**PCL-Am disturbance dataset README**

Paper title: ‘Diverse anthropogenic disturbances shift Amazon forests along a structural spectrum’

Authors: Marielle N. Smith\*, Scott C. Stark, Tyeen C. Taylor, Juliana Schietti, Danilo Roberti Alves de Almeida, Susan Aragón, Kelly Torralvo, Albertina P. Lima, Gabriel de Oliveira, Rafael Leandro de Assis, Veronika Leitold, Aline Pontes Lopes, Ricardo Scoles, Luciana Cristina de Sousa Vieira, Angelica Faria Resende, Alysha I. Coppola, Diego Oliveira Brandão, João de Athaydes Silva Junior, Laura F. Lobato, Wagner Freitas, Daniel Almeida, Mendell S. Souza, David M. Minor, Juan Camilo Villegas, Darin J. Law, Nathan Gonçalves, Daniel Gomes da Rocha, Marcelino Carneiro Guedes, Hélio Tonini, Kátia Emídio da Silva, Joost van Haren, Diogo Martins Rosa, Dalton Freitas do Valle, Carlos Leandro Cordeiro, Nicolas Zaslavsky de Lima, Gang Shao, Imma Oliveras Menor, Georgina Conti, Ana Paula Florentino, Lía Montti, Luiz E.O.C. Aragão, Sean M. McMahon, Geoffrey G. Parker, David D. Breshears, Antonio Carlos Lola Da Costa, William E. Magnusson, Rita Mesquita, José Luís C. Camargo, Raimundo C. de Oliveira, Plinio B. de Camargo, Scott R. Saleska, Bruce Walker Nelson

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\*Please contact Marielle Smith with any questions: [mariellenatashasmith@gmail.com](mailto:mariellenatashasmith@gmail.com)

This repository contains disturbed and control forest datasets from the ground-based profiling canopy lidar (PCL) database for Amazonia (PCL-Am), as presented in Smith et al. 2022 (*Frontiers in Ecology & the Environment*), comprising the files listed below.

Ground-based lidar data for the following sites have been published previously and those original papers should be cited if data from them are used: TNF Seca Floresta drought plot and Alter do Chão savanna (Stark et al. 2020), BDFFP forest fragment (Dimona) and contiguous forest (Almeida et al. 2019), Reserva Ducke (Stark et al. 2012), Careiro Castanho (burnt *terra firme* and *igapó* and control plots) (Almeida et al. 2016). For all other sites, please cite Smith et al. 2022 (*Frontiers in Ecology & the Environment*).

The following files are included:

**1) “PCL-Am\_disturbed\_control\_profiles\_V1.csv”**

This comprises mean leaf area density (LAD) profile data for each of the 11 treatment pairs and the savanna outgroup as presented in Smith et al. 2022 (Frontiers in Ecology & the Environment). Mean disturbed and control profile values are also included.

Please note that for some treatments, the same control (undisturbed) forests are used. For example, TNF K83 control plots are the control forest for both TNF K83 selectively logged plots and TNF K81 secondary forest plots. Please see WebTable 1 for more details.

------------- COLUMN DESCRIPTIONS -------------

Column Variable Description

1. treat.pair # treatment pair number (as per WebTable 1)

2. site # site name

3. disturbance.type # type of land use or climate change-related disturbance

the forest was exposed to; some comprise experimental treatments (see WebTable 2 for details)

4. disturbed/control # indicates the disturbed vs. undisturbed forest

5. ht # height in the canopy (m)

6. lad # leaf area density (LAD) (m2/m3)

7. lowCI # lower LAD 95% confidence interval

8. uppCI # upper LAD 95% confidence interval

**2) “PCL-Am\_disturbed\_control\_metrics\_V1.csv”**

This comprises ‘single value’ (i.e., non profile) metrics for each of the 11 disturbed – control treatment pairs and the savanna outgroup as presented in Smith et al. 2022 (*Frontiers in Ecology & the Environment*).

Please note that for some treatments, the same control (undisturbed) forests are used. For example, TNF K83 control plots are the control forest for both TNF K83 selectively logged plots and TNF K81 secondary forest plots. Please see WebTable 1 for more details.

------------- COLUMN DESCRIPTIONS -------------

Column Variable Description

1. treat.pair # treatment pair number (as per WebTable 1)

2. site # site name

3. disturbance.type # type of land use or climate change-related disturbance

the forest was exposed to; some comprise experimental treatments (see WebTable 2 for details)

4. disturbed/control # indicates the disturbed vs. undisturbed forest

5. metric # metric name (see below for full names and WebTable 3

for descriptions)

6. value # value of the metric

7. lowCI # lower 95% confidence interval of the metric value

8. uppCI # upper 95% confidence interval of the metric value

Metric descriptions

ERR – elevation-relief ratio

gap.frac – gap fraction

hetero.frac – heterogeneity fraction

ht.light50 – height of 50% incident light (m)

lahv – leaf area height volume (LAHV, m)

lai – leaf area index (LAI, m)

lai50 – height of 50% LAI

lawh – leaf area weighted height (LAWH, m)

max.can.ht – maximum canopy height (m)

mean.can.ht – mean canopy height (m)

sd.can.ht – canopy surface rugosity (m)

**References**

Almeida DRA de, Nelson BW, Schietti J, *et al.* 2016. Contrasting fire damage and fire susceptibility between seasonally flooded forest and upland forest in the Central Amazon using portable profiling LiDAR. *Remote Sens Environ* **184**: 153–60.

Almeida DRA, Stark SC, Schietti J, *et al.* 2019. Persistent effects of fragmentation on tropical rainforest canopy structure after 20 yr of isolation. *Ecol Appl* **29**: e01952.

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