

FOREST INVENTORY: FELIZ NATAL

FNA_A01_2013_INVENTORY

1.0 GENERAL INFORMATION

The Forest Inventory Feliz Natal (FNA_A01_2013_INVENTORY) is located in Mato Grosso State, Brazil. A total of 20 50x50m plots disposed systematically along 5 reference lines were measured. Trees with diameter at breast height (DBH) equal to or greater than 5cm were accounted for and measured within the plot area (see Fig. 1).

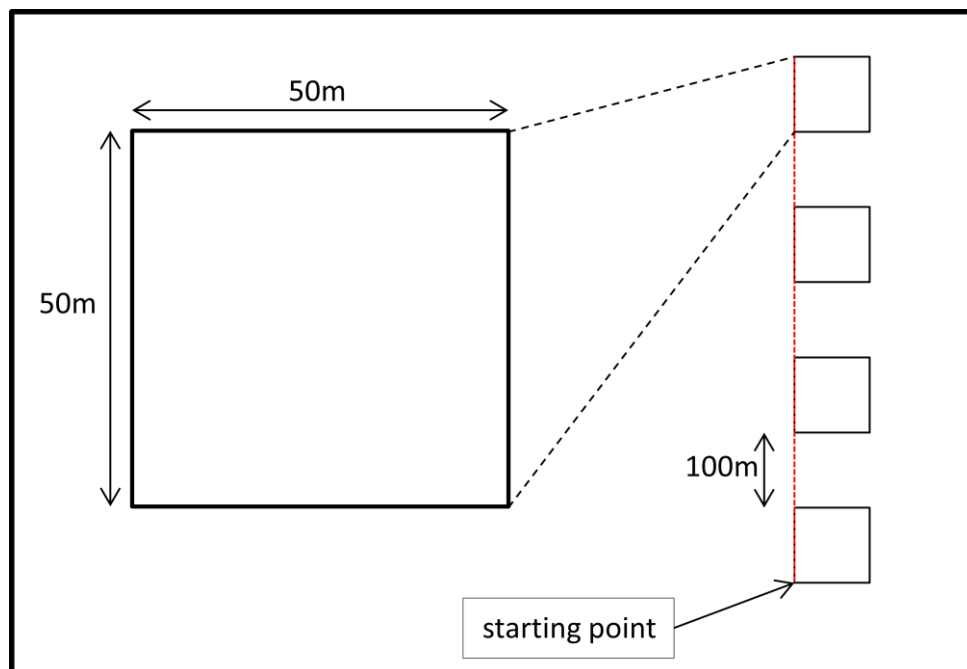


FIG 1. REPRESENTATION OF THE 50 X 50M PLOT (BLACK POLYGON) WHERE THE INCLUSION CRITERIA WAS: $DBH \geq 5CM$. THE DOTTED RED LINE REPRESENTS THE REFERENCE LINE.

2.0 INVENTORY DATA RECORDED - .CSV FILE CONTENT

For each tree the following measurements were recorded/calculated:

area: A code name given to the area.

transect: the plot/transect/reference line identification number.

tree: tree number

common_name: tree common name.

scientific_name: tree scientific name.

family_name: tree family name

WSD (g/cm³):

If tree is alive:

wood specific gravity - oven-dry wood over green volume (Chave et al, 2009¹).

If tree is dead (standing dead):

Dead trees are divided into 5 decay classes (Keller et al, 2004²),

DBH (cm): Diameter at breast height, 1.3 m above the ground.

BA(m²): individual basal area.

AGB(Mg): individual Above Ground Biomass

If tree is alive: $AGB (Mg) = 0.0509 * WSD * DBH^2 * H_{tot}$ (Chave, 2005³)

If tree is dead (standing dead): $AGB(Mg) = Necromass\ volume$ (Palace, 2007⁴) *
WSD

If palm(alive or dead): $AGB (Mg) = \{exp[0.9285 \ln(DBH^2) + 5.7236]1.05001\}/10^3$ (Nascimento and Laurence, 2002⁵)

If liana(alive or dead): $AGB (Mg) = exp[-1.484 + 2.657 \ln(D)]$ (Schnitzer et al, 2006⁶)

type(class) Divided into four classes:

Liana (L): woody vines, inclusion was based on the position of the vine at 1.3 m above the ground, not the rooting position.

Palms (P): leafed palms, inclusion based on the diameter at the ground surface. Litter was removed from around the base for measurement.

Trunked palms (Pt): palms with a trunk measurable at 1.3 m

Other (O): Trees

canopy (class): Position of crown with respect to surrounding canopies, split into 3 classes.

E: Emergent, above surrounding tree canopies

C: Canopy level, at the same height as the main forest canopy of surrounding trees. This class includes both dominant and super-dominants.

S: Suppressed, trees below the height of the dominant canopy layer.

light (class): Crown Illumination Index, divided into three classes.

1: Entire crown surface gets direct sunlight.

2: A section of the crown surface receives direct sunlight.

3: The crown surface only receives indirect light.

dead: Standing dead.

D: tree is dead

A: tree is alive

D_class: Decomposition Class (Keller et al, 2004²)

Plot_code: plot identification code

Hcom: Commercial Height (m), measured using a clinometer and tape as the height of the lowest leaf (bottom of the canopy).

Htot: Total Height (m), measured using a clinometer and tape as the height to the highest point of the tree crown.

RN (m): Radius to the north of the tree crown.

RS (m): Radius to the south of the tree crown.

RE (m): Radius to the east of the tree crown.

RW (m): Radius to the west of the tree crown.

Date (ISO 8601): date

UTM_Easting: X coordinate of tree individual location calculated based on measurements of tree X position with respect to the transect.

UTM_Northing: Y coordinate of tree individual location calculated based on measurements of tree Y position with respect to the transect.

3.0 COMPLEMENTARY INFORMATION

NA = not available/not applicable

4.0 REFERENCES

- ³Chave, J., Andalo, C., Brown, S., Cairns, M. A., Chambers, J. Q., Eamus, D., Folster, H., Fromard, F., Higuchi, N., Kira, T., Lescure, J.-P., Nelson, B. W., Ogawa, H., Puig, H., Riera B. & Yamakura, T. (2005) Tree allometry and improved estimation of carbon stocks and balance in tropical forests. *Oecologia* 145: 87–99.
- ¹Chave, J., Coomes, D., Jansen, S., Lewis, L.S., Swenson, N. & Zanne, A. (2009) Towards a worldwide wood economics spectrum. *Ecology Letters*, 12, 351–366.
- ²Keller, M., Palace, M., Asner, G.P., Pereira, R. & Silva, J.N.M.(2004) Coarse woody debris in undisturbed and logged forests in the eastern Brazilian Amazon. *Global Change Biol.* 10 (5), 784–795.
- ⁵Nascimento, H.E.M. & Laurance, F.W. (2002) Total aboveground biomass in central Amazonian rainforests: a landscape-scale study. *Forest Ecology and Management* 168 (2002) 311–321.
- ⁴Palace, M., Keller M., Asner, G.P., Silva, J.N.M., Passos C. (2007) Necromass in undisturbed and logged forests in the Brazilian Amazon. *Forest Ecology and Management* 238 (2007) 309–318.
- ⁶Schnitzer, S.A. DeWalt, S.J., Chave, J. (2006) Censusing and Measuring Lianas: A Quantitative Comparison of the Common Methods. *Biotropica* 38:5,581-591.