

Accepted Manuscript

Research papers

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PII: S0022-1694(18)30597-3
DOI: <https://doi.org/10.1016/j.jhydrol.2018.08.001>
Reference: HYDROL 23015

To appear in: *Journal of Hydrology*

Received Date: 31 May 2018
Revised Date: 30 July 2018
Accepted Date: 1 August 2018

Please cite this article as: Shahgedanova, M., Afzal, M., Severskiy, I., Usmanova, Z., Saidaliyeva, Z., Kapitsa, V., Kasatkin, N., Dolgikh, S., Changes in the mountain river discharge in the northern Tien Shan since the mid-20th Century: Results from the analysis of a homogeneous daily streamflow data set from seven catchments, *Journal of Hydrology* (2018), doi: <https://doi.org/10.1016/j.jhydrol.2018.08.001>

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Changes in the mountain river discharge in the northern Tien Shan since the mid-20th Century: Results from the analysis of a homogeneous daily streamflow data set from seven catchments

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Abstract

This study is an assessment of the changes in seasonal and monthly flow in seven catchments draining the northern Tien Shan Mountains in Central Asia over a period from the 1950s to the present day. The purpose is to provide a first assessment of the flow response to climate change in regionally important catchments given their contribution to the water resource. All the catchments have a natural flow regime, and are therefore sensitive to climate change, but differ in area, elevation and glacial extent. Trends in flow were characterised using the Mann-Kendall test for standard meteorological seasons and individual months for mean flow, five flow quantiles and peak-over-threshold series for the period 1974-2013 at all sites and from the 1950s where data were available. The results were related to trends in seasonal temperature and precipitation from the

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