

The impact of variations in oceanographic conditions on distribution of redfish in the Irminger Sea and adjacent waters – the temperature is as major factor such cause according to analysis of climatic variability and SST Satellite Data

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In this study, for the first time, the data of satellite (“NOAA” and “Meteosat”) monitoring of the Irminger Sea and adjacent waters were used to estimate the impact of the Sea surface temperature (SST) on distribution and density of redfish concentrations. We made analytical calculations of the average values of SST for the reference zone of the Irminger Sea, integral acoustic values (SA) for the reference zone, and the average values of the SA only for those sites on the reference zone where redfish were found in the layer 0-500 m. The strong correlation between SST and average values of redfish density for real situations shows that the lower SST values correspond to the lower integral and average values of redfish density.

The area of the Irminger Sea and adjacent waters is characterized by considerable interannual and decadal climatic variability associated with the state of the NAO (the North Atlantic Oscillation) and phase of the AMO (the Atlantic Multidecadal Oscillation). This results in corresponding variations of the thermal parameters in the upper 500-m layer. The further investigations are needed to identify mechanisms of transfer of physical anomalies controlled by the NAO and AMO, from the sea surface into the intermediate and deep layers of water column. The climatic variability leads to permanent spatial redistribution of redfish concentrations.

The results obtained confirm that environmental processes, rather than fishery, have the greater impact on estimates of redfish distribution.

Key words: satellite monitoring of SST, climatic variability, the North Atlantic, the Irminger Sea, redfish distribution.