

西溪湿地公园湿地植物群落及其与水环境质量的关系

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Relationship Between Wetland Plant Communities and Water Environment Quality in Xixi Wetland Park

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摘要

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摘要 对西溪湿地公园33个随机选取的有植被覆盖的水塘进行湿地植物群落调查, 监测分析包括9个无植被覆盖水塘在内共计42个水塘的水环境状况, 以湿地植被覆盖度分级为基础, 揭示其与水环境质量之间的关系。结果表明, 调查区域内湿地植物共计16种, 分属13科16属, 且物种丰富度较低; 当湿地植被覆盖度维持在低水平(1% ~ 20%)或中等水平(>40% ~ 60%)时, 水质也可以维持在一个较好的水平, 而高湿地植被覆盖度并不利于维持较好的水质; 对具有相同植被覆盖水平(约40%)的常见湿地植物群落类型与水环境之间关系进行分析发现, 可将这些湿地植物群落划分为3种类型: 第1类包括黄花鸢尾(*Iris tectorum*) + 水花生(*Alternanthera philoxeroides*)和芦竹(*Arundo donax*) + 水花生, 其水体COD_{Mn}、TN、TP、NH₃-N、Chl-a值处于最高水平, 说明水环境处于相对较差状态; 第二类包括水花生、野茭白(*Zizania latifolia*) + 水花生、再力花(*Thalia dealbata*) + 水花生, 其水环境状态处于中等水平; 第三类为芦苇(*Phragmites australis*) + 水花生, 其水环境处于较好状态。建议恢复芦苇等本地种植被, 并将湿地植被的盖度控制在一个较低或者中等水平, 以利于维持良好的水质。

关键词: 西溪湿地 湿地植物群落 盖度 水环境

Abstract: Based on classification of the wetland vegetation coverage in the Xixi Wetland Park, relationship between plant communities and water quality were studied. Results show that the park has 16 species of wetland plants, belonging to 16 genera, 13 families, and is low in species richness. When vegetation coverage of the wetland is maintained at a low (1% - 20%) or moderate level (>40% - 60%), its water quality was kept at a relatively good level. It seems that a higher vegetation coverage is not at all conducive to maintenance of a good water quality. Based on analysis of relationships of common plant communities (ca 40% in coverage) with water quality, the plant communities can be sorted into 3 types, i.e. Type I : *Iris tectorum* + *Alternanthera philoxeroides* and *Arundo donax* + *A. philoxeroides*, and *Thalia dealbata* + *A. philoxeroides*, where chemical indices of the water were all very high, indicating that the water environment is very poor in quality; Type II : *A. philoxeroides*, *Zizania latifolia* + *A. philoxeroides*, and *Thalia dealbata* + *A. philoxeroides*, where the water environment is at a moderate level in quality; and Type III : *Phragmites australis* + *A. philoxeroides*, where the water environment is relatively good. Therefore, reestablishment of vegetation of native plants, like *P. australis* and maintenance of a proper vegetation coverage, low or moderate is recommended to keep the water in good quality in wetland park.

Keywords: Xixi Wetland wetland plant community coverage water environment

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