**SUPPLEMENTARY MATERIAL**

Supplementary material for “**Impacts of fire on forest biomass dynamics at the southern Amazon edge”** by Nogueira et al. addressed for publication at Environmental Conservation.

**Table S1 –** List of permanent monitoring plots of forest from Amazon-Cerrado transition. Mato Grosso. Riparian forests (RF). flooded forests (FF. locally known as impucas). seasonal perennial forests (SPF). seasonal deciduous forest (SDF). open ombrophylous forests (OF). monodominant forest (MF). cerradão forest (CF).

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**Figure S1 -** Map showing locations of 30 monitoring plots of forest ecosystems in the Amazon-Cerrado transition zone, in Mato Grosso, Brazil. Background gradients of the left panel are MCWD (maximum climatological water deficit) estimated for the region from 1998 to 2012 (Feldspauch et al. 2016). In the right panel background gradient distinguishes the Amazon biome (green) and Cerrado biome (yellow) in Mato Grosso. Green and red arrows represent positive and negative balance of AGB biomass as measured in each plot. Plot locations are indicative, with multiple plots set apart for display purposes. Coordinates of each plot are given in Table S2. Shapefiles of biomes and rivers for base maps were obtained from Brazilian Ministry of the Environment [http://mapas.mma.gov.br/i3geo/datadownload].

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**Figure S2** - Plot scale variation of net AGB change among terra firme (light gray) and riparian forests (dark gray) sampled at southern Amazon edge from Mato Grosso. Brazil. **A.** Histogram of net AGB change for 30 plots and expected normal sampling distribution. **B.** Net long-term biomass change rate. in Mg/ha/yr. calculated as the final minus the start AGB. divided by the total time elapsed. for each plot (see raw data Table S1).



**Figure S3** - Variation of MCWD along burned and unburned plots at the Amazon-Cerrado transition in Mato Grosso. Despite unburned plots have broader variation, burned forest showed negative values in MCWD (< - 400 mm). The occurrence of fire on this forest may be related to the combination of deliberated use of fire to stimulate grass regrowth and stochastic spread of fire by wind into riparian forests.

**Table S1 –** List of permanent monitoring plots of forest from Amazon-Cerrado transition. Mato Grosso. Phito = **Phitophysiognomies**Riparian forests (RF). flooded forests (FF. locally known as impucas). seasonal perennial forests (SPF). seasonal deciduous forest (SDF). open ombrophylous forests (OF). monodominant forest (MF). cerradão forest (CF).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Plot Code** | **Phito** | **Altitude (m a.s.l.)** | **Latitude** | **Longitude** | **Plot Area (Ha)** | **Number of census** | **Census interval** | **Total time** | **Average census interval** |
| ALF-01 | OF | 269 | -9.60 | -55.94 | 1 | 4 | 2002-2013 | 11.0 | 2.8 |
| ALF-02 | OF | 277 | -9.58 | -55.92 | 1 | 3 | 2008-2013 | 5.0 | 1.7 |
| FLO-01 | SPF | 377 | -12.81 | -51.85 | 1 | 4 | 2008-2015 | 6.9 | 1.7 |
| FLO-02 | SPF | 366 | -12.76 | -51.88 | 1 | 3 | 2010-2015 | 4.5 | 1.5 |
| FRP-01 | SPF | 260 | -11.48 | -51.52 | 1 | 2 | 2013-2016 | 3.0 | 1.5 |
| GAU-01 | RF | 303 | -13.10 | -53.39 | 1 | 2 | 1999-2013 | 14.2 | 7.1 |
| NXV-02 | CF | 320 | -14.70 | -52.35 | 1 | 3 | 2002-2008 | 5.7 | 1.9 |
| NXV-06 | RF | 346 | -14.72 | -52.36 | 0.5 | 5 | 1998-2015 | 16.3 | 3.3 |
| NXV-07 | RF | 350 | -14.72 | -52.36 | 0.5 | 5 | 1999-2015 | 15.9 | 3.2 |
| NXV-08 | RF | 328 | -14.72 | -52.36 | 0.5 | 5 | 1999-2015 | 16.0 | 3.2 |
| NXV-09 | CF | 324 | -14.69 | -52.35 | 0.5 | 2 | 2008-2011 | 3.8 | 1.9 |
| PEA-01 | IF | 200 | -12.15 | -50.83 | 1 | 3 | 2007-2014 | 6.9 | 2.3 |
| PEA-02 | IF | 200 | -12.32 | -50.74 | 1 | 3 | 2007-2014 | 2.9 | 1.0 |
| PEA-03 | IF | 221 | -12.38 | -50.89 | 1 | 2 | 2007-2014 | 6.8 | 3.4 |
| PEA-04 | IF | 200 | -12.42 | -50.71 | 1 | 2 | 2007-2014 | 6.8 | 3.4 |
| PEA-05 | IF | 194 | -11.90 | -50.75 | 1 | 2 | 2008-2016 | 8.1 | 4.1 |
| PEA-06 | IF | 190 | -11.92 | -50.71 | 1 | 2 | 2008-2016 | 8.1 | 4.1 |
| PEA-07 | IF | 208 | -12.48 | -50.90 | 1 | 2 | 2008-2014 | 6.0 | 3.0 |
| PEA-08 | IF | 205 | -12.54 | -50.73 | 1 | 2 | 2008-2014 | 6.0 | 3.0 |
| POA-01 | SDF | 297 | -10.96 | -52.17 | 1 | 2 | 2014-2016 | 2.0 | 1.0 |
| SAA-01 | SPF | 204 | -9.79 | -50.43 | 1 | 3 | 2011-2015 | 4.1 | 1.4 |
| SAA-02 | SPF | 207 | -9.64 | -50.45 | 1 | 2 | 2013-2015 | 2.0 | 1.0 |
| SAT-01 | SPF | 243 | -9.84 | -50.46 | 1 | 2 | 2013-2015 | 2.0 | 1.0 |
| SIP-01 | SPF | 390 | -11.41 | -55.32 | 1 | 2 | 2002-2014 | 12.4 | 6.2 |
| SMT-02 | CF | 332 | -12.82 | -51.77 | 1 | 4 | 2008-2015 | 7.0 | 1.8 |
| TAN-02 | SPF | 382 | -13.09 | -52.37 | 1 | 4 | 2009-2015 | 5.3 | 1.3 |
| TAN-03 | SPF | 356 | -12.82 | -52.35 | 1 | 4 | 2009-2015 | 5.3 | 1.3 |
| TAN-04 | SPF | 392 | -12.92 | -52.37 | 1 | 4 | 2008-2015 | 6.9 | 1.7 |
| VCR-01 | MF | 303 | -14.83 | -52.16 | 0.6 | 8 | 1996-2015 | 19.2 | 2.4 |
| VCR-02 | SDF | 297 | -14.83 | -52.17 | 0.6 | 5 | 2003-2015 | 11.9 | 2.4 |

**Table S2** - Average values of the number of trees. number of recruits and dead trees. Total AGB change (last minus first inventory). average AGB recruitment. gain. productivity (AGB recruitment plus gain). and mortality. and delta AGB (annual net change in AGB) for each forest plot from Amazon-Cerrado transition. Brazil.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Plot code** | **Forest type** | **Burning** | **N. trees** | **N. recruits** | **N. dead trees** | **Total AGB change (Mg ha-1)** | **AGB Recruitment (Mg ha-1 yr-1****)** | **AGB Gain (Mg ha-1 yr-1)** | **AGB Mortality (Mg ha-1 yr-1)** | **AGB woody productivity (Mg ha-1 yr-1)** | **Δ AGB (Mg ha-1 yr-1)** |
| ALF-01 | Terra firme | Unburned | 509.8 | 40.3 | 24.0 | 16.6 | 0.5 | 3.3 | 2.3 | 3.8 | 1.5 |
| ALF-02 | Terra firme | Unburned | 547.7 | 26.5 | 38.5 | -28.3 | 0.5 | 3.7 | 8.8 | 4.2 | -5.7 |
| FLO-01 | Terra firme | Unburned | 602.5 | 35.0 | 38.0 | 3.9 | 0.6 | 3.4 | 3.4 | 4.0 | 0.6 |
| FLO-02 | Terra firme | Unburned | 536.7 | 64.0 | 14.5 | 26.5 | 1.2 | 5.6 | 0.9 | 6.8 | 5.9 |
| FRP-01 | Terra firme | Unburned | 537.5 | 18.0 | 41.0 | 2.7 | 0.3 | 4.1 | 3.4 | 4.3 | 0.9 |
| GAU-01 | Riparian | Burned | 422.5 | 173.0 | 304.0 | -120.6 | 0.9 | 1.8 | 11.2 | 2.7 | -8.5 |
| NXV-02 | Terra firme | Burned | 408.3 | 72.0 | 34.5 | 9.5 | 2.5 | 3.7 | 4.5 | 6.1 | 1.7 |
| NXV-06 | Riparian | Unburned | 253.0 | 18.3 | 17.8 | 37.6 | 0.5 | 3.5 | 2.0 | 4.1 | 2.3 |
| NXV-07 | Riparian | Unburned | 205.2 | 18.3 | 15.8 | 27.2 | 0.4 | 3.4 | 1.8 | 3.9 | 1.7 |
| NXV-08 | Riparian | Unburned | 299.0 | 74.0 | 38.3 | 58.2 | 6.6 | 3.7 | 2.5 | 10.3 | 3.6 |
| NXV-09 | Terra firme | Unburned | 360.0 | 60.5 | 25.5 | 14.7 | 13.5 | 3.0 | 3.0 | 16.5 | 3.9 |
| PEA-01 | Riparian | Burned | 709.0 | 64.5 | 110.0 | -12.4 | 1.0 | 3.3 | 6.1 | 4.3 | -1.8 |
| PEA-02 | Riparian | Burned | 852.0 | 31.0 | 281.0 | -55.1 | 0.5 | 3.3 | 22.7 | 3.8 | -18.9 |
| PEA-03 | Riparian | Unburned | 1593.0 | 144.0 | 112.0 | 17.7 | 2.3 | 2.2 | 1.9 | 4.5 | 2.6 |
| PEA-04 | Riparian | Burned | 1201.5 | 101.0 | 250.0 | -16.8 | 0.8 | 2.6 | 5.8 | 3.3 | -2.5 |
| PEA-05 | Riparian | Burned | 942.0 | 99.0 | 140.0 | 16.3 | 0.6 | 4.4 | 2.8 | 5.0 | 2.0 |
| PEA-06 | Riparian | Burned | 666.5 | 51.0 | 555.0 | -122.8 | 0.3 | 2.3 | 17.7 | 2.7 | -15.2 |
| PEA-07 | Riparian | Burned | 450.5 | 102.0 | 142.0 | -9.5 | 0.9 | 3.8 | 6.3 | 4.8 | -1.6 |
| PEA-08 | Riparian | Burned | 380.5 | 15.0 | 104.0 | -21.9 | 0.1 | 3.3 | 7.0 | 3.4 | -3.7 |
| POA-01 | Terra firme | Unburned | 650.0 | 23.0 | 25.0 | 9.1 | 0.5 | 5.4 | 1.3 | 5.9 | 4.6 |
| SAA-01 | Terra firme | Unburned | 503.3 | 18.0 | 25.0 | 9.3 | 0.5 | 4.2 | 2.5 | 4.7 | 2.3 |
| SAA-02 | Terra firme | Unburned | 545.5 | 29.0 | 30.0 | 3.3 | 0.6 | 3.9 | 2.9 | 4.6 | 1.7 |
| SAT-01 | Terra firme | Unburned | 526.5 | 31.0 | 14.0 | 8.4 | 0.6 | 4.5 | 0.8 | 5.1 | 4.3 |
| SIP-01 | Terra firme | Unburned | 506.0 | 146.0 | 82.0 | 4.9 | 1.0 | 2.8 | 3.5 | 3.9 | 0.4 |
| SMT-02 | Terra firme | Unburned | 431.8 | 35.0 | 25.7 | 8.0 | 0.6 | 1.4 | 0.9 | 2.0 | 1.1 |
| TAN-02 | Terra firme | Unburned | 486.5 | 22.0 | 32.0 | -0.4 | 0.6 | 3.1 | 3.2 | 3.6 | -0.1 |
| TAN-03 | Terra firme | Unburned | 580.3 | 27.7 | 39.0 | -15.8 | 0.7 | 2.9 | 6.2 | 3.6 | -3.0 |
| TAN-04 | Terra firme | Unburned | 560.3 | 34.3 | 46.3 | -6.9 | 0.6 | 2.9 | 4.6 | 3.5 | -1.0 |
| VCR-01 | Terra firme | Unburned | 300.6 | 5.0 | 16.1 | 18.1 | 0.1 | 4.8 | 3.6 | 4.9 | 0.9 |
| VCR-02 | Terra firme | Unburned | 378.2 | 41.0 | 39.8 | 1.5 | 1.6 | 2.0 | 3.7 | 3.6 | 0.1 |