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### New recognitions to genesis and exploitation of the Xuxi River in Jiangsu Province

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Along the north bank of the Xuxi River, the sand-intercalated-muddy gravel layer from -3.7--5.8 m in the borehole 7508 at the East Dam and the middle, coarse and fine sand layer with a thickness of 4.5 m at the lower part of the borehole 8179 between the East Dam and the West Dam indicate that a large natural river was here before the Kingdom of Wu excavated the Xuxi Canal. The existence of Neolithic sites such as Xuecheng, Chaoduntou and Xiajiadang along the Xuxi River and the silt layer with dozens of meters archived under the earth's surface within a range of 1 km along both banks are the even more important evidences for the existence of the ancient Zhongjiang River. The floodgate of the East Dam nowadays makes against the communication between the Shuiyangjiang River and the Taihu Lake. The authors suggest the canal between Wuhu and Taihu Lake should be excavated as soon as possible, namely, the navigation channel from Wuhu through Guchenghu Lake, Xuxi River, East Dam, Liyang, Yixing to Taihu Lake should be further widened and the deposits composed of slope wash on the watershed between Shuiyangjiang River and Taihu Lake should be dredged away. Then, the channel journey can be shortened, the boats in ship transportation on the Yangtze River can be shunted to ensure the security of shipping, the resources of sand and gravel in the old river channel can be exploited and the dike of the Yangtze River can be reinforced. So, the problems of irrigation, flood diversion, pollution abatement and drainage of flooded fields in the lower Yangtze River will be resolved. Then, the above methods can impel the sustainable development of the Xuxi River and Taihu Lake area.

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**关键词:** Jiangsu province; genesis of the Xuxi River; borehole data; exploitation of riverway; canal from Wuhu to Taihu Lake doi: 10.1360/gso50311