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Low streamflow frequency analysis and its application in environmental planning

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The decrease in the amount of the river yield causes the increase in the contaminant concentration; therefore, resulting a great number of damages to the natural world. On the other side, in some regions where the domestic, agricultural, and industrial wastewater enter the rivers, the quality of the water in low flow periods is extremely down. Consequently, the surface water users in downstream are faced with problems. In this regard, researches in low flow frequency analysis will be useful in environmental planning. The main objective of this research is to investigate the commonly used statistical distributions in low streamflow frequency analysis, and to select the best distribution via Probability Plot Correlation Coefficient. The seven-day low streamflow series of thirteen rivers situated in Talesh watershed in northern Iran have been used. The results show that among the the log-normal, 2 and 3- parameter Weibull, Pearson III and log-Pearson III; Pearson III has been selected as the best one for seven-day low flow.