

Analysis of curved river habitat geomorphological characteristics and habitat suitability

Abstract: Curved river has the unique geomorphological characteristics, and provides diverse habitats for instream and riparian living organisms as well. Human activities caused stress on river habitat which makes river restoration be necessary by taking effective methods. In order to solve the problem of how to restore the river morphology, Chishui River is selected as the research area and fish is selected as the biological indicator in this study. Geomorphological index of curved river is defined based on the river ecosystem integrity. Through field investigation and numerical simulation, quantitative method of the geomorphological index is researched. Then the geomorphological characteristics of certain rare and endemic fishes in Chishui River are confirmed according to their life habits. The response of fish habitat suitability to geomorphological characteristics alteration is researched by hydrodynamic model. The research of curved river habitat characteristics analysis and its ecological responses will provide direct theoretical supports for mitigation the ecological effects of hydraulic and hydroelectric engineering development in southwest area.