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Estimation of Water Environmental Capacity Considering Hydraulic Project Operation in the Xiangyang Reach of the Han River, Central China

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ABSTRACT

Using the Xiangyang Reach of the Han River as an example, this paper evaluates the changes of water environmental capacity after the implementation of Cuijiaying Hydro-junction project. The allowable pollutant loads entering the Xiangyang Reach were estimated using two-dimensional steady state water quality model with different data sets. The water environmental capacity has declined in the reservoir area of the Cuijiaying Hydro-junction project during the low-flow period; it is appearing to increase slightly in the upper and lower stream of this reservoir. However, the state of flow may turn into the state of reservoirs flow in the reservoir area, and the changes of hydrological regime may cause the water flow and the nutrient contents suitable for the occurrence of ecological environment problems.

KEYWORDS

Han River; Water Environmental Capacity; Cascade Development; Pollutant Loading

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