

数据资源: [林业专题资讯](#)
[打印](#)
[下载](#)
A+
A-
[分享](#)

Soil Fungal Diversity and Functionality Changes Associated with Multispecies Restoration of Pinus massoniana Plantation in Subtropical China

编号	010038503
推送时间	20230306
研究领域	森林生态
年份	2022
类型	期刊
语种	英语
标题	Soil Fungal Diversity and Functionality Changes Associated with Multispecies Restoration of Pinus massoniana Plantation in Subtropical China
来源期刊	forest
期	第385期
发表时间	20221206
关键词	biogeochemical process ; carbon cycling ; diversity ; guild ; mycorrhizal fungi ; tree species ;
摘要	Soil fungi play a critical role in the carbon and nutrient cycling of forest ecosystems. Identifying the composition of soil fungi in response to the broadleaf restoration of Pinus massoniana plantation is essential for exploring the mechanistic linkages between tree species and ecological processes, but remains unexplored. We compared the shifts in soil fungal diversity and guilds by high-throughput sequencing between two P. massoniana plantations at different stand ages, two modes of restoration with broadleaf trees, and a secondary forest in subtropical China. We found that soil fungal taxonomic and functional compositions significantly differed among forests. The highest Chao 1, Shannon, and phylogenetic diversity indices were consistently observed in the two P. massoniana monocultures, followed by the two modes of broadleaf mixing, and the secondary forests. Fungal communities transitioned from Ascomycota-dominated at P. massoniana plantations to Basidiomycota-dominated at other forests in the topsoil. Furthermore, saprotrophs and symbiotrophs were favoured in plantations and secondary forests, respectively. Soil pH exerted the most significant effect on the relative abundance of Ascomycota and Rozellomycota, as well as the saprotrophs. Moreover, the dominant phyla of Ascomycota, Mucoromycota, and Rozellomycota were negatively related to soil microbial biomass nitrogen, ammonium nitrogen, and total nitrogen contents; however, Mortierellomycota benefited from the elevated soil ammonium nitrogen content. On the other hand, soil nitrate nitrogen and available phosphorus contents strongly and negatively influenced the ectomycorrhizal fungi, while the other fungal guilds were mainly affected by soil pH. Our findings guide an evaluation of the consequences of forest restoration and contribute to an improved understanding of the mechanisms behind soil biogeochemical cycling in subtropical forest ecosystems.
服务人员	王璐
服务院士	蒋有绪
PDF文件	浏览全文

相关记录

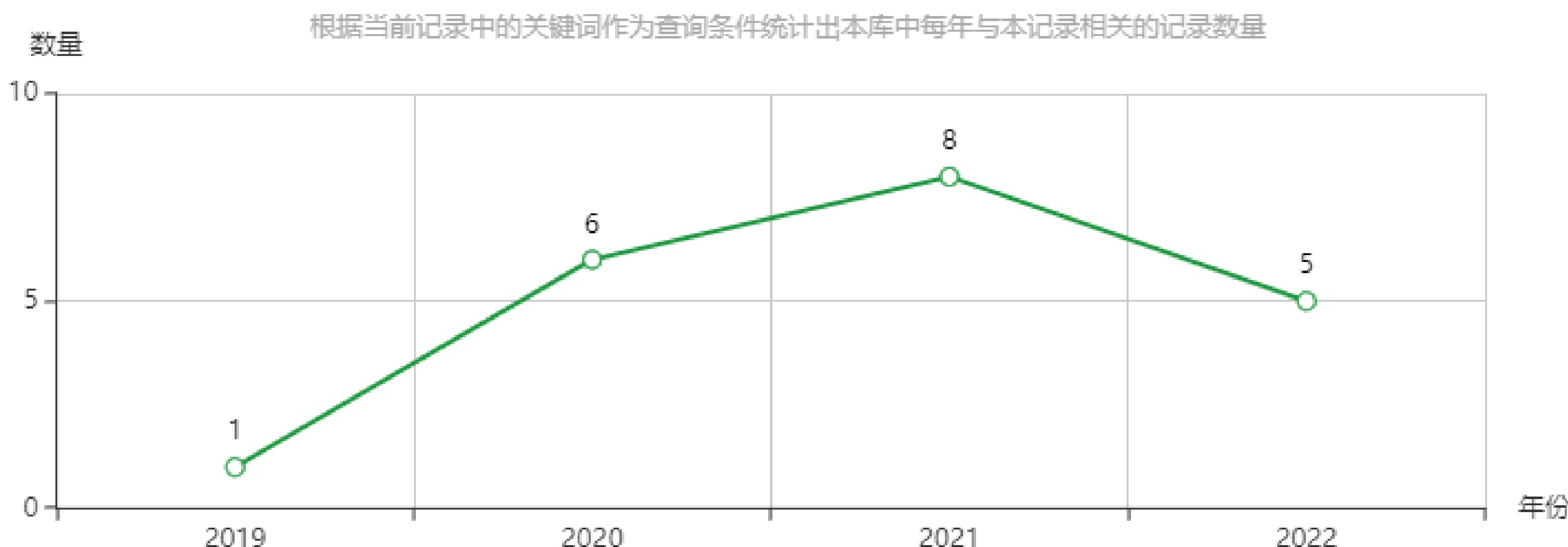
[更多](#)

- Responses of Rhizosphere Soil Chemical Properties and Bacterial Community Stru... 2022-12-26
- Species Diversity and Carbon Sequestration Oxygen Release Capacity of Dominan... 2022-11-07
- Topography, Diversity, and Forest Structure Attributes Drive Aboveground Carbon... 2022-04-04
- Tree Species and Stand Density: The Effects on Soil Organic Matter Contents, Dec... 2022-02-28
- Understanding the Impact of Vertical Canopy Position on Leaf Spectra and Traits i... 2022-01-24
- Consistent Effects of Canopy vs. Understory Nitrogen Addition on Soil Respiration... 2021-11-01

相关图谱

相关主题趋势分析图

根据当前记录中的关键词作为查询条件统计出本库中每年与本记录相关的记录数量



相关主题

[生物质能源树种](#)
[乡土树种](#)
[基因多样性](#)
[粮食树种](#)
[抗旱树种](#)
[目的树种](#)
[防火树种](#)
[耐寒树种](#)
[湿生树种](#)
[造林树种](#)

相关论文

- 红池坝炼山后生态恢复过程中群落特...
- 山东省的菌根真菌及分布
- Diversity, distribution and resource ...
- Review on Color Change of Heat Tr...
- Review on Leaf Water Use Efficienc...
- 黄河源区地貌景观多样性概述(英文)