Stanford



Alison Hoyt

Assistant Professor of Earth System Science and Center Fellow, by courtesy, at the Woods Institute for the Environment

Bio

BIO

Alison Hoyt is an Assistant Professor of Earth System Science at Stanford. Her work focuses on understanding how biogeochemical cycles respond to human impacts, with a particular focus on the most vulnerable and least understood carbon stocks in the tropics and the Arctic. For more information, please visit her group website here: https://carboncycle.stanford.edu/

ACADEMIC APPOINTMENTS

- Assistant Professor, Earth System Science
- Center Fellow (By courtesy), Stanford Woods Institute for the Environment
- Member, Bio-X

Teaching

COURSES

2026-27

- Ecosystem Restoration and the Carbon Cycle: ESS 35N (Aut)
- Mitigating Climate Change through Soil Management: ESS 233 (Spr)

2024-25

- Ecosystem Restoration and the Carbon Cycle: ESS 35N (Aut)
- Mitigating Climate Change through Soil Management: EARTHSYS 233, ESS 233 (Win)

2023-24

- Climate Change: An Earth Systems Perspective: ESS 305 (Aut)
- Mitigating Climate Change through Soil Management: EARTHSYS 233, ESS 233 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Adrian Wackett

Postdoctoral Faculty Sponsor

Newton Nguyen

Doctoral Dissertation Advisor (AC)

Jack Lamb

Doctoral Dissertation Co-Advisor (AC)

Cherrie Zheng

Doctoral (Program)

Jack Lamb, Lorena Santamaria Rojas, Julie Shahan

Publications

PUBLICATIONS

- **Controls and relationships of soil organic carbon abundance and persistence vary across pedo-climatic regions.** *Global change biology*
  von Fromm, S. F., Hoyt, A. M., Sierra, C. A., Georgiou, K., Doetterl, S., Trumbore, S. E.
  2024; 30 (5): e17320
- **Canal networks regulate aquatic losses of carbon from degraded tropical peatlands** *NATURE GEOSCIENCE*
  Bowen, J. C., Wahyudio, P. J., Anshari, G. Z., Aluwihare, L. I., Hoyt, A. M.
  2024
- **Boreal-Arctic wetland methane emissions modulated by warming and vegetation activity** *NATURE CLIMATE CHANGE*
  Yuan, K., Li, F., McNicol, G., Chen, M., Hoyt, A., Knox, S., Riley, W. J., Jackson, R., Zhu, Q.
  2024
- **Controls on timescales of soil organic carbon persistence across sub-Saharan Africa.** *Global change biology*
  von Fromm, S. F., Doetterl, S., Butler, B. M., Aynekulu, E., Berhe, A. A., Haefele, S. M., McGrath, S. P., Shepherd, K. D., Six, J., Tamene, L., Tondoh, E. J., Vagen, T., Winowiecki, et al
  2024; 30 (1): e17089
- **Relating mineral-organic matter stabilization mechanisms to carbon quality and age distributions using ramped thermal analysis.** *Philosophical transactions. Series A, Mathematical, physical, and engineering sciences*
  Stoner, S., Trumbore, S. E., González-Pérez, J. A., Schrumpf, M., Sierra, C. A., Hoyt, A. M., Chadwick, O., Doetterl, S.
  2023; 381 (2261): 20230139
- **How well does ramped thermal oxidation quantify the age distribution of soilcarbon? Assessing thermal stability of physically and chemicallyfractionated soil organic matter** *BIOGEOSCIENCES*
  Stoner, S. W., Schrumpf, M., Hoyt, A., Sierra, C. A., Doetterl, S., Galy, V., Trumbore, S.
  2023; 20 (15): 3151-3163
- **Processes Controlling Methane Emissions From a Tropical Peatland Drainage Canal** *JOURNAL OF GEOPHYSICAL RESEARCH-BIOGEOSCIENCES*
  Somers, L. D. D., Hoyt, A., Cobb, A. R. R., Isnin, S., Suhip, M., Sukri, R. S. S., Gandois, L., Harvey, C.
  2023; 128 (3)
- **Soil carbon stocks in stable tropical landforms are dominated by geochemical controls and not by land use.** *Global change biology*
  Reichenbach, M., Fiener, P., Hoyt, A., Trumbore, S., Six, J., Doetterl, S.
  2023
- **Extensive global wetland loss over the past three centuries.** *Nature*
  Fluet-Chouinard, E., Stocker, B. D., Zhang, Z., Malhotra, A., Melton, J. R., Poulter, B., Kaplan, J. O., Goldewijk, K. K., Siebert, S., Minayeva, T., Hugelius, G., Joosten, H., Barthelmes, et al
  2023; 614 (7947): 281-286
- **Reviews and syntheses: The promise of big diverse soil data, moving current practices towards future potential** *BIOGEOSCIENCES*
  Todd-Brown, K. E. O., Abramoff, R. Z., Beem-Miller, J., Blair, H. K., Earl, S., Frederick, K. J., Fuka, D. R., Santamaria, M., Harden, J. W., Heckman, K., Heran, L. J., Holmquist, J. R., Hoyt, et al
  2022; 19 (14): 3505-3522
- **Climate change-induced peatland drying in Southeast Asia** *ENVIRONMENTAL RESEARCH LETTERS*
  Dadap, N. C., Cobb, A. R., Hoyt, A. M., Harvey, C. F., Feldman, A. F., Im, E., Konings, A. G.

2022; 17 (7)

- **Drainage Canals in Southeast Asian Peatlands Increase Carbon Emissions** *AGU Advances*
  Dadap, N. C., Hoyt, A. M., Cobb, A. R., Oner, D., Kozinski, M., Fua, P. V., Rao, K., Harvey, C. F., Konings, A. G.
  2021; 2 (1): 1-14

- **An open-source database for the synthesis of soil radiocarbon data: International Soil Radiocarbon Database (ISRaD) version 1.0** *EARTH SYSTEM SCIENCE DATA*
  Lawrence, C. R., Beem-Miller, J., Hoyt, A. M., Monroe, G., Sierra, C. A., Stoner, S., Heckman, K., Blankinship, J. C., Crow, S. E., McNicol, G., Trumbore, S., Levine, P. A., Vinduskova, et al
  2020; 12 (1): 61–76

- **The landscape of soil carbon data: emerging questions, synergies and databases** *Progress in Physical Geography*
  Malhotra, A., Todd-Brown, K., Nave, L. E., Batjes, N. H., Holmquist, J. R., Hoyt, A. M., Iversen, C. M., Jackson, R. B., Lajtha, K., Lawrence, C., Vindušková, O., Wieder, W., Williams, et al
  2019

- **Satellite soil moisture observatins predict burned area in Southeast Asian peatlands** *ENVIRONMENTAL RESEARCH LETTERS*
  Dadap, N. C., Cobb, A. R., Hoyt, A. M., Harvey, C. F., Konings, A. G.
  2019; 14