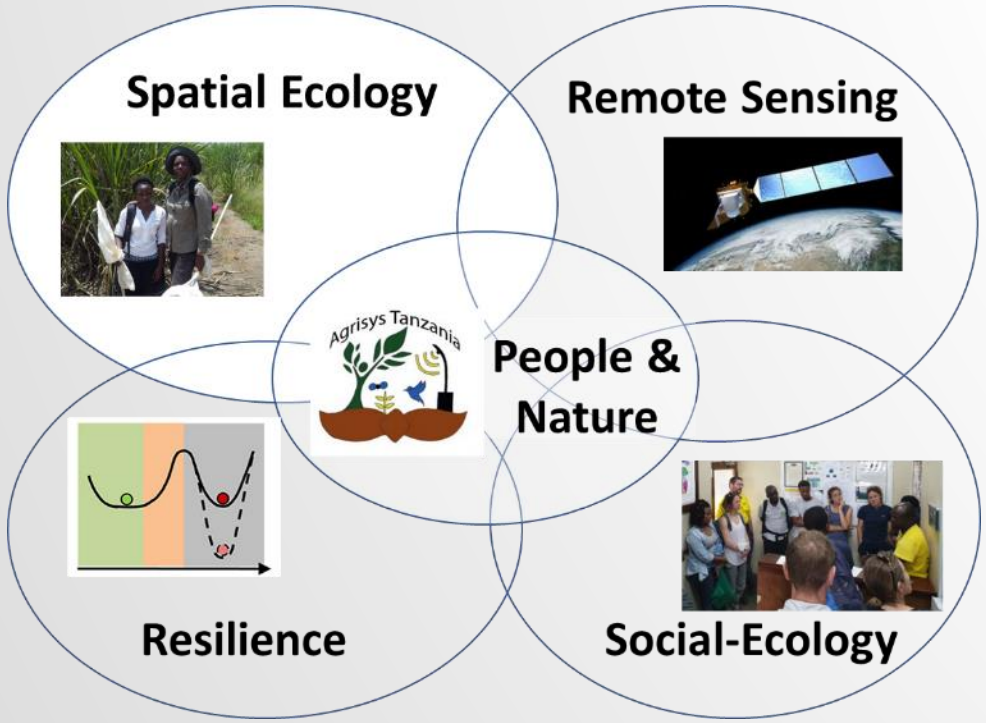
INTEGRATING SATELLITE DATA WITH HABITAT QUALITY, BIODIVERSITY AND SOCIAL DATA



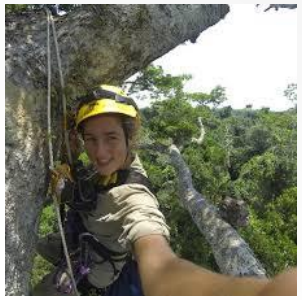
Dr Marion Pfeifer,

PI of the TROPS lab

Reader, Landscape Ecology and Management, Newcastle University

Co-Director of Centre for Climate and Environmental Resilience

To inform decision-making in forest-agricultural landscapes for on biodiversity, people & climate change mitigation and adaptation



Landscapes that my lab is working in

To inform decision-making in forest-agricultural landscapes for on biodiversity, people & climate change mitigation and adaptation

1. Predictive mapping of land use/forest cover and biodiversity distribution

Data:
- Landsat sensor data (30 m)
- Biodiversity data (20 m plots)
- Point surveys of habitat type

Models:
- Machine learning algorithms
- Cluster algorithms
- In house algorithms to characterize landscape configuration

To inform decision-making in forest-agricultural landscapes for on biodiversity, people & climate change mitigation and adaptation

1. Predictive mapping of land use/forest cover and biodiversity distribution
2. Mapping habitat quality (biomass, carbon, vegetation canopy closure) linking it to biodiversity and microclimate

Data:

- High to moderate resolution satellite sensor data
- Microclimate data (20 m plots)
- Point surveys of habitat quality

Models:

- Machine learning algorithms
- Regression models

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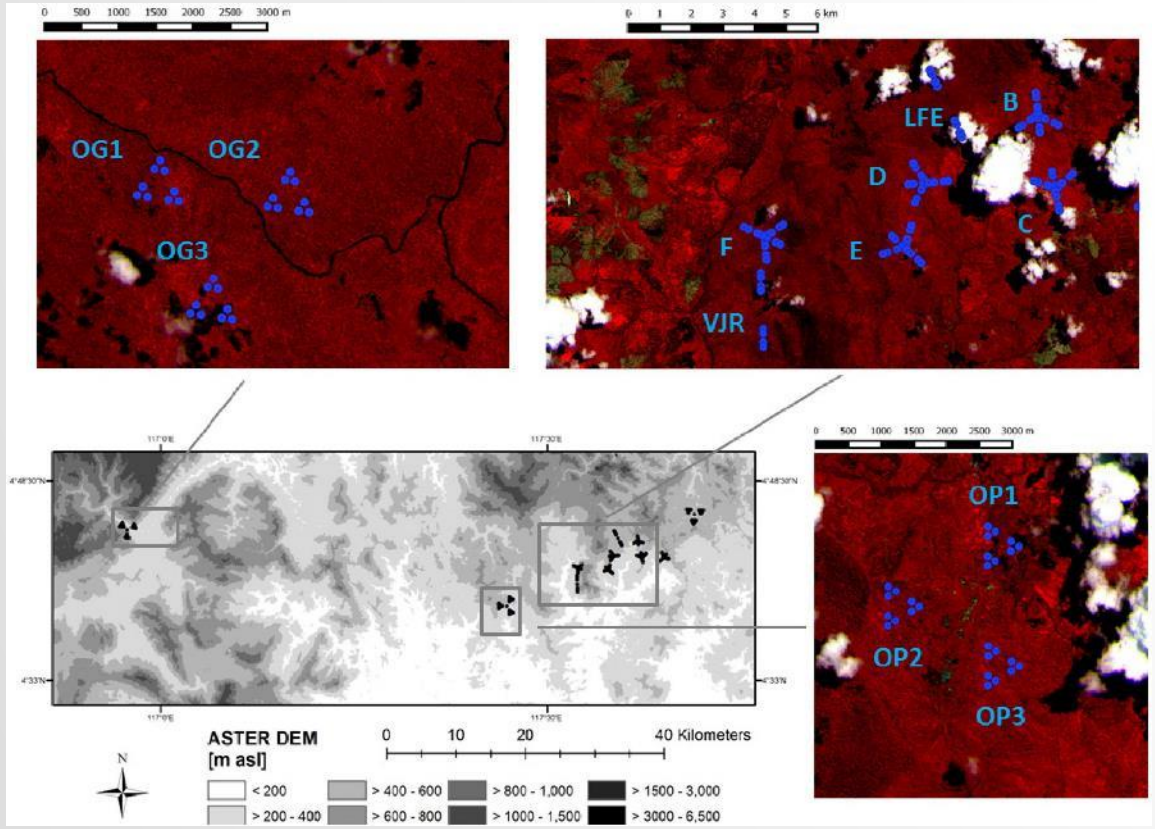

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Mapping the structure of Borneo's tropical forests across a degradation gradient

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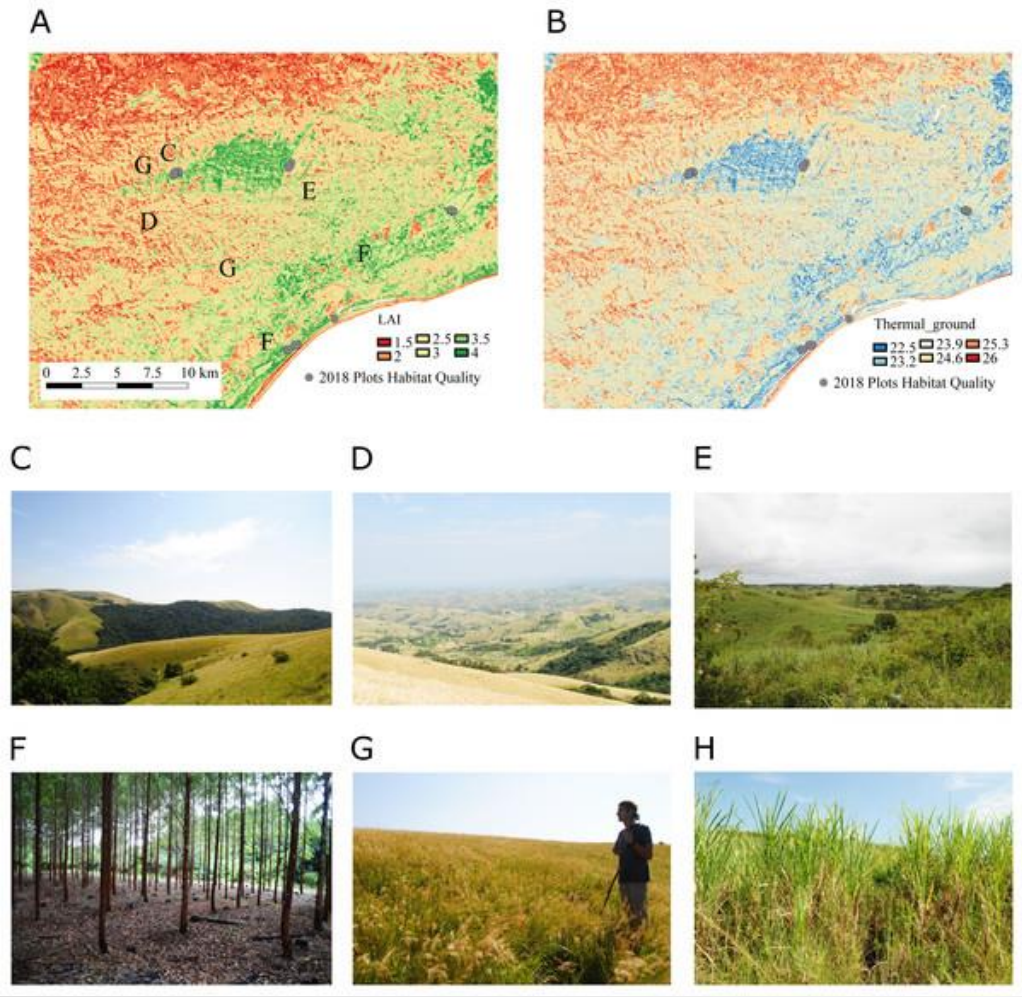
The relationship between leaf area index and microclimate in tropical forest and oil palm plantation: Forest disturbance drives changes in microclimate

Stephen R. Hardwick [a], Ralf Toumi [a], Marion Pfeifer [b], Edgar C. Turner [c], Reuben Nilus [d], Robert M. Ewers [b]

To inform decision-making in forest-agricultural landscapes for on biodiversity, people & climate change mitigation and adaptation



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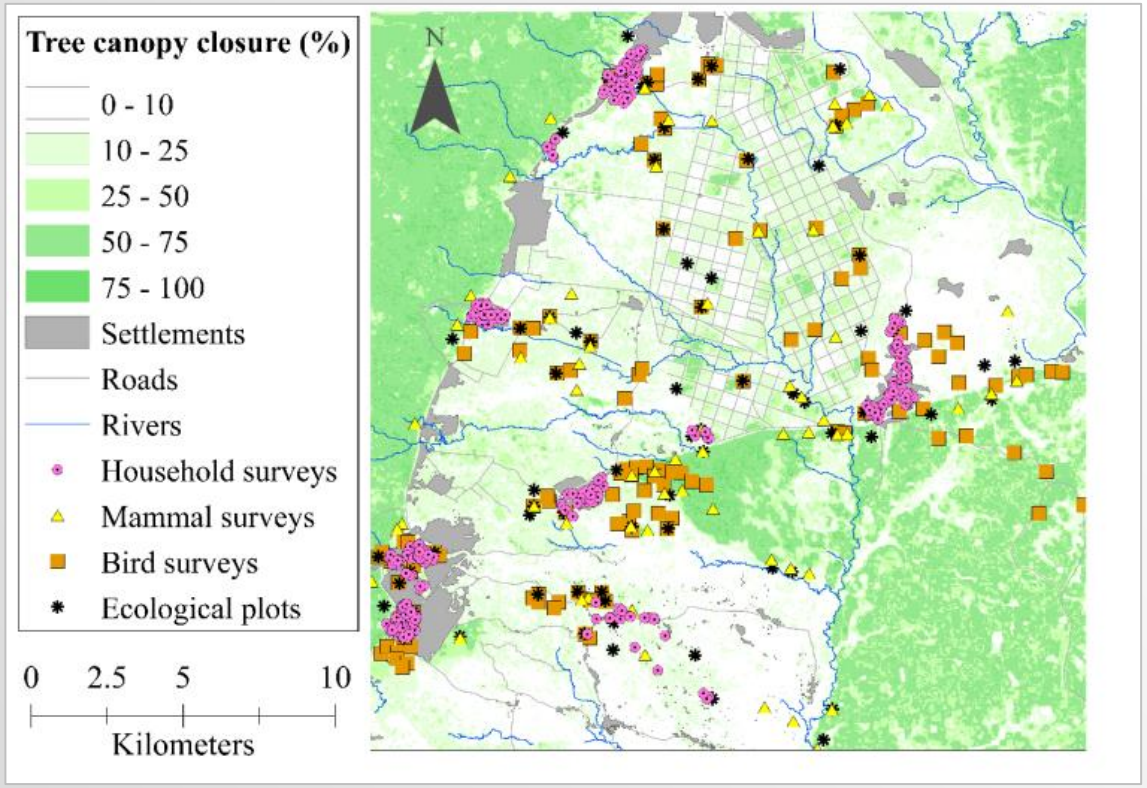

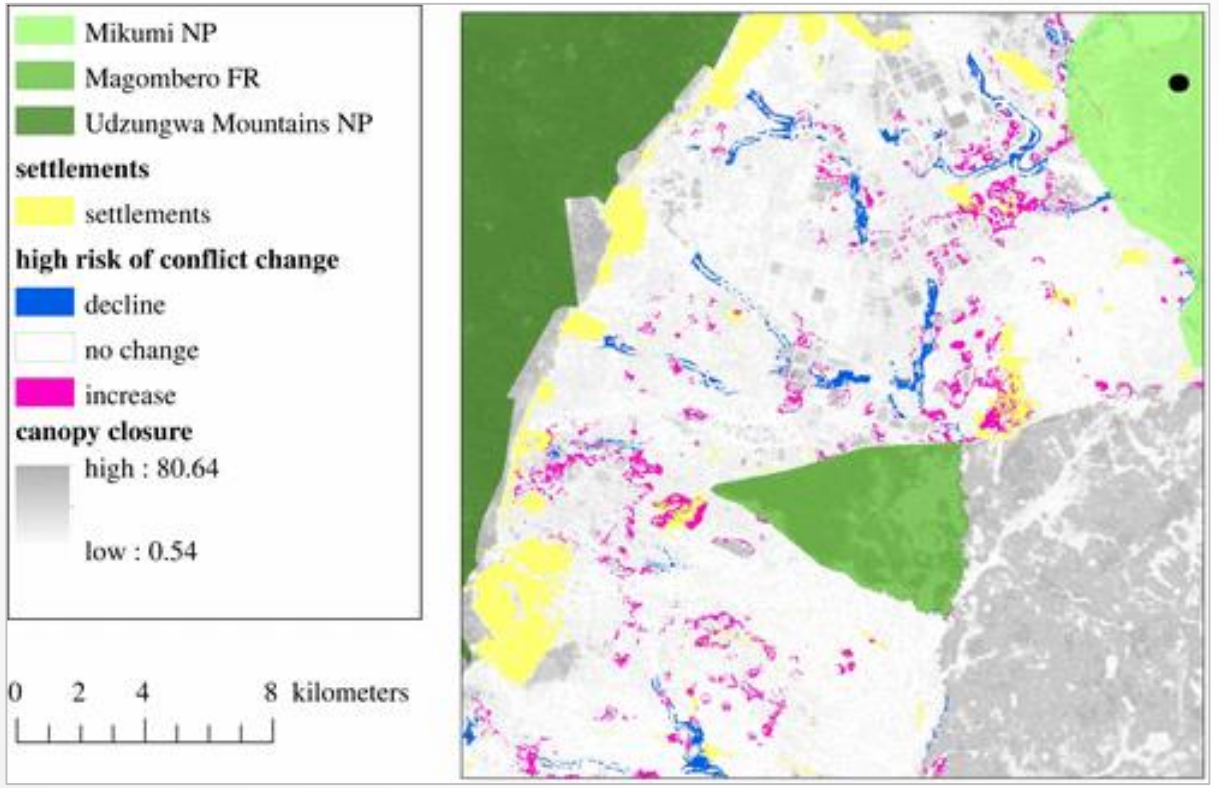

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Bill Schultz[13,1], Dan Brockington[2,3], Eric A Coleman[1], Ida Djenontin[4,5], Harry W Fischer[6], Forrest Fleischman[7], Prakash Kashwan[8], Kristina Marquardt[6], Marion Pfeifer[9], Rose Pritchard[10]

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Forrest Fleischman, Eric Coleman, Harry Fischer, Prakash Kashwan, Marion Pfeifer, Vijay Ramprasad, Claudia Rodriguez Solorzano & Joseph W. Veldman

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