

Global Fire Emissions Database, Version 4.0 (GFED4)

Monthly and Daily Burned Area Data Set

The fourth version of the Global Fire Emissions Database (GFED4) burned area data set provides global, monthly burned area at 0.25° spatial resolution from mid-1995 through the present, and higher temporal resolution daily burned area for a subset of the time series extending back to August 2000.

1 Naming Convention

GFED4.0_MQ_YYYYMM_BA.hdf (monthly product)

GFED4.0_DQ_YYYYDDD_BA.hdf (daily product)

YYYY = year

MM = calendar month (1 – 12)

DDD = day of year (1 – 366)

The sequence “MQ” is short for “monthly, quarter-degree”.

The sequence “DQ” is short for “daily, quarter-degree”.

Examples: The file GFED4.0_MQ_200909_BA.hdf contains monthly burned area for September 2009.

The file GFED4.0_DQ_2012336_BA.hdf contains the daily burned area burned for day 336 (December 1st) of 2012 (a leap year).

2 Data Layers

Each product file contains seven data layers, each stored as a separate HDF4 Scientific Data Set (SDS). Units apply to each layer *after* multiplying by the specified scale factor. Each data layer has 720 rows and 1440 columns which correspond to the global 0.25° GFED grid. The center of the upper left grid cell is located at longitude 179.875°W, 89.875°N. Some of the data layers have an additional dimension (i.e., they are three dimensional) as described below.

Monthly Product

BurnedArea Monthly area burned [hectares]. Scale factor = 0.01.

BurnedAreaUncertainty Uncertainty in monthly area burned [hectares]. Scale factor = 0.01.

source Source of burned area estimate: 0 = no burned area (water), 1 = no burned area (unmapped), 2 = 500-m MCD64A1 burned area map, 3 = VIRS local regression, 4 = ATSR local regression, 5 = climatology.

TreeCoverDist A breakdown (to the nearest percent) of the area burned by fractional tree cover. Stored in this layer are 21 bins for each 0.25° grid cell, with each bin containing the percentage of the total area burned in 5% tree cover intervals. The bins are organized as follows:

bin 0	0% - 4% tree cover
bin 1	5% - 9% tree cover
bin 2	10% - 14% tree cover
bin 3	15% - 19% tree cover
	⋮
bin 17	85% - 89% tree cover
bin 18	90% - 94% tree cover
bin 19	95% - 100% tree cover (note slightly larger bin size)
bin 20	water or missing or unprocessed

LandCoverDist A breakdown (to the nearest percent) of the area burned in each grid cell by the 18 different UMD land cover classes.

FirePersistence Monthly fire persistence [days]. Scale factor = 0.1.

PeatFraction Fraction of area burned (to nearest percent) observed in organic peat (Indonesia only).

Daily Product

BurnedArea Daily area burned [hectares]. Scale factor = 0.01.

BurnedAreaUncertainty Uncertainty in daily area burned [hectares]. Scale factor = 0.01.

MeanBurnDateUncertainty Mean burn-date uncertainty [days].

source Source of burned area estimate: 0 = no burned area (water), 2 = no burned area (unmapped), 3 = 500-m MCD64A1 burned area map.

TreeCoverDist (Same as for monthly product.)

LandCoverDist (Same as for monthly product.)

PeatFraction (Same as for monthly product.)

3 Citation

Giglio, L., Randerson, J. T., and van der Werf, G. R., 2013, Analysis of daily, monthly, and annual burned area using the fourth generation Global Fire Emissions Database (GFED4), *Journal of Geophysical Research: Biogeosciences*, doi:10.1002/jgrg.20042.

4 Contact

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