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Status of Fisheries and Research Carried Out  
in Subarea 5 in 1966

by

S. A. Studenetsky  
 Chairman of Scientific Advisers, Subarea 5

1. The following documents are pertaining to Subarea 5:  
 67/7; 67/10; 67/11; 67/17; 67/20; 67/21; 67/22; 67/24; 67/25;  
 67/28; 67/29; 67/30; 67/35; 67/36; 67/37; 67/53; 67/67; 67/68;  
 67/70; 67/76; 67/82; 67/88; 67/107; the Report of Herring and  
 Other Pelagic Species Subcommittee.
2. The number of countries conducting fishing in Subarea 5 increased in 1966 as compared to 1965. As in the previous years, in 1966 more than 95% of all catches in Subarea 5 was taken by Canada, USSR, and USA.

Results of research carried out in Subarea 5 were submitted by Canada, Poland, USSR, USA, and FRG.

The present Report is a summary of Research Reports of the said countries, given by separate species. The main landings taken from Subarea 5 in 1966 (given against 1965) are shown in the Table. Apart from these, some quantities of fish were caught by Norway, Poland, Spain, and U.K.

### 3. Herring.

Herring catches by USSR enlarged due to some increase in fishing effort. Herring fishery was conducted from late May until the first fortnight of October.

Studies on size and age composition of catches showed that in 1966 as in 1963-1965 the 1960 year-class was dominant (47.3% at an average for the year). Since this year-class has already decreased considerably and the following year-classes are poorer than the 1960 year-class, the Soviet scientists think that in 1967 one should expect a decrease in herring stocks of Georges Bank.

USSR continued studies on registration of herring eggs in spawning grounds in order to determine the value of spawning population.

Canada did not conduct herring fishery in Subarea 5 in 1966. Analysis of age composition carried out by Canada showed that the 1961 year-class was predominant in samples taken in Division 5Z (69%). The 1960 year-class made up 20%; next by importance were the 1962, 1959, and 1963 year-classes.

U.S. catch of small-sized herring from Gulf of Maine was 27,200 tons. It was noted that the said catch was the second lowest in 20 years. Some peculiarities in distribution of herring fishery in Gulf of Maine in 1966 were noted. Reasons for a decline in catches are not clear.

According to U.S. data in sardine catches taken from Gulf of Maine 3-year olds of the 1963 year-class were dominant (49.3%). Next by importance were 2-year olds of the 1964 year-class (42.4%). One-year olds of the 1965 year-class made up 5.1%.

Poland increased herring catches in the Convention area in 1966 up to 14,473 tons against 1,447 tons in 1965. In November-December 1966 studies were carried out on size composition of herring catches in Georges Bank.

#### 4. Silver hake

Total landings of silver hake in Subarea 5 reduced by half due to a decrease in the USSR catch.

In 1966 the Soviet trawlers conducted fishery for silver hake mainly during the summer period. Silver hake concentrations were dispersed and unstable. The Soviet scientists presume that at present silver hake stocks have decreased. Samples for age determination showed the predominance of the 1963 year-class (45.5% at an average for the year) in catches.

USSR carried out some works on evaluation of locality of silver hake stocks as well as on registration of juvenile.

U.S. catch of silver hake showed some decrease. Catch per effort (per fishing day) changed inconsiderably: 1965-12.8 tons, 1966 -12.5 tons.

During the year USA carried out studies on growth rate and age determination of silver hake. The studies showed that there was difference in growth rate during the first year of life in Gulf of Maine and southern New England.

Canada did not conduct fishery for silver hake in Subarea 5 in 1966.

Poland carried out studies on size composition of silver hake catches. Smaller silver hake was caught on northwest slopes of Georges Bank.

#### 5. Haddock

Total haddock landings from Subarea 5 went down by 20% against 1965. Canada somewhat increased the catch, whereas USA kept it at 1965 level. USSR decreased haddock catch by almost 40%.

Analysis of size and age composition of haddock catches carried out by USSR showed that haddock was mainly 38-51 cm. long. The 1962 year-class was dominant in catches.

Results of studies on age composition of haddock conducted by Canada showed that the 1963 year-class continued to predominate in catches.

According to U.S. data 3-year olds (the 1963 year-class) made up 60% of the catch. At the same time the 1964, 1965, and 1966 year-classes are considered as weak ones. For this reason, one can forecast some decrease in haddock abundance in Georges Bank in 1968-1969.

Poland carried out studies on size composition of haddock of Georges Bank in relation to its distribution depthwise. It was noted that haddock were larger in deeper areas than in shallower.

#### 6. Cod

Total cod landings from Subarea 5 increased by more than 30% against 1965 due to increase in catches by Canada and USSR. USA kept cod catch at 1965 level. About 8,000 tons of cod were caught by Spain.

U.S. research showed that cod abundance in 1966 was slightly higher than in 1965.

#### 7. Flatfish

Flatfish catches in Subarea 5 in 1966 somewhat decreased (see Table). Fishery for flatfish was conducted mainly by USA. The bulk of U.S. catches was made of yellowtail flounder (about 54%). As in the previous years, USA conducted fishery for yellowtail flounder in two areas: South New England and Georges Bank. Total U.S. landings of yellowtail flounder in 1966 decreased by 18%

against 1965. At the same time landings per day went down. All these point to the fact that stocks of yellowtail flounder have decreased. U.S. data on age composition also show some decline in abundance of yellowtail flounder in 1967.

Other member countries did not carry out studies on flatfish in Subarea 5 in 1966.

#### 8. Redfish

Total redfish landings in Subarea 5 slightly increased in 1966 against 1965.

U. S. Research Report shows that catch of redfish per effort in Subarea 5 continued to increase while total fishing effort went down.

Other member countries did not conduct research on redfish in Subarea 5 in 1966.

#### 9. Red hake

Total catch of red hake in Subarea 5 in 1966 increased approximately by 20% against 1965.

USSR increased in 1966 food fish catch of red hake in Georges Bank. The main fishery for red hake was conducted on southwest slopes of Georges Bank at 150-250 m. depth in January-February 1966. It was noted in USSR Research Report that 3- and 4-year olds were the most numerous in catches.

#### 10. Sea Scallops

Total catch of sea scallops in Subarea 5 in 1966 somewhat decreased. Canadian catch increased whereas U.S. catch went down as compared to 1965. Canada caught sea scallops mostly in the northeast part of Georges Bank. Besides, the fishery was carried out southward off the Convention area.

In 1966 the Canadian scientists studied distribution of sea scallops on Georges Bank during the cruise of a research vessel.

U. S. catches of sea scallops in 1966 were the lowest in the past five years. It is noted in U.S. Research Report that sea scallop fishery was expanded outside the Convention area.

#### 11. Large Pelagic Species

In Subarea 5 in 1966, 1998 tons of swordfish were caught. The bulk of the total catch was taken by Canada (1818 tons).

Canada continued in 1966 studies on size and age composition of swordfish catches as well as on sex and maturity. Attempts were made to continue tagging of swordfish.

USA carried out tagging of tuna, skipjack, and marlin in Subarea 5.

#### 12. Fishery for Industrial Purposes

In 1966 in Subarea 5, special industrial groundfish fishery was conducted by USA. In 1966 total industrial landings were lower by about 18% against 1965. U. S. Research Report points out that in 1966 the share of silver hake and red hake in industrial catches was altogether about 20% only against 60% in previous years. This may indicate some decrease in abundance of silver hake and red hake in Subarea 5.

In 1966 80% of U.S. industrial landings comprised 10-12 species. The share of each species was less than 7%.

### 13. Special Research

Apart from research work mentioned above, USSR carried out special environmental surveys in Subarea 5 in 1966. Throughout the year four standard surveys were completed on Georges Bank. Their results showed that cooling which had started in previous years continued in 1966.

USSR also conducted studies on plankton in the course of the year.

USA carried out in 1966 in Subarea 5 special research on currents in the Gulf of Maine - Georges Bank area with the help of near-bottom drifters.

Hydrographic surveys were carried out on the continental shelf between Nova Scotia and Long Island.

USA conducted also studies on plankton and benthos. Research work on groundfish carried out by USA showed influence of the haddock fishery on catch per effort. This problem, as it was pointed out in U.S. Research Report, has several aspects which need further study.

USA conducted some studies on lobsters in 1966.

FRG, Poland, and UK also carried out some research work in Subarea 5 in 1966.

SUBAREA 5

Metric Tons Round Fresh

SPECIES	CANADA		U.S.S.R.		U.S.A.		TOTAL SUBAREA 5	
	1965	1966	1965	1966	1965	1966	1965	1966
Herring	30	47	36,349	117,346	34,495	30,511	74,303	165,054
Silver Hake	-	-	281,431	121,373	41,811	40,718	323,242	162,091
Haddock	15,048	19,097	81,882	48,409	57,027	57,441	154,725	126,565
Cod	10,746	15,133	14,415	16,755	15,190	15,636	42,261	56,237
Flatfish	764	705	2,076	998	54,586	52,256	57,504	53,976
Redfish	68	420	968	939	6,986	7,208	8,057	8,573
Red Hake	29	16	58,546	82,889	13,493	3,681	72,068	86,586
Sea Scallop	36,803 *4,600	40,489	-	-	13,532 *1,509	8,283 * 901	50,335	48,772
Others	4,558	7,047	25,019	67,649	76,374	54,706	107,424	131,240
All Species	68,046	82,954	500,686	456,358	313,494	270,440	889,919	839,094

Fish used for  
Industrial purposes

28,337

\*Weight of Adductor Muscle Only