Biogeosciences Discuss., 9, C5646–C5647, 2012
www.biogeosciences-discuss.net/9/C5646/2012/

Biogeosciences Discussions

Interactive comment on "Evaluation and improvement of the Community Land Model (CLM 4.0) in Oregon forests" *by* T. W. Hudiburg et al.

Anonymous Referee #1

Received and published: 13 November 2012

This paper analyzes regional CLM4 simulations for the Pacific Northwest. The focus of the analysis is on the carbon stocks and fluxes and model output is compared to detailed information archived in the FIA dataset. The paper is well written and mostly clear. The main conclusion is that using default parameters, the model exhibits significant biases in biomass and NPP. When using parameters that are more appropriate for sub ecoregions, the simulation is much improved. The paper will be useful to readers that are interested in applying CLM (or possibly other global land biogeochemical models) for regional applications.

Overall, the paper is technically sound, the figures are easy to interpret and the paper reads fairly well. But, the new scientific content is relatively low. The paper can be substantially improved with increased discussion and context to address my main point

below.

My main suggestion is that the authors spend considerably more effort explaining what the implications of this work are. Are they suggesting that the only way to model the regional carbon balance correctly is to specify parameters at a relatively fine level of spatial (or in this case it is effectively increasing the PFT resolution, i.e. the number of PFTs represented) detail. This would make it difficult to impossible to use the model outside of regions with rich datasets such as the FIA dataset against which the model could be calibrated. Or, are they simply trying to show the model is structurally sound, and that with appropriate parameters, the model can faithfully represent carbon stocks and NPP? Perhaps the suggestion is that PFT resolution needs to be increased. If that is a possible solution, then it would be good to get a perspective on what this would take. What would the practical modeling consequences be of going to a higher PFT resolution.

Minor points

p.4: Thomas et al. reference is missing year of publication

p. 7: Should read “calibrate the physiology parameters”

p. 9: Combing should be combining

Figure 5: Figure caption should state which version of the model is being analyzed for this plot

---

Interactive comment on Biogeosciences Discuss., 9, 12757, 2012.