**Soil Necromass Database (SNDB) metadata**

v1.0.0

<https://github.com/kaizadp/sndb>

Updated: September 18, 2024

This file contains metadata associated with the SNDB records.

The SNDB is composed of two data files:

1. *sndb\_data.csv* containing the relevant necromass indices and data (see Table 1). This file also contains site and soil-level characteristics of the samples reported. Each record is assigned a unique SNDB record number.
2. *sndb\_studies.csv* that contains bibliographic information for each study used in this database (see Table 2). A unique SNDB publication index number is used to map the entries between the two files.

Below is the full documentation for all fields in the two data files.

***sndb\_data.csv***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column name** | **Units** | **Class** | **Study reported?** | **Description** |
| SNDB\_record\_number | unitless | numeric |  | generated for this database, unique identifier for each data record |
| SNDB\_study\_number | unitless | numeric |  | generated for this database, unique identifier for each piece of primary literature used. corresponding bibliographic info is in the “studies” file. |
| date added to SNDB | YYYY-MM-DD | Date |  | all entries in V1 have a standardized date of 2024-09-01 |
| notes |  | free text |  | additional comments or notes, as needed |
| latitude | decimal degrees | numeric | study-reported | study-reported latitude, in decimal format; positive = north |
| longitude | decimal degrees | numeric | study-reported | study-reported longitude, in decimal format; positive = east |
| lat\_lon\_notes | unitless | free text |  | where applicable, notes describing how lat-lon was calculated. in some cases, it was the mean of a geographical range. in some cases, it was the lat-lon of the study site/town mentioned in the “Methods”. where no notes, the lat-lon was provided in the original paper, and is reported as such. |
| elevation | m | numeric | study-reported | elevation of site or sampling location |
| MAT | ℃ | numeric | calculated | mean annual temperature, derived from gridded datasets based on latitude and longitude |
| MAP | cm | numeric | calculated | mean annual precipitation, derived from gridded datasets based on latitude and longitude |
| climate\_types |  | controlled vocabulary | calculated | simplified Köppen-Geiger classification based on latitude and longitude. values include: arid, equatorial, polar, snow, temperate |
| biome\_name |  | controlled vocabulary | calculated | Whittaker Biome classification based on latitude and longitude. values include: Boreal forests/Taigas, Deserts & Xeric Shrublands, Flooded Grasslands & Savannas, Mediterranean Forests/Woodlands/Scrub, Montane Grasslands & Shrublands, Temperate broadleaf & mixed forests, Temperate conifer forests, Temperate grasslands/savanna/shrublands, Tropical & subtropical dry broadleaf forests, Tropical & subtropical grasslands/savannas/shrublands, Tropical & subtropical moist broadleaf forests |
| treatment |  | free text | study-reported | treatment/disturbance manipulation |
| treatment\_level |  | free text | study-reported | treatment/manipulation intensity, if applicable |
| lyr\_top | cm | numeric | study-reported | depth of top of sampled layer |
| lyr\_bot | cm | numeric | study-reported | depth of bottom of sampled layer |
| horizon |  | free text | study-reported | soil horizon |
| soil\_type |  | free text | study-reported | soil classification |
| ecosystem |  | controlled vocabulary | study-reported | ecosystem descriptors categorized into fixed classes: cropland, forest, grassland, wetland |
| wetland\_type |  | controlled vocabulary | study-reported | wetland descriptors categorized into fixed classes: freshwater marsh, mangrove, paddy, peatland, salt marsh, tidal wetland, upland |
| plant\_species |  | free text | study-reported | study reported broad species or terms like 'broadleaf forest'' |
| year\_sampled | YYYY | numeric | study-reported | study reported |
| fraction\_scheme |  | controlled vocabulary | study-reported | bulk soil vs. aggregates |
| aggregate\_size | mm |  | study-reported | size class of aggregates |
| gluN | mg/kg |  | study-reported | concentration of total glucosamine |
| murA | mg/kg |  | study-reported | concentration of muramic acid |
| galN | mg/kg |  | study-reported | concentration of galactosamine |
| manN | mg/kg |  | study-reported | concentration of mannose |
| microbial\_necromass\_C | mg/kg |  | calculated | microbial necromass carbon, calculated as the sum of fungal and bacterial necromass carbon |
| fungal\_necromass\_C | mg/kg |  | calculated | fungal necromass carbon, calculated from gluN and murA (see associated paper for calculations) |
| bacterial\_necromass\_C | mg/kg |  | calculated | bacterial necromass carbon, calculated from murA (see associated paper for calculations) |
| bacterial\_biomass\_C | mg/kg |  | study-reported | bacterial biomass carbon |
| fungal\_biomass\_C | mg/kg |  | study-reported | fungal biomass carbon |
| microbial\_biomass\_C | mg/kg |  | study-reported | microbial biomass carbon |
| microbial\_biomass\_N | mg/kg |  | study-reported | microbial biomass nitrogen |
| soil\_OC | g/kg |  | study-reported | total organic carbon in soil |
| soil\_C | g/kg |  | study-reported | total carbon in soil |
| soil\_N | g/kg |  | study-reported | total nitrogen in soil |
| pH |  |  | study-reported | pH |
| pH\_method |  |  | study-reported | method of pH measurement |
| clay | percent |  | study-reported | clay percentage |
| silt | percent |  | study-reported | silt percentage |
| sand | percent |  | study-reported | sand percentage |

***sndb\_studies.csv***

|  |  |
| --- | --- |
| **Column name** | **Description** |
| SNDB\_study\_number | generated for this database, unique identifier for each piece of primary literature used. corresponding bibliographic info is in the “studies” file. |
| doi | Digital Object Identifier for the published paper |
| title | Title of the published paper |
| author | All listed authors for the published paper |
| journal | Journal in which the paper was published |
| year | Publication year |