

EERD Quarterly Report

Project Title: Observing carbon fluxes and potential climate change impacts from forest land management

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Period: Jan 1,2011-Mar 30,2010 (2011 Q1)

Project Period: June 1,2010 – May 31, 2013

Activities:

Our project has continued to focus on maintaining operation of the flux tower at the Willow Creek site, installing new sensors and communication devices, and continuing discussion on the nature of the forest management actions. We also presented some results at the annual AGU meeting and contributed to several papers.

Major activities include:

- Development of scripts for automated data download and visualization using cellular communication system installed last quarter. Temporary version at: http://flux.aos.wisc.edu/~bjorn/willow_creek/
- Repair of high-accuracy aspirated temperature sensors (WMO traceable).
- Teleconference with collaborators at Lawrence Berkeley National Laboratory of the Dept of Energy (DOE) for soil respiration and radiocarbon sampling in tower footprint. New collaboration with Diego Riveros-Iregui at U Nebraska for additional soil and isotope sampling analysis. Meeting with both groups in the field scheduled for week of May 21 to set up radiocarbon tower sampling.
- Flux analysis code written and in testing phase
- Initiation of Forest Service Climate Tower Network wiki and initial meeting
- Continued supervision of post-doc and research associate
- Relevant presentations:
 - *Missing the "sink": What observations and models tell us about the future of land carbon dioxide uptake and why it matters for future climate change*, Limnology Seminar, University of Wisconsin, Madison, WI, Mar 1, 2011 (invited)

- Amiro, B.D., A. Barr, J. Barr, A. Black, R. Bracho, M. Brown, J. Chen, K. Clark, K. Davis, **A.R. Desai**, S. Dore, V. Engel, J. Fuentes, A. Goldstein, M. Goulden, T. Kolb, M. Lavigne, B.E. Law, H. Margolis, T. Martin, H. [McCaughey](#), M. Montes-Helu, A. Noormets, J. Randerson, G. Starr, and J. Xiao, 2011: What have we learned from forest tower flux data following disturbance?, 3rd North American Carbon Program (NACP) All-Investigators Meeting, New Orleans, LA, Jan. 31- Feb 4, 2011.
- Blonquist, J., S.A. Montzka, D. Yakir, **A.R. Desai**, D. Dragoni, T.J. Griffis, R.K. Monson, J.W. Munger, R.L. Scott, and D.R. Bowling, 2011: The Potential of Carbonyl Sulfide as a Tracer for Gross Primary Productivity at Flux Tower Sites, 3rd North American Carbon Program (NACP) All-Investigators Meeting, New Orleans, LA, Jan. 31- Feb 4, 2011.
- Hicke, J.A., C.D. Allen, **A.R. Desai**, M.C. Dietze, R.J. Hall, E.T. Hogg, D.M. Kashian, D.J. Moore, K. Raffa, R. Sturrock, and J. Vogelmann, 2011: The impacts of biotic disturbances on carbon budgets of North American forests, Ameriflux Science Meeting and 3rd North American Carbon Program (NACP) All-Investigators Meeting, New Orleans, LA, Jan. 31- Feb 4, 2011.
- Hollinger, D.Y., C.-T. Lai, W.J. Massman, K.L. Clark, K. Bible, J. Vose, **A.R. Desai**, R. Kolka, A.D. Richardson, J.L. Hom, and R. Evans, 2011: Forest Service Climate Tower Network, 3rd North American Carbon Program (NACP) All-Investigators Meeting, New Orleans, LA, Jan. 31- Feb 4, 2011.

- Relevant publications:
 - Sprintsin, M., Chen, J.M., **Desai, A.R.**, and Gough, C.M., 2011. Evaluation of leaf-to-canopy upscaling methodologies against carbon flux data in North America. *Journal of Geophysical Research-Biogeosciences*, #2010JG001407, submitted.
 - Hicke, J.A., Allen, C.D., **Desai, A.R.**, Dietze, M., Hall, R., Hogg, E.T., Kashian, D., Moore, D., Raffa, K., Sturrock, R., and Vogelmann, J., 2011. Effects of biotic disturbances on forest carbon budgets of North America. *Ecological Monographs*, submitted.