



## **Rain-season trends in precipitation and its' effect in different climate regions of China during 1961-2008**

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Using high-quality precipitation data from 524 stations, the trends of a set of precipitation variables during the main rain season (May to September) were analyzed from 1961 to 2008 for different climate regions in China. Averaged over China, the results indicated an increase in total precipitation, where days with low precipitation were decreasing while precipitation intensity increased. However, different characteristics were displayed in different regions of China. In most temperate monsoon regions (north-eastern China), total precipitation and precipitation days showed decreasing trends, while positive tendencies in precipitation intensity were, noted for most stations. It is suggested that the decrease in rain-season precipitation is mainly related to fewer rain days and a change towards drier conditions in north-eastern China, and as a result, the available water resources have been negatively affected in the temperate monsoon regions. In most subtropical and tropical monsoon climate regions (south-eastern China), total precipitation and precipitation days (11-50mm, >50 mm) showed slightly positive trends. However, precipitation days ( $\leq 10$ mm) decreased in these regions. Changes towards wetter conditions in this area, together with more frequent heavy rainfall events causing floods, have a severe impact on the peoples' lives and socio-economic development. In general, the rain-season precipitation, precipitation days as well as rain-season precipitation intensity all had increased in the temperate continental and plateau/mountain regions of western China. This increase in rain-season precipitation has been favourable to pasture growth.

Key words: Precipitation; trend analysis; rain season, China