ISLSCP II EDGAR 3 Gridded Greenhouse and Ozone Precursor Gas Emissions

Summary:

The EDGAR (Emission Database for Global Atmospheric Research) database project is a comprehensive task carried out jointly by the National Institute for Public Health (RIVM) and the Netherlands Organization for Applied Scientific Research (TNO) and stores global emission inventories of direct and indirect greenhouse gases from anthropogenic sources including halocarbons and aerosols both on a per country and region basis as well as on a grid (see http://www.rivm.nl/edgar/ [Internet Link]). For the ISLSCP Initiative II data collection, gridded global annual anthropogenic emissions for the greenhouse gases CO_2, CH_4, N_2O are provided on a 1-degree by 1-degree grid for the years 1970, 1980, 1990, and 1995 and for the tropospheric ozone precursor gases CO, NOx, NMVOC (Non-Methane Volatile Organic Compounds) and SO_2 for the years 1990 and 1995.

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. Selected data sets span even longer periods. 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 global data sets were mapped at consistent spatial (1, 0.5 and 0.25 degrees) and temporal (monthly, with meteorological data at finer (e.g., 3-hour)) resolutions and reformatted into a common ASCII format. 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.

Data Citation:

Cite this data set as follows:

Olivier, J. G. J. 2008. ISLSCP II EDGAR 3 Gridded Greenhouse and Ozone Precursor Gas Emissions. Data set. Available on-line [http://daac.ornl.gov/] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A.

File Information:

The archived data sets for ISLSCP II have been organized by the following categories:

- Carbon -- a collection of atmospheric and surface carbon data sets;
- Hydrology, Soils, and Topography -- a collection of hydroclimatology and surface elevation data sets;
- Near-Surface Meteorology -- a collection of climate and meteorology data sets;
- Radiation and Clouds -- a collection of radiation and cloud data sets;
- Snow, Sea Ice, and Oceans -- a collection of snow, oceans, and sea ice data sets;
- Socioeconomic -- a collection of societal- and economics-based data sets;
- Vegetation -- a collection of vegetation and albedo data sets; and
- Ancillary Data -- a collection of ancillary data sets (e.g., land outlines, land/water masks, lat/long grid coordinates).

This data set is in the Carbon category.

The original data files submitted to the ISLSCP II staff were ASCII data tables, containing the total anthropogenic emissions of the various gases shown above. These original data files contain a 12-13 line header and 3 columns of data: Longitude, Latitude, and the emissions data for that cell. The file names contain the word "data".

The ISLSCP II staff also used the coordinates given in the original tabular data to create two-dimensional ASCII map files for each gas on a 1-degree by 1-degree Earth grid. These files are named in a similar fashion as the table names above except that they contain the word "map" as opposed to the word "data" and the file extension is ".asc" indicating that this is an ASCII map. As an example, the file named **edgar_co2_map_1d_1980.asc** contains the CO_2 anthropogenic emissions for 1980 mapped onto a 1-degree by 1-degree grid and is based on data from the original data table named **edgar_co2_data_1d_1980.csv**.

Documentation:

* **1_edgar_atmos_emis_doc.pdf:** EDGAR 3: Gridded Greenhouse and Ozone Precursor Gas Emissions (1970-1995).

* **0_edgar_atmos_emis_readme.txt**: Description of data files.

Data:

* edgar_data_1deg.zip

* edgar_maps_1deg.zip

References:

Olivier, J.G.J. and J.J.M. Berdowski (2001a) Global emissions sources and sinks. In: Berdowski,J., Guicherit, R. and B.J. Heij (eds.) "The Climate System", pp. 33-78. A.A.

Balkema Publishers/Swets & Zeitlinger Publishers, Lisse, The Netherlands. ISBN 90 5809 255 0

Data Access:

These data are available through the Oak Ridge National Laboratory (ORNL) Distributed Active Archive Center (DAAC) [http://www.daac.ornl.gov].

Data Archive Contact Information:

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