

亚高山次生桦木林地表苔藓组成与多样性

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Ground bryophyte diversity in secondary birch forests in western Sichuan, China

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摘要

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摘要 桦木林(*Betula* spp.)是我国原始冷杉林(*Abies* spp.)皆伐后自然恢复形成的主要次生林之一,为揭示其发育过程中地表苔藓组成与多样性差异,评估其自然恢复状况,我们选择了四川省金川县507林场地形条件基本一致的3个桦木林地以及1个原始岷江冷杉(*Abies faxoniana*)林地,调查了地表苔藓层结构和物种组成。结果显示:(1)桦木林的地表苔藓植物盖度低于原始林,不同年龄的桦木林之间其盖度没有差异($P>0.05$),但优势种的组成差异及物种替代明显;(2)桦木林地表苔藓物种丰富度较原始林高,不同年龄相比,9年生和22年生较42年生桦木林地表苔藓种类丰富;(3)未郁闭桦木林(9年生)与郁闭林(22年生和42年生)间的地表苔藓物种组成相似程度(相似性系数为0.24-0.29)低于它与原始林间的相似程度(0.51);22年生和42年生桦木林间地表苔藓物种组成相似程度(相似性系数为0.50)高于它们与原始林间的相似程度(0.13-0.24),在自然恢复过程中,桦木林与原始林下地表苔藓共有种数量逐渐减少,相似程度降低。原始林下35种地表苔藓植物中只有25种存在于迹地桦木林地。上述分析表明:迹地上自然恢复9-42年的桦木林下地表苔藓多样性虽然较云杉人工林高,但仅保存约71%的原始林下种类,而约有29%的敏感苔藓种类无法通过次生林自然恢复过程得以保育或恢复。

关键词: 桦木林 采伐迹地 自然恢复 苔藓多样性 亚高山森林

Abstract: Secondary birch (*Betula* spp.) forest is an important vegetation type in western Sichuan, China. These forests have naturally regenerated from primary fir (*Abies* spp.) forests after clear-cutting. However, little is known about ground bryophyte species composition and community structure during this succession sequence. In our study, we sampled three plots in 9-, 22-, and 42-year old secondary forests, and a primary fir forest, respectively, in Jinchuan County. We found that bryophyte coverage in different aged secondary forests was similar, but communities in the individual forests differed in dominant species composition. Compared with the primary forest, the secondary forests had lower coverage but higher species richness. As for the secondary forests, 9- and 22-year old forests had higher species richness than the 42-year old forest. Similarity coefficients among secondary forests ranged between 0.24 - 0.50. In contrast, 22- and 42-year old secondary forests exhibited lower similarity coefficients when compared with the primary forest. There were 25 bryophyte species shared by the primary forest and secondary forests, accounting for 71% of the species occurring in the primary fir forest. Our results indicated that naturally regenerated birch forests can harbor more bryophyte species than the spruce plantation. However, there was about 29% bryophyte species failed to recover in the natural recovery process.

Keywords: birch forests cutovers naturally regenerated bryophyte diversity subalpine forests

Received 2010-06-24; published 2011-05-20

Fund:

传统林业实践对地表苔藓物种组成与层片发育的影响

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引用本文:

闫晓丽, 包维楷. 亚高山次生桦木林地表苔藓组成与多样性[J] 生物多样性, 2011, V19(03): 327-334

Xiaoli Yan, Weikai Bao. Ground bryophyte diversity in secondary birch forests in western Sichuan, China[J] Biodiversity Science, 2011, V19(03): 327-

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