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THE UNIVERSITY OF HONG KONG

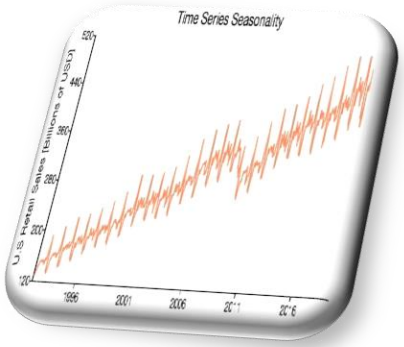
Assessing ecosystem dynamics and disturbances using Remote Sensing

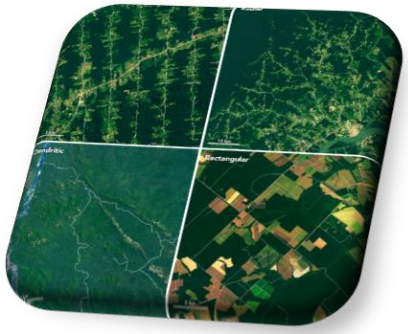
Eduardo Maeda

Associate Professor

School of Biological Sciences
The University of Hong Kong

Department of Geosciences and Geography
University of Helsinki





Time

Space

Climate

Terrestrial ecosystems

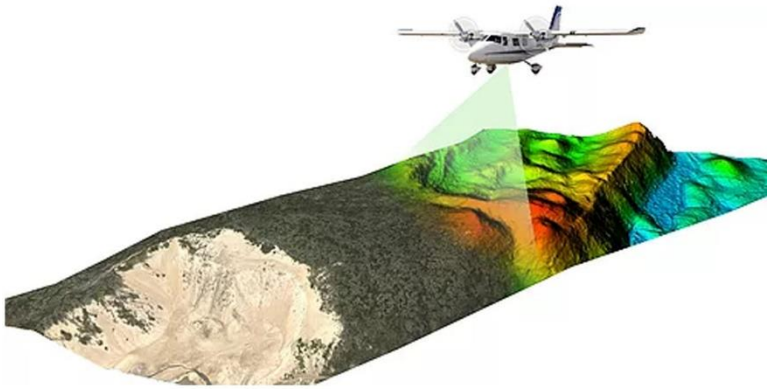
Humans

Land use

Scale up

Scale down

Terrestrial



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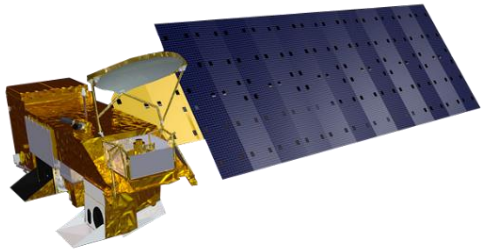


Orbital

AGU PUBLICATIONS

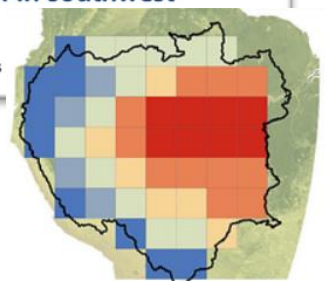
Geophysical Research Letters

RESEARCH LETTER
10.1002/2015GL065252

Key Points:

Disruption of hydroecological equilibrium in southwest Amazon mediated by drought

Eduardo Eiji Maeda[1], Hyungjun Kim[2], Luiz E. O. C. Aragão[3,4], James



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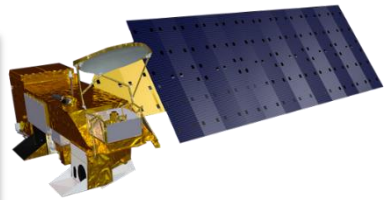
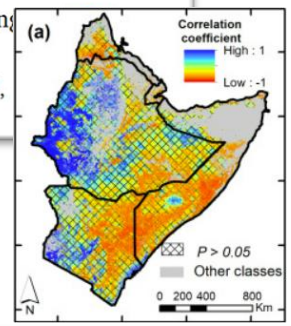
journal homepage: www.elsevier.com/locate/rse



Clarifying the role of radiative mechanisms in the spatio-temporal chan
of land surface temperature across the Horn of Africa

Temesgen Alemayehu Abera[a,b,*], Janne Heiskanen[a,b], Petri Pellikka[a,b], Miina Rautiainen[c,d], Eduardo Eiji Maeda[a]



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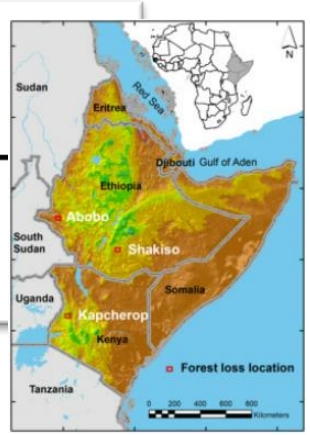
Global and Planetary Change

journal homepage: www.elsevier.com/locate/gloplacha

Research article

Rainfall–vegetation interaction regulates temperature anomalies during extreme dry events in the Horn of Africa

Temesgen Alemayehu Abera[a,b,*], Janne Heiskanen[a,b], Petri Pellikka[a], Eduardo Eiji Maeda[c]

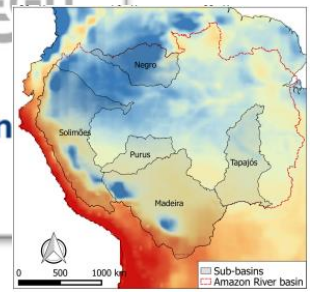


Earth Syst. Dynam., 8, 439–454, 2017
https://doi.org/10.5194/esd-8-439-2017

Earth System Dynamics
Open Access
EGU

Evapotranspiration seasonality across the Amazon Basin

Eduardo Eiji Maeda[1], Xuanlong Ma[2], Fabien Hubert Wagner[3], Hyungjun Kim[4], Taikan Oki[4], Derek Eamus[5], and Alfredo Huete[2]



AGU PUBLICATIONS

Geophysical Research Letters

RESEARCH LETTER
10.1002/2014GL061535

Key Points:

Can MODIS EVI monitor ecosystem productivity in the Amazon rainforest?

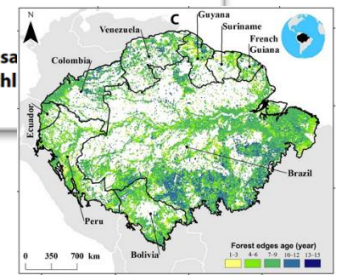
Eduardo Eiji Maeda[1], Janne Heiskanen[1], Luiz E. O. C. Aragão[2], and Janne Rinne[1]

SCIENCE ADVANCES | RESEARCH ARTICLE

APPLIED ECOLOGY

Persistent collapse of biomass in Amazonian forest edges following deforestation leads to unaccounted carbon losses

Celso H. L. Silva Junior[1,2]*, Luiz E. O. C. Aragão[1,2,3], Liana O. Anderson[1,4], Marisa
Yosio E. Shimabukuro[1,2], Christelle Vancutsem[6], Frédéric Achard[6], René Beuchl
Carlos A. Silva[8], Eduardo E. Maeda[9], Marcos Longo[10], Sassan S. Saatchi[10,11]



THE UNIVERSITY OF EDINBURGH

FMI

UNIVERSITY OF TURKU

東京大学 THE UNIVERSITY OF TOKYO

INPE

SEARRP South East Asia Rainforest Research Partnership

INPA INSTITUTO NACIONAL DE PESQUISAS DA AMAZÔNIA

TAITA RESEARCH STATION TAITA UNIVERSITY OF HELSINKI

UTS UNIVERSITY OF TECHNOLOGY SYDNEY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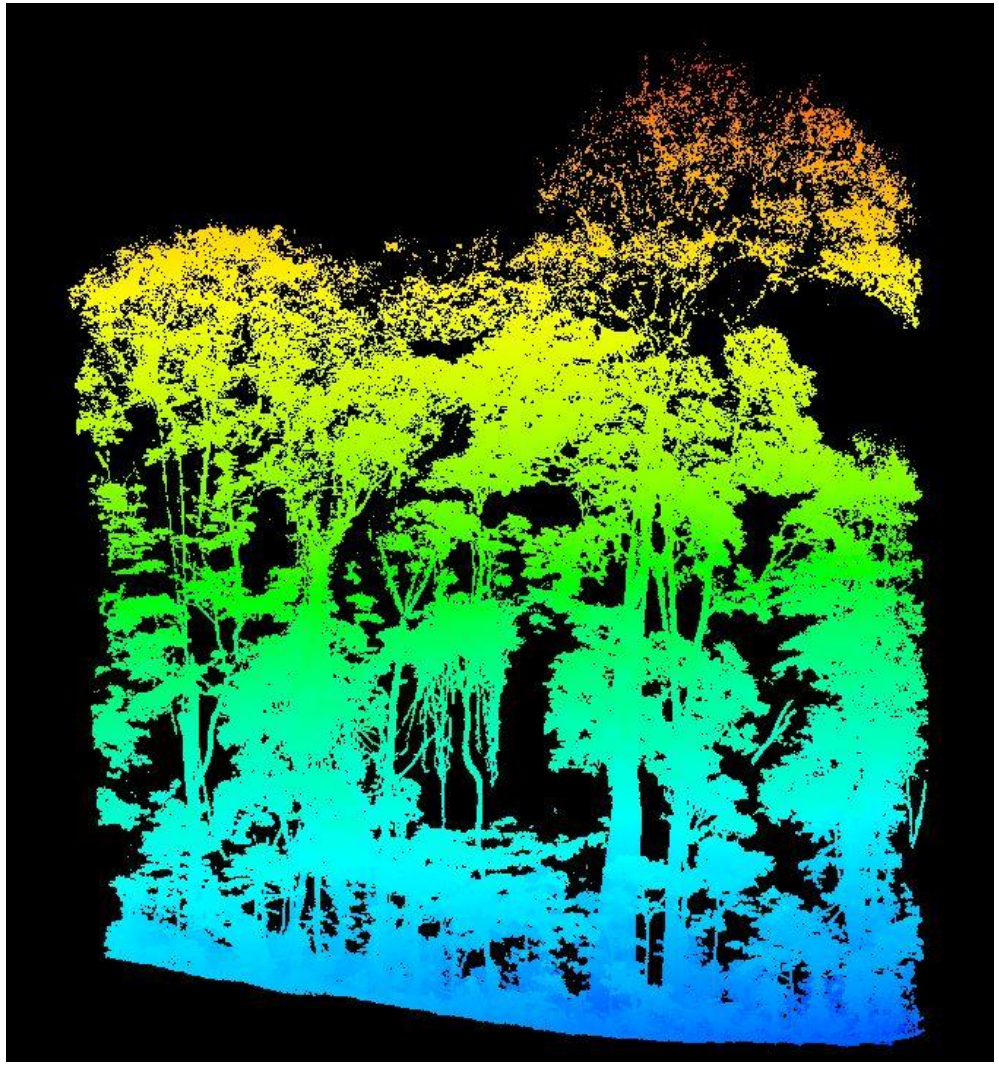
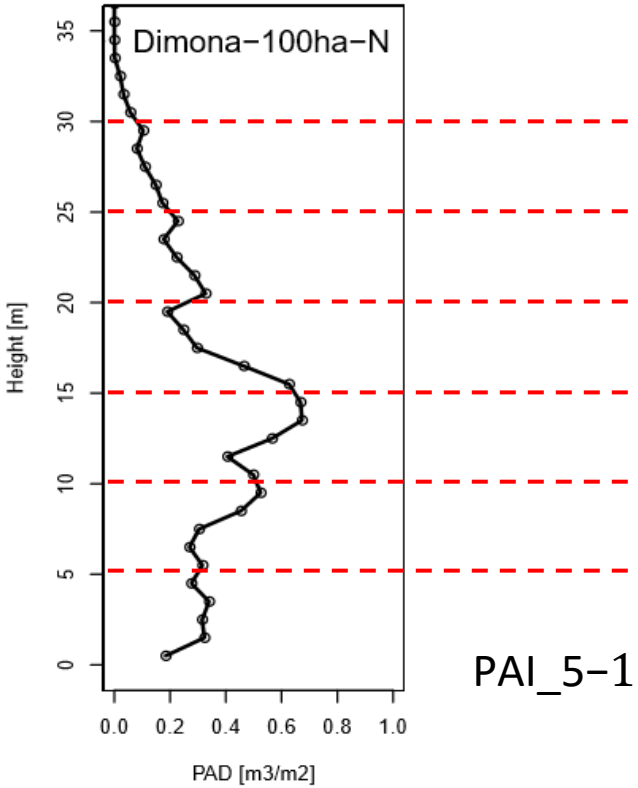
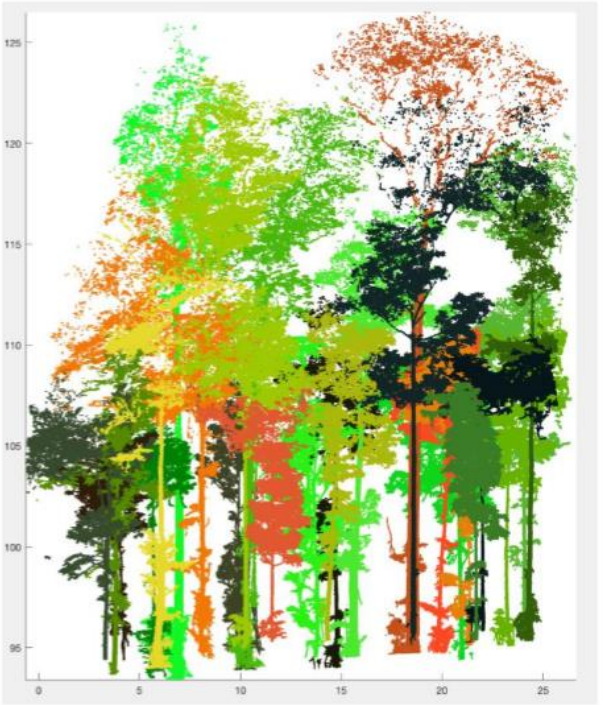
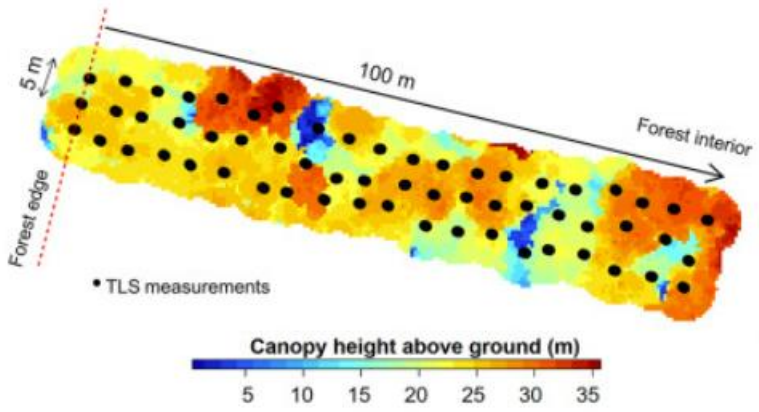
ScanPos064

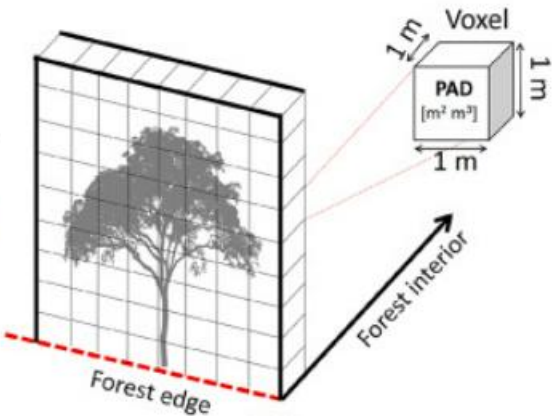






$$PAI\_5{-}10 = \sum_{5}^{10} PAD$$



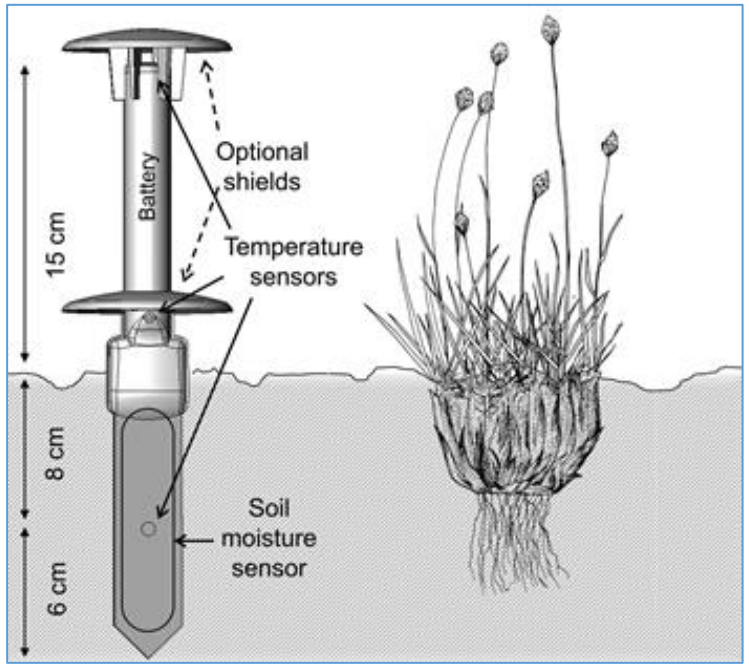


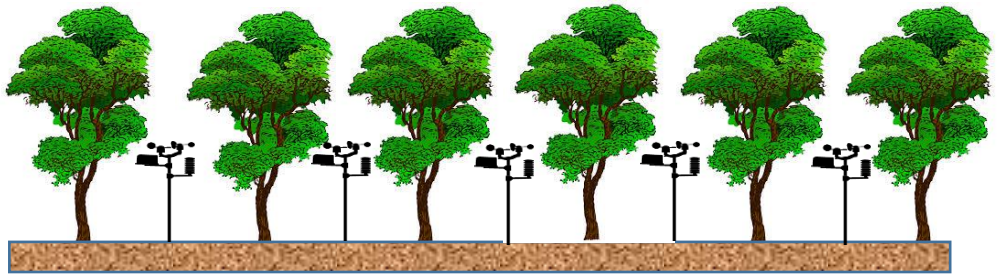
Climate at ecologically relevant scales

https://tomst.com/web/en/systems/tms

TMS-4 dataloggers:

- soil and air temperature
- soil moisture





ELSEVIER

Agricultural and Forest Meteorology

Volume 268, 15 April 2019, Pages 40-47

Climate at ecologically relevant scales: A new temperature and soil moisture logger for long-term microclimate measurement

Jan Wild [a], Martin Kopecký [a], Martin Macek [a, b], Martin Šanda [c], Jakub Jankovec [c], Tomáš Haase [d]

Show more

https://doi.org/10.1016/j.agrformet.2018.12.018

The impacts of selective logging

Forest Ecology and Management 524 (2022) 120546

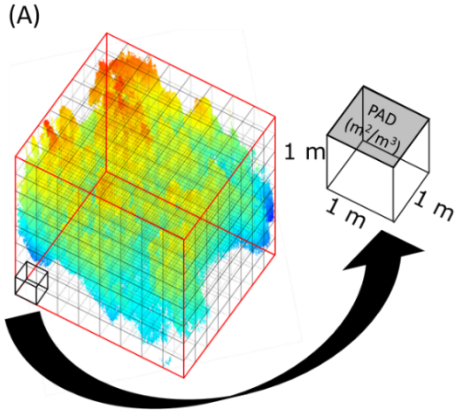
Contents lists available at ScienceDirect

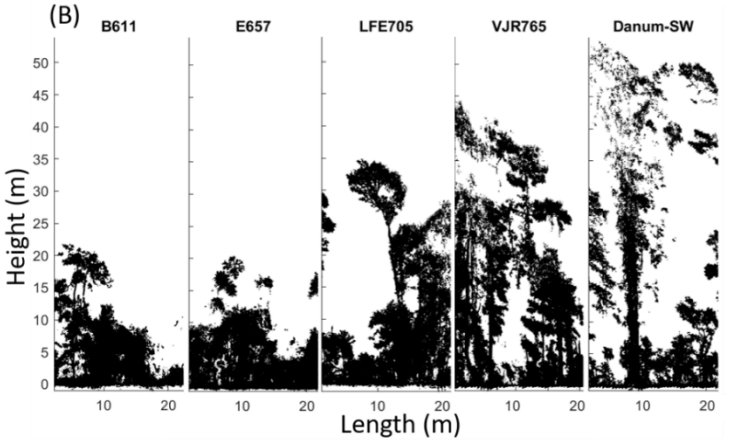
Forest Ecology and Management

journal homepage: www.elsevier.com/locate/foreco

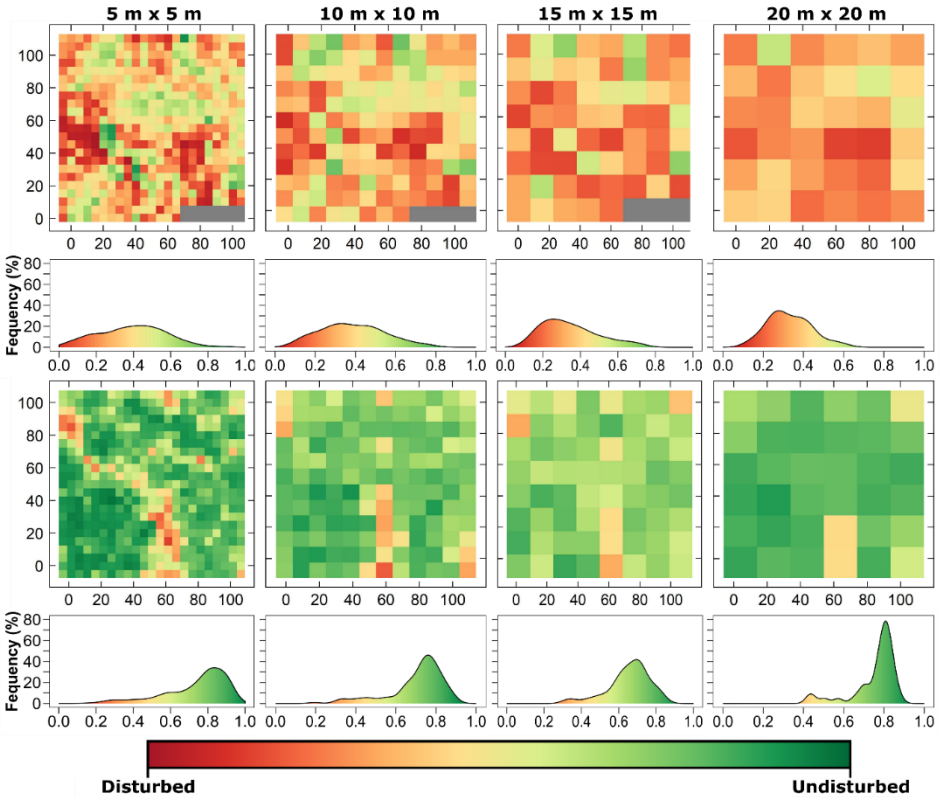
Quantifying tropical forest disturbances using canopy structural traits derived from terrestrial laser scanning

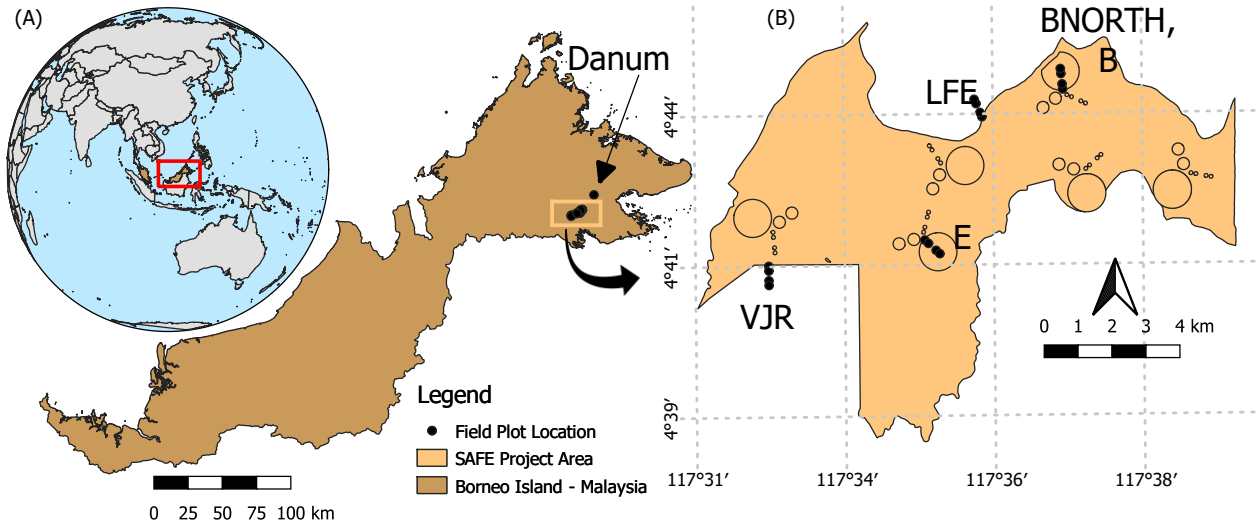
Erone Ghizoni Santos [a,*], Matheus Henrique Nunes [a], Toby Jackson [b], Eduardo Eiji Maeda [a,c]



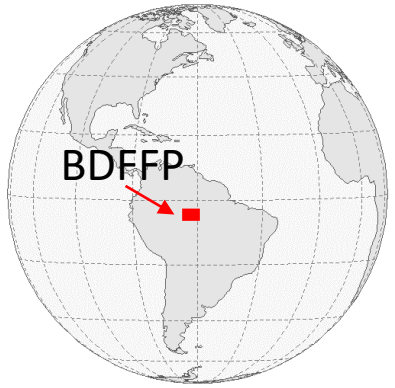


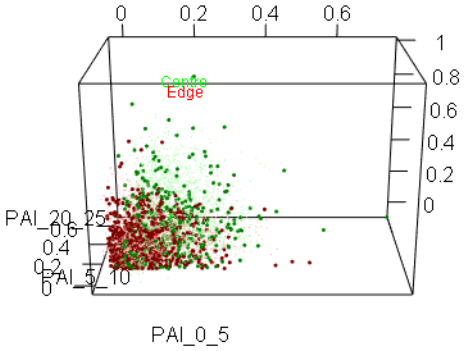
Stability of Altered Forest Ecosystems

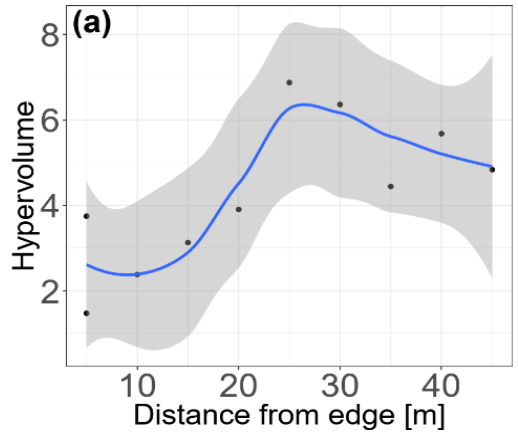


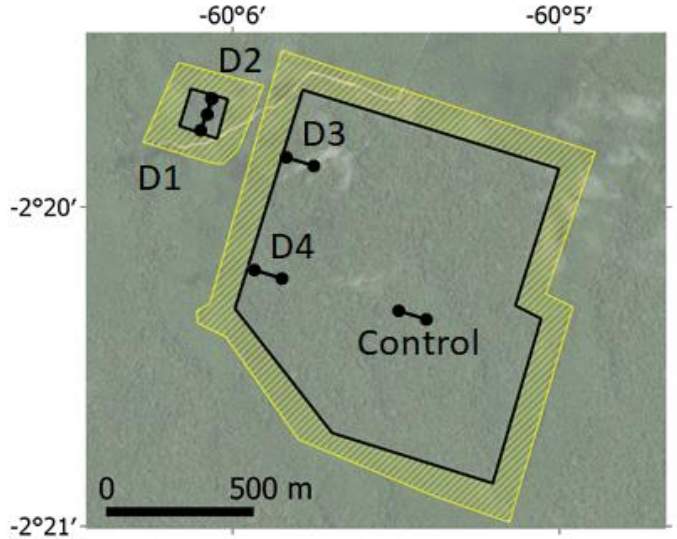


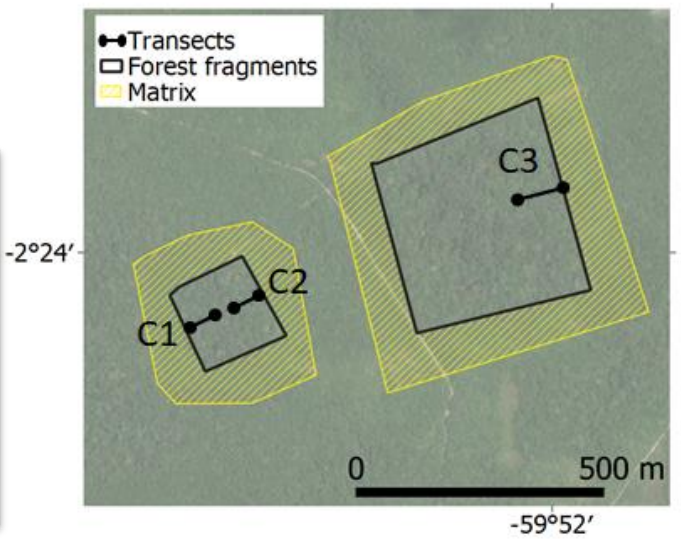
The impacts of fragmentation in the Amazon rainforest

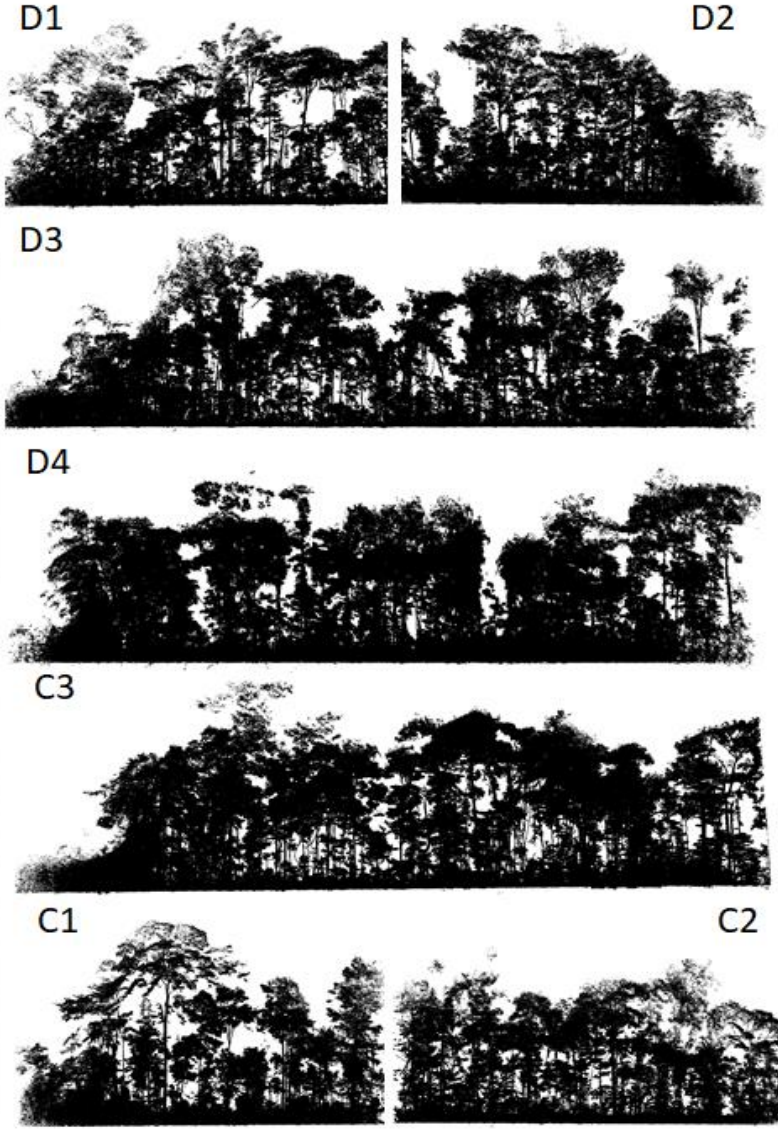












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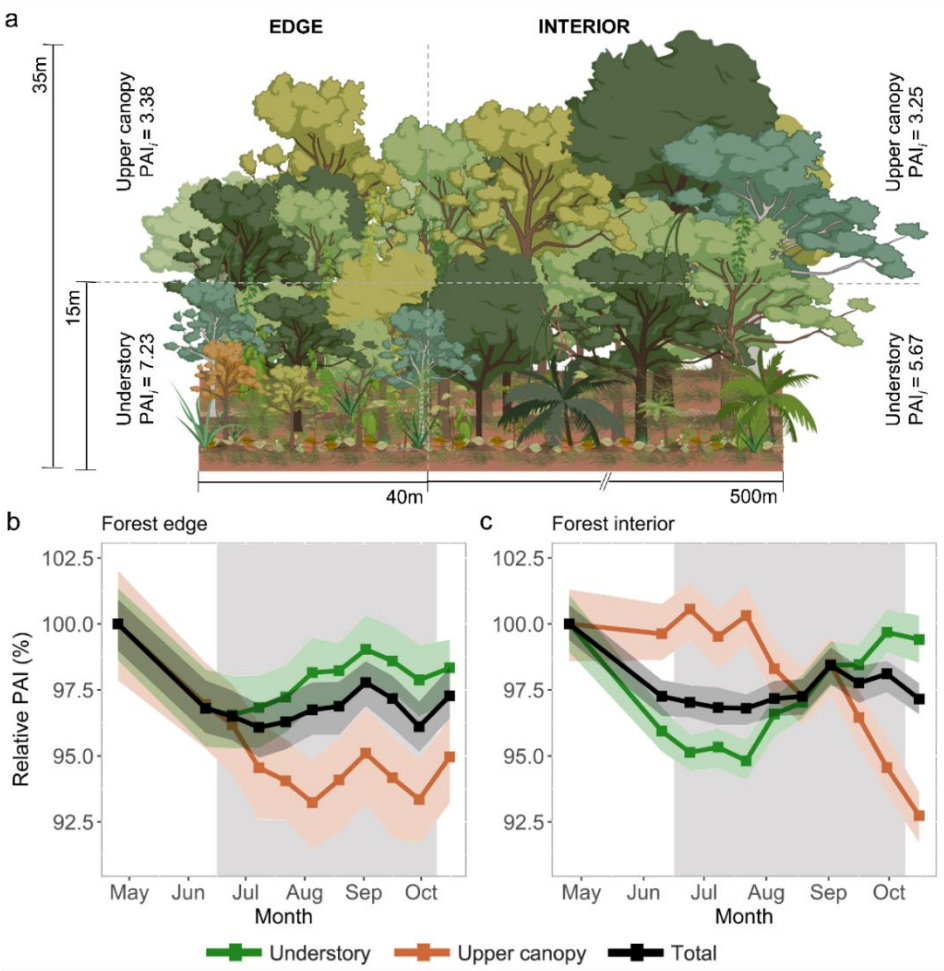
journal homepage: www.elsevier.com/locate/rse

ELSEVIER

Shifts in structural diversity of Amazonian forest edges detected using terrestrial laser scanning

Eduardo Eiji Maeda [a,j,*], Matheus Nunes [a], Kim Calders [b], Yhasmin Mendes de Moura [c,d], Pasi Raumonen [e], Hanna Tuomisto [f], Philippe Verley [g], Gregoire Vincent [g], Gabriela Zuquim [f,h], José Luís Camargo [i]

Impact of fragmentation on forest phenology



nature COMMUNICATIONS

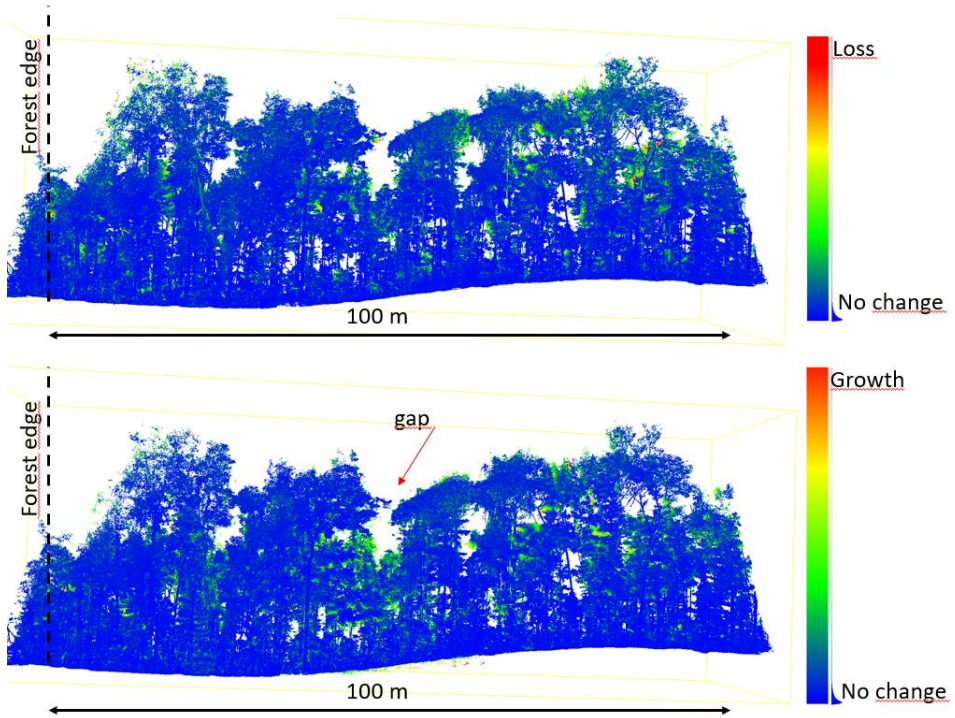
ARTICLE

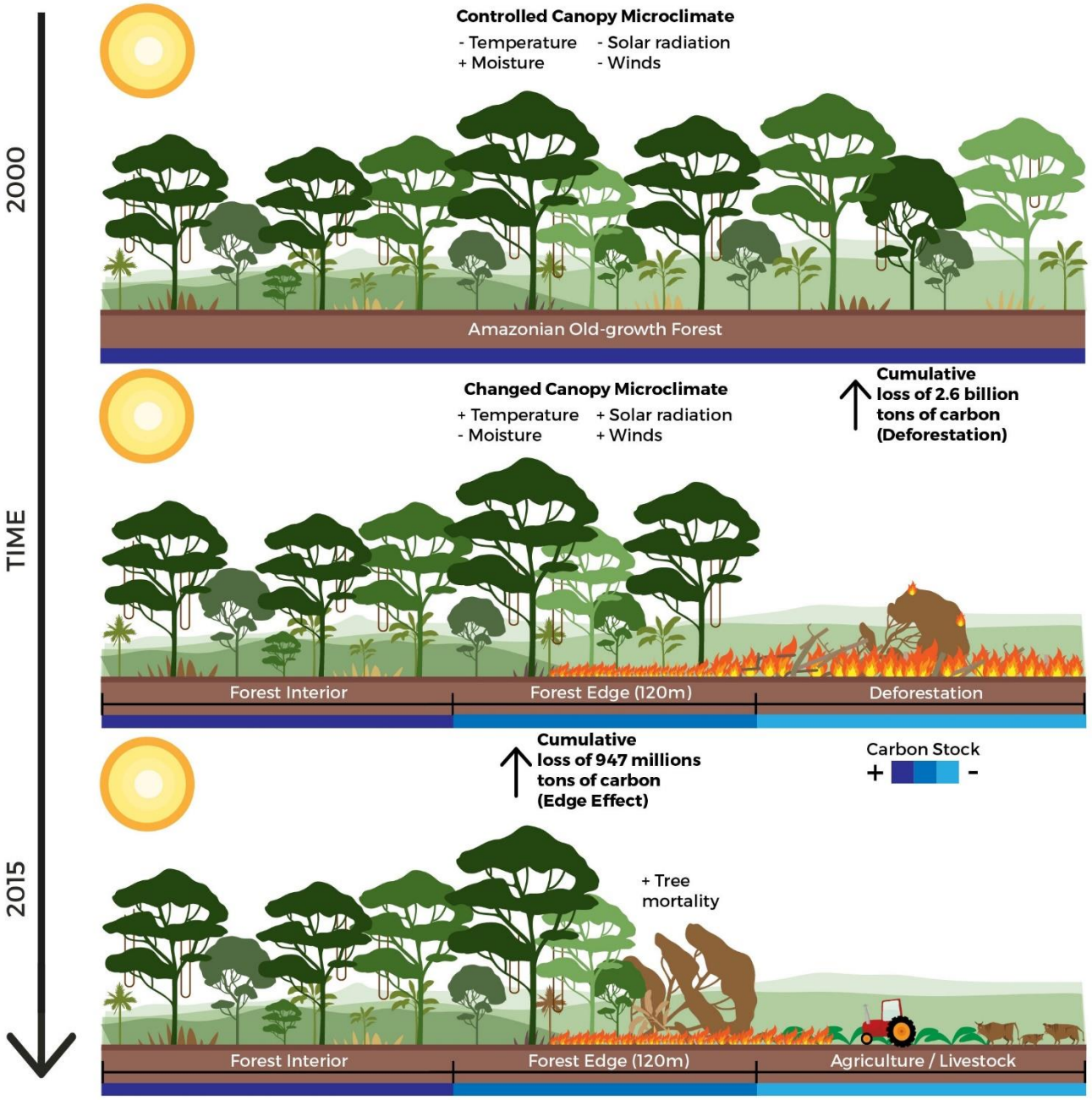
https://doi.org/10.1038/s41467-022-28490-7 OPEN

Check for updates

Forest fragmentation impacts the seasonality of Amazonian evergreen canopies

Matheus Henrique Nunes[1✉], José Luís Campana Camargo[2], Grégoire Vincent[3], Kim Calders[4], Rafael S. Oliveira[5], Alfredo Huete[6], Yhasmin Mendes de Moura[7,8], Bruce Nelson[9], Marielle N. Smith[10], Scott C. Stark[10] & Eduardo Eiji Maeda[1,11]

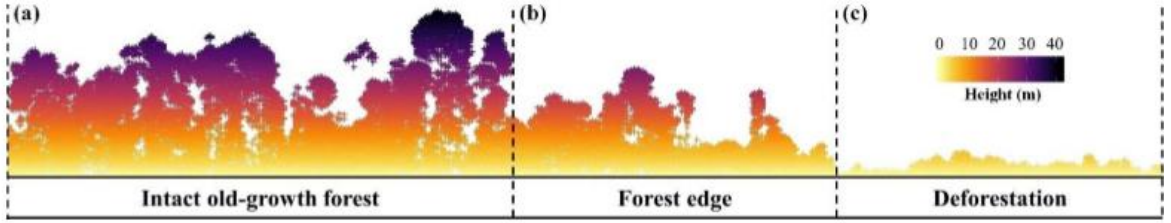




Science Advances
AAAS

Persistent collapse of biomass in Amazonian forest edges following deforestation leads to unaccounted carbon losses

Celso H. L. Silva Junior[1,2,*], Luiz E. O. C. Aragão[1,2,3], Liana O. Anderson[1,4], Marisa G. Fonseca[1,2], Yosio E. Shimabukuro[1,2], Christelle Vancutsem[5], Frédéric Achard[5], René Beuchle[5], Izaya Numata[6], Carlos A. Silva[7,8], Eduardo E. Maeda[9], Marcos Longo[10], Sassan S. Saatchi[10,11]



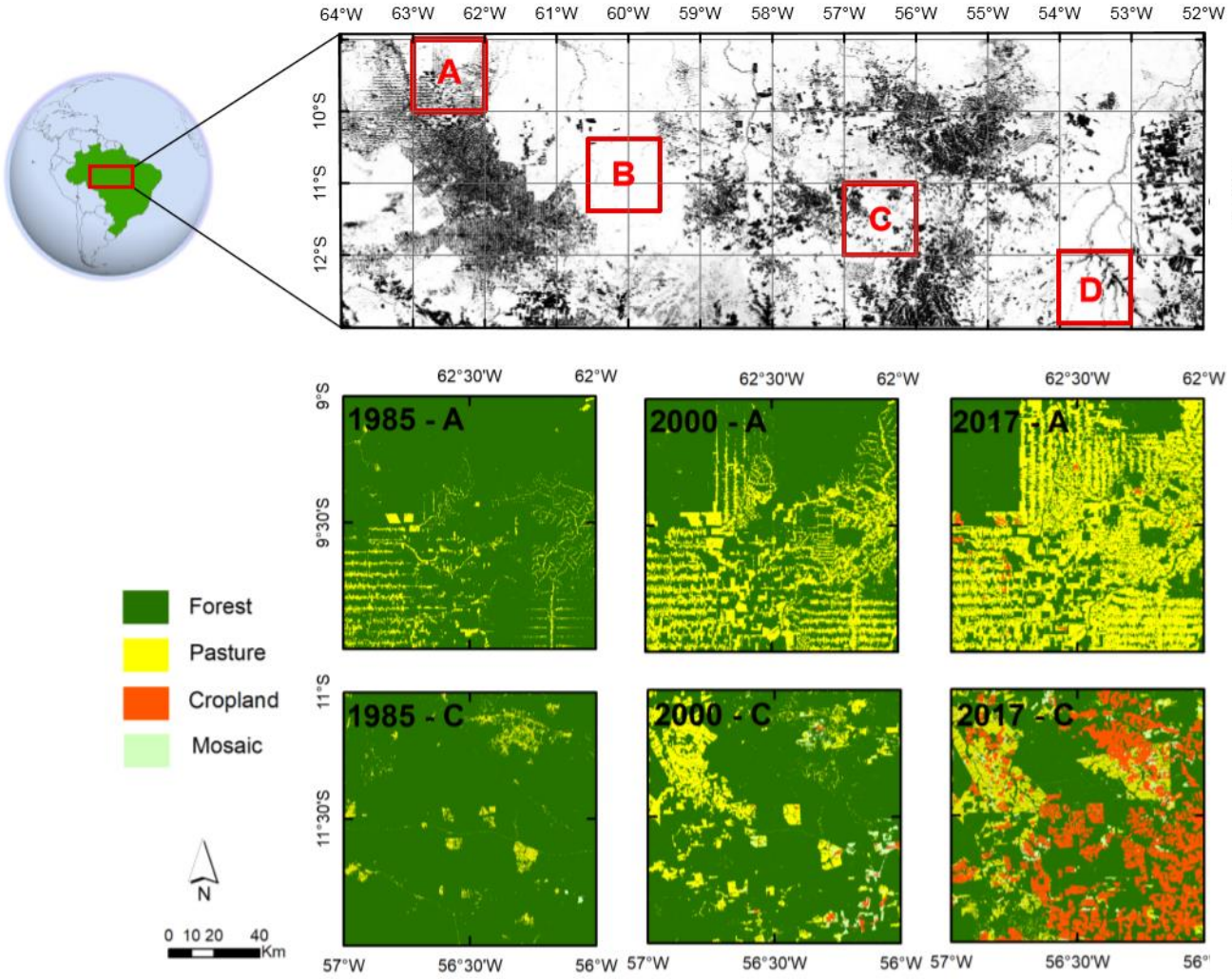
- 947 million tons of carbon induced by forest edge effect between 2001 and 2015
- one-third the quantity of C lost due to deforestation

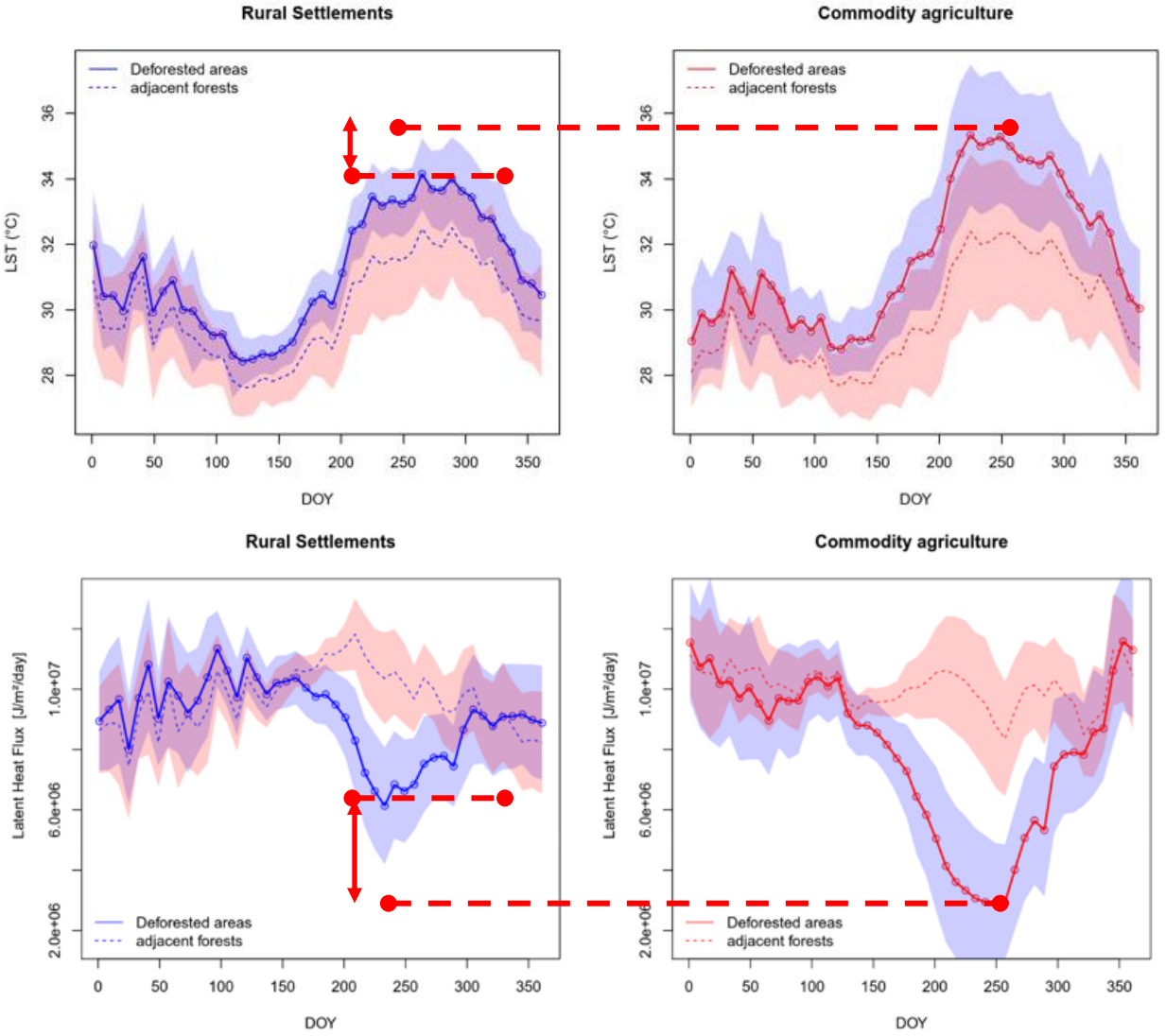
Large-scale commodity agriculture exacerbates the climatic impacts of Amazonian deforestation

Eduardo Eiji Maeda[a,1], Temesgen Alemayehu Abera[a,b], Mika Siljander[a], Luiz E. O. C. Aragão[c,d], Yhasmin Mendes de Moura[e], and Janne Heiskanen[a,b]

PNAS Proceedings of the National Academy of Sciences of the United States of America

(2021, https://doi.org/10.1073/pnas.2023787118)





Acknowledgements

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ACADEMY OF FINLAND

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FINNISH UNIVERSITY PARTNERSHIP FOR INTERNATIONAL DEVELOPMENT

Contact:
eduardo.maeda@helsinki.fi