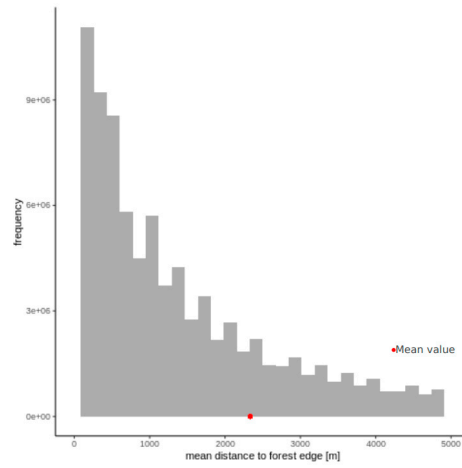
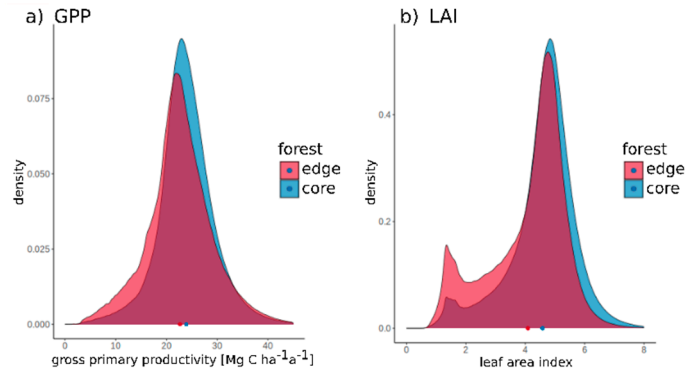


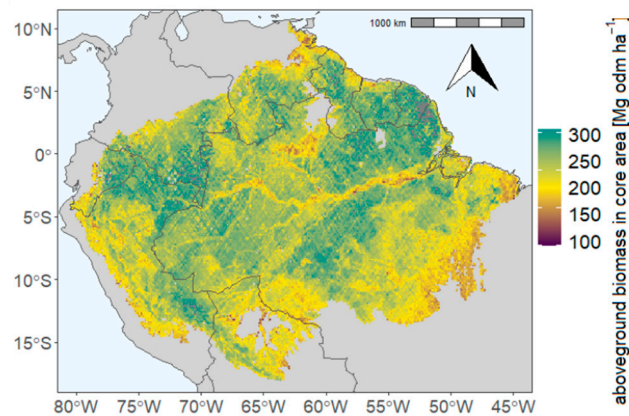
# Supplementary Materials:



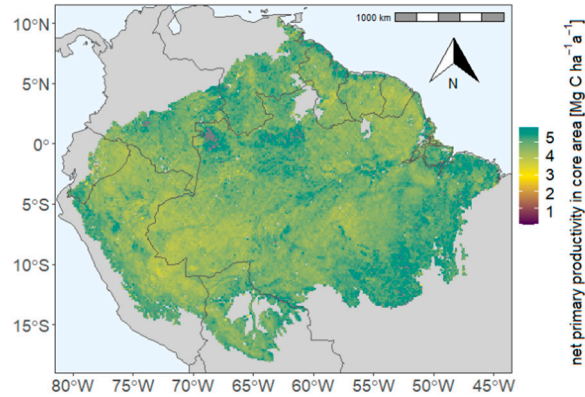
**Figure S1:** Frequency distribution of mean distance at footprint level with mean value (red). The distance indicates the distance of each forest stand to the nearest forest edge.



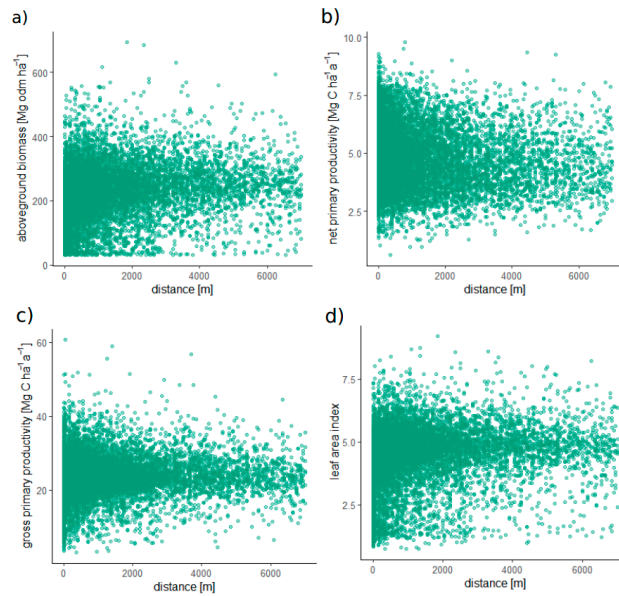
**Figure S2.** Density distribution of gross primary productivity (a) and leaf area index (b) for edge and core areas in the Amazon. (Core and edge areas are defined as in the scheme shown in Fig. 3a). The edge area includes forest stands with a distance below 100 m from non-forest areas. Core areas are at > 100 m distance from non-forest areas. In the density plots, the mean value of gross primary productivity and leaf area index is shown as dots. The relative frequency was plotted for all 110 million GEDI shots for the respective forest attributes at footprint level.



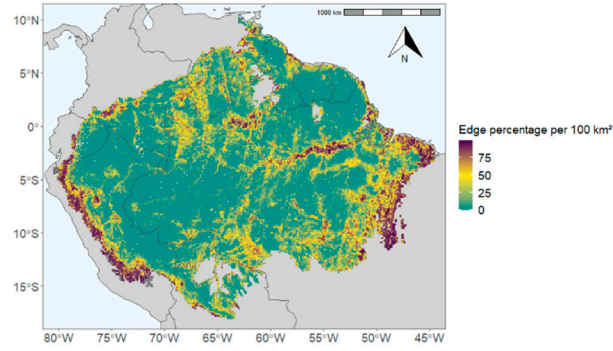
**Figure S3.** Amazon map showing aboveground biomass in core areas based on combining GEDI measurements with forest modelling. For visualization purposes, the GEDI shots were averaged into 10x10 km<sup>2</sup> sections.



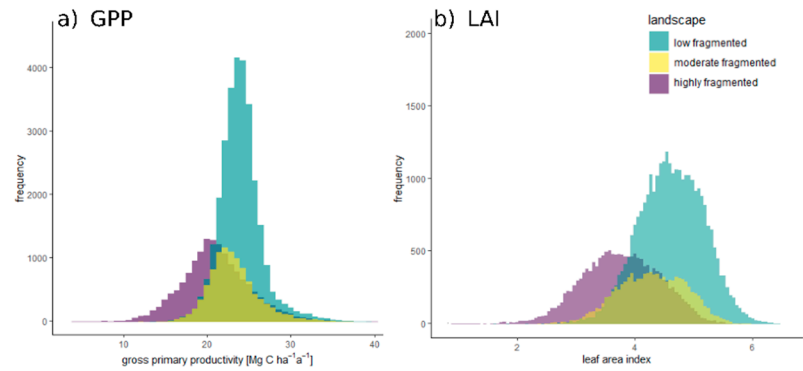
**Figure S4.** Amazon map showing net primary productivity in core areas. For visualization purposes, the GEDI shots were averaged into 10x10 km<sup>2</sup> sections.



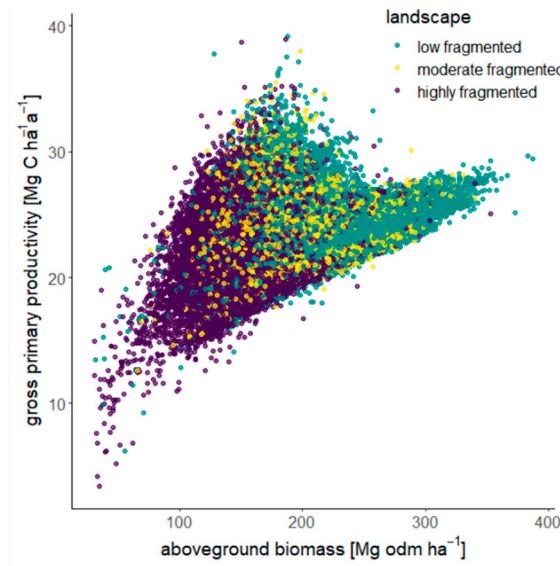
**Figure S5.** Scatterplot of aboveground biomass (a), net primary productivity (b), gross primary productivity (c) and leaf area index (d) against distance to nearest non-forest area for forest in the Amazon (footprint level 25 m). For display purposes, 10,000 of the 110 million GEDI shots were randomly selected and displayed here. Each pixel represents a single GEDI shot. As in Chaplin-Kramer et al., a scatterplot was created showing the biomass (Fig. S5a) against the distance from edge [13]. The scatterplots were also derived net primary productivity, gross primary productivity and leaf area index (Fig. S5b)-d)).



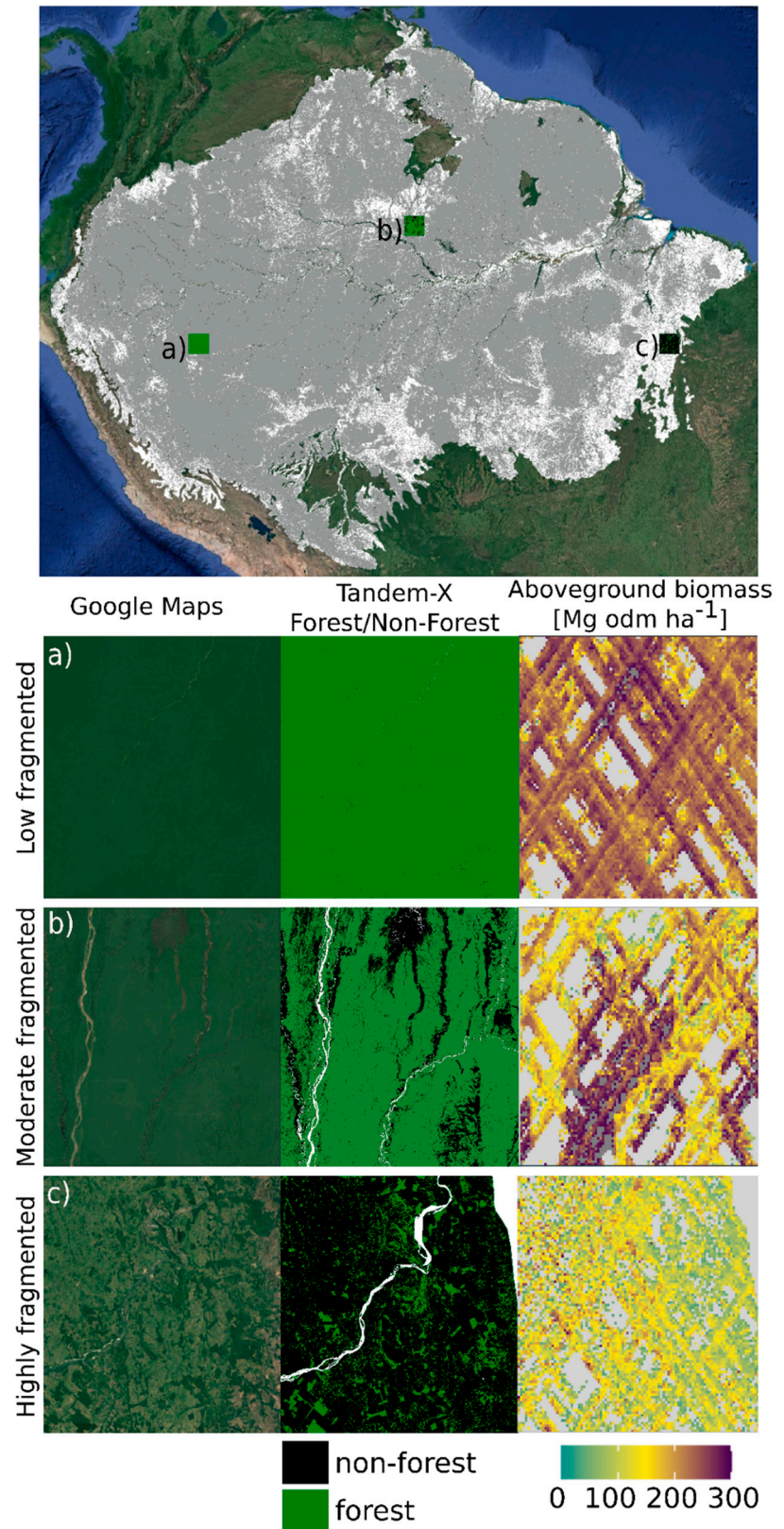
**Figure S6.** Amazon map showing fraction of edge area in forests. Each value is calculated as the fraction of GEDI shoots located at the forest edge to the total number of GEDI shoots in a landscape cell (10x10 km<sup>2</sup>).



**Figure S7.** Frequency distribution for mean gross primary productivity and leaf area index for forest in the Amazon (landscape scale, 10x10 km<sup>2</sup>), classified according to landscape type (low fragmented, moderate fragmented, highly fragmented).



**Figure S8.** Scatterplot showing the relationship between aboveground biomass and gross primary productivity for forest in the Amazon. Each point represents a 10x10 km<sup>2</sup> area in which the GEDI shots and the associated forest attributes were averaged and assigned to the fragmentation landscape types (low fragmented, moderate fragmented and highly fragmented) based on their edge proportion.



**Figure S9.** Visualisation of the three landscape types: low fragmented, moderate fragmented and highly fragmented. The location of the three landscape types is shown in the Amazon map (above). For each landscape type, a satellite image from Google maps (© 2023 Google), a radar image from the Tandem-X Forest/Non-forest map and an aboveground biomass map from this study are included.