

EGU21-347

<https://doi.org/10.5194/egusphere-egu21-347>

EGU General Assembly 2021

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The influence of fluctuating SST by satellite data in the Barents and Norwegian seas during periods of early ontogenesis NEA cod in 1998-2016 on its strength.

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Abstract

The paper presents preliminary results of the analysis of the influence of fluctuating seasonal sea surface temperature in the Barents and Norwegian seas during early ontogenesis of the Northeast Atlantic (NEA) cod in the period 1998-2016 on its future strength of generations at age 3+ accordingly in 2001-2019. The temperature data for control zones of these seas (May-October) to 1998-2016 were obtained from the analysis of daily infrared information by the NOAA series of satellites and quasisynchronous temperature data "in situ" from ships, buoys and coastal stations. Data about the strength of NEA cod generations at age 3+ to 2001-2019 was taken from ICES reports. Real comparative analysis was conducted for following three-zones: 1 - Murman-Novaya Zemlya zone (69-76N 30-54E), 2 - North Cape zone (71-76N 17-30E), 3 - West-Spitsbergen zone (69-76N 11-17E). Direct comparative analysis of these indicators revealed very low relationship between them, so $R < 0,1$ for every zone and the whole period. That is why we tried to use the data about distribution of monthly solar activity during solar cycles 23-24 in considering years. The border between these solar cycles is 2008-2009. New comparative analysis of the same indicators separated by cycle 23 (1998-2008 solar activity) and by cycle 24 (2009-2016 solar activity) revealed rather opposite results. In first case (cycle 23) R was received for zone 1 +0,72, zone 2 +0,62 and for zone 3 +0,50, but for cycle 24 R was accordingly equal for zone 1 -0,60, zone 2 -0,66 zone 3

-0,38. So, the influence of seasonal temperature conditions in the Barents and Norwegian seas during 1998-2016 on the strength of new NEA cod generations at age 3+ to 2001-2019 changed its sign on border between 23 and 24 cycles of solar activity for considering years. Perhaps, obtained dependence between these indicators is fairly only for this period of time. For all that ought to note intensification of different character influence of solar activity these cycles towards east.

Keywords: satellite monitoring, sea surface temperature (SST), the North-East Atlantic (NEA) cod generations, solar activity, comparative analysis.