

## FOREST INVENTORY: FAZENDA TANGURO

### TAN\_A01\_2012\_INVENTORY

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#### 1.0 GENERAL INFORMATION

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The Forest Inventory Fazenda Tanguro (TAN\_A01\_2012\_INVENTORY) is located in Mato Grosso State, Brazil. A total of 10 20x500m plots/transects and 2x500m subplots were measured. Trees with diameter at breast height (DBH) equal to or greater than 35cm were accounted for and measured within the plot area (see Fig. 1) whereas trees with DBH equal to or greater than 10cm were only measured within the subplot area (see Fig. 1).

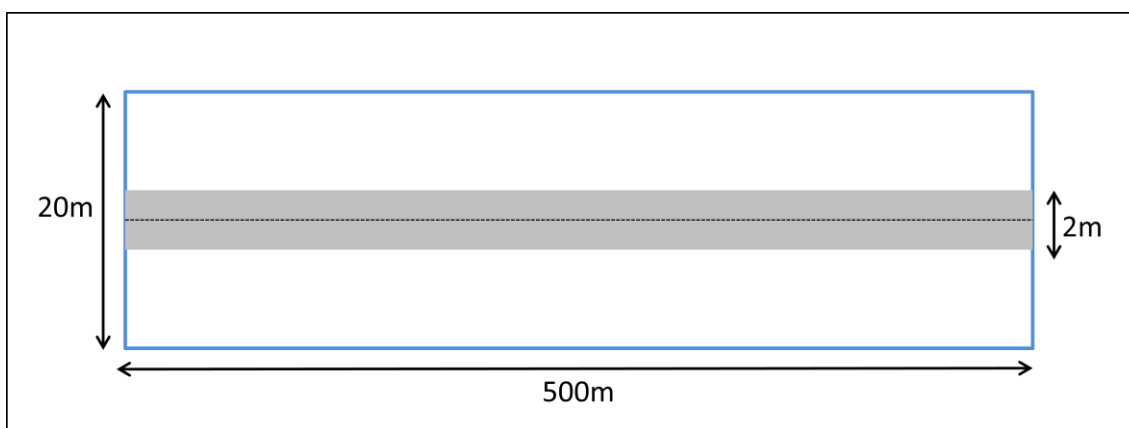


FIG 1. REPRESENTATION OF THE 20 X 500M PLOT (BLUE POLYGON) AND THE 2 X 500M SUBPLOT (GREY AREA). THE INCLUSION CRITERIA WAS: (A)  $DBH \geq 35CM$  FOR THE PLOT AREA AND (B)  $DBH \geq 10CM$  FOR THE SUBPLOT AREA.

#### 2.0 INVENTORY DATA RECORDED - .CSV FILE CONTENT

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For each tree the following measurements were recorded/calculated:

**area:** A code name given to the area.

**transect:** the transect number.

**tree:** tree number

**common\_name:** tree common name.

**scientific\_name**: tree scientific name.

**family\_name**: tree family name

**WSD** (g/cm<sup>3</sup>):

If tree is alive:

wood specific gravity - oven-dry wood over green volume (Chave et al, 2009<sup>1</sup>).

If tree is dead (standing dead):

Dead trees are divided into 5 decay classes (Keller et al, 2004<sup>2</sup>),

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

**BA**(m<sup>2</sup>): individual basal area.

**AGB**(Mg): individual Above Ground Biomass

If tree is alive:  $AGB \text{ (Mg)} = 0.0509 * WSD * DBH^2 * H_{tot}$  (Chave, 2005<sup>3</sup>)

If tree is dead (standing dead):  $AGB \text{ (Mg)} = \text{Necromass volume (Palace, 2007<sup>4</sup>)} * WSD$

If palm(alive or dead):  $AGB \text{ (Mg)} = \{\exp[0.9285 \ln(DBH^2) + 5.7236]1.05001\} / 10^3$  (Nascimento and Laurence, 2002<sup>5</sup>)

If liana(alive or dead):  $AGB \text{ (Mg)} = \exp[-1.484 + 2.657 \ln(D)]$  (Schnitzer et al, 2006<sup>6</sup>)

**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, 2004<sup>2</sup>)

**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.

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### 3.0 COMPLEMENTARY INFORMATION

NA = not available/not applicable

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### 4.0 REFERENCES

<sup>3</sup>Chave, 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.

<sup>1</sup>Chave, J., Coomes, D., Jansen, S., Lewis, L.S., Swenson, N. & Zanne, A. (2009) Towards a worldwide wood economics spectrum. *Ecology Letters*, 12, 351–366.

<sup>2</sup>Keller, 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.

<sup>5</sup>Nascimento, 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.

<sup>4</sup>Palace, 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.

<sup>6</sup>Schnitzer, S.A. DeWalt, S.J., Chave, J. (2006) Censusing and Measuring Lianas: A Quantitative Comparison of the Common Methods. *Biotropica* 38:5,581-591.