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Anthropogenic transformation (1962 - 2007) of alkali metal ion runoff in the Mudyuga river and the Yarenga river of Arkhangelsk Oblast*Dinara KHAYRULLINA (Russian Federation)*

The paper deals with estimation of anthropogenic component of active water migrants (alkali metal ions) runoff of rivers located at different distances from the White Sea (the Mudyuga River - Patrakeevskaya village, the Yarenga River - Tokhta village) for the period from 1962 to 2007. The method of research is based on assessment of anthropogenic transformation of the ionic runoff. It consists of several approaches used by V.A. Belonogov and M.P. Maksimova. Statistically, the ionic runoff of the Mudyuga has the largest anthropogenic transformation of 62%. Conversely, this value is 44% on the Yarenga. This difference may be due to several reasons: the Mudyuga has the small proportion of groundwater flow (9.5%) in the total annual runoff. For this reason, river runoff exposed to external factors more. Therefore the pollutants can enter from industrial emissions, in particular from the Arkhangelsk-Severodvinsk urban agglomeration with atmospheric precipitation. In time (seasonal) aspect the maximum values of anthropogenic transformation of ionic runoff are observed during the spring flood on the Mudyuga (70%). More specifically, there is heating season in winter and overflow of karst water from other river basins. However, the maximum values are marked on the Yarenga during baseflow period in the summer-autumn (83%). Primarily, there is northern wind from marine waters in this period. Finally, the Mudyuga has less anthropogenic transformation between seasons than the Yarenga because the Mudyuga basin swamped more (19.6%), than the Yarenga basin (2%).