

ISLSCP II IGBP NPP Output from Terrestrial Biogeochemistry Models

Revision date: September 7, 2011

Summary:

This data set contains modeled annual net primary production (NPP) for the land biosphere from seventeen different global models. Annual NPP is defined as the net difference of annual carbon uptake (grams CO₂/m²/yr) from the atmosphere through photosynthesis by the land vegetation and that lost back to the atmosphere through autotrophic and maintenance respiration. NPP is also related to the Net Ecosystem Exchange (NEE) of carbon accumulated by or lost from the surface by its vegetation and soils. NPP is NEE plus heterotrophic (decomposition) respiration of the vegetation and soils. Only NPP values are included in this data set as some models did not estimate NEE. Data for the mean, standard deviation and coefficient of variation of NPP for the 17 models are provided at spatial resolutions of 1.0 degree and 0.5 degrees. There are two compressed (*.zip) data files with this data set.

Usage Guidance

This data set was created in the mid-1990s with 17 models available at that time. It is reasonable to expect that these models will have been updated and/or modified since then, and that the variability shown in the data sets here may have decreased. This data set is recommended for general visualization of coarse global NPP patterns and education purposes and not for model validation. This data set also illustrates the broad variability of NPP retrieved from several global biogeochemical models at the time.

Additional Documentation:

This data set is one of the products of the **International Satellite Land-Surface Climatology Project, Initiative II (ISLSCP II)** data collection which contains 50 global time series data sets for the ten-year period 1986 to 1995. A complete description of the data, its derivation, acknowledgements, and references provided by the ISLSCP II Data Management Staff is included with this data set as a companion file named [1_model_npp_doc.pdf](#).

ISLSCP II is a consistent collection of data sets that were compiled from existing data sources and algorithms, and were designed to satisfy the needs of modelers and investigators of the global carbon, water and energy cycle. The data were acquired from a number of U.S. and international agencies, universities, and institutions. The data and documentation have undergone two peer reviews.

ISLSCP is one of several projects of Global Energy and Water Cycle Experiment (GEWEX) [<http://www.gewex.org/>] and has the lead role in addressing land-atmosphere interactions -- process modeling, data retrieval algorithms, field experiment design and execution, and the development of global data sets.

Related Data Sets:

- Additional [ISLSCP II](#) data sets are available from the Oak Ridge National Laboratory Distributed Active Archive Center ([ORNL DAAC](#)).

Data Citation:

Cite this data set as follows:

Cramer, W. 2011. ISLSCP II IGBP NPP Output from Terrestrial Biogeochemistry Models. In Hall, F.G., G. Collatz, B. Meeson, S. Los, E. Brown de Colstoun, and D. Landis (eds.). ISLSCP Initiative II Collection. Data set. Available on-line [<http://daac.ornl.gov/>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A.
<http://dx.doi.org/10.3334/ORNLDAAAC/1027>

File Information:

The archived data sets for ISLSCP II have been organized by categories. This data set is in the Carbon category.

Data Set Spatial Extent: Global gridded

Westernmost Longitude: -180 W

Easternmost Longitude: 180 E

Northernmost Latitude: 90 N

Southernmost Latitude: -90 S

Projection: Geographic

Data Set Spatial Resolution: 1.0 degree and 0.5 degree in both latitude and longitude

Data Set Temporal Extent:

Data File Format

All of the data files in each data set within the ISLSCP Initiative II data collection are in standard ESRI ArcGIS ASCII grid format. The file format consists of numerical fields of varying length, which are delimited by a single space and arranged in columns and rows. All values are written as real numbers. Missing values are assigned the value of -99.99.

There are 2 *.zip data files with this data set in one degree (1deg) and half degree (hdeg) spatial resolution: **model_npp_1deg.zip** and **model_npp_hdeg.zip**.

When extrapolated, the zip files contain the following ASCII (.asc) files:

modeled_npp_average_Xd.asc: data for the gridded average Net Primary Productivity (NPP) for 17 global models of biogeochemistry, in gC/m². Xd is for files in 1deg or hdeg resolution.

modeled_npp_cv_Xd.asc: data on the coefficient of variation (cv) of the NPP of the 17 models, in percent. Xd is for files in 1deg or hdeg resolution.

modeled_npp_stdev_Xd.asc: data for the the standard deviation (stdev) of the NPP of the 17 models in gC/m2. Xd is for files in 1deg or hdeg resolution.

modeled_npp_stdev_Xd.asc: data for the the standard deviation (stdev) of the NPP of the 17 models in gC/m2. Xd is for files in 1deg or hdeg resolution.

Please refer to [0_model_npp_readme.txt](#) for a more complete description of the data files and naming conventions.

References:

Cramer, W., D. W. Kicklighter, A. Bondeau, B. Moore III, G. Churkina, B. Nemry, A. Ruimy, A. L. Schloss and The Participants of the Potsdam NPP Model Intercomparison (1999). Comparing global models of terrestrial net primary productivity (NPP): overview and key results. *Global Change Biology*, Volume 5 Issue S1:1-15.

Data Access:

These data are available through the Oak Ridge National Laboratory (ORNL) Distributed Active Archive Center (DAAC)

Data Archive Contact Information:

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