**NOAA Technical Memorandum NMFS-F/NEC-39**



# USA Historical Catch Data, 1904-82, for Major Georges Bank Fisheries

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**NOAA TECHNICAL MEMORANDUM NMFS-F/NEC**

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ABSTRACT

United States historical catch data for major finfish and invertebrate species taken in the Georges Bank area during 1904 to 1982 are presented. Schemes used to prorate catch data to Georges Bank, in years when catch was not reported specifically for that area, are described.

## INTRODUCTION

This document presents USA historical catch data for major finfish and invertebrate species taken in the Georges Bank area. The period covered is 1904-1982. Data for each species are from various sources, as described. Schemes used to apportion catches reported from major fishery areas to Georges Bank (NAFO - Northwest Atlantic Fisheries Organization Division 5Ze) for years prior to establishment of the current statistical areas, are also described. All data are for the USA only, and are expressed as nominal catch (the live weight equivalent of the landings) in metric tons.

## HISTORICAL DATA SOURCES, BY SPECIES

The species and species groups covered in this report are cod *(Gadus morhua),* haddock *(Melanogrammus aeglefinus),* pollock *(Pollachius virens)* , silver hake *(Merluccius bilinearis),* yellowtail flounder *(Limanda ferruginea)* , all other flounders, mackerel (Scomber scombrus), sea scallops *(Plaeopeeten magellanicus)* and all other species not reported separately. Catch data were not reported by the smaller geographical areas (NAFO Divisions) for the entire time series (1904-82), therefore, for most years Georges Bank catches were estimated using data for years when NAFO Divisions were available.

Figure 1 is a chart of the Northwest Atlantic Fisheries Organization (NAFO) subareas and divisions used here. In general, NAFO Subareas 5 and 6 (SA5, SA6) define the area off the northeastern USA; Division 5Y denotes the Gulf of Maine, Division 5Ze Georges Bank, Division 5Zw Southern New England, and Subarea 6 the Mid-Atlantic. Figure 2 shows the locations of the USA statistical areas used currently. These statistical areas may be grouped to correspond to NAFO areas and divisions.

Table 1 provides details of the data sources and proration schemes used for each species and time series. To reduce duplication in the description of the data sources, an index number is provided (in parentheses) with each time/area series. This number corresponds to the item number in the "References" section, Sources and comments regarding *reported* data are presented first, in chronological order, progressing from the subareas to the divisions. Proration schemes used to ***estimate*** catches in the divisions follow the *reported* data.

Table 2 provides the final reported and estimated catch data for Georges Bank, by major species or species groups described above for 1904-82. Figures 3-12 present plots of the Table 2 catch data by species and species groups.

ACKNOWLEDGEMENTS

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Table 1. Data sources and proration schemes used to determine the historical (1904-82) USA nominal catches from Georges Bank, NAFO Division 5Ze.

| Species or species group | Data reported or estimated | Area | Years | Proration scheme | References |
|---|---|---|---|---|---|
| Cod | Reported[a] | All | 1904-26 | - | 1 |
| | | | 1927-53 | - | 2(p.387) |
| | | Subarea 5 | 1904-26 | - | 1 |
| | | | 1927-53 | - | 3 |
| | | | 1954-82 | - | 4 |
| | | Divisions 5Z, 5Y[b] | 1932-53 | - | 3 |
| | | | 1954-82 | - | 4 |
| | | Division 5Ze, 5Zw | 1968-82 | - | 4 |
| | Estimated | Division 5Y | 1904-31 | Multiply mean ratio of 5Y to SA5 for 1932-76 (0.2779) times reported SA5 for 1904-31 | 3,4 |
| | | Division 5Z | 1904-31 | Multiply mean ratio of 5Z to SA5 for 1932-76 (0.7721) times reported SA5 for 1904-31 | 8,20 |
| | | Division 5Ze | 1904-53 | Multiply annual ratio of 5Ze to total USA catch for major New England ports times total USA catch for all areas | 1,2,5 |
| | | | 1954-67 | Multiply mean ratio of 5Ze to 5Z for 1968-76 (0.9372) times reported 5Z for 1954-67 (unknown area catches added to 5Ze) | 4 |
| | | Division 5Zw | 1904-67 | Subtract 5Ze from 5Z | |
| Haddock | Reported | All Areas | 1904-65 | - | 6(p. 703) |
| | | | 1966-76 | - | 7 |
| | | | 1977-80 | - | 8 |
| | | Subarea 5 | 1904-51 | - | 1(Table 3e) |
| | | | 1952-82 | - | 4 |
| | | Division 5Z | 1954-82 | - | 4 |
| | | Division 5Ze, 5Zw | 1968-82 | - | 4 |
| | Estimated | Division 5Y | 1931-53 | | 10 |
| | | Division 5Z | 1904-16 | Multiply mean ratio of 5Z to SA5 (as estimated below) for 1931-60 (0.913) times reported SA5 totals | 1(Table 3e) |
| | | | 1917-30 | | 9 |
| | | | 1931-53 | Subtract 5Y from SA5 | 10,1(Table 3) |

[a] All catches have been converted to live weight using the current conversion factor of 1.17.

[B] 5Y was obtained by subtracting Division 5Z catches from Subarea 5.

Table 1 (cont'd)

| Species of species group | Data reported or estimated | Area | Years | Proration scheme | References |
|---|---|---|---|---|---|
| Haddock(cont'd) | Estimated | Division 5Ze | 1904-16 | Multiply annual ratio of 5Ze to total USA catch for major New England ports times reported total USA catch for all areas | 5,6 |
| | | | 1917-67 | Multiply mean ratio of 5Ze to 5Z for 1969-80 (0.999) times reported and estimated catches for 5Z | 4 |
| | | Division 5Zw | 1904-67 | Subtract 5Ze catches from 5Z catches | |
| Pollock | Reported | All areas | 1904-23, 25-27 | - | 11 |
| | | | 1924, 1928-33[c] 1935, 1937-40[c] 1942-59[c] | - | 6(p. 141) |
| | | | 1960-82 | - | 4 |
| | | Subarea 5 | 1960-82 | - | 4 |
| | | Division 5Y, 5Z | 1960-82 | - | 4 |
| | | Division 5Ze, 5Zw | 1968-82 | - | 4 |
| | Estimated | Division 5Ze | 1904-59 | Multiply mean ratio of 5Ze to total USA for major New England ports times reported total USA all areas | 5,11 |
| | | | 1960-67 | Multiply mean ratio of 5Ze to 5Z reported for 1968-80 (0.997) times reported and estimated catches for 5Z | 4 |
| | | Division 5Zw | 1960-67 | Subtract 5Ze catches from 5Z catches | |
| Silver hake[d] | Reported | Subarea 5 | 1937-54 | - | 12 |
| | | | 1955-82 | - | 4 |
| | | Division 5Y, 5Ze | 1937-54 | Total statistical areas G-0 | 2(Table 7, p.7) |
| | | | | Cape Cod ports and New England unclassified (1942-53) were included in 5Ze totals | |
| | | | 1955-64 | - | 13(Table 9,p.27) |

[c] Total New England and Middle Atlantic states only.

[d] **Data** are **not** available for silver hake catches prior to 1937.

Table 1 (cont'd)

| Species or species group | Data reported or estimated | Area | Years | Proration scheme | References |
|---|---|---|---|---|---|
| Silver hake (cont'd) | Reported | Division 5Y, 5Ze (cont'd) | 1965-82 | - | 4 |
| | | Division 5Zw | 1937-64 | Subtract total 5Ze and 5Y catches from SA5 totals | |
| Yellowtail[e] flounder | Reported | Division 5Ze | 1935-41 | - | 14 |
| | | | 1942-66 | - | 15 |
| | | | 1967-82 | - | 4 |
| Other flounder | Reported | Subarea 5 | 1915-34[f] | - | 1(Table 6d) |
| | | | 1935-51 | All flounders | 1(Table 6d) |
| | | | | Other flounder - by subtracting yellowtail from all flounder total | |
| | | | 1952-82 | All flounder - yellowtail flounder subtracted from total | 4,14 |
| | | | 1960-82 | Other flounder (did not include yellowtail) | 4 |
| | | Divisions 5Y, 5Z | 1955-82 | - | 4 |
| | | Divisions 5Ze, 5Zw | 1968-82 | - | 4 |
| | Estimated | Divisions 5Y, 5Z | 1915-54 | Multiply mean ratio of total 5Z to SA5 (0.757) as reported for 1955-65 times SA5 total; mean ratio of 5Y to SA5 is 0.243 | |
| | | Divisions 5Ze, 5Zw | 1915-67 | Multiply mean ratio of 5Ze to 5Z as reported for 1968-80 (0.722) times 5Z estimates; mean ratio of 5Zw to 5Z is 0.278 | |
| Mackerel | Reported | Subarea 5 | 1904-62 | - | 16(pp. 424-426) |
| | | | 1962-82 | - | 4 |
| | | Division 5Ze | 1904-30 | - | 7 |
| | | | 1968-82 | - | 4 |
| | Estimated | Division 5Ze | 1931-67 | Multiply mean of 5Ze to SA5 for 1904-30 times SA5 catches for 1931-67 | 16,17 |

[e] Data are not available for yellowtail flounder catches prior to 1935.

[f] Includes yellowtail flounder.

Table 1 (cont'd)

| Species or species group | Data reported or estimated | Area | Years | Proration scheme | References |
|---|---|---|---|---|---|
| Sea scallops[g] | Reported | All areas | 1904-81 | - | 18 (Table 1) |
| | | | 1904-60 | - | 19 |
| | | | 1961-75 | - | 7 |
| | | | 1963-82 | - | 4 |
| | | Division 5Z | 1944-64 | - | 18 (Table 2) |
| | | | 1944-57 | - | 20 |
| | | | 1958-82 | - | 4 |
| | | Divisions 5Ze, 5Zw | 1968-82 | - | 4 |
| Other fish[h] | Reported | Division 5Ze | 1904-64 | - | 5 |
| | | | 1965-82 | - | 4 |
| Total catch[i] | | | | | |

[G] Meat weight to live weight conversion factor is 8.33.

[h] Includes all species not reported separately in Table 1.

[i] Total nominal catch was determined by adding all species and species group catches as presented in Table 2 with sea scallop catches expressed as meat weights, for each year. These data are plotted in Figure 12.

Table 2. Historical (1904-82) USA nominal catches from Georges Bank NAFO Division 5Ze, in thousands of metric tons live weight (except sea scallops).

| YEAR | COD | HADDOCK | POLLOCK | SILVER HAKE | YELLOW-TAIL | FLOUNDER (NS) | MACKEREL | SEA SCALLOPS | ALL OTHER | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| 1904 | 9.8 | 19.7 | 0.2 | - | - | - | 1.6 | - | 2.1 | 33.4 |
| 1905 | 8.6 | 27.5 | 0.2 | - | - | - | 2.8 | - | 3.0 | 42.0 |
| 1906 | 13.8 | 26.9 | 0.3 | - | - | - | >0.1 | - | 3.1 | 43.1 |
| 1907 | 8.0 | 16.4 | 0.3 | - | - | - | 2.0 | - | 2.0 | 28.2 |
| 1908 | 11.9 | 19.1 | 0.6 | - | - | - | >0.1 | - | 1.6 | 33.2 |
| 1909 | 8.2 | 16.3 | 2.4 | - | - | - | 0.4 | - | 1.1 | 28.4 |
| 1910 | 9.1 | 20.4 | 0.5 | - | - | - | >0.1 | - | 0.9 | 30.9 |
| 1911 | 8.7 | 22.5 | 0.5 | - | - | - | >0.1 | - | 1.2 | 32.9 |
| 1912 | 10.5 | 25.3 | 0.3 | - | - | - | >0.1 | - | 1.7 | 37.7 |
| 1913 | 8.0 | 19.2 | 0.4 | - | - | - | >0.1 | - | 1.6 | 29.1 |
| 1914 | 4.6 | 25.6 | 0.2 | - | - | - | >0.1 | - | 0.9 | 31.3 |
| 1915 | 6.3 | 26.6 | 0.5 | - | - | 3.0 | 0.4 | - | 1.0 | 37.8 |
| 1916 | 4.6 | 22.9 | 0.3 | - | - | 2.7 | 1.6 | - | 1.5 | 33.5 |
| 1917 | 4.9 | 14.1 | 0.3 | - | - | 4.2 | 0.3 | - | 1.3 | 25.0 |
| 1918 | 13.2 | 24.8 | 0.3 | - | - | 4.5 | 0.2 | - | 0.9 | 43.8 |
| 1919 | 14.5 | 39.4 | 0.4 | - | - | 4.9 | >0.1 | - | 1.0 | 60.2 |
| 1920 | 12.3 | 40.6 | 0.4 | - | - | 6.0 | >0.1 | - | 1.7 | 61.0 |
| 1921 | 14.9 | 29.7 | 0.3 | - | - | 5.2 | >0.1 | - | 1.2 | 51.3 |
| 1922 | 12.8 | 30.8 | 0.4 | - | - | 6.7 | >0.1 | - | 2.5 | 53.2 |
| 1923 | 13.0 | 32.9 | 0.3 | - | - | 7.4 | >0.1 | - | 1.8 | 55.4 |
| 1924 | 15.5 | 36.9 | 0.3 | - | - | 8.9 | 0.4 | - | 1.6 | 63.5 |
| 1925 | 14.9 | 41.4 | 0.3 | - | - | 9.9 | 0.9 | - | 1.4 | 68.7 |
| 1926 | 17.5 | 51.3 | 0.4 | - | - | 11.7 | 1.1 | - | 1.7 | 83.5 |
| 1927 | 18.0 | 73.8 | 0.5 | - | - | 12.4 | 2.3 | - | 1.5 | 108.5 |
| 1928 | 14.0 | 98.5 | 0.6 | - | - | 14.3 | 2.9 | - | 2.5 | 132.7 |
| 1929 | 17.1 | 115.4 | 1.2 | - | - | 13.9 | 5.0 | - | 6.6 | 159.3 |
| 1930 | 22.0 | 95.0 | 1.5 | - | - | 13.7 | 6.5 | - | 10.1 | 148.7 |
| 1931 | 18.7 | 64.2 | 1.7 | - | - | 12.0 | 4.0 | - | 6.1 | 106.6 |
| 1932 | 17.0 | 56.7 | 1.7 | - | - | 10.9 | 5.1 | - | 10.6 | 102.0 |
| 1933 | 16.6 | 47.4 | 1.8 | - | - | 10.5 | 3.5 | - | 4.0 | 83.8 |
| 1934 | 7.4 | 28.5 | 0.4 | - | - | 9.4 | 4.4 | - | 1.7 | 51.9 |
| 1935 | 13.2 | 41.7 | 2.2 | - | 0.3 | 3.2 | 5.4 | - | 3.6 | 69.4 |
| 1936 | 17.5 | 46.9 | 2.8 | - | 0.3 | 5.8 | 4.3 | - | 24.5 | 102.0 |
| 1937 | 25.3 | 51.7 | 4.6 | 0.2 | 0.3 | 6.4 | 2.0 | - | 13.9 | 104.4 |
| 1938 | 19.1 | 49.7 | 4.2 | 0.6 | 0.3 | 7.5 | 3.4 | - | 19.0 | 103.6 |
| 1939 | 14.4 | 56.5 | 4.7 | 0.5 | 0.4 | 5.8 | 2.4 | - | 12.1 | 96.7 |
| 1940 | 14.1 | 51.1 | 6.5 | 1.1 | 0.6 | 4.7 | 3.1 | 2.0 | 10.6 | 93.5 |
| 1941 | 18.2 | 67.1 | 4.8 | 1.2 | 0.9 | 3.4 | 3.6 | 2.5 | 10.6 | 112.2 |
| 1942 | 14.9 | 55.5 | 3.7 | 0.5 | 1.1 | 0.4 | 4.1 | 2.5 | 6.7 | 89.3 |
| 1943 | 15.6 | 49.0 | 2.7 | 0.6 | 1.3 | 3.7 | 4.6 | 1.7 | 7.2 | 86.3 |
| 1944 | 12.8 | 49.6 | 1.8 | 3.5 | 1.7 | 6.5 | 5.5 | 1.8 | 7.1 | 90.3 |
| 1945 | 9.6 | 41.8 | 2.8 | 3.3 | 1.4 | 6.2 | 4.3 | 1.8 | 7.5 | 78.6 |
| 1946 | 14.3 | 53.4 | 4.1 | 7.9 | 1.0 | 7.9 | 3.7 | 4.0 | 9.8 | 105.9 |
| 1947 | 13.5 | 56.1 | 3.6 | 8.8 | 2.3 | 6.6 | 4.1 | 4.9 | 16.2 | 115.9 |
| 1948 | 13.4 | 49.5 | 5.4 | 10.1 | 5.7 | 6.2 | 3.5 | 4.6 | 17.1 | 115.4 |
| 1949 | 15.1 | 42.9 | 9.4 | 8.6 | 7.3 | 7.0 | 1.6 | 5.3 | 27.8 | 124.9 |
| 1950 | 9.9 | 41.0 | 3.7 | 7.7 | 3.9 | 9.5 | 1.3 | 5.4 | 10.7 | 93.0 |
| 1951 | 10.7 | 47.5 | 4.8 | 12.6 | 4.3 | 9.2 | 1.0 | 5.7 | 9.2 | 104.8 |
| 1952 | 8.5 | 43.0 | 3.7 | 7.8 | 3.7 | 7.5 | 1.1 | 5.5 | 1.6 | 82.3 |
| 1953 | 8.0 | 35.9 | 4.9 | 3.5 | 2.9 | 5.4 | 0.6 | 7.4 | 5.4 | 73.8 |
| 1954 | 8.3 | 46.6 | 4.2 | 8.2 | 2.9 | 5.0 | >0.1 | 7.0 | 7.9 | 90.3 |
| 1955 | 8.7 | 43.2 | 6.2 | 19.6 | 2.9 | 4.6 | >0.1 | 8.3 | 12.2 | 106.0 |
| 1956 | 9.8 | 51.1 | 6.3 | 20.7 | 1.6 | 5.2 | >0.1 | 7.9 | 12.0 | 115.1 |
| 1957 | 9.7 | 48.5 | 6.0 | 25.9 | 2.3 | 3.6 | >0.1 | 7.9 | 11.6 | 115.6 |
| 1958 | 10.4 | 37.3 | 5.5 | 14.5 | 4.5 | 1.0 | >0.1 | 6.3 | 8.7 | 88.4 |
| 1959 | 11.3 | 36.0 | 5.1 | 15.9 | 4.1 | 2.1 | >0.1 | 8.5 | 12.8 | 96.1 |
| 1960 | 9.7 | 40.8 | 3.8 | 22.1 | 4.5 | 8.2 | >0.1 | 9.9 | 4.9 | 104.0 |
| 1961 | 13.1 | 46.3 | 3.1 | 14.5 | 4.3 | 7.3 | >0.1 | 10.7 | 3.8 | 103.3 |
| 1962 | 14.3 | 49.4 | 3.2 | 16.3 | 7.8 | 7.4 | >0.1 | 9.7 | 5.9 | 114.0 |
| 1963 | 13.0 | 44.1 | 2.6 | 14.0 | 11.0 | 7.2 | >0.1 | 7.9 | 5.1 | 105.1 |
| 1964 | 11.6 | 46.5 | 3.1 | 5.5 | 14.9 | 12.9 | >0.1 | 6.2 | 5.3 | 106.2 |
| 1965 | 10.7 | 52.8 | 3.1 | 8.2 | 14.2 | 10.8 | >0.1 | 1.5 | 3.2 | 104.8 |
| 1966 | 11.1 | 52.9 | 2.2 | 12.7 | 12.1 | 13.5 | >0.1 | 1.0 | 3.6 | 109.3 |
| 1967 | 11.9 | 34.7 | 1.6 | 12.3 | 18.8 | 11.5 | 1.0 | 1.2 | 3.5 | 96.1 |
| 1968 | 13.5 | 25.2 | 1.6 | 6.5 | 21.9 | 7.7 | >0.1 | 1.0 | 5.6 | 83.4 |
| 1969 | 15.0 | 16.4 | 2.2 | 1.7 | 22.5 | 9.5 | >0.1 | 1.3 | 5.7 | 74.2 |
| 1970 | 13.4 | 8.4 | 2.2 | 4.3 | 24.1 | 10.3 | >0.1 | 1.4 | 5.1 | 69.4 |
| 1971 | 15.0 | 7.3 | 3.0 | 3.1 | 18.0 | 17.6 | >0.1 | 1.3 | 8.0 | 73.4 |
| 1972 | 12.5 | 3.9 | 2.1 | 1.0 | 18.8 | 15.1 | >0.1 | 1.0 | 8.8 | 62.7 |
| 1973 | 14.8 | 2.8 | 2.2 | 5.7 | 21.4 | 6.6 | - | 1.1 | 7.7 | 62.3 |
| 1974 | 16.6 | 2.4 | 2.6 | 2.3 | 19.5 | 6.9 | >0.1 | 1.0 | 7.0 | 58.3 |
| 1975 | 14.6 | 4.0 | 3.0 | 4.7 | 16.3 | 8.8 | - | 1.0 | 7.2 | 59.3 |
| 1976 | 13.9 | 2.9 | 3.8 | 3.8 | 14.2 | 7.8 | >0.1 | 1.8 | 6.5 | 54.7 |
| 1977 | 19.6 | 7.9 | 4.6 | 3.7 | 12.1 | 10.2 | >0.1 | 4.8 | 8.3 | 71.2 |
| 1978 | 23.8 | 12.1 | 6.5 | 6.4 | 7.7 | 11.4 | >0.1 | 5.6 | 10.6 | 83.2 |
| 1979 | 30.9 | 14.2 | 6.9 | 1.0 | 9.8 | 11.6 | >0.1 | 6.6 | 13.2 | 93.0 |
| 1980 | 38.4 | 17.4 | 6.8 | 1.2 | 12.9 | 14.0 | >0.1 | 5.6 | 9.9 | 106.2 |
| 1981 | 32.1 | 19.2 | 6.0 | 1.2 | 9.7 | 14.2 | >0.1 | 8.4 | 10.7 | 101.4 |
| 1982 | 37.5 | 12.6 | 5.5 | 1.8 | 16.8 | 13.8 | >0.1 | 6.5 | 12.0 | 106.5 |

[1] Sea scallops are expressed in meat weights, where the meat to live weight conversion factor is 8.33.

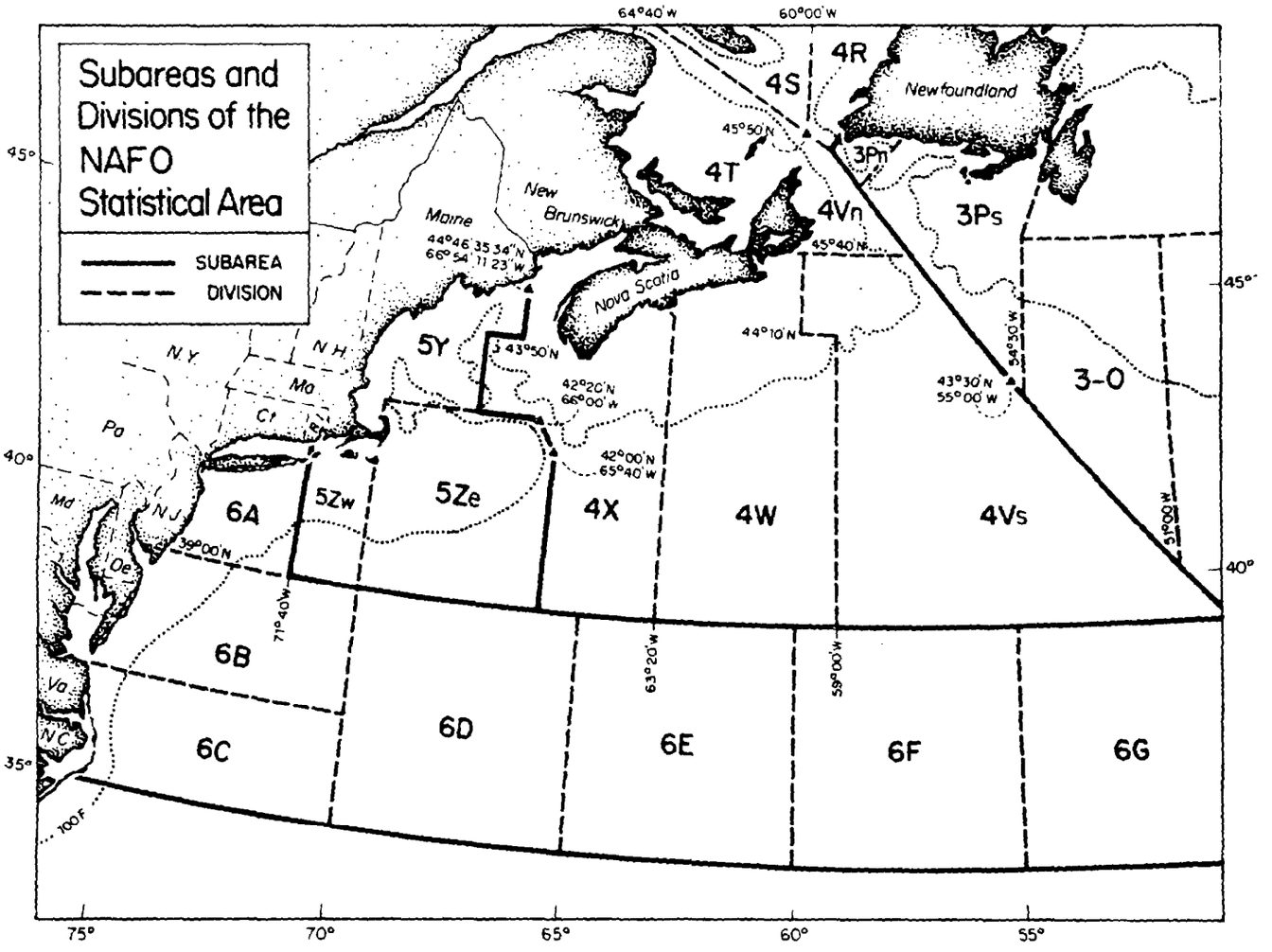


Figure 1. Subareas and divisions of the Northwest Atlantic Fisheries Organization (NAFO).

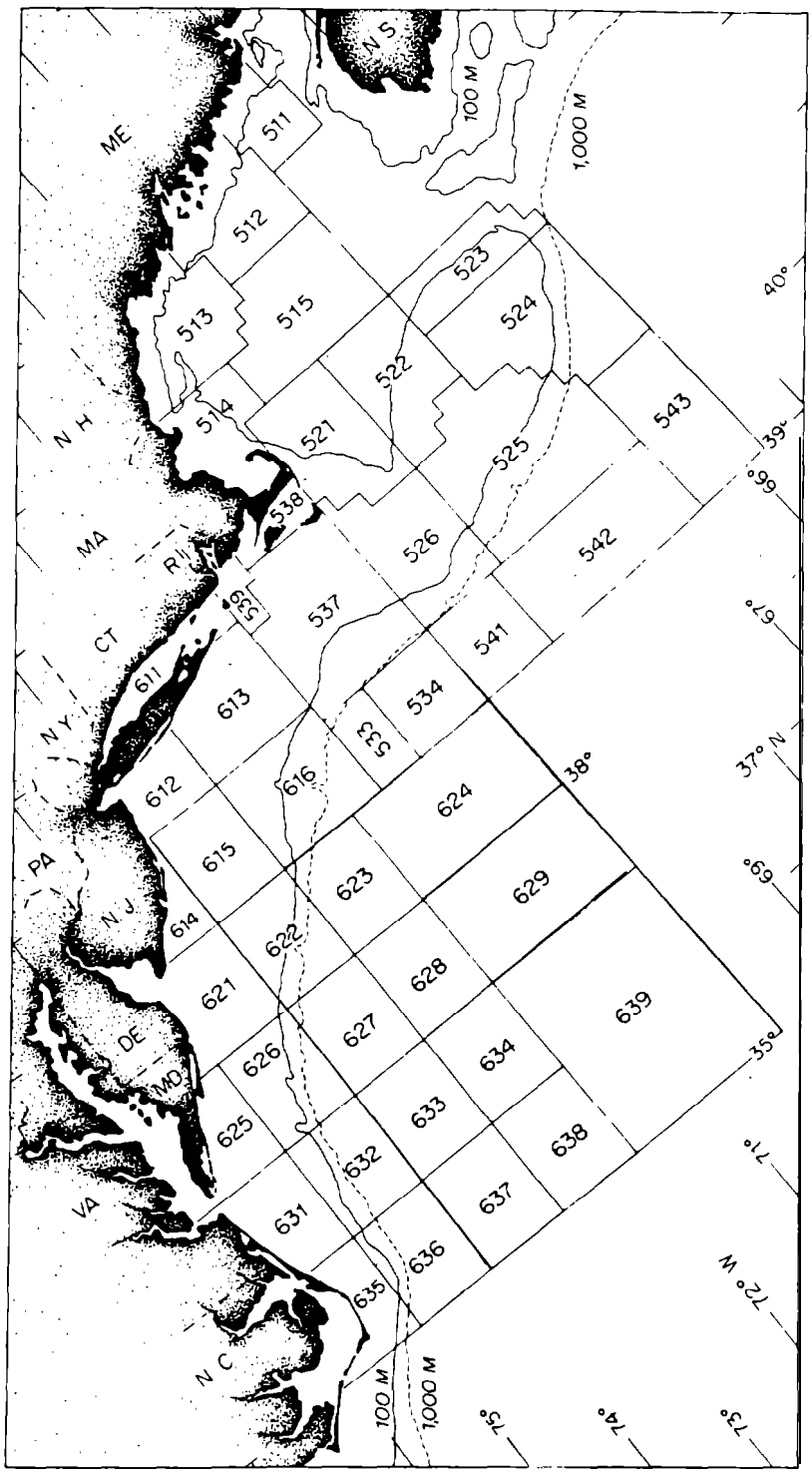


Figure 2. USA Statistical areas used for reporting fisheries data.

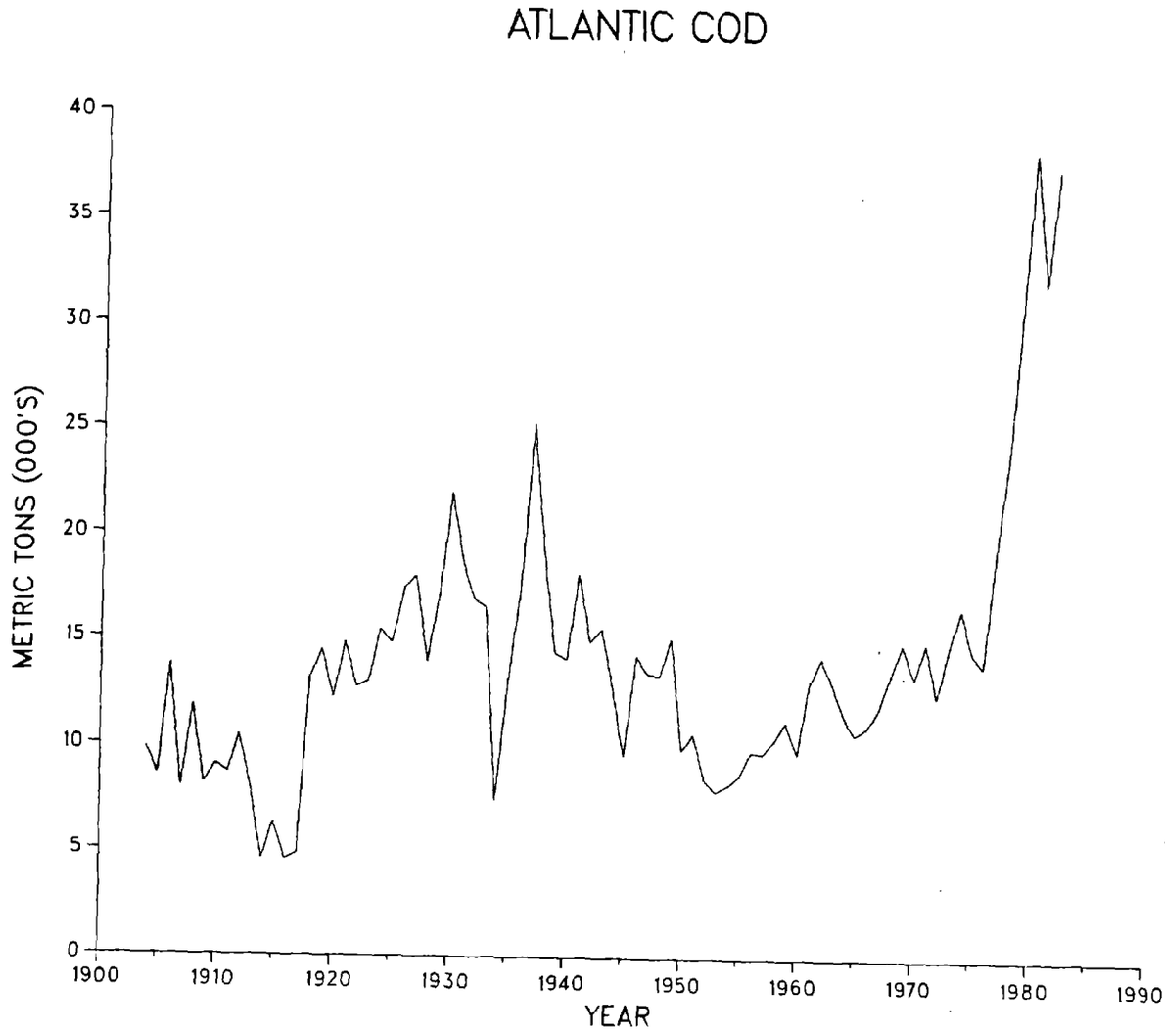


Figure 3. Nominal USA catch of cod from Georges Bank, 1904-1982.

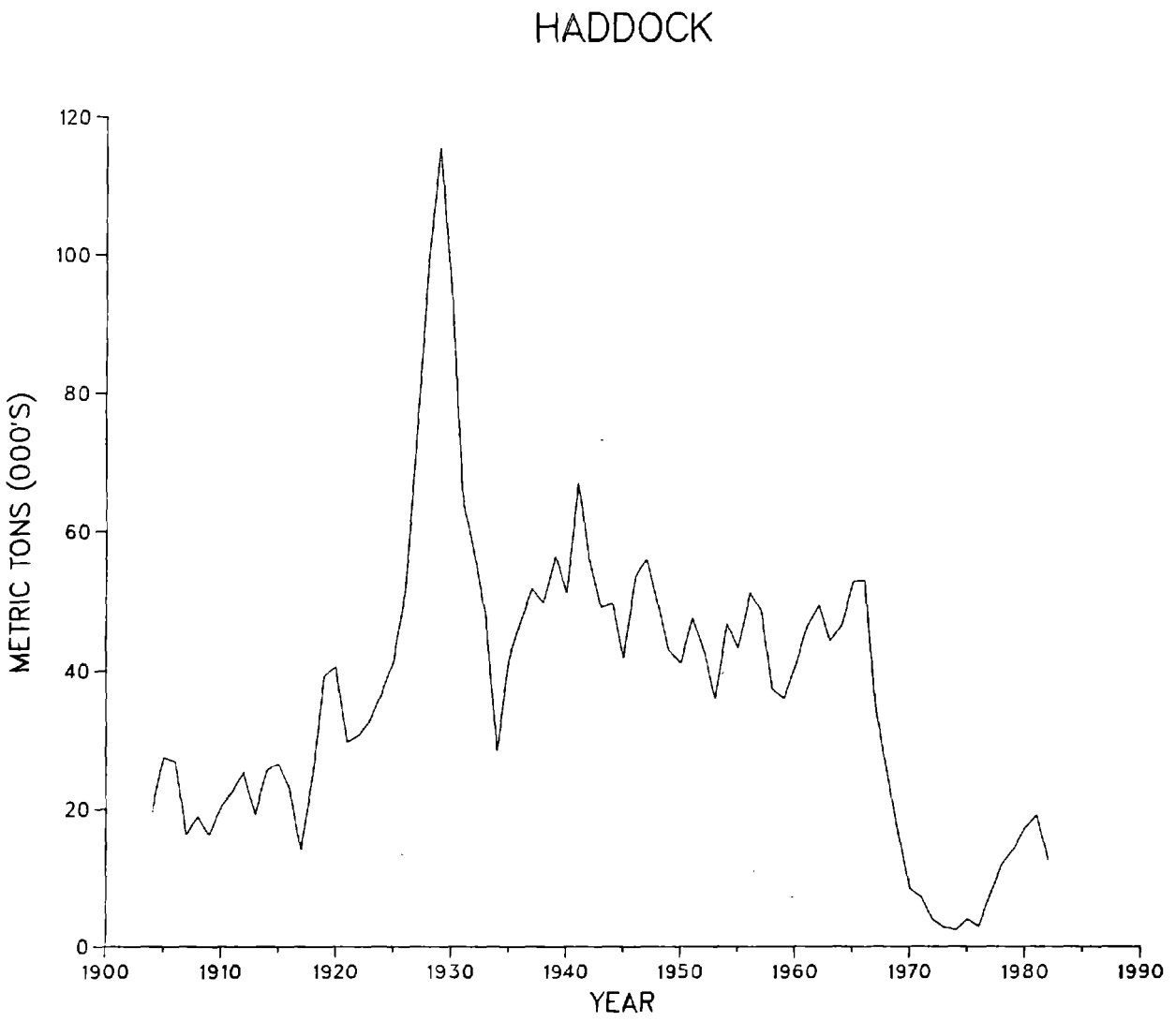


Figure 4. Nominal USA catch of haddock from Georges Bank, 1904-1982.

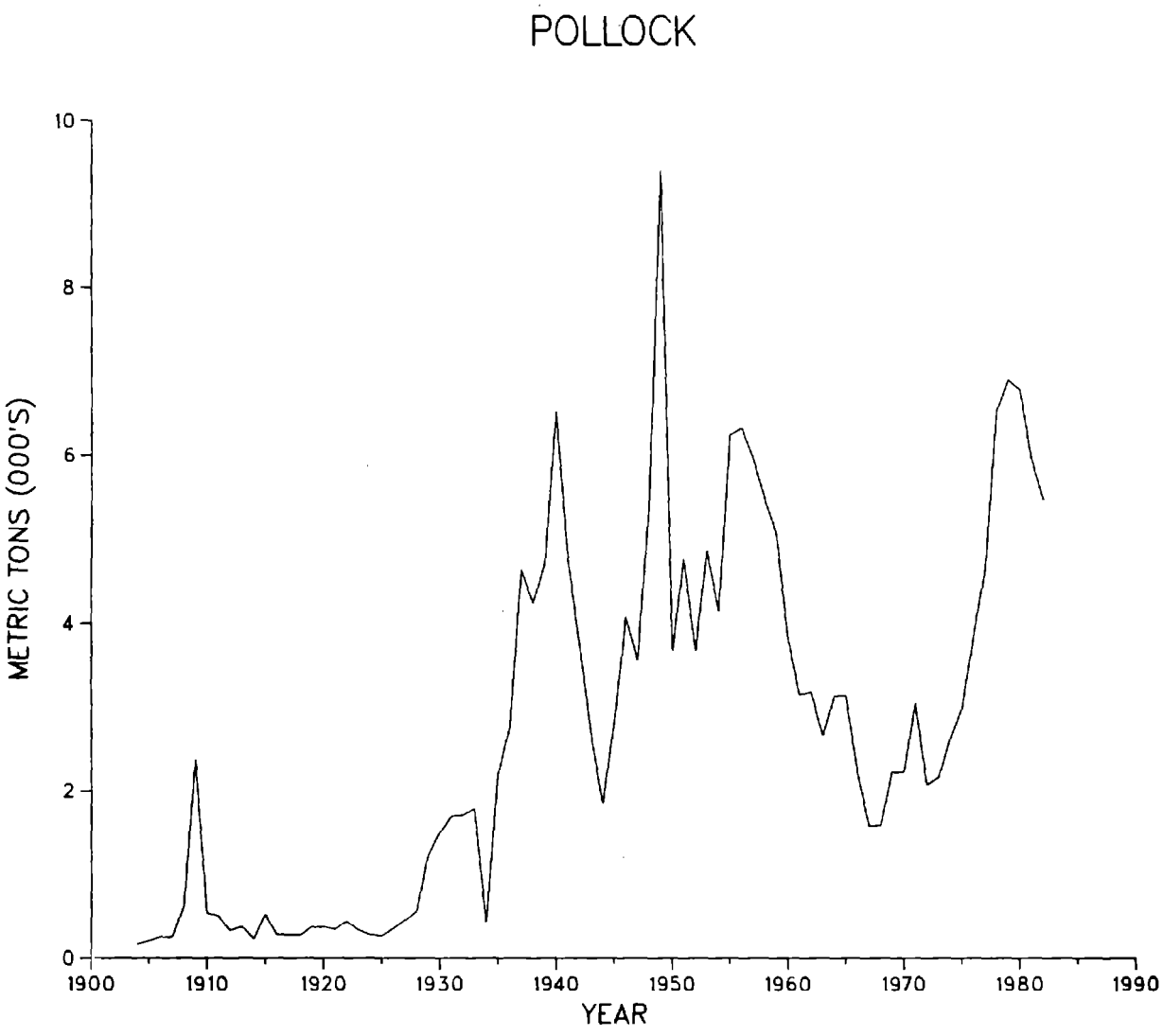


Figure 5. Nominal USA catch of pollock from Georges Bank, 1904-1982.

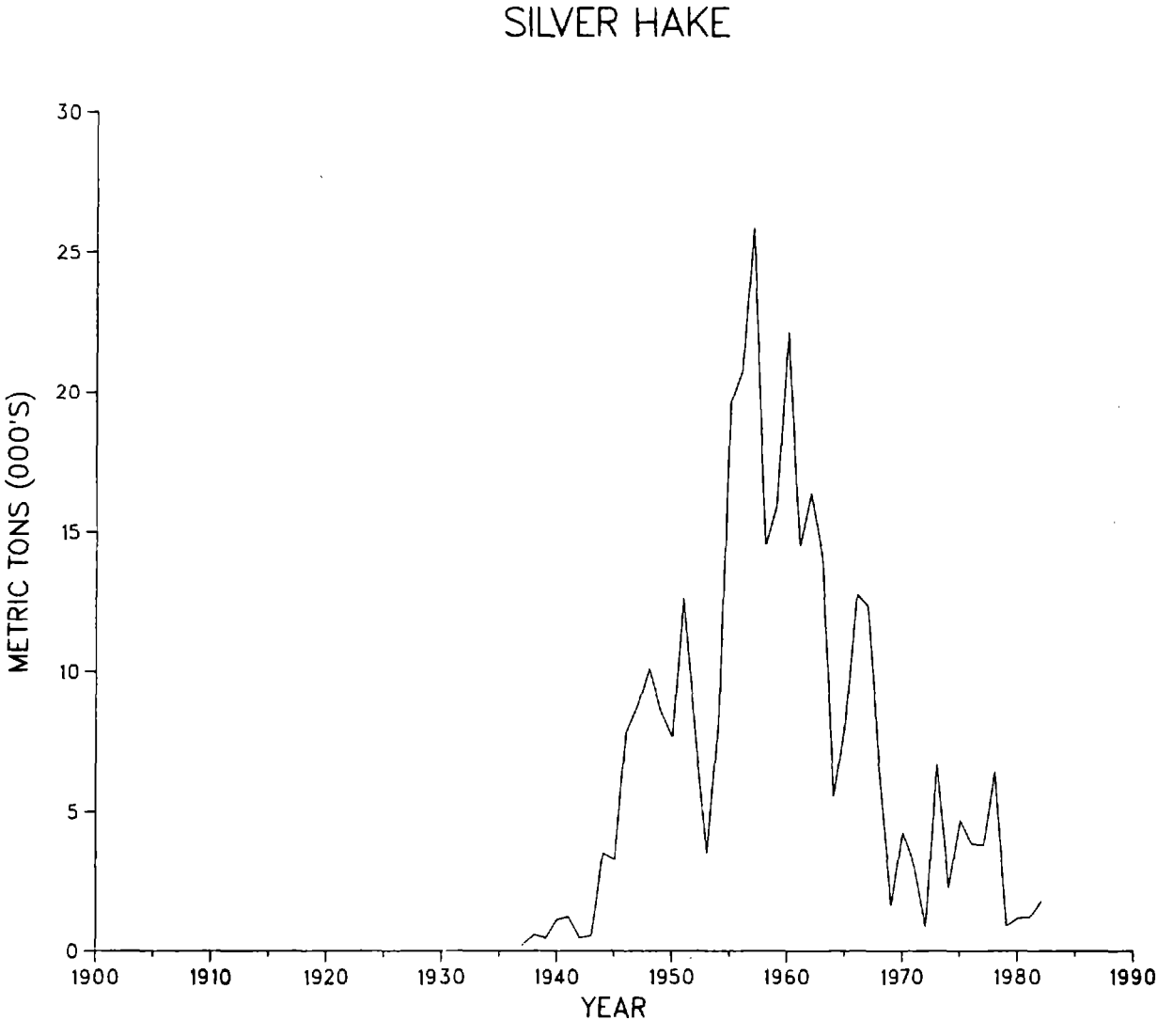


Figure 6. Nominal USA catch of silver hake from Georges Bank, 1937-1982.

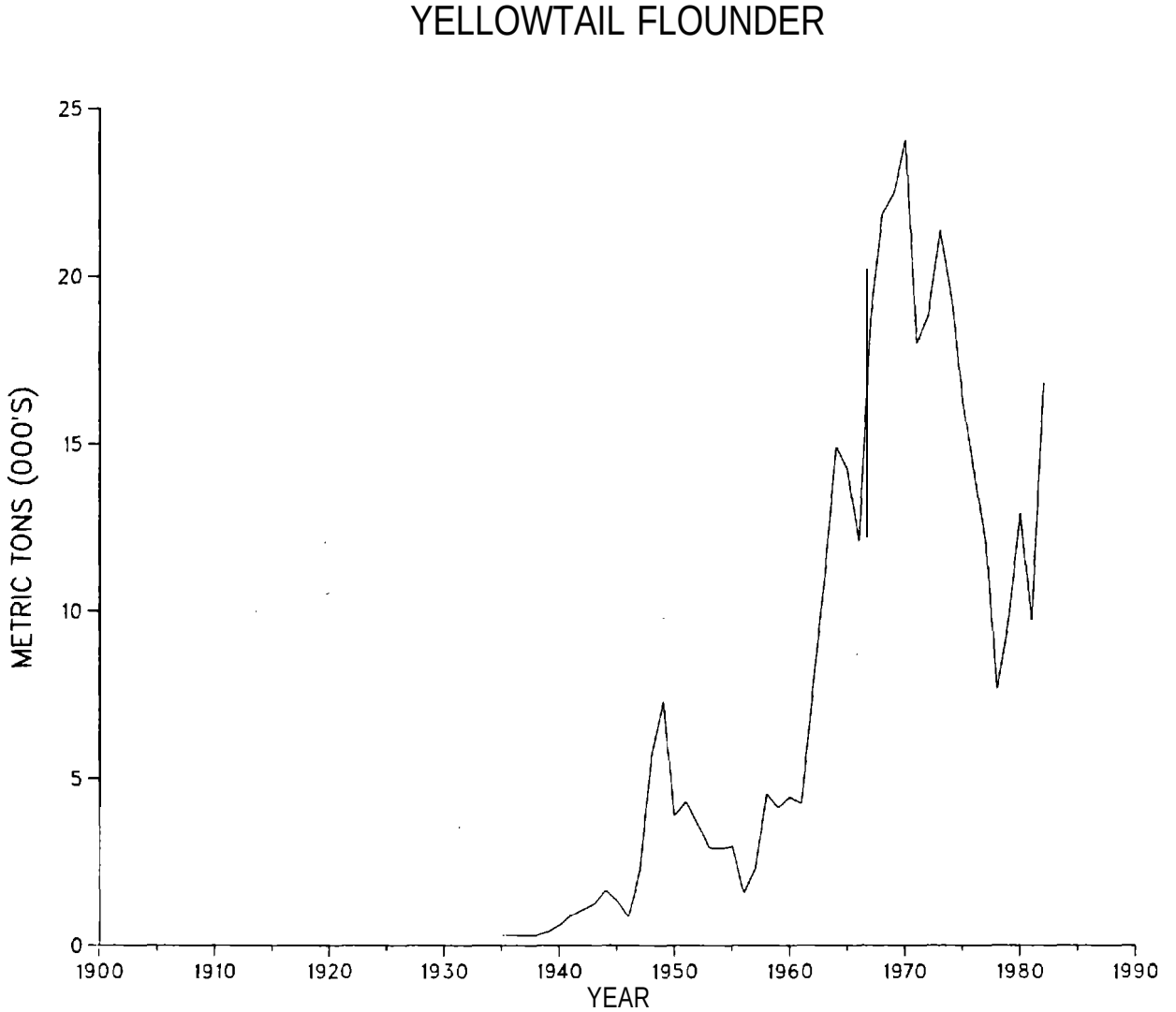


Figure 7. Nominal USA catch of yellowtail flounder from Georges Bank, 1935-1982.

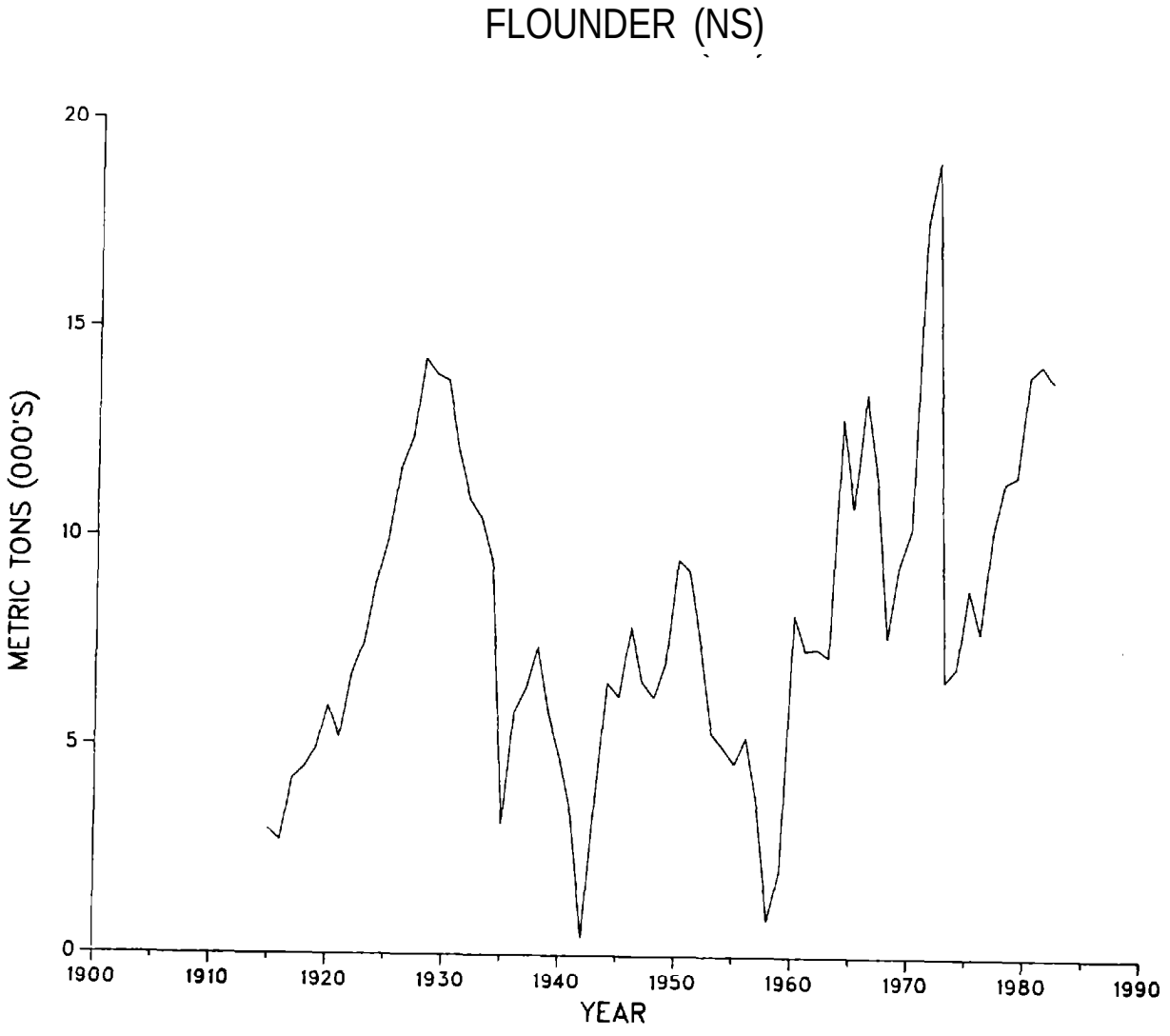


Figure 8. Nominal USA catch of other flounder from Georges Bank, 1915-1982.

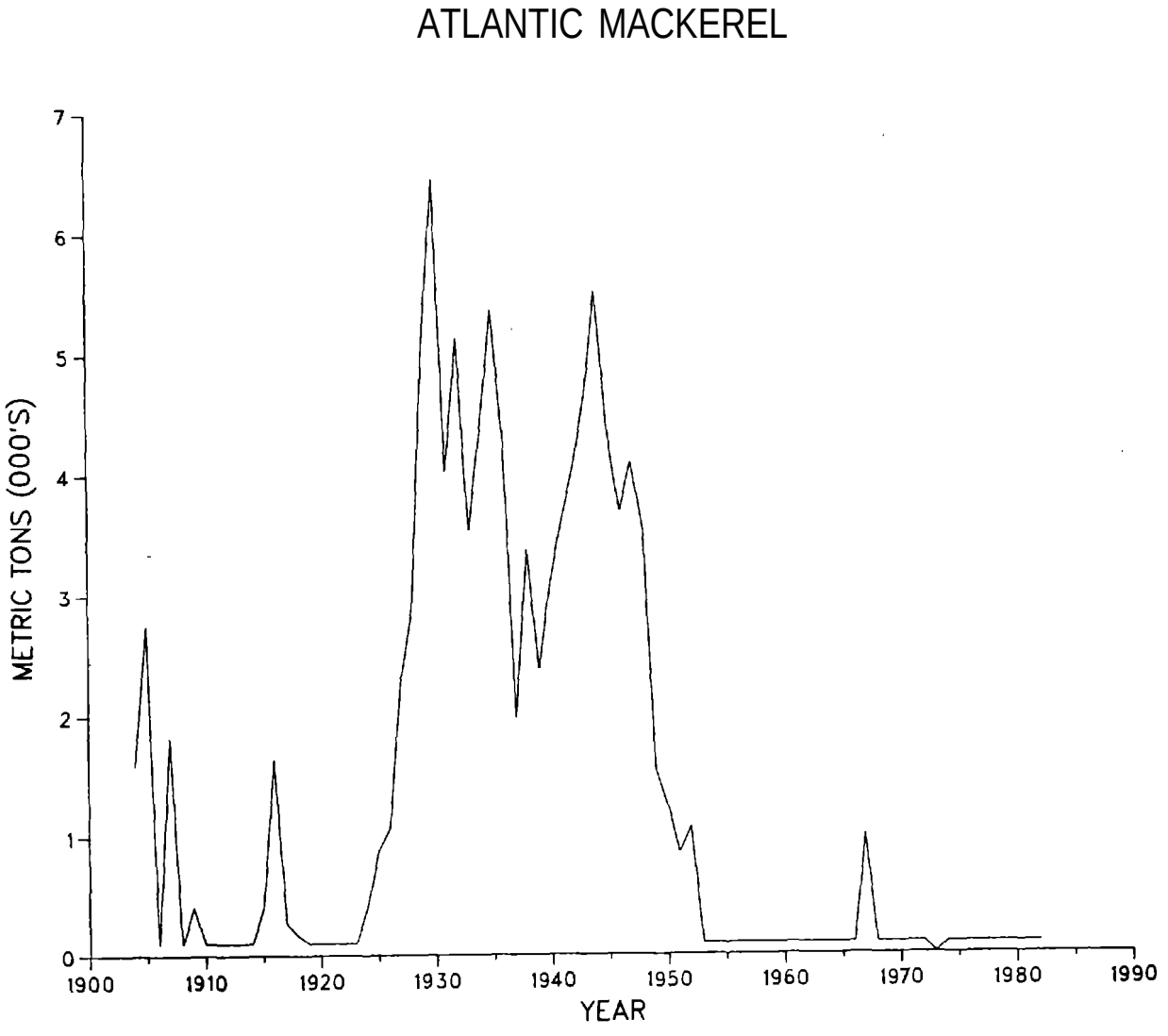


Figure 9. Nominal USA catch of mackerel from Georges Bank, 1904-1982.

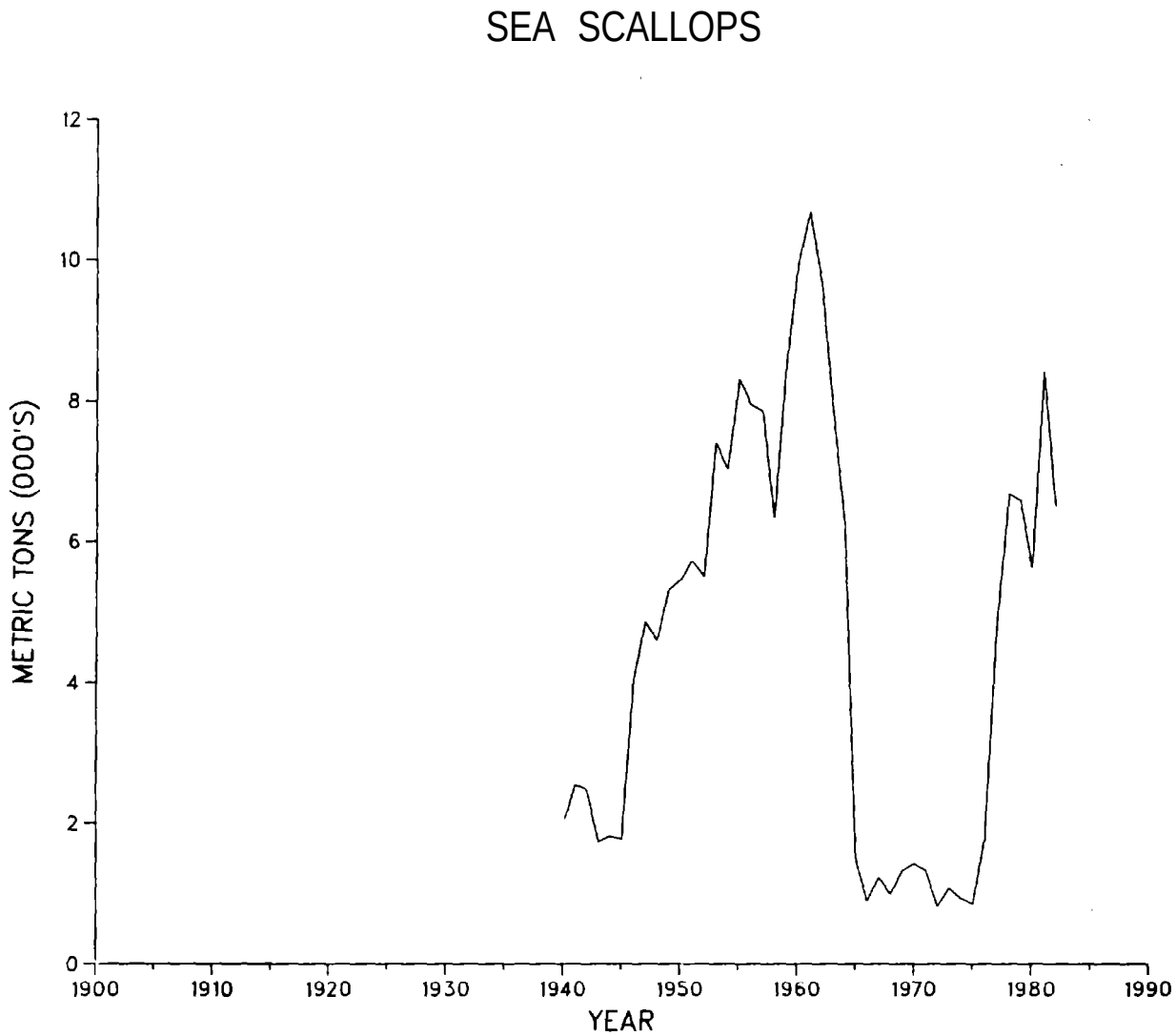


Figure 10. Nominal USA catch of sea scallops from Georges Bank, 1940-1982, in meat weight, where the meat to live weight conversion factor is 8.33.

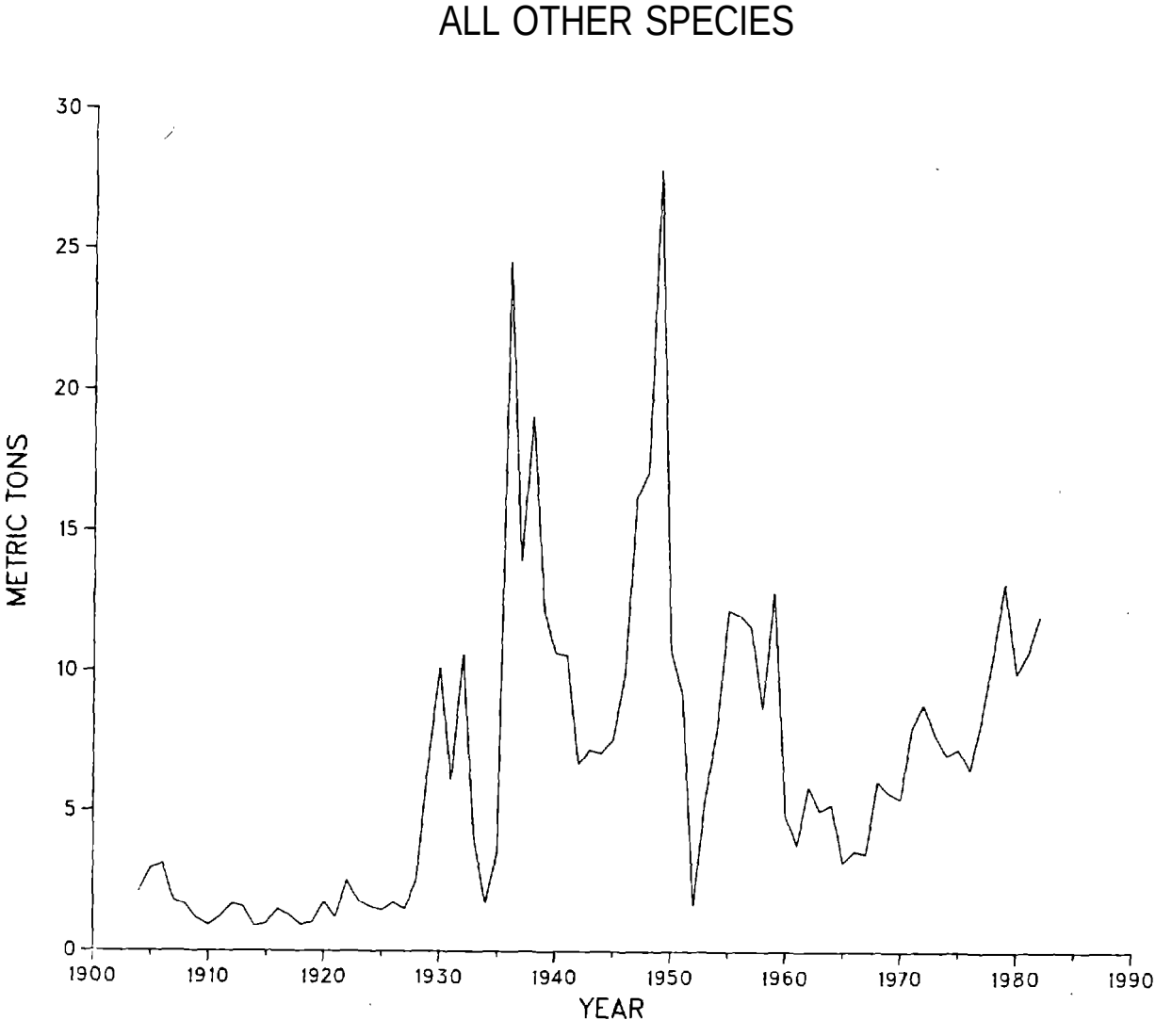


Figure 11. Nominal USA catch of other fish from Georges Bank, 1904-1982.

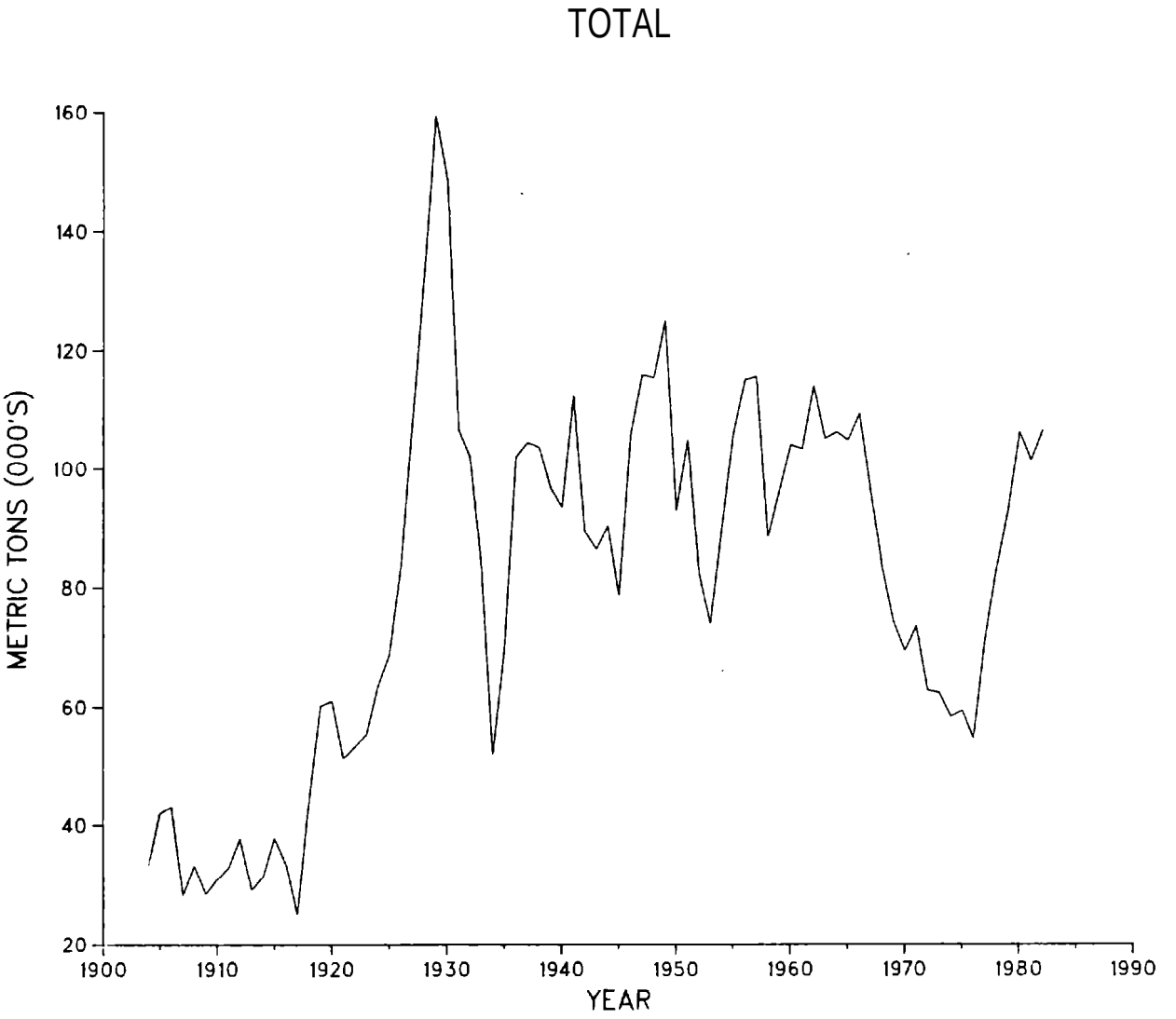


Figure 12. Total nominal USA catch from Georges Bank, 1904-1982.