

BOREAS TE-19 ECOSYSTEM CARBON BALANCE MODEL

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Summary:

The BOREAS TE-19 team developed a model called the Spruce and Moss Model (SPAM) designed to simulate the daily carbon balance of a black spruce/moss boreal forest ecosystem. It is driven by daily weather conditions, and consists of four components: (1) soil climate; (2) tree photosynthesis and respiration; (3) moss photosynthesis and respiration; and (4) litter decomposition and associated heterotrophic respiration. The model simulates tree gross and net photosynthesis, wood respiration, live root respiration, moss gross and net photosynthesis, and heterotrophic respiration (decomposition of root litter, young needle and moss litter, and humus). These values can be combined to generate predictions of total site net ecosystem exchange of carbon (NEE), total soil dark respiration (live roots + heterotrophs + live moss), spruce and moss net productivity, and net carbon accumulation in the soil. The files include source code and sample input and output files in ASCII format.

A guide document which includes more information about this data set can be found at http://daac.ornl.gov/daacdata/boreas/TE/te19modl/comp/TE19_Model.txt.

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

Data Citation

Cite this data set as follows:

Frolking, S., J. Aber, and C. Li. 1999. BOREAS TE-19 Ecosystem Carbon Balance Model. 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/487.

References:

Frolking, S., M.L. Goulden, S.C. Wofsy, S.M. Fan, D.J. Sutton, J.W. Munger, A.M. Bazzaz, B.C. Daube, P.M. Crill, J.D. Aber, L.E. Band, X. Wang, K. Savage, T. Moore, and R.C. Harriss. 1996. Temporal Variability In The Carbon Balance Of A Spruce/Moss Boreal Forest, *Global Change Biology*, 2:343-366.

Frolking, S. 1997. Sensitivity Of Spruce/Moss Boreal Forest Net Ecosystem Productivity To Seasonal Anomalies In Weather (Paper 96JD03707).

Sellers, P. and F. Hall. 1994. Boreal Ecosystem-Atmosphere Study: Experiment Plan. Version 1994-3.0, NASA BOREAS Report (EXPLAN 94).

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

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

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

Sellers, P.J., 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. *Bull. Am. Meteorol. Soc.* 76:1549-1577.

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*, 102 (D24), 28,731-28,769.

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uso@daac.ornl.gov

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