Biogeosciences Discuss., 6, S964–S965, 2009
www.biogeosciences-discuss.net/6/S964/2009/

Biogeosciences Discussions

Interactive comment on "Liana infestation impacts tree growth in a lowland tropical moist forest" *by* G. M. F. van der Heijden and O. L. Phillips

Anonymous Referee #1

Received and published: 5 May 2009

Nice paper attempting to determine the effects of lianas on forest-level carbon storage. Clearly this is an important topic and the results suggest that lianas play an important role in limiting tree above-ground incremental growth.

One limitation of this study includes the inability to tease apart whether lianas reduce tree growth from the possibility that trees may grow faster in areas without lianas for some reason other than lianas. That is, lianas may be in low abundance / biomass in areas in areas where trees grow fast for some unexplored reason. Similarly, fast-growing trees tend to have fewer lianas. The correlative approach taken by the authors will always have this limitation. That is not to say that it is not worthwhile, but that it needs to be considered.

The statement that “dominance of lianas in many neotropical forests has increased” is somewhat confusing (p. 3135 line 21). Were lianas previously “dominant” and now they are more dominant?

The analyses were not completely understandable and thus were difficult to evaluate.

The authors state that they estimate liana biomass based only on lianas $>$ 10 cm dbh – omitting more than 40% of the liana biomass, which is in the smaller liana stems (-. 3140 lines 15-20). This is cause for concern because few lianas reach 10 cm in dbh, but there are many smaller lianas. If the somewhat smaller lianas, say 5 cm dbh, are growing much faster than the 10 cm dbh lianas, then the authors may be miscalculating the true change in liana biomass. However, the authors also include biomass increments for lianas $>$ 1 cm in the results, which is not consistent with their stated methods.

I was confused when, in the Results section, the authors seem to offhandedly state that below-ground effects may be important for (p. 3144 line 12: Trees growing in favourable condi-tions (i.e. high light and low below-ground competition with local competitors) tended to be relatively less aﬀected by lianas compared to trees that were experiencing low light conditions and severe competition with neighbours for below-ground resources (Fig. 2)), but then in the Discussion section they claim that below-ground effects are not present. Thus the authors seem to be making two contradictory claims. The below-ground competitive effects of lianas may diminish with tree size, as stated, but this may be due to a greater effect of light on adult trees.

Interactive comment on Biogeosciences Discuss., 6, 3133, 2009.