

地形对阔叶红松林幼苗更新的影响

赵雪, 刘妍妍, 金光泽**

(东北林业大学生态研究中心, 哈尔滨 150040)

Effects of topography on seedling regeneration in a mixed broadleaved-Korean pine forest in Xiaoxing' an Mountains, Northeast China.

ZHAO Xue, LIU Yan-yan, JIN Guang-ze

(Center for Ecological Research, Northeast Forestry University, Harbin 150040, China)

摘要

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摘要

依托黑龙江凉水国家级自然保护区9 hm²典型阔叶红松林动态监测样地的900个 2 m×2 m 多年生幼苗($H \geq 30$ cm, DBH < 1 cm)样方,基于2006、2008和2010年3次调查数据,分析了地形对幼苗建立的影响.结果表明:样地内共有乔木幼苗26种,2006、2008和2010年的乔木幼苗总数分别为4514、6464和5611株·hm⁻².其中个体数前10位树种的幼苗数量占幼苗总数的90%以上.地形对8个主要乔木幼苗的分布有显著的影响,其中暴马丁香、冷杉、色木槭、春榆、花楷槭、紫椴和青楷槭幼苗与其成树分布基本一致,而红松幼苗的空间分布与成树分布有所不同.暴马丁香、冷杉、裂叶榆、青楷槭和紫椴幼苗的死亡与地形显著相关.暴马丁香、春榆、红松、冷杉、水曲柳、色木槭和紫椴新增幼苗与地形显著相关.

关键词: 阔叶红松林 幼苗组成 地形 死亡 新增

Abstract:

To explore the responses of forest seedlings to topographic heterogeneity, nine hundreds of 4 m²(2 m×2 m) quadrats with perennial seedlings ($H \geq 30$ cm, DBH < 1 cm) were installed in a 9 hm² plot in a typical mixed broadleaved-Korean pine forest in Xiaoxing' an Mountains. Based on the investigation data in 2006, 2008, and 2010, the effects of topography on the seedling establishment were studied. There were a total of 26 tree species in these quadrats. In 2006, 2008, and 2010, the total number of the tree seedlings was 4514, 6464, and 5611 individuals·hm⁻², respectively, among which, the seedlings of the top 10 species occupied >90% of the total. Topography had significant effects on the seedling distribution of the 8 major tree species. For *Syringa reticulata* var. *mandshurica*, *Abies nephrolepis*, *Acer mono*, *Ulmus japonica*, *A. ukurunduense*, *Tilia amurensis*, and *A. tegmentosum*, the spatial distribution of the seedlings was consistent with that of grown trees; but for *Pinus koraiensis*, the spatial distribution of seedlings was inconsistent with that of the grown trees. The mortality of *S. reticulata* var. *mandshurica*, *A. nephrolepis*, *U. laciniata*, *A. tegmentosum*, and *T. amurensis* seedlings was significantly correlated with the topography. The recruitment of *S. reticulata* var. *mandshurica*, *U. japonica*, *P. koraiensis*, *A. nephrolepis*, *Fraxinus mandshurica*, *A. mono*, and *T. amurensis* seedlings was also significantly correlated with the topography.

Key words: mixed broadleaved-Korean pine forest seedling composition topography mortality recruitment.

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