Application for technology of ecological interception pre-reservoir in the confluence of river and lake

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**Abstract:** Phosphorus pollutant control is the key to solve the problem of lake eutrophication. In general, watershed pollutants enter into lake mostly from the inflowing rivers. The confluence of river and lake is a sensitive area of water ecology, which is affected by the alternating strong and weak interaction of river and lake factors. A new pre-reservoir system is constructed with the functions of diversion collection, storage and buffering, interception and settlement, enhanced purification and ecological stability in the confluence of river and lake, in order to reduce the pollution load into the lake, while the traditional pre-reservoir structure is optimized and developed. It solves the problems of water distribution, purification efficiency, and stable construction of the pre-reservoir in the confluence of river and lake of the plain river network area. It realizes comprehensive integration of ecological interception, structure optimization, and plant community configuration. It applied in a demonstration project in Gehu Lake, Changzhou City, Taihu Lake Basin, and the reduction rate of total suspended solids and total phosphorus can respectively reach 50% and 20%. It provides example and technical support for the water pollution control and ecological restoration of Taihu Lake and other river basins, and has been promoted and applied in the Jiaogang Lake Basin, the Shiwuli River around Chaohu Lake and other places.

**Keywords:** Confluence; Phosphorus; Pre-reservoir; Taihu Lake Basin