EERD Quarterly Report

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

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Period: July 1,2010-September 30,2010 (2010 Q3)

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

Activities:
Our project has continued to focus on restoring flux tower operations at the Willow Creek site and continuing discussion on the nature of the forest management actions. We also have continued discussion on analysis of model output from the Mladenoff lab.

Major activities include:

- Start of operations at tower in August 2010. Several instruments have needed replacement and we are slowly but surely replacing those. Flux data computation will start in the next quarter now that we have a regular data stream coming in.

- Installation of high-accuracy aspirated temperature sensors (WMO traceable) and new computer for increased data collection reliability. Specs and bids on real-time communications have been made.

- Renegotiation of the contract the USFS for weekly data collection was completed.

- Acquired funding from the Lawrence Berkely 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 being these measurements in summer 2011.

- Relevant presentations:
    - Desai, A.R., 2010: Regional carbon fluxes in heterogenous landscapes: Challenges and opportunities. 29th Conference on Agricultural and Forest Meteorology, American Meteorological Society, Abstract 6.4, Keystone, CO, Aug 2-6, 2010
    - Desai, A.R., 2010: Climate change and regional carbon fluxes in heterogeneous landscapes. 2nd Science in the Northwoods workshop,

U Wisconsin Center for Limnology, Boulder Junction, WI, Sep 29-Oct 1,2010.

- Sulman, B.N., A.R. Desai, R.M. Scheller, C.M. Gough, P.S. Curtis, C.S. Vogel, 2010: Assessing the effects of past disturbance and future climate change and land use decisions on northern Great Lakes forest carbon cycling. 29th Conference on Agricultural and Forest Meteorology, American Meteorological Society, Abstract P1.4, Keystone, CO, Aug 2-6, 20110.

- Relevant submitted articles:
  - 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, doi:10.1029/2010JG001390, in press.
  - Buffam, I., Turner, M.G., Desai, A.R., Hanson, P., Rusak, J., Lottig, N.R., Stanley, E.H., and Carpenter, S.R., 2010. Integrating aquatic and terrestrial components to construct a complete carbon budget for a north temperate lake district. Global Change Biology, doi:10.1111/j.1365-2486.2010.02313.x, in press.

- Abstracts submitted to several national meetings.