

论文

兰州市南北两山不同生境红砂种群数量动态研究

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摘要:

对兰州市南北两山不同生境天然分布的红砂种群进行数量动态研究,通过径级结构回归年龄结构,编制静态生命表,绘制生存函数曲线,计算动态指数及谱分析,结果表明:不同生境红砂种群均表现为幼龄个体多,中老年个体少,种群在III龄级时死亡率最高,随着年龄增加,死亡率有所降低,VII、VIII龄级由于生理衰老死亡率上升,种群存活曲线均接近于Deevey-III型,年龄结构均接近增长型,增长潜力阴坡山下(5.90%)>阳坡山下(5.62%)>阴坡山上(4.77%)>阳坡山上(3.79%),并存在明显的周期性,红砂种群的数量动态变化整体上受其生命周期中生物学特性的控制;由于坡向及海拔差异带来的环境异质性,阴坡山下红砂种群整体生长最佳,阴坡山上和阳坡山下次之,而阳坡山上的红砂种群危险系数最大,受环境和种内压力共同作用显著,应适当抚育,从而促进种群持续发育。

关键词: 红砂 生境 种群数量动态 静态生命表 动态指数 谱分析 兰州市南北两山

Quantity Dynamics of *Reaumuria soongorica* Populations from Different Habitats in the South-north Hills in Lanzhou

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Abstract:

The quantity dynamics of the natural *Reaumuria soongorica* populations from different habitats in the south-north hills in Lanzhou were studied. Using the age class structure regression by diameter class, the static life table and survival function curves were determined, the dynamic indexes were calculated and spectrum analysis was done. The results showed: in 4 habitats the *Reaumuria soongorica* populations all contained more young members and less middle-aged or old members; all populations had highest death rates at age class III. As the age increased, the death rates reduced; because of the physiological senescence, the death rates of age class VII and VIII increased. The survival curve of the populations approached to Deevey type III. The populations all belonged to progressive type. The order of growth potential is: at the foot of shady slope (5.90%)> at the foot of sunny slope (5.62%)> at the top of shady slope (4.77%)> at the top of sunny slope (3.79%), and this order indicated obvious periodicity. The dynamic quantity of all *Reaumuria soongorica* populations were overall controlled by their biological characteristics of lifecycle. Due to the environmental heterogeneity caused by different slope situations and altitudes, *Reaumuria soongorica* populations at the foot of shady slope grew well, at the top of shady slope and at the foot of sunny slope took the second place. But *Reaumuria soongorica* populations at the top of sunny slope which were influenced significantly by both environment and intraspecific competition pressure, had the biggest danger coefficient. The *Reaumuria soongorica* populations should be protected by proper tending practices to enhance sustainable development.

Keywords: *Reaumuria soongorica* habitats population quantity dynamics static life table dynamic index spectral analysis the south-north hills in Lanzhou

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