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QUANTITY

# BASIC ECONOMIC INDICATORS 

## BLUE CRABS

Master Plan Fishery $\begin{array}{llll}50 & 10 & 30\end{array}$

Working Paper No. 58

May 1970

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

millows of doilars


CRABS



Sぬロヨス



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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 blue crab vessels

NO DATA AVAILABLE

Table I-2.--Earnings of blue crab fis hermen

NO DATA AVAILABLE

Table I-3.--Productivity of blue crab fishermen and vessels

|  | Landings per <br> fisherman | Landings per <br> vessel and boat |
| :--- | :---: | :---: |
| Pounds 1/ | Pounds 1/ |  |
| 1947 | n.a. | n.a. |
| 1948 | n.a. | n.a. |
| 1949 | n.a. | n.a. |
| 1950 | 17,016 | 20,719 |
| 1951 | 16,198 | 18,996 |
| 1952 | 16,267 | 18,873 |
| 1953 | 15,823 | 19,311 |
| 1954 | 15,054 | 18,016 |
| 1955 | 12,517 | 14,636 |
| 1956 | 12,039 | 13,633 |
| 1957 | 14,558 | 16,854 |
| 1958 | 14,033 | 16,216 |
| 1959 | 14,256 | 17,412 |
| 1960 | 19,184 | 22,294 |
| 1961 | 18,952 | 21,964 |
| 1962 | 19,378 | 22,388 |
| 1963 | 17,884 | 20,825 |
| 1964 | 18,510 | 21,440 |
| 1965 | 19,276 | 21,943 |
| 1966 | 18,400 | 21,552 |
| 1967 |  |  |
| 1968 |  |  |
| 1969 |  |  |
| 1970 |  |  |
| 1971 |  |  |

Source: Fishery Statistics of the U.S.
1/ Figures are on round weight basis.

Table I-4.--Cost per pound of blue crab

NO DATA AVAILABLE

Table I-5--Historical growth rate of blue crab landings, fisherman and vessels

$$
\begin{array}{ll}
\text { Landings 1/(1950-1966) } & +3.10 \text { Percent per year } \\
\text { Fisherman } 2 /(1950-1966) & +1.61 \text { Percent per year } \\
\text { Vessels 3/(1950-1966) } & +1.42 \text { Percent per year }
\end{array}
$$

$1 /$ Log of landings (thou. Ibs.) $=4.9818+0.0136$ time
(5.24)*

2/ Log of number of fishermen $=3.8250+0.0074$ time
(6.77)*

3/ Log of number of vessels $=3.7622+0.0068$ time

$$
(5.07)^{*}
$$

* Indicates T value


## II DEMAND INDICATORS

\author{

- Consumption <br> Aggregate <br> Per capita <br> Socio-economic characteristics <br> - Prices <br> Exvessel <br> Wholesale <br> Retail <br> - Value <br> Landings <br> Wholesale <br> Retail <br> -Relative prices <br> - Seasonal demand <br> -Price and income elasticities
}

Table II-I.--U.S. aggregate and per capita consumption of blue crabs, 1947-68
(Meat Weight)

|  | Aggregatel/ | Per Capita |
| :---: | :---: | :---: |
|  | Thousand pounds ?/ | Pounds |
| 1947 | n.a. | n.a. |
| 1948 | n.a. | n.a. |
| 1949 | n.a. | n.a. |
| 1950 | 19,226 | . 127 |
| 1951 | 17,439 | . 113 |
| 1952 | 15,896 | .102 |
| 1953 | 16,857 | . 106 |
| 1954 | 15,485 | . 096 |
| 1955 | 15,448 | . 094 |
| 1956 | 14,996 | . 089 |
| 1957 | 17,344 | . 101 |
| 1958 | 16,917 | . 097 |
| 1959 | 17,764 | . 100 |
| 1960 | 23,591 | . 131 |
| 1961 | 23,296 | . 127 |
| 1962 | 23,671 | . 127 |
| 1963 | 22,152 | . 117 |
| 1964 | 23,957 | . 125 |
| 1965 | 26,119 | . 135 |
| 1966 | 25,925 | . 132 |
| 1967 | 22,117 | .112 |
| 1969 . 16,694 |  |  |
|  |  |  |
| 1970 |  |  |
| 1971 |  |  |
| 1972 |  |  |

Source: Fishery Statistics of the U.S.
1/ Based on landing figures only. There is no reported international trade in blue crabs; the U.S. is the only country which reports landings. Yearly changes in U.S. stocks are not available for blue crabs and are not reflected in the above consumption figures.
2/ Conversion factor for meat weight to round weight is .1525 .

Table II-2 -- U.S. consumption of crabs (all forms, fresh and frozen) by socioeconomic characteristics, 19691
(Retail Weight)

| Socio-Economic |  |  | 1969 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Characteristics | 1st Qtr. | 2nd Qtr. | 3rd Qtr. | 4 th Qtr. | Totál | - |
| RACE |  | Pound | per capi |  |  |  |
| $\frac{\text { Regee }}{\text { Neg }}$ | . 047 | 141 |  |  |  |  |
| White | . 046 | . 032 | . 033 | . 013 | . 288 |  |
| Other | . 075 | . 000 | . 150 | . 039 | . 150 |  |
| Not specified | . 080 | . 000 | . 000 | . 029 | . 8109 |  |
| RELIGION |  |  |  |  |  |  |
| Catholic | . 046 | . 027 | . 047 | . 028 |  |  |
| Jewish | . 048 | . 033 | . 000 | . 116 | . 148 |  |
| Protestant | . 046 | . 041 | . 030 | . 038 | .155 |  |
| Other | . 050 | . 000 | . 307 | . 062 | . 419 |  |
| Not specified | . 042 | . 000 | . 000 | . 000 | . 042 |  |
| INCOME PER CAPIT |  |  |  |  |  |  |
| Under 1,000 | . 018 | . 003 | . 002 |  |  |  |
| 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 |  |

OCCUPATION
Prof. \& semipro-

| fessional <br> Proprietors, <br> managerial | .026 | .023 | .026 | .055 | .130 |
| :--- | :--- | :--- | :--- | :--- | ---: |
| Clerical \& sales | .052 | .046 | .030 | .039 |  |
| Craftsmen, foremen | .062 | .032 | .031 | .048 | .167 |
| Head operative | .038 | .027 | .028 | .050 | .173 |
| Service workers, | .034 | .028 | .035 | .007 | .143 |
| \& laborers | .066 | .062 | .061 | .025 | .2104 |

EDUCATION
Less than 4 yr .
high school . 045 . 033

Less than 4 yr college
Colle ge grad.
Head, not spec.

| .046 | .045 |
| :--- | :--- |
| .052 | .029 |


| .034 | .042 | .154 |
| :--- | :--- | :--- |
| .033 | .041 | .165 |
| .042 | .061 | .184 |
| .030 | .018 | .048 |

REGION

| 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 uno.

Table II-3.--Blue crab prices: Exvessel, wholesale, and retail
(Round Weight)

|  | Exvessel ${ }^{1 /}$ | Wholesale ${ }^{\text {2/ }}$ | Retail ${ }^{\text {2/ }}$ |
| :---: | :---: | :---: | :---: |
|  | ------- | per pound |  |
| 1947 | n.a. | n.a. | n.a. |
| 1948 | n.a. | n.a. | n.a. |
| 1949 | n.a. | n.a. | n.a. |
| 1950 | 4.7 | 15.7 | 22.4 |
| 1951 | 4.9 | 16.3 | 23.3 |
| 1952 | 4.9 | 16.3 | 23.3 |
| 1953 | 5.2 | 17.3 | 24.8 |
| 1954 | 5.0 | 16.7 | 23.8 |
| 1955 | 5.9 | 19.7 | 28.1 |
| 1956 | 6.8 | 22.7 | 32.4 |
| 1957 | 6.5 | 22.0 | 31.4 |
| 1958 | 6.1 | 20.3 | 29.0 |
| 1959 | 6.9 | 23.0 | 32.9 |
| 1960 | 5.9 | 19.7 | 28.1 |
| 1961 | 5.3 | 17.7 | 25.2 |
| 1962 | 5.8 | 19.3 | 27.6 |
| 1963 | 6.2 | 20.7 | 29.5 |
| 1964 | 7.1 | 23.7 | 33.8 |
| 1965 | 7.5 | 25.0 | 35.7 |
| 1966 | 6.6 | 22.0 | 31.4 |
| 1967 | 5.9 | 19.9 | 27.7 |
| 1968 | 9.9 | 33.0 | 47.1 |
| 1969 \% 47.1 |  |  |  |
| 1970 |  |  |  |
| 1971 |  |  |  |
| 1972 |  |  |  |

Source: Fishery Statistics of the U.S., BCF, DER.
1/ Weighted average price derived by dividing value of landings into landings.
2/ Estimated by applying marketing margins in 1967 to the exvessel price

Table II-4.--Value of blue crab landings, wholesale, and retail

|  | Exvessel | Wholesale ${ }^{\text {I/ }}$ | Retail ${ }^{1 /}$ |
| :---: | :---: | :---: | :---: |
|  | -------------Thousand dollars----------------- |  |  |
| 1947 | n.a. | n.a. | n.a. |
| 1948 | n.a. | n.a. | n.a. |
| 1949 | n.a. | n.a. | n.a. |
| 1950 | 5,881 | 19,603 | 28,005 |
| 1951 | 5,703 | 19,010 | 27,157 |
| 1952 | 5,092 | 16,973 | 24,248 |
| 1953 | 5,744 | 19,147 | 27,3フ2 |
| 1954 | 5,027 | 16,757 | 23,938 |
| 1955 | 5,967 | 19,890 | 28,414 |
| 1956 | 6,660 | 22,200 | 31,714 |
| 1957 | 7,483 | 24,943 | 35,633 |
| 1958 | 6,813 | 22,710 | 32,443 |
| 1959 | 8,047 | 26,823 | 38,319 |
| 1960 | 9,176 | 30,587 | 43,695 |
| 1961. | 8,149 | 27,163 | 38,805 |
| 1962 | 8,993 | 29,977 | 42,824 |
| 1963 | 9,014 | 30,047 | 42,924 |
| 1964 | 11,153 | 38,433 | 53,110 |
| 1965 | 12,848 | 42,827 | 61,180 |
| 1966 | 11,208 | 37,360 | 53,371 |
| 1967 | 8,603 | 28,677 | 40,966 |
| 1968 | 10,800 | 36,000 | 51,428 |
| 1969 - 10.000 |  |  |  |
| 1970 |  |  |  |
| 1971 |  |  |  |
| 1972. |  |  |  |

Source: Fishery Statistics of the U.S.
I/ Estimated by applying marketing margins in 1967 to the exvessel price.

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

|  | Retail $1 /$ | Retail/CPI ${ }^{\text {2/ }}$ | Retail/CPImpf ${ }^{\text {3/ }}$ |
| :---: | :---: | :---: | :---: |
|  |  | per pound--- |  |
| 1947 | n.a. | n.a. | n.a. |
| 1948 | n.a. | n.a | n.a. |
| 1949 | n.a. | n.a. | n.a. |
| 1950 | 224 | 26.7 | 23.6 |
| 1951 | 23.3 | 25.7 | 21.9 |
| 1952 | 23.3 | 25.2 | 22.1 |
| 1953 | 24.8 | 26:6 | 24.9 |
| 1954 | 23.8 | 25.4 | 24.3 |
| 1955 | 28.1 | $30: 1$ | 30.5 |
| 1956 | 32.4 | 34.2 | 36.8 |
| 1957 | 31.4 | 32.0 | 32.9 |
| 1958 | 29.0 | 28.8 | 27.8 |
| 1959 | 32.9 | 32.4 | 32.8 |
| 1960 | 28.1 | 27.3 | 28.4 |
| 1961 | 25.2 | 242 | 25.4 |
| 1962 | 27.6 | 26.2 | 27.1 |
| 1963 | 29.5 | 27.6 | 29.4 |
| 1964 | 33.8 | 31.3 | 34.3 |
| 1965 | 35.7 | 32.5 | 34.0 |
| 1966. | 31.4 | 27.8 | 27.5 |
| 1967 | 27.7 | 23.8 | 24.9 |
| 1968 | 47.1 | 389 | 41.4 |
| 1969 \% 4 |  |  |  |
| 1970 |  |  |  |
| 1971 |  |  |  |
| 1972 |  |  |  |

Source: Division of Economic Research, BCF
1/ Estimated (See Table II-3)
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 hard crabs by market area 1/

| Month | Fulton Fish Market |
| :--- | :---: |
| January | 88.2 |
| February | 89.0 |
| March | 92.6 |
| April | 98.2 |
| May | 104.5 |
| June | 109.9 |
| July | 112.4 |
| August | 111.4 |
| September | 107.1 |
| October | 101.0 |
| November | 95.0 |
| December | 90.4 |

[^0]Table II-7.--Price and income elasticities for crabs (all forms)

Price elasticity $=-0.1487$
Income elasticity $=1.8789$

Demand Equation for United States

$$
\left.\begin{array}{rl}
\mathrm{C} / \mathrm{N}= & -5.9941-0.1487 \mathrm{Log}\left[\frac{\mathrm{P}}{\mathrm{CPI}}\right] \\
& +1.8789 \log \left[\frac{\mathrm{Y} / \mathrm{CPI}}{\mathrm{~N}}\right]
\end{array}\right\} \begin{gathered}
\mathrm{C} / \mathrm{N}=\text { Crabs consumption per capita } \\
\mathrm{P} / \mathrm{CPI}=\text { Price of crabs divided by Consumer } \\
\text { Price Index (CPI) }
\end{gathered}
$$

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

Source: Division of Economic Research, Bureau of Commercial Fisheries.

## III DEMAND PROJECTIONS

-U.S. Consumption<br>Aggregate .<br>Per capita

Table III-I.--Demand projuctions for crabs, U.S. and world, to the year 2000 $1 /$

| Year | U.S. per caj. consumption | $\begin{gathered} \text { U.S. } \\ \text { population } \end{gathered}$ | U.S. aggregate consumption | World aggregate consumption |
| :---: | :---: | :---: | :---: | :---: |
|  | Pounds ${ }^{\text {a }}$ ' | Millions | --------Million | ounds ${ }^{2 /-}-\ldots-{ }^{-}$ |
| $\begin{aligned} & 1966 \\ & \text { (actual) } \end{aligned}$ | 1.60 | 195.9 | 313 | 750 |
| 2970 | 2.01 | 206.0 | 413 | 930 |
| 1975 | 2.36 | 219.4 | 518 | 1,110 |
| 1980 | 2.63 | 235.2 | 618 | 1,262* |
| 2985 | 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 sand rate as all consumer prices.

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

I/ For annual projection between five year intervals the reader may interpolate.
2/ Round weight

* Reaches MSY

IV DOMESTIC PRODUCTION

-Landings

-Value

Table IV-I.--Tandings and value of Atlantic and Gulf blue crabsI/
(Round Weight)

|  |  |  |
| :--- | :---: | :---: |
|  | Landings | Value |
|  | Thousand pounds | Thousand dollars |
| 1947 | n.a. | n.a. |
| 1948 | n.a. | n.a. |
| 1949 | n.a. | n.a. |
| 1950 | 126,073 | 5,881 |
| 1951 | 114,356 | 5,703 |
| 1952 | 104,236 | 5,092 |
| 1953 | 110,540 | 5,744 |
| 1954 | 101,541 | 5,027 |
| 1955 | 101,297 | 5,967 |
| 1956 | 98,337 | 6,660 |
| 1957 | 113,728 | 7,483 |
| 1958 | 110,934 | 6,813 |
| 1959 | 116,488 | 8,047 |
| 1960 | 154,697 | 9,176 |
| 1961 | 152,758 | 8,149 |
| 1962 | 155,218 | 8,993 |
| 1963 | 145,257 | 9,014 |
| 1964 | 157,092 | 11,153 |
| 1965 | 171,269 | 12,848 |
| 1966 | 169,999 | 11,208 |
| 1967 | 145,027 | 8,603 |
| 1968 | 109,500 | 10,800 |
| 1969 |  |  |
| 1970 |  |  |
| 1971 |  |  |
| 1972 |  |  |
|  |  |  |

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

1/ Includes hard, soft, and peeler crabs.

Table IV-2.--Landings of Atlantic and Gulf blue crabs, I/ by region

|  | New England states | Middle Atlantic states | Chesapeake states | South Atlantic states |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| 1947 | 4 | I, 882 | 65,355 | n.a. |
| 1948 | 4 | 2,145 | 67,947 | n.a. |
| 1949 | 3 | 4,297 | 67,626 | n.a. |
| 1950 | 1 | 6,575 | 80,046 | 20,271 |
| 1951 | 2 | 5,715 | 70,777 | 23,704 |
| 1952 | 4 | 2,386 | 64,831 | 24,500 |
| 1953 | 6 | 2,408 | 63,184 | 30,236 |
| 1954 | 32 | 3,838 | 54,743 | 29,878 |
| 1955 | 2 | 3,503 | 45,128 | 32,578 |
| 1956 | 4 | 4,290 | 50,598 | 26,809 |
| 1957 | 3 | 6,151 | 58,351 | 30,721 |
| 1958 | 3 | 3,346 | 49,462 | 35,620 |
| 1959 | 2 | 2,635 | 45,549 | 38,930 |
| 1960 | 3 | 3,700 | 70,716 | 44, 877 |
| 1961 | 4 | 1,517 | 74,894 | 40,451 |
| 1962 | 2 | 3,571 | 86,571 | 38,829 |
| 1963 | 2/ | 1,419 | 66,129 | 50,852 |
| 1964 | 2/ | 894 | 78,608 | 52,083 |
| 1965 | 2/ | 1,496 | 86,334 | 46,214 |
| 1966 | - | 1,259 | 97,016 | 40,643 |
| 1967 | - | 757 | .79,699 | 37,423 |
| 1968 |  |  |  |  |
| 1969 |  |  |  |  |
| 1970 |  |  |  |  |
| 1971 |  |  |  |  |
| 1972 |  |  |  |  |

Table IV-2.--Iandings of Atlantic and Gulf blue crabs, 1/ by region (Continued)

|  | Total Atlantic <br> states | Gulf <br> states | Total <br> U.S. |
| :--- | :---: | :---: | :---: |
|  | n.a. | n.a. | n.a. |
| 1947 | n.a. | n.a. | n.a. |
| 1948 | n.a. | 27,050 | n.a. |
| 1949 | 106,893 | 19,180 | 126,073 |
| 1950 | 100,198 | 14,158 | 114,356 |
| 1951 | 91,721 | 12,515 | 104,236 |
| 1952 | 95,834 | 14,706 | 110,540 |
| 1953 | 88,491 | 13,050 | 101,541 |
| 1954 |  |  |  |
| 1 | 81,211 | 20,086 | 101,297 |
| 1955 | 81,701 | 16,636 | 98,337 |
| 1956 | 95,226 | 18,502 | 113,728 |
| 1957 | 88,431 | 22,503 | 110,934 |
| 1958 | 87,116 | 29,372 | 116,488 |
| 1959 | 119,296 | 35,401 | 154,697 |
| 1960 | 116,866 | 35,892 | 152,758 |
| 1961 | 128,973 | 26,245 | 155,218 |
| 1962 | 118,400 | 26,857 | 145,257 |
| 1963 | 131,585 | 25,507 | 157,092 |
| 1964 |  |  |  |
| 1965 | 134,044 | 37,225 | 171,269 |
| 1966 | 138,918 | 11,879 |  |
| 1967 | 117,081 | 169,999 |  |
| 1968 |  |  | 145,027 |
| 1969 |  |  | 109,500 |
| 1970 |  |  |  |
| 1971 |  |  |  |
| 1972 |  |  |  |

Source: Fishery Statistics of the U.S.
I/ Blue crabs include hard, and soft and peeler crabs
2/ Less than 500 pounds

Table IV-3.--Supply and disposition of crabs (all forms) in the U.S.I/

| Year | Beginning 2/ stocks | Landin | Import | Total | $\begin{aligned} & \text { Endi } \\ & \text { stoc } \end{aligned}$ | Expo | Apparent total consumption |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 1lion | s, mea |  |  |  |
| 1947 | . 4 | n.a. | 0.5 | n.a. | .4 | . 2 | n.a. |
| 1948 | . 4 | n.a. | 1.4 | n.a. | . 4 | . 1 | n.a. |
| 1949 | . 4 | n.a. | 2.3 | n.a. | . 5 | . 1 | n.a. |
| 1950 | . 5 | 20.1 | 4.1 | 24.7 | . 4 | - | 24.3 |
| 1951 | . 4 | 25.2 | 2.0 | 27.6 | . 5 | - | 27.1 |
| 1952 | . 5 | 23.0 | 2.2 | 25.7 | - 3 | - | 25.4 |
| 1953 | . 3 | 24.5 | 4.3 | 29.1 | -7 | - | 28.4 |
| 1954 | . 7 | 24.3 | 3.3 | 28.3 | - 7 | - | 27.6 |
| 1955 | . 7 | 23.2 | 5.6 | 29.5 | 1.2 | - | 28.3 |
| 1956 | 1.2 | 25.3 | 5.9 | 32.4 | 1.6 | - | 30.8 |
| 1957 | 1.6 | 30.5 | 6.3 | 38.4 | 1.7 | - | 36.7 |
| 1958 | 1.7 | 29.6 | 6.0 | 37.3 | 1.4 | - | 35.9 |
| 1959 | 1.4 | 30.7 | 7.5 | 39.6 | . 8 | - | 38.8 |
| 1960 | . 8 | 38.3 | 5.1 | 44.2 | 1.2 | - | 43.0 |
| 1961 | 1.2 | 40.2 | 4.7 | 46.1 | 1.7 | - | 44.4 |
| 1962 | 1.7 | 40.3 | 4.0 | 46.0 | 1.8 | - | 44.2 |
| 1963 | 1.8 | 44.4 | 5.8 | 52.0 | 4.0 | - | 48.0 |
| 1964. | 4.0 | 47.3 | 5.0 | 56.3 | 6.6 | - | 49.7 |
| 1965 | 6.6 | 59.9 | 4.5 | 71.0 | 7.0 | - | 64.0 |
| 1966 | 7.0 | 67.8 | 2.4 | 77.2 | 6.1 | - | 71.1 |
| 1967 | 6.1 | 58.9 | 2.5 | 67.5 | 2.3 | - | 65.2 |
| 1968 | 2.3 | 44.4 | 6.7 | 53.4 | 6.7 | - | 46.7 |

1969
1970
1971
1972

[^1]
# V DOMESTIC EMPLOYMENT, VESSELS AND EFFORT 

-Fishermen

- Vessels
- Trips
- Days at sea
- Days fishing

Table V-I.--Number of fishermen and vessels for blue crabs I/

|  | Fishermen | Vessels 2/ |
| :--- | :---: | :---: |
|  | n.a. | n.a. |
| 1947 | n.a. | n.a. |
| 1948 | n.a. | n.a. |
| 1949 | 7,409 | 6,085 |
| 1950 | 7,060 | 6,020 |
| 1951 | 6,408 | 5,523 |
| 1952 | 6,986 | 5,724 |
| 1953 | 6,745 | 5,636 |
| 1954 | 8,093 | 6,921 |
|  | 8,168 | 7,213 |
| 1955 | 7,812 | 6,748 |
| 1956 | 7,905 | 6,841 |
| 1957 | 8,171 | 6,990 |
| 1958 | 8,064 | 6,939 |
| 1959 | 8,060 | 6,955 |
| 1960 | 8,010 | 6,933 |
| 1961 | 8,122 | 6,975 |
| 1962 | 8,487 | 7,327 |
| 1963 | 8,885 | 7,805 |
| 1964 | 9,239 | 7,888 |
| 1965 |  |  |
| 1966 |  |  |
| 1967 |  |  |
| 1968 |  |  |
| 1969 |  |  |
| 1970 |  |  |
| 1971 |  |  |
| 1972 |  |  |

Source: Fishery Statistics of the U.S.
I/ Includes fishermen and vessels in blue crab line fishery, pot fishery, otter trawl fishery, and dredge fishery.
2/ Includes all boats and vessels.

Table V-2.--Vessels and boats in U.S. blue crab fisheries I/

|  | VESSELS |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Line fishery | Pot fishery | Otter trawl fishery | Dredge fis hery | Total Vessels |
|  |  |  | ----Number |  |  |
| 1947 | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1948 | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1949 | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1950 | 4 | 4 | 9 | 121 | 138 |
| 1951 | 3 | 3 | 11 | 127 | 144 |
| 1952 | - | 1 | 48 | 143 | 192 |
| 1953 | 5 | 1 | 77 | 142 | 225 |
| 1954 | 8 | - | 31 | 140 | 179 |
| 1955 | 8 | 96 | 18 | 138 | 260 |
| 1956 | 7 | 99 | 49 | 138 | 293 |
| 1957 | 21 | 82 | 53 | 167 | 323 |
| 1958 | 78 | 122 | 56 | 187 | 443 |
| 1959 | 77 | 220 | 110 | 193 | 600 |
| 1960 | 54 | 225 | 58 | 196 | 533 |
| 1961 | 76 | 297 | 47 | 210 | 624 |
| 1962 | 85 | 297 | 69 | 184 | 635 |
| 1963 | 75 | 351 | 90 | 194 | 710 |
| 1964 | 85 | 321 | 173 | 163 | 682 |
| 1965 | 97 | 378 | 112 | 151 | 738 |
| 1966 | 92 | 396 | 178 | 164 | 830 |
| 1967 |  |  |  |  |  |
| 1968 |  |  |  |  |  |
| 1969 |  |  |  |  |  |
| 1970 |  |  |  |  |  |
| 1971 |  |  |  |  |  |
| 1972 |  |  |  |  |  |

1/ These four fisheries account for more than 90 percent of the total catch.

Table V-2.--Vessels and boats in U.S. blue crab fisheries (Continued)

BOATS

|  | Line fishery | Pot <br> fishery | Otter trawl fishery | Dredge fishery | Total boats | Total <br> boats \& vessels |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Nu | rs |  |  |
| 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 | 3,707 | 1,999 | 175 | 66 | 5,947 | 6,085 |
| 1951 | 3,498 | 2,173 | 118 | 87 | 5,876 | 6,020 |
| 1952 | 3,268 | 1,886 | 79 | 98 | 5,331 | 5,523 |
| 1953 | 3,119 | 2;207 | 83 | 90 | 5,499 | 5,724 |
| 1954 | 2,863 | 2,340 | 138 | 116 | 5,457 | 5,636 |
| 1955 | 3,974 | 2,420 | 125 | 142 | 6,661 | 6,921 |
| 1956 | 4,161 | 2,492 | 109 | 158 | 6,920 | 7,213 |
| 1957 | 3,707 | 2,486 | 122 | 110 | 6,425 | 6,748 |
| 1958 | 3,848 | 2,282 | 162 | 106 | 6,398 | 6,841 |
| 1959 | 3,662 | 2,475 | 178 | 75 | 6,390 | 6,990 |
| 1960 | 3,412 | 2,692 | 196 | 106 | 6,406 | 6,939 |
| 1961 | 3,572 | 2,469 | 214 | 76 | 6,331 | 6,955 |
| 1962 | 3,381 | 2,631 | 211 | 75 | 6,298 | 6,933 |
| 1963 | 3,306 | 2,663 | 236 | 60 | 6,265 | 6,975 |
| 1964 | 3,266 | 3,039 | 284 | 57 | 6,646 | 7,327 |
| 1965 | 3,534 | 3,216 | 261 | 56 | 7,067 | 7,805 |
| 1966 3,480 3,317 1967 , 13 7,050 7,888 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| 1968 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

1970
1971
1972

Source: Fishery Statistics of the U.S.

Table V-3.--Fishermen in U.S. blue crab fisheries

| Year | Line fishery |  | Pot fishery |  | Otter trawl fishery |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | On vessels | On boats \& shore | On vessels | On boats \& shore | On vessels | On boats \& shore |
|  |  |  | N | mber- |  |  |
| 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 | 8 | 4,215 | 9 | 2,338 | 26 | 313 |
| 1951 | 6 | 3,794 | 7 | 2,454 | 29 | 201 |
| 1952 | - | 3,460 | 2 | 2,098 | 96 | 158 |
| 1953 | 10 | 3,574 | 3 | 2,469 | 164 | 166 |
| 1954 | 16 | 3,086 | - | 2,664 | 62 | 276 |
| 1955 | 12 | 4,203 | 181 | 2,742 | 36 | 250 |
| 1956 | 8 | 4,251 | 188 | 2,735 | 100 | 189 |
| 1957 | 24 | 3,775 | 152 | 2,847 | 106 | 216 |
| 1958 | 83 | 3,922 | 221 | 2,575 | 112 | 264 |
| 1959 | 79 | 3,789 | 348 | 2,768 | 218 | 325 |
| 1960 | 56 | 3,563 | 355 | 2;970 | 118 | 328 |
| 1961 | 82 | 3,744 | 438 | 2,737 | 82 | 291 |
| 1962 | 89 | 3,565 | 402 | 2,898 | 138 | 304 |
| 1963 | 80 | 3,494 | 477 | 2,926 | 180 | 347 |
| 1964 | 89 | 3,410 | 512 | 3,301 | 226 | 413 |
| 1965 | 100 | 3,684 | 608 | 3,393 | 226 | 390 |
| 1966 | 95 | 3,743 | 590 | 3,670 | 348 | 328 |
| 1967 1968 |  |  |  |  |  |  |
| 1969 |  |  |  |  |  |  |
| 1970 |  |  |  |  |  |  |
| 1971 |  |  |  |  |  |  |
| 1972 |  |  |  |  |  |  |

Table V-3.--Fishermen in U.S. blue crab fisheries (Continued)

| Year | Dredge fishery |  | Total |  | Total <br> Fishermen |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | On vessels | On boats \& shore | On vessels | On boats \& shore |  |
|  |  |  | Number-- |  |  |
| 1947 | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1948 | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1949 | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1950 | 373 | 127 | 416 | 6,993 | 7,409 |
| 1951 | 426 | 143 | 468 | 6,592 | 7,060 |
| 1952 | 440 | 154 | 538 | 5,870 | 6,408 |
| 1953 | 419 | 181 | 596 | 6,390 | 6,986 |
| 1954 | 411 | 230 | 489 | 6,256 | 6,745 |
| 1955 | 395 | 274 | 624 | 7,469 | 8,093 |
| 1956 | 391 | 306 | 687 | 7,481 | 8,168 |
| 1957 | 496 | 212 | 778 | 7,034 | 7,812 |
| 1958 | 538 | 190 | 954 | 6,951 | 7,905 |
| 1959 | 511 | 133 | 1,156 | 7,015 | 8,171 |
| 1960 | 531 | 143 | 1,060 | 7,004 | 8,064 |
| 1961 | 569 | 117 | 1,171 | 6,889 | 8,060 |
| 1962 | 494 | 120 | 1,123 | 6,887 | 8,010 |
| 1963 | 514 | 104 | 1,251 | 6,871 | 8,122 |
| 1964 | 438 | 98 | 1,265 | 7,222 | 8,487 |
| 1965 | 406 | 78 | 1,340 | 7,545 | 8,885 |
| 1966 | 446 | 19 | 1,479 | 7,760 | 9,239 |
| 1967 |  |  |  |  |  |
| 1968 |  |  |  |  |  |
| 1969 |  |  |  |  |  |
| 1970 |  |  |  |  |  |
| 1971 |  |  |  |  |  |
| 1972 |  |  |  |  |  |

Source: Fishery Statistics of the U.S.

VI BIOLOGICAL STOCK ASSESSMENT

Table VI-1.--Estimates of maximum sustainable yield from world stock of blue crabs

| Region | MSY |
| :---: | :---: |
|  | Thou. metric tons |
| 1. Atlantic West-Central Blue crab (Callinectes sapidus) (Longhurst, p. 35) | $76.0{ }^{1 /}$ |
| 2. Atlantic East-Central Blue crab (Neptunus validus) (Longhurst, p. 38) | $10.0{ }^{-\frac{1}{4}}$ |
| 3. Pacific West-Central <br> Blue crab (Portunid Swimming Crabs) (Longhurst, p. 57) | 150.0 ${ }^{\text {/ }}$ |
| 4. Pacific East-Central Blue crab (Portunid Swimming Crabs) (Longhurst, p. 62) | 7.5 2/ |
| 5. Atlantic Southwest <br> Blue crab (Portunid Swimming crabs) (Longhurst, p. 67) | 21.0 |
| Total | 264.5 |
| 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, 1969. |  |
| 1/ The Callinectes sapidus, caught off the east coast of the U.S., is the only specie which has been significantly commercially exploited. It is also the only species reported by the FAO in the blue crab fishery. |  |
| 2/ These species are the homologue to the Callinectes sapidus of the blue crab fishery in the western Atlantic. Their commercial catch to the present has been negligible and their MSY's are derived by analogy to the Callinectes on the eastern seaboard of the U.S. |  |

VI-2.--Estimate of maximum sustainable yield for blue crabs in waters fished by U.S. fishermen.

| Region | $\frac{\text { Thou. metric tons }}{}$ |
| :---: | :---: |
| I. Atlantic west-central | $\frac{80.0}{}$ |
| Total | 80.0 |
|  |  |

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

## VII INTERNATIONAL TRADE

- Imports

Quantity
Value
Price

Table VII-I.--Quantity and value of imports of blue crabs to the U.S.

There is no reported international trade in the blue crab fishery. The only reported landings are off the East Coast and Gulf regions of the United States. The U.S. does not report its exports of blue crabs'separately.

Homologous species are reported to be found in the East-Central Atlantic, the Southwest Atlantic, the West-Central Pacific, and the East-Central Pacific. These species, however, are not commercially exploited to any significant degree at the present time.

Source: Division of Economic Research, BCF

## VIII FOREIGN PRODUCTION

-Landings

Table VIII-I. --World landings of crabs by country I/

| Year | U.S. | Japan | USSR | Brazil | Thailand | Other | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ------Million Pounds, round weight---------- |  |  |  |  |  |  |  |
| 1947 | 162.3 | 50.1 | n.a. | n.a. | n. a. | n.a. | n. a. |
| 1948 | 169.3 | 59.1 | 33.3 | n.a. | 5.5 | 12.8 | 280.0 |
| 1949 | 119.7 | n. a. | n. a . | n.a. | 5.1 | 104.5 | 229.3 |
| 1950 | 132.9 | n.a. | n. a. | n.a. | 6.0 | 82.6 | 220.5 |
| 1951 | 118.4 | n.a. | n. a. | n.a. | 5.5 | 89.8 | 213.8 |
| 1952 | 137.1 | 57.5 | n.a. | n.a. | 5.1 | 23.0 | 308.6 |
| 1953 | 144.4 | 59.5 | n.a. | n.a. | 5.7 | 99.0 | 308.6 |
| 1954 | 140.9 | 107.8 | 81.6 | n.a. | 7.1 | 35.2 | 372.6 |
| 1955 | 136.6 | 152.3 | 82.6 | n.a. | 6.4 | 49.7 | 425.5 |
| 1956 | .143.7 | 141.7 | 79.6 | n.a. | 6.2 | 41.7 | 412.3 |
| 1957 | 179.2 | 130.7 | 65.7 | n.a. | 6.4 | 30.3 | 410.1 |
| 1958 | 170.8 | 130.2 | 68.1 | 4.9 | n. a. | 60.8 | 434.3 |
| 1959 | 166.0 | 127.0 | 71.0 | 9.0 | n.a. | 67.9 | 440.9 |
| 1960 | 221.8 | 141.3 | 80.9 | 7.3 | n.a. | 58.0 | 509.3 |
| 1961 | 231.7 | 139.3 | 85.1 | 16.1 | n . a . | 66.3 | 537.9 |
| 1962 | 233.0 | 151.2 | 91.3 | 14.1 | n.a. | 72.6 | 562.2 |
| 1963 | 252.6 | 157.0 | 93.7 | 17.9 | 20.1 | 58.3 | 599.6 |
| 1964 | 276.2 | 184.5 | 101.9 | 19.2 | 20.3 | 32.8 | 634.9 |
| 1965 | 334.9 | 140.2 | 97.9 | 22.7 | 24.3 | 63.4 | 683.4 |
| 1966 | 372.3 | 158.1 | 101.4 | 39.0 | 30.4 | 66.0 | 767.2 |
| 1967 | 326.3 | 190.0 | 93.2 | 32.8 | $30 \cdot 4$ | 70.7 | 751.8 |
| 1968 | 243.6 | 260.1 | 89.1 | n.a. | n.a. | 187.6 | 780.4 |
| 1969 |  |  |  |  |  |  |  |

1970
1971
1972

Source: FAO Yearbook of Fishery Statistics
I/ King, blue, dungeness, Zuwai, houseshoe, rock and all edible crab.

Table VIII-2. --World landings, international trade and consumption of crabs, 1967

| Country | Landings | Exports | Imports | Consumption |
| :---: | :---: | :---: | :---: | :---: |
|  | -------Million pounds round weight------- |  |  |  |
| U.S. | 315.2 | -- | 12.5 | 327.7 |
| Japan | 187.3 | 30.6 | -- | 156.7 |
| USSR | 93.3 | 58.6 | -- | 34.6 |
| U.K. | 9.9 | -- | 24.7 | 34.6 |
| France |  |  | 23.5 | 23.5 |
| Other | 146.1 | 4.7 | 33.2 | 17.4 .7 |
| Total | 751.8 | 93.9 | 93.9. | 751.8 |

Source: Fishery Statistics of the United States and FAO Yearbook of Fishery Statistics

# IX FOREIGN CONSUMPTION 

-Consumption<br>Aggregate<br>Per capita

-Prices

Table IX-1.-World aggregate consumption of crabs by major consuming countries

| Year | United States | Japan | USSR | United Kingdom | France | Other | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | n.a. |  |  |  |  |  |  |
| 1947 |  |  |  |  |  |  |  |
| 1948 | n.a. | 30.9 | n.a. | n.a. | n.a. | 249.1 | 280.0 |
| 1949 | n.a. | 19.2 | n.a. | n.a. | n.a. | 210.1 | 229.3 |
| 1950 | 176.3 | 26.9 | n.a. | n.a. | n.a. | 17.3 | 220.5 |
| 1951 | 155.6 | 30.0 | n.a. | n.a. | n.a. | 28.2 | 213.8 |
| 1952 | 144.4 | 22.9 | n.a. | n.a. | n.a. | 55.4 | 222.7 |
| 1953 | 163.8 | 43.2 | n.a. | n.a. | n.a. | 101.6 | 308.6 |
| 1954 | 156.5 | 73.6 | n.a. | n.a. | n.a. | 142.5 | 372.6 |
| 1955 | 163.1 | 103.0 | n.a. | n.a. | 15.3 | 144.1 | 425.5 |
| 1956 | 171.6 | 76.1 | 12.6 | 70.9 | 10.6 | 70.5 | 412.3 |
| 1957 | 201.2 | 61.7 | 21.0 | 50.6 | 16.5 | 59.1 | 410.1 |
| 1958 | 194.7 | 58.6 | 19.9 | 60.0 | 15.3 | 81.4 | 429.9 |
| 1959 | 210.4 | 47.2 | 22.8 | 60.1 | 16.5 | 83.9 | 440.9 |
| 1960 | 245.6 | 103.6 | 37.4 | 46.3 | 15.3 | 61.1 | 509.3 |
| 1961 | 254.4 | 100.5 | 41.8 | 36.4 | 18.8 | 86.0 | 537.9 |
| 1962 | 252.1 | 116.0 | 56.0 | 39.0 | 14.1 | 85.0 | 562.2 |
| 1963 | 278.5 | 119.3 | 35.0 | 36.8 | 25.8 | 104.2 | 599.6 |
| 1964 | 292.5 | 114.2 | 39.6 | 44.4 | 29.4 | 114.8 | 634.9 |
| 1965 | 355.3 | 95.6 | 40.3 | 33.0 | 24.7 | 135.5 | 683.4 |
| 1966 | 381.3 | 121.7 | 45.0 | 33.9 | 23.5 | 161.8 | 767.2 |
| 1967 | 327.7 | 156.7 | 34.6 | 34.6 | 23.5 | 174.7 | 751.8 |
| 1968 | 272.3 | 212.5 | 33.8 | 23.9 | 20.0 | 217.9 | 780.4 |

1970
1971
1972

Source: Original data from Fishery Statistics of the United States and FAO Yearbook of Fishery, Statistics

Table IX-2. --World per capita consumption of crabs by major consuming countries

| Year | United States | Japan | USSR | United Kingdom | France |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | ----------Pounds, round weight------------ |  |  |  |  |
| 1947 | n.a. | $\mathrm{n} . \mathrm{a}$. | n.a. | n.a. | n.a. |
| 1948 | n.a. | . 384 | n.a. | n.a | n.a. |
| 1949 | n.a. | . 234 | n.a. | n.a | n.a. |
| 1950 | 1.161 | . 324 | n.a. | n.a. | n.a. |
| 1951 | 1.106 | . 355 | n.a. | n.a. | n. |
| 1952 | . 924 | . 269 | n . a . | n.a. | n |
| 1953 | 1.031 | . 498 | n.a. | $\mathrm{n} . \mathrm{a}$. | n.a. |
| 1954 | . 967 | . 838 | n.a | n.a. | n.a. |
| 1955 | . 988 | 1.158. | n.a. | n.a. | . 352 |
| 1956 | 1.021 | . 847 | . 063 | 1.380 | . 241 |
| 1957 | 1.176 | . 838 | . 103 | . 983 | - 372 |
| 1958 | 1.118 | . 642 | . 096 | 1.157 | . 341 |
| 1959 | 1.188 | . 512 | . 109 | 1.152 | . 364 |
| 1960 | 1.365 | 1.111 | .175 | . 880 | . 334 |
| 1961 | 1.390 | 1.069 | . 192 | . 687 | - 407 |
| 1962 | 1.356 | 1.222 | . 253 | . 730 | . 300 |
| 1963 | 1.476 | 1.244 | . 156 | . 684 | .540 .607 |
| 1964 | 1.528 | 1.180 | . 174 | . 818 | . 607. |
| 1965 | 1.833 | . 975 | .175 | .604 | .504 |
| 1966. | 1.946 | 1.230 | . 193 | . 617 | - 476 |
| 1967 | 1.656 | 1.560 | . 146 | . 625 | . 471 |
| 1968 | 1.362 |  |  |  |  |
| 1969 |  |  |  |  |  |

1970
1971
1972

Source: Original data from Fishery Statistics of the United States and FAO Yearbook of Fishery Statistics.

Table IX-3. --World crab prices by country and species

| Year | United States |  |  | Japan |  | USSR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Blue | Dungeness | King | King | Zuwai: | King |
|  |  | ---------- | ents per | pound | ------ |  |
| 1947 | n.a. | 9.8 | 4.2 | n.a. | n.a. | n.a. |
| 1948 | n.a. | 10.4 | 4.5 | n.a. | n.a. | n.a. |
| 1949 | n.a. | 11.1 | 6.0 | n.a. | n.a. | n.a. |
| 1950 | 4.7 | 11.1 | 6.0 | n.a. | n.a. | n.a. |
| 1951 | 4.9 | 12.5 | 11.4 | n.á. | n.a. | n.a. |
| 1952 | 4.9 | 13.0 | 14.0 | n.a. | n.a. | n.a. |
| 1953 | 5.2 | 13.9 | 11.9 | n.a. | n.a. | n.a. |
| 1954 | 5.0 | 12.7 | 9.9 | n.a. | n.a. | n.a. |
| 1955 | 5.9 | 12.7 | 9.9 | 13.1 | 10.6 | n.a. |
| 1956 | 6.8 | 11.7 | 9.8 | 9.4 | 6.5 | n.a. |
| 1957 | 6.6 | 8.2 | 8.0 | 7.2 | 7.2 | n.a. |
| 1958 | 6.1 | 10.6 | 8.0 | 8.6 | 7.2 | n.a. |
| 1959 | 6.9 | 13.6 | 7.8 | 7.6 | 7.6 | n.a. |
| 1960 | 5.9 | 14.8 | 8.0 | 7.3 | 7.9 | n.a. |
| 1961 | 5.3 | 15.2 | 9.0 | 11.3 | 10.5 | n.a. |
| 1962 | 5.8 | 17.4 | 10.0 | 17.8 | 12.2 | n.a. |
| 1963 | 6.2 | 17.3 | 9.7 | 19.6 | 12.7 | n.a. |
| 1964 | 7.1 | 17.3 | 9.4 | 22.7 | 13.6 | n.a. |
| 1965 | 7.5 | 16.2 | 9.7 | 23.5 | 16.5 | n.a. |
| 1966 | 6.6 | 14.0 | 9.8 | 26.2 | 16.8 | n.a. |
| 1967 | 5.9 | 15.7 | 11.7 | 28.4 | 15.4 | n.a. |
| 1968 | 9.9 | 18.6 | 30.0 |  |  |  |
| 1969 |  |  |  |  |  |  |
| 1970 |  |  |  |  |  |  |
| 1971 |  |  |  |  |  |  |
| 1972 |  |  |  |  |  |  |

Source: Original data from Fishery Statistics of the United States and FAO Yearbook of Fishery Statistics

X U.S. TRADE BARRIERS

Table X-I.--Present U.S. tariff structure for crabs $1 /$

| Item | Stat. Suf.fix | Product Description |  | $\frac{\mathrm{U} . \mathrm{S} \cdot \text { Imports-1968 }}{\text { Quantity }:-1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | (Jan. 1, 1972) |  |  |
| Crabs: <br> Crabmeat: |  |  |  |  |  |
| 114.15 | 00 | Fresh, chilled or frozen | 15\% ad. val. $12 \% \mathrm{ad}$. val. $7.5 \%$ ad. val. | 1,483,983 | 2,085,656 |
| Prepared or preserved (inc. pastes and sauces): |  |  |  |  |  |
| 114.20 | 00 | Canned | $22.5 \% \mathrm{ad} . \mathrm{val} .18 \% \mathrm{ad} . \mathrm{val} .11 \% \mathrm{ad}. \mathrm{val}$. | 4,635,055 | 5,272,502 |
| 174.25 | 00 | Other | $15 \%$ ad. val. $12 \%$ ad. val. $7.5 \%$ ad. val. | 84,895 | 100,376 |
|  |  | Other (whole or live) | Free Free Free |  |  |

Source: Division of Economic Research
1/ All forms

Table X-2.--Historical synopsis of trade investigations for crabs/

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
Source: Division of Economic Research
1/ Antidumping information echeck since 1954; for Section 332 and countervailing no summary lists available and an inquiry into a number of cases has not been completed.

# XI GOVERNMENT PROGRAMS 

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

Table XI-I. --Bureau of Commercial Fisheries programs and expenditures on blue crabs fiscal years 1965-69.

| Bureau of Commercial <br> Fisheries programs | 1965 | 1966 | 1967 | 1968 | 1969 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |

1960 and 1964 Fishing
Fleet Improvement Act
a) Number of Vessels Constructed
b) Total Government

Subsidies to
Vessels Constructed (dollars)

Mortgage Insurance Program
a) Number of Vessels
b) Value of Mortgages (dollars)

Fisheries Loan Fund
a) Number of Vessels

Receiving Loans
b) Total Value of

Loans (dollars)
Other BCF Programs I/
(dollars) n.a. n.a. $400,000100,000100,000$
Source: Division of Financial Assistance, Bureau of Commercial Fisheries

1/ 1971 Program Memorandum, U.S. Department of the Interior, Living Aquatic Resources

Table XI-2.--Estimated E conomic Development Administratiop expenditures for blue crab by program, May 1961-May 1969

Program/Project
Amount
Public Works Grants \& Loans:
0
Business Loans:
0
Technical Assistance Grants:
Carteret County, N.C. Seafood study
$\$ 27,000$
Grand Total
$\$ 27,000$

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.

## WRETMG IMPER SERES

Division of Economic Research
Burvau of Comacreial Fisheries
$\therefore$ An Apizcazion oi an Investment Model to Channel Catifish Earming oy R．Z＂．umson and E．Kange．

2．Ơe Devolophent oE Catfish as a Farm Crop and ant Estimetion of Zit Zco：omic Adaptability to Radiation Processing by D．Nash and X．Killer

3．Desigs：Stuiy：An Optimun Fishing Vessel for Georges Eank Gzouncisish Fistieny by A．Sokoloski（Project Monitor）

4．Tie Ralation between Vessel Subsidy Percentages and the Rate of Revira un Investment for Various Techoologies and Scale Levels： Tee Nociock Fishery by D．Nash，A．Sokoloski and E．Bell（Project シャnizors）

5．An Eoonomic Justification for Recommended Legislative Charges in the 1964 Fishing Fleet Improvement Act by E．Bell，E．Carisor， D．Nast：and A．Sokoloski．

6．Fin Economic Impact of Current Fisheries Management Policy on the Comareciai Fishing Industry of the Upper Great Lakes by D．Cleariy．

7．Cost and Earnings in the Boston Large Trawler Fleet by 3．Noetzei ane V．Nozton．

3．Sone Eioments of An Evaiuation of the Effects of Legal Factors on tio Utilizazion of pishery Resouzces by A．Sokoloski．

9．－Repori on the Economics of Polish Factory Trawlers and Freezer

：0．$\therefore$ ：－Inen＝ozy oミ Demand Equations for Fishery Products by D．Nash anci E．Eeli．

Z．Zncous＝ay Analysis of West Coast Flounder and Sole Proưces and a．．Zatimation of Its Economic Adaptability to Radiation Processins by D．Kash and M．Millor．

Z．Zio－Economic Modul of a Fishery（Primarily Demersal）by E．Ca：ison．
$\therefore$ ．An Zactozs behind the Differont Crowth Rates of U．S．Eishorics ジミ．2cll．



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：7．A：シ̈cunumic Evaluation o三 Columbia River Anadromous Fish コこいごams by J．Richards．

SU．Eunomic Projections of the Worid Demand and Supply of Tuna， 2970－90 by E．Bell．
：9．Ecunomic Feasibility of a Seafood Processing Operation in the Inaer CiEy of Miiwaukee by D．Cieary．

20．The izs 2assage by the Division of Economic Research．
 Ėaviges Bank Faddocia Fishery by L．Van Meir．

22．Son：Araiyses of Fish Prices by E．Waugh and V．Nor＝or．
23．Some Economic Characteristics of Pond－Raised Catíish Enterprises by こَ．G：eenfield．

ニ－Zlemenこe Cuciaj to the Future of Alaskan Commercial Fisheries by D．Nash，A．Soioloski，and D．Cleary

2う．シニミects on the Shrimp Processing Industry of Veeting the Cecuiremenes of Wholesome Eishery Products Legislation


2も．～EnEi＝Cose Aralysis of a Proposed Trawi Systems Progren －$\because$ ．$\because$ 亿ller



 $\therefore$ Suse Suady of the Occan asiacty by D．Bronley．



 ジッ．Bul．


35．A Suzve of Fish Purchases by Socio－Economic Charac－aristics－

34．A SuEvey of gish Purchases by Socio－Economic Characteristics－ Second Quarterly Report－Vay，June，July，igos by D．Nash．＇

3o．Eseimation of the Economic Benefits to Eishermer，Vessels，and Soceety Eum Limited Entry：A Generalized Model Applied to tien No：Chera Looster Fishery by $E$ ．Bell．
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¿シ．Kazke Potential for the San Pedro Wetfish Fishery by D．Nask．
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$\because$ A Suzvey oE Eish Purchases by Socio－Economic Characteristics， Fanec Cuarterly Repori－August，September，Octojer， 1969 by〕．$\because=\mathrm{s}$ ：
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49. A Survey of Fish Purchases by Socio-Economic Characteristics - Fourth Quarterly Report - November, December 1969, and January 1970 by Darrel A. Nash.
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52. Basic Economic Indicators-Halibut.
53. Basic Economic Indicators-Northern Lobsters.
54. Basic Economic Indicators-Sea Scallops.
55. Basic Economic Indicators-Clams.
56. Basic Economic Indicators-Oysters.
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.


[^0]:    Source: Frederick V. Waugh and Virgil J. Norton, Some Analyses of Fish Prices, Working Paper No. 22, Division of Economic Research, BCF.

    1/ 100 equals average monthly demand.

[^1]:    Source: Division of Current Economic Analysis, BCF.
    1/ This table includes figures for all types of crabs since separate data for international trade and changes in stocks is not available for blue crabs.
    2/ Frozen stocks only. Reported frozen stocks estimated to be 80 percent meat weight.
    3/ Landings converted to meat weights.
    [/ Those figures are lower than reported import weights as fresh and frozen crabs were converted to meat weights.
    5/ Included with miscellaneous shellfish exports after 1949.

