

Water cycle changes during the past 50 years over the Tibetan Plateau: review and synthesis

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Abstract The evidence for water cycle changes during the past 50 years on the Tibetan Plateau (TP) is synthesised by analyses of the meteorological observations and reanalysis data, and review of relevant studies. Robust warming has been evident, and decreasing wind speed has led to a weak atmospheric forcing. Snow depth decreased and the active layer depth increased in the permafrost region. In response to these changes, evapotranspiration slightly increased due to a wetter ground surface. Inhomogeneous changes in precipitation result in uncertainties regarding trends in river discharge over the regions and basins.

Key words water cycle; Tibetan Plateau; climate change