



The influence of seasonal temperature conditions on base of satellite data in the Barents and Norwegian seas during 1998-2014 on strength of NEA cod generations in 2001-2017.

George Vanyushin and Tatyana Bulatova

Russian Federal Research Institute of Fisheries and Oceanography, Russian Federation (ladimon@mail.ru)

The influence of seasonal temperature conditions on base of satellite data in the Barents and Norwegian seas during 1998-2014 on strength of NEA cod generations in 2001-2017.

G.P. Vanyushin and T.V. Bulatova

Russian Federal Research Institute of Fisheries and Oceanography (VNIRO), Moscow, Russia
e-mail: ladimon@mail.ru

Abstract

The paper presents the results of the analysis of the influence of seasonal sea surface temperature in the Barents and Norwegian seas during early ontogenesis of the Northeast Atlantic (NEA) cod in the period 1998-2014 on its future strength of generations at age 3+ accordingly in 2001-2017. The temperature data for these areas (May-October) to 1998-2014 were obtained from the analysis of daily infrared information by the NOAA series of satellites. Data about the strength of NEA cod generations at age 3+ to 2001-2017 was taken from ICES reports. Direct comparative analysis of these indicators revealed very low relationship between them, so $R=0,07$. 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 (2009-2014 solar activity) revealed rather unexpected results. In first case R received equal $+0,55$, but in second case R was equal $-0,68$. So, the influence of seasonal temperature conditions in the Barents and Norwegian seas during 1998-2014 on the strength of new NEA cod generations at age 3+ to 2001-2017 was direct opposite and well correspond by considerable difference of indexes of solar activity in 23 and 24 cycles for considering years. Perhaps, obtained dependence between these indicators is valid only for this period of time, as in fact a number of reasons (climatic, biological and anthropogenic) could be able to influence on strength of NEA cod generations at the age of 3+.

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