Global Annual Soil Respiration Data (Raich and Schlesinger 1992)

Abstract

This data set is a compilation of soil respiration rates (g C m-2 yr-1) from terrestrial and wetland ecosystems reported in the literature prior to 1992. These rates were measured in a variety of ecosystems to examine rates of microbial activity, nutrient turnover, carbon cycling, root dynamics, and a variety of other soil processes.

In this summary, only those data based on most or all of one full year of measurements were used so that annual rates of soil respiration could be estimated. Data from soil cores were excluded, because the sample coring modifies root respiration.

In addition, biome type, vegetation type, locality, and geographic coordinates are included, based on information from the original paper. Mean annual temperature and precipitation were based on the original paper; where those data were not included they were estimated from a gridded global climate database (0.5 degree resolution; Legates and Willmott, 1988).

Reference:

Raich, J.W. and W.H. Schlesinger. 1992. The global carbon dioxide flux in soil respiration and its relationship to vegetation and climate. Tellus 44B: 81-99.

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Data Set Description:

This is a companion document for the Global Soil Respiration data set file annual_soil_respiration_data_raich.xls

Parameters in annual_soil_respiration_data_raich.xls

Biome: Based on Appendix of Raich and Schlesinger (1992).

Lat_dd: Latitude (in decimal degrees). Missing values are represented by -999.00.

Lon_dd: Longitude (in decimal degrees). Missing values are represented by -999.00.

Veg: Vegetation type in spreadsheet provided by James Raich, Iowa State University, March 2001.

* T is Tundra
* BF is Boreal Forest and Woodland
* G is Temperate Grassland
* CF is Temperate Coniferous Forest
* TF is Temperate Broad-leaved and Mixed Forest
* W is Mediterranean woods heathland
* AG is Crops Settlement, Fields, and Fringeland
* D is Desert Scrub
* S is Tropical Savanna and Grassland
* DF is Tropical and Subtropical Dry Forest
* RF is Tropical and Subtropical Moist Forest
* NW is Northern Bogs and Mires
* TW Marshes

Vegetation and locality: from Raich and Schlesinger (1992).

T: Annual average temperature (C) from spreadsheet provided by James Raich, Iowa State University, March 2001. Missing values are represented by -999.

P: Annual average Precipitation (mm)from spreadsheet provided by James Raich, Iowa State University, March 2001. Missing values are represented by -999.

Soil R: Soil Respiration in g C m^2 yr^-1, from Raich and Schlesinger (1992).

Ref: the Footnote letter from Raich and Schlesinger (1992).

Notes: Footnote text from Raich and Schlesinger (1992).

Reference: from Raich and Schlesinger (1992). A list of the references may be found at the end of this document.

Latitude: in degrees, minutes from Raich and Schlesinger (1992). Missing values are represented by -999.

Longitude: in degrees, minutes from Raich and Schlesinger (1992). Missing values are represented by -999.

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