

Impacts of the South - North Water Diversion on Nansi Lake, China

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An ambitious engineering project, the South – North water transfer, is underway in China to provide the pumping and conveyance infrastructure for moving massive volumes of water from the Yangtze River to drought-prone areas in the north of the county. Nansi Lake, a long (125 km), narrow water body (1270 km² total area), will serve as a key conveyance segment for the eastern route of the water transfer project. Water quality in Nansi Lake is poor, due to internal (aquaculture) pollutant inputs and external (untreated domestic wastewater, industrial wastewaters, and agricultural and urban runoff) loadings from the 31,000 km² watershed. The water transfer project is serving as a catalyst for eliminating and treating industrial and municipal discharges in the Nansi Lake watershed, as well as the implementation of water reuse schemes. Both conventional (WWTPs) and non-conventional water treatment technologies (constructed wetlands) are being deployed for reducing point source and non-point source pollutant loads. Spatial water quality trends demonstrate that pollutant loadings from aquaculture operations in the lake are substantial, however, and these are proving difficult to mitigate. Additionally, the water transfer itself may create problems, since it will change the dry season lake residence time, direction of flow, and water depths, potentially creating adverse impacts to biota as well as the ~70,000 humans (fisherman, fish farmers) who live in the lake.