

**ANALYSIS OF CONNECTIONS BETWEEN SOIL MOISTURE,
GROUNDWATER LEVEL AND VEGETATION VITALITY ALONG TWO
TRANSECTS AT THE LOWER REACHES OF THE TARIM RIVER,
NORTHWEST CHINA**

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SUMMARY

The so-called 'tugay'-vegetation along the Tarim River, that crosses Taklamakan desert in northwest China is a local biodiversity hotspot and delivers various ecosystem services on local, regional and global scale. It consists of *Populus euphratica*, *Tamarix spec.* and few other species. The ecosystem is well adapted to local conditions of high salinity and a hyper-arid climate. Due to unsustainable use of the scarce water it suffered severe damage in the past century, especially in the lower reaches. Efforts are made to cope with the problem of vegetation degradation.

The Tarim River is the only source of water for vegetation depending on groundwater and soil moisture. This study examines the vegetation structure, vegetation condition, soil moisture conditions, soil characteristics and depth of the groundwater table along two transects near the settlement of Argan at the lower reaches of the river.

Key words: soil moisture, *Populus euphratica*, tree vitality, degradation, Tarim River