**Title**: The cost of resource use for photosynthesis drives variation in leaf nitrogen content across a resource availability gradient

**Running Head:** Costs of resource use modify leaf N content

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**Author Contributions**

NGS conceptualized the experiment in collaboration with EAP. EAP completed field work and laboratory analyses. EAP conducted data analysis and wrote the manuscript with input from NGS and HGS. All authors contributed to manuscript feedback and approved its submission to *Journal of Ecology*.

**Data Availability Statement**

All R scripts, data, and metadata are available at <https://doi.org/10.5281/zenodo.8387808>

(or on GitHub at: <https://github.com/eaperkowski/TXeco>).

**Conflict of Interest Statement**

The authors declare no conflicts of interest for this study.

**Statement on Inclusion**

This study was conducted in grasslands of Texas, USA. All authors are affiliated with Texas Tech University, a state-funded university located in the state where this experiment was conducted. All authors were engaged early on with the research and study design to ensure diverse perspectives would be considered. Authors are also all early career researchers. Field work was conducted on private land with private landowners, with property access facilitated through the Texas Ecolaboratory Program and specifically Braun & Gresham, PLLC. Prior to the experiment, all private landowners were contacted to discuss logistics of the experimental design and interviewed to understand the historical uses of the property. While private landowners are not included as authors in this manuscript due to career paths not related to anything biology-related, we made efforts to include them in research plans and were flexible based on landowner needs. We acknowledge and are thankful for their consultations and willingness to allow research on their land.