

ESTIMATING SOIL CARBON STOCKS AND FLUXES IN A BOREAL FOREST LANDSCAPE

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WORK CHRONOLOGY

- Graduate Fellow, The Woods Hole Research Center, February 1996 to March 1997.
- Field Work, BOREAS Northern and Southern Study Areas, Manitoba and Saskatchewan, August 1996.
- Visiting Scientist, Universities Space Research Association, Goddard Space Flight Center, Greenbelt MD, September 1996.
- Associate, The Environmental Careers Organization, San Francisco CA, May to September 1997.
- Programmer/Analyst, Science Systems & Applications, Inc., Greenbelt MD, November 1997 to June 1998.
- Research Associate, Department of Earth System Science, University of California, Irvine. BOREAS Follow-on Project: "Assessing the Role of Fire and Soil Drainage in Determining Net C Fluxes in Boreal Ecosystems." July 1998 to present.

PUBLICATIONS

- Rapalee, G., E. A. Davidson, J. W. Harden, S. E. Trumbore, and H. Veldhuis, Mapping drainage patterns and carbon stocks of boreal forest soils in northern Manitoba, in *Proceedings of the 1996 Society of American Foresters Convention*, Albuquerque NM, 414-418, 1997.
- _____, Scaling soil carbon stocks and fluxes at the BOREAS northern study site (abstract), *EOS Transactions*, American Geophysical Union, 78(17), S63, 1997.
- _____, Scaling soil carbon stocks and fluxes at the BOREAS northern study area, in *Proceedings of the New England-St. Lawrence Valley Geographical Society Annual Meeting*, Salem MA, Vol. 27, 160-164, 1998.
- _____, Scaling soil carbon stocks and fluxes at the BOREAS northern study area, in *Proceedings of the International Boreal Forest Research Association Conference*, August 1997, Duluth MN (in press), 1999.
- Rapalee, G., S. E. Trumbore, E. A. Davidson, J. W. Harden, and H. Veldhuis, Soil carbon stocks and their rates of accumulation and loss in a boreal forest landscape, *Global Biogeochemical Cycles*, 12 (4), 687-701, 1998.
- Veldhuis, H. and G. Rapalee, Soil carbon stocks and distribution in soil and landscapes of the Glacial Lake Agassiz basin, north-central Manitoba, in *Proceedings of 42nd Annual Manitoba Soil Science Society Meeting*, February 1999, Winnipeg MB, 181-188, 1999.
- Harden J. with G. Rapalee and S. Robinson, The role of peatlands in the carbon cycle, in *Notes from the Underground: Soil Processes and Global Change*, edited by E. A. Holland, NATO ASI-Series, Springer-Verlag, Berlin, West Germany (in press), 2000.
- Rapalee, G., A simple model to estimate soil carbon dynamics at the BOREAS northern study area, Manitoba, Canada, in *Advances in Soil Science*, edited by R. Lal, J. Kimble, R. F. Follett, and B. A. Stewart, CRC/Lewis Press, Inc., Boca Raton, FL (in press), 2000.

PRESENTATIONS

Rapalee, G., E. A. Davidson, J. W. Harden, S. E. Trumbore, and H. Veldhuis. "Scaling Soil Carbon Stocks and Fluxes at the BOREAS Northern Study Area." Papers and posters presented at:

- Society of American Foresters National Convention. Albuquerque NM. November 1996.
- BOREAS Science Workshop. Annapolis MD. March 1997.
- American Geophysical Union Spring Meeting. Baltimore MD. May 1997.
- Marine Biological Laboratory 1997 Poster Session. Woods Hole MA. June 1997.
- International Boreal Forest Research Association Conference. Duluth MN. August 1997.
- New England - St. Lawrence Valley Geographical Society Meeting. Salem MA. November 1997.
- NASA/GSFC Biospheric Sciences Branch Seminar Series. Greenbelt MD. March 1998.
- New England Society of American Foresters Winter Meeting. Manchester NH. March 1998.
- BOREAS Science Workshop. Troutdale OR. March 1998.
- Soil Science Society of America Annual Meeting. Baltimore MD. October 1998.
- Assessment Methods for Soil C Pools, An International Workshop. Columbus OH. November 1998.

ELECTRONIC POSTER / WEB PAGE

Rapalee, G., E. A. Davidson, J. W. Harden, S. E. Trumbore, and H. Veldhuis. Scaling soil carbon stocks and fluxes at the BOREAS northern study area (part of "Input, Accumulation, and Turnover of Carbon in Boreal Forest Soils: Integrating ^{14}C Isotopic Analyses with Ecosystem Dynamics"). An electronic poster. In *Collected Data of the BOREal Ecosystem-Atmosphere Study, Volumes 1-12*. Edited by J. Newcomer, D. Landis, S. Conrad, S. Curd, K. Huemmrich, D. Knapp, A. Morrell, J. Nickeson, A. Papagno, D. Rinker, R. Strub, T. Twine, F. Hall, and P. Sellers. Volumes 1-12: HTML_PAGES/GROUPS/TGB/TGB12/TGB12_POSTER.PDF. Published on CD-ROM by NASA, 2000. Also on-line at http://daacl.esd.ornl.gov/BOREAS/bhs/Groups/TGB/tgb12_poster.pdf, (last updated 4 Jan 1999), 1998.

DATA SET

Rapalee, G., E. A. Davidson, J. W. Harden, S. E. Trumbore, H. Veldhuis, and D. Knapp, BOREAS TGB-12 soil carbon and flux data of NSA-MSA in raster format (part of "Input, Accumulation, and Turnover of Carbon in Boreal Forest Soils: Integrating ^{14}C Isotopic Analyses with Ecosystem Dynamics"). In *Collected Data of the BOREal Ecosystem-Atmosphere Study, Volumes 1-12*. Edited by J. Newcomer, D. Landis, S. Conrad, S. Curd, K. Huemmrich, D. Knapp, A. Morrell, J. Nickeson, A. Papagno, D. Rinker, R. Strub, T. Twine, F. Hall, and P. Sellers. Volume 4: HTML_PAGES/GROUPS/TGB/TGB12/TGB12_SOIL_CARBON_MAP.HTML. Published on CD-ROM by NASA, 2000. Also on-line at <http://www.eosdis.ornl.gov/>, Distributed Active Archive Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee, 1998.