

Trends in magnitude, frequency and timing of floods in Spain

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An analysis of trends in magnitude, frequency and timing of floods was conducted at a national scale in Spain in 60 gauging stations for the periods 1942–2009, 1949–2009 and 1959–2009. A general decreasing trend in annual maximum series was found in Spain in the three periods, with more notable evidence in the period 1959–2009 than 1942–2009. Autumn floods showed a decreasing trend in eastern Spain, mainly in the Ebro and Júcar catchments. A general decreasing pattern was found in winter, spring and summer.

Detected trends in flood series were linked to increasing trends in evapotranspiration that increase the loss of water in soils and reduce moisture content in the catchment before the occurrence of flood events. Most flood trends could not be explained by trends in precipitation. Consequently, decreasing trends in flood series seems to be related to increasing temperatures and decreasing relative humidity in the last decades.

Source: Mediero et al. 2014. Journal of Hydrology 517: 1072–1088

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