1968	8,200	15,769	30,370
1969			
1970			
1971			
1972			

Source: Fishery Statistics of the U.S. and Division of Economic Research, BCF

^{1/} Estimated by applying the marketing margin in 1967 to the
exvessel level.

Table II-4(b).--Value of king crab landings, wholesale, and retail

	Exvessel	Wholesale ^{1/}	Retail ^{1/}
	-----Thousand dollars-----		
1947	32	76	152
1948	96	229	458
1949	72	171	342
1950	91	217	434
1951	228	543	1,086
1952	388	924	1,848
1953	547	1,302	2,605
1954	880	2,095	4,190
1955	809	1,927	3,852
1956	864	2,057	4,114
1957	1,046	2,490	4,981
1958	897	2,136	4,271
1959	1,478	3,519	7,038
1960	2,286	5,443	10,886
1961	3,914	9,319	18,638
1962	5,278	12,567	25,133
1963	7,607	18,112	36,224
1964	8,186	19,490	38,981
1965	12,729	30,307	60,614
1966	15,671	37,312	74,624
1967	14,970	35,643	71,286
1968	25,500	60,714	121,428
1969			
1970			
1971			
1972			

Source: Fishery Statistics of the U.S. and Division of Economic Research, BCF

^{1/} Estimated by applying the marketing margin in 1967 to the exvessel level.

Table II-5(a).--Retail dungeness crab prices relative to the consumer price index and the consumer price index of meat, poultry and fish, 1947-68

	Retail ^{1/}	Retail/CPI ^{2/}	Retail/CPImpf ^{3/}
-----Cents per pound-----			
1947	36.44	46.84	42.97
1948	38.52	45.97	40.04
1949	37.44	45.11	41.10
1950	41.26	49.24	43.39
1951	46.41	51.28	43.66
1952	48.19	52.10	45.76
1953	51.44	55.19	51.65
1954	46.89	50.10	47.08
1955	47.00	50.37	51.03
1956	43.26	45.68	49.16
1957	30.56	31.18	32.03
1958	39.11	38.84	37.46
1959	50.44	49.69	50.24
1960	54.63	52.99	55.13
1961	56.37	54.10	56.77
1962	64.37	61.07	63.29
1962	64.15	60.12	64.02
1964	64.15	59.34	65.06
1965	60.19	54.77	57.27
1966	51.74	45.75	45.35
1967	58.70	50.47	52.78
1968	69.04	56.96	60.72
1969			
1970			
1971			
1972			

Source: Division of Economic Research, BCF

^{1/}Estimated

^{2/}Consumer Price Index, 1957-59 = 100

^{3/}Consumer Price Index for meat, poultry, and fish, 1957-59 = 100

Table II-5(b).--Retail king crab prices relative to the consumer price index and the consumer price index of meat, poultry and fish, 1947-68

	Retail ^{1/}	Retail/CPI ^{2/}	Retail/CPImp ^{3/}
	-----Cents per pound-----		
1947	20.24	26.02	23.87
1948	21.42	25.56	22.27
1949	28.42	34.24	31.20
1950	28.52	34.03	29.99
1951	54.42	60.13	51.19
1952	66.62	72.02	63.27
1953	46.48	49.87	46.56
1954	47.24	50.47	48.25
1955	47.20	50.59	51.25
1956	46.76	49.38	53.14
1957	38.09	38.87	39.93
1958	38.09	37.83	36.48
1959	37.38	36.83	37.23
1960	38.09	36.94	38.44
1961	42.95	41.22	43.25
1962	47.61	45.17	46.81
1963	46.00	43.11	45.91
1964	44.95	41.58	45.59
1965	46.05	41.90	43.82
1966	46.86	41.43	41.07
1967	55.20	47.46	49.64
1968	142.80	118.02	125.59
1969			
1970			
1971			
1972			

Source: Division of Economic Research, BCF

^{1/}Estimated

^{2/}Consumer Price Index, 1957-59 = 100

^{3/}Consumer Price Index for meat, poultry, and fish, 1957-59 = 100

Table II-6.--Index of seasonal demand for king and dungeness crab,
by market area

NO DATA AVAILABLE

Table II-7.--Price and income elasticities for crabs (all forms)

Price Elasticity = -0.1487

Income Elasticity = 1.8789

Demand Equation for United States

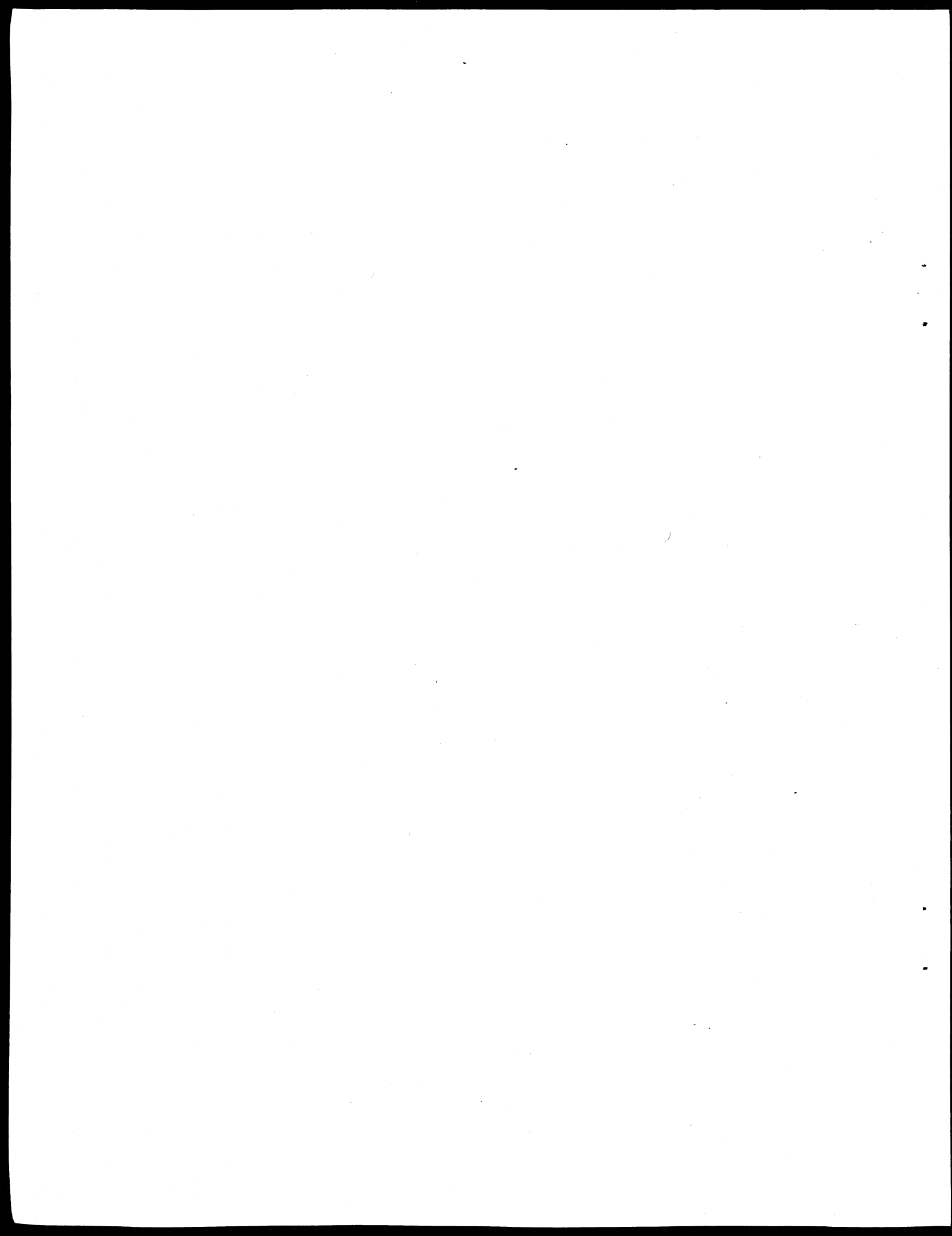
$$C/N = -5.9941 - 0.1487 \log \left[\frac{P}{CPI} \right] \\ + 1.8789 \log \left[\frac{Y/CPI}{N} \right]$$

C/N = Crabs consumption per capita

P/CPI = price of crabs divided by Consumer Price Index (CPI)

$\frac{Y/CPI}{N}$ = Per capita income deflated by CPI

Source: Division of Economic Research, Bureau of Commercial Fisheries



III DEMAND PROJECTIONS

-U.S. Consumption
Aggregate
Per capita

Table III-1.--Demand projections for crabs,
U.S. and world, to the year 2000^{1/}

Year	U.S. per cap. consumption	U.S. population	U.S. aggregate consumption	World aggregate consumption
	Pounds ^{2/}	Millions	-----Million pounds ^{2/} -----	
1966 (actual)	1.60	195.9	313	750
1970	2.01	206.0	413	930
1975	2.36	219.4	518	1,110
1980	2.63	235.2	618	1,262 [*]
1985	2.66	252.9	672	1,262
1990	2.57	270.8	695	1,262
2000	2.43	307.8	747	1,262

- Assumptions:
- (1) Declining income elasticity over time;
 - (2) A Schaefer biological yield curve;
 - (3) Fishery management instituted when world fishery reaches maximum sustainable yield;
 - (4) Relative prices of fishery product variable over time (i.e., cost of production derived from (2) allowed to interact with demand);
 - (5) Projected per capita income and population given by U.S. Department of Agriculture by country;
 - (6) Constant technology; and
 - (7) Input prices to fisheries rise at approximately same rate as all consumer prices.

Source: For a fuller description of above assumptions and alternative projections see Working Paper No. 71, "Economic Projections of U.S. and World Demand for Major Fishery Projects," by F. Bell, D. Nash, F. Waugh, and E. Carlson.

^{1/} For annual projection between five year intervals the reader may interpolate.

^{2/} Round weight

* Reaches MSY

IV DOMESTIC PRODUCTION

—Landings

—Value

Table IV-1.--Landings and value of king and dungeness crabs

(Round Weight)				
	King crabs		Dungeness crabs	
	Landings	Value	Landings	Value
	<u>thou. pounds</u>	<u>thou. dollars</u>	<u>thou pounds</u>	<u>thou. dollars</u>
1947	753	32	31,631	3,111
1948	2,133	96	45,823	4,765
1949	1,207	72	35,034	3,543
1950	1,519	91	27,930	3,111
1951	1,994	228	29,332	3,674
1952	2,773	388	26,469	3,444
1953	4,613	547	26,578	3,693
1954	8,871	880	28,481	3,607
1955	8,163	809	24,334	3,088
1956	8,796	864	34,184	3,992
1957	13,077	1,046	42,774	3,529
1958	11,212	897	42,097	4,447
1959	18,840	1,478	36,947	5,032
1960	28,570	2,286	36,157	5,333
1961	43,412	3,914	32,699	4,977
1962	52,782	5,278	23,364	4,061
1963	78,740	7,607	24,863	4,306
1964	86,721	8,186	23,043	3,992
1965	131,671	12,729	28,913	4,699
1966	159,202	15,671	39,718	5,549
1967	127,716	14,970	42,437	6,544
1968	85,000	25,500	44,000	8,200
1969				

Source: Fishery Statistics of the U. S.

Table IV-2.--Landings of dungeness crabs by states^{1/}

	Alaska	Washington	Oregon	California	Total
-----Thousand pounds round weight-----					
1947	1,393	11,973	7,532	10,733	31,631
1948	1,223	22,713	10,070	11,818	45,823
1949	1,429	13,143	9,347	11,115	35,034
1950	4,120	5,821	6,267	11,722	27,930
1951	5,482	4,830	7,452	11,568	29,332
1952	3,749	4,266	5,457	12,997	26,469
1953	3,472	7,004	7,824	8,278	26,578
1954	2,740	8,311	9,602	7,828	28,481
1955	4,384	7,149	6,681	6,120	24,334
1956	2,446	8,842	8,611	14,285	34,184
1957	552	11,090	12,018	19,114	42,774
1958	1,747	11,933	11,134	17,283	42,097
1959	3,999	8,257	7,429	17,262	36,947
1960	4,733	7,251	9,297	14,876	36,157
1961	4,591	7,109	9,288	11,711	32,699
1962	8,990	5,403	5,748	3,223	23,364
1963	12,084	6,674	4,153	1,952	24,863
1964	12,708	5,163	3,357	1,815	23,043
1965	8,895	8,104	7,110	4,804	28,913
1966	5,053	11,745	10,544	12,376	39,718
1967					
1968					
1969					
1970					
1971					
1972					

Source: Fishery Statistics of the U. S.

^{1/} All the king crab landings are in Alaska, therefore, no comparable table is prepared for that species.

Table IV-3(a).---Supply and disposition of king and dungeness crabs in the U.S.^{1/} 1947-68

	Landings		Total	Imports ^{2/}	Apparent total consumption ^{3/}
	King	Dungeness			
	-----Thousand pounds, round weight-----				
1947	753	31,631	32,384	2,495	34,879
1948	2,133	45,823	47,956	7,066	55,022
1949	1,207	35,034	36,241	11,799	48,040
1950	1,519	27,930	29,499	20,805	50,254
1951	1,994	29,332	31,326	10,195	41,521
1952	2,773	26,469	29,242	10,968	40,210
1953	4,613	26,578	31,191	22,094	53,285
1954	8,871	28,481	37,352	17,583	54,935
1955	8,163	24,334	32,497	29,319	61,816
1956	8,796	34,184	42,980	30,310	73,290
1957	13,077	42,774	55,851	31,665	87,516
1958	11,212	42,097	53,309	30,504	83,813
1959	18,840	36,947	55,787	38,120	93,907
1960	28,570	36,157	64,727	26,223	90,950
1961	43,412	32,699	76,111	25,560	101,671
1962	52,782	23,364	76,146	20,724	96,870
1963	78,740	24,863	103,603	29,628	133,231
1964	86,721	23,043	109,764	25,631	135,395
1965	131,671	28,913	160,584	23,413	183,997
1966	159,202	39,718	198,920	12,383	211,303
1967	127,716	42,437	170,153	12,539	182,692
1968	85,000	44,000	129,000	33,762	162,762
1969					
1970					
1971					
1972					

Source: Fishery Statistics of the U.S.

^{1/} This does not include changes in stocks as separate data for these species is not available.

^{2/} All imports converted to round weights (See Table VII-2)

^{3/} Exports not considered. Crab exports are reported with miscellaneous shellfish exports after 1949 and no separate data is available.

V DOMESTIC EMPLOYMENT, VESSELS AND EFFORT

- Fishermen
- Vessels
- Trips
- Days at sea
- Days fishing

Table V-1(a).--Number of fishermen and vessels in the U. S. dungeness crab pot fishery

	Fishermen			Vessels		
	On Vessels	On boats & shore	Total ^{1/}	Vessels	Boats	Total ^{1/}
	-----Number-----					
1947	618	979	1,597	229	803	1,032
1948	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1949	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1950	902	675	1,577	358	541	899
1951	743	582	1,325	315	411	726
1952	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1953	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1954	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1955	616	479	1,095	268	369	637
1956	1,094	718	1,812	482	646	1,128
1957	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1958	906	557	1,463	350	353	703
1959	1,026	525	1,551	444	357	801
1960	1,118	587	1,705	486	371	857
1961	1,150	551	1,701	498	346	844
1962	1,248	534	1,782	522	334	856
1962	1,173	533	1,706	508	326	834
1964	1,179	494	1,673	504	302	806
1965	1,012	442	1,454	441	276	717
1966	984	412	1,396	415	232	647
1967						
1968						
1969						

Source: Fishery Statistics of the U. S.

^{1/}Exclusive of duplication. Does not include Alaska prior to 1959.

Table V-1(b).--Number of fishermen and vessels in the Alaska king crab pot fishery

	Fishermen			Vessels		
	On Vessels	On boats & shore	Total ^{1/}	Vessels	Boats	Total ^{1/}
	-----Number-----					
1947	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1948	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1949	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1950	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1951	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1952	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1953	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1954	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1955	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1956	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1957	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1958	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1959	329	54	383	152	44	196
1960	486	94	580	201	47	248
1961	750	106	856	285	53	338
1962	1,023	190	1,213	315	95	410
1963	1,020	88	1,108	265	44	309
1964	941	171	1,112	268	82	350
1965	607	257	864	184	119	303
1966	780	285	1,065	247	135	382
1967						
1968						
1969						

Source: Fishery Statistics of the U. S.

^{1/} Exclusive of duplication

Table V-2(a).--Vessels and boats in the U.S. dungeness crab pot fishery

	Vessels				Total ^{1/}
	Alaska	Washington	Oregon	California	
	Number				
1947	n.a.	66	75	88	229
1948	n.a.	94	79	n.a.	n.a.
1949	n.a.	101	75	n.a.	n.a.
1950	n.a.	105	84	189	358
1951	n.a.	72	73	187	315
1952	n.a.	58	85	n.a.	n.a.
1953	n.a.	68	89	n.a.	n.a.
1954	n.a.	90	99	n.a.	n.a.
1955	n.a.	66	96	121	268
1956	n.a.	75	87	346	482
1957	n.a.	71	75	n.a.	n.a.
1958	n.a.	79	103	187	350
1959	28	86	105	249	444
1960	34	85	120	274	486
1961	36	95	138	256	498
1962	83	97	129	242	522
1963	95	96	138	207	508
1964	94	107	142	189	504
1965	54	102	118	191	441
1966	41	88	107	202	415
1967					
1968					
1969					
1970					
1971					
1972					

Table V-2(a).--Vessels and boats in the U.S. dungeness crab pot fishery (Continued)--

	Boats				
	Alaska	Washington	Oregon	California	Total ^{1/}
	-----Number-----				
1947	n.a.	301	194	308	803
1948	n.a.	264	153	n.a.	n.a.
1949	n.a.	183	138	n.a.	n.a.
1950	n.a.	161	127	253	541
1951	n.a.	139	57	215	411
1952	n.a.	105	54	n.a.	n.a.
1953	n.a.	111	65	n.a.	n.a.
1954	n.a.	114	75	n.a.	n.a.
1955	n.a.	87	75	207	369
1956	n.a.	86	67	493	646
1957	n.a.	99	74	n.a.	n.a.
1958	n.a.	77	86	190	353
1959	13	67	81	196	357
1960	33	99	68	171	371
1961	36	100	78	142	346
1962	46	85	80	123	334
1963	64	94	51	117	326
1964	51	84	67	100	302
1965	52	79	51	94	276
1966	16	74	49	93	232
1967					
1968					
1969					
1970					
1971					
1972					

Source: Fishery Statistics of the U.S.

^{1/} Exclusive of duplication. Does not include Alaska prior to 1959.

Table V-2(b).--Vessels and boats in the Alaska king crab pot fishery

	Vessels				Boats			
	Southeast	Central	Western	Total ^{1/}	Southeast	Central	Western	Total ^{1/}
	-----Number-----							
1947	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1948	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1949	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1950	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1951	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1952	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1953	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1954	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1955	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1956	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1957	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1958	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1959	-	152	-	152	-	44	-	44
1960	1	198	2	201	-	47	-	47
1961	14	272	9	285	-	53	-	53
1962	27	256	32	315	5	90	-	95
1963	9	256	25	265	10	27	7	44
1964	14	223	37	268	4	73	5	82
1965	6	176	44	184	7	107	19	119
1966	12	235	45	247	3	120	12	135
1967								
1968								
1969								
1970								
1971								
1972								

Source: Fishery Statistics of the U.S.

^{1/} Exclusive of duplication.

Table V-3(a).--Fishermen in the U.S. dungeness crab pot fishery

	On Vessels				
	Alaska	Washington	Oregon	California	Total ^{1/}
	-----Number-----				
1947	n.a.	187	206	225	618
1948	n.a.	257	215	n.a.	n.a.
1949	n.a.	266	210	n.a.	n.a.
1950	n.a.	282	228	444	902
1951	n.a.	192	182	408	743
1952	n.a.	146	196	n.a.	n.a.
1953	n.a.	165	208	n.a.	n.a.
1954	n.a.	225	236	n.a.	n.a.
1955	n.a.	162	230	258	616
1956	n.a.	178	211	765	1,094
1957	n.a.	172	183	n.a.	n.a.
1958	n.a.	194	255	505	906
1959	48	208	264	563	1,026
1960	65	202	278	636	1,118
1961	74	234	315	589	1,150
1962	219	237	301	559	1,248
1963	252	232	313	443	1,173
1964	248	245	325	427	1,179
1965	135	234	273	432	1,012
1966	112	206	249	478	984
1967					
1968					
1969					
1970					
1971					
1972					

Table V-3(a).--Fishermen in the U.S. dungeness crab pot fishery (Continued)

	On Boats & Shore				
	Alaska	Washington	Oregon	California	Total ^{1/}
	-----Number-----				
1947	n.a.	346	237	396	979
1948	n.a.	311	194	n.a.	n.a.
1949	n.a.	209	179	n.a.	n.a.
1950	n.a.	177	159	339	675
1951	n.a.	152	80	350	582
1952	n.a.	132	73	n.a.	n.a.
1953	n.a.	135	88	n.a.	n.a.
1954	n.a.	138	105	n.a.	n.a.
1955	n.a.	105	106	268	479
1956	n.a.	101	102	515	718
1957	n.a.	127	114	n.a.	n.a.
1958	n.a.	120	123	314	557
1959	18	107	117	283	525
1960	63	150	98	276	587
1961	68	137	114	232	551
1962	92	128	127	187	534
1963	128	144	84	177	533
1964	105	124	105	160	494
1965	107	121	83	131	442
1966	36	113	78	185	412
1967					
1968					
1969					
1970					
1971					
1972					

Source: Fishery Statistics of the U.S.

^{1/} Exclusive of duplication. Does not include Alaska prior to 1959.

Table V-3(b).--Fishermen in the Alaska king crab pot fishery

	On vessels				On boats and shore			
	Southeast	Central	Western	Total ^{1/}	Southeast	Central	Western	Total ^{1/}
	-----Number-----							
1947	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1948	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1949	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1950	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1951	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1952	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1953	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1954	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1955	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1956	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1957	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1958	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1959	-	329	-	329	-	54	-	54
1960	3	478	5	486	-	94	-	94
1961	41	704	30	750	-	106	-	106
1962	77	824	122	1,023	10	180	-	190
1963	27	958	131	1,020	20	54	14	88
1964	45	762	155	941	10	146	15	171
1965	15	564	174	607	14	214	57	257
1966	36	698	170	780	9	240	36	285
1967								
1968								
1969								
1970								
1971								
1972								

Source: Fishery Statistics of the U.S.^{1/} Exclusive of duplication.

Table V-4(a).--Gear in the Pacific Coast dungeness crab pot fishery

Year	Crab Pots				Total Gear ^{1/}
	Alaska	Washington	Oregon	California	
	<u>Number</u>				
1947	n.a.	37,800	26,200	17,826	81,826
1948	n.a.	43,100	27,050	n.a.	n.a.
1949	n.a.	38,950	25,100	15,418	77,743
1950	n.a.	31,850	25,900	19,678	76,153
1951	n.a.	25,050	19,200	20,551	64,001
1952	n.a.	19,000	17,800	20,551	57,351
1953	n.a.	21,575	20,300	21,864	61,014
1954	n.a.	23,600	27,000	20,575	69,275
1955	n.a.	19,500	26,100	22,605	61,105
1956	n.a.	22,600	24,500	51,708	97,408
1957	n.a.	19,100	20,400	34,875	72,230
1958	n.a.	19,000	27,400	28,740	71,440
1959	5,911	21,300	27,900	36,290	87,301
1960	10,216	25,835	31,100	34,255	92,302
1961	7,965	24,415	32,775	30,555	90,550
1962	7,800	23,060	33,400	27,090	88,009
1963	12,000	23,670	32,935	23,570	87,485
1964	22,500	24,215	31,051	24,770	90,819
1965	20,900	24,595	32,825	24,772	100,356
1966	17,700	23,075	28,500	28,242	93,908
1967					
1968					
1969					
1970					
1971					
1972					

Source: Compiled from data published in Fishery Statistics of the U. S.

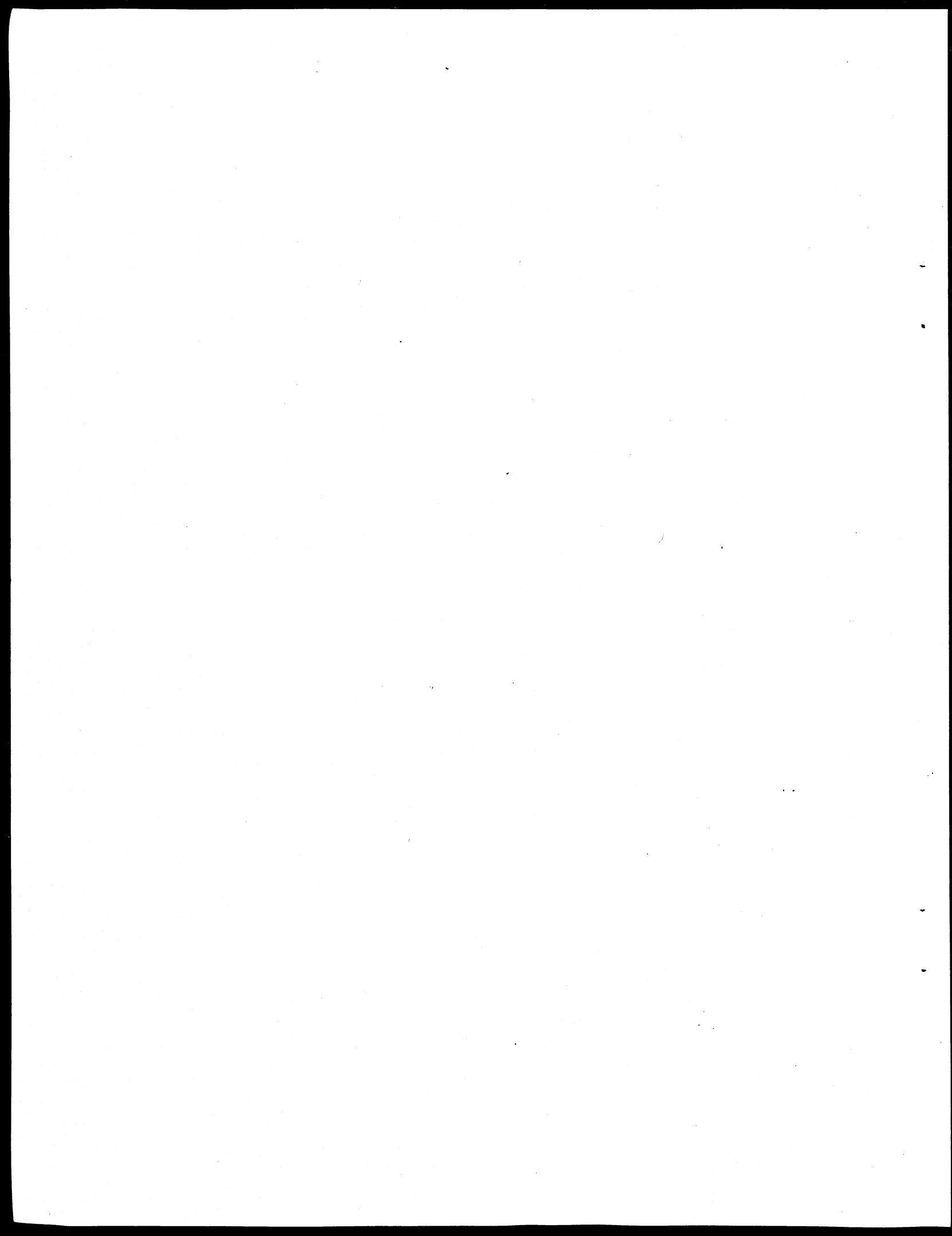
^{1/} Exclusive of duplication. Does not include Alaska prior to 1959.

Table V-4(b).--Gear in the Alaska king crab pot fishery

Year	Crab Pots			Total Gear ^{1/}
	Southeastern	Central	Western	
	<u>Number</u>			
	(Not available prior to 1959)			
1959	-	5,655	-	5,655
1960	30	8,275	70	8,375
1961	405	9,701	380	10,076
1962	1,500	10,400	1,800	13,700
1963	1,280	13,000	3,200	16,000
1964	1,800	16,500	4,200	22,000
1965	1,500	20,000	5,000	24,350
1966	1,500	36,700	4,800	41,340
1967	1,240	27,000	5,350	28,771
1968				
1969				
1970				
1971				
1972				

Source: Compiled from data published in Fishery Statistics of the U. S.

^{1/} Exclusive of duplication.



VI BIOLOGICAL STOCK ASSESSMENT

Table VI-1(a).--Estimates of maximum sustainable yield from world stock of dungeness crab

Region	MSY
	<u>Thou. metric tons</u>
I. North Pacific Dungeness crab (<u>Cancer magister</u>) (Longhurst, p. 30)	40.0 ^{1/}
II. Pacific Southeast Dungeness crabs (<u>Cancer</u> spp., <u>Taliepus</u> spp., and <u>Homalaspis</u> spp.) (Longhurst, p. 76)	<u>2.5</u>
Total	42.5

Source: Longhurst, Alan R. "Survey of Crustacean Resources," Area Reviews on Living Resources of the Ocean, FAO Indicative World Plan for Agricultural Development, Bureau of Commercial Fisheries, La Jolla, California.

^{1/} This was arrived at by assuming an increase to an annual rate of 22.0×10^3 tons along the western seaboard of North America; also, a similar increase along the Asiatic Coast, potential then constrained to 40.0 for the entire region.

Table VI-1(b).--Estimates of maximum sustainable yield from world stock of king crab.

Region	MSY Thou. metric tons
I. North Pacific King crab (<u>Paralithodes</u> <u>camschatica</u>) (Longhurst, p. 30)	100.0 ^{1/}
II. Pacific Southeast King crabs (<u>Lithodes</u> <u>antarcticus</u>) (Longhurst, p. 76)	<u>5.0</u>
TOTAL	105.0

Source: Longhurst, Alan R. "Survey of Crustacean Resources," Area Reviews on Living Resources of the Ocean, FAO Indicative World Plan for Agricultural Development, Bureau of Commercial Fisheries, La Jolla, California.

^{1/} The recent decline in the availability of king crabs suggests that the total potential of this resource may not be as high.

^{2/} Actually, this is only a related form, i.e., the southern form of of the king crab.

Table VI-2.--Estimate of maximum sustainable yield for
king and dungeness crab in waters fished
by U. S. fishermen.

Region	Species	MSY
		Thou. metric tons
I. North Pacific	King Crab	100
II. North Pacific	Dungeness Crab	40
	Total	140

Source: Bureau of Commercial Fisheries, Division of Economic Research. Longhurst, Alan R. "Survey of Crustacean Resources", Area Reviews on Living Resources of the Ocean, FAO Indicative World Plan for Agricultural Development, Bureau of Commercial Fisheries, La Jolla, California, 1969.

VII INTERNATIONAL TRADE

— Imports
Quantity
Value
Price

Table VII-1.--Quantity and value of crab (all forms) imports to the U.S.

	Fresh and Frozen		Crabmeat		Canned	
	Quantity ^{1/}	Value	Quantity ^{1/}	Value	Quantity ^{1/}	Value
	<u>Thousand pounds</u>	<u>Thousand dollars</u>	<u>Thousand pounds</u>	<u>Thousand dollars</u>	<u>Thousand pounds</u>	<u>Thousand dollars</u>
1947	196	18	12	9	378	303
1948	128	15	5	4	1,337	751
1949	84	12	6	5	2,307	1,960
1950	126	23	21	18	4,070	3,673
1951	99	24	16	14	1,968	2,100
1952	136	45	38	38	2,080	2,226
1953	584	155	112	106	3,982	4,045
1954	1,082	207	48	49	2,867	2,916
1955	1,246	318	220	208	4,951	4,718
1956	723	182	20	16	5,640	5,318
1957	259	66	4	3	6,185	6,254
1958	379	97	36	35	5,854	6,116
1959	457	133	66	52	7,304	7,947
1960	816	222	284	226	4,507	5,514
1961	1,031	278	135	133	4,237	5,780
1962	595	230	309	292	3,505	4,701
1963	681	264	251	224	5,296	6,370
1964	844	317	107	121	4,550	5,358
1965	841	218	49	28	4,166	4,935
1966	323	80	40	30	2,257	2,819
1967	681	240	52	45	2,117	2,708
1968	1,284	734	1,484	2,086	4,720	5,373
1969						
1970						
1971						
1972						

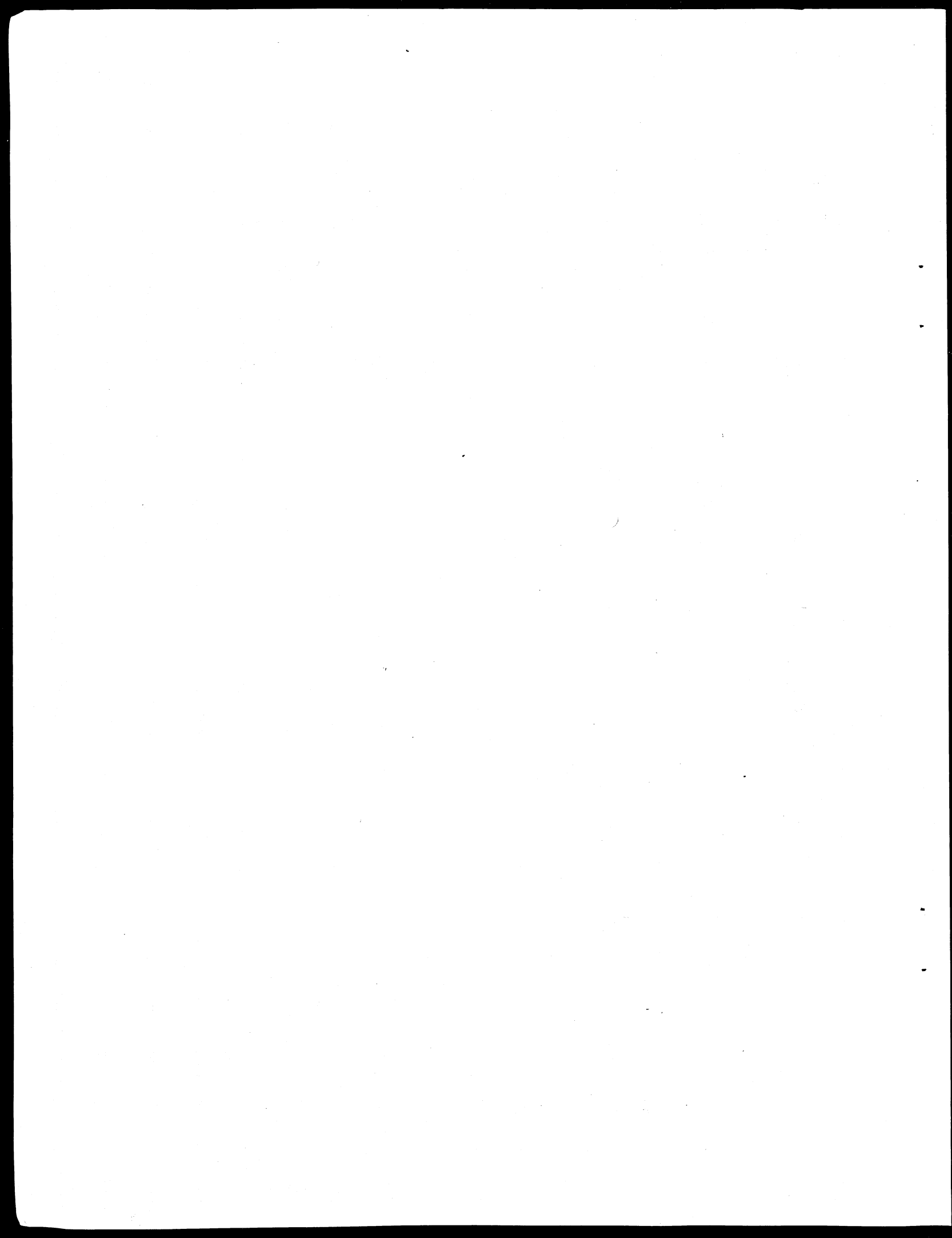
Source: Fishery Statistics of the U.S.

^{1/} Product weight.

Table VII-2.--Imports of crab (all forms) to the U.S. by country of origin

	Canada ^{1/}			Japan ^{2/}			Total Imports ^{3/}
	Meat	Fresh & Frozen	Canned	Meat	Fresh & Frozen	Canned	Thou. lbs.- round weight-
	-----Thousand pounds, product weight-----						
1947	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2,495
1948	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	7,066
1949	1	70	-	6	-	2,307	11,799
1950	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	20,805
1951	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	10,195
1952	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	10,968
1953	125	549	85	9	1	3,861	22,094
1954	41	1,075	-	6	1	2,845	17,583
1955	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	29,319
1956	1	709	-	13	11	5,614	30,310
1957	-	257	-	4	-	6,133	31,665
1958	15	357	-	12	21	5,797	30,504
1959	9	397	-	55	55	7,251	38,120
1960	103	806	-	166	8	4,432	26,223
1961	85	1,025	-	46	-	4,207	25,560
1962	40	595	-	206	-	3,442	20,724
1963	2	681	-	36	-	5,249	29,628
1964	67	844	5	-	-	4,378	25,631
1965	18	831	-	-	-	3,856	23,413
1966	12	312	-	24	6	2,124	12,383
1967	61	561	-	-	98	1,839	12,539
1968							
1969							
1970							
1971							
1972							

Source: U.S. Department of Commerce, Bureau of the Census, U.S. Imports.^{1/} All Canadian crab imports are Dungeness crabs.^{2/} Mostly King crab, but these figures include various other species.^{3/} Includes a small amount from other countries. These totals are from Richard K. Kinoshita and Frederick W. Bell, Working Paper No. 37, Major Economic Trends in Selected U.S. Master Plan Fisheries: A Graphical Survey, Bureau of Commercial Fisheries, Division of Economic Research.



VIII FOREIGN PRODUCTION

—Landings

Table VIII-1(a).--World landings of king crabs, by major countries

	U.S. ^{1/}	Japan	Korea ^{2/}	U.S.S.R.	Total ^{3/}
	-----Million pounds, round weight-----				
1947	0.8	n.a.	n.a.	n.a.	n.a.
1948	2.1	4.4	n.a.	32.0	38.5
1949	1.2	n.a.	n.a.	n.a.	52.9
1950	1.5	n.a.	n.a.	n.a.	61.7
1951	2.0	n.a.	n.a.	n.a.	79.4
1952	2.8	n.a.	n.a.	n.a.	83.8
1953	4.6	18.3	n.a.	62.6	85.5
1954	8.9	21.6	n.a.	81.6	112.1
1955	8.2	47.6	n.a.	82.5	138.3
1956	8.8	62.6	n.a.	79.6	151.0
1957	13.1	57.1	n.a.	65.7	135.9
1958	11.2	62.2	n.a.	68.1	141.5
1959	18.8	60.6	n.a.	71.0	150.4
1960	28.6	56.0	n.a.	80.9	165.5
1961	43.4	61.3	n.a.	85.3	190.0
1962	52.8	74.1	n.a.	91.3	218.2
1963	78.7	69.7	n.a.	93.7	242.1
1964	86.7	70.1	-	101.9	258.7
1965	131.7	57.1	0.7	97.9	287.4
1966	159.2	68.3	0.9	101.4	329.8
1967	127.7	66.8	-	93.3	287.8
1968	85.0	66.1	5.5	89.1	345.7
1969					
1970					
1971					
1972					

Source: FAO Yearbook of Fishery Statistics

^{1/} Data from Fishery Statistics of the U.S.

^{2/} As per 1966 FAO Yearbook, no landing reported separately prior to 1964.

^{3/} As revised in 1966 FAO Yearbook. Revised data for Japan and U.S.S.R. for 1947, 1949-52 is not available.

Table VIII-1(b).--World landings of dungeness crabs, by major countries

	U.S.	Canada	Total
	-----Thousand pounds, round weight-----		
1947	31,631	1,840	33,471
1948	45,823	1,669	47,492
1949	35,034	2,593	37,627
1950	27,930	1,864	29,794
1951	29,332	1,802	31,134
1952	26,469	1,999	28,468
1953	26,578	3,193	29,771
1954	28,481	4,188	32,669
1955	24,334	4,514	28,848
1956	34,184	3,791	37,975
1957	42,774	3,030	45,804
1958	42,097	4,209	46,306
1959	36,947	4,323	41,270
1960	36,157	5,068	41,225
1961	32,699	4,601	37,300
1962	23,364	2,771	26,135
1963	24,863	3,405	28,268
1964	23,043	4,351	27,394
1965	28,913	3,501	32,414
1966	39,718	4,538	44,256
1967	42,437	5,301	47,738
1968	44,000	4,400	48,400
1969			
1970			
1971			
1972			

Source: Canadian Fishermen, June, 1968, and Fishery Statistics of the U.S.

Table VIII-2(a).--World landings of king crabs: International trade and consumption, 1967

Country	Landings	Exports	Imports	Consumption
----- <u>Million pounds round weight</u> -----				
United States	127.7		5.4 ^{1/}	133.1
U.S.S.R.	93.3	58.6		34.7
Japan	66.8	17.6		49.2
Other			70.8	70.8
Total	287.8	76.2	76.2	287.8

Source: FAO Yearbook, Volume 25, 1967. Bureau of Census, 1967, Annual.

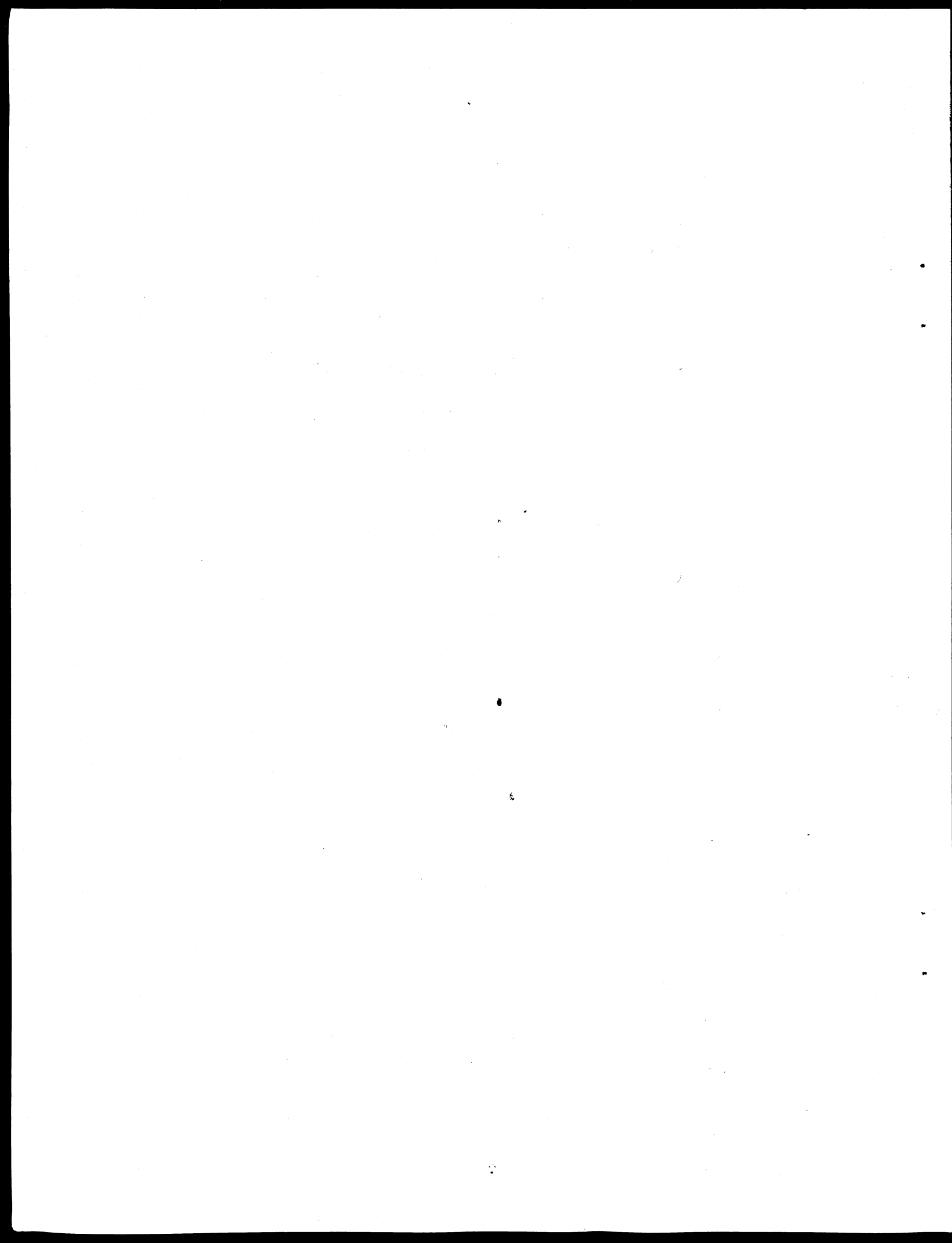
^{1/} This is the Japanese export of king crabs to the U. S. converted to round weights.

Table VIII-2(b).--World landings of dungeness crabs: International trade and consumption, 1967

Country	Landings	Exports	Imports	Consumption
--- <u>Million pounds round weight</u> -----				
United States	42.4		1.1 ^{1/}	43.5
Canada	5.3	1.1 ^{1/}		4.2
Other				
Total	47.7			47.7

Source: FAO Yearbook, Volume 25, 1967. Bureau of the Census, 1967, Annual.

^{1/} This is the total quantity of all Canadian crab exports to the U. S. since the only crab fishery in Canada is that for dungeness crabs. Data for Canadian exports to other countries is not available. The U. S. does not report its crab exports separately.



IX FOREIGN CONSUMPTION

—Consumption
Aggregate
Per capita

—Prices

Table IX-1.--World aggregate king and dungeness crab consumption by country

	U.S.	Canada	Japan ^{1/}	U.S.S.R. ^{1/}	Other	Total ^{2/}
	-----Million pounds, round weight-----					
1947	34.9	n.a.	n.a.	n.a.	n.a.	n.a.
1948	55.0	n.a.	n.a.	n.a.	n.a.	86.1
1949	48.0	2.5	n.a.	n.a.	n.a.	90.5
1950	50.3	n.a.	n.a.	n.a.	n.a.	91.4
1951	41.5	n.a.	n.a.	n.a.	n.a.	110.5
1952	40.2	n.a.	n.a.	n.a.	n.a.	112.3
1953	53.3	1.3	n.a.	n.a.	n.a.	115.2
1954	54.9	2.4	n.a.	n.a.	n.a.	144.8
1955	61.8	n.a.	n.a.	n.a.	n.a.	167.0
1956	73.3	2.6	34.4	12.6	66.0	188.9
1957	87.5	2.7	18.3	21.0	52.3	181.8
1958	83.8	3.6	10.5	19.9	70.0	187.8
1959	93.9	3.8	10.7	22.8	60.5	191.7
1960	91.0	3.4	24.3	37.4	50.7	206.8
1961	101.7	2.7	26.0	41.8	55.1	227.3
1962	96.9	1.5	42.4	56.0	47.4	244.2
1963	133.2	2.3	35.6	35.0	64.2	270.3
1964	135.4	2.8	30.1	39.6	78.2	286.1
1965	184.0	2.2	19.5	40.3	73.8	319.8
1966	211.3	3.9	40.1	45.0	73.6	373.9
1967	182.7	4.2	49.2	34.6	64.8	335.5
1968	162.8					394.1
1969						
1970						
1971						
1972						

Source: FAO Yearbook of Fishery Statistics and Fishery Statistics of the U.S.

^{1/} Derived by subtracting reported king crab exports from landings.

^{2/} As revised in the 1966 FAO Yearbook. Revised data for individual countries is not available prior to 1956.

Table IX-2.--King and dungeness crab per capita consumption by country

	U.S.	Canada	Japan	U.S.S.R.
	-----Pounds, round weight-----			
1947	.242	n.a.	n.a.	n.a.
1948	.375	n.a.	n.a.	n.a.
1949	.321	.187	n.a.	n.a.
1950	.331	n.a.	n.a.	n.a.
1951	.270	n.a.	n.a.	n.a.
1952	.257	n.a.	n.a.	n.a.
1953	.335	.087	n.a.	n.a.
1954	.339	.157	n.a.	n.a.
1955	.374	n.a.	n.a.	n.a.
1956	.436	.161	.382	.063
1957	.511	.162	.201	.103
1958	.481	.210	.115	.096
1959	.530	.217	.116	.109
1960	.506	.190	.261	.175
1961	.556	.148	.276	.192
1962	.521	.086	.447	.253
1963	.706	.125	.371	.156
1964	.708	.149	.311	.174
1965	.949	.115	.199	.175
1966	1.078	.195	.406	.193
1967	.923	.206	.492	.146
1968	.815			
1969				
1970				
1971				
1972				

Source: FAO Yearbook of Fishery Statistics and U.N. Statistical Yearbook, World Population.

Table IX-3(a).--World king crab prices ^{1/} by selected countries

	U.S.	U.S.S.R.	Japan
	-----Cents per pound-----		
1947	4.25	n.a.	n.a.
1948	4.50	n.a.	n.a.
1949	5.97	n.a.	n.a.
1950	5.99	n.a.	n.a.
1951	11.43	n.a.	n.a.
1952	13.99	n.a.	n.a.
1953	11.86	n.a.	n.a.
1954	9.92	n.a.	n.a.
1955	9.91	n.a.	13.13
1956	9.82	n.a.	9.39
1957	8.00	n.a.	7.23
1958	8.00	n.a.	8.65
1959	7.85	n.a.	7.60
1960	8.00	n.a.	7.32
1961	9.02	n.a.	11.34
1962	10.00	n.a.	17.78
1963	9.66	n.a.	19.58
1964	9.44	n.a.	22.66
1965	9.67	n.a.	23.54
1966	9.84	n.a.	26.21
1967	11.72	n.a.	28.41
1968	30.00	n.a.	
1969			
1970			
1971			
1972			

Source: FAO Yearbook of Fishery Statistics

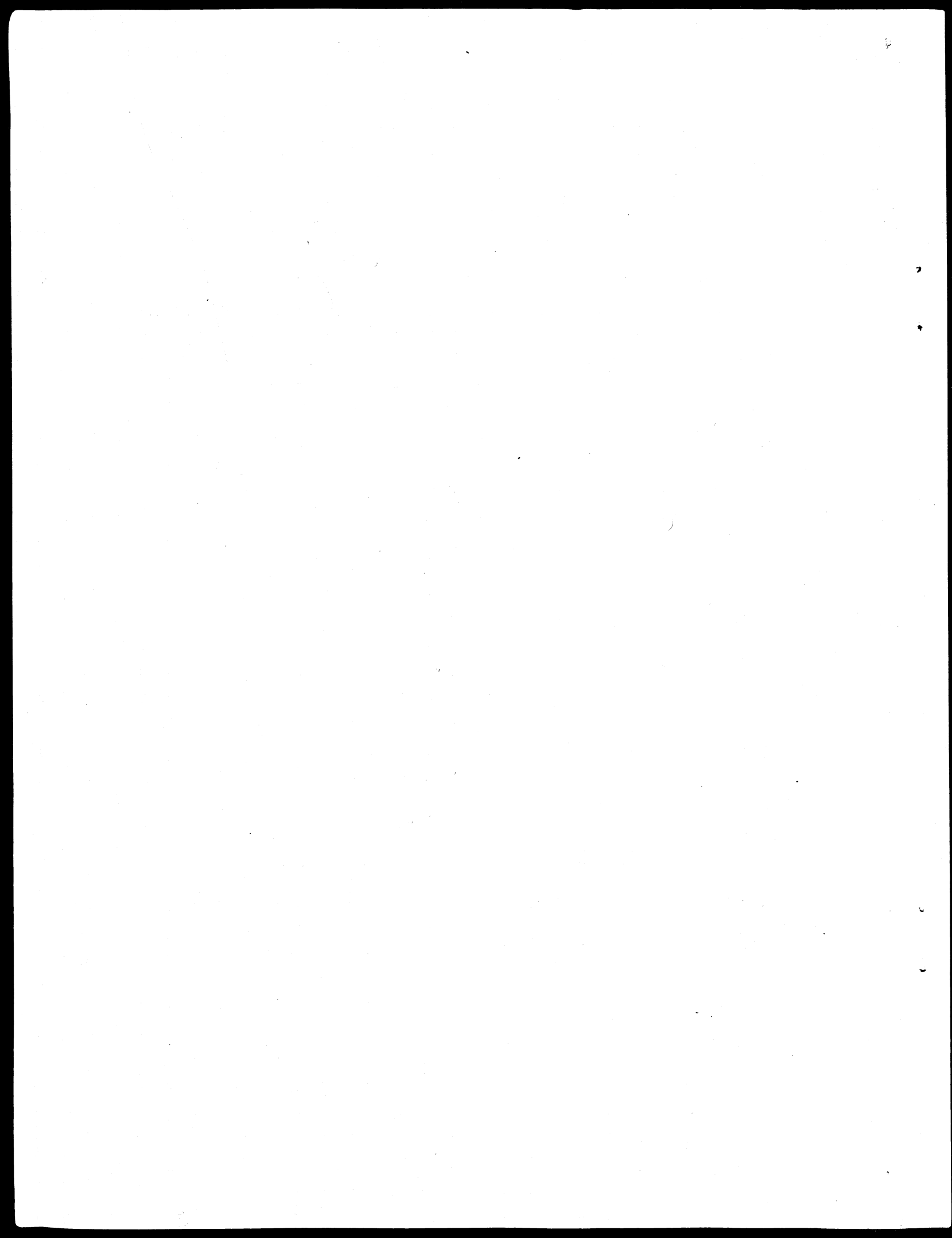
^{1/} Average price derived by dividing reported landings into values for each year.

Table IX-3(b)--World dungeness crab prices^{1/} by selected countries

	U.S.	Canada
	- cents per pound - - - - -	- - - - -
1947	9.84	7.12
1948	10.40	8.38
1949	10.11	9.67
1950	11.14	9.38
1951	12.53	9.54
1952	13.01	11.10
1953	13.89	10.74
1954	12.66	10.95
1955	12.69	10.36
1956	11.68	10.34
1957	8.25	9.83
1958	10.56	9.12
1959	13.62	10.13
1960	14.75	10.16
1961	15.22	10.21
1962	17.38	10.89
1963	17.32	11.89
1964	17.32	16.06
1965	16.25	15.76
1966	13.97	12.95
1967	15.67	15.03
1968	18.64	
1969		

Source: Fishery Statistics of the U. S. and Canadian Fishermen,
June 1968.

^{1/}Average price derived by dividing landings into values for each year.



X U.S. TRADE BARRIERS

Table X-1.--Present U.S. tariff structure for crabs (all forms)

Item	Stat. Suf- Fix	Product Description	Rates of Duty			U.S. Imports 1968	
			June 30, 1967	Jan. 1, 1969	K-R Concession (Jan. 1, 1972)	Quantity	Value
		Crabs:					
		Crabmeat:					
114.15	00	Fresh, chilled or frozen	15% ad.val.	12% ad.val.	7.5% ad.val.	1,483,983	2,085,656
		Prepared or preserved (inc. pastes and sauces):					
114.20	00	Canned	22.5% ad.val.	18% ad.val.	11% ad.val.	4,635,055	5,272,502
114.25	00	Other	15% ad.val.	12% ad.val.	7.5% ad.val.	84,895	100,376
		Other (whole or live)	Free	Free	Free		

Table X-2.--Historical synopsis of crab (all forms) investigations ^{1/}

1. Section 9(b) of the Fish and Wildlife Act of 1956

None

2. Escape Clause under Executive Orders and the T.E.A. of 1951, as amended (T.C.)

None

3. Section 301 of the T.E.A. of 1962 (T.C.)

None

4. Section 332 of the T.E.A. of 1930 (Investigations by the Tariff Commission)

None

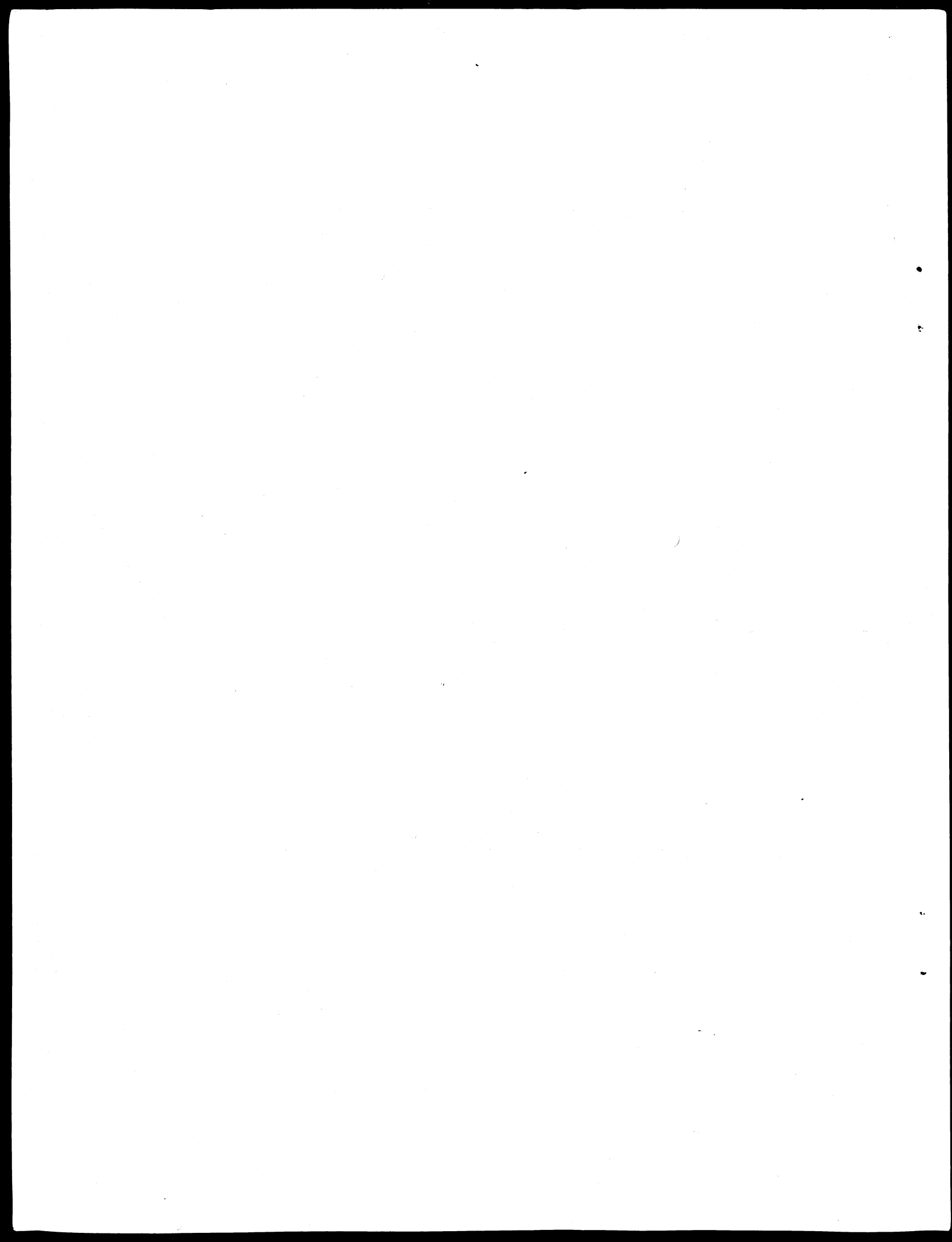
5. Antidumping under Antidumping Act of 1921 (Customs Bureau)

None

6. Countervailing (Section 303 of T.E.A. of 1930 Customs Bureau)

None

^{1/} Antidumping information checked since 1954; for Section 332 and countervailing no summary lists available and in inquiry into a number of cases has not been completed.



XI GOVERNMENT PROGRAMS

- Subsidies
- Mortgage insurance
- Loans
- EDA projects
- BCF expenditures
- Federal aid to states

Table XI-1.--Bureau Commercial Fisheries programs and expenditures on king and dungeness crab, fiscal years 1960-1969

Bureau of Commercial Fisheries Programs	1960	1961	1962	1963	1964
<u>1960 and 1964 Fishing Fleet Improvement Act</u>					
a) Number of Vessels Constructed	-	-	-	-	-
b) Total Government Subsidies to Vessels Constructed (dollars)	-	-	-	-	-
<u>Mortgage Insurance Program</u>					
a) Number of Vessels	-	-	-	-	-
b) Value of Mortgages (dollars)	-	-	-	-	-
<u>Fisheries Loan Fund</u>					
a) Number of Vessels Receiving Loans	3	1	4	6	23
b) Total Value of Loans (dollars)	46,372	7,690	148,907	126,200	611,417
Other BCF Programs <u>1/</u>	n.a.	n.a.	n.a.	n.a.	n.a.

Table XI-1.--Bureau of Commercial Fisheries programs and expenditures on king and dungeness crab, fiscal years 1960-69 (continued)

Bureau of Commercial Fisheries Programs	1965	1966	1967	1968	1969
<u>1960 and 1964 Fishing Fleet Improvement Act</u>					
a) Number of Vessels Constructed	-	-	1	-	-
b) Total Government Subsidies to Vessels Constructed (dollars)	-	-	218,850	-	-
<u>Mortgage Insurance Program</u>					
a) Number of Vessels	-	1	1	4	-
b) Value of Mortgages (dollars)	-	150,000	150,000	915,157	-
<u>Fisheries Loan Fund</u>					
a) Number of Vessels Receiving Loans	13	17	11	8	9
b) Total Value of Loans (dollars)	498,000	695,671	701,500	541,700	250,258
Other BCF Programs ^{1/}	n.a.	n.a.	1,100,000	600,000	600,000

Source: Division of Financial Assistance, Bureau of Commercial Fisheries

^{1/} 1971 Program Memorandum, Department of the Interior, Living Aquatic Resources

Table XI-2.--Estimated Economic Development Administration
expenditures for king and dungeness crab by
program, May 1961 - May 1969^{1/}

<u>Program/Project</u>	<u>Amount</u>
Public Works Grants and Loans:	
Crescent City, California - Industrial Park and processing plant	\$ 40,000
Seward, Alaska - Harbor facilities	45,000
Seldovia, Alaska - Dock facilities	200,000
Astoria, Oregon - Laboratory	15,000
Homer, Alaska - Extension of facilities	145,000
Metlakatla, Alaska, Indians Harbor, docks, etc.	146,000
Wrangell, Alaska - extension of water system for processing plant	71,000
Newport, Oregon - Expansion of fishing facilities	53,000
Yaquina Bay, Oregon - Estimate of Marine Research Center	30,000
Total Public Works	\$ 745,000
Business Loans:	
Alaska Ice and Cold Storage Co., Kodiak	\$ 65,000
Valdez, Alaska Cold Storage Co.	46,000
Total Business Loans	\$ 111,000
Technical Assistance Grants:	
University of California - Pasteurization Study	\$ 11,000
Pacific County, Washington - Voc. training	6,000
University of Alaska fisheries study	32,000
Bayview Cold Storage - Feas. Study	1,000
Kodiak, Alaska - Resource Potential	5,000
Total Technical Assistance	\$ 55,000
Grand Total	\$ 911,000

^{1/} Includes available information on expenditures under the predecessor agency, the Area Redevelopment Administration. Estimates represent an attempt to prorate the total amount of EDA funding applicable to the fishing industry in multi-industry projects and to a particular fishery in multi-fishery projects.

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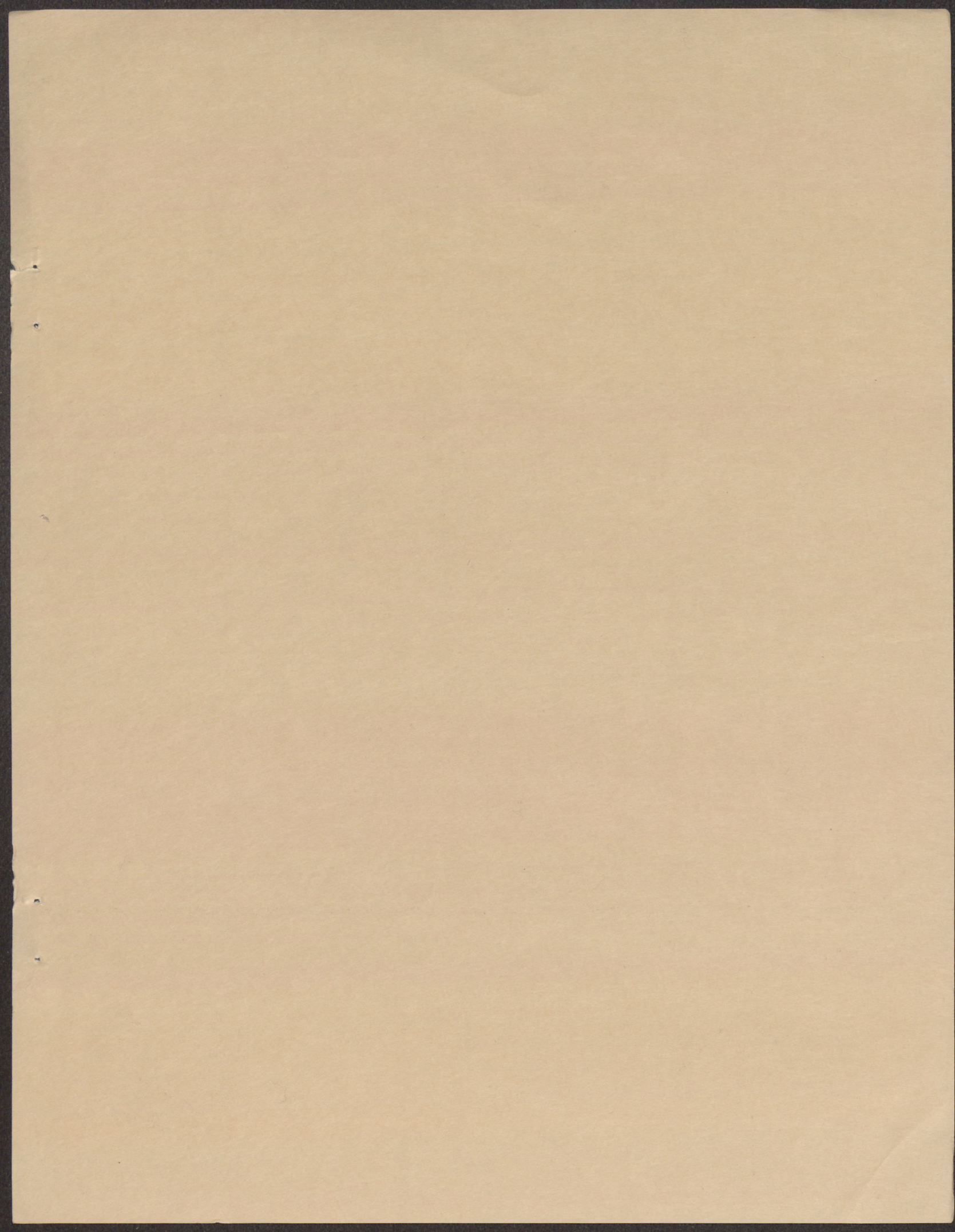
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57. Basic Economic Indicators-Shrimp.
58. Basic Economic Indicators-Blue Crabs.
59. Basic Economic Indicators-King and Dungeness Crabs.
60. Basic Economic Indicators-Menhaden.
61. Basic Economic Indicators-Tuna.
62. Basic Economic Indicators-Salmon.



The goal of the Division of Economic Research is to engage in economic studies which will provide industry and government with costs, production and earnings analyses; furnish projections and forecasts of food fish and industrial fish needs for the U. S.; develop an overall plan to develop each U. S. fishery to its maximum economic potential and serve as an advisory service in evaluating alternative programs within the Bureau of Commercial Fisheries.

In the process of working towards these goals an array of written materials has been generated representing items ranging from interim discussion papers to contract reports. These items are available to interested professionals in limited quantities of offset reproduction. These "Working Papers" are not to be construed as official BCF publications and the analytical techniques used and conclusions reached in no way represent a final policy determination endorsed by the U. S. Bureau of Commercial Fisheries.