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The evolution law study of wetland landscape pattern in the multi-sediment reservoir area – a case study of the Sanmenxia reservoir

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The Yellow River is the most typical sediment-laden river in China and even in the world. The Sanmenxia reservoir area is a fragile ecosystem formed under special water and sand conditions. Under the changes of external hydrological conditions, physical and chemical indicators and other indicators, structure and functional changes of the system would likely happen. The Sanmenxia reservoir area has different types of wetlands (river wetlands, marshes, ponds, lakes, etc.) and is one of the international protection migratory birds habitat in the central and western China. Based on the remote sensing images of the region in 1980, 1990, 2000 and 2010, this study uses remote sensing interpretation to analyze the dynamic change law of river channel form in the reservoir area, and analyzes four key regions. The study results show that different types of wetlands are in a relatively violent change process in this area and the main driving factor is water level fluctuation. The main way of the decrease of wetland area is water body changed to river beach to cultivated field. That indicated human activities is the main influencing factor for wetland area reduction.