

## Fallow periods and landscape structure in areas of slash and burn agriculture (NE Brazilian Amazon)

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Slash-and-burn is one of the most widespread agricultural systems in tropical areas. Shifting cultivation can be sustainable in conditions of low human population density, allowing long fallow periods to restore soil fertility. However, in many parts of the world, growing population pressure is leading to a reduction in the fallow period, gradually resulting in lower yields. This is the case of most areas in the Bragantina region, the oldest agricultural frontier in Brazilian Amazon. The objective of this study was to analyze the effects of a shortened fallow period on Bragantina landscape structure. We were particularly interested in the spatial distribution of the secondary forest ("capoeira"), as defined by its degree of fragmentation, isolation and connectivity. The work was done with 6 areas of 250 ha each, 3 with short fallow periods (2-4 years) and 3 with long fallow periods (about 10 years). The landscape structure was quantified on a LANDSAT-TM image, from June 1996, classified in 5 landuse/cover units: agricultural areas (crop and pasture lands), wetlands, young capoeiras (up to 8 years old), old capoeiras (more than 9 years old) and forests. The results obtained confirm that the decrease of fallow period led to significant changes in landscape structure. Particularly, we could notice that with a decrease of fallow period the old capoeira showed higher fragmentation and isolation and lower connectivity, and that edges between old and young capoeiras were less common. These spatial changes may contribute to reduce secondary forest regrowth and agricultural productivity.

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