

The structuring role of artificial structure on fish assemblages in a dammed river of the Pearl River in China



To address the fish use patterns of artificial structures mimicking floating macrophytes deployed in a impounded tributary of the Pearl River, China, field experiments were performed from December 2014 to June 2016 using multi-mesh gillnet. The fish assemblages using artificial structures differ in terms of species richness, abundance, body size, diversity indices, and ecological traits from fish assemblages on natural barren habitats of this river. Overall, fish abundance, species richness, Shannon diversity index, and functional richness were higher at the artificial structures than at the control sites, while fish length and functional evenness was greater at the control sites in comparison to artificial structures. The introduction of artificial structures did not result in statistically significant effects on fish biomass as artificial structures attracted more individuals with smaller size. Seasonal changes of chlorophyll-a and transparency may affect the efficiency of artificial structure in harboring fishes. This study revealed that artificial structures, as synthesized habitats, are effective in acting as a "fish attractor" and an alternative tool to provide new habitats for

smaller individuals in a dammed river like the Youjiang River which is a structure-less ecosystem.

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