

BOREAS TGB-12 SOIL CARBON DATA: NSA

Summary:

The BOREAS TGB-12 team made measurements of soil carbon inventories, carbon concentration in soil gases, and rates of soil respiration at several sites to estimate the rates of carbon accumulation and turnover in each of the major vegetation types. TGB-12 data sets include soil properties at tower and selected auxiliary sites in the BOREAS NSA and data on the seasonal variations in the radiocarbon content of CO₂ in the soil atmosphere at NSA tower sites. The sampling strategies for soils were designed to take advantage of local fire chronosequences, so that the accumulation of C in areas of moss regrowth could be determined. These data are used to calculate the inventory of C and N in moss and mineral soil layers at NSA sites and to determine the rates of input and turnover (using both accumulation since the last stand-killing fire and radiocarbon data). This data set includes physical parameters needed to determine carbon and nitrogen inventory in soils. The data were collected discontinuously from August 1993 to July 1996.

A guide document which includes more information about this data set can be found at http://daac.ornl.gov/boreas/TGB/tgb12scd/comp/TGB12_Soil_Carbon.txt.

ORNL DAAC maintains information on the entire [BOREAS Project](#).

Data Citation

Cite this data set as follows:

Trumbore, S. E., J. W. Harden, E. T. Sundquist, and G. C. Winston. 1998. BOREAS TGB-12 Soil Carbon Data: NSA. Data set. Available on-line [http://www.daac.ornl.gov] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. [doi:10.3334/ORNLDAAC/402](http://dx.doi.org/10.3334/ORNLDAAC/402).

References:

Donahue, D. J., T. W. Linick and A. J. T. Jull, Isotope-ratio and background corrections for accelerator mass spectrometry radiocarbon measurements, *Radiocarbon* 32: 135-142 (1990).

Goh, K. M., Carbon dating, chapter 8 (pp. 125 - 145), in, D. C. Coleman and B. Fry, *Carbon isotope techniques*, Academic Press, San Diego (1991) Sellers, P., F. Hall. 1994. Boreal Ecosystem-Atmosphere Study: Experiment Plan. Version 1994-3.0, NASA BOREAS Report (EXPLAN 94).

Sellers, P., F. Hall. 1996. Boreal Ecosystem-Atmosphere Study: Experiment Plan. Version 1996-2.0, NASA BOREAS Report (EXPLAN 96).

Sellers, P., F. Hall, K.F. Huemmrich. 1996. Boreal Ecosystem-Atmosphere Study: 1994 Operations. NASA BOREAS Report (OPS DOC 94).

Sellers, P., F. Hall, K.F. Huemmrich. 1997. Boreal Ecosystem-Atmosphere Study: 1996 Operations. NASA BOREAS Report (OPS DOC 96).

Sellers, P., F. Hall, H. Margolis, B. Kelly, D. Baldocchi, G. den Hartog, J. Cihlar, M.G. Ryan, B. Goodison, P. Crill, K.J. Ranson, D. Lettenmaier, and D.E. Wickland. 1995. The boreal ecosystem-atmosphere study (BOREAS): an overview and early results from the 1994 field year. Bulletin of the American Meteorological Society. 76(9):1549-1577.

Sellers, P.J., F.G. Hall, R.D. Kelly, A. Black, D. Baldocchi, J. Berry, M. Ryan, K.J. Ranson, P.M. Crill, D.P. Lettenmaier, H. Margolis, J. Cihlar, J. Newcomer, D. Fitzjarrald, P.G. Jarvis, S.T. Gower, D. Halliwell, D. Williams, B. Goodison, D.E. Wickland, and F.E. Guertin. 1997. BOREAS in 1997: Experiment Overview, Scientific Results and Future Directions. Journal of Geophysical Research, BOREAS Special Issue, 102(D24), Dec. 1997, pp. 28731-28770.

Southon, J., R., J. S. Vogel, S. E. Trumbore and others, Progress in AMS measurements at the LLNL spectrometer, Radiocarbon 34: 473 - 477 (1992).

Stuiver, M. and H. Polach., Reporting of ¹⁴C data. Radiocarbon 19: 355-363 (1977).

Taylor, R. E., A. Long, and R. Kra, eds., Radiocarbon after Four Decades: An interdisciplinary perspective, Springer-Verlag, NY, 596 pp. (1992).

Trumbore, S. E., Comparison of carbon dynamics in two soils using measurements of radiocarbon in pre-and post-bomb soils. Global Biogeochemical Cycles 7:275-290 (1993).

Data Format:

For information on Parameter/Variable Names, Variable Description/Definition, Units of Measurement, and Data File Format see this companion file
<http://daac.ornl.gov/boreas/TGB/tgb12scd/comp/tgb12scd.def>

Document Information:

28-Oct-1998 (data set citation revised on 10-Sep-2002)

Document Review Date:

28-Oct-1998

Document Curator:

webmaster@daac.ornl.gov

Document URL:

<http://daac.ornl.gov>