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Biography: Hui Guo received his Ph.D. in Ecology at *Lanzhou University*, focusing on plant population and community ecology. During his graduate stage, he studied at *University of California, Santa Barbara* for two years, working with Dr. Susan Mazer. He then had a postdoc position at *Fudan University*, working with Prof. Bo Li, where he began his studies on the invasive species. He then began his faculty position in *Nanjing Agricultural University*. During 2017-2018, he collaborated with Dr. Jeffrey Diez at *University of California, Riverside* studying plant biodiversity and species coexistence in red wood forest.

Research: I have very broad research interests in Ecology. Specifically, my research aims to detect the effects of global change factors on plant traits, phenology, and community structure in grassland and agricultural ecosystems, and to explore the phenotypic and genetic differentiation during plant invasions. We also examine the roles of soil feedbacks in driving plant responses to altered environments including temperature, nutrients and precipitation.

Teaching: 《普通生态学 II (群落、生态系统)》、《进化生态学》、《Advanced Ecology》、《生态学野外实习》

Peer review publications

- [1] Fuwei Wang#, Zhen Li, Yanan Wei, Fanglong Su, **Hui Guo**, Jiuxin Guo, Yi Wang, Yi Zhang, Shuijin Hu*. 2021. Responses of soil ammonia-oxidizing bacteria and archaea to short-term warming and nitrogen input in a semi-arid grassland on the Loess Plateau. *European Journal of Soil Biology*, 102, 103267
- [2] Xi Luo, Lorealee Larios, Carla D' Antonio, Xiaohong Xu, Hui Guo Hui Guo*, (2021) An invading annual plant benefits less from soil biota and has reduced competitive power with a resident grass. *Journal of Plant Ecology* (In Press)
- [3] Fei Yang, Zhilong Zhang, Albert Barberan, Yi Yang, Shuijin Hu, **Hui Guo***, (2021) Nitrogen-induced acidification plays a vital role driving ecosystem functions: Insights from a

- 6-year nitrogen enrichment experiment in a Tibetan alpine meadow. *Soil Biology and Biochemistry* (153: 108107)
- [4] Rui Xiao, Wei Ran, Shuijin Hu, **Hui Guo***, (2021) Microbial interactions dominate ammonia oxidizing archaea and bacteria in agricultural soils under long-term fertilizer management. (*Applied Soil Ecology*, 103812)
- [5] Xi Luo, Yi Zheng, Xiaohong Xu, Rui Xiao, **Hui Guo***, The impacts of warming and nitrogen addition on competitive ability of native and invasive populations of *Plantago virginica*. (*Journal of Plant Ecology*, 2020, 13 (6), 676–682)
- [6] Collins, Courtney G; Spasojevic, Marko J; Alados, Concepcion L; Aronson, Emma L; Benavides, Juan C; Cannone, Nicoletta; Caviezel, Chatrina; Grau, Oriol; **Guo, Hui**; Kudo, Gaku; Kuhn, Nikolas J; Mullerova, Jana; Phillips, Michala L; Pombubpa, Nuttapon; Reverchon, Frederique; Shulman, Hannah B; Stajich, Jason E; Stokes, Alexia; Weber, Soren E; Diez, Jeffrey M. Belowground Impacts of Alpine Woody Encroachment are determined by Plant Traits, Local Climate and Soil Conditions. (*Global Change Biology*, 2020, DOI: 10.1111/gcb.15340)
- [7] Fanglong Su, Fuwei Wang, Zhen Li, Yanan Wei, Shijie Li, Tongshuo Bai, Yi Wang, **Hui Guo***, Shuijin Hu*. Predominant role of soil moisture in regulating the response of ecosystem carbon fluxes to global change factors in a semi-arid grassland on the Loess Plateau. (*Science of the Total Environment*, 2020, 38, 139746)
- [8] Wang, Peng; Guo, Jin; Xu, Xinyu; Yan, Xuebin; Zhang, Kangcheng; Qiu, Yunpeng; Zhao, Qingzhou; Huang, Kailing; Luo, Xi; Yang, Fei; **Guo, Hui**; Hu, Shuijin. Soil acidification alters root morphology, increases root biomass but reduces root decomposition in an alpine grassland. (*Environmental Pollution*, 2020, 265, 115016)
- [9] Pan, S; Wang, Y; Qiu, YP; Chen, DM; Zhang, L; Ye, CL; **Guo, H**; Zhu, WX; Chen, AQ; Xu, GH; Zhang, Y; Bai, YF; Hu, SJ. Nitrogen-induced acidification, not N-nutrient, dominates suppressive N effects on arbuscular mycorrhizal fungi. (*Global Change Biology*, 2020, 26 (11): 6568-6580)
- [10] Long, M; Zhang, JJ; Liu, ZY; Zhou, LY; Su, FL; Xiao, R; Wang, Y; **Guo, H***; Hu, SJ*. Can the scaling of plant nitrogen to phosphorus be altered by global change? An empirical test. (*Journal of Plant Ecology*, 2020, 13 (4): 442-449)
- [11] Zhang, Y; Zhang, N; Yin, JJ; Zhao, YX; Yang, F; Jiang, ZQ; Tao, JJ; Yan, XB; Qiu, YP; **Guo, H**; Hu, SJ. Simulated warming enhances the responses of microbial N transformations to reactive N input in a Tibetan alpine meadow. (*Environment International*, 2020, 141, 105795)
- [12] Yan, XB; Diez, J; Huang, KL; Li, SP; Luo, X; Xu, XY; Su, FL; Jiang, L; **Guo, H***; Hu, SJ. Beyond resource limitation: an expanded test of the niche dimension hypothesis for multiple types of niche axes. (*Oecologia*, 2020, 193 (3): 689-699)
- [13] Bai, TS; Wang, P; Hall, SJ; Wang, FW; Ye, CL; Li, Z; Li, SJ; Zhou, LY; Qiu, YP; Guo, JX; **Guo, H**; Wang, Y; Hu, SJ. Interactive global change factors mitigate soil aggregation and carbon change in a semi-arid grassland. (*Global Change Biology*, 2020, 26 (9) 5320-5332).
- [14] Li, SJ; Wang, FW; Chen, MF; Liu, ZY; Zhou, LY; Deng, J; Dong, CJ; Bao, GC; Bai, TS; Li, Z; **Guo, H**; Wang, Y; Qiu, YP; Hu, SJ. Mowing alters nitrogen effects on the community-level plant stoichiometry through shifting plant functional groups in a semi-arid grassland. (*Environmental Research Letters*, 2020, 15 (7) 074031)

- [15] Zhang, Y; Zhang, N; Yin, JJ; Yang, F; Zhao, YX; Jiang, ZQ; Tao, JJ; Yan, XB; Qiu, YP; **Guo, H**; Hu, SJ. Combination of warming and N inputs increases the temperature sensitivity of soil N₂O emission in a Tibetan alpine meadow. (*Science of the Total Environment*, 2020, 704, 135450)
- [16] Bai, TS; Tao, JJ; Li, Z; Shu, M; Yan, XB; Wang, P; Ye, CL; **Guo, H**; Wang, Y; Hu, SJ. Different microbial responses in top- and sub-soils to elevated temperature and substrate addition in a semiarid grassland on the Loess Plateau. (*European Journal of Soil Science*, 2019, 70(5): 1025-1036)
- [17] Fanglong Su, Yanan Wei, Fuwei Wang, Jiuxin Guo, JuanJuan Zhang, Yi Wang, **Hui Guo***, Shuijin Hu*. Sensitivity of plant species to warming and altered precipitation dominates the community productivity in a semiarid grassland on the Loess Plateau. (*Ecology and Evolution*, 2019 9(13):7628-7638)
- [18] Luo, Xi, Xinyu Xu, Yi Zheng, **Hui Guo***, and Shuijin Hu. The role of phenotypic plasticity and rapid adaptation in determining invasion success of *Plantago virginica*. (*Biological Invasions* 21, no. 8 (2019): 2679-2692)
- [19] Xu, Xinyu, Lorne Wolfe, Jeffrey Diez, Yi Zheng, **Hui Guo***, and Shuijin Hu. Differential germination strategies of native and introduced populations of the invasive species *Plantago virginica*. (*NeoBiota* 43 (2019): 101.)
- [20] Xiao Sun, Jiuxin Guo, Shiwei Guo, **Hui Guo***, Shuijin Hu. (2019) Divergent responses of leaf N: P: K stoichiometry to nitrogen fertilization in rice and weed plants. (*Weed Science*, 2019:1-7.).
- [21] Fei Yang, Kechang Niu, Courtney G. Collins, Xuebin Yan, Yanguang Ji, Ning Ling, Xianhui Zhou, Guozhen Du, **Hui Guo***, Shuijin Hu*. (2018) Grazing practices affect the soil microbial community composition in a Tibetan alpine meadow. (*Land Degradation & Development*, DOI: 10.1002/ldr.3189)
- [22] Chenglong Ye, Dima Chen, Steven J. Hall, Shang Pan, xuebin Yan, Tongshuo Bai, **Hui Guo**, Yi Zhang, Yongfei Bai, Shuijin Hu. (2018) Reconciling multiple impacts of nitrogen enrichment on soil carbon: plant, microbial, and geochemical controls. (*Ecology Letters*, 2018, 21: 1162–1173)
- [23] Haoming Chen, Jingyi Ma, Jiaying Wei, Xin Gong, Xichen Yu, **Hui Guo***, Yanwen Zhao* (2018). Biochar increases plant growth and alters microbial communities via regulating the moisture and temperature of green roof substrates. *Science of the Total Environment* (635, 333-342)
- [24] Juanjuan Zhang, Xuebin Yan, Fanglong Su, Zhen Li, Ying Wang, Yanan Wei, Yangguang Ji, Yi Yang, Xianhui Zhou, **Hui Guo*** Shuijin Hu*. (2018) Long-term N and P additions alter the scaling of plant nitrogen to phosphorus in a Tibetan alpine meadow. *Science of the Total Environment* (625: 440-448).
- [25] Chenglong Ye, Hao Zhang, Xiaolong Zhou, Xianhui Zhou, **Hui Guo***, Shuijin Hu. (2018) Effects of nitrogen additions on soil microbial respiration and its temperature sensitivity in a Tibetan alpine meadow. *Acta Ecologica Sinica* (38 (7): 2279-2287)
- [26] **Hui Guo**, Chenglong Ye, Hao Zhang, Shang Pan, Yangguang Ji, Zhen Li, Manqiang Liu, Xianhui Zhou, Guozhen Du, Feng Hu, Shuijin Hu. (2017) Long-term nitrogen and phosphorus additions reduced soil microbial respiration but increased microbial temperature sensitivity in a Tibetan alpine meadow. *Soil Biology and Biochemistry* (113: 26-34)

- [27] Xinyu Xu, Xi Luo, Xiaoyi Wang, **Hui Guo***, Shuijin Hu. (2017) Microsatellite primers in *Plantago virginica* (Plantaginaceae), an invasive species with both cleistogamous and chasmogamous flowers. *Genes & Genetic Systems* (doi.org/10.1266/ggs.17-00011)
- [28] Chenglong Ye, Tongshuo Bai, Hao Zhang, **Hui Guo**, Zhen Li, Huixin Li, Shuijin Hu. (2017) Physical access for residue-mineral interactions controls organic C retention in a red-earth soil. *Scientific Reports* (doi:10.1038/s41598-017-06654-6)
- [29] Ning Ling, Dima Chen, **Hui Guo**, Yongfei Bai, Qi-Rong Shen, Jiaying Wei, Shuijin Hu. (2017) Differential responses of soil bacterial communities to long-term N and P inputs in a semi-arid steppe. *Geoderma*. (292:25-33)
- [30] Mingxing Jiang, Aibin Zhan, **Hui Guo**, and Fanghao Fang. Research and management of biological invasions in China: Future perspectives. (2017) *Invading Nature Springer Series in Invasion Ecology: Biological Invasion in China*. Springer-Verlag New York Inc. 11(IV):239-247
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- [34] Zhongling Yang, **Hui Guo**, Jiayang Zhang & Guozhen Du (2013) Stochastic and deterministic processes together determine alpine meadow plant community composition on the Tibetan Plateau. *Oecologia* (171, 495–504)
- [35] **Hui Guo**, Jacob Weiner, Susan J. Mazer, Zhigang Zhao, Guozhen Du & Bo Li. (2012) Reproductive allometry in *Pedicularis* species changes with elevation. *Journal of Ecology*. 100, 452-458
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- [37] **Hui Guo**, Susan J. Mazer & Guozhen Du. (2010) Geographic variation in primary sex allocation per flower within and among 12 species of *Pedicularis* (Orobanchaceae): proportional male investment increases with elevation. *American Journal of Botany*. 97,1334-1341.
- [38] Longchong Zhang, **Hui Guo**, Mantang Wang & Guozhen Du. (2011) Plasticity of reproductive traits responding to variation in light availability at the rosette stage of the first year in a strict biennial, *Pedicularis torta*, from a field on the Qinghai–Tibet Plateau, China. *Plant Species Biology*, 26,105-110

中文核心期刊论文

- [1] 叶成龙, 张浩, 周小龙, 周显辉, 郭辉* & 胡水金. (2018). 氮添加对高寒草甸土壤微生物呼吸及其温度敏感性的影响. 生态学报 (7), 2279-2287.
- [2] 张浩, 叶成龙, 王益, 郭辉* & 胡水金. (2017). 云雾山草原不同深度土壤的呼吸特征及其对温度变化的响应. 草业科学 34(2), 224-230.
- [3] 杨敏慎, 刘晓雨 & 郭辉* (2021) 气候变暖和 CO₂ 浓度升高对农作物的影响. 江苏农业学报 37 (1) 246-258.

英文专著

- [1] Hui Guo*, Susan J. Mazer, Xinyu Xu, Xi Luo, Kailing Huang, and Xiaohong Xu. Biological invasions in nature reserves in China. (2017) Invading Nature Springer Series in Invasion Ecology: Biological Invasion in China. Springer-Verlag New York Inc. 11(I):125-204

承担和参与科研项目:

- [1] 国家自然科学基金委面上项目: 青藏高原高寒草甸植物-土壤反馈对植物群落构建的作用机制研究 (31971435)
- [2] 国家重点研发项目: 典型脆弱生态修复与保护—陆地生态系统碳源汇监测技术及指标体系 (2017YFC0503902)
- [3] 国家重点研发项目: 生物安全关键技术研发—入侵植物与脆弱生态系统相互作用的机制、后果及调控 (2017YFC1200105)
- [4] 江苏省自然科学基金项目面上项目 (BK20161445), 入侵植物自交亲和性进化及其对温度升高的响应
- [5] 中央高校基本科研业务费重点项目 (0306J0887), 长期养分添加对青藏高原土壤微生物呼吸及其温度敏感性的影响