

Distribution and Age-Length Composition of Polar Cod
in the Barents Sea in 1972-1973

by

V.N.Shleinik



Digitalization sponsored
by Thünen-Institut

Investigations were conducted on board the research and scouting vessels "Akademik Knipovich", "Nikolai Maslov", "Tunets" and "Ural". Age-length composition of polar cod in the Barents Sea is shown in Figures 1 and 2.

In January-February 1972 spawning polar cod distributed in the eastern Barents Sea (Kolguyev, Cheshskaya Inlet, western coast of the Kanin Peninsula) and in the White Sea. Mass approaches of pre-spawning and spawning polar cod into the inlets and bays of the White Sea are usually observed in years with a decreased heat content of water masses in the south-eastern Barents Sea, and therefore they do not occur every year. Thus since 1931 to 1973 approaches of polar cod for spawning into the White Sea were registered 21 times.

First spawned specimens 18 to 26 cm in length at an age of 5-6 years were found in catches as early as November 1971; by January 1972 about 60% of polar cod spawned out, and in February spawning was completed.

In March-May 1972 concentrations of post-spawning fish were observed on the northern slope of the Goose Bank, in the northern part of the Novaya Zemlya Shallows and even in the Sukhoi Nos area. Polar cod migrated by small shoals in north-easterly direction following the ice edge. During most part of the day polar cod stayed in pelagic layers, moving down to the bottom only in the

morning, where they formed dense concentrations at a depth of 170-240 m. Large specimens 18-24 cm in length (72.2%) aged 5-6 years dominated in trawl catches.

In the feeding period 1972 (July-September) polar cod distributed far to the north-east (Novaya Zemlya Bank, Admiralty Peninsula) due to a considerable solar heating of water masses of the Barents Sea. Specimens 17-20 cm long (68.8%) of the 1967 and 1968 year classes made up the bulk of concentrations at that period.

In the autumn-winter period 1972 great concentrations of pre-spawning and spawning polar cod were observed in the Vaigach and Pechora areas, where fish migrated from the north and east.

In the Kolguyev Island area, where densest concentrations distributed in previous years, only small scattered shoals were registered. In catches taken with a bottom trawl mature specimens 18-24 cm long (89.8%) at an age of 3+ to 6+ years predominated.

In 1973 heat content of water masses in the Barents Sea was at the highest level for the last ten years that was responsible for later terms of spawning (in January only 26% of fish spawned out) and a more dispersed distribution of polar cod.

In March-May post-spawning polar cod did not form concentrations but distributed over a great area in the eastern Barents Sea, mainly in pelagic layers. In trawl catches specimens 16-20 cm long at an age of 4-6 complete years (79.2%) predominated.

In the fattening period 1973 (July-September) polar cod was intensively feeding on the Novaya Zemlya Bank and Admiralty Peninsula areas. Their stable concentrations appeared in the begin-

ning of August in the coastal zone of the Novaya Zemlya Island (north of 74°30'). Specimens 17-20 cm long of the 1968-1970 year classes made up the bulk of concentrations.

In 1973 pre-spawning migrations of polar cod began in September-October; in November main concentrations of fish shifted from the Vaigach area to the coastal part of the Kolguyev Island that was not observed in 1972.

Mature polar cod 17-22 cm in length at an age of 3+ to 6+ years made up the bulk of trawl catches in 1972 and 1973.

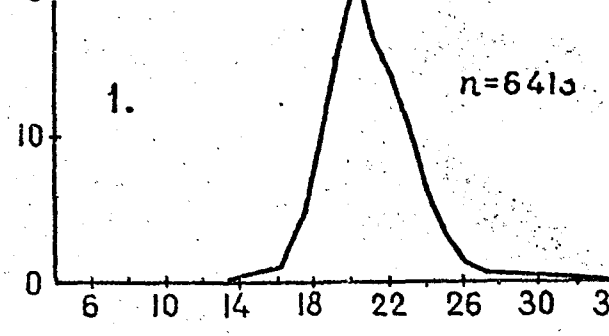
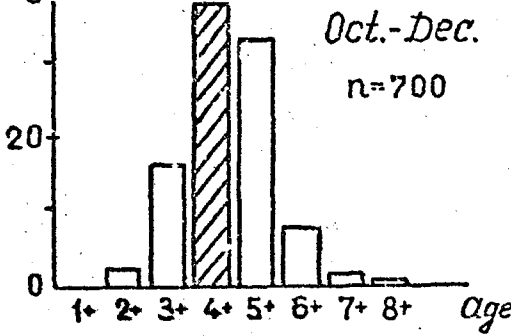
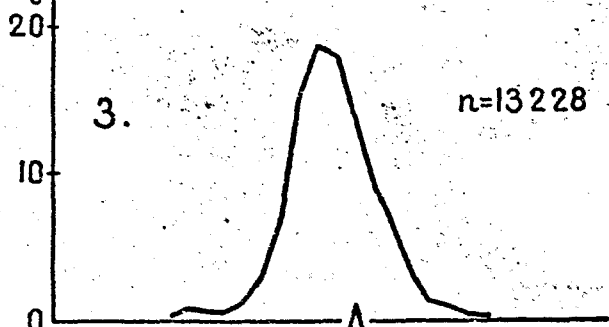
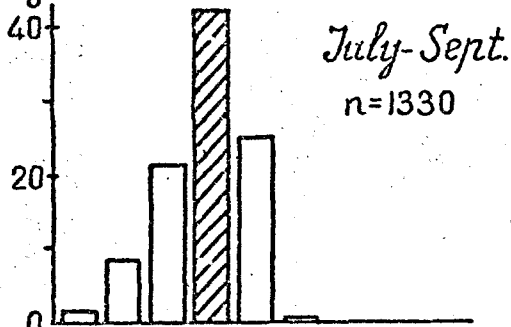
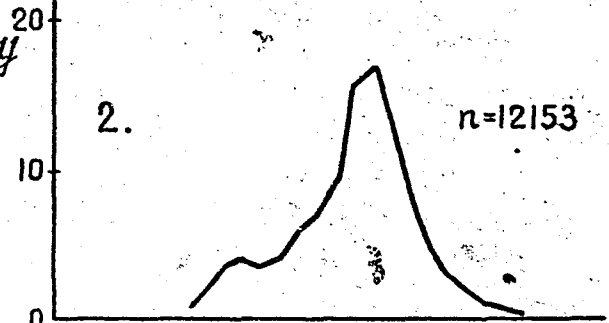
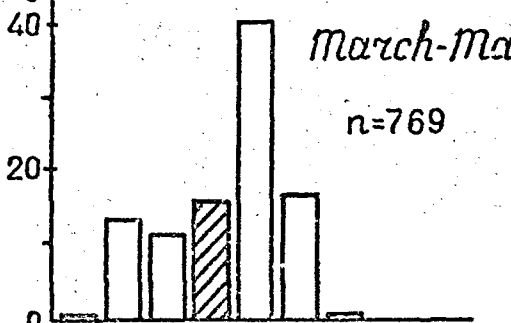
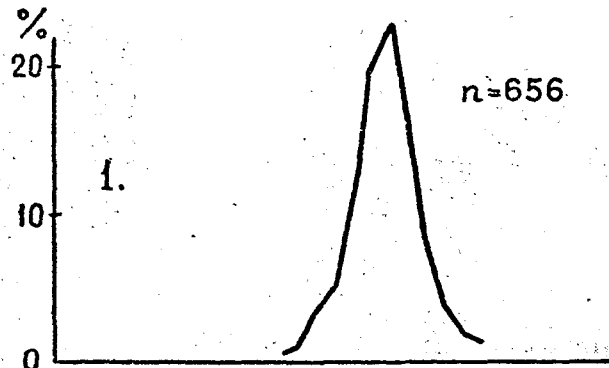
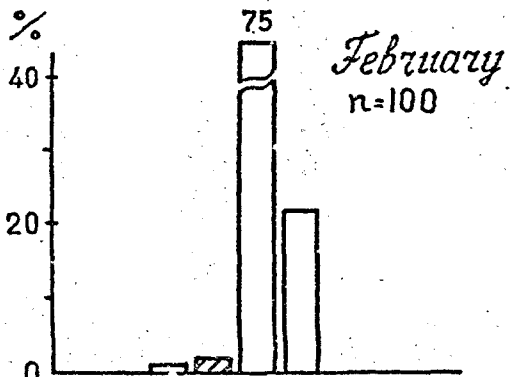
The Polar Research Institute of
Marine Fisheries and Oceanography
(PINRO), 6 Knipovich Street, Murmansk,
USSR.

Headings for Figures
to the paper by V.N.Shleinik "Distribution and Age-Length
Composition of Polar Cod in the Barents Sea in 1972-1973"

Fig.1. Age-length composition of polar cod in 1972.

1- eastern areas;2 - central areas;3 - north-eastern areas.

Fig.2. Age-length composition of polar cod in 1973.



Age

6 10 14 18 22 26 30 34 cm

