

数据资源: [林业专题资讯](#)
 打印 下载 A⁺ A⁻ 分享 <

Soil Microbial Diversity, Biomass, and Activity in Two Pine Plantations of Southern Italy Treated with Prescribed Burning

| | |
|-------|--|
| 编号 | 010021905 |
| 推送时间 | 20191230 |
| 研究领域 | 森林生态 |
| 年份 | 2019 |
| 类型 | 期刊 |
| 语种 | 英语 |
| 标题 | Soil Microbial Diversity, Biomass, and Activity in Two Pine Plantations of Southern Italy Treated with Prescribed Burning |
| 来源期刊 | Forests |
| 期 | 第219期 |
| 发表时间 | 20191221 |
| 关键词 | Pinus pinea plantation ; Pinus pinaster plantation ; prescribed burning ; microbial biomass ; microbial activity ; bacterial genetic diversity ; |
| 摘要 | Microbial diversity plays a crucial role in ecosystem processes, including organic matter decomposition and nutrient cycling. This research explores the effect of prescribed burning (PB) on soil microbial diversity, as well as biomass and activity in Mediterranean pine plantations. In burned and adjacent unburned plots of <i>Pinus pinea</i> and <i>P. pinaster</i> plantations of Southern Italy protected areas, the fermentation layer and the 5 cm thick layer of mineral soil underneath were sampled at intervals during the first year after PB. The experimental protocol encompassed measurements of total microbial abundance (Cmic and soil DNA), fungal mycelium, fungal fraction of Cmic, microbial activity, bacterial genetic diversity (16S rDNA PCR-DGGE), microbial metabolic quotient (qCO ₂), and C mineralization rate (CMR), as well as physical and chemical soil properties. PB caused only temporary (up to 3 h–32 d) reductions in Cmic, DNA amount, fungal mycelium, respiration, and CMR in the <i>P. pinaster</i> plantation, and had no appreciable negative effect on the microbial community in <i>P. pinea</i> plantation, where fire intensity was lower because of less abundant litter fuel. In either plantation, PB did not generally reduce bacterial genetic diversity (evaluated as band richness, Shannon index, and evenness), thus, also accounting for the fast recovery in microbial growth and activity after high-intensity PB in <i>P. pinaster</i> plantation. While confirming PB as a sustainable practice to reduce wildfire risk, also supported by data on plant community obtained in the same plantations, the results suggest that an integrated analysis of microbial diversity, growth, and activity is essential for an accurate description of PB effects on soil microbial communities. |
| 服务人员 | 王璐 |
| PDF文件 | 浏览全文 |

相关记录

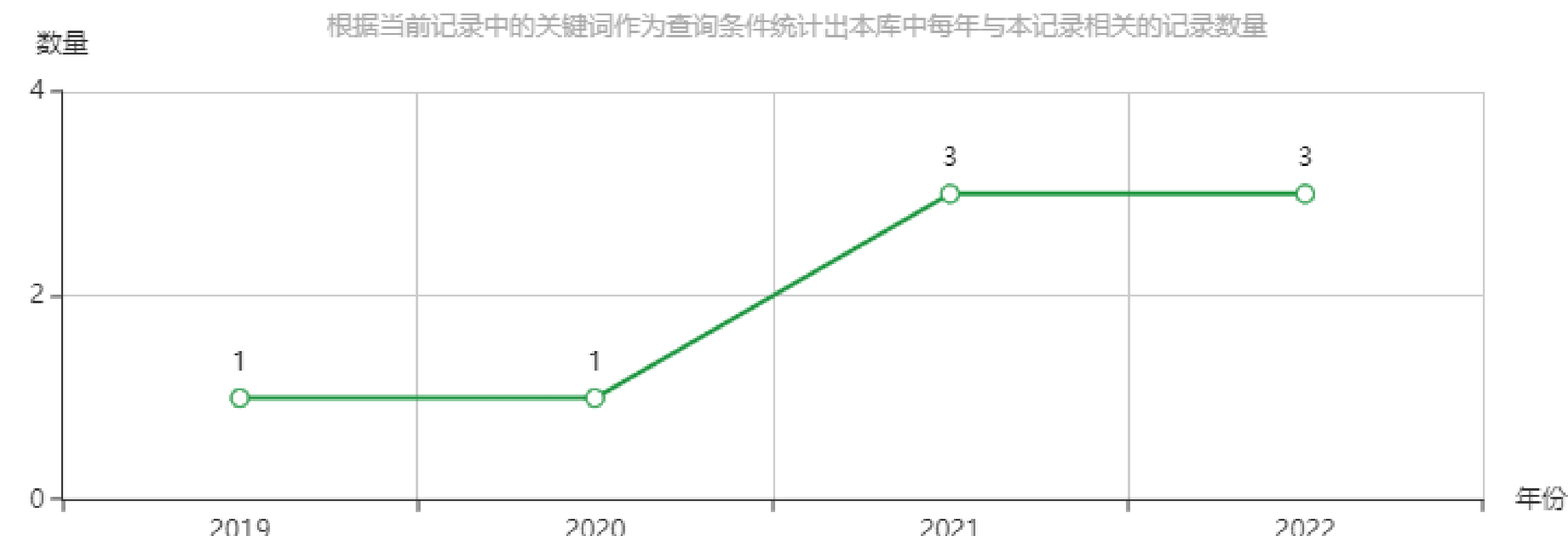
[更多 >](#)

- Effects of Precious Tree Introduction into Moso Bamboo Forests on Soil Carbon a... 2023-01-30
- Impact of Tree Species and Substrates on the Microbial and Physicochemical Prop... 2023-01-09
- Impact of Natural Forest Succession on Changes in Soil Organic Carbon in the Pol... 2022-05-23
- Long-Term Nitrogen Addition Decreases Soil Carbon Mineralization in an N-Rich ... 2021-06-28
- The Influence of Forest Management and Changed Hydrology on Soil Biochemica... 2021-03-22
- Liming Alters the Soil Microbial Community and Extracellular Enzymatic Activities ... 2021-03-08

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

[计划烧除](#) [土壤微生物生物量](#)
[空中计划火烧](#)