

## 高原鼠兔扰动对高寒草地植物群落特征的影响

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Impacts of *Ochotona pallasii* disturbance on alpine grassland community characteristics.ZHAO Guo-qin<sup>1</sup>, LI Guang-yong<sup>1</sup>, MA Wen-hu<sup>2</sup>, ZHAO Dian-zhi<sup>3</sup>, LI Xiao-yan<sup>1,4</sup>

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摘要

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摘要

高原鼠兔是青海湖流域高寒草地主要的啮齿动物. 本文基于R-Vegan中的RDA排序方法, 以有效洞口数差异将高原鼠兔扰动强度划分为4组, 分析不同扰动强度下高寒草地植物群落特征, 进而提出群落演替的概念模型, 探究高原鼠兔扰动对高寒草地生态系统及放牧质量的影响. 结果表明: 随着扰动强度加大, 出现以灯芯草为优势种的群落向以草地早熟禾、海乳草为优势种的群落演替. 当扰动强度较小时, 群落的总盖度、地上生物量、物种多样性和物种丰富度较高, 但杂类草植物比例较高; 当扰动强度较大时, 各群落特征值较低且杂类草植物比例最高; 当扰动强度适中时, 各群落特征值比较高, 禾本科和莎草科植物比例最大. 因此, 轻度扰动时, 虽然群落特征值高但放牧质量低; 过度扰动时出现草场植被退化; 而扰动强度在阈值内可维持高寒草地生态系统稳定并提高放牧质量.

关键词: 高原鼠兔 扰动强度 扰动阈值 放牧质量

Abstract:

Plateau pika is the main fossorial mammal in the alpine grassland in Qinghai Lake Watershed of Northwest China. Based on the field investigation data from 18 alpine grassland quadrats in the Watershed, and by using redundancy analysis (RDA) and the surface fitting offered by 'R Vegan', the disturbance intensity of plateau pika (*Ochotona pallasii*) was classified as four levels. In order to explore the impacts of plateau pika disturbance on the alpine grassland ecosystem and its grazing quality, the community characteristics under different disturbance intensities by plateau pika were analyzed, and a conceptual model about the alpine grassland community succession was proposed. The results showed that with the increase of the disturbance intensity, the dominant species changed from *Juncus roemerianus* to *Poa pratensis* and *Laux maritima*. When the disturbance was small, the community had high quantitative values of coverage, aboveground biomass, biodiversity, and species richness, but the proportion of weeds was also high. When the disturbance was large, the quantitative values were the lowest, while the proportion of weeds was the highest. When the disturbance was moderate, the community had relatively high quantitative values, and the proportion of grasses and sedges was the highest. It was concluded that the community's characteristic values under low plateau pika disturbance intensity were high but the grazing quality was low, while high disturbance intensity resulted in the grassland degradation. Therefore, the disturbance intensity in the threshold could maintain the stability of alpine grassland ecosystem and improve its grazing quality.

Key words: plateau pika disturbance intensity disturbance threshold grazing quality.

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