

EERD Quarterly Report

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

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Period: Oct 1,2010-Dec 31,2010 (2010 Q4)

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:

- Replacement of sonic anemometer for vertical wind speed after initial data checks showed bad data.
- Uploaded of data from high-accuracy aspirated temperature sensors (WMO traceable).
- Installation of cellular communication system and software at the site. We now have a direct connection to monitor the site and will be working on building a real-time interface.
- Planning of project from Lawrence Berkeley National Laboratory of the Dept of Energy (DOE) for radiocarbon and soil respiration sampling to better understand controls on carbon decomposition with change in land management. Karis MacFarlane at LBNL will begin these measurements in summer 2011.
- Initial data quality control and flux analysis code started.
- Relevant presentations:
 - 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, 2010: The Potential of Carbonyl Sulfide as a Tracer for Gross Primary Productivity at Flux Tower Sites, American Geophysical Union Fall Meeting, Abstract [B21G](#) -07, San Francisco, CA, Dec 13-17, 2010.

- Helliker, B.R., D.D. Baldocchi, A.R. Desai, M.L. Goulden, K.J. Davis, S.C. Wofsy, and J.W. Munger, 2010: Independent support for leaf homeothermy during carbon uptake and the implications for the interpretation of tree-ring oxygen isotopes, American Geophysical Union Fall Meeting, Abstract [GC24B](#) -01, San Francisco, CA, Dec 13-17, 2010.
- 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, 2010: A Review of Carbon Cycle Impacts of Biotic Disturbances in North American Forests, American Geophysical Union Fall Meeting, Abstract [B42B](#) -02, San Francisco, CA, Dec 13-17, 2010.
- Sulman, B.N., A.R. Desai, and R.M Scheller, 2010: Sensitivity of regional forest carbon budgets to continuous and stochastic climate change pressures, American Geophysical Union Fall Meeting, Abstract [B42B](#) -06, San Francisco, CA, Dec 13-17, 2010.
- Relevant publications:
 - Amiro, B., Barr, A.G., Barr, J.G., Black, T.A., Bracho, R., Brown, M., Chen, J., Clark, K.L., Davis, K.J., **Desai, A.R.**, Dore, S., Engel, V., Fuentes, J.D., Goldstein, A.H., Goulden, M.L., Kolb, T.E., Lavigne, M.B., Law, B.E., Margolis, H.A., Martin, T., [McCaughey](#), J.H., Misson, L., Montes-Helu, M., Noormets, A., Randerson, J.T., Starr, G., and Xiao, J., 2010. Ecosystem carbon dioxide fluxes after disturbance in forests of North America. Journal of Geophysical Research-Biogeosciences, 115: [G00K02](#), [doi:10.1029/2010JG001390](#).
 - Blonquist, J.M., Montzka, S.A., Yakir, D., Desai, A.R., Dragoni, D., Griffis, T.J., Monson, R.K., Munger, J.W., Scott, R.L., and Bowling, D.R., submitted. The potential of carbonyl sulfide as a tracer for gross primary productivity at flux tower sites. Global Change Biology.
 - 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., 2010. The effects of biotic disturbances on carbon budgets of North American forests. Journal of Geophysical Research-Biogeosciences, #2010JG001565, submitted.