

International Commission for



the Northwest Atlantic Fisheries

Serial No. 4063
(D.c.9)

ICNAF Res.Doc. 76/XII/167

NINTH SPECIAL COMMISSION MEETING - DECEMBER 1976

A brief description of the Soviet herring, mackerel, silver hake and red hake fisheries in ICNAF Subarea 5 and Statistical Area 6

by

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The present document has been prepared under the requirements of the ICNAF Circular Letter 76/46 to provide data for the ICNAF Special Meeting scheduled for the late November 1976. The material of this paper combined with the similar data presented by other countries will contribute to the development of regulation measures for conservation of some species stocks, provided that relatively effective fisheries of other species is maintained.

Mackerel

The mackerel fishery is of highly pronounced seasonal character and is timed mainly to the first quarter of the year. The mackerel aggregation in this period may occur in the area from the Chesapeake Bay to Georges Bank depending on the thermal conditions of the water (fig.1). During the recent years mackerel was mainly concentrated in the eastern part of the area.

The depth range of mackerel occurrence is also rather wide (30-300 m). The Soviet fishery is chiefly carried out at the depths to 100 m due to a ban imposed on all types of fishing gear for the period from January 1 to April 15 in the so called "banana" zone.

The variations in length-age composition by depth is observed. The young fish is kept to shelf water with the depth to 80m. According to the fishing data by other countries the slopes are mostly occupied by large mackerel.

On April a large-scale eastward migration is commenced. On Georges Bank mackerel occurs in May-August then disappears, and

is seen again in November-December.

Mackerel is successfully fished both by bottom and midwater trawls and by purse seines. Due to imposition of a ban on the bottom fishing gear in the shelf area at the time being the fishing is mainly conducted by mid-water trawls.

Herring

Summarized distribution of herring by season and area is shown in fig. 2. Georges Bank is the major fishing area.

From March to June herring is concentrated in the southwest and south Georges Bank where favourable conditions for purse-seine fishery set in. In the years of high abundance the aggregation may be seen on the northwest slope as well. Larger herring prefer the depth range of 80-120 m in this period, while average and small sized specimens occur at the depths of 50-80 m.

In June herring begins to move to the east Bank slope. Stable concentrations are observed there in July and August. Spawning takes place in September-October in the northern part within the depth range from 40 to 60 m. Immature specimens at this time keep mainly to the west slopes. After spawning (first half of October) herring remains in the spawning ground for a while sinking to the depths of 80-120 m and then the westward and southwestward migration follows.

Earlier, before imposition of a ban, the spawning herring concentrations were successfully fished by bottom trawls. However, as shown by experience of foreign fleet operation, the midwater trawl utilization is no less effective.

Silver hake and red hake

Seasonal migration pattern and conditions contributing to formation of hake and red hake aggregations are highly similar. Insignificant variations are sometimes observed by depth. Therefore, no differentiation by species was made in the analysis of aggregation distribution (fig. 3).

In the first quarter of the year the concentrations are mainly seen over the shelf slopes in the vicinity of Hudson, Black and Witch Canyons. From March to May hake in much numbers occurs sometimes in the vicinity of Washington, Baltimore and Wilmington

Canyons.

On the shelf slopes hake keeps to the depths of 150-300 m. Red hake prefers the depth range of 100-120 m.

In the period from March to July both species are always observed on the south and southeast Georges Bank slopes within the depth range of 100-300 m, red hake during all this time keeping mainly to the depths of 150 m or less. After the end of massive spawning (July) the movement of both species to lesser depths and their concentration on the northwest Bank slope is observed. It mostly applies to hake, while red hake, probably, belongs to more settled species remaining in large quantities on the southeast slope where it can be fished sometimes right up to October.

In the southern part of the New England region both species migrate to shallow water beginning from April. Before the imposition of a ban on bottom trawls hake and red hake were fished at the depths of 40-70 m in the summer - fall period within the Long-Iceland-Nantucket region.

In November-December a back migration begins. In warm winters hake and red hake stay in the Hudson Canyon area at 50-100 m in great numbers.

After practically all the shelf was closed for bottom trawl fishery the midwater fishing has been gradually developed. As applied to hake, this fishery in some areas may possibly compensate the losses due to interruption of the bottom fishing. The case is different with red hake which practically inhabits pre-bottom layers and can be successfully fished by bottom trawls only.

At present the specialized hake and red hake fisheries are mainly carried out on the Georges Bank slopes at the depths of 100 m and more. The fishing period on the south and south-east slopes lasts for March-July, though red hake fishery sometimes covers two more months. Fishery conditions on the north-west slope are less stable. The fishery may last with intervals from June to December. The period from August to November is most favourable there.

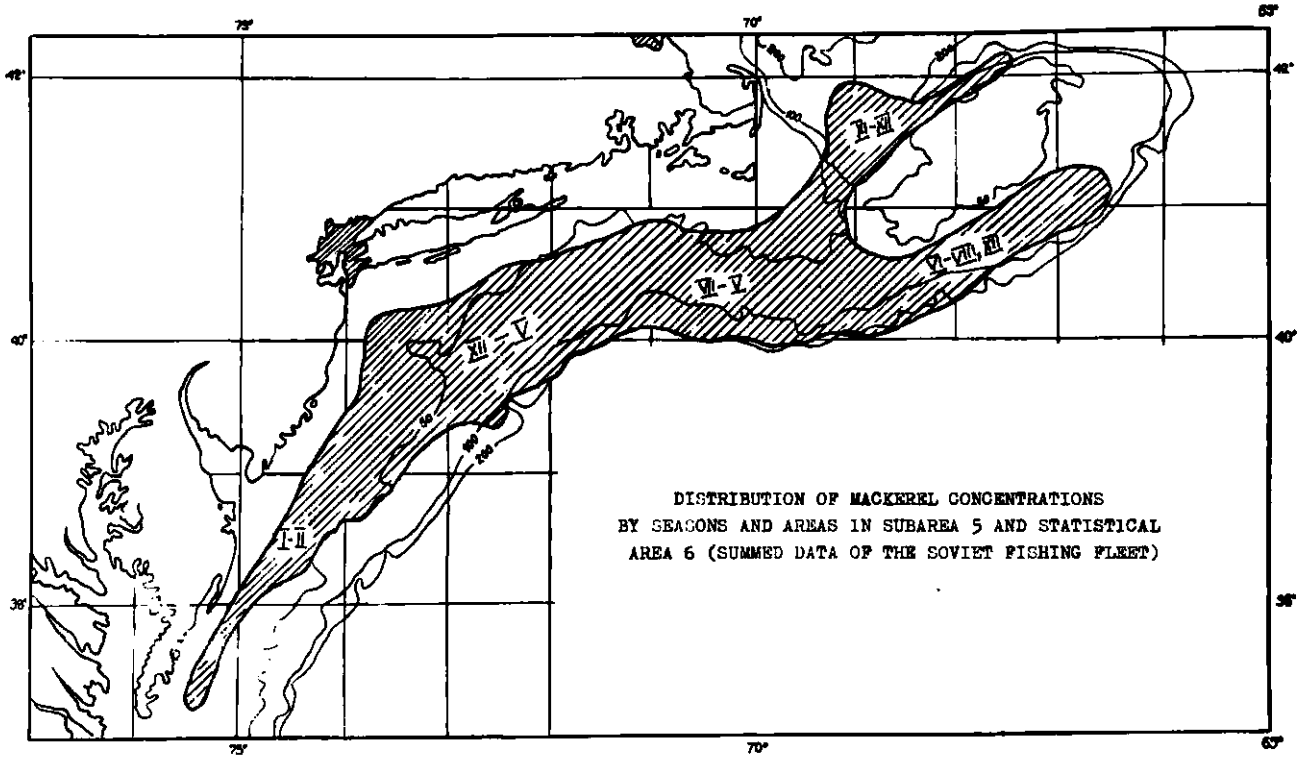


Fig. 1

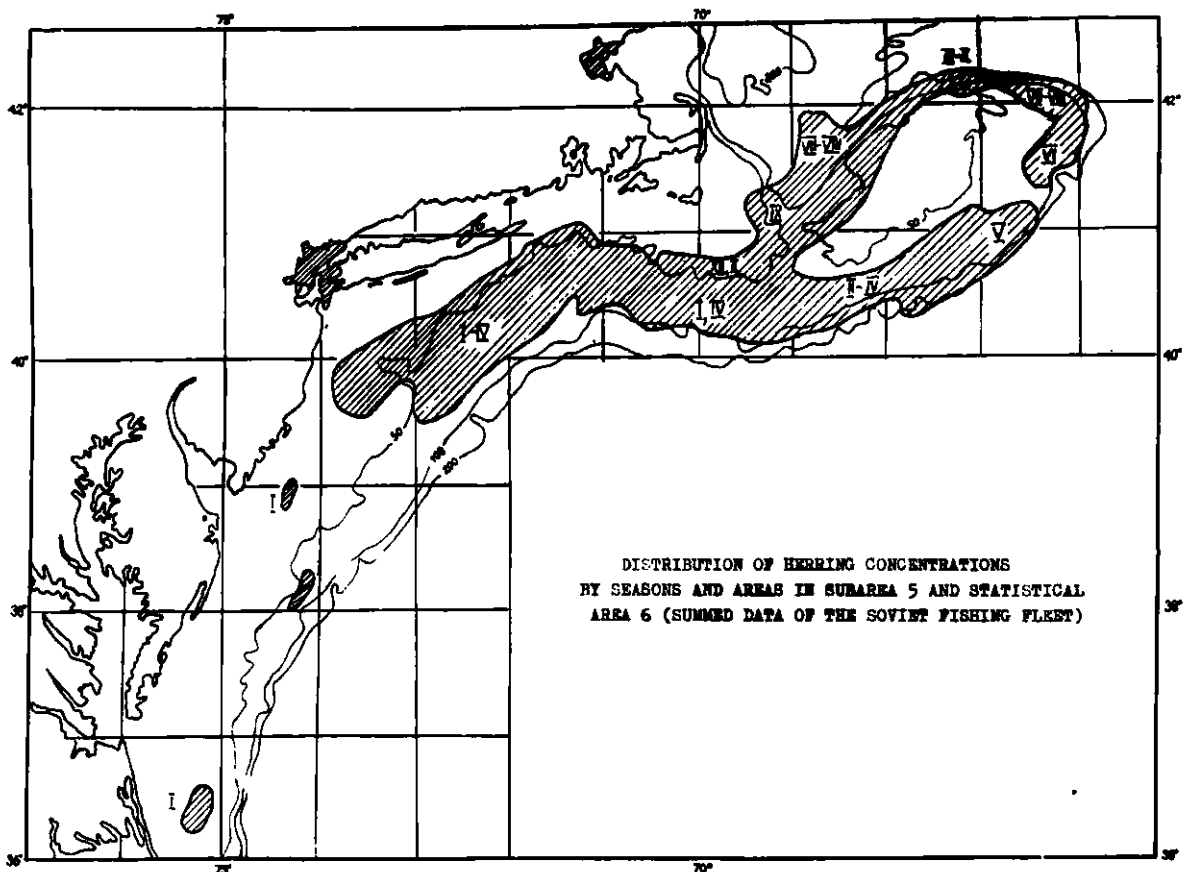


Fig. 2

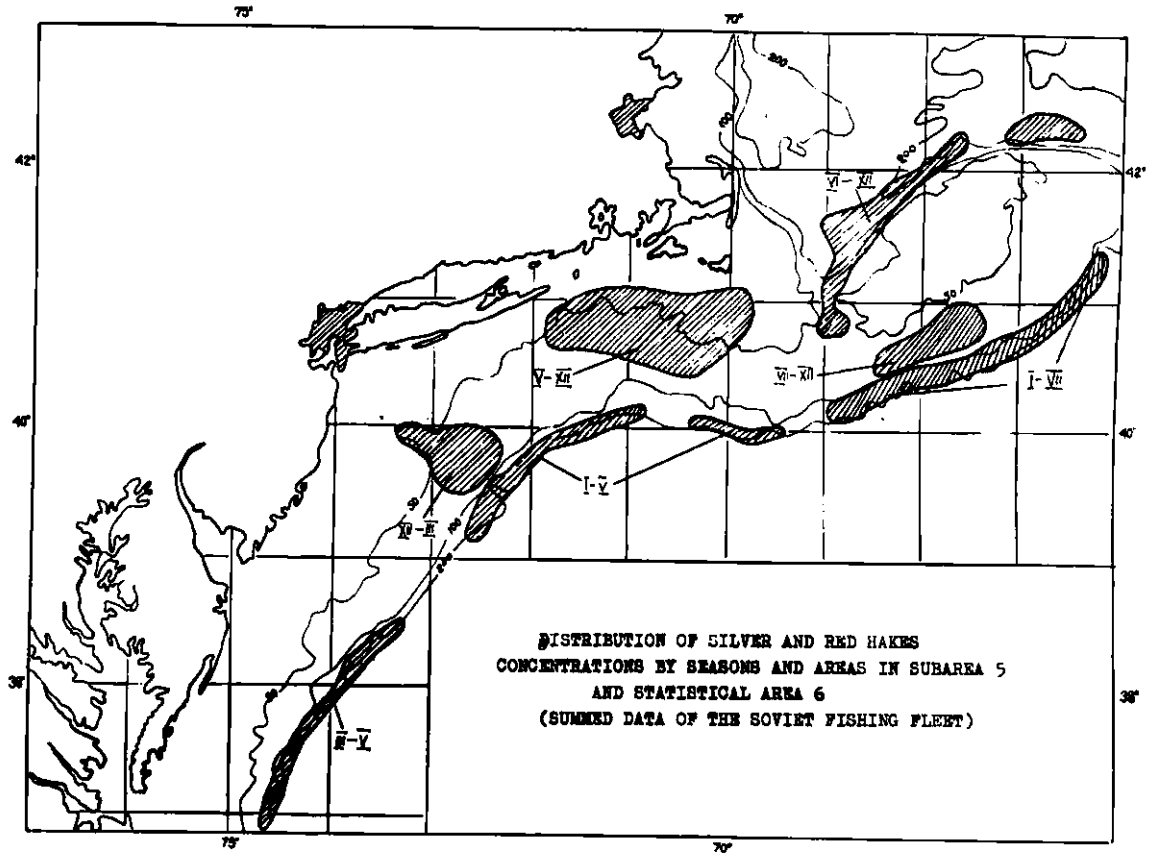


Fig. 3

