*SM2. Description of the study sites.*

Table S1. Study sites and their characteristics.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Locality | No of trees | Available in 2005 | Lat. (°N) | Long. (°E) | Locality | Forest type | Successional type | Mean annual temperature (°C) | Temp. Season-ality | Mean Annual Precip. (mm/yr) | Precip. Season-ality (%) | Altitude (m asl) | Evapo-transpiration (mm/yr) | Dry months | CWD (mm/yr) | Ref |
| Australia | 46 | YES | -12.48 | 131.05 | Darwin, Northern Territory, Australia | dry forest | old growth | 273 | 1670 | 1547 | 104 | 39 | 2004 | 8 | -1075 | [1] |
| BraMan2 | 123 | YES | -2.5 | -60.17 | Manaus, Amazonas, Brazil | moist forest | secondary | 272 | 431 | 2358 | 33 | 64 | 1378 | 3 | -39 | [2] |
| BraPara1 | 127 | YES | -2.5 | -48.13 | Tomé Açu, Para, Brazil | moist forest | old growth | 268 | 259 | 2439 | 70 | 37 | 1366 | 6 | -286 | [3] |
| BraPara3 | 21 | YES | -1.37 | -48.28 | Belem, Para, Brazil | moist forest | secondary | 267 | 312 | 2377 | 54 | 22 | 1393 | 4 | -172 | [4] |
| BraRond | 8 | YES | -8.75 | -63.38 | Samuel Reservoir, Rondonia, Brazil | moist forest | old growth | 260 | 589 | 2258 | 63 | 91 | 1259 | 4 | -227 | [5] |
| Cambodia | 34 | YES | 10.93 | 103.4 | Thma Sa (formerly Cheko), Cambodia | dry forest | old growth | 275 | 690 | 3339 | 86 | 14 | 1481 | 6 | -402 | [6] |
| Cameroon | 5 | NO | 2.67 | 10 | Campo Ma'an, Cameroon | moist forest | old growth | 255 | 781 | 2611 | 59 | 53 | 1226 | 3 | -71 | [7] |
| Cameroon3 | 59 | NO | 3.94 | 14.81 | Mindourou 2, South-west Cameroon | moist forest | old growth | 236 | 625 | 1380 | 47 | 647 | 1256 | 6 | -202 | [8] |
| CentralAfric | 12 | NO | 0.76 | 24.46 | Yangambi, Democratic Republic of Congo | moist forest | old growth | 248 | 480 | 1759 | 29 | 419 | 1281 | 2 | -70 | [9] |
| ColombiaC1 | 60 | NO | 4.77 | -77.18 | Upland forest, departamento del Choco, Colombia | wet forest | old growth | 257 | 287 | 6753 | 21 | 107 | 1007 | 0 | 0 | [10] |
| ColombiaG1 | 36 | NO | 1.64 | -78.84 | Swamp forest, departamento de Narino, Colombia | moist forest | old growth | 256 | 330 | 2333 | 46 | 14 | 1113 | 2 | -7 | [10] |
| ColombiaG2 | 10 | NO | 4.71 | -77.18 | Swamp forest, departamento del Choco, Colombia | wet forest | old growth | 258 | 300 | 6737 | 21 | 50 | 1004 | 0 | 0 | [10] |
| ColombiaM1 | 24 | NO | 1.64 | -78.89 | Mangrove forest, departamento de Narino, Colombia | moist forest | old growth | 256 | 331 | 2243 | 46 | 13 | 1113 | 2 | -18 | [10] |
| ColombiaM2 | 9 | NO | 4.7 | -77.26 | Mangrove forest, departamento del Choco, Colombia | wet forest | old growth | 259 | 323 | 6781 | 22 | 20 | 1004 | 0 | 0 | [10] |
| CostaRic | 97 | NO | 10.38 | -83.98 | Horquetas, Sarapiqui Costa Rica | wet forest | old growth | 260 | 760 | 4042 | 28 | 62 | 1317 | 0 | 0 | [11] |
| FrenchGu | 360 | YES | 5.3 | -53.5 | Piste de Saint Elie, near Sinnamary, French Guiana | moist forest | old growth | 259 | 542 | 2579 | 41 | 90 | 1402 | 2 | -103 | [12] |
| Gabon | 101 | NO | 0.95 | 13.17 | Makokou, Gabon | moist forest | old growth | 231 | 889 | 1657 | 56 | 528 | 1110 | 5 | -113 | [13] |
| Ghana | 39 | NO | 5.5 | -2.67 | Boi Tano Reserve, Ghana | moist forest | old growth | 267 | 992 | 1842 | 58 | 61 | 1329 | 4 | -188 | [14] |
| IndiaCha | 23 | YES | 25.05 | 83.21 | Chakia, India | dry forest | secondary | 262 | 5828 | 940 | 132 | 89 | 1487 | 9 | -922 | [15] |
| Jalisco | 124 | NO | 19.5 | -105.04 | Chamela station, Jalisco state, Mexico | dry forest | old growth | 261 | 1630 | 818 | 110 | 35 | 1524 | 10 | -889 | [16] |
| Kaliman1 | 23 | YES | -0.4 | 116.45 | Balikpapan, Kalimantan, Indonesia | moist forest | old growth | 266 | 203 | 2146 | 29 | 10 | 1433 | 3 | -43 | [17] |
| Kaliman2 | 69 | YES | -1.08 | 116.97 | Sebulu, Kalimantan, Indonesia | wet forest | old growth | 267 | 262 | 2377 | 20 | 38 | 1472 | 0 | 0 | [18] |
| Kaliman4 | 40 | NO | 1.95 | 117.08 | Berau Regency, Kalimantan, Indonesia | wet forest | old growth | 264 | 204 | 2498 | 13 | 80 | 1366 | 0 | 0 | [19] |
| Kaliman6 | 25 | NO | -0.52 | 115.37 | West Kutai, near Balikpapan, East Kalimantan, Indonesia | moist forest | old growth | 261 | 197 | 3201 | 25 | 85 | 1369 | 0 | 0 | [20] |
| Karnataka | 189 | NO | 13.83 | 74.95 | Kilandur Reserve Forest, Shimoga district, Karnataka State, India | wet forest | old growth | 240 | 1392 | 4864 | 150 | 623 | 1533 | 7 | -801 | [21] |
| Llanosec | 24 | YES | 7.43 | -70.92 | Llanos secondary, Venezuela | dry forest | secondary | 268 | 483 | 1730 | 67 | 145 | 1463 | 4 | -447 | [22] |
| Llanosol | 27 | YES | 7.43 | -70.92 | Llanos old-growth, Venezuela | dry forest | old growth | 268 | 483 | 1730 | 67 | 145 | 1463 | 4 | -447 | [22] |
| Madagascar1 | 76 | NO | -14.45 | 49.05 | Bealanana, Analila, Madagascar | dry forest | old growth | 190 | 2106 | 1497 | 91 | 1154 | 1338 | 8 | -476 | [23] |
| Madagascar2 | 90 | NO | -20.45 | 47.6 | Fandriana, Fiadanana, Madagascar | dry forest | old growth | 178 | 2591 | 1714 | 74 | 1362 | 1138 | 6 | -170 | [23] |
| Madagascar3 | 87 | NO | -24.96 | 45.23 | Dry forest Manavy, Madagascar | dry forest | old growth | 242 | 3027 | 505 | 84 | 210 | 1430 | 12 | -921 | [23] |
| Madagascar4 | 80 | NO | -24.48 | 46.9 | Moist forest, Beampingaratra, Madagascar | dry forest | old growth | 207 | 2502 | 1239 | 65 | 986 | 1244 | 8 | -279 | [23] |
| Madagascar5 | 90 | NO | -22.44 | 46.99 | Ivohibe, Sakaroa, Madagascar | dry forest | old growth | 210 | 2555 | 1258 | 85 | 662 | 1171 | 8 | -353 | [23] |
| Malaysia | 139 | YES | 2.98 | 102.32 | Pasoh, Malaysia | moist forest | old growth | 263 | 478 | 1987 | 30 | 129 | 1399 | 3 | -26 | [24] |
| Malaysia2 | 24 | NO | 2.98 | 102.32 | Pasoh, Malaysia | moist forest | old growth | 263 | 478 | 1987 | 30 | 129 | 1399 | 3 | -26 | [25] |
| MFrenchG | 29 | YES | 4.87 | -52.32 | Marais Leblond, Kourou, French Guiana | moist forest | old growth | 265 | 558 | 3305 | 52 | 14 | 1351 | 3 | -150 | [26] |
| MGuadel | 55 | YES | 16.27 | -61.57 | Grand Cul de Sac Marin, Guadeloupe | moist forest | old growth | 257 | 1225 | 1613 | 41 | 13 | 1509 | 4 | -321 | [27] |
| Moluccas | 25 | NO | -3.05 | 129.43 | Manusela National Park, Moluccas, Indonesia | moist forest | old growth | 250 | 732 | 2701 | 29 | 147 | 1375 | 2 | -1 | [28] |
| Mozambique | 28 | NO | -18.97 | 34.17 | Nhambita, Gorongosa district, Mozambique | dry forest | old growth | 246 | 2701 | 1048 | 89 | 148 | 1548 | 8 | -676 | [29] |
| NewGuinea | 42 | YES | -6 | 145.18 | Marafunga, New Guiena | wet forest | old growth | 134 | 607 | 2216 | 38 | 3047 | 1271 | 0 | -15 | [30] |
| Peru | 51 | NO | -12.92 | -69.27 | South East Peru (Tambopata) | moist forest | old growth | 253 | 1074 | 2546 | 52 | 222 | 1527 | 4 | -115 | [31] |
| PuertoRi | 30 | YES | 18.32 | -65.82 | El Verde, Puerto Rico | moist forest | old growth | 222 | 1258 | 2771 | 26 | 70 | 1685 | 3 | -30 | [32] |
| PuertoRi2 | 25 | NO | 17.98 | -66.67 | Ponce, Puerto Rico | dry forest | old growth | 260 | 1130 | 997 | 56 | 82 | 1509 | 9 | -486 | [33] |
| SaoPaulo3 | 75 | NO | -23.99 | -46.39 | Restinga (sandy soil) forest, Sao Paulo, Brazil | wet forest | old growth | 219 | 2264 | 2578 | 39 | 15 | 1125 | 0 | 0 | [35] |
| Sarawak | 21 | NO | 1.05 | 110.92 | Sabal Forest reserve, Sarawak, Malaysia | wet forest | old growth | 257 | 353 | 3344 | 23 | 96 | 1293 | 0 | 0 | [36] |
| SouthAfrica | 469 | NO | -23.83 | 31.1 | Pompey, Kruger Park, South Africa | dry forest | old growth | 221 | 3169 | 529 | 78 | 436 | 1481 | 12 | -948 | [37] |
| SouthBrazil1 | 151 | NO | -9.86 | -58.41 | Cotriguacu, Mato Grosso, Brazil | dry forest | old growth | 249 | 547 | 1979 | 74 | 263 | 1290 | 5 | -376 | [38] |
| SouthBrazil2 | 49 | NO | -12.85 | -58.93 | Juruena, Mato Grosso, Brazil | dry forest | old growth | 237 | 868 | 2026 | 73 | 328 | 1378 | 5 | -382 | [38] |
| SouthBrazil3 | 64 | NO | -7.14 | -55.38 | Novo Progresso, Para, Brazil | moist forest | old growth | 257 | 453 | 2268 | 66 | 228 | 1244 | 4 | -273 | [38] |
| Sumatra | 29 | YES | -1.48 | 102.23 | Sepunggur, Jambi, Sumatra, Indonesia | wet forest | secondary | 267 | 275 | 2876 | 33 | 64 | 1436 | 0 | 0 | [39] |
| Sumatra2 | 11 | NO | -3.32 | 103.9 | Bendar Udara Pendopo, Sumatra, Indonesia | moist forest | old growth | 268 | 276 | 2782 | 38 | 60 | 1460 | 2 | -16 | [20] |
| Tanzania1 | 38 | NO | -6.33 | 35.78 | Manyara, Tanzania | dry forest | old growth | 221 | 1538 | 561 | 112 | 1195 | 1639 | 12 | -1094 | [40] |
| Tanzania2 | 42 | NO | -9.78 | 37.92 | Lindi, Tanzania | dry forest | old growth | 238 | 1386 | 872 | 104 | 526 | 1624 | 9 | -920 | [40] |
| Tanzania3 | 38 | NO | -6.35 | 30.95 | Katavi, Tanzania | dry forest | old growth | 246 | 949 | 1117 | 91 | 1118 | 1582 | 6 | -824 | [40] |
| Tanzania4 | 34 | NO | -5.3 | 32.97 | Tabora, Tanzania | dry forest | old growth | 232 | 1201 | 1062 | 91 | 1174 | 1782 | 7 | -917 | [40] |
| Venezuela2 | 40 | NO | 1.92 | -67.03 | San Carlos de Rio Negro, Venezuela | wet forest | old growth | 262 | 415 | 3424 | 24 | 94 | 1344 | 0 | 0 | [41] |
| WestJava | 41 | NO | -6.575 | 106.51 | Bogor, West Java, Indonesia | moist forest | old growth | 249 | 324 | 3966 | 20 | 526 | 1542 | 0 | 0 | [20] |
| Yucatan | 175 | YES | 20 | -88 | La Pantera, Yucatan, Mexico | dry forest | old growth | 258 | 1678 | 1222 | 54 | 24 | 1554 | 8 | -482 | [42] |
| Zambia | 141 | NO | -15.25 | 29.83 | Central Zambia | dry forest | old growth | 221 | 3083 | 823 | 118 | 1017 | 1563 | 9 | -968 | [43] |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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