

研究论文

长江三峡库区蝶类群落的物种多样性

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摘要 报道了多样性指数、丰富度和均匀度。各小生境物种丰富度的变化在0~28之间, 其下限值的数理分布范围主要在0与5之间, 而上限值的分布主要在9、11和12。物种多样性指数的变化范围是: 样本间0~4.9285, 小生境间0~2.1143, 生境类型间0~1.7091和植被型0.9740~1.3143; 而物种多样性指数最高的样本(4.9285)在1500~1500m针阔混交林的小生境中, 物种多样性指数最高的小生境(2.1143)是1000~1500m阔叶林, 物种多样性指数最高的生境类型是阔叶林灌丛(1.4373), 物种多样性指数最高的植被型是灌丛(1.3143); 而灌丛各生境类型的物种多样性指数最高, 从1.2773到1.4373; 草地居第二位1.0588~1.2402, 森林最低, 0.8088~0.9618(仅分布在一个海拔梯度的生境类型除外); 就整体而言, 物种多样性指数居前5位的生境类型都是灌丛。可见, 三峡库区灌丛是最适宜于蝴蝶繁衍的植被型; 完全成片的森林与纯粹的农田均不太适合蝴蝶生存。因环境的复杂性, 物种多样性指数的最高值(4.9285)和最低值(0.0)均出现森林植被型, 样本间物种多样性指数变异系数最大的也是森林植被型, 表明它对蝴蝶生存的影响, 也将是最复杂的。海拔高度对物种多样性指数的影响明显, 最高的物种多样性指数出现在海拔1000~1500m(1.2363), 最低是2000m以上(0.2536), 但没有显著的规律性。灌丛和森林各个小生境的蝴蝶均匀度与物种多样性的变化趋势基本是一致的, 表明这两种植被型内各小生境的物种多样性指数主要受物种均匀度变化的影响; 农田和草地两种植被型的物种多样性指数的变化除受均匀度影响外, 还较大程度地受物种丰富度的影响。在生境类型的水平上, 蝴蝶均匀度与物种多样性指数、丰富度间有着比较复杂的关系。这些结果反映了三峡库区蝶类生存环境的多样性和破碎化, 从而影响了蝴蝶分布的丰富度、多样性和均匀性。

关键词 [蝴蝶](#); [群落](#); [结构](#); [参数](#); [三峡库区](#)

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The diversity indexes, richness and evenness of butterfly communities in the Three Gorge Reservoir Area of Yangtze River

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Abstract This article describes species diversity indices, richness and evenness of butterfly community in the Three Gorge Reservoir Area of Yangtze River. The influences factors on these parameters are discussed. Species richness of a sampled microhabitat ranges from 0 to 28, with species-poor locales ranging from 0 to 5 species, whereas species upper limits as ranged from 9 to 12 species. The ranges of species diversity indices were from 0 to 4.9285 among samples, 0 to 2.1143 among microhabitats, 0 to 1.7091 among habitat types, and 0.9740 to 1.3143 among vegetation types. The largest species index was within a sample was found in the microhabitat of hillside bushes between 1000~1500m in elevation (4.9285); the highest value within a microhabitat was in the broad-leaved forest between 1000~1500m in elevation (2.1143); the largest species index within a habitat was in the broad-leaved forest-bushes (1.4373), and the highest value within a vegetation type was in the bushes (1.3143). Of all investigated vegetation types, the diversity indices of bushes were highest, ranging from 1.2773 to 1.4373, followed by the grasslands, values ranging from 1.0588 to 1.2402. The lowest indices were found in forest, ranging from 0.8088 to 0.9618 with one exception. It is thus clear that bushes are the vegetation type most suitable for butterflies in the Three Gorge Reservoir Area, while forest and farmlands are less suitable. However, the influence of the forest vegetation type on the survival of butterflies was also the more imp

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licated as the highest (4.9285) and lowest (0) indices values within a sample both occurred within the forest. Altitude seems to affect species diversity considerably, with the highest diversity index value found in the range of 1000~1500m (1.2363), and the lowest value in the range 500~1000m (0.2536), but no trend among the elevations was identified, in the sample of the forest and bushes, the values of the species evenness index were only positively related with those of the species diversity indices. In contrast, within the farmland and grassland samples, the values of the species diversity indices were affected by both species evenness and richness. Species evenness, richness, and diversity indices showed implicated relationship across the microhabitats, reflecting both diversity and fragmentation of the habitats. The next article of the series will report the results of investigations on other parameters, and the structure and dynamics of butterfly communities in the Three Gorge Reservoir Area.

Key words [butterflies](#) [community](#) [structure](#) [parameters](#) [Three Gorge Reservoir Area](#) [of Yangtze River](#)

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