

# Study shows how nitrogen deposition affects community litter nutrient status

May 19 2020, by Zhang Nannan

---



Credit: CC0 Public Domain

Litter nutrient status plays an important role in driving litter decomposition and ecosystem nutrient cycling. Nitrogen (N) deposition could alter community-level litter nutrient status through both intra- and

inter-specific pathways, but their relative importance remains unknown.

Scientists from Institute of Applied Ecology of the Chinese Academy of Sciences examined the responses of species- and community-level litter nutrient concentrations and N:P ratio after seven-year N addition in a semi-arid grassland of northern China.

They found that [community composition](#) strengthened the positive impacts of N addition on litter phosphorus (P) concentration and N:P ratio. There were positive co-variations between intra- and inter-specific variation, indicating the consistency of community composition and intra-specific variation in their effects on litter P and N:P ratio.

Results from this study indicate that the imbalance of N and P following N enrichment would be much larger than the expectation based on the findings from species-level, and highlight that changes in community composition would be an unnegligible pathway in plant-mediated biogeochemical cycling.

This study, titled "Changes of community composition strengthen the positive effects of nitrogen deposition on [litter](#) N:P stoichiometry in a semi-arid grassland," has been published in *Plant and Soil*.

**More information:** Shuang-Li Hou et al. Changes of community composition strengthen the positive effects of nitrogen deposition on litter N:P stoichiometry in a semi-arid grassland, *Plant and Soil* (2020). [DOI: 10.1007/s11104-020-04534-z](https://doi.org/10.1007/s11104-020-04534-z)

Provided by Chinese Academy of Sciences

Citation: Study shows how nitrogen deposition affects community litter nutrient status (2020,

May 19) retrieved 20 June 2024 from <https://phys.org/news/2020-05-nitrogen-deposition-affects-litter-nutrient.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.