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Regional agricultural landscape pattern changes along the Yellow River in Henan Province from 1987 to 2002

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Agricultural landscape along the riparian zones is designated as important landscape components for partly controlling water quality, biodiversity, as well as for their aesthetic role in landscapes. Therefore, the change of agricultural landscape along the riparian zones is at the top of the agenda for many policy makers and landscape planners. As a basis for conservation management, sufficient information about landscape structure should be provided. In the present study, we reconstructed the former landscape structure and elucidated the changes in landscape patterns during a period of about 15 years. Two sets of maps were used: a landsat-5 TM image (1987) and landsat-7 ETM image (2002). The frequency index, landscape diversity index and landscape fragmentation index were calculated for analyses. The results showed that: (1) the areas of the irrigated land, river, forest and beach landscape classes presented a decreasing trend while the areas of landscape classes of pool, paddy fields, dry land and construction land increased. (2) Disturbed by human activity, landscape diversity index increased but landscape fragmentation index decreased. In short, Human activities have had important influences on agricultural landscape of the riparian zones along the Yellow River in Henan Province.

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关键词: agricultural landscape; landscape pattern change; the Yellow River; Henan Province doi: 10.1360/gs050404