**S1 Table.** Review of the studies on the effect of ENSO droughts on tropical forests

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Location | Site | Precipitation (monthly range) | Type of forest | Annual tree mortality (normal year) | Years of drought | Comment | References |
| Indonesia(Sumatra) | BukitBarisan Selatan National Park  | - | Lowland rainforest | 24.6% (9.8%) | 1997-98 | Mainly burnt trees | (Kinnaird and O’Brien 1998)  |
| Indonesian (Borneo) | East Kalimantan | - | Lowland rainforest  | 25-80% by fires | 1997-98 | 21% burnt area | (Siegert et al. 2001) |
| Indonesia (Borneo) | East Kalimantan | 2100-2500mm | Lowland rainforest | 7.9-23.1%11.2-28.7% | 1997-981997-98 |  | (Nieuwstadt 2002)(Slik 2004) |
|  |  |  |  | 23.9-46.6%  | 1997-98 | 64.2-79% by fire | (van Nieuwstadt and Sheil 2005) |
| Malaysia(Borneo) | Lambir Hills National Park, Sarawak | 2700mm y-1 (167.5- 328.4) | Lowland rainforest | 4.35-6.37 (0.89%) | 1997-98  |  | (Nakagawa et al. 2000) |
| Costa Rica | La Selva Biological Station  | 3962mm y-1 |  | 1.4-5.6% (0.8-3.7) | 1997-98 |  | (Chazdon et al., 2005) |
| Nicaragua | AutonomousSouthern Atlantic Region  | 4320 mm y-1Feb to April: 75–125 mm  | Lowland rainforest | ~30% (2%) | 1997-98 | Include fires mortality | (Granzow-de la Cerda et al. 2012) |
| Panama | Barro Colorado Island (BCI) | 2600 mmDec to April: 215 mm | Semi-deciduoustropical moist forest | 2.75-10% (1.98%)3% (2%) | 1982-831982-83 |  | (Leigh et al. 1990)(Condit et al. 1995) |
| Argentina | NahuelHuapi National Park  | 1400 mmyear–1, 60% falling during May–August. | Mountain forest | 11-57% | 1998-99 |  | (Suarez and Kitzberger 2008) |
| Brazil | Tapajós National ForestCaxiuanãNationalForest ReserveAll Amazon | 2000 mm, 2000-2500 mm, Dry June to Nov.  | Amazonian forest | 1.91% (1.12%)3.36% (2.54%)2.5% (1.25%)13% of the area | 1997–982000-042001-082015-16 | Artificial drought (TFE) Artificial drought (TFE)  | (Williamson et al. 2000)(Nepstad et al. 2007)(da Costa et al. 2010)(Jiménez-Muñoz et al. 2016) |
|  | Linhares, Espiritu Santo | 1200mm | Atlantic forest | 4.9% 3.8% (1.4%) | 1997–98 1982–83 |  | (Rolim et al. 2005) |
|  | Barro Preto, Bahia |  | Atlantic forest and agroforest | 22% | 2015-16 |  | (This study 2017) |
| 10 countries | Mainly Amazon and Borneo |  | Lowland tropical forests | Increasing water stress increase mortality | 1982-83, 1997-98, 2005 |  | (Phillips et al. 2010) |
| Review | World  |  | All types of forest |  | From 1904 to 2008 | Big trees are more affected, varying following species | (Allen et al. 2010) |