RACHEL LAU YU SAN

Research Assistant

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EDUCATION

Michigan State University

2024-present

Ph.D. in Geography

National University of Singapore

2017-2021

Bachelor of Environmental Studies (Hons): Specialization in Geography

• Student Exchange Programme (SEP) in Norway, University of Oslo

• EXPLORE Young Marine Scientist Research Grant

SKILLS

• Bilingual in Chinese

• Proficient in GIS software (ArcGIS, QGIS) for data analysis and mapping

• Proficient in Microsoft Office

• Familiarity with R statistical software

CAREER OBJECTIVE

To advance our knowledge of environmental systems and their interactions with human society to support sustainable development and protection of nature in the long term

EXPERIENCE

Research Assistant | National Institute of Education, Singapore

Aug 2021 – Jul 2024

• Gathered and interpreted extensive bathymetry data to assess the impact of riverbed sand mining on the environment and communities in Southeast Asia

• Participated in overseas fieldwork involving biophysical data collection and social surveys to gain insights into livelihood changes generated by human activities

• Collaborated with team members to develop and submit three successful grant proposals to secure research funding

• Wrote, designed, and reviewed materials for presentation and publication to ensure effective communication and clarity

• Managed administrative duties related to PI's research grants (budget virement, reporting, and compliance with funding agency requirements), and procurement of equipment and supplies

• Worked collaboratively with external stakeholders and support officers to ensure smooth project management

Intern | Keppel Land

Oct 2020 – Dec 2020

• Conducted extensive literature reviews on climate change, sea level rise, ecological coastal protection, and environmental impacts of floating developments on both global and local scales.

• Developed comprehensive reports that provided insights and recommendations for future sustainable development plans in Singapore, contributing to Keppel Land's commitment to sustainability and social responsibility.

Intern | National Parks Board Marine & Coastal Division

Jun 2019 – Aug 2019

• Produced a comprehensive coastal biodiversity identification guide, organized a photo database, and verified photos from surveys for the Intertidal Watch Survey, contributing to the attainment of baseline information of biodiversity on the intertidal shores of Singapore.

• Aided various experts in conducting field surveys, such as the Mangrove Insect Survey, Harlequin Butterfly Survey, and Heron Watch Survey, demonstrating strong teamwork and collaboration skills.

• Supported various events hosted by NParks, including the Festival of Biodiversity, 5th Mangrove, Macrobenthos, and Management conference, and Marine Debris Stakeholder Engagement, through booth management, ushering, and note taking.

PUBLICATIONS

• Tran, D. D., Thien, N. D., Yuen, K. W., Lau, R. Y. S., Wang, J., & Park, E. (2023). Uncovering the lack of awareness of sand mining impacts on riverbank erosion among Mekong Delta residents: insights from a comprehensive survey. *Scientific Reports, 13*(1), 15937.

• **Lau, R. Y. S.**, Park, E., Tran, D. D. & Wang, J. (2023). Recent intensification of riverbed mining in the Mekong Delta revealed by extensive bathymetric surveying. *Journal of Hydrology,* 130174*.*

• Alcântara, E., Marengo, J. A., Mantovani, J., Londe, L. R., Lau, R. Y. S., Park, E., Lin, Y. N., Wang, J., Mendes, T., Cunha, A. P., Pampuch, L., Seluchi, M., Simões, S., Cuartas, L. A., Goncalves, D., Massi, K., Alvalá, R., Moraes, O., Filho, C. S., . . . Nobre, C. (2023). Deadly disasters in southeastern South America: Flash floods and landslides of February 2022 in Petrópolis, Rio de Janeiro. *Natural Hazards and Earth System Sciences, 23*(3), 1157-1175.

• Alemu, J. B., Yaakub, S. M., Yando, E. S., Lau, R. Y. S., Lim, C. C., Puah, J. Y., & Friess, D. A. (2022). Geomorphic gradients in shallow seagrass carbon stocks. *Estuarine, Coastal and Shelf Science, 265*, 107681.

CONFERENCE PRESENTATIONS

• (2024, Mar) Recent intensification of riverbed mining in the Mekong Delta revealed by extensive bathymetric surveying. International Association of Geomorphologists (*IAG) Geomorphology Week webinar for East and Southeast Asia, online.* [Oral]

• (2023, Dec). *Uncovering the Legacy Effects of Riverbed Sand Mining on Riverbank Instability: A Study of the Vietnamese Mekong Delta.* American Geophysical Union (AGU), San Francisco, CA. [Poster]

• (2023, Aug). *Recent Intensification of Riverbed Mining in the Mekong Delta Revealed by Extensive Bathymetric Surveying.* Asia Oceania Geosciences Society (AOGS), Singapore. [Oral]

OTHER ARTICLES

Lau, R. Y. S. & Park, E. (2023). *Riverbed sand mining threatens the future stability of the Vietnamese mekong delta.* Global Water Forum. https://www.globalwaterforum.org/2023/11/22/riverbed-sand-mining-threatens-the-future-stability-of-the-vietnamese-mekong-delta/

MEDIA ATTENTION

Climate connections podcast on 'sand debt' in the Vietnamese Mekong delta, later featured in NTU news, and on linkedin where the post was reacted by minister grace fu https://www.moneyfm893.sg/guest/rachel-lau-assistant-professor-edwardpark-ntu/