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Synthesis Studies of Secondary Forest Productivity in the Amazon: Field Data, Remote Sensing, Modeling Approaches

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We are using measurement data and MODIS remote sensing observations at locations that represent conversion patterns of primary forests to regrowing secondary forests in Amazonia. A principal objective is to improve calibration of the NASA-CASA productivity and soil biogeochemistry modeling and subsequently evaluate and refine a series of regional model simulation runs for transformed forest ecosystems. We have implemented the aboveground biomass accumulation (ABA) rate model of Zarin et al. (2001) on the CASA 8-km regional grid as an initial representation of potential secondary forest regrowth for the Legal Amazon. Our next objective is to evaluate the NASA-CASA model predicted ABA rates over several forest clearing and regrowth cycles with simulated nitrogen (loss) limitations on secondary forest NPP patterns.

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