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Minimal River Runoff of the Steppe Zone of Ukraine under Changing Climate

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The formation of dry weather flow in the Steppe zone going on under the influence of a number of climatic factors that determine the excess of evaporation in conjunction with the infiltration in the average over a long period over the amount of precipitation. Initial materials for the characterization of the minimum runoff were used data from 67 hydrological posts with a stable freeze-up, and separately presented minimum discharges for rivers with unstable freeze-up at 16 hydrological stations. Investigation of the factor conditionality of the low runoff in the Steppe zone of Ukraine showed that the main factors for both winter and summer low flow are the geographical position of the catchments and indirect indicators of the degree of erosion of the rivers - the average height of the catchments, their area and forestation. A distinctive feature of small rivers on the studied area is the episodic or annual termination of the runoff and, as a result, it's drying (in the summer) or complete freeze-up (in winter). Analysis of long-term time series for the largest observation period (South Bug - Oleksandrivka, 1914-2015) showed that there is a slight tendency to increase for the winter low flow, and for the summer-autumn low flow - a clearly expressed positive trend with a significant correlation coefficient. A significant increase in the minimum runoff is observed after the 1980s, confirming the findings of the leading Ukrainian hydrologists, regarding the impact of climate change on the water regime of the rivers during this period.