Treasures from the sea: the Virginia seafood industry Revised edition

Robert S. Bailey
Virginia Institute of Marine Science

Follow this and additional works at: https://scholarworks.wm.edu/reports

Part of the Aquaculture and Fisheries Commons

Recommended Citation

This Report is brought to you for free and open access by W&M ScholarWorks. It has been accepted for inclusion in Reports by an authorized administrator of W&M ScholarWorks. For more information, please contact scholarworks@wm.edu.
TREASURES FROM THE SEA
The Virginia Seafood Industry

by

ROBERT S. BAILEY, Information Officer
Virginia Fisheries Laboratory
Gloucester Point, Virginia

Published by
VIRGINIA FISHERIES LABORATORY
Gloucester Point, Virginia
1959

Educational Series No. 10
(Revision and replacement of Educational Series, Nos. 5 and 6, which are out of print)
# TABLE OF CONTENTS

Early Treasure Hunters................................... 1
New Treasures are Found.................................... 1
Treasures Pile on Treasures ................................. 3
The Make-Up of Treasure Changes ......................... 3
Treasures of Greatest Value ................................ 13
Most Valuable Sea Products Landed in
Virginia 1956 ............................................. 15
Value of Seafoods Landed in Virginia ..................... 16
Pounds of Seafoods Landed in Virginia ................... 17
Guarding our Seafood Treasures............................ 17

## ILLUSTRATIONS

Virginia Seafood Production 1956 ......................... 2
Largest and Smallest Catches of Finfish
1931-1955................................................................
Average Annual Catch of Five Seafoods
Taken in Largest Quantities During the
Twenty-Five Years 1931-1955................................. 6
Average Annual Values of Five Seafoods
Producing the Greatest Wealth During the
Twenty-Five Years 1931-1955............................... 8
The Virginia Fisheries Laboratory Serves
a Multi-Million Dollar Seafood Industry ................. 10
Knowledge is the Safe Foundation for a
Wise Conservation Program .................................. 20
EARLY TREASURE HUNTERS

Early colonists coming to Virginia dreamed of gathering quantities of gold. With this wealth they would return to England and live the rest of their lives in comfort. But their dreams did not come true, for gold was not one of Virginia's great treasures.

NEW TREASURES ARE FOUND

Tobacco was the earliest treasure to be found in Virginia and the introduction of tobacco culture probably accounts for the early survival of the colony. Not until 1870 did Virginians realize how great was the wealth present in the bays and rivers along the Chesapeake. About that time improved refrigeration and transportation made available to inland markets seafood which, heretofore, had appeared only on the tables of Tidewater residents. Demand for delicacies of the sea increased from year to year, and more and more men gave their time to harvesting a wild crop that could be had for the taking.
VIRGINIA SEAFOOD PRODUCTION 1956
314 MILLION POUNDS

**FISH**
50 MILLION POUNDS

**SHELLFISH**
264 MILLION POUNDS

**CRAFTS AND MEN**
4937 VESSELS AND BOATS WERE IN USE.
9389 FISHERMEN WERE EMPLOYED.

**VALUE OF VIRGINIA SEAFOODS 1956**
19 MILLION DOLLARS

**SHELLFISH**
$12.5 MILLION

**LANDED VALUE**

**FISH**
$6.7 MILLION
There seemed to be no limit to the quantity of fish and shellfish. Here was a treasure even more valuable than gold, for it could renew itself and produce a new crop each year!

TREASURES PILE ON TREASURES

By 1880, 159 million pounds of seafoods from Virginia were sold in the markets and ten years later production rose to 185 million pounds. By the turn of the century this harvest had increased to 378 million pounds, creating vast wealth for fishermen and seafood dealers and providing the nation with a variety of nutritious foods.

Nineteen thousand Virginians were employed wholly or in part in the expanding seafood industry of the State in 1920, the year of greatest production when 471 million pounds of sea products were landed.

THE MAKE-UP OF TREASURE CHANGES

Although 59 different species of sea animals are sold in the market, during the past 25 years five have accounted for about 86 per cent of the total landings in Virginia. Listed
LARGEST AND SMALLEST CATCHES OF FINFISHES 1931-1955

1955
389,000,000 POUNDS

1942
118,000,000 POUNDS

LARGEST AND SMALLEST TOTAL CATCH 1931-1955

1955
441,000,000 POUNDS

1942
155,000,000 POUNDS

LARGEST AND SMALLEST CATCHES OF SHELLFISHES 1931-1955

1948
68,000,000 POUNDS

1941
37,000,000 POUNDS
in order by landed weight they are:

menhaden (bunkers)
blue crabs
croakers
alewives (river herring)
oysters

More pounds of fish and shellfish were landed between 1951 and 1955 than during any five-year period on record. This is true in spite of the decrease in abundance of certain species.

Oysters

One third by weight of all seafoods landed in Virginia in 1880 were oysters, but they accounted for only one-tenth of the total weight landed at the beginning of this century. Oysters have been removed more rapidly from natural bars than nature could replace them, and were it not for their cultivation by private planters, production today would be very small indeed.

A wider variety of seafoods has appeared on the market since the turn of the century so that total production has been boosted from 159 million pounds in 1880 to 314 million pounds in 1956. Although oysters make up only one-
AVERAGE ANNUAL CATCH OF FIVE SEAFOODS TAKEN IN LARGEST QUANTITIES DURING THE TWENTY-FIVE YEARS 1931-1955

MENHADEN
147 MILLION POUNDS

BLUE CRABS
31 MILLION POUNDS

CROAKERS
23 MILLION POUNDS

ALEWIVES
18 MILLION POUNDS

OYSTERS
17 MILLION POUNDS
(MEAT ONLY)

These five seafoods made up 86% of the total pounds fishermen landed during the years 1931-1955 inclusive,
fifteenth of this total, they continue to be more valuable than all the rest of the seafoods added together.

**Croakers**

Croakers, which were taken in small numbers before 1920, became more and more numerous up to 1945 when 55 million pounds were landed. A sudden decline followed and by 1952 few were being caught. In recent years, more successful spawning has helped bring back the supply but this fishery sustained another setback during the winter of 1957-58 when severe cold killed many young fish.

**Menhaden**

Menhaden produced more than one half of Virginia's wealth from the sea in 1880. These fish were originally used whole as fertilizer; later the scrap and oil were separated with only the scrap being used for fertilizer while the oil went into paints and was burned in whale-oil lamps. In this modern day, menhaden scrap is a valuable supplement in livestock and poultry feed, while the oil continues to be used largely in paints and varnishes. Recent research has increased the use of this oil in such diverse products as soaps, ink, cosmetics,
AVERAGE ANNUAL VALUES OF FIVE SEAFOODS PRODUCING THE GREATEST WEALTH DURING THE TWENTY-FIVE YEARS 1931-1955

- OYSTERS $4,165,000
- BLUE CRABS $1,735,000
- CROAKERS $1,197,000
- MENHADEN $1,166,000
- SHAD $474,000

These five seafoods furnished 75% of fisherman's income from 1931-1955 inclusive.
pharmaceuticals, linoleum, and oleomargarine.

These fish are consistently taken in great numbers year after year, and the total weight now landed is frequently greater than that of all other seafoods combined. In 1955, the best year on record since 1920, more than 300 million pounds were caught by Virginians. Of the entire weight of fish and shellfish landed in the State in 1955, 71 per cent was menhaden. Tentative reports indicate that the catch for 1958 probably exceeded that of 1955.

Blue Crabs

The blue crab fishery has made remarkable advancement. In 1901 the total catch was about 7 million pounds. Since then there have been wide fluctuations in abundance from year to year but the trend of the catch has been upward, and since 1929 has passed the 30 million mark 12 times. The best catch was in 1950 when over 50 million pounds of crabs were marketed.

Alewives

Though river herring were caught in greatest numbers in 1908 there is usually no scarcity of these fish in
THE VIRGINIA FISHERIES LABORATORY SERVES A MULTI-MILLION DOLLAR SEAFOOD INDUSTRY

1956 LANDINGS BY GEAR

1,028 FISHERMEN USING 604 POUND NETS LANDED:
- RIVER HERRING: 20,846,100 POUNDS
- MENHADEN: 3,736,700
- SEA TROUT: 2,015,500
- SHAD: 1,360,900
- GIZZARD SHAD: 1,045,700

1,078 FISHERMEN USING 1,670 GILL NETS LANDED:
- SHAD: 1,682,900 POUNDS
- CROAKERS: 840,200
- STRIPED BASS: 318,100
- SPOT: 270,200
- SNARLS: 98,400

2,701 TONGERS REMOVED 926,000 BUSHELS OF MARKET OYSTERS AND 2,245,000 BUSHELS OF SEED OYSTERS FROM PUBLIC GROUNDS.

706 FISHERMEN USING 184 HAUL SEINES LANDED:
- CROAKERS: 2,996,000 POUNDS
- SPOT: 2,058,600
- MENHADEN: 1,860,500
- CARP: 1,058,300
- OTHER FISHES: 2,901,000

712 FISHERMEN USING 184 TRAWLERS LANDED:
- PORUGY: 7,591,000 POUNDS
- SEA BASS: 5,786,500
- CROAKERS: 2,438,900
- FLUONDELS: 1,533,300

293 FISHERMEN ON 60 TRAWLERS LANDED:
- PORUGY: 7,591,000 POUNDS
- SEA BASS: 5,786,500
- CROAKERS: 2,438,900
- FLUONDELS: 1,533,300

SPORT FISHERMEN FISHING FROM SKIFFS, PARTY BOATS, AND PIERS CAUGHT OVER 2,600,000 POUNDS OF CROAKERS, SPOT, SPOT, SEA TROUT, ROCKFISH, CHANNEL BASS, Cobia, Bluefish, Marlin, and MANY OTHER VARIETIES.

OYSTER PLANTERS HARVESTED 3,853,478 BUSHELS OF MARKET OYSTERS FROM PRIVATE GROUNDS.

CRABBERS USING SEVERAL DIFFERENT TYPES OF GEAR CAUGHT 213,680,000 POUNDS OF BLUE CRABS.
Virginia. During the past ten years the annual production has been above the average for this century, but records do not tell us accurately how many fish could have been caught. When herring are very abundant the market is saturated, prices go down and fishermen stop tending their nets. Watermen often call these fish "glut herring" because their great numbers often glut the market, causing prices to tumble.

Sport Fisheries

Virginia's salt water sport fisheries have grown by leaps and bounds since World War II. These provide valuable recreation for Virginians and contribute to a growing tourist industry. The Virginia Salt Water Sport Fishing Association, established in 1957, keeps sport fishermen informed about when and where certain species are most plentiful, and conducts a fishing tournament that awards, citations, and trophies.

Sportsmen, fishing from hired party boats, skiffs, private boats, piers, and in the surf caught at least 2,600,000 pounds of croaker, spot, gray sea trout, and flounder in 1956. Unrecorded numbers of striped bass, channel bass, black
drum, cobia, bluefish, marlin and other varieties also re-
warded efforts of salt-water anglers. When these fishes are
added to those first mentioned, the total sports catch probably
exceeded 5,000,000 pounds.

Virginia finally is beginning to realize the recrea-
tional value of her marine waters. Income derived from
supplying equipment, accommodations, and services to vaca-
tionists who come to fish, boat, and bathe in Tidewater
communities may amount to several million dollars annually.

TREASURES OF GREATEST VALUE

Fishermen received 22 million dollars for all sea-
food they harvested in 1945. This was the most valuable
marine crop ever landed in Virginia, worth about 75 million
dollars in retail food markets. The landings of 1936 reached
an all-time low when fishermen's earnings were scarcely
more than four million dollars.

Shellfish

Shellfish have always been more valuable than fin-
fish in Virginia. Between 1880 and the turn of the century the
greater part of fishermen's earnings was derived from oysters. There have been few years when these bivalves made up less than half this income. Blue crabs are usually next in value to oysters, but menhaden sometimes force them into third place. Not only has the harvest of crabs increased in numbers, but the value has increased ten fold since 1880.

**Finfish**

As has been pointed out, the croaker fishery mounted to prominence in the 40's and in 1945 was valued at more than six million dollars, well over one-fourth of the fishermen's income for that year. Drastic reductions in the catch followed, and in 1956 croakers supplied a very small proportion of fishermen's earnings.

The shad fishery was the third most valuable fishery in the State in 1925 but it now ranks seventh. Its popularity has declined in recent years, giving way to less flavorful fishes which are more easily prepared and served. Not since 1929 has this fishery yielded a million dollars.
MOST VALUABLE SEA PRODUCTS
LANDED IN VIRGINIA 1956

Caught in Atlantic Ocean

<table>
<thead>
<tr>
<th>Pounds</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menhaden</td>
<td>137,098,000</td>
</tr>
<tr>
<td>Sea bass</td>
<td>5,891,000</td>
</tr>
<tr>
<td>Porgy</td>
<td>11,043,000</td>
</tr>
<tr>
<td>Flounder</td>
<td>1,555,000</td>
</tr>
<tr>
<td>Croaker</td>
<td>2,466,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>158,098,000</strong></td>
</tr>
</tbody>
</table>

Caught in Chesapeake Bay and Estuaries

<table>
<thead>
<tr>
<th>Pounds</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oysters</td>
<td>19,430,000</td>
</tr>
<tr>
<td>Blue crabs</td>
<td>24,715,000</td>
</tr>
<tr>
<td>Menhaden</td>
<td>51,949,000</td>
</tr>
<tr>
<td>Croaker</td>
<td>7,202,000</td>
</tr>
<tr>
<td>Shad</td>
<td>3,186,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>106,382,000</strong></td>
</tr>
</tbody>
</table>

When we try to compare the current value of seafood landed with that of previous years we must necessarily allow for the changing values of dollars. If a loaf of bread could be bought for six cents in 1920, but the same loaf costs 18 cents today, obviously the buying value of the present dollar is worth only one-third as much as the 1920 dollar. Therefore,
if fishermen earned 10 million dollars in 1920 and earn 30 million today, their present earnings would buy no more bread than their 1920 earnings.

Of course fishermen spend their money for many things: houses, automobiles, boats, clothes, television sets, as well as for food; consequently, if a comparison is to be made between the buying value of a man's income one year with that of another, it is necessary to work out a system measuring the buying value of dollars in different years. Such an index, calculated by the United States Department of Labor economists, has been used in the following table to show the relative value of the fishermen's average earnings for five-year periods beginning in 1920.

<table>
<thead>
<tr>
<th>Year</th>
<th>Market Value</th>
<th>Corrected to 1939 Standard*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1931-1935</td>
<td>$1,891,057</td>
<td>$1,941,346</td>
</tr>
<tr>
<td>1936-1940</td>
<td>2,092,885</td>
<td>2,024,262</td>
</tr>
<tr>
<td>1941-1945</td>
<td>5,739,182</td>
<td>4,134,954</td>
</tr>
<tr>
<td>1946-1950</td>
<td>8,584,405</td>
<td>4,374,412</td>
</tr>
<tr>
<td>1951-1955</td>
<td>6,938,061</td>
<td>2,959,274</td>
</tr>
</tbody>
</table>
Shellfish

<table>
<thead>
<tr>
<th>Year</th>
<th>Market Value</th>
<th>Corrected to 1939 Standard*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1931-1935</td>
<td>2,051,389</td>
<td>2,093,438</td>
</tr>
<tr>
<td>1936-1940</td>
<td>2,300,405</td>
<td>2,229,565</td>
</tr>
<tr>
<td>1941-1945</td>
<td>5,680,139</td>
<td>4,173,747</td>
</tr>
<tr>
<td>1946-1950</td>
<td>9,587,964</td>
<td>4,833,949</td>
</tr>
<tr>
<td>1951-1955</td>
<td>10,543,896</td>
<td>4,500,234</td>
</tr>
</tbody>
</table>

Fish and Shellfish

<table>
<thead>
<tr>
<th>Year</th>
<th>Market Value</th>
<th>Corrected to 1939 Standard*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1931-1935</td>
<td>3,942,272</td>
<td>4,034,784</td>
</tr>
<tr>
<td>1936-1940</td>
<td>4,401,291</td>
<td>4,253,827</td>
</tr>
<tr>
<td>1941-1945</td>
<td>11,434,597</td>
<td>8,308,701</td>
</tr>
<tr>
<td>1946-1950</td>
<td>18,172,369</td>
<td>9,208,361</td>
</tr>
<tr>
<td>1951-1955</td>
<td>17,481,957</td>
<td>7,459,509</td>
</tr>
</tbody>
</table>

*As established by U. S. Department of Labor Statistical Bureau.

POUNDS OF SEAFOODS LANDED IN VIRGINIA
(Average for 5-year period)

<table>
<thead>
<tr>
<th>Year</th>
<th>Fish</th>
<th>Shellfish</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1931-1935</td>
<td>195,223,740</td>
<td>45,860,083</td>
<td>241,085,824</td>
</tr>
<tr>
<td>1936-1940</td>
<td>209,866,820</td>
<td>46,503,120</td>
<td>256,369,940</td>
</tr>
<tr>
<td>1941-1945</td>
<td>187,027,900</td>
<td>39,158,925</td>
<td>226,186,825</td>
</tr>
<tr>
<td>1946-1950</td>
<td>248,181,500</td>
<td>61,365,680</td>
<td>309,547,180</td>
</tr>
<tr>
<td>1951-1955</td>
<td>267,766,400</td>
<td>55,570,400</td>
<td>323,296,800</td>
</tr>
</tbody>
</table>

GUARDING OUR SEAFOOD TREASURES

Fishes, crabs, oysters, clams, and many other inhabitants of the ocean, Chesapeake Bay and its salty estuaries
are valuable natural resources which have enabled Virginians to build up a prosperous seafood and sport fishing industry. These resources should be safeguarded for the benefit of future generations.

Conservation as applied to salt-water resources should mean intelligent use of marine life so that the greatest value can be secured from it for the longest period of time; but intelligent use can be based only on knowledge. With this in mind, the General Assembly created the Virginia Fisheries Laboratory in 1940, and since then marine biologists have been gathering information about Virginia's marine resources. Scientists assigned the task recognized that the following fundamental questions must be answered:

1) What effect does sport and commercial fishing have on the abundance of fish and shellfish?

2) How do variable natural conditions affect populations of marine animals?

3) What competitors, predators, and parasites injure and destroy valuable sea products?

4) What effects do domestic and industrial pollution and engineering projects have on marine populations, and how can they be controlled?
5) What can man do to maintain a yield of seafood at the most desirable economic level?

In order to answer these questions, scientists find it necessary to accumulate records over many years. A part of their information comes from reports given by fishermen on their fishing activities. Fishermen give further help by returning tags which have been attached to fishes and crabs by biologists. From recovered tags scientists estimate the numbers of various species of fishes in areas being studied, and may learn something of fish migrations.

Since many sea animals spend the first few months of their lives in marshy areas and upriver in brackish waters, it is important that these regions be kept free from pollution and siltation. Domestic sewage from cities and towns, and waste from industrial plants entering rivers without proper treatment may kill young oysters, fishes, and crabs or may destroy the food on which they depend. Marsh filling and drainage may destroy valuable nursery areas. Silt from eroded forest and farmland may make the water so cloudy that minute plants useful for fish food cannot grow or reproduce properly. These small plants and the tiny animals
KNOWLEDGE IS THE SAFE FOUNDATION FOR A WISE CONSERVATION PROGRAM

MAN AND NATURE INFLUENCE THE ABUNDANCE OF SEAFOOD.
CAN MAN CONTROL HIMSELF AND NATURE FOR THE WELFARE OF OUR MARINE RESOURCES?

OCEAN AND TIDAL CURRENTS MAY INFLUENCE THE NUMBER OF OCEAN-SPAWNED FISH REACHING THE BAY NURSERY AREAS.

SALT MARSHES, RIVERS, AND BAYS AFFORD FOOD, FAVORABLE TEMPERATURES, AND PROPER SALTINESS FOR YOUNG FISHES, CRABS, AND SHELLFISHES. KEEP THESE NURSERY AREAS IN A NATURAL STATE FREE FROM POLLUTION.

A PARASITIC FUNGUS KILLS MANY ADULT OYSTERS DURING HOT DRY SUMMERS. OYSTER DRILLS KILL MANY SMALL OYSTERS.

DAMS MAY PREVENT FISH FROM REACHING SPawning GROUNDS, AND WATERS BELOW DAMS MAY BECOME UNSUITED FOR FISH AND OYSTERS.

WHEN FISHERMEN HAVE POOR CATCHES ON THE USUAL GROUNDS, IT MAY BE THAT FISH ARE PLENTIFUL IN NEW LOCATIONS.
feeding on them are food for young menhaden, croaker, striped bass, shad, herring, oysters, blue crabs and many marine animals. If the nursery areas are misused, many young fish may die. It is everyone’s job to "keep the waters clean!"

What Can You Do?

The welfare of our salt water resources is dependent upon your attitude and actions as a citizen. You can help conserve these resources by:

a) not wasting what you take from the water

b) learning what you can about the lives, habits and enemies of our commercial species.

c) supporting responsible agencies engaged in scientific study and management of our marine resources

d) passing on to others accurate information secured by scientists through painstaking research.

The spreading of information about marine resources helps to formulate public opinion necessary for the enactment of wise conservation laws with which to guard our sea treasures.
But laws are of little value unless citizens believe they are worthwhile and will support them. The Virginia Fisheries Laboratory wants our citizens to know what the best ways are to manage our marine resources for the health, wealth, and happiness of this generation and many generations to come.

* * *