

Interactive comment on “Carbon emissions from deforestation in the Brazilian Amazon region predicted from satellite data and ecosystem modeling” by C. Potter et al.

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Potter and colleagues present a regional analysis of C emissions from deforestation based on deforestation data from the Brazilian Institute for Space Research (INPE) PRODES program. Digital data products from PRODES are indeed derived from a detailed analysis of Landsat data, as the authors note on pg. 3034. However, the raw data must be corrected to estimate annual rates of forest conversion. Two data errors likely result in substantial overestimates of C emissions from forest clearing during 2000 and 2001 in this study:

1. PRODES Digital data for 2000 capture the accumulated forest losses between 1997-

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2000, as 1997 and 2000 were the first two years of reference imagery for the digital analysis. In cases where 1997 imagery were cloudy or not included (see point 2 below), the increment of forest loss recorded as '2000' may be longer. Thus, the rate of forest clearing used by Potter et al. is likely to be approximately three times higher (representing forest losses in 1998, 1999, and 2000) than would be expected for 2000 alone. Official statistics from the PRODES program (available at www.obt.inpe.br/prodes) suggest that the annual increment of deforestation in the Brazilian Legal Amazon was higher in 2002 than in either 2000 or 2001.

2. The second artifact appears in 2001 when areas without previous imagery in Maranhao State were included in the PRODES assessment. References in the text, Table 2, and Figure 4 to large C emissions in 2001 from Maranhao state suggest that Potter et al. assume that this entire area of historic deforestation (~1960-2001) occurred in 2001. For Maranhao State, official statistics of annual forest loss were similar during 2000-2002 (~1000 km²/yr).

As data errors propagate directly into estimates of C emissions in this study, it would seem critical to revise the input data for deforestation in order to improve estimates of the contribution from deforestation in the Brazilian Legal Amazon to net carbon fluxes from the region. Relevant information for careful use of the PRODES deforestation data can be found online (www.obt.inpe.br/prodes) and in van der Werf et al. (2009), *Biogeosciences*.

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