

Research on evolution of Manas Lakes in Xinjiang over last 50 years

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The imageries of Landsat MSS, TM and ETM, thematic maps, hydrological and meteorological data from gauge stations are used to investigate the status and evolution process of Manas Lakes, to evaluate its effect to surrounding eco-environment in arid China. Over last 50 years, Manas Lakes shrieked and dried up gradually, surrounding marsh vegetation died, fixed and half-fixed sand reactivate, which intimidate oasis safety and sustainable development. One of main causes of drying up of Manas Lakes was over-exploitation in pediment plain, almost all river water was inducted into artificial lakes, oasis area increased from 156.385km² in 1949 to 5,042.440km² in 2001. Another cause is climate change, since 1950, especially 1990s', the temperature and rainfall of North Xinjiang has an obvious increase trend. This study shows that drying up of Manas Lake has important effect to near-distance marsh vegetation, while less effect to far-distance desert environment.