# RAHAYU ADZHAR

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# Education:

**Ph.D. in Ecology, Evolution, and Environmental Biology | Miami University | 2024 (Anticipated)**
Focus: Land Use Land Cover Change Modelling, Ecosystem Services, Tropical Ecology
Advisor: Dr. Jessica McCarty

Aim: To use remotely sensed vegetation structure and biomass data from NASA's Global Ecosystem Dynamics Investigation (GEDI) mission in conjunction with climate data to predict the occurrence and composition of tropical savannas in semi-arid and wet environments, and how they will likely change in the near future under climate change and increased human population pressure.

**M.Res., Tropical Forest Ecology | Imperial College London | 2019 | Merit**
Thesis: *MODIS VCF and Its 5 m Tree Height Threshold in Tropical Forests and Savannas*
Advisors: Prof. Jon Lloyd (retired), Dr. France Gerard, Dr. Douglas I. Kelley

**B.A, Environment and Information | Keio University, Japan | 2018 | Commendation for Academic Excellence**

# Research Experience:

**Research Assistant | NASA Atmospheric Composition Campaign Data Analysis and Modeling | 2022 –**
Digitising the occurrence of fires in southeastern Kansas using Planet and Sentinel 2 imagery, and validating the accuracy of active fire sensors

**Graduate Research Assistant | NASA Interdisciplinary Research in Earth Science, Miami University | 2021 – Present**
Measure the impact of urban expansion on peri-urban agriculture in Sub-Saharan Africa, and project future land use and land cover change under different climate projections. First deliverable is a systematic review of land use/land cover change models that have been used in Africa up till now, projected to be completed September 2022

**Research Assistant | Institute for Future Engineering Japan | 2018 – Present**
Evaluate effectiveness of Japanese Ministry of Education strategies for attracting international students; responsible for Southeast Asia and South America

**Research Assistant | Nordeste Project, Brazil | 2019 – Present**
Established and collected vegetation structure and species distribution at 4 tropical forest and savanna sites at Juazeiro do Norte (Brazil) in collaboration with Universidad de Fortaleza. Inventory data available on Forestplots.net upon request

**Student Researcher | Sustainability of Altered Forest Ecosystems Project, Malaysia | 2019**
Collected amphibian and insect diversity data in Borneo, organised project to monitor soil carbon fluxes. Data available on Zenodo.

**Teaching Activities:**
**Teaching Assistant | Miami University | Fall 2021 –**
Graded essays, provided feedback regarding critical examination of geographical topics/traditions for GEO111 (World Regional Geography) and GEO208 (Rise of Industrialism in East Asia).

**Student Assistant | Keio University | 2015 – 2018**
Taught Japanese to international students, and assisted administrative staff as a Japanese-English translator. Featured in the 2017 school guidebook as an international student representative. Acted as a teaching assistant for multiple courses conducted in both English and Japanese.

## Publications and Datasets:

**Adzhar, R.**, Kelley, D. I., Dong, N., George, C., Torello Raventos, M., Veenendaal, E., Feldpausch, T. R., Phillips, O. L., Lewis, S. L., Sonké, B., Taedoumg, H., Schwantes Marimon, B., Domingues, T., Arroyo, L., Djagbletey, G., Saiz, G., and Gerard, F.: MODIS Vegetation Continuous Fields tree cover needs calibrating in tropical savannas, Biogeosciences, 19, 1377–1394, https://doi.org/10.5194/bg-19-1377-2022, 2022.

Kelley, D., Beets, …, **Adzhar, R.**, Gerard, F., Quangqi, L., Mercado, L., & Clark, D.: The virtual tress of UKESM, UK Earth System Modelling Newsletter (12), 2021.

Mackintosh, E., …, **Adzhar, R.**, Wiederkehr, F., Graves, K., Brasington, E., Noble, C., Baynham, G., Roxby, G., Poznansky, F., Chung, A., & Ewers, R. M. (2020). Ecosystem process rates across SAFE project forest quality gradient [Data set]. Zenodo. https://zenodo.org/record/3908118

Mackintosh, E., …, **Adzhar, R.,** Wiederkehr, F., Graves, K., Brasington, E., Noble, C., Baynham, G., Roxby, G., Poznansky, F., & Ewers, R. M. (2020). Amphibian survey of riparian buffer zones at SAFE Project, Borneo [Data set]. Zenodo. https://doi.org/10.5281/zenodo.3973551

Orme, C., …, **Adzhar, R.**, MacLean, C., Martin, S., McKinlay, A., Poznansky, F., Prairie, A., Brasington, E., & Wiederkehr, F. (2019). Daily cycles in soil carbon flux [Data set]. Zenodo. https://doi.org/10.5281/zenodo.3247592

## Presentations:

**Adzhar, R**. (2020). "Why Earth Observation Products Struggle in Tropical Savannas." Conservation Ecology & Tropical Ecology Joint Twitter Conference by the British Ecological Society, 2020.

**Adzhar, R.**, Kelley, D., Dong, N., Gerard, F. (2020). "How accurate is the MODIS Vegetation Continuous Fields Tree Cover, and why it matters." American Geophysical Union, Fall 2020 Meeting. Poster.

## Skills:

- Collaborative Research in Large, International Research Groups
- Ecological Modeling and Analysis in R
- Geospatial Analysis in Google Earth Engine, QGIS, ArcGISPro
- Land Cover Land Use Change Modeling in TerrSet
- Fluency in English, Malay, and Japanese