

千岛湖陆桥岛屿植物群落结构的边缘效应

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Edge effect of the plant community structure on land-bridge islands in the Thousand Island Lake.

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摘要

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摘要

选取千岛湖29个岛屿建立长期监测样地,研究从森林边缘到林内的木本植物物种丰富度、Shannon指数,以及植株密度、平均株高和平均胸径等群落特征的变化,探讨森林边缘效应的作用.结果表明:研究区物种丰富度和Shannon指数受边缘效应的影响深度超过50 m,平均株高的影响深度波及到林内20~30 m,而植株密度和平均胸径的影响深度在林内10 m.不同边缘梯度间的群落特征差异显著,物种丰富度和Shannon指数随距离梯度增大呈单峰型变化,而植株密度和平均株高沿边缘梯度呈增大趋势,平均胸径则呈减小趋势.5项群落特征与边缘梯度均有显著相关性.不同植物功能群(常绿/落叶种,乔木/灌木种,耐阴/不耐阴种)受边缘效应的影响程度不同.边缘效应对千岛湖片段化森林中不同群落特征和不同植物功能群的作用强度有所差异.

关键词: 边缘效应 木本植物 生境片段化 群落结构 功能群 千岛湖

Abstract:

The research was conducted on 29 land-bridge islands in the Thousand Island Lake (TIL), where long-term monitoring plots were set up during 2009-2010. The community attributes including species richness, Shannon index, plant mean height, plant mean diameter at breast height (DBH) and plant density along the edge interior gradient from edge to interior forest were calculated to investigate the edge effect. The results showed that the species richness and Shannon index were affected through the whole gradient (larger than 50 m), while the range of edge effect was 20-30 m on mean plant height, and 10 m on plant density and mean DBH. Community attributes differed significantly among the edge gradients. The species richness and Shannon index peaked at the intermediate edge gradient. Plant density decreased and plant mean height increased along the edge to interior gradient. All five community attributes were significantly associated with the edge gradient, also different functional groups, evergreen or deciduous species, trees or shrubs, shade tolerant or shade intolerant species, were differentially influenced by the edge effect. It was demonstrated the influence of edge effect on the fragmented forest community varied with community attributes and functional groups.

Key words: edge effect woody plants habitat fragmentation community structure functional group Thousand Island Lake.

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- [1] 刘贝贝,叶成龙,虞丽,焦加国,刘满强,胡锋,李辉信^{**}. 不同植被类型的滩涂湿地土壤线虫群落特征[J]. 应用生态学报, 2012, 23(11): 3057-3064.
 - [2] 甘志彬^{1,2},李新正^{1**},王洪法¹,张宝琳¹. 宁津近岸海域大型底栖动物生态学特征和季节变化[J]. 应用生态学报, 2012, 23(11): 3123-3132.
 - [3] 李永春¹,刘卜榕^{1,2},郭帅¹,郭奇峰³,秦华¹,吴家森¹,徐秋芳^{1**}. 亚热带不同林分土壤氨氧化菌群落特征[J]. 应用生态学报, 2014, 25(1): 125-131.
 - [4] 林更铭,杨清良^{**},王雨. 2010年夏季白令海小型浮游植物分布[J]. 应用生态学报, 2013, 24(9): 2643-2650.
 - [5] 黎健龙^{1,2},唐劲驰²,赵超艺²,唐颢²,黎秀娣²,黎华寿^{1**}. 不同景观斑块结构对茶园节肢动物多样性的影响[J]. 应用生态学报, 2013, 24(5): 1305-1312.
 - [6] 刘伟^{1,2},王润润³,刘新民^{3**}. 内蒙古皇甫川流域不同水土治理措施对粪金龟子群落的影响[J]. 应用生态学报, 2013, 24(3): 777-787.
 - [7] 齐海明^{1,2},孙岳³,徐兆礼^{1**},孙鲁峰¹,高倩¹,阙江龙¹,田伟¹. 椒江口海域春秋季节虾类群落结构及其影响因素[J]. 应用生态学报, 2013, 24(12): 3546-3552.
 - [8] 李素美,王银桥,刘润进^{**}. 特殊生境中丛枝菌根真菌多样性[J]. 应用生态学报, 2013, 24(11): 3325-3332.
- 刘常富¹,刘辰¹,何兴元²,阮亚男⁴,徐胜²,陈振举^{1,2,3**},彭俊杰²,李腾². 基于OTC模拟的臭氧浓度升高对华山松生长的影响[J]. 应用生态学报, 2013, 24

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(10): 2731-2736.

- [10] 王丽,魏伟,周平,李杨,孙庆业^{**}. 铜陵市河流冬季浮游植物群落结构及其与环境因子的关系[J]. 应用生态学报, 2013, 24(1): 243-250.
- [11] 徐艺露^{1,2},杨晓东^{1,2},许月^{1,2},谢一鸣^{1,2},王良衍³,阎恩荣^{1,2*}. 基于功能性状的亚热带常绿植物抗雨雪冰冻能力评价[J]. 应用生态学报, 2012, 23(12): 3288-3294.
- [12] 薛会英^{1**},罗大庆²,于宝政¹. 西藏色季拉山急尖长苞冷杉林土壤线虫群落特征[J]. 应用生态学报, 2012, 23(12): 3402-3408.
- [13] 陈立婧¹,吴艳芳¹,景钰湘¹,王聪. 上海世博园后滩湿地枝角类群落结构的周年动态[J]. 应用生态学报, 2012, 23(10): 2863-2870.
- [14] 刘继亮¹,曹靖^{2**},李世杰²,潘春林³,潘成臣¹. 秦岭西部山地次生林和人工林大型土壤动物群落结构特征[J]. 应用生态学报, 2012, 23(09): 2459-2466.
- [15] 田永强,俞超超,王磊,黄邦钦^{**}. 福建九龙江北溪浮游植物群落分布特征及其影响因子[J]. 应用生态学报, 2012, 23(09): 2559-2565.