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EDUCATION

- 2021/09 – 2025/08 Ph.D. Department of Forestry, National Chung Hsing University, Taichung City, Taiwan (R.O.C.)
- 2019/09 – 2021/08 M.S. Department of Forestry, National Chung Hsing University, Taichung City, Taiwan (R.O.C.)
- 2016/09 – 2019/08 B.A. Department of Forestry, National Chung Hsing University, Taichung City, Taiwan (R.O.C.)

EMPLOYMENT

- 2025/12 – Present Postdoctoral Research Fellow RCEC, Academia Sinica, Taiwan

HONORS & AWARDS

- 2025 Phi Tau Phi Member from The Phi Tau Phi Scholastic Honor Society of the Republic of China (R.O.C.).
- 2022 Award Higher Education SPROUT Project Scholarship from Innovation and Development Center of Sustainable Agriculture, National Chung Hsing University, Taichung City, Taiwan (R.O.C.).
- 2021 Award Higher Education SPROUT Project Scholarship from Innovation and Development Center of Sustainable Agriculture, National Chung Hsing University, Taichung City, Taiwan (R.O.C.).
- 2021 Best Master's Thesis Award from Rural Economics Society of Taiwan, Taipei City, Taiwan (R.O.C.).
- 2021 Best Master's Thesis Award from Outdoor Recreation Association of R.O.C., Taipei City, Taiwan (R.O.C.).
- 2021 Best Master's Thesis Award from Taiwan Association of Environmental and Resources Economics, Taipei City, Taiwan (R.O.C.).

2020 Excellent Research Academic Paper, Municipal Development from Taichung City Government, Taichung City, Taiwan (R.O.C).

RESEARCH INTEREST

My research focuses on climate and environmental change impacts on forest ecosystems, with emphasis on the spatiotemporal characteristics of forest fires in Taiwan, wildfire risk modeling and prediction, and fire management strategies. Holding a degree in Forest Management from National Chung Hsing University, I have published research spanning Atmospheric Science, Forest Resource Evaluation, and Environmental Economics. In wildfire research, I examined western U.S. wildfire effects on air quality and national park visitation, and for Taiwan, analyzed six decades of fire-climate relationships, projected future wildfire risk under climate change, and assessed practitioner risk attitudes to inform adaptive management strategies. I also contributed to developing the Wildfire Danger Rating System for the Forestry and Nature Conservation Agency of Taiwan, translating research into operational disaster prevention. In forest resource valuation and environmental economics, my work addresses non-market valuation of ecosystem services, including recreation, carbon sequestration, water conservation, and biodiversity, alongside payment scheme design and policy evaluation, published in domestic and international peer-reviewed journals. Looking ahead, I plan to extend wildfire research to broader environmental change assessments and further investigate forest carbon sequestration.

RESEARCH HIGHLIGHTS

1. Estimating Wildfire Potential in Taiwan under Climate Change

By integrating satellite observation data and regional dynamically downscaled climate change projections, I investigated the spatiotemporal relationships between historical wildfire risk and climate-environmental change in Taiwan, as well as future wildfire risk trends under climate change scenarios. I compiled 58 years of climate-environmental and wildfire event data to identify the key drivers of wildfire risk in Taiwan. My findings revealed that wildfire risk in Taiwan is more strongly driven by drought conditions than by extreme high temperatures, and that seasonal drought in central and southern Taiwan makes spring the peak wildfire season. Under the RCP8.5 scenario, wildfire occurrences are projected to increase by approximately 35.6% by the late twenty-first century, indicating that climate change will significantly elevate wildfire risk in Taiwan.

Reference: Yu, H.W., Wang, S.Y.S., & Liu, W.Y. (2024). Estimating wildfire potential in Taiwan under different climate change scenarios. *Climatic Change*, 177, 13.

2. Strategic Decision-Making in Wildfire Risk Management in Taiwan

By integrating two decades of wildfire incident response records (2004–2023) with discrete choice experiment (DCE) field surveys, I examined the development of Taiwan's wildfire management strategies over the past 20 years and the risk attitudes of wildfire management

personnel. Through simulating decision-making processes under conditions of high uncertainty during wildfire events, I aimed to improve the efficiency of emergency resource allocation and adaptive management. My findings revealed that Taiwan's wildfire management strategies have shifted significantly toward Full Suppression over the past two decades, and that wildfire management personnel generally exhibit risk-averse attitudes with a high priority placed on personnel safety. Model estimates indicate that Taiwanese wildfire managers are willing to pay NT\$1.69 million to prevent one casualty per 1,000 wildfire events.

Reference: Yu, H.W., & Liu, W.Y. (2025). Strategic decision-making in wildfire risk management: Risk attitudes, strategy shifts, and policy implications in Taiwan. *International Journal of Disaster Risk Reduction*, 128. 105706.

REPRESENTATIVE PUBLICATIONS (*: corresponding author)

1. **Yu, H. W.** & W. Y. Liu* (2025). Strategic decision-making in wildfire risk management: risk attitudes, strategy shifts, and policy implications in Taiwan. *International Journal of Disaster Risk Reduction*, 128, 105706. (SCIE; 2024 IF=4.5; 38/258=14.5% Q1). Accepted. <https://doi.org/10.1016/j.ijdr.2025.105706>
2. **Yu, H. W.**, S. Y. S. Wang & W. Y. Liu* (2025). Do fire weather conditions significantly affect wildfires in subtropical forests in Taiwan? *Journal of Applied Meteorology and Climatology*, 64(2), 165-184. (SCIE; 2024 IF=2.2; 71/111=63.5% Q3) <https://doi.org/10.1175/JAMC-D-24-0031.1>
3. **Yu, H. W.** & W. Y. Liu* (2025). Visitor dynamics under disturbance: exploring the interplay of air quality, wildfires, and U.S. national park visitation patterns. *Leisure Sciences*, 1-28. (SSCI; 2024 IF=1.9; 51/139=36.33% Q2) <https://doi.org/10.1080/01490400.2025.2468402>
4. **Yu, H. W.**, S. Y. S. Wang & W. Y. Liu* (2024). Estimating wildfire potential in Taiwan under different climate change scenarios. *Climatic Change*, 177, 13. (SCIE; 2024 IF=4.8; 20/111=17.6% Q1) <https://doi.org/10.1007/s10584-023-03669-z>
5. Chen, Y. Y., S. Y. S. Wang, **H. W. Yu**, & W. Y. Liu* (2024). When forests hold their breath: will increasing drought further disrupt carbon sequestration? *Environmental Research Letters*, 19, 031002. (SCIE; 2024 IF=5.6; 12/111=10.4% Q1) <https://doi.org/10.1088/1748-9326/ad27ba>
6. **Yu, H. W.**, C. C. Lin & W. Y. Liu* (2023). Predicting forest recreation benefits changes under different climate change scenarios. *Trees Forests and People*, 12(2), 100390. (ESCI; 2024 IF=2.9; 17/92=17.9% Q1) <https://doi.org/10.1016/j.tfp.2023.100390>
7. Liu, W. Y.*, D. R. Lee., S. Y. S. Wang, & **H. W. Yu** (2023). Assessing the ecological loss of mining areas in Taiwan. *Environmental Monitoring and Assessment*, 195, 288. (SCIE; 2024 IF=3.0; 190/374=50.7% Q3) <https://doi.org/10.1007/s10661-022-10780-8>
8. Liu, W. Y.*, **H. W. Yu** & M. Y. Chu (2023). Potential Impacts of Afforestation Expansion Under Price Fluctuations of Carbon and Timber. In: Wu, HH., Liu, WY., Huang, M.C. (eds) *Moving*

Toward Net-Zero Carbon Society. Springer Climate. Springer, Cham.
https://doi.org/10.1007/978-3-031-24545-9_2

9. Liu, W. Y., H. W. Yu & C. M. Hsieh* (2021). Evaluating forest visitors' place attachment, recreational activities, and travel intentions under different climate scenarios. *Forests*, 11(2), 171. (SCIE; 2024 IF=2.5; 25/92=26.6% Q2) <https://doi.org/10.3390/f12020171>

Others

1. 柳婉郁、俞鉉文 (2025) 全球野火警訊：從 2025 年洛杉磯與南韓重大林火事件看台灣森林防災策略。 臺灣環境，198 期，第 9 頁至第 13 頁。 <https://tepu.org.tw/?p=22018>
2. 柳婉郁、王世宇、俞鉉文 (2025) 韌性森林：臺灣森林大火的預測與應對。 科學月刊，56 卷 666 期，56 頁至 61 頁。 <https://www.scimonth.com.tw/archives/13428>
3. 柳婉郁、王世宇、俞鉉文 (2024) 林火風險評估系統氣象資料導入及加值運用。 台灣林業，農業部林業及自然保育署，台北市，50 卷 6 期，5 頁至 14 頁。 <https://www.forest.gov.tw/MagazineFile.aspx?fno=7313>
4. 柳婉郁、俞鉉文 (2023) 基於結果之農業環境給付政策之初探。 農業世界雜誌，農世股份有限公司，台中市，474 期，33 頁至 37 頁。 https://www.agriworld.com.tw/magazine1_detail.php?Key=39
5. 柳婉郁、俞鉉文 (2023) 歐盟基於結果之農業環境給付計畫-以英國案例為例。 強化農業政策決策訊息蒐集分析平台，台灣農村經濟學會，台北市。