

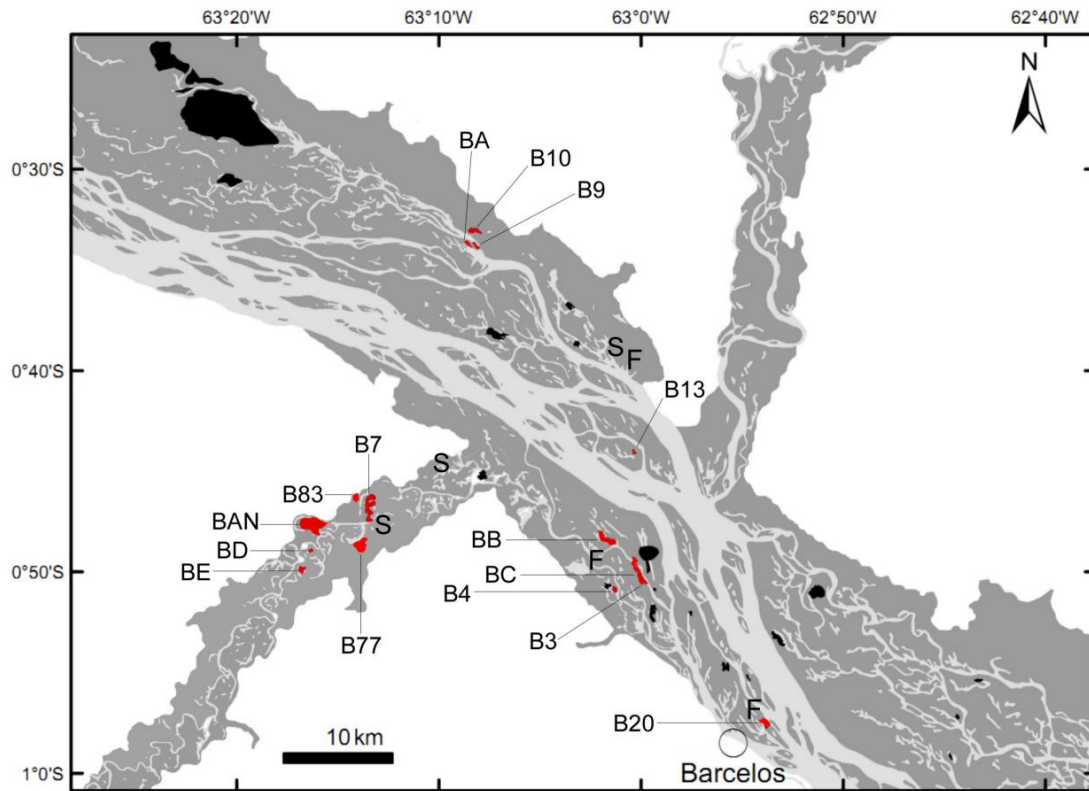
## Supporting Information

# White-sand savannas expand at the core of the Amazon after forest wildfires

Bernardo M. Flores and Milena Holmgren

**Table S1.** Plots used in this study and available data. Fire history was assessed by satellite images. In the white-sand savannas, we could not assess fire dates from satellite, as in burnt forests (Figures S3 and S4, Methods - Fire detection). In the field, we noted that all three savanna sites had signs of recent fire, such as charred stems. All plots were sampled in 2013. Plot locations are shown in Figure S1.

| Site      | # of fires | Fire dates  | Dry phase<br>(days.y <sup>-1</sup> ) | Soil<br>data | Tree composition<br>data |
|-----------|------------|-------------|--------------------------------------|--------------|--------------------------|
| Forest 1  | 0          | –           | –                                    | Yes          | Yes                      |
| Forest 2  | 0          | –           | –                                    | Yes          | Yes                      |
| Forest 3  | 0          | –           | 165                                  | Yes          | Yes                      |
| BA        | 1          | 2010        | 130                                  | Yes          | No                       |
| BB        | 1          | 2010        | 172                                  | Yes          | No                       |
| BC        | 1          | 2010        | 172                                  | Yes          | No                       |
| B9        | 1          | 1998        | 133                                  | Yes          | Yes                      |
| B10       | 1          | 1998        | 163                                  | Yes          | Yes                      |
| B13       | 1          | 1998        | 133                                  | Yes          | Yes                      |
| B3        | 2          | 1998 / 2010 | 180                                  | Yes          | No                       |
| BD        | 2          | 2003 / 2010 | 165                                  | Yes          | No                       |
| BE        | 2          | 1992 / 2010 | 172                                  | Yes          | No                       |
| B4        | 2          | 1998 / 2004 | 60                                   | Yes          | Yes                      |
| B7        | 2          | 1998 / 2004 | 190                                  | Yes          | Yes                      |
| BAN       | 2          | 1998 / 2004 | 197                                  | Yes          | No                       |
| B20       | 2          | 1980 / 1992 | 30                                   | Yes          | Yes                      |
| B83       | 2          | 1983 / 2004 | 202                                  | Yes          | Yes                      |
| B77       | 2          | 1977 / 1998 | 205                                  | Yes          | Yes                      |
| Savanna 1 | Unknown    | Unknown     | 206                                  | Yes          | Yes                      |
| Savanna 2 | Unknown    | Unknown     | 202                                  | Yes          | Yes                      |
| Savanna 3 | Unknown    | Unknown     | 217                                  | Yes          | Yes                      |



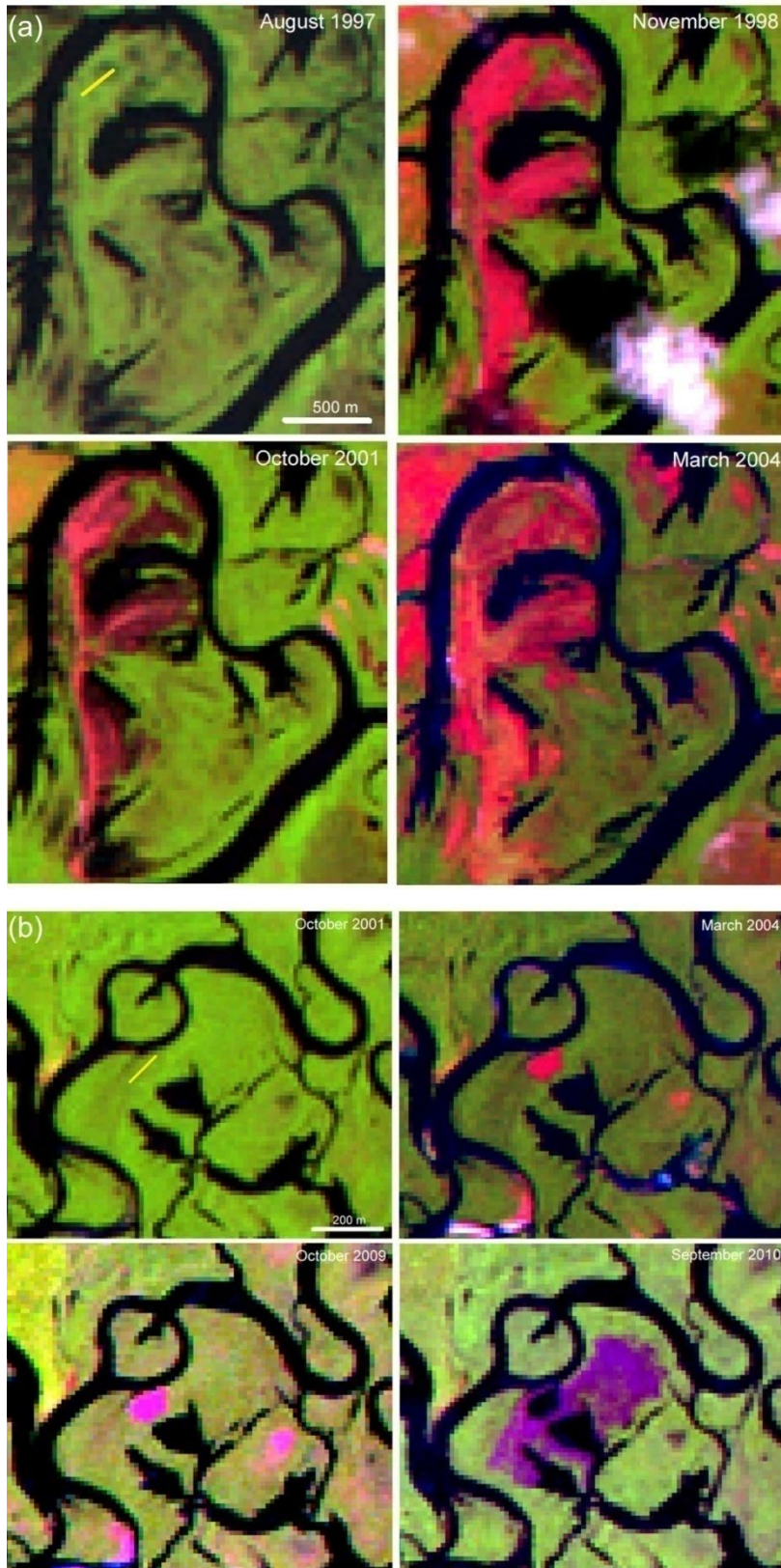
**Figure S1.** Map of the Middle Rio Negro, showing in red all fire scars we sampled. All scars were validated in the field regarding their fire origin. Letters indicate: B for burnt sites, F for unburnt forests, and S for white-sand savannas. In white are the uplands, in light gray open waters, and in dark gray the floodplains. In black we show other forests burnt before 2015, which we did not include in the study.



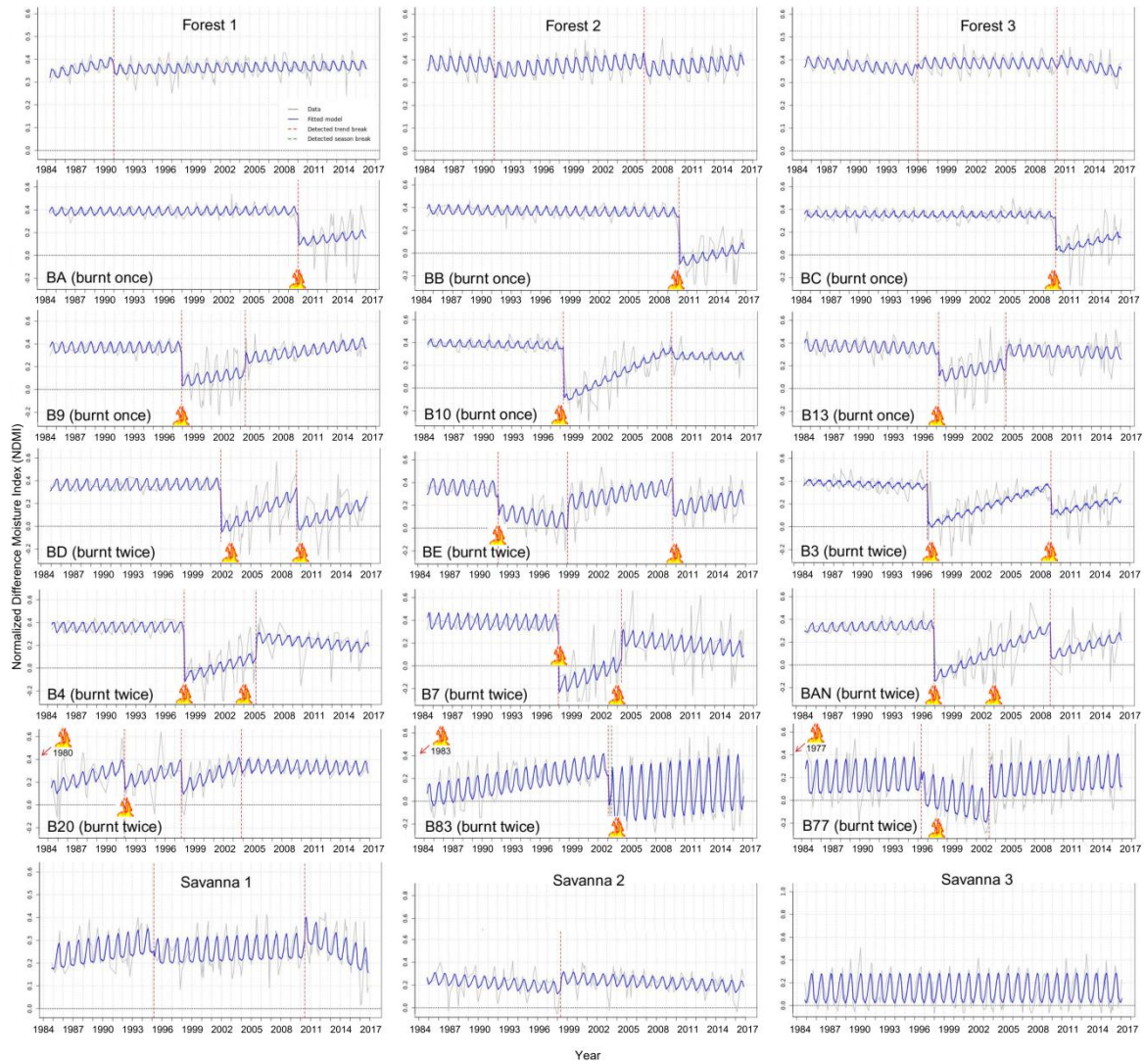
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22 **Figure S2.** White-sand savannas, burnt sites and some herbaceous plants we observed  
 23 as dominant in the field. (a - c) Different savannas in the study area, (d) the 36 year-old  
 24 burnt site B77, (e) the 30 year-old twice burnt site B83, (f) the 33 year-old twice burnt  
 25 site B20, (g and h) the 10 year-old twice burnt site BD, (i) the 15 year-old twice burnt  
 26 site BAN, (j) *Hyptis parkieri*, (k) *Scleria secans*, (l) *Eleocharis* spp., (m) *Securidaca*  
 27 spp., (n) *Scleria* spp. Photo credits to Bruce Nelson, Camila Ritter, Aline dos Santos and  
 28 Bernardo Flores.

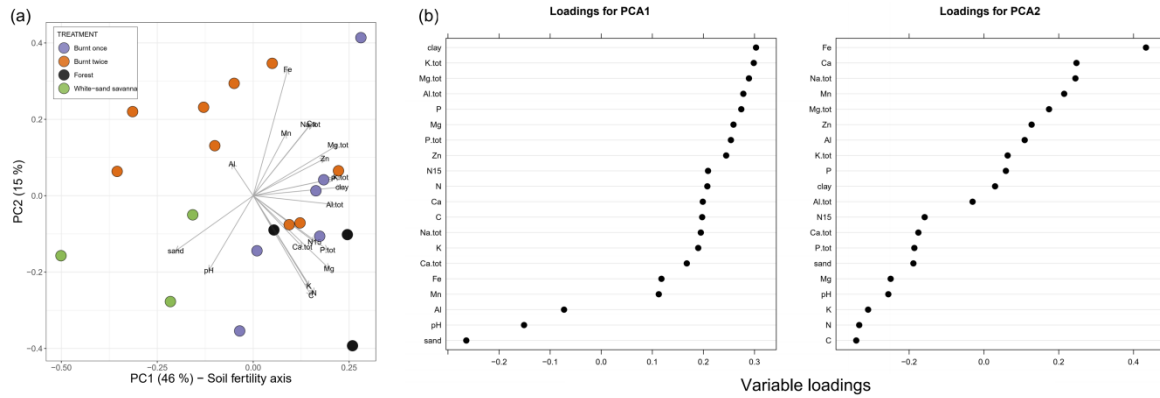




**Figure S3.** Examples of the use of Landsat TM images to visually identify fire dates. (a) Site B7 - first fire occurred in 1997-1998, removing most of the forest canopy. Second fire early 2004 was inferred from the expansion of the old fire scar's borders. (b) Site BD - first fire early 2003 removed the forest canopy over  $\sim 2$  ha. Second fire early 2010, expanded its borders. Yellow line shows the approximate location study plots.

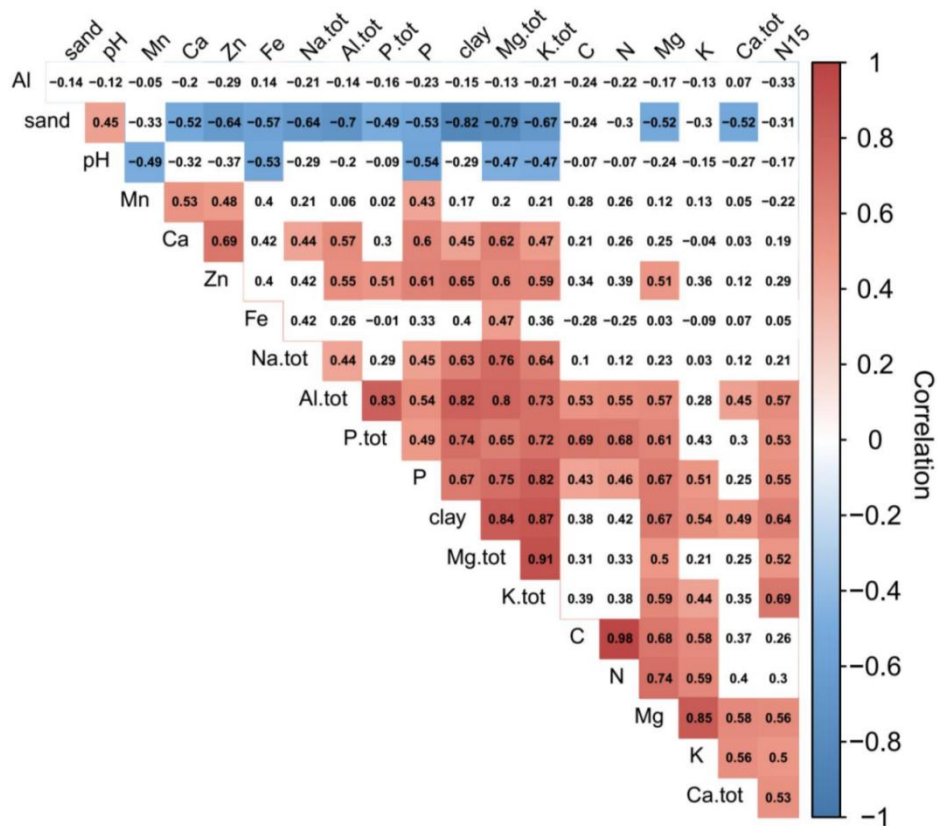


**Figure S4.** Time-series of the Normalized Difference Moisture Index (NDMI) for each plot used in this study (Table S1, Fig. S1), showing the years when each method detected a fire. First, we detected fire events visually (flame symbols) using false colour RGB-543 Landsat images (Figure S3). Later, we used the breakpoint detection method (vertical red dashed lines) applied to NDMI time-series derived from Landsat 5, 7 and 8 TM images. This data was processed for detection of breakpoints, indicative of disturbance and recovery events, using the Breaks For Additive Season and Trend (BFAST) algorithm (Verbesselt and others 2010), using the Tukumã Toolbox (see ‘Fire Detection’ for more details).



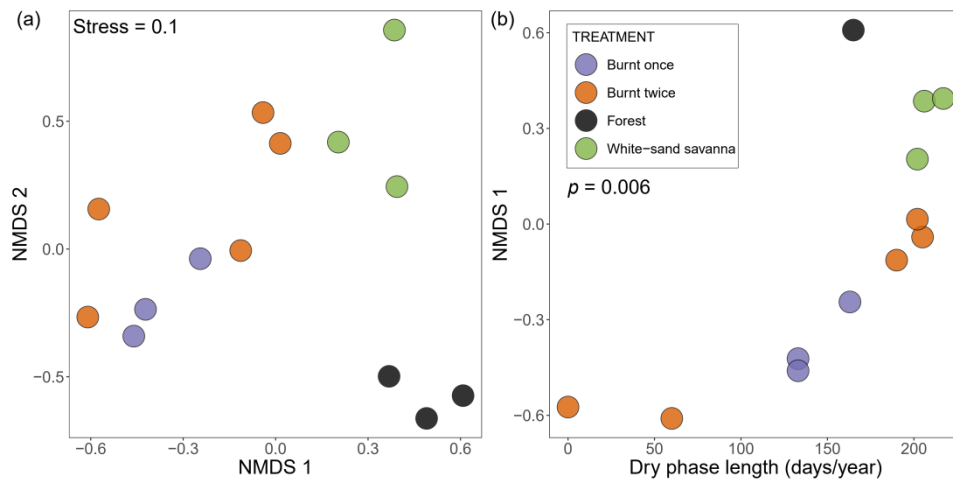
**Figure S5.** Principal Components Analysis (PCA) with all soil variables. (a) Soil structure based on both PC axes, arrows show correlation with different soil variables, (b) Loadings from PCA, showing which soil variables were better explained.

| Variable -           | Clay | Sand | <sup>15</sup> N | C   | P    | Ca  | K    | Mg   | P total | Ca total | K total | Mg total |
|----------------------|------|------|-----------------|-----|------|-----|------|------|---------|----------|---------|----------|
| Correlation with PC1 | 0.92 | -0.8 | 0.63            | 0.6 | 0.83 | 0.6 | 0.57 | 0.78 | 0.77    | 0.51     | 0.9     | 0.87     |

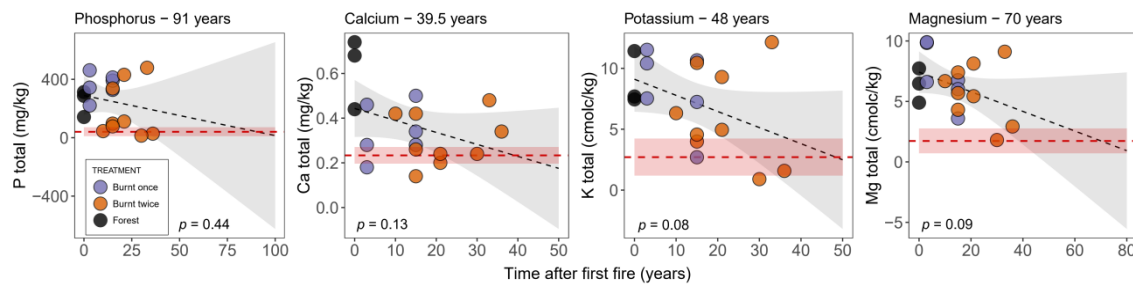


**Figure S6.** Pearson correlations between the PC1 and the eight main soil variables of the study (above), as well as among all 20 soil variables. Colours in the matrix indicate  $p < 0.05$ ; red for positive and blue for negative correlations.





**Figure S7.** (a) Results from Non-metric Multidimensional Scaling (NMDS) analysis. (b) First axis NMDS 1 vs. Dry-phase length, showing that most study sites have similar hydrology, with the exception of two twice burnt sites with very short time above water every year. We only show one unburnt forest because the other two unburnt forests were not penetrable by canoe to collect the measurements, but from the edge we noted that they had similar hydrology. For analyses using NMDS2, see Fig. 3.

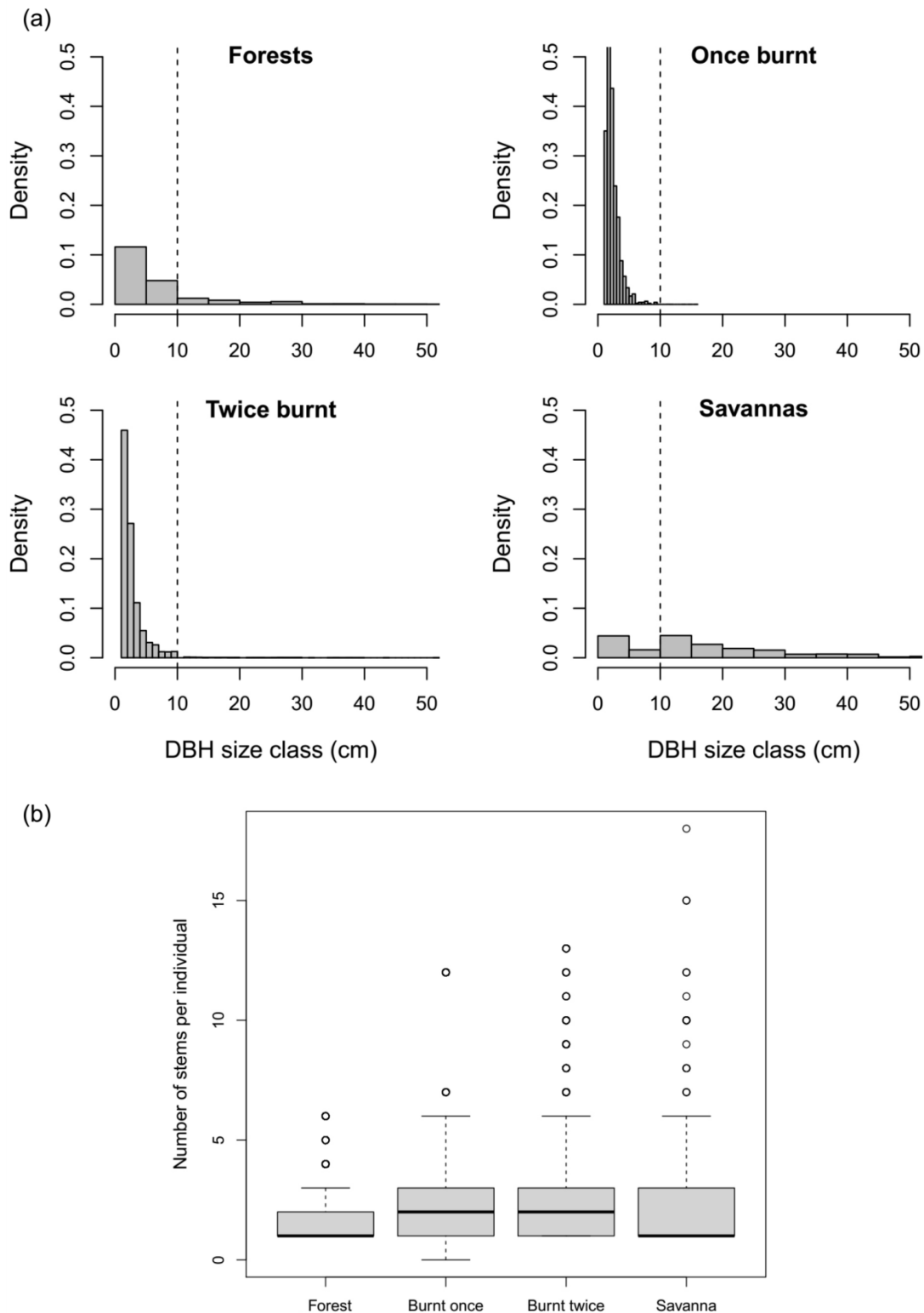


**Figure S8.** Changes in total P, Ca, K and Mg as a function of 'time after first fire' in floodable forests. White-sand savanna sites were excluded from the analyses, and instead shown as mean ( $\pm$ SE) in semi-transparent red colour. *P* values refer to simple linear regressions (black dashed lines). Above each plot we show the time in which savanna levels (red lines) would be reached. See Table S1 for site details.



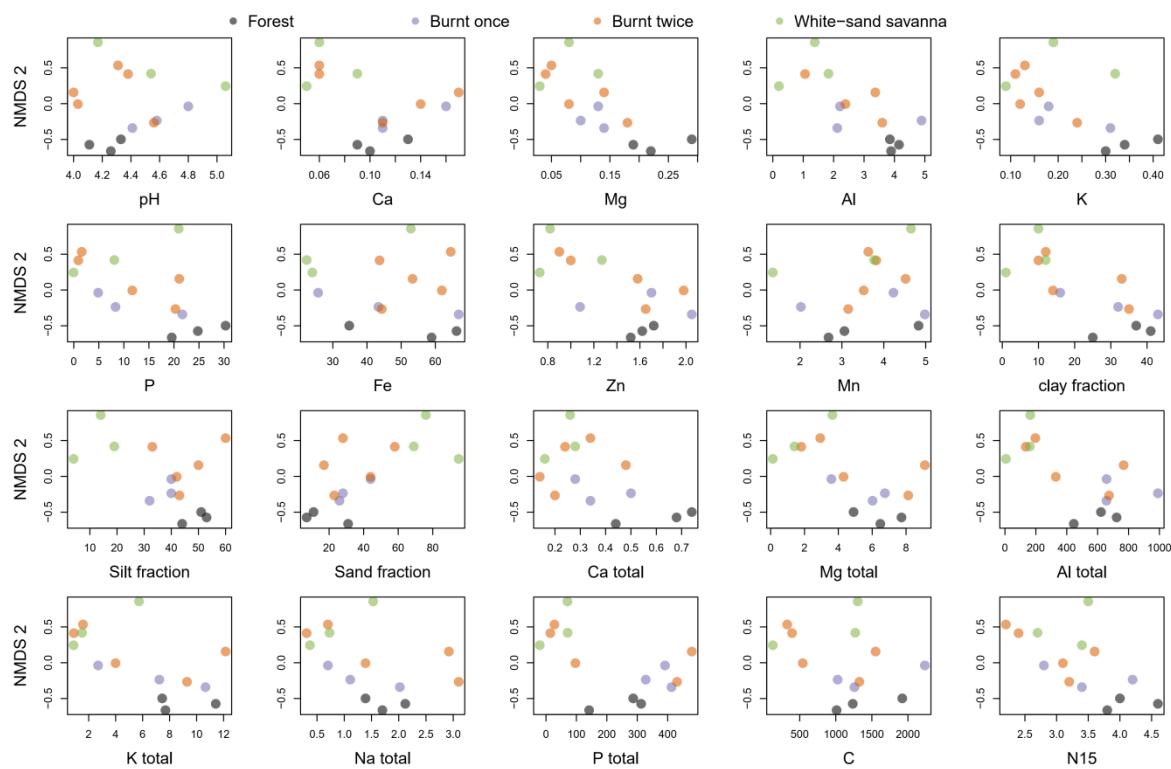
**Figure S9.** Initial damage and recovery of burnt floodplain forests. (a and b) Border of 15 year-old twice burnt site B7 with regenerating forest seen from opposite angles. (c and d) Once burnt site BC with five (left) and eight (right) years after the fire at the exact same place. (e - g) Once burnt sites with intense tree recruitment, including the 15 year-old once burnt site B10 (f). (h) Three-years old once burnt site BC. (i) Unburnt forest F1. Photo credits to Bruce Nelson, Camila Ritter, Aline dos Santos and Bernardo Flores.





**Figure S10.** Tree structure in floodplain forests, once burnt, twice burnt and white-sand savannas. (a) Density distribution of DBH size classes among the trees found in the plots with over 1 cm. Vertical dashed line represents the usual DBH that separates young recruits from adult trees. (b) Variation in the number of stems per individual in forests, once burnt, twice burnt and white-sand savannas. The number of stems increases from forest to white-sand savannas, indicating resprouting ability.

90



**Figure S11.** Relations between the tree community ‘ordination axis 2’ (NDMS2) (Figure S7a) and all soil variables in our study sites (Table S1).



97 **Table S2.** List of tree and palm species found in our study plots, with their relative  
 98 abundances of individuals per treatment. Species names were checked with *Flora do*  
 99 *Brasil* 2020.

| Family           | Species                                                     | Forest | Burnt once | Burnt twice | White-sand savana |
|------------------|-------------------------------------------------------------|--------|------------|-------------|-------------------|
| Anacardiaceae    | <i>Thyrsoedium spruceanum</i> Benth.                        | 1      | 0          | 0           | 0                 |
| Annonaceae       | <i>Duguetia longicuspis</i> Benth.                          | 6      | 0          | 0           | 0                 |
|                  | <i>Guatteria inundata</i> Mart.                             | 53     | 8          | 6           | 0                 |
| Apocynaceae      | <i>Couma utilis</i> (Mart.) Müll. Arg.                      | 0      | 0          | 4           | 7                 |
|                  | <i>Himatanthus attenuatus</i> (Benth.) Woodson              | 0      | 0          | 2           | 2                 |
|                  | <i>Malouetia duckei</i> Markgr.                             | 0      | 1          | 0           | 0                 |
|                  | <i>Malouetia furfuracea</i> Benth. ex Müll.Arg.             | 48     | 0          | 0           | 0                 |
|                  | <i>Malouetia tamaquarina</i> (Aubl.) A. DC.                 | 0      | 9          | 1           | 0                 |
|                  | <i>Molongum laxum</i> (Benth.) Pichon                       | 0      | 0          | 6           | 0                 |
|                  | <i>Tabernaemontana rupicola</i> Benth.                      | 58     | 0          | 0           | 0                 |
| Aquifoliaceae    | <i>Ilex inundata</i> Poepp. ex Reissek                      | 0      | 0          | 2           | 3                 |
| Areaceae         | <i>Bactris</i> sp. 1 Jacq. ex Scop.                         | 0      | 0          | 1           | 0                 |
|                  | <i>Leopoldinia pulchra</i> Mart.                            | 2      | 0          | 0           | 0                 |
| Bignoniaceae     | <i>Handroanthus serratifolius</i> (Vahl) S.O. Grose         | 0      | 2          | 0           | 23                |
| Boraginaceae     | <i>Cordia nodosa</i> Lam.                                   | 1      | 0          | 0           | 0                 |
| Calophyllaceae   | <i>Calophyllum brasiliense</i> Cambess.                     | 0      | 0          | 8           | 0                 |
|                  | <i>Calophyllum pachyphyllum</i> Triana & Planch.            | 0      | 0          | 2           | 4                 |
|                  | <i>Caraipa grandifolia</i> Mart.                            | 52     | 0          | 0           | 0                 |
|                  | <i>Haplocalthra leiantha</i> (Benth.) Benth.                | 4      | 0          | 1           | 1                 |
| Celastraceae     | <i>Salacia impressifolia</i> (Miers) A.C. Sm.               | 3      | 0          | 0           | 0                 |
| Chrysobalanaceae | <i>Couepia bracteosa</i> Benth.                             | 0      | 0          | 0           | 2                 |
|                  | <i>Couepia guianensis</i> Aubl.                             | 1      | 0          | 0           | 0                 |
|                  | <i>Couepia paraensis</i> (Mart. & Zucc.) Benth. ex Hook. f. | 1      | 0          | 0           | 0                 |
|                  | <i>Exellodendron coriaceum</i> (Benth.) Prance              | 0      | 0          | 0           | 1                 |
|                  | <i>Licania apetala</i> (E. Mey.) Fritsch                    | 1      | 0          | 2           | 4                 |
|                  | <i>Licania heteromorpha</i> Benth.                          | 12     | 0          | 0           | 0                 |
|                  | <i>Licania impressa</i> Prance                              | 0      | 0          | 0           | 3                 |
|                  | <i>Licania lata</i> J.F. Macbr.                             | 1      | 0          | 0           | 7                 |
|                  | <i>Licania micrantha</i> Miq.                               | 3      | 0          | 0           | 0                 |
|                  | <i>Licania niloi</i> Prance                                 | 0      | 0          | 0           | 2                 |
|                  | <i>Licania sothersiae</i> Prance                            | 12     | 0          | 0           | 0                 |
|                  | <i>Licania wurdackii</i> Prance                             | 0      | 0          | 1           | 27                |
| Clusiaceae       | <i>Garcinia albuquerquei</i> (M.E.Berg) Bittrich            | 0      | 0          | 1           | 28                |
| Combretaceae     | <i>Buchenavia congesta</i> Ducke                            | 1      | 0          | 0           | 0                 |
|                  | <i>Buchenavia grandis</i> Ducke                             | 1      | 0          | 2           | 0                 |
|                  | <i>Buchenavia oxycarpa</i> (Mart.) Eichler                  | 19     | 49         | 90          | 17                |
|                  | <i>Buchenavia suaveolens</i> Eichler                        | 0      | 0          | 0           | 1                 |
| Ebenaceae        | <i>Diospyros manausensis</i> Cavalcante                     | 14     | 0          | 0           | 0                 |
| Elaeocarpaceae   | <i>Sloanea porphyrocarpa</i> Ducke                          | 18     | 0          | 0           | 1                 |
| Erythroxylaceae  | <i>Erythroxylum campinense</i> Amaral                       | 7      | 0          | 0           | 5                 |
| Euphorbiaceae    | <i>Alchornea discolor</i> Poepp.                            | 4      | 1          | 0           | 0                 |

|               |                                                                                            |    |     |    |    |
|---------------|--------------------------------------------------------------------------------------------|----|-----|----|----|
|               | <i>Hevea spruceana</i> (Benth.) Müll. Arg.                                                 | 19 | 1   | 0  | 0  |
|               | <i>Mabea nitida</i> Spruce ex Benth.                                                       | 2  | 0   | 0  | 0  |
|               | <i>Mabea piriri</i> Aubl.                                                                  | 0  | 0   | 5  | 0  |
|               | <i>Mabea speciosa</i> Müll. Arg.                                                           | 45 | 0   | 0  | 0  |
|               | <i>Mabea uleana</i> Pax & K. Hoffm.                                                        | 0  | 0   | 0  | 2  |
|               | <i>Maprounea brasiliensis</i> A. St.-Hil.                                                  | 0  | 0   | 15 | 22 |
|               | <i>Micrandra siphonioides</i> Benth.                                                       | 8  | 0   | 0  | 0  |
|               | <i>Pera bicolor</i> (Klotzsch) Müll. Arg.                                                  | 3  | 0   | 1  | 8  |
|               | <i>Pera distichophylla</i> (Mart.) Baill.                                                  | 0  | 0   | 0  | 7  |
|               | <i>Euphronia hirtelloides</i> Mart.                                                        | 0  | 0   | 0  | 1  |
| Fabaceae      | <i>Abarema jupunba</i> (Willd.) Britton & Killip                                           | 3  | 0   | 0  | 0  |
|               | <i>Aldina heterophylla</i> Spruce ex Benth.                                                | 41 | 0   | 1  | 8  |
|               | <i>Copaifera guyanensis</i> Desf.                                                          | 2  | 0   | 0  | 0  |
|               | <i>Crudia amazonica</i> Spruce ex Benth.                                                   | 1  | 0   | 0  | 0  |
|               | <i>Cynometra spruceana</i> Benth.                                                          | 9  | 0   | 0  | 0  |
|               | <i>Dalbergia inundata</i> Spruce ex Benth.                                                 | 0  | 0   | 5  | 1  |
|               | <i>Dalbergia revoluta</i> Ducke                                                            | 0  | 0   | 30 | 0  |
|               | <i>Dicorynia paraensis</i> Benth.                                                          | 22 | 0   | 0  | 0  |
|               | <i>Heterostemon mimosoides</i> Desf.                                                       | 4  | 0   | 0  | 0  |
|               | <i>Hydrochorea marginata</i> (Spruce ex Benth.) Barneby & J.W. Grimes                      | 0  | 0   | 7  | 0  |
|               | <i>Leptolobium nitens</i> Vogel                                                            | 0  | 6   | 19 | 20 |
|               | <i>Limadendron amazonicum</i> (Ducke) Meireles & A.M.G.Azevedo                             | 7  | 0   | 0  | 1  |
|               | <i>Macrolobium acaciifolium</i> (Benth.) Benth.                                            | 5  | 116 | 20 | 0  |
|               | <i>Macrolobium microcalyx</i> Ducke                                                        | 7  | 0   | 4  | 6  |
|               | <i>Macrosamanea discolor</i> (Humb. & Bonpl. ex Willd.) Britton & Rose ex Britton & Killip | 0  | 2   | 3  | 0  |
|               | <i>Macrosamanea duckei</i> (Huber) Barneby & J.W. Grimes                                   | 0  | 0   | 1  | 0  |
|               | <i>Parkia discolor</i> Spruce ex Benth.                                                    | 0  | 0   | 6  | 2  |
|               | <i>Peltogyne venosa</i> (Vahl) Benth.                                                      | 5  | 0   | 0  | 0  |
|               | <i>Swartzia acuminata</i> Willd. ex Vogel                                                  | 28 | 2   | 0  | 1  |
|               | <i>Swartzia anomala</i> R.S. Cowan                                                         | 0  | 0   | 0  | 4  |
|               | <i>Swartzia argentea</i> Spruce ex Benth.                                                  | 3  | 0   | 0  | 0  |
|               | <i>Swartzia cardiosperma</i> Spruce ex Benth.                                              | 1  | 0   | 0  | 0  |
|               | <i>Swartzia macrocarpa</i> Spruce ex Benth.                                                | 14 | 0   | 0  | 0  |
|               | <i>Swartzia panacoco</i> (Aubl.) R.S. Cowan                                                | 2  | 0   | 0  | 0  |
|               | <i>Tachigali goeldiana</i> (Huber) L.F. Gomes da Silva & H.C. Lima                         | 0  | 0   | 43 | 54 |
|               | <i>Zygia juruana</i> (Harms) L. Rico                                                       | 10 | 1   | 0  | 0  |
| Humiriaceae   | <i>Humirastrum cuspidatum</i> (Benth.) Cuatrec.                                            | 0  | 0   | 1  | 3  |
|               | <i>Schistostemon macrophyllum</i> (Benth.) Cuatrec.                                        | 1  | 0   | 1  | 1  |
| Lamiaceae     | <i>Vitex triflora</i> Vahl                                                                 | 9  | 0   | 0  | 0  |
| Lauraceae     | <i>Endlicheria levelii</i> C.K. Allen                                                      | 0  | 2   | 0  | 0  |
|               | <i>Endlicheria macrophylla</i> (Meisn.) Mez                                                | 3  | 0   | 0  | 0  |
|               | <i>Licaria macrophylla</i> (A.C. Sm.) Kosterm.                                             | 8  | 0   | 0  | 0  |
|               | <i>Ocotea nigrescens</i> A. Vicentini                                                      | 20 | 2   | 0  | 0  |
| Lecythidaceae | <i>Eschweilera collina</i> Eyma                                                            | 32 | 0   | 0  | 0  |

|                  |                                                          |    |    |     |     |
|------------------|----------------------------------------------------------|----|----|-----|-----|
|                  | <i>Eschweilera coriacea</i> (DC.) S.A. Mori              | 1  | 0  | 0   | 0   |
|                  | <i>Eschweilera grandiflora</i> (Aubl.) Sandwith          | 4  | 0  | 0   | 0   |
|                  | <i>Eschweilera tenuifolia</i> (O. Berg) Miers            | 3  | 96 | 57  | 0   |
|                  | <i>Eschweilera truncata</i> A.C. Sm.                     | 50 | 0  | 1   | 0   |
|                  | <i>Gustavia augusta</i> L.                               | 1  | 0  | 0   | 0   |
|                  | <i>Lecythis lurida</i> (Miers) S.A. Mori                 | 10 | 0  | 0   | 0   |
| Linaceae         | <i>Roucheria calophylla</i> Planch.                      | 0  | 0  | 1   | 6   |
| Malpighiaceae    | <i>Burdachia duckei</i> Steyerm.                         | 0  | 1  | 0   | 1   |
|                  | <i>Burdachia prismatocarpa</i> A. Juss.                  | 0  | 7  | 13  | 0   |
|                  | <i>Burdachia sphaerocarpa</i> A. Juss.                   | 0  | 0  | 1   | 3   |
|                  | <i>Byrsonima coniophylla</i> A. Juss.                    | 0  | 0  | 6   | 34  |
|                  | <i>Byrsonima punctulata</i> A. Juss.                     | 0  | 0  | 4   | 1   |
| Malvaceae        | <i>Lueheopsis rosea</i> (Ducke) Burret                   | 32 | 0  | 0   | 0   |
|                  | <i>Mollia lepidota</i> Spruce ex Benth.                  | 0  | 0  | 0   | 2   |
|                  | <i>Mollia longifolia</i> Spruce ex Benth.                | 1  | 5  | 0   | 0   |
|                  | <i>Mollia speciosa</i> Mart.                             | 1  | 0  | 0   | 0   |
|                  | <i>Pachira macrocalyx</i> (Ducke) Fern. Alonso           | 10 | 0  | 0   | 0   |
| Melastomataceae  | <i>Henriettea martiusii</i> (DC.) Naudin                 | 0  | 0  | 4   | 0   |
|                  | <i>Henriettea spruceana</i> Cogn.                        | 1  | 0  | 0   | 0   |
|                  | <i>Tococa subciliata</i> (DC.) Triana                    | 6  | 0  | 0   | 13  |
| Meliaceae        | <i>Guarea pubescens</i> (Rich.) A. Juss.                 | 3  | 0  | 0   | 0   |
| Moraceae         | <i>Pseudolmedia laevigata</i> Trécul                     | 12 | 0  | 0   | 0   |
| Myristicaceae    | <i>Virola elongata</i> (Benth.) Warb.                    | 4  | 0  | 0   | 0   |
| Myrtaceae        | <i>Calyptanthus crebra</i> McVaugh                       | 1  | 0  | 0   | 0   |
|                  | <i>Calyptanthus forsteri</i> O. Berg                     | 13 | 0  | 1   | 2   |
|                  | <i>Eugenia florida</i> DC.                               | 0  | 0  | 0   | 4   |
|                  | <i>Eugenia patens</i> Poir.                              | 2  | 0  | 0   | 0   |
|                  | <i>Eugenia patrisii</i> Vahl                             | 2  | 0  | 0   | 0   |
|                  | <i>Myrcia paivae</i> O. Berg                             | 0  | 0  | 2   | 0   |
|                  | <i>Myrcia scytophylla</i> (Diels) E. Lucas & C.E. Wilson | 0  | 0  | 0   | 1   |
|                  | <i>Myrcia servata</i> McVaugh                            | 0  | 6  | 11  | 120 |
| Ochnaceae        | <i>Blastemanthus gemmiflorus</i> (Mart.) Planch.         | 0  | 0  | 0   | 7   |
|                  | <i>Ouratea discophora</i> Ducke                          | 0  | 0  | 1   | 2   |
|                  | <i>Ouratea odora</i> Poepp. ex Engl.                     | 0  | 0  | 1   | 0   |
|                  | <i>Ouratea ramosissima</i> Maguire & Steyerm.            | 0  | 0  | 3   | 0   |
|                  | <i>Ouratea roraimae</i> Engl.                            | 0  | 0  | 1   | 0   |
|                  | <i>Quiina rhytidopus</i> Tul.                            | 1  | 0  | 0   | 0   |
| Olacaceae        | <i>Chaunochiton loranthoides</i> Benth.                  | 0  | 0  | 0   | 1   |
| Opiliaceae       | <i>Agonandra silvatica</i> Ducke                         | 2  | 0  | 0   | 0   |
| Pentaphylacaceae | <i>Ternstroemia brasiliensis</i> Cambess.                | 0  | 0  | 0   | 20  |
|                  | <i>Ternstroemia dentata</i> (Aubl.) Sw.                  | 0  | 0  | 2   | 0   |
|                  | <i>Ternstroemia punctata</i> (Aubl.) Sw.                 | 0  | 1  | 180 | 0   |
|                  | <i>Ternstroemia urophora</i> Kobuski                     | 0  | 0  | 9   | 3   |
| Phyllanthaceae   | <i>Amanoa oblongifolia</i> Müll. Arg.                    | 1  | 9  | 0   | 0   |



|               |                                                            |    |     |    |    |
|---------------|------------------------------------------------------------|----|-----|----|----|
|               | <i>Discocarpus essequiboensis</i> Klotzsch                 | 4  | 0   | 0  | 0  |
|               | <i>Phyllanthus attenuatus</i> Miq.                         | 0  | 0   | 0  | 2  |
|               | <i>Phyllanthus neblinae</i> Jabl.                          | 0  | 0   | 1  | 3  |
| Polygalaceae  | <i>Bredemeyera myrtifolia</i> Spruce ex A.W. Benn.         | 0  | 0   | 0  | 5  |
| Polygonaceae  | <i>Ruprechtia tangarana</i> Standl.                        | 0  | 1   | 0  | 0  |
|               | <i>Symmeria paniculata</i> Benth.                          | 0  | 2   | 0  | 0  |
| Primulaceae   | <i>Cybianthus fulvopulverulentus</i> (Mez) G. Agostini     | 0  | 0   | 0  | 2  |
|               | <i>Cybianthus reticulatus</i> (Benth. ex Miq.) G. Agostini | 0  | 0   | 6  | 5  |
|               | <i>Cybianthus spicatus</i> (Kunth) G. Agostini             | 0  | 1   | 4  | 1  |
| Proteaceae    | <i>Panopsis rubescens</i> (Pohl) Rusby                     | 0  | 0   | 3  | 4  |
|               | <i>Roupala obtusata</i> Klotzsch                           | 0  | 0   | 0  | 17 |
| Rubiaceae     | <i>Duroia eriopila</i> L. f.                               | 7  | 208 | 26 | 9  |
|               | <i>Palicourea violacea</i> (Aubl.) A.Rich.                 | 4  | 0   | 0  | 0  |
|               | <i>Psychotria lupulina</i> Benth.                          | 47 | 0   | 0  | 0  |
|               | <i>Remijia tenuiflora</i> Benth.                           | 0  | 1   | 25 | 1  |
|               | <i>Stachyarrhena spicata</i> Hook. f.                      | 0  | 0   | 2  | 2  |
| Salicaceae    | <i>Banara arguta</i> Briq.                                 | 0  | 1   | 0  | 0  |
|               | <i>Casearia aculeata</i> Jacq.                             | 0  | 39  | 1  | 0  |
|               | <i>Laetia suaveolens</i> (Poepp.) Benth.                   | 0  | 11  | 0  | 0  |
| Sapindaceae   | <i>Cupania macrostylis</i> (Radlk.) Acev.-Ror.             | 4  | 0   | 0  | 0  |
| Sapotaceae    | <i>Elaeoluma glabrescens</i> (Mart. & Eichler) Aubrév.     | 1  | 0   | 0  | 0  |
|               | <i>Elaeoluma schomburgkiana</i> (Miq.) Baill.              | 0  | 0   | 0  | 13 |
|               | <i>Micropholis egensis</i> (A. DC.) Pierre                 | 15 | 0   | 1  | 2  |
|               | <i>Micropholis melinoniana</i> Pierre                      | 1  | 0   | 0  | 0  |
|               | <i>Pouteria ambelaniifolia</i> (Sandwith) T.D. Penn.       | 2  | 0   | 0  | 0  |
|               | <i>Pouteria elegans</i> (A. DC.) Baehni                    | 8  | 0   | 0  | 1  |
|               | <i>Pouteria pachyphylla</i> T.D. Penn.                     | 19 | 0   | 1  | 0  |
|               | <i>Pouteria stipulifera</i> T.D. Penn.                     | 0  | 0   | 1  | 0  |
|               | <i>Pouteria venosa</i> (Mart.) Baehni                      | 1  | 0   | 0  | 0  |
| Simaroubaceae | <i>Simaba obovata</i> Spruce ex Engl.                      | 1  | 0   | 0  | 0  |
|               | <i>Simaba orinocensis</i> Kunth                            | 0  | 6   | 10 | 21 |
| Violaceae     | <i>Amphirrhox longifolia</i> (A. St.-Hil.) Spreng.         | 16 | 0   | 0  | 0  |
|               | <i>Leonia cymosa</i> Mart.                                 | 4  | 0   | 0  | 0  |
| Vochysiaceae  | <i>Erismacalcaratum</i> (Link) Warm.                       | 6  | 0   | 0  | 0  |
|               | <i>Vochysia calophylla</i> Spruce ex Warm.                 | 0  | 0   | 0  | 9  |
| Indet.        | Indet. 1                                                   | 1  | 0   | 0  | 0  |
|               | Indet. 2                                                   | 6  | 0   | 0  | 0  |
|               | Indet. 3                                                   | 2  | 0   | 0  | 0  |
|               | Indet. 4                                                   | 0  | 0   | 0  | 17 |
|               | Indet. 5                                                   | 0  | 0   | 1  | 0  |

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**Table S3.** List of tree species indicators of forest and white-sand savanna habitats. Species abundances are shown for each habitat: forest, burnt once, burnt twice and white-sand (WS) savanna. ‘Specificity’ indicates whether a species only occurs in that habitat (value 1) or in other habitats as well (value < 1). ‘Fidelity’ indicates whether a species occurs in all sites that correspond to a habitat (value 1) or only a few of them (value < 1). For details, see Methods.

|                    | TREE SPECIES                    | FAMILY         | FOREST | BURNT ONCE | BURNT TWICE | WS SAVANNAS | P VALUE | SPECIFICITY | FIDELITY |
|--------------------|---------------------------------|----------------|--------|------------|-------------|-------------|---------|-------------|----------|
| Forest indicators  | <i>Tabernaemontana rupicola</i> | Apocynaceae    | 58     | 0          | 0           | 0           | 0.013   | 1.000       | 1.000    |
|                    | <i>Caraipa grandifolia</i>      | Calophyllaceae | 52     | 0          | 0           | 0           | 0.013   | 1.000       | 1.000    |
|                    | <i>Malouetia furfuracea</i>     | Apocynaceae    | 48     | 0          | 0           | 0           | 0.013   | 1.000       | 1.000    |
|                    | <i>Psychotria lupulina</i>      | Rubiaceae      | 47     | 0          | 0           | 0           | 0.013   | 1.000       | 1.000    |
|                    | <i>Mabea speciosa</i>           | Euphorbiaceae  | 45     | 0          | 0           | 0           | 0.013   | 1.000       | 1.000    |
|                    | <i>Eschweilera collina</i>      | Lecythidaceae  | 32     | 0          | 0           | 0           | 0.013   | 1.000       | 1.000    |
|                    | <i>Dicorynia paraensis</i>      | Fabaceae       | 22     | 0          | 0           | 0           | 0.013   | 1.000       | 1.000    |
|                    | <i>Swartzia macrocarpa</i>      | Fabaceae       | 14     | 0          | 0           | 0           | 0.013   | 1.000       | 1.000    |
|                    | <i>Pachira macrocalyx</i>       | Malvaceae      | 10     | 0          | 0           | 0           | 0.013   | 1.000       | 1.000    |
|                    | <i>Cynometra spruceana</i>      | Fabaceae       | 9      | 0          | 0           | 0           | 0.013   | 1.000       | 1.000    |
|                    | <i>Peltogyne venosa</i>         | Fabaceae       | 5      | 0          | 0           | 0           | 0.013   | 1.000       | 1.000    |
|                    | <i>Eschweilera truncata</i>     | Lecythidaceae  | 50     | 0          | 1           | 0           | 0.006   | 0.988       | 1.000    |
|                    | <i>Aldina heterophylla</i>      | Fabaceae       | 41     | 0          | 1           | 8           | 0.029   | 0.827       | 1.000    |
|                    | <i>Ocotea nigrescens</i>        | Lauraceae      | 20     | 2          | 0           | 0           | 0.013   | 0.909       | 1.000    |
|                    | <i>Hevea spruceana</i>          | Euphorbiaceae  | 19     | 1          | 0           | 0           | 0.013   | 0.950       | 1.000    |
|                    | <i>Pouteria pachyphylla</i>     | Sapotaceae     | 19     | 0          | 1           | 0           | 0.043   | 0.969       | 0.667    |
|                    | <i>Sloanea porphyrocarpa</i>    | Elaeocarpaceae | 18     | 0          | 0           | 1           | 0.013   | 0.947       | 1.000    |
|                    | <i>Micropholis egensis</i>      | Sapotaceae     | 15     | 0          | 1           | 2           | 0.014   | 0.852       | 1.000    |
|                    | <i>Calyptranthes forsteri</i>   | Myrtaceae      | 13     | 0          | 1           | 2           | 0.028   | 0.833       | 1.000    |
|                    | <i>Zygia juruana</i>            | Fabaceae       | 10     | 1          | 0           | 0           | 0.013   | 0.909       | 1.000    |
| Savanna indicators | <i>Myrcia servata</i>           | Myrtaceae      | 0      | 6          | 11          | 120         | 0.031   | 0.905       | 1.000    |
|                    | <i>Tachigali goeldiana</i>      | Fabaceae       | 0      | 0          | 43          | 54          | 0.047   | 0.6767      | 1.000    |
|                    | <i>Byrsonima conioophylla</i>   | Malpighiaceae  | 0      | 0          | 6           | 34          | 0.018   | 0.9043      | 1.000    |
|                    | <i>Maprounea brasiliensis</i>   | Euphorbiaceae  | 0      | 0          | 15          | 22          | 0.045   | 0.7097      | 1.000    |