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Riparian Ecosystem Restoration and Management: Challenges and Opportunities for Application of Geo-Information. A Case Study in Tarim River (Northwestern China)

by

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SUMMARY. — The Tarim River is the longest continental river of the Xinjiang Uyghur Autonomous Region in the People's Republic of China. The riparian ecosystem of the well-known "Green Corridor" located alongside the Lower Tarim River (LTR) has been ebbed constantly since the 1950s as a result of both developing agricultural cropland in the upper, middle and some parts of lower reaches of the river and the construction of the Dashkol reservoir in 1972. In 2000, the "Green Corridor" riparian ecosystem was temporally re-linked with its original water source by initiating an Emergency Ecological Water Transfusion (EEWT) project. As a result, approximately 8.43×10^9 (8.43 billion) m^3 of water has been transported to the LTR for twenty-one times over the last twenty years (reported on November 15, 2020). However, questions arise on the real impact of this massive water input on the riparian ecosystem restoration of the LTR. This report will introduce how geo-information science and technology have played a significant role to evaluate the ecological effects of the water transfer project using both qualitative and quantitative measures.

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