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Ice Regime of Rivers Flowing into Lake Sevan, 2020/21-2024/25

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ABSTRACT

This paper studied, discussed, and highlighted the features of the ice regime of rivers flowing into Lake Sevan, based on the meteorological and climatic conditions of the period and using data from actual hydrometeorological observations conducted between 2019/20 and 2023/24, as well as fieldwork carried out by the authors. Of the 12 rivers flowing into Lake Sevan, only the Dzknaget, Drakhtik, Pambak, Vardenis, and Bakhtak rivers exhibited ice phenomena during the 2019/20–2023/24 period. During this time, between 21 and 106 days of ice phenomena were recorded at the observed river points. A greater number of ice phenomena were observed in the winters of 2020/21 and 2021/22, while fewer were recorded in 2019/20 and 2023/24. Notably, the maximum number of ice days (106) was recorded in 2020/21 on the Dzknaget River, while the minimum (21–22 days) occurred in 2023/24 on the Drakhtik and Pambak rivers. On average, the number of days with ice phenomena was as follows: 69 days on the Dzknaget River at Dzoragyugh, 60 days on the Drakhtik River at Drakhtik, 57 days on the Pambak River at Pambak, 78 days on the Vardenis River at Vardenik, 68 days on the Bakhtak River at Tsakkar. The Dzknaget and Drakhtik rivers stood out for having the highest number of days with ice cover. In approximately 45–95% of cases with ice phenomena, ice cover was observed in these rivers – ranging from 31 to 62 days (average 49) on the Dzknaget and from 19 to 81 days (average 53) on the Drakhtik. Studies conducted during the observation period indicate that ice phenomena on these five rivers generally begin in the first decade of December and persist until the first or second decade of March. It was also found that, under the influence of global climate change, the onset of ice phenomena is shifting to later dates, while the end dates are occurring earlier, leading to a shortening of both the ice season and the freezing duration.

Keywords: ice phenomenon, freezing, de-icing, air temperature, precipitation, Lake Sevan

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