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动物生产层

疏勒河上游冻土区大型土壤动物群落调查

林恭华, 杨传华, 陈生云, 刘文杰, 陈桂琛, 张同作

摘要:

为了掌握疏勒河上游冻土生态系统中土壤动物的群落特征,于2010年6-7月对这一地区不同生境中的大型土壤动物进行了调查。共捕获大型土壤动物453头,隶属3纲9目13个类群,优势类群为鞘翅目幼虫、双翅目幼虫和鞘翅目成虫。与我国西北高原地区的土壤动物群落相比,疏勒河上游地区的土壤动物数量稀少、生物多样性较低,推测极端干旱可能是导致这一现象的主要原因。尽管不同植被类型间的大型土壤动物物种组成方面有较大差别,但其生物量和多样性与植被定量指标之间无显著相关关系( $P>0.05$ )。季节冻土和多年冻土之间,土壤动物生物量、个体数和Shannon-Wiener多样性指数都无显著差异( $P>0.05$ ),而过渡类型冻土中的土壤动物生物量和个体数却显著大于其他2种冻土类型( $P<0.05$ )。

关键词: 大型土壤动物 冻土类型 植被类型 气候特征

Larger size soil animal communities of the frost soil regions in the upper reaches of Shule River

LIN Gong hua, YANG Chuan hua, CHEN Sheng yun, LIU Wen jie, CHEN Gui chen, ZHANG Tong zuo

Abstract:

To understand the soil animal communities of the frost soil regions in the upper area of Shule River, a field survey was carried out to investigate the larger size soil animals from different habitats during June to July, 2010. A total of 453 animals (belonging to 3 classes 9 orders 13 taxonomic groups) were identified in this study, in which the larval Coleopteran (beetles), larval Diptera and adult Coleopteran were dominant groups. Compared with former related record at other regions in the northwest of China, the quantity and diversity of soil animal in the upper reaches of Shule River was lower due to the extremely arid conditions. Although the species composition of the soil animals differed significantly in different vegetation types, the animal biomass and diversity had no obvious correlations with quantified vegetation indices ( $P>0.05$ ). The biomass, individual numbers and Shannon-Wiener diversity of soil animals was not significantly different between permafrost and seasonal frost ( $P>0.05$ ); however, the diversity in the transition zone of permafrost were significantly higher than those in the permafrost and seasonal frost ( $P<0.05$ ).

Keywords: larger size soil animal frost type vegetation type climate

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