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Trends in flow intermittence for rivers in the Euro-Mediterranean region

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Intermittent rivers and ephemeral streams (IRES) are dynamic ecosystems that can reflect climatic changes and human activities. Studies on flow intermittence are therefore important from the point of view of water and ecosystem management.

The Euro-Mediterranean region includes a large number of intermittent rivers in different regions with different patterns of zero-flow events. We studied the characteristics of intermittence in over three hundred rivers from this region from the database collected within the COST Action SMIRES. Metrics of the duration of the longest annual dry spell, of the annual number of zero-flow days, of the mean annual date of zero-flow days and of the day of onset of zero-flows were assessed using statistical methods. Long-term trends in the metrics of duration were revealed in various parts of the study area. Associations between characteristics of intermittence and climatic factors such as precipitation and large-scale climatic drivers were assessed. Several clusters with similar patterns of intermittence were identified.

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