Biogeosciences Discuss., 12, C5928–C5930, 2015
www.biogeosciences-discuss.net/12/C5928/2015/

Biogeosciences Discussions
Open Access

Interactive comment on "Water limitations on forest carbon cycling and conifer traits along a steep climatic gradient in the Cascade Mountains, Oregon" *by* L. T. Berner and B. E. Law

B. Bond-Lamberty (Referee)

bondlamberty@pnnl.gov

Received and published: 30 September 2015

General comments

This manuscript describes a spatial (multiple sites across a precipitation gradient) and temporal (tree rings) analysis of how forest structure and function (morphology, chemistry, growth) relate to climate stress in the eastern Cascades, Oregon, USA. This is an interesting topic with clear relevance for a broad range of scientists, managers, and policymakers. The ms is extremely well written, with appropriate references, and generally clear. On the one hand, the larger lessons from this study are unsurprising and have been known a long time: water availability is a strong control on forest structure

and growth in the eastern Cascades. But this study's multiple lines of evidence and rigorous analysis make a substantial contribution, and the discussion does a nice job discussing potential sources of unexplained variance.

This is, overall, a very strong and interesting manuscript–nice job, and congratulations. There are a few minor weak points (see short list below), and two somewhat larger ones. First, the authors need to be more explicit about the statistical packages used. In addition, it's 2015 and I really expect to see the data and code underpinning this analysis made available, either as SI or deposited in a repository. Second, for all its rigor and care, this is fundamentally a correlative and observational study, and it would be good to acknowledge the limitations of this somewhere.

———————-

Specific comments

1. Page 14508, line 15: perhaps "of fir individuals" for clarity
2. P. 14509, l. 13: start new paragraph?
3. P. 14510, l. 18: "species"'
4. P. 14513, l. 8 and p. 14515, l. 7: "publicly"
5. P. 14513, l. 19: ? fix
6. P. 14514, l. 4: how was height measured?
7. P. 14515, l. 27-29: necessary to state? Doesn't seem relevant
8. P. 14516, l. 14: here or somewhere, give beta values used
9. P. 14519, l. 17: 'stats' is part of base R, so this isn't very informative. What version of R? What functions, specifically? Availability of code and data?
10. Figure 4: nice plot! Very informative visualization of a lot of data

BGD

12, C5928–C5930, 2015

11. Table S3 caption: give units for SA and DBH

Interactive comment on Biogeosciences Discuss., 12, 14507, 2015.