

论文

三峡水库初期蓄水对消落带植被及物种多样性的影响

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摘要:

通过对173 m蓄水后三峡水库消落带内植物群落的调查,运用CCA法对消落带植物群落进行排序,研究了消落带植物群落特征和物种多样性格局,分析了消落带植被的变化及其环境解释。结果表明:三峡库区消落带共记录58科175种植物。狗尾草、马唐、小蓬草、狼把草、稗、酸模叶蓼、苍耳、双穗雀稗、狗牙根等为优势种。一年生植物为消落带优势生活型。共记录54个群落类型,其中灌丛群落5个,草本植物群落49个。CCA排序表明,三峡水库消落带植物主要分布在坡度平缓、底质较细、高程较高的消落带上部区域。在消落带内,物种多样性和一年生植物比例随高程上升而增加。消落带植物组成特征和物种多样性格局与水淹干扰强度在空间上的变化一致。长期的冬季水淹、剧烈的水位变动以及退水季节的高温伏旱等环境因素是影响消落带植被组成的重要因素。

关键词: 三峡水库 消落带 植物群落 生物多样性 水文情势 典范对应分析(CCA)

Effect of Initial Impoundment on the Vegetation and Species Diversity in Water-level Fluctuation Zone of the Three Gorges Reservoir

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Abstract:

Based on the vegetation survey of 14 sampling sites in water-level fluctuation zone of the Three Gorges Reservoir, the vegetation characteristic and species diversity after flooding to 173 m were reported. Canonical correspondence analysis (CCA) was used to explore the environmental interpretation of vegetation variation. The result showed that there were 175 species of 58 families in the water-level fluctuation zone. *Setaria viridis*, *Conyza Canadensis*, *Bidens tripartita*, *Paspalum thunbergii*, *Polygonum lapathifolium*, *Xanthium sibiricum*, *Paspalum paspaloides*, *Cynodon dactylon* and *Digitaria* spp. were the dominant vascular plants. Therophytes were the most abundant life form with 84 species. There were 54 vegetation community types, including 5 shrub and 49 herb associations. The results of CCA reflected that vegetation predominantly disturbed in the upper area with low slope and fine substratum. Species diversity and annual taxa increased as elevation rose which reflected the influence of submerged gradient. Long-term winter flooding, enormous water magnitude and summer drought were the important reasons for the vegetation composition.

Keywords: Three Gorges Reservoir water-level fluctuation zone plant community biodiversity hydrographic regime canonical correspondence analysis (CCA)

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