FOURTH QUARTER
STOCK CATALOGUE 1968

GROUND FISH AND SEA SCALLOPS FISHED BY NEW ENGLAND FLEETS

by

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HADDOCK

In 1968, haddock landings by the United States from Georges Bank were 22 percent lower than in 1967 (Table 1). The decrease is a result of declining abundance due to heavy fishing (Figure 1) from 1965 to 1966 and poor recruitment since 1965.

In 1968 landings per day of large haddock increased by 15 percent but a 53 percent drop in scrod abundance caused an overall 37 percent drop in landings per day (Figures 2 and 3) compared to 1967.

Age compositions for the past several years (Figure 4) shows the shift in age dominance that has resulted from poor recruitment. Two-, three-, and four-year olds, normally the bulk of the landings, were very scarce in 1968. Five- and six-year olds (1963 and 1962 year classes) supported the fishery in 1968 as large haddock.

The present scarcity of scrod was predicted on the basis of data gathered aboard the Albatross IV when it found that the 1964, 1965, 1966, and 1967 year classes were very small relative to other years (Figure 5). The groundfish survey last fall found that the 1968 year class was also poor. Because of this, the present trend in declining haddock abundance will continue at least through 1971.

The population is so low, that BCF scientists have recommended a complete cessation of fishing in order to provide for the most rapid rebuilding of the fishable stock. Possible management measures are now being discussed by the industry and BCF personnel.
Landings from Browns Bank were 9.9 million pounds in 1968, an increase of about 10 percent from 1967. Landings per day decreased by 17 percent to almost 10 thousand pounds.

Because Browns Bank haddock grow at a slower rate than they do on Georges, the strong 1962 and 1963 year classes would normally just be coming into the fishery on Browns this year. We had hoped this would provide for larger catches. It so happened however, that in 1964, effort by other countries increased on Browns Bank and landings began climbing from about 40 million pounds (Figure 6) to almost 95 million by 1966. In 1967 and 1968 total haddock landings from Browns held at about 80 million pounds, still exceeding the long-term average of 30 to 40 million pounds.

Age compositions for the last few years (Figure 7) show a marked reduction in the older fish. The fishery has thus become more dependent on newly recruited fish, of a younger age than ever before. The 1962 and 1963 year classes have been rather heavily fished before the expected recruitment age of 5-6 years. Since all the year classes subsequent to 1963 are also poor on Browns Bank, we can expect a drastic reduction in recruitment over the next few years.

Assessing the fishery in this manner we find it difficult to be optimistic. Browns Bank cannot support any additional fishing pressure. Furthermore, it is quite possible that the haddock stock on Browns Bank will be in the same perilous position as it is on Georges Bank, should effort continue at the present level.
<table>
<thead>
<tr>
<th></th>
<th>Fourth Quarter</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Landings in thousands of pounds</td>
<td>Landings in thousands of pounds</td>
</tr>
<tr>
<td>Scrod</td>
<td>2,795</td>
<td>4,561</td>
</tr>
<tr>
<td>Large</td>
<td>6,138</td>
<td>5,653</td>
</tr>
<tr>
<td>Total</td>
<td>8,933</td>
<td>10,214</td>
</tr>
<tr>
<td>Scrod</td>
<td>39</td>
<td>81</td>
</tr>
<tr>
<td>Large</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>97</td>
</tr>
<tr>
<td>Scrod</td>
<td>627</td>
<td>1,851</td>
</tr>
<tr>
<td>Large</td>
<td>682</td>
<td>716</td>
</tr>
<tr>
<td>Total</td>
<td>1,309</td>
<td>2,567</td>
</tr>
<tr>
<td>Scrod</td>
<td>244</td>
<td>2,056</td>
</tr>
<tr>
<td>Large</td>
<td>246</td>
<td>614</td>
</tr>
<tr>
<td>Total</td>
<td>490</td>
<td>2,670</td>
</tr>
<tr>
<td>Scrod</td>
<td>3,705</td>
<td>8,549</td>
</tr>
<tr>
<td>Large</td>
<td>7,088</td>
<td>6,999</td>
</tr>
<tr>
<td>Total</td>
<td>10,793</td>
<td>15,548</td>
</tr>
</tbody>
</table>
Figure 1.

HADDOCK
GEORGES BANK

LANDINGS
ALL COUNTRIES

U.S. LANDINGS

U.S. L/D

YEAR

LANDINGS PER DAY (Thousands of Pounds)
Figure 6.

HADDOCK
BROWNS BANK

LANDINGS, ALL COUNTRIES

U.S. L/D

U.S. LANDINGS


YEAR

LANDINGS PER DAY (Thousands of Pounds)

Figure 7.

BROWNS BANK HADDOCK

CATCH PER DAY (Thousands of Fish)

AGE IN YEARS

1966

1967

1968

AGE IN YEARS
YELLOWTAIL

Total yellowtail landings by this country reached 64 million pounds in 1968 (Table 2), up about 12 million from 1967 (Figure 8). Landings per day for the year showed a considerable increase on both major grounds.

This increase in yellowtail abundance was a result of the strong 1964 and 1965 year classes (Figure 9). The 1966 year class appeared as two-year olds to be about average in strength.

Landings per day at age for Georges Bank and Southern New England (SNE) for 1968 (Figures 10 and 11) show that the 1964 and 1965 year classes were stronger on SNE grounds than on Georges. The 1966 year class, however, is greater on Georges by a considerable amount.

Quarterly landings per day estimates for both grounds (Figures 12 and 13) continued the trend upwards. Southern New England yellowtail abundance seemed to be leveling off, however. Although effort decreased on Georges Bank in the fourth quarter the increase in landings per day caused by the incoming 1966 year class was significant. From all indications it looks like 1969 should be another good year for yellowtail. Landings should stay between 60 and 65 million pounds providing effort stays about the same.
There were two factors that caused yellowtail landings to fall off so sharply in 1966. Increased effort had reduced the numbers of older fish on the grounds to a very low level and the 1962 and 1963 year classes were not as strong as the 1961 and 1962 year classes. Compared to earlier years, the size composition of the landings had changed considerably. Instead of threes, fours, and fives dominating the catch, twos, threes, and fours were the only age groups of importance left in the fishery. Because the older fish had been cropped off, the fishery was more dependent on newly recruited fish.

It was fortunate for the fishery at this time that the 1965 year class was a good one and abundance began to climb in 1967. The 1964 year class was also good and abundance continued to increase. Age composition of the landings for 1968 however, show the fishery is still primarily dependent on newly recruited fish.

Bureau scientists believe that this fishery should be managed to maintain fishing intensity at optimal levels. Present intensity is probably too great.
TABLE 2

YELLOWTAIL FOURTH QUARTER STATISTICS
(Live Weights)

<table>
<thead>
<tr>
<th>Fourth Quarter</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Landings in thousands of Pounds</td>
</tr>
<tr>
<td>New Bedford</td>
<td>9,136</td>
</tr>
<tr>
<td>Georges Bank</td>
<td>7,598</td>
</tr>
<tr>
<td>Atlantic</td>
<td>167</td>
</tr>
<tr>
<td>Cape Cod Bay</td>
<td>760</td>
</tr>
<tr>
<td>Total</td>
<td>17,661</td>
</tr>
</tbody>
</table>

Landings/Day in pounds: 1968 23,898 6,408 5,118
Landings/Day in pounds: 1967 28,223 18,534 4,970
Landings/Day in pounds: 1968 1,056 6,308 7,920 7,102
Landings/Day in pounds: 1967 3,454 3,399 6,414 3,052

Landings/Day in pounds: 1968 64,189 52,139 6,609 5,497
Landings/Day in pounds: 1967 52,139 6,609 5,497
COD

United States cod landings (Figure 14) increased again in 1968. Landings per day (Table 3) also increased. Cod landings by all countries dropped sharply in 1967 and it will be interesting to see what happened in 1968 when data are available for our next edition. It is doubtful that total cod landings can be maintained at the 1966, 1967 level.

Quarterly abundance indices (Figure 15) for cod held fairly steady in 1968, suggesting a possible leveling off, or perhaps a decrease in 1969. This is difficult to predict however, due to the change in the Georges Bank haddock fishery, causing a diversion of effort to cod.
### TABLE 3
COD FOURTH QUARTER STATISTICS
(Live Weight)

<table>
<thead>
<tr>
<th>Fourth Quarter</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landings in thousands of pounds</td>
<td>Landings/Day in pounds</td>
</tr>
<tr>
<td>Nares Bank</td>
<td>6,766</td>
</tr>
</tbody>
</table>
Figure 14.

COD
ALL N. ENGLAND GROUNDS
SUBAREA 5

LANDINGS, ALL COUNTRIES

U.S. LANDINGS

U.S. L/D

YEAR

Figure 15.

COD
GEORGES BANK

QUARTERLY L/D

ANNUAL L/D

YEARS & QUARTERS
REDFISH

Redfish landings by the United States from the Gulf of Maine were down about 40 percent from 1967 (Figure 16) despite the increase in apparent abundance. The same thing happened in the Nova Scotian fishery this year (Figure 17). Landings for the Gulf of St. Lawrence (Figure 18) were up slightly while abundance stayed about the same.

Quarterly abundance indices for the three grounds in 1968 (Figure 19 and Table 4) reflect a rather unsettled fishery. More can probably be determined from curves represented by all countries landings than from U.S. statistics.

It seems quite apparent that the redfish could withstand more fishing than it presently receives. This is true at least for the Gulf of Maine stock if not the others. It has been a marketing and processing problem but now that haddock are in short supply, redfish demands may stimulate an interest.
**TABLE 4**

REDFISH FOURTH QUARTER STATISTICS  
(Live Weight)

<table>
<thead>
<tr>
<th></th>
<th>Fourth Quarter</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Landings</td>
<td>Landings/Day</td>
</tr>
<tr>
<td></td>
<td>in thousands of pounds</td>
<td>in pounds</td>
</tr>
</tbody>
</table>
Figure 18.

REDFISH
GULF OF ST. LAWRENCE

LANDINGS, ALL COUNTRIES
U.S. L/D
U.S. LANDINGS

YEAR

1956
1958
1960
1962
1964
1966
1968
1970

LANDINGS (Millions of Pounds)

Figure 19.

REDFISH

GULF OF ST. LAWRENCE
NOVA SCOTIAN SHELF
GULF OF MAINE

LANDINGS PER DAY (Thousands of Pounds)

YEARS & QUARTERS

1965
1966
1967
1968
1969
1970
1971
SILVER HAKE
(Food Fish)

The U. S. silver hake fishery in 1968 showed a nice increase in landings (20 percent) from the Gulf of Maine (Table 5) compared to 1967. Georges Bank silver hake landings on the other hand dropped off about 30 percent in 1968. Silver hake landings for all of ICNAF area 5 by all countries dropped off considerably in 1967 (Figure 20) compared to 1966. Considering the increase in U. S. landings for 1968 it will be interesting to see the 1968 figures for all countries when they become available in June 1969, especially with the apparent increase in abundance.

Quarterly abundance indices for the Gulf of Maine and Georges Bank (Figure 21) show that the big increase in abundance in the Gulf of Maine in 1968, but a decrease on Georges Bank.
Figure 20.

SILVER HAKE
ALL N. ENGLAND GROUNDS
(SUBAREA 5)

LANDINGS (Thousands of Pounds)


YEAR

LANDINGS, ALL COUNTRIES

U.S. L/D

U.S. LANDINGS

Figure 21.

SILVER HAKE

LANDINGS PER DAY (Thousands of Pounds)

GEORGES BANK

GULF OF MAINE

ANNUAL

YEARS & QUARTERS

INDUSTRIAL SPECIES

Industrial landings of red and silver hake by the U.S. were about the same in 1967 and 1968 (Figure 22). Landings of other species decreased causing the slight decrease in total industrial landings in 1968 (Table 6).

Species composition (Table 7) for the past three years show a gradual percentage increase of red hake in the industrial landings. Silver hake have also been increasing but they seemed to level off in 1968.

Landings per day for red hake (Figure 23) in 1968, were slightly higher than in 1967. Silver hake abundance (Figure 24) stayed about the same.
### TABLE 6

**INDUSTRIAL RED AND SILVER HAKE FOURTH QUARTER STATISTICS**  
*(Live Weight)*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Landings in thousands of pounds</td>
<td>Landings/Day in pounds</td>
<td></td>
<td>Landings in thousands of pounds</td>
<td>Landings/Day in pounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Red hake</td>
<td>2,450</td>
<td>3,665</td>
<td>12,264</td>
<td>20,715</td>
<td>13,278</td>
<td>12,822</td>
<td>15,394</td>
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<tr>
<td></td>
<td>Silver hake</td>
<td>1,890</td>
<td>2,964</td>
<td>10,267</td>
<td>16,746</td>
<td>7,664</td>
<td>7,330</td>
<td>8,851</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4,340</td>
<td>6,629</td>
<td>22,531</td>
<td>37,461</td>
<td>20,942</td>
<td>20,152</td>
<td>24,255</td>
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<tr>
<td></td>
<td>Red hake</td>
<td>19</td>
<td>45</td>
<td>4,196</td>
<td>19,709</td>
<td>91</td>
<td>1,071</td>
<td>2,419</td>
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<tr>
<td></td>
<td>Silver hake</td>
<td>32</td>
<td>37</td>
<td>5,861</td>
<td>9,578</td>
<td>278</td>
<td>747</td>
<td>2,755</td>
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<tr>
<td></td>
<td>Total</td>
<td>51</td>
<td>82</td>
<td>10,057</td>
<td>29,287</td>
<td>369</td>
<td>1,813</td>
<td>5,174</td>
</tr>
<tr>
<td></td>
<td>Red hake</td>
<td>2,469</td>
<td>3,710</td>
<td>12,202</td>
<td>20,703</td>
<td>13,369</td>
<td>13,893</td>
<td>15,306</td>
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<tr>
<td></td>
<td>Silver hake</td>
<td>1,922</td>
<td>3,001</td>
<td>10,193</td>
<td>16,741</td>
<td>7,942</td>
<td>8,077</td>
<td>8,647</td>
</tr>
<tr>
<td></td>
<td>Total Industrial</td>
<td>13,598</td>
<td>17,438</td>
<td>70,957</td>
<td>96,793</td>
<td>79,667</td>
<td>85,289</td>
<td>89,012</td>
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</tbody>
</table>
TABLE 7
INDUSTRIAL SPECIES COMPOSITION FOR SO. NEW ENGLAND

RED AND SILVER HAKE IN PERCENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Red</th>
<th>Silver</th>
<th>Red</th>
<th>Silver</th>
<th>Red</th>
<th>Silver</th>
<th>Red</th>
<th>Silver</th>
<th>Red</th>
<th>Silver</th>
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</thead>
<tbody>
<tr>
<td>1964</td>
<td>64.9</td>
<td>26.3</td>
<td>39.2</td>
<td>14.4</td>
<td>0.6</td>
<td>1.0</td>
<td>0.7</td>
<td>0.6</td>
<td>--</td>
<td>0.3</td>
</tr>
<tr>
<td>1965</td>
<td>64.9</td>
<td>20.0</td>
<td>55.9</td>
<td>14.1</td>
<td>20.3</td>
<td>5.6</td>
<td>17.5</td>
<td>4.8</td>
<td>16.9</td>
<td>6.9</td>
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<td>1966</td>
<td>10.7</td>
<td>34.2</td>
<td>29.3</td>
<td>31.4</td>
<td>17.7</td>
<td>20.3</td>
<td>30.5</td>
<td>21.7</td>
<td>30.1</td>
<td>24.4</td>
</tr>
<tr>
<td>1967</td>
<td>2.4</td>
<td>29.5</td>
<td>35.2</td>
<td>23.2</td>
<td>9.9</td>
<td>14.2</td>
<td>21.4</td>
<td>17.3</td>
<td>17.2</td>
<td>14.4</td>
</tr>
<tr>
<td>1968</td>
<td>42.6</td>
<td>20.0</td>
<td>38.0</td>
<td>20.4</td>
<td>10.2</td>
<td>9.6</td>
<td>14.7</td>
<td>10.2</td>
<td>17.2</td>
<td>9.9</td>
</tr>
</tbody>
</table>

Total
SEA SCALLOPS

United States sea scallop landings (Figure 25) from Georges Bank decreased slightly in 1968. This decrease was accompanied by a decline in landings per day. The abundance index as determined from research cruises each year, showed a drop of about 30 percent in 1968 compared to 1967.

Sea scallop landings in New England from Middle Atlantic grounds (Table 8) increased somewhat in 1968 but landings per day stayed about the same. This increase in scallop landings may be a result of boats from Middle Atlantic ports landing their catches in New England rather than an improved fishery.

Landings (Figure 26) from Georges Bank in 1968 averaged less than a million pounds of meats a quarter. Middle Atlantic scallop landings (Figure 27) seemed to hold up throughout the year except for the fourth quarter.
## TABLE 8

**SEA SCALLOP FOURTH QUARTER STATISTICS**

(Uniform Weight)

<table>
<thead>
<tr>
<th></th>
<th>Fourth Quarter</th>
<th>Annual</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Landings in thousands of pounds</td>
<td>Landings/Day in pounds</td>
</tr>
<tr>
<td><strong>1968</strong></td>
<td><strong>1967</strong></td>
<td><strong>1968</strong></td>
</tr>
<tr>
<td>Georges Bank</td>
<td>791</td>
<td>1,045</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>864</td>
<td>730</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,655</strong></td>
<td><strong>1,775</strong></td>
</tr>
</tbody>
</table>
Figure 27.

SEA SCALLOPS
MIDDLE ATLANTIC

LANDINGS

YEARS & QUARTERS

L/D

LANDINGS PER DAY (Thousands of Pounds)