

**Background:** The remaining forests in the extensive contact zone between southern Amazonia (seasonal rain forest) and the Cerrado (savanna) biomes are at risk due to intense land-use and climate change.

**Aims:** To explore the vulnerability of these transitional forests to changes in land use and climate, we evaluated the effects of fragmentation and climatic variables on forest structure.

**Methods:** We measured the diameter and height of 14,185 trees with diameter  $\geq 10$  cm at 24 forest plots distributed over an area of 25,000 km<sup>2</sup>. For each plot, we obtained data on contemporary fragmentation and climatic variables.

**Results:** Forest structure variables (height, diameter, height:diameter allometry, biomass) varied significantly both within and among plots. The height,  $H:D$  and biomass of trees were positively correlated with annual precipitation and fragment area.

**Conclusions:** The association between forest structure and precipitation indicates that these forests plots are likely to be vulnerable to dry season intensification anticipated for the southern edge of the Amazon. Additionally, the reduction in the fragment area may contribute to reductions in forest biomass and tree height, and consequently ecosystem carbon stocks. Given the likely susceptibility of these forests, urgent conservation action is needed to prevent further habitat degradation.

