

Assessment of water environment health using fuzzy evaluation theory and AHP method in Xixi Wetland, Hangzhou, China

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Abstract: Water environment health is the foundation of the wetland ecosystem health, effecting the sustainable development and social function services of wetlands. In this paper, a framework of combination fuzzy evaluation theory and AHP method was developed to realize water environment health assessment of the Xixi National Wetland Park in Hangzhou, China. The indicators including water environment quality indicators, water ecological character indicators and water habitat indicators were organized to assess the wetland water environment in various seasons and locations from 2008 to 2013. Results indicated the whole wetland water environment was in the state of sub-health in 2008 and 2009, improving from 2010, turning into the state of health. The Xixi wetland water environment in summer was better than winter. The current study may provide useful information for valid wetland environment restoration and management.

Keywords: water environment health assessment, fuzzy evaluation theory, AHP method, the Xixi Wetland