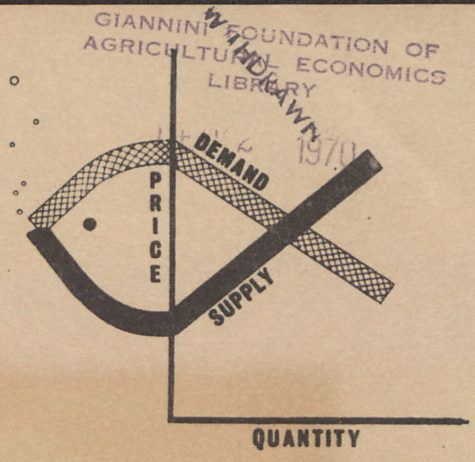


BASIC ECONOMIC INDICATORS

OYSTERS

Master Plan Fishery 50 10 21

Working Paper No. 56

May 1970

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.

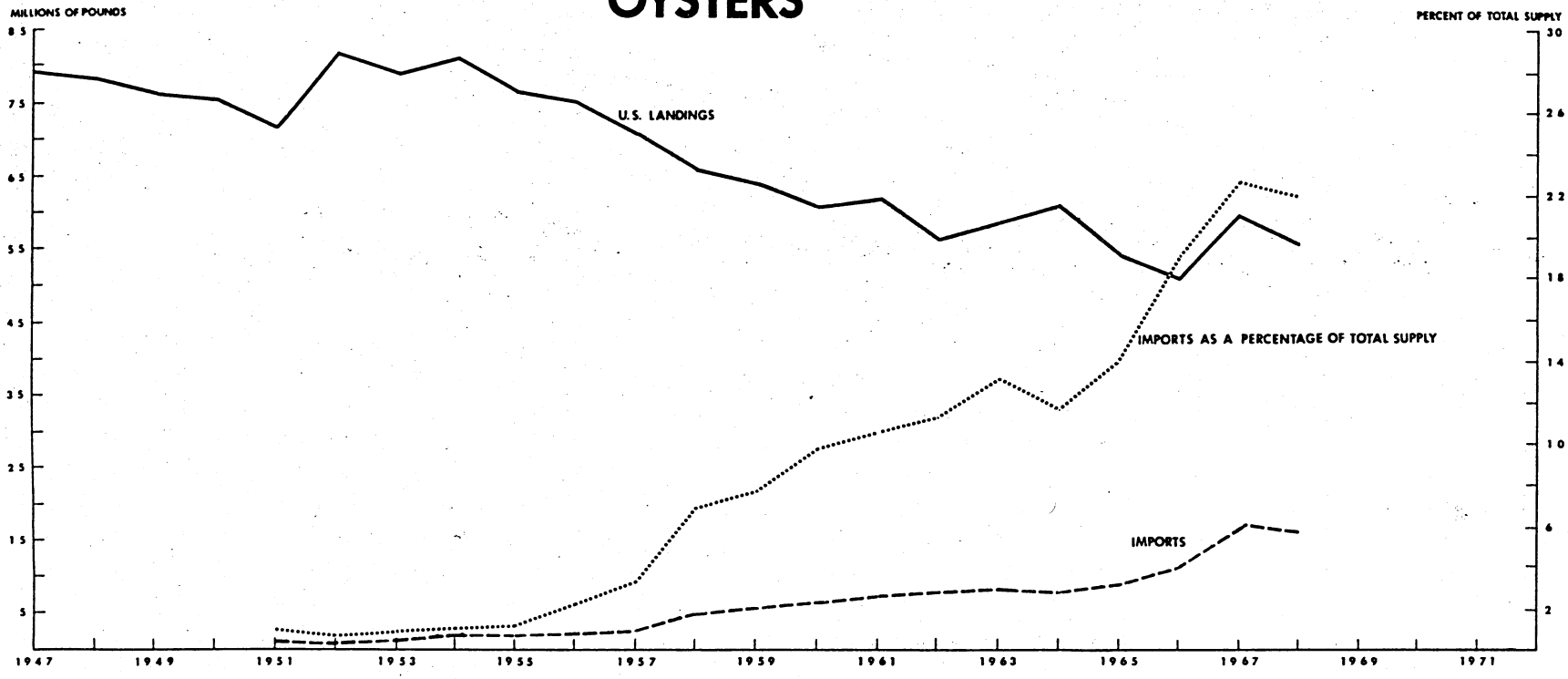
It should be noted that data for 1967 and 1968 are preliminary. Some figures are approximations and are subject to revision. Comments and suggestions may be directed to the Division of Economic Research, 7338 Baltimore Avenue, College Park, Maryland 20740.

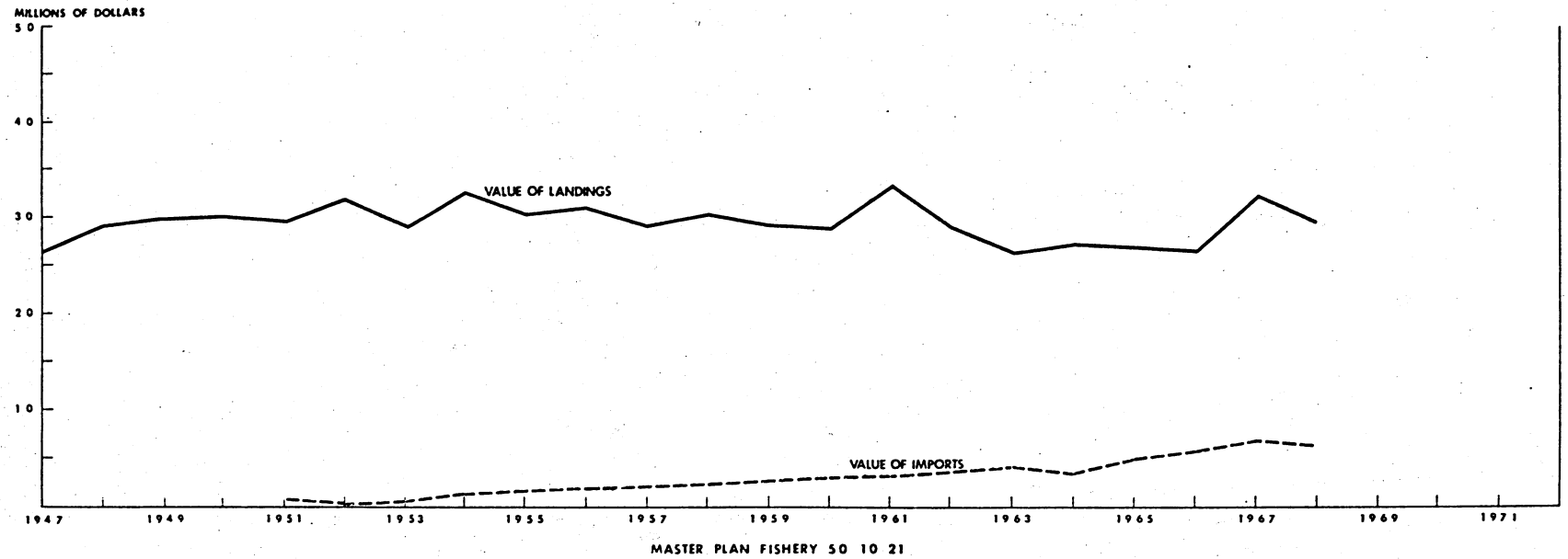
The "Basic Economic Indicators" were compiled and reviewed by the staff of the Division of Economic Research under the supervision of Richard K. Kinoshita with major contributions from Bruno G. Noetzel and Kenneth E. Koller.

Frederick W. Bell

Frederick W. Bell, Chief
Division of Economic Research

OYSTERS





MASTER PLAN FISHERY 50 10 21

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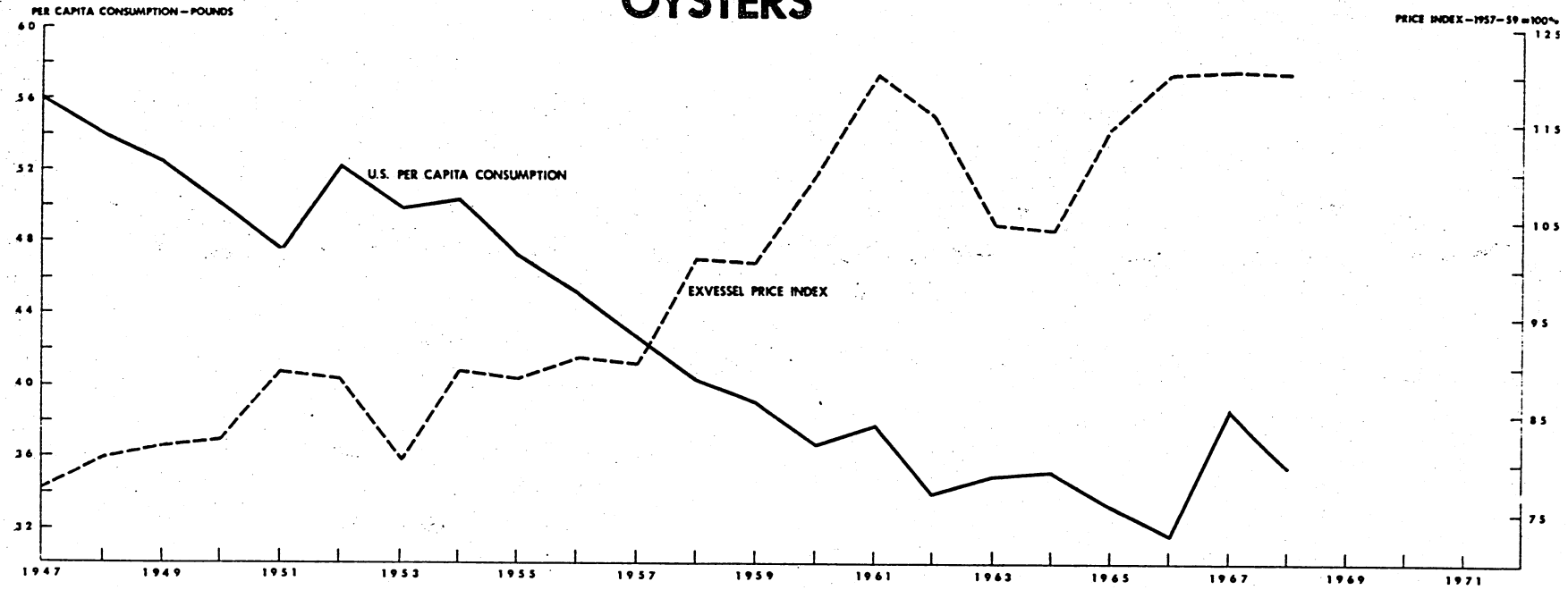
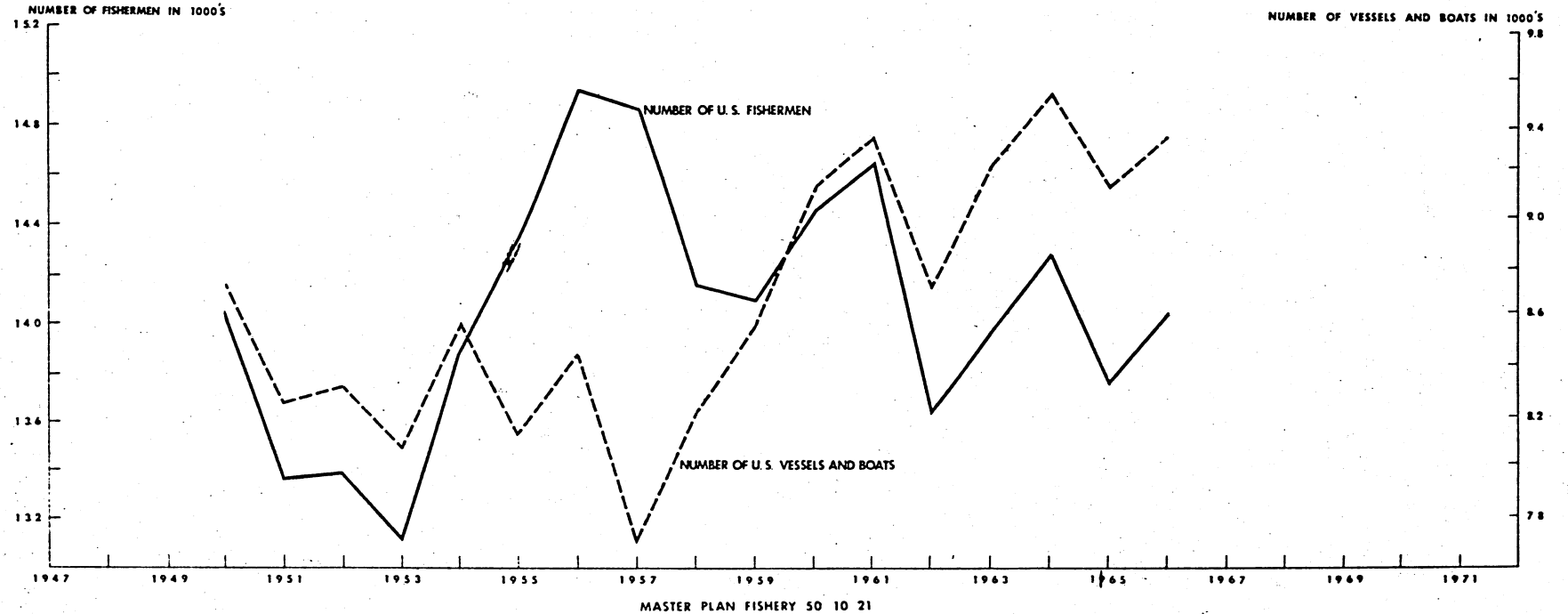
11

OYSTERS





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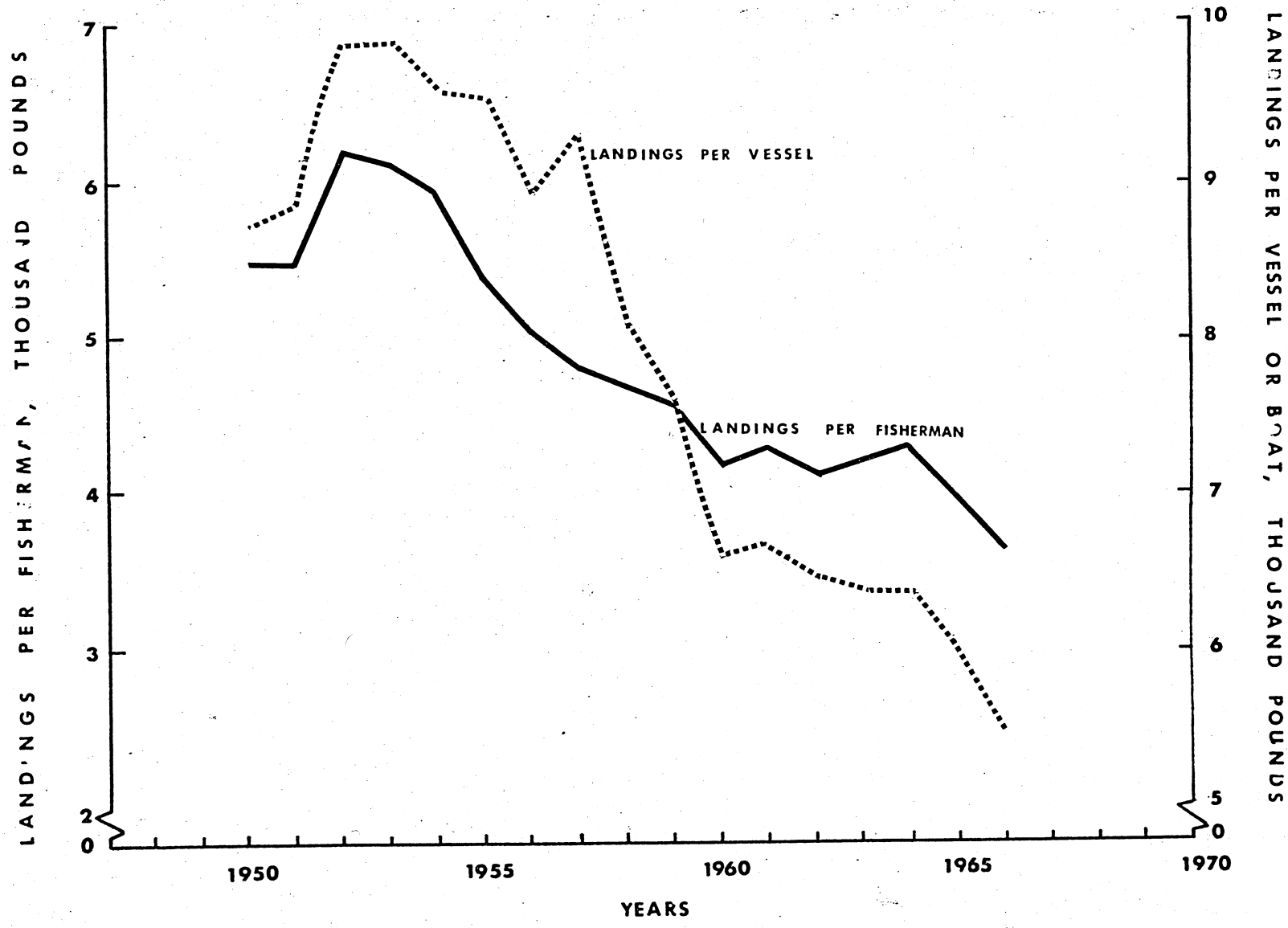
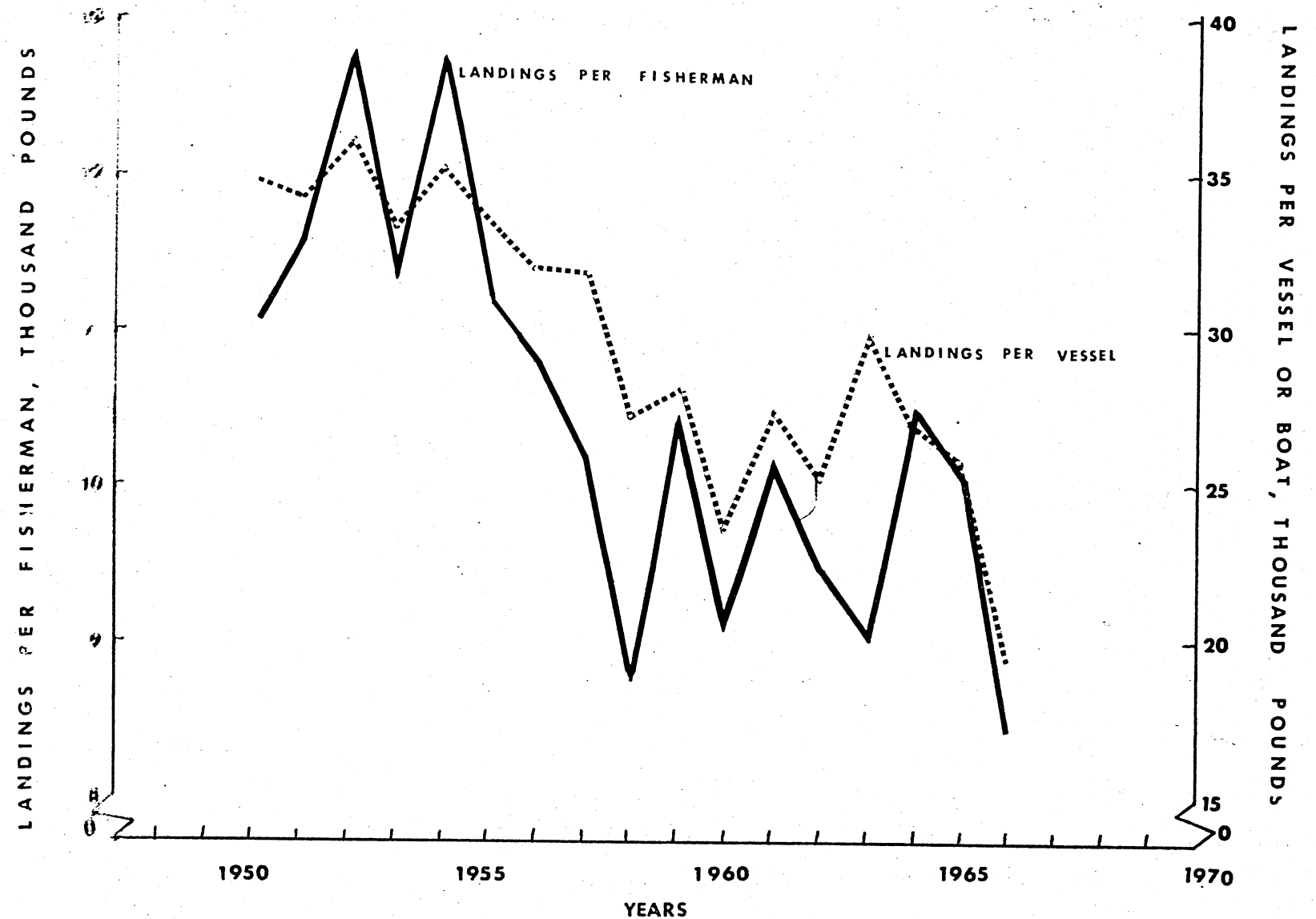
PRODUCTIVITY OF OYSTER (All) FISHERMEN AND VESSELS AND BOATS



PRODUCTIVITY OF OYSTER DREDGE FISHERMEN AND VESSELS AND BOATS



List of Tables

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 oyster vessels

NO DATA AVAILABLE

Table I-2.--Earnings of oyster fishermen

NO DATA AVAILABLE

Table I-3.--Productivity of oyster fisherman and vessel or boat: Landings per fisherman and per vessel or boat

	Landings per fisherman	Landings per vessel or boat
	Pounds, meat weight	
1950	5,441	8,705
1951	5,455	8,821
1952	6,142	9,862
1953	6,072	9,860
1954	5,892	9.539
1955	5,390	9,509
1956	5,027	8,883
1957	4,821	9,291
1958	4,684	8,065
1959	4,586	7,540
1960	4,149	6,573
1961	4,254	6,643
1962	4,113	6,423
1963	4,179	6,331
1964	4,239	6,345
1965	3,972	5,993
1966	3,643	5,457
1967		
1968		
1969		

Source: Fishery Statistics of the United States, BCF.

Table I-4.--Cost per pound of oyster

NO DATA AVAILABLE

Table I-5.--Historical growth rate of oyster landings, fishermen and vessels

Landings 1/ (1950-1966)	- 2.8 percent per year
Fishermen 2/ (1950-1966)	+ .02 percent per year
Vessels 3/ (1950-1966)	+ .72 percent per year

1/ Log of landings (Thou. lbs.) = 4.9349 - 0.012 time
(9.35) *

2/ Log of number of fishermen = 4.1390 + .00089
(1.24) *

3/ Log of number of vessels = 3.9027 + 0.0037
(2.94) *

* t value

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 oysters

(Meat Weight)

	Aggregate	Per capita
	Thousand pounds	Pounds
1947	63,196	.434
1948	61,770	.421
1949	76,385	.512
1950	76,322	.502
1951	73,240	.475
1952	81,693	.522
1953	79,567	.499
1954	82,372	.508
1955	78,072	.473
1956	76,153	.452
1957	73,181	.427
1958	70,583	.409
1959	69,414	.392
1960	65,893	.366
1961	69,100	.377
1962	63,124	.339
1963	66,385	.351
1964	68,812	.358
1965	64,107	.331
1966	61,824	.319
1967	76,273	.389
1968	70,794	.358
1969		
1970		
1971		
1972		

Source: Division of Current Economic Analysis, Bureau of Commercial Fisheries

Table 11-2(a) -- U.S. consumption of oysters (canned) by socio-economic characteristics, 1969 1/
(Retail Weight)

Socio-Economic Characteristics	1969				
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Total
	Pounds, per capita				
RACE					
Negro	.027	.032	.074	.041	.174
White	.061	.029	.030	.062	.182
Other	.000	.000	.000	.000	.000
Not specified	.000	.000	.000	.071	.071
RELIGION					
Catholic	.030	.021	.015	.036	.102
Jewish	.013	.000	.000	.000	.013
Protestant	.070	.033	.038	.071	.212
Other	.029	.000	.038	.024	.091
Not specified	.000	.000	.000	.050	.050
INCOME PER CAPITA					
Under 1,000	.074	.027	.027	.059	.187
1,000-1,999	.052	.037	.036	.053	.178
2,000-2,499	.056	.017	.015	.039	.127
2,500-2,999	.050	.018	.050	.076	.194
3,000-3,499	.049	.011	.012	.065	.137
3,500 & over	.098	.038	.037	.076	.249
OCCUPATION					
Prof. & semiprofessional	.051	.020	.018	.058	.147
Proprietors, managerial	.072	.031	.033	.073	.209
Clerical & sales	.038	.006	.008	.035	.125
Craftsmen, foremen	.050	.028	.030	.037	.145
Head operative	.010	.025	.033	.040	.108
Service workers, & laborers	.138	.058	.066	.113	.375
EDUCATION					
Less than 4 yr high school	.090	.038	.056	.090	.274
Less than 4 yr college	.051	.029	.020	.049	.149
College grad.	.028	.013	.016	.039	.096
Head, not spec.	.014	.030	.006	.016	.066
REGION					
New England	.007	.006	.005	.004	.022
Middle Atlantic	.022	.009	.019	.022	.072
E. North Cent.	.036	.029	.020	.059	.144
W. North Cent.	.062	.019	.039	114	.234
South Atlantic	.098	.029	.037	.063	.227
E. South Cent.	.147	.089	.105	.232	573
W. South Cent.	.100	.018	.044	.028	.190
Mountain	.156	.064	.017	.087	.324
Pacific	.055	.045	.037	.044	.181

Source: Division of Economic Research, Bureau of Commercial Fisheries
1/Purchases by households for home use.

Table 11-2(b) -- U.S. consumption of oysters (fresh and frozen) by socio-economic characteristics, 1969[1/]
(Retail Weight)

Socio-Economic Characteristics	1969				
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Total
	Pounds, per capita				
RACE					
Negro	.136	.044	.044	.143	.367
White	.070	.006	.021	.096	.193
Other	.166	.000	.058	.611	.835
Not specified	.026	.000	.000	.000	.026
RELIGION					
Catholic	.041	.002	.011	.060	.114
Jewish	.011	.000	.000	.005	.016
Protestant	.085	.010	.026	.112	.233
Other	.070	.000	.043	.179	.292
Not specified	.084	.000	.000	.000	.084
INCOME PER CAPITA					
Under 1,000	.068	.005	.022	.092	.187
1,000-1,999	.100	.010	.019	.105	.234
2,000-2,499	.024	.004	.012	.086	.126
2,500-2,999	.052	.002	.039	.080	.173
3,000-3,499	.030	.005	.003	.077	.115
3,500 & over	.118	.013	.031	.117	.279
OCCUPATION					
Prof. & semiprofessional	.040	.005	.015	.065	.125
Proprietors, managerial	.081	.007	.028	.129	.245
Clerical & sales	.090	.007	.020	.083	.200
Craftsmen, foremen	.060	.007	.021	.113	.201
Head operative	.022	.015	.015	.060	.112
Service workers, & laborers	.145	.009	.030	.117	.301
EDUCATION					
Less than 4 yr high school	.088	.006	.024	.096	.214
Less than 4 yr college	.178	.011	.023	.114	.326
College grad.	.036	.005	.016	.070	.127
Head, not spec.	.000	.000	.000	.000	.000
REGION					
New England	.059	.003	.024	.022	.108
Middle Atlantic	.029	.006	.019	.062	.116
E. North Cent.	.042	.001	.017	.087	.147
W. North Cent.	.026	.001	.024	.073	.124
South Atlantic	.154	.019	.038	.188	.399
E. South Cent.	.170	.021	.024	.147	.362
W. South Cent.	.120	.011	.021	.074	.226
Mountain	.066	.002	.024	.201	.293
Pacific	.082	.013	.015	.081	.191

Source: Division of Economic Research, Bureau of Commercial Fisheries

1/ Purchases by households for home use

Table 11-2(c) --U.S. consumption of oysters (fresh, frozen, and canned) by socio-economic characteristics, 1969 1/
(Retail Weight)

Socio-Economic Characteristics	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Total
	Pounds, per capita				
RACE					
Negro	.163	.076	.118	.184	.541
White	.086	.035	.051	.158	.330
Other	.166	.000	.058	.611	.835
Not specified	.026	.000	.000	.071	.097
RELIGION					
Catholic	.071	.023	.026	.096	.216
Jewish	.024	.000	.000	.005	.029
Protestant	.155	.043	.064	.183	.445
Other	.099	.000	.081	.203	.383
Not specified	.084	.000	.000	.050	.134
INCOME PER CAPITA					
Under 1,000	.142	.032	.049	.151	.374
1,000-1,999	.152	.047	.055	.158	.412
2,000-2,499	.080	.021	.027	.125	.253
2,500-2,999	.102	.020	.089	.156	.367
3,000-3,499	.079	.016	.015	.142	.252
3,500 & over	.216	.051	.068	.193	.528
OCCUPATION					
Prof. & semiprofessional	.091	.025	.035	.121	.272
Proprietors, managerial	.153	.038	.061	.202	.454
Clerical & sales	.128	.013	.028	.118	.287
Craftsmen, foremen	.110	.035	.051	.150	.346
Head operative	.032	.040	.048	.100	.220
Service workers, & laborers	.283	.067	.096	.230	.676
EDUCATION					
Less than 4 yr high school	.178	.044	.080	.186	.488
Less than 4 yr college	.229	.040	.043	.163	.475
College grad.	.064	.018	.032	.109	.223
Head, not spec.	.014	.030	.006	.016	.066
REGION					
New England	.066	.009	.029	.026	.130
Middle Atlantic	.051	.015	.038	.084	.188
E. North Cent.	.078	.030	.037	.146	.291
W. North Cent.	.088	.020	.063	.187	.358
South Atlantic	.252	.048	.075	.251	.626
E. South Cent.	.317	.110	.129	.379	.935
W. South Cent.	.220	.029	.065	.102	.416
Mountain	.222	.066	.041	.288	.617
Pacific	.137	.058	.052	.125	.372

Source: Division of Economic Research, Bureau of Commercial Fisheries

1/ Purchases by households for home use.

Table II-3.--Price of oysters, exvessel, wholesale, and retail

	Exvessel Price	Wholesale Price	Retail Price[1/]
	Dollars per pound		
1950	.39	.46	.64
1951	.40	.49	.78
1952	.39	.43	.84
1953	.36	.45	.88
1954	.40	.55	.90
1955	.39	.55	.90
1956	.41	.56	.96
1957	.41	.58	.93
1958	.46	.56	1.09
1959	.46	.66	1.07
1960	.49	.80	1.34
1961	.53	.87	n.a.
1962	.52	.88	1.54
1963	.46	.91	1.60
1964	.46	.83	1.65
1965	.51	.85	1.71
1966	.53	.95	1.81
1967	.54	.87	
1968	.54	.91	
1969			
1970			
1971			
1972			

Source: Bureau of Labor Statistics
Fishery Statistics of the U.S.

1/ At Boston, large oysters; per pound based on 1.094 lbs. per pint.

Table II-4.--Value of oyster landings: Exvessel, wholesale, and retail

	(Meat Weight)		
	Exvessel Value	Wholesale 1/ Value	Retail 1/ Value
	Thousand dollars		
1947	27,691	n.a.	n.a.
1948	28,675	n.a.	n.a.
1949	29,543	n.a.	n.a.
1950	29,596	35,150	48,905
1951	29,070	35,765	56,932
1952	32,339	35,346	69,083
1953	29,054	35,873	70,152
1954	32,796	45,057	73,729
1955	30,476	42,633	69,763
1956	30,884	42,075	72,128
1957	29,407	41,561	66,641
1958	30,442	37,181	72,371
1959	29,483	42,708	69,239
1960	29,242	48,008	80,413
1961	33,204	54,205	n.a.
1962	29,139	49,312	86,296
1963	27,105	53,184	93,510
1964	27,926	50,213	99,881
1965	27,863	46,484	93,516
1966	27,373	48,661	92,713
1967	32,241	52,162	
1968	29,800	50,596	
1969			

Source: Fishery Statistics of the United States., Bureau of Commercial Fisheries., Table II-3.

1/ Based on average weight of one pint equals 1.094 pounds

Table II-5.-- Retail price of oysters relative to the Consumer Price Index and the Consumer Price Index for meat, poultry, and fish, 1950-66.

	Retail price	Retail price/CPI	Retail price/CPImpf
	Dollar per pound		
1950	.64	.76	.67
1951	.78	.86	.73
1952	.84	.91	.80
1953	.88	.94	.88
1954	.90	.96	.92
1955	.90	.96	.98
1956	.96	1.01	1.09
1957	.93	.95	.97
1958	1.09	1.08	1.04
1959	1.07	1.05	1.06
1960	1.34	1.30	1.35
1961	n.a.	n.a.	n.a.
1962	1.54	1.46	1.51
1963	1.60	1.50	1.60
1964	1.65	1.53	1.67
1965	1.71	1.56	1.63
1966	1.81	1.60	1.59
1967			
1968			
1969			
1970			
1971			
1972			

Source: Bureau of Labor Statistics

Table II-3

Table II-6.--Index of seasonal demand for oyster, by market area

NO DATA AVAILABLE

Table II-7.--Price and income elasticities for oysters

Price elasticity = -0.6728

Income elasticity = 0.0

Demand Equation for United States

$$C/N = 4.6329 - 0.6728 \text{ Log } \left[\frac{P}{CPI}\right] + 0.0 \text{ Log } \left[\frac{Y/CPI}{N}\right]$$

C/N = Oysters consumption per capita

PP/CPI = Price of oysters 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 oysters, 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/	
1968 (actual)	3.04	197.9	602	1,828
1970	2.91	206.0	600	2,127
1975	2.91	219.4	639	2,687
1980	2.91	235.2	685	3,278
1985	2.91	252.9	736	3,869
1990	2.91	270.8	788	4,444
2000	2.91	307.8	896	5,409

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

IV DOMESTIC PRODUCTION

—Landings

—Value

Table IV-1.--U.S. oyster landings

(Meat Weight)

	Landings 1/	Value
	Thou. pounds	Thou. dollars
1947	63,085	27,691
1948	61,610	28,675
1949	75,773	29,543
1950	76,415	29,596
1951	72,990	29,070
1952	82,242	32,339
1953	79,719	29,054
1954	81,922	32,796
1955	77,515	30,476
1956	75,134	30,884
1957	71,658	29,407
1958	66,396	30,442
1959	64,710	29,483
1960	60,010	29,242
1961	62,305	33,204
1962	56,037	29,130
1963	58,444	27,105
1964	60,534	27,926
1965	54,688	27,868
1966	51,223	27,373
1967	59,957	32,241
1968	55,600	29,800
1969		
1970		
1971		
1972		

Source: Fishery Statistics of the U.S.

1/1947-1949 not all states included

Table IV-2.--U.S. oyster landings by region

	New England	Middle Atlantic	Chesapeake
	Thousand pounds, meat weight		
1947	2,125	15,744	33,730
1948	1,652	15,790	34,403
1949	4,004	17,411	31,777
1950	4,728	18,170	29,954
1951	1,970	17,410	29,598
1952	2,209	16,767	34,418
1953	1,038	14,462	36,945
1954	735	13,376	41,588
1955	619	9,849	39,228
1956	505	8,465	38,064
1957	403	7,982	34,234
1958	274	4,296	37,530
1959	386	1,391	33,321
1960	498	1,153	27,110
1961	453	1,921	27,500
1962	294	2,363	19,938
1963	453	950	18,274
1964	194	1,356	22,098
1965	341	757	21,189
1966	408	917	21,233
1967	323	1,190	25,789
1968			
1969			
1970			
1971			
1972			

Table IV-2.--U.S. oyster landings by region (Continued)

	South Atlantic	Gulf	Pacific	Total All Regions
	Thousand pounds, meat weight			
1947	n.a.	n.a.	11,486	63,085
1948	n.a.	n.a.	9,765	61,610
1949	n.a.	13,121	8,374	75,773
1950	3,034	12,292	8,239	76,415
1951	3,783	11,519	8,709	72,990
1952	4,112	14,637	10,100	82,242
1953	4,021	12,835	10,337	79,718
1954	3,810	11,444	10,970	81,921
1955	2,261	13,881	11,681	77,518
1956	3,656	13,514	11,863	75,132
1957	3,068	14,306	11,607	71,654
1958	2,651	10,407	11,236	66,395
1959	3,517	13,722	12,366	64,709
1960	4,120	16,098	11,027	60,007
1961	3,985	18,239	10,208	62,304
1962	3,849	18,840	10,753	56,037
1963	4,838	24,138	9,790	58,443
1964	3,527	23,385	9,953	60,532
1965	4,082	19,155	9,164	54,686
1966	3,657	17,182	7,827	51,223
1967	3,160	21,747	7,739	59,957
1968				
1969				
1970				
1971				
1972				

Source: Fishery Statistics of the United States, BCF

Table IV-3.--Source and disposition of oysters (all forms) in the U.S.

Year	Beginning stock[1/]	Landings	Imports[2/]	Total	Ending stocks[1/]	Exports[3/]	Apparent total consumption
	Thousand pounds, meat weight						
1947	363	63,085	111	63,196	169	825	62,565
1948	169	61,610	160	61,770	270	76	61,593
1949	270	75,773	342	76,385	305	851	75,229
1950	305	76,415	446	77,166	209	635	76,322
1951	209	72,990	962	74,161	201	720	73,240
1952	201	82,242	595	83,038	534	811	81,693
1953	534	79,719	637	80,890	580	743	79,567
1954	580	81,922	1,056	83,558	503	683	82,372
1955	503	77,515	1,391	79,409	520	817	78,072
1956	520	75,134	1,928	77,582	613	816	76,153
1957	613	71,658	2,575	74,846	780	883	73,181
1958	780	66,396	5,015	72,191	774	834	70,583
1959	774	64,710	5,540	71,024	826	784	69,414
1960	826	60,010	6,597	67,433	936	604	65,893
1961	936	62,305	7,261	70,502	823	579	69,100
1962	823	56,037	7,387	64,247	712	411	63,124
1963	712	58,444	8,906	68,062	1,426	251	66,385
1964	1,426	60,534	8,154	70,114	1,051	251	68,812
1965	1,051	54,688	9,001	64,740	633	-	64,107
1966	633	51,223	12,028	63,884	2,060	-	61,824
1967	2,060	50,957	17,672	79,689	1,416	-	78,273
1968	1,416	55,600	15,550	72,566	1,772	-	70,794
1969							
1970							
1971							
1972							

Source: Division of Current Economic Analysis

1/ Frozen only; canned not available.
2/ Does not include seed oysters. Import weight of fresh and frozen and canned oysters converted to meat weight.
3/ Through 1956 includes in shell and shucked exports converted to meat weight. After 1956 in shell exports no longer reported. After 1964 exports are no longer reported as a separate category.

V DOMESTIC EMPLOYMENT, VESSELS AND EFFORT

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

Table V-1.--Number of fishermen and vessels in the U.S. oyster fishery, 1950-66.

	Fishermen	Vessels and boats
	Number	
1950	14,045	8,778
1951	13,381	8,275
1952	13,370	8,339
1953	13,128	8,085
1954	13,901	8,588
1955	14.382	8,152
1956	14,945	8,458
1957	14,862	7,713
1958	14,176	8,233
1959	14,110	8,582
1960	14,464	9,130
1961	14,646	9,379
1962	13,626	8,724
1963	13,985	9,231
1964	14,280	9,541
1965	13,770	9,125
1966	14,061	9,387
1967		
1968		
1969		
1970		
1971		
1972		

Source: Fishery Statistics of the United States 1966, BCF

Table V-2.--Vessels in oyster tong fishery

	Vessels			
	Atlantic	Gulf	Pacific	Total 1/
	Number			
1947	n.a.	n.a.	-	n.a.
1948	n.a.	n.a.	n.a.	n.a.
1949	n.a.	4	n.a.	4
1950	82	2	-	84
1951	58	-	-	58
1952	33	-	n.a.	33
1953	60	-	n.a.	60
1954	61	20	n.a.	81
1955	223	21	-	244
1956	265	-	-	265
1957	284	-	n.a.	284
1958	310	-	-	310
1959	422	-	-	422
1960	390	-	n.a.	390
1961	493	-	n.a.	493
1962	434	5	-	439
1963	501	9	-	510
1964	432	9	-	441
1965	545	7	-	552
1966	594	2	-	596
1967				
1968				
1969				
1970				
1971				
1972				

Table V-2.--Vessels in oyster tong fishery (Continued)

	Boats (Motor)			
	Atlantic	Gulf	Pacific	Total 1/
	Number			
1947	n.a.	n.a.	81	81
1948	n.a.	n.a.	n.a.	n.a.
1949	n.a.	706	n.a.	706
1950	4,601	519	88	5,208
1951	4,664	519	82	5,265
1952	4,718	448	n.a.	5,166
1953	4,717	362	n.a.	5,079
1954	5,030	890	n.a.	5,920
1955	4,648	822	89	5,559
1956	4,881	777	118	5,776
1957	4,810	724	n.a.	5,534
1958	4,795	839	27	5,661
1959	5,109	1,017	25	6,151
1960	5,262	1,447	n.a.	6,709
1961	5,219	1,632	n.a.	6,841
1962	4,713	1,708	26	6,447
1963	5,005	1,763	30	6,798
1964	5,457	1,717	39	7,213
1965	5,124	1,729	42	6,895
1966	5,613	1,644	17	7,274
1967				
1968				
1969				
1970				
1971				
1972				

Table V-2.--Vessels in oyster tong fishery (Continued)

	Boats (Other)			
	Atlantic	Gulf	Pacific	Total 1/
		Number		
1947	n.a.	n.a.	119	
1948	n.a.	n.a.	n.a.	
1949	n.a.	1,285	n.a.	
1950	624	1,243	130	1,997
1951	578	747	121	1,446
1952	523	759	n.a.	
1953	387	712	n.a.	
1954	385	397	n.a.	
1955	319	288	85	692
1956	383	387	90	760
1957	358	325	n.a.	
1958	300	215	-	515
1959	214	210	-	424
1960	175	211	n.a.	
1961	184	271	n.a.	
1962	146	212	-	358
1963	129	229	-	358
1964	108	233	-	341
1965	124	197	-	321
1966	37	94	-	131
1967				
1968				
1969				
1970				
1971				
1972				

Source: Fishery Statistics of the United States, 1966

1/ Total of vessel and boat data available at the time the table was compiled.

Table V-3.--Vessels in oyster dredge fishery

	Vessels			
	Atlantic	Gulf	Pacific	Total
	----------	Number	----------	
1947	n.a.	n.a.	18	18
1948	n.a.	153	21	174
1949	n.a.	163	21	184
1950	512	195	21	728
1951	438	58	24	520
1952	461	94	24	579
1953	475	175	24	676
1954	455	189	28	672
1955	443	255	33	731
1956	403	299	37	739
1957	417	308	38	763
1958	464	315	34	813
1959	359	268	37	664
1960	350	297	32	679
1961	443	225	28	696
1962	340	340	31	711
1963	354	352	32	738
1964	282	402	29	713
1965	299	287	29	615
1966	275	292	30	597
1967				
1968				
1969				
1970				
1971				
1972				

Table V-3.--Vessels in oyster dredge fishery (Continued)

	Boats (Motor)			
	Atlantic	Gulf	Pacific	Total
	Number			
1947	n.a.	n.a.	6	6
1948	n.a.	52	7	59
1949	n.a.	43	9	52
1950	626	65	9	700
1951	786	139	13	938
1952	900	132	17	1,049
1953	754	168	18	940
1954	686	191	21	898
1955	649	206	19	874
1956	694	173	21	888
1957	632	199	21	852
1958	635	256	19	910
1959	607	277	17	901
1960	638	283	15	936
1961	501	342	15	858
1962	410	344	15	769
1963	393	420	14	827
1964	422	395	16	833
1965	390	340	13	743
1966	419	358	12	789
1967				
1968				
1969				
1970				
1971				
1972				

Table V-3.--Vessels in oyster dredge fishery (Continued)

	Boats (Other)			
	Atlantic	Gulf	Pacific	Total
	Number			
1947	n.a.	n.a.	n.a.	n.a.
1948	n.a.	-	-	n.a.
1949	n.a.	-	-	n.a.
1950	61	-	-	61
1951	48	-	-	48
1952	50	-	-	50
1953	53	-	-	53
1954	72	3	-	75
1955	52	-	-	52
1956	30	-	-	30
1957	20	-	-	20
1958	24	-	-	24
1959	18	2	-	20
1960	5	-	-	5
1961	1	-	-	1
1962	-	-	-	-
1963	-	-	-	-
1964	-	-	-	-
1965	-	-	-	-
1966	-	-	-	-
1967				
1968				
1969				
1970				
1971				
1972				

Source: Fishery Statistics of the United States

Table V-4.--Number of fishermen in oyster tong fishery

	On Vessels				On boats and shore			
	Atlantic	Gulf	Pacific	Total	Atlantic	Gulf	Pacific	Total
	Number							
1947	n.a.	n.a.	-	n.a.	n.a.	n.a.	307	n.a.
1948	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1949	n.a.	8	n.a.	n.a.	n.a.	2,201	n.a.	n.a.
1950	177	4	-	181	6,870	1,912	380	9,162
1951	131	-	-	131	6,973	1,482	338	8,793
1952	77	-	n.a.	n.a.	6,956	1,272	n.a.	n.a.
1953	126	-	n.a.	n.a.	6,666	1,099	n.a.	n.a.
1954	130	40	n.a.	n.a.	7,206	1,658	n.a.	n.a.
1955	463	43	-	506	7,021	1,553	349	8,923
1956	554	-	-	554	7,650	1,424	404	9,478
1957	565	-	n.a.	n.a.	7,490	1,345	n.a.	n.a.
1958	607	-	-	607	6,808	1,319	27	8,154
1959	780	-	-	780	7,441	1,609	25	9,075
1960	737	-	n.a.	n.a.	7,341	2,201	n.a.	n.a.
1961	904	-	n.a.	n.a.	7,140	2,286	n.a.	n.a.
1962	762	7	-	769	6,343	2,541	26	8,910
1963	881	14	-	895	6,271	2,631	30	8,932
1964	683	19	-	702	7,049	2,529	39	9,617
1965	966	14	-	979	6,866	2,416	42	9,324
1966	1,099	4	-	1,103	7,485	2,251	33	9,769
1967								
1968								
1969								
1970								
1971								
1972								

Source: Fishery Statistics of the U.S.

Table V-5.--Number of fishermen in oyster dredge fishery

	On vessesl				: On boats and shore			
	Atlantic	Gulf	Pacific	Total	: Atlantic	Gulf	Pacific	Total
	Number							
1947	n.a.	n.a.	55	n.a.	n.a.	n.a.	15	n.a.
1948	n.a.	693	63	n.a.	n.a.	166	17	n.a.
1949	n.a.	679	63	n.a.	n.a.	155	23	n.a.
1950	2,208	831	63	3,102	1,324	250	26	1,600
1951	2,103	253	66	2,422	1,575	429	31	2,035
1952	2,039	389	65	2,493	1,813	389	40	2,242
1953	2,088	675	68	2,831	1,516	504	36	2,056
1954	1,954	593	75	2,622	1,382	471	42	1,895
1955	2,230	811	90	3,131	1,331	453	38	1,822
1956	1,903	1,006	103	3,012	1,414	445	42	1,901
1957	2,117	1,015	107	3,239	1,296	535	42	1,873
1958	2,382	1,029	110	3,521	1,265	591	38	1,894
1959	1,522	774	111	2,407	1,194	616	38	1,848
1960	1,294	866	90	2,250	1,283	592	35	1,910
1961	1,537	839	79	2,455	1,020	688	32	1,740
1962	1,308	958	87	2,353	842	721	31	1,594
1963	1,351	1,040	89	2,480	788	861	29	1,678
1964	1,017	1,216	80	2,313	842	775	31	1,648
1965	1,070	854	81	2,005	775	660	27	1,462
1966	903	796	79	1,778	664	722	25	1,411
1967								
1968								
1969								
1970								
1971								
1972								

Source: Fishery Statistics of the U.S.

VI BIOLOGICAL STOCK ASSESSMENT

Table VI-1.--Estimate of maximum sustainable yield of oyster from world stocks

MAXIMUM SUSTAINABLE YIELD FROM WORLD STOCK IS UNAPPLICABLE TO OYSTER. YIELD IS DEPENDENT ON EFFORT BECAUSE STOCKS ARE OBTAINED FROM BOTH FISHING EFFORT AND AQUACULTURAL EFFORT.

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

VII INTERNATIONAL TRADE

- Imports
  - Quantity
  - Value
  - Price

Table VII-1.--Quantity and value of oyster imports to the U.S.

	Fresh & frozen[1/]	Canned[2/]	Total	Value (all forms)
	Thousand pounds			Thou. dollars
1947	10	101	111	110
1948	13	147	160	151
1949	29	313	342	318
1950	38	408	446	278
1951	13	949	962	544
1952	25	570	595	363
1953	14	623	637	397
1954	7	1,049	1,056	625
1955	23	1,3	1,391	686
1956	141	1,787	1,928	869
1957	86	2,489	2,575	1,028
1958	13	5,002	5,015	1,587
1959	4	5,536	5,540	1,965
1960	64	6,533	6,597	2,302
1961	99	7,162	7,261	2,496
1962	105	7,282	7,387	2,883
1963	1,035	7,871	8,906	3,706
1964	743	7,411	8,154	3,320
1965	968	8,033	9,001	3,842
1966	854	11,174	12,028	5,054
1967	2,686	14,986	17,672	6,912
1968	2,066	13,484	15,550	6,528
1969				
1970				
1971				
1972				

Source: Division of Economic Research, BCF

1/ Conversion factor for imported oysters to meat weight is .75.
2/ Conversion factor for imported canned oyster to meat weight is .93.

VIII FOREIGN PRODUCTION

—Landings

Table VIII-1.--World landings of oysters by countries[1/]

(Round weight)

Year	Mexico	U.S.	Taiwan	Japan	S. Korea[2/]	France[2/]	Other	Total
	Million pounds							
1947	10.2	641.9	n.a.	26.9	n.a.	n.a.	263.9	932.7
1948	10.2	629.1	n.a.	30.7	n.a.	n.a.	67.9	727.7
1949	n.a.	621.2	n.a	70.3	n.a.	n.a.	102.3	793.8
1950	8.5	620.0	n.a.	76.5	n.a.	n.a.	82.3	771.8
1951	n.a.	586.3	n.a.	118.9	n.a.	n.a.	194.5	899.6
1952	n.a.	660.2	n.a.	174.6	n.a.	n.a.	62.6	897.4
1953	n.a.	640.6	12.4	242.1	n.a.	n.a.	68.6	963.6
1954	n.a.	1023.8	13.5	233.7	2.9	37.0	43.0	1358.9
1955	23.4	1060.8	13.9	216.1	3.5	8.4	49.8	1375.9
1956	23.4	1031.3	11.2	252.3	3.5	27.8	44.1	1393.6
1957	26.5	986.5	11.2	317.7	3.3	41.5	41.9	1428.8
1958	28.9	940.9	11.5	333.4	15.4	29.1	49.8	1409.0
1959	37.9	923.5	10.6	329.7	17.9	195.1	57.6	1572.2
1960	44.1	896.3	13.7	403.1	25.4	192.9	58.7	1614.1
1961	42.3	887.7	17.9	381.2	32.4	192.1	58.2	1611.9
1962	40.4	804.6	16.5	448.9	26.0	168.7	53.8	1558.9
1963	43.7	809.7	17.4	529.4	7.7	155.0	64.4	1627.3
1964	52.9	914.0	18.7	530.5	93.9	137.2	80.7	1827.9
1965	65.3	773.7	19.6	464.4	101.2	145.1	64.6	1633.9
1966	55.3	785.9	22.7	487.5	114.0	137.4	75.2	1678.0
1967	62.6	902.5	25.8	511.6	97.9	153.3	74.3	1827.9
1968								
1969								
1970								
1971								
1972								

Source: FAO Yearbook of Fishery Statistics.

1/ Conversion from meat weight to round weight for the U.S., based on FAO data as compared to meat weight data in Fishery Statistics of the U.S. Import data from other countries converted from metric tons to million pounds, round weight.

2/ A large portion from aquaculture.

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

Countries	Landings	Exports	Imports	Consumption
	Million pounds, round weight			
U.S.	902.5	.9	242.9	1,144.5
Japan	511.6	307.4	-	204.2
Mexico	62.6	-	-	62.6
France	156.4	-	120.0	276.4
S. Korea	97.9	-	-	97.9
Other	96.9	262.9	208.3	42.3
Total	1,827.9	571.2	571.2	1,827.9

Source: FAO Yearbook of Fishery Statistics, Bureau of Commercial Fisheries.

IX FOREIGN CONSUMPTION

—Consumption
  Aggregate
  Per capita

—Prices

Table IX-1.--World aggregate oyster consumption by selected countries

	U.S.[1/]	France	Japan	Taiwan	Mexico	Other	Total
	Million pounds, pound weight						
1947	644.6	n.a.	n.a.	n.a.	n.a.	288.1	932.7
1948	630.4	n.a.	30.6	n.a.	n.a.	66.7	727.7
1949	626.5	n.a.	70.3	n.a.	n.a.	97.0	793.8
1950	618.0	n.a.	75.6	n.a.	n.a.	78.2	771.8
1951	585.6	n.a.	118.4	n.a.	n.a.	195.6	899.6
1952	653.6	n.a.	173.2	n.a.	n.a.	70.6	897.4
1953	638.8	n.a.	240.9	12.4	n.a.	71.5	963.6
1954	659.2	37.0	233.6	13.5	n.a.	415.6	1,358.9
1955	1,070.0	8.4	216.0	13.9	23.4	44.2	1,375.9
1956	1,043.9	27.8	238.0	11.2	23.4	49.3	1,393.6
1957	1,010.2	43.2	296.4	11.2	26.5	41.3	1,428.8
1958	1,002.5	32.6	298.0	11.5	28.9	35.5	1,409.0
1959	992.4	200.4	308.3	10.6	37.9	22.6	1,572.2
1960	962.1	205.3	355.3	13.7	44.1	33.6	1,614.1
1961	981.2	206.2	322.9	17.9	42.3	41.4	1,611.9
1962	908.6	177.5	392.3	16.5	40.4	23.6	1,558.9
1963	923.0	306.7	467.5	17.4	43.7	(131.2)[2/]	1,627.3
1964	1,038.9	302.5	473.9	18.7	52.9	(59.0)	1,827.9
1965	903.8	258.0	397.2	19.6	65.3	(10.0)	1,633.9
1966	945.5	234.4	402.7	22.7	55.3	17.4	1,678.0
1967	1,144.5	273.2	389.7	25.8	62.6	(67.9)	1,827.9
1968							
1969							
1970							
1971							
1972							

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

1/ Converted from meat weight into live weight. Conversion factor statistically derived from comparison of FAO data and Fishery Statistics data.

2/ Negative values due to incomplete aggregate consumption data.

Table IX-2.--World per capita oyster consumption by country

Year	France	Canada	S. Korea	Japan	Taiwan	Mexico	U.S.
	Pounds, round weight						
1947	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4.47
1948	n.a.	n.a.	n.a.	0.38	n.a.	n.a.	4.30
1949	n.a.	0.62	n.a.	0.86	n.a.	n.a.	4.20
1950	n.a.	0.58	n.a.	0.91	n.a.	n.a.	4.07
1951	n.a.	0.36	n.a.	1.41	n.a.	n.a.	3.80
1952	n.a.	0.41	n.a.	2.03	n.a.	n.a.	4.18
1953	n.a.	0.41	n.a.	2.78	1.39	n.a.	4.02
1954	0.86	0.30	0.14	2.66	1.46	n.a.	4.07
1955	0.19	0.38	0.16	2.43	1.46	0.76	6.48
1956	0.63	0.27	0.16	2.65	1.14	0.74	6.21
1957	0.98	0.27	0.16	2.26	1.14	0.81	5.90
1958	0.73	0.19	0.66	3.26	1.10	0.86	5.76
1959	4.43	0.24	0.74	3.14	0.98	1.09	5.60
1960	4.49	0.22	1.03	3.81	1.23	1.22	5.35
1961	4.47	0.25	1.28	3.44	1.56	1.34	5.34
1962	3.78	0.20	1.00	4.13	1.41	1.05	4.89
1963	6.41	0.26	0.72	4.88	1.44	1.10	4.89
1964	6.25	0.23	3.40	4.89	1.51	1.33	5.43
1965	5.27	0.22	3.57	4.06	1.51	1.53	4.66
1966	4.75	0.21	3.92	4.08	1.70	1.26	4.83
1967	5.48	0.21	3.29	3.90	1.88	1.37	5.78
1968							
1969							
1970							
1971							
1972							

Source: FAO Yearbook of Fishery Statistics, Fishery Statistics of the U.S., Canadian Fisherman, and Bureau of Commercial Fisheries

Table IX-3.--World oyster prices by selected countries 1/

Year	France	Canada	S. Korea	Japan	Taiwan	Mexico	U.S.
			Cents per pound				
1947	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.	43.6
1949	n.a.	2.81	n.a.	n.a.	n.a.	n.a.	45.9
1950	n.a.	2.51	n.a.	n.a.	n.a.	n.a.	46.2
1951	n.a.	4.67	n.a.	n.a.	n.a.	n.a.	44.1
1952	n.a.	4.56	n.a.	n.a.	n.a.	n.a.	42.5
1953	n.a.	4.92	n.a.	n.a.	1.88	n.a.	39.1
1954	n.a.	5.16	n.a.	n.a.	2.13	n.a.	42.8
1955	1.03	4.66	n.a.	3.65	1.12	n.a.	42.1
1956	4.93	7.69	n.a.	2.27	1.03	n.a.	43.4
1957	3.77	7.72	n.a.	2.20	1.16	n.a.	41.9
1958		7.36	n.a.	2.11	0.76	n.a.	45.5
1959	1.47	11.58	n.a.	2.35	1.05	n.a.	44.9
1960	1.46	11.02	n.a.	2.30	0.97	n.a.	47.3
1961	2.24	10.81	4.69	n.a.	0.83	n.a.	51.1
1962	2.93	10.71	6.83	n.a.	0.77	n.a.	49.3
1963	2.81	11.22	3.68	n.a.	0.67	n.a.	43.5
1964	2.73	12.35	2.04	n.a.	0.66	1.94	42.7
1965	3.02	15.91	2.88	n.a.	0.64	2.27	46.7
1966	3.44	17.17	1.12	n.a.	0.70	2.27	47.2
1967	3.27	20.28	n.a.	n.a.	0.69	1.80	47.1
1968							
1969							
1970							
1971							
1972							

Source: FAO Yearbooks of Fishery Statistics, Canadian Fishermen (Canada), and Fishery Statistics of the U.S.

1/ Deflated by CPI, 1957-59=100.

X U.S. TRADE BARRIERS

Table X-1.--Present U.S. tariff structure for oyster

Item	Stat. Suf-fix	Product Description	Rates of Duty: June 30, 1967	Rates of Duty: Jan. 1, 1969	Rates of Duty: K-R Concession (Jan. 1, 1972)	U.S. Imports-1968: Quantity	U.S. Imports-1968: Value
		In airtight containers:					
114.34	00	Smoked	4.5¢ per lb.*	3.5¢ per lb.*	2.2¢ per lb.*	4,626,594	2,283,750
114.36	00	Other	6¢ per lb.*	4.8¢ per lb.*	3¢ per lb.*	8,990,959	2,867,032
114.40		Other (not canned)				(BU)	
	20	Seed oysters	Free	Free	Free	84,093	625,486
	40	Other	Free	Free	Free	2,754,172	887,826
114.55	00	Oyster juice	6¢ per lb.*	4.8¢ per lb.*	3¢ per lb.*	881,518	489,407

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

*includes weight of immediate container

Table X-2.--Historical synopsis of trade investigations on oyster

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 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 states

Table XI-1.-- Bureau of Commercial Fisheries programs and expenditures on oyster, fiscal years 1965-69.

Bureau of Commercial 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 1/ (dollars)	n.a.	n.a.	1,300,000	1,300,000	1,200,000

Source: Division of Financial Assistance, Bureau of Commercial Fisheries

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

Table X1-2.--Estimated Economic Development Administration expenditures on oyster by program, May 1961-May 1969[1/]

Program/Project	Amount
Public Facilities Grants and Loans:	
Yoquina Bay, Oregon - Research Center	$ 30,000
Willapa, Washington - Floating Docks	1,000
Total Public Works	$ 31,000
Business Loans:	
Florida Seafood Con. Co.	$ 43,000
Northwest Oyster Farms (Wash.)	110,000
Total Business Loans	$ 153,000
Technical Assistance Grants:	
Florida Seafood Con. Co.	$ 5,000
Carteret Co., N.C.-Seafood Study	28,000
Windmill Pt., Va. - Oyster study	115,000
Lunnic Ind., Washington - Research Study	43,000
Willapa Bay, Washington - Oyster Study	67,000
Dukes Co., Mass. - Shellfish Study	29,000
Total Technical Assistance	$ 292,000
Grand Total	$ 476,000

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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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.