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Modelling the role of mycorrhizal associations in soil carbon cycling: insights from global analyses of mycorrhizal vegetation

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Citation

Huang, W. (2024, April 10). *Modelling the role of mycorrhizal associations in soil carbon cycling: insights from global analyses of mycorrhizal vegetation*. Retrieved from <https://hdl.handle.net/1887/3734176>

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Note: To cite this publication please use the final published version (if applicable).

List of publications

Publications in peer-reviewed journals

1. **Huang, W.**, van Bodegom, P. M., Declerck, S., Heinonsalo, J., Cosme, M., Viskari, T., ... Soudzilovskaia, N. A. (2022). Mycelium chemistry differs markedly between ectomycorrhizal and arbuscular mycorrhizal fungi. *Communications Biology*, 5(1), 398. <https://doi.org/10.1038/s42003-022-03341-9>
2. **Huang, W.**, van Bodegom, P. M., Viskari, T., Liski, J., & Soudzilovskaia, N. A. (2022). Implementation of mycorrhizal mechanisms into soil carbon model improves the prediction of long-term processes of plant litter decomposition. *Biogeosciences*, 19(5), 1469–1490. <https://doi.org/10.5194/bg-19-1469-2022>
3. Tian, Y., **Huang, W.**, Wu, X., Jim, C. Y., Wang, X., & Liu, Y. (2019). Dominant control of climate variations over land-use change on net primary productivity under different urbanization intensities in Beijing, China. *Shengtai Xuebao/ Acta Ecologica Sinica*, 39(5), 416–424. <https://doi.org/10.1016/j.chnaes.2019.07.002>
4. **Huang, W.**, Tian, Y., Liu, Y., Song, H. (2017). Review: Research on forest death and its response to climate change. *Forest Science and Technology* 3(1). DOI: 10.13456/j.cnki.lykt.2017.03.001
5. Tian, Y., **Huang, W.**, Liu, Y., Song, H. (2017). Plant monitoring of urban air pollution. *Journal of Beijing Normal University (Natural Science)* 53(2): 242-246. DOI: 10.16360/j.cnki.jbnuns.2017.02.021
6. Wang, H., Tian, Y., **Huang, W.**, & Xiao, S. (2015). Analyzing the impact of irrigation quantity on biomass and water use efficiency of main grasses in artificial grassland in Inner Mongolia. *Shengtai Xuebao/ Acta Ecologica Sinica*, 35(10), 3225–3232. <https://doi.org/10.5846/stxb201312022858>

In review/revision

1. Huang, W., Bodegom, P.M. van, Rineau, F., Viskari, T., Liski, J., Sun, P. & Soudzilovskaia, N.A. Mediation of litter decomposition by mycorrhizal vegetation environment regulates global litter dynamics.
2. Huang, W., Sun, P., Bodegom, P.M. van, Rineau, F., Viskari, T., Liski, J. & Soudzilovskaia, N.A. Projected re-distribution of global mycorrhizal vegetation under future environmental change and implications for leaf litter decomposition.

Conference/Forum Abstracts

1. Huang, W., van Bodegom, P. M., Viskari, T., Liski, J., & Soudzilovskaia, N. A. (2021). Implementation of mycorrhizal mechanisms in a soil carbon model improves predictions of long-term plant litter decomposition processes. European Geosciences Union (EGU) General Assembly 2021 (Oral presentation, Selected Outstanding Student and PhD candidate Presentation award)
2. Huang, W., van Bodegom, P. M., Viskari, T., Liski, J., & Soudzilovskaia, N. A. (2022) Mycorrhizal impact as mediators of the litter decomposition process, regulate the global litter decomposition dynamics. 4th Ecology of Soil Microorganisms Conference, Prague, Czech Republic (Oral presentation)

Acknowledgements

In this cheerful moment, I reflect on the pivotal conversations that led me to the doctoral path—speaking with Prof. Arnold Tukker at a conference in Beijing, and deliberating with Dr. Tiejun Wang at the ITC office in Enschede. Despite initial uncertainties and unforeseen challenges, I am immensely grateful for choosing this unparalleled journey. My heart is filled with gratitude for the steadfast companions who have been part of this odyssey.

Foremost, I extend my deepest appreciation to my supervisors, Prof. Peter van Bodegom and Prof. Nadia Soudzilovskaia, for their unwavering support, guidance, and invaluable feedback that shaped this thesis. I want to thank Nadia for leading me into this fantastic research field of mycorrhiza, she through both words and actions, instilled in me the qualities essential for scientific inquiry. Peter, with his calm and rigorous approach to scientific challenges, has been a source of inspiration to me. His methodical thinking has had a contagious effect on me. They have shared in every success and setback along my research journey, and spare no words in encouraging every small step of progress I take and fostering my resilience in facing challenges, all these will be my lifelong treasures beyond scientific research. Thank you for not only being mentors but also friends on my scientific journey. I feel incredibly fortunate to have you as my guide.

This research owes its existence to the opportunities provided by the China Scholarship Council and the University of Leiden, along with the collaboration with Hasselt University. I am also grateful to Prof. Francois Rineau and Prof. Jaco Vangronsveld for their support during the joint PhD program with Hasselt, enabling me to persist in my quest for knowledge.

Gratitude extends to collaborators for their contribution to my research. I want to thank Prof. Jari Liski, Dr. Toni Viskari from Finnish Meteorological Institute, and Prof. Jussi Heinonsalo from Helsinki University, for sharing their valuable input and knowledge with me. I would also like to thank Prof. Stéphane Declerck, Dr. Marco Cosme, and colleagues from the mycology lab of Université catholique de Louvain for sharing the lab and providing support. I am grateful to Emilie Didaskalou and all of our technicians in CML, thanks for their efforts in supporting our research.

My appreciation to the mycorrhiza team of Mili, Chenguang, Riccardo, and Sofia, working with you on this fascinating topic has been a pleasure. Extra appreciation for Chen Li, Peng Sun, Dirk, and Nuno for insightful discussions and help that alleviated research hurdles. Special mentions to members of “Soil process group”

Emilia, Anne, Andrea, Ruiqi, and ‘GIS group’, Joris and Yali, thanks for exchanging research ideas and insights.

These years have been a fortune spent with colleagues in CML, Leiden University, navigating a multicultural environment with respect. Gratitude to my IE department meeting chairing partner Bregje and Institute Council members Franco, Laura, Mingming, Michiel, Stefano, thank you for your collaborative spirit and it’s joyful working with you. All my colleagues Stewart, Glenn, Brenda, Joeri, Amie, Eefje, Tom, Pim, Kevin, Joeri, Mike, Oliver and more that I cannot name all here, thanks for those moments together making my coffee, lunch and gym time more joyful. I must express my thankfulness to our supporting team, Paul, Sammy, Milan and all of you for making our life easier.

I also want to thank my Chinese friends who shared countless warm moments with nice food and smiles. To Qi Yu, Juan Wu, Jianhong, Yujia, Di Dong, Zhongxiao, Guiying, Yingji, Cherry Yuan and Liangchen, thanks for the time spent together. To Beilun, Deyi, Yusheng, Kaixuan, Baoxiao, Chen Tang, Xiaoyang, Qi Chen, Xining, Kai Li, Justin, Jinhui, Meng Li, Yuanyuan and so many names I can’t list all here, thanks for those moments spent together with cheerful talks and care which fuelled me up. My Mahjong and activity mates deserve a special moment here, Yanan, Wen Wen, Zhenyang, Yuchao and all friends in Fei Ma’s chatting group, thank you for the happy time together, you have made my days! I would also like to thank my friend Dr. Rui Shao who just defended her PhD thesis at Ghent University, for the mutual encouragement along our path from our master's degree to PhD.

Special thanks to Dr.Tiejun Wang for your listening, counselling and guidance during my confusing and anxious moments which empowers me now and then. Thanks to Dr. Yuhong Tian, my supervisor during my master's at BNU, for leading me onto this amazing academic path.

My deepest gratitude goes to my parents, my husband and all my families, especially my mother, thank you for being my mental pillar so that I could stay true to my choices, and thank you for your unconditional love and giving.

To you all, I extend my heartfelt thanks. Though constrained by an 800-word limit, my gratitude knows no bounds.

Curriculum vitae



Weilin was born on December 24th, 1991, on a picturesque island - Zhoushan - in the eastern part of China, in Zhejiang. Weilin's formative years unfolded amidst the vibrant tapestry of rural life. Nestled within the embrace of her grandparents and the fertile landscapes cultivated by her extended family, she spent countless summers and winters immersed in the idyllic surroundings of orchards filled with mulberry and citrus trees, alongside farm animals. The undulating hills, serene lakes, and meandering rivers became the backdrop of her upbringing, forging an indelible connection with nature and the land. These cherished experiences not only constitute the fondest memories of her youth but also laid the foundation for her future academic pursuits, with a particular focus on the agricultural landscapes and ecosystems that have profoundly shaped her identity.

Embarking on her academic journey, from 2010 to 2014, Weilin commenced with a Bachelor's degree in Land Resource Management from Chengdu University of Technology (CUT), Sichuan, China, where she graduated as the top 1st student in the major and was awarded *Outstanding School Graduates* by CUT. Building upon this foundation, she pursued Master's degree majoring in Nature Resources at Beijing Normal University, Beijing, China (2014-2017). In 2015, she participated in a joint Master's degree project majoring in Geo-information Science and Earth Observation at ITC, University of Twente, Enschede, the Netherlands. Her master's thesis delved into the large spatial data of Hansen's Global Forest Change dataset and MODIS data, unveiled insights into forest loss and changes over decades and also estimated the human and climate impact on these transformations, contributing significantly to the Project of National Foundation of Natural Science Major Program in China.

Starting in December 2017, Weilin was granted a scholarship through the China Scholarship Council-Leiden University Joint Program. During this period, she served as a PhD candidate under the supervision of Prof. Nadia Soudzilovskaia and Prof. Peter van Bodegom at the Institute of Environmental Sciences (CML) at Leiden University, the Netherlands. In 2021, she participated in the joint PhD program of Leiden University & Hasselt University (Belgium). Her project focuses on modelling the impact of mycorrhiza on soil carbon sequestration and examining how land-use change and climate change will influence plant-microbial interactions and their role in soil carbon dynamics. The results of her PhD research are presented in this thesis. In the future, she will continue to devote herself to sustainable agriculture and climate change related work and research, which is her passion.