

兰州市郊红砂种群数量动态与分布格局

周资行, 李毅, 焦健

甘肃农业大学林学院

Quantity Dynamics and Spatial Distribution Pattern of *Reaumuria soongorica* Population in Suburbs of Lanzhou

ZHOU Zi-Xing, LI Yi, JIAO Jian

College of Forestry, Gansu Agricultural University

[摘要](#)[参考文献](#)[相关文章](#)Download: [PDF \(1127KB\)](#) [HTML 1KB](#) Export: [BibTeX](#) or [EndNote \(RIS\)](#) [Supporting Info](#)

摘要 对兰州市南北两山天然分布的红砂种群数量动态和空间分布格局进行研究。利用地径回归得到红砂种群年龄结构,编制静态生命表,进行生存分析季谱分析,计算红砂种群年龄结构动态指数,以揭示种群数量动态特征;采用扩散系数、负二项指数、平均拥挤度、聚块性指数、扩散型指数、丛生指数、Cassie指数和Green指数8个分布指标判断红砂种群时空尺度上的格局类型。结果表明,南北两山红砂种群密度、盖度适宜,动态指数均大于0,呈现增长型,并存在明显的周期性;种群以中幼龄植株为主体,各龄级的死亡率基本平稳,但在第II过度到第III龄级时,出现死亡率高峰,存活曲线趋于Deevey-III型。种群时空异质性明显,阳坡的红砂种群呈现聚集分布,阴坡则多呈现均匀分布;不同发育阶段红砂种群分布格局呈现明显递变规律,幼龄阶段聚集度高,随着年龄增大,聚集性大幅减弱。

关键词: 红砂种群 数量动态 空间分布格局 动态指数 谱分析 兰州

Abstract: Quantity dynamics and spatial distribution patterns of the *Reaumuria soongorica* populations naturally distributed on the hills in the south and north of Lanzhou were studied. Age structures of the *Reaumuria soongorica* populations were worked out by regression of ground diameter and their static life tables were plotted. Through survival analysis and spectral analysis, age structure dynamic indexes of the populations were calculated, thus revealing characteristics of their quantity dynamics. Based on the eight distribution indexes, types of the distribution patterns of the *Reaumuria soongorica* populations on time and space scales were determined. Results show that the *Reaumuria soongorica* populations on the two hills were appropriate in population density and crown density with their dynamic indexes being >0 and showing a rising trend. They both demonstrated an obvious periodicity. The populations were dominated with young and middle-aged plants. Mortality in each age class was basically stable, but peaked when the plants were in the transition period from Age Class II to III. The populations were close to Deevey's Type II to III in survival curve and quite obvious in spatio-temporal heterogeneity. The populations on the sunny slope were distributed in concentration, while on the shady slope they spread evenly. The population distribution patterns of the plants of different development stages varied regularly. Young individuals often grew together in patches, and when they grew older, their aggregation weakened sharply.

Keywords: *Reaumuria soongorica* population quantity dynamics spatial distribution pattern dynamic index spectrum analysis Lanzhou

Received 2011-05-19;

Fund:

国家科技部农转资金项目(2009GB2G100375); 农业科技成果转化资金计划甘肃省科技厅项目(0805XCNA063)

Corresponding Authors: 焦健 甘肃农业大学林学院 Email: jiaoj@gsau.edu.cn

About author: 周资行(1987-), 男, 浙江温州人, 硕士生, 主要研究方向为植物生态学。E-mail: zzhiee@qq.com

引用本文:

周资行, 李毅, 焦健. 兰州市郊红砂种群数量动态与分布格局[J]. 生态与农村环境学报, 2011, V27(5): 24-31

ZHOU Zi-Xing, LI Yi, JIAO Jian. Quantity Dynamics and Spatial Distribution Pattern of *Reaumuria soongorica* Population in Suburbs of Lanzhou[J]. Journal of Ecology and Rural Environment, 2011, V27(5): 24-31

Service

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ Email Alert
- ▶ RSS

作者相关文章

- ▶ 周资行
- ▶ 李毅
- ▶ 焦健