Summary of entries in the Soil Incubation Database

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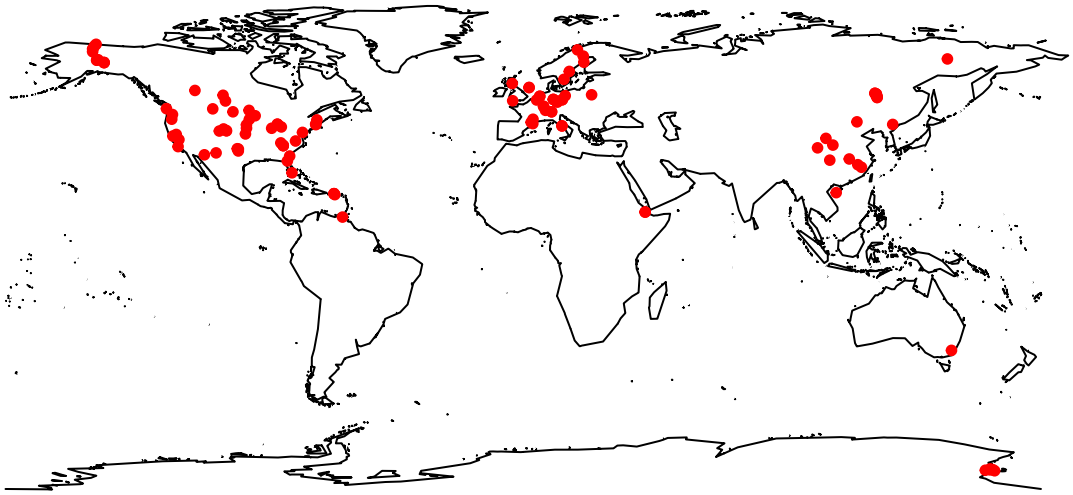
Database summary and statistics

This file contains a summary of the data currently available in the soil incubation database **sidb**. Currently, the number of entries in the database is 36. Most entries have multiple time-series of CO_2 flux release from incubation experiments. The current total number of time-series is 588, and the total number of datapoints is 10543. The last entry was added on 2017-02-07.

citationKey	doi	entryAuthor	entryCreationDate
Andrews2000SBB	10.1016/S0038-0717(99)00206-0	Heidi Voelkel	2016-04-27
Arevalo2012	10.2136/sssaj2011.0126	Heidi Voelkel	2016-04-27
Barrett2006	10.1016/j.soilbio.2006.03.025	Heidi Voelkel	2016-05-09
Bradford2010	10.1111/j.1365-2486.2009.02040.x	Heidi Voelkel	2016-07-11
Chen2010	10.1016/j.soilbio.2010.08.030	Heidi Voelkel	2016-07-25
Conant2008a	10.1111/j.1365-2486.2008.01541.x	Heidi Voelkel	2016-07-26
Conant2008b	10.1890/08-0137.1	Heidi Voelkel	2016-07-26
Craine2010NatGeo	10.1038/NGEO1009	Maddie Tilyou	2016-07-25
CurielYuste2007	10.1111/j.1365-2486.2007.01415.x	Heidi Voelkel	2016-08-02
Cusack2010GCB	10.1111/j.1365-2486.2009.02131.x	Maddie Tilyou	2016-06-21
Dalias2001b	10.1046/j.1365-2486.2001.00386.x	Heidi Voelkel	2016-08-10
Fang2005	10.1038/nature03135	Heidi Voelkel	2016-08-19
Fissore2009	10.1111/j.1365-2486.2009.01903.x	Heidi Voelkel	2016-08-19
Gillabel2010	10.1111/j.1365-2486.2009.02132.x	Heidi Voelkel	2016-08-23
Grisi1998	10.1016/S0038-0717(98)00016-9	Heidi Voelkel	2016-08-23
Haddix2011	10.2136/sssaj2010.0118	Heidi Voelkel	2016-08-24
Hartley2008	10.1111/j.1461-0248.2008.01223.x	Heidi Voelkel	2016-08-30
HartleyIneson2008	10.1016/j.soilbio.2008.01.007	Heidi Voelkel	2016-08-30
Hopkins2006	10.1016/j.soilbio.2006.01.012	Heidi Voelkel	2016-09-20
JenkinsAdams2011	10.1016/j.soilbio.2011.02.017	Heidi Voelkel	2016-09-22
Lavoie2011JGR	10.1029/2010JG001629	Maddie Tilyou	2016-10-13
LeifeldFuhrer2005	10.1007/s10533-005-2237-4	Heidi Voelkel	2016-09-30
NeffHooper2002	10.1046/j.1365-2486.2002.00517.x	Heidi Voelkel	2016-10-07
Niklinska1999	10.1023/A:1006049204600	Heidi Voelkel	2016-10-17
Reichstein2000	10.1016/S0038-0717(00)00002-X	Heidi Voelkel	2016-10-27
Rey2008	10.1111/j.1365-2389.2008.01065.x	Heidi Voelkel	2016-11-29
ReyJarvis2006	10.1111/j.1365-2486.2006.01230.x	Heidi Voelkel	2016-10-27
Sierra2017BG	10.5194/bg-2016-474	Carlos A. Sierra	2017-01-24
Song2010	10.1016/j.ejsobi.2010.09.003	Heidi Voelkel	2017-01-06
Stewart2008SBB	10.1016/j.soilbio.2008.02.014	Maddie Tilyou	2016-10-4
Townsend1997	10.1023/A:1017942918708	Heidi Voelkel	2017-01-06
Wang2010	10.1016/S1001-0742(09)60217-5	Heidi Voelkel	2017-01-10
WicklandNeff2008	10.1007/s10533-007-9166-3	Heidi Voelkel	2017-01-26
Winkler1996	10.1016/0038-0717(96)00076-4	Heidi Voelkel	2017-01-30
Zhang2007	10.1016/S1001-0742(07)60052-7	Heidi Voelkel	2017-01-31
ZhuCheng2011	10.1016/j.soilbio.2010.12.021	Heidi Voelkel	2017-02-07

Location and ecosystem types

Locations for which data are available are presented in the following map



A list of all ecosystem types in the database:

```
kable(unique(ecosystemType))
```

Forest
Cropland
Polar
Cultivated
Grassland
Wheat cropland
Northern mixed-grass praire
Southern mixed-grass praire
ponderosa pine plantation, oak savanna
wet tropical rainforest
lower montane forest
coniferous forests
middle-aged plantation of Sitka spruce
Pine, Hardwood
agricultural site planted with winter barley
Evergreen forest
Maize
Beans and Maize
Cereals
Native grassland and cultivated
Native forest and pasture
Tundra
cultivated
glacial dry land
Grassland (G)
Woodland with Grass understorey (WG)
Woodland with Shrub understorey (WS)
boreal forest
tundra
arable rotation
permanent grassland

Tundra (Tussock, Spruce)
Tundra (Tussock)
Tundra (Tussock, Shrub)
Tundra (Tussock, Wet sedge)
Scots pine monocultures
Forest-Tundra
peatland

```
kable(unique(studySite))
```

Central Piedmont region of North Carolina, USA
Linaria parkland region of Alberta, Canada
McMurdo Dry Valleys of Southern Victoria Land, Antarctica
CoweetaLong-Term Ecological Research (LTER)
Harvard Forest (LTER)
arable site; Agro-Ecological Experiment Station, Shanxi Province
semi-arid grassland; Xilinguole Steppe, Inner Mongolia Province
cool temperate meadow; Gahai-Zecha National Nature Reserve, Gansu Province
tropical rainforest; Jianfengling National Forest Park, Hainan Province
sub-tropical evergreen broadleaved forest; Wuyi mountain, Fujian Province
cool temperate broadleaved deciduous forest; Baekdu Mountain Forest Ecosystem Research Station, Jilin Province
Akron, Colorado
Vernon, Texas
Northern Great Plains Research Laboratory,Mandan, North Dakota
Waggoner Ranch, Vernon, Texas
HJ Andrew (AND)
American Prairie (AP)
Toolik (ARC)
Baltimore Ecosystem Study (BES)
Bonanza Creek (BNZ)
Cedar Creek, (CDR)
Florida Coastal Everglades (FCE)
Harvard Forest (HFR)
Jorndada Basin (JRN)
Kellog Biological Station (KBS)
Olympic National Park (OLY)
Sedgwick (SDG)
Walker Branch (WB)
Wind River (WR)
Coweeta (COW)
Georgia Coastal Ecosystems (GCE)
Guanica (GUA)
Itasca State Park (ITA)
Konza Prarie (KNZ)
Luquillo (LUQ)
Niwot Range (NIW)
San Joaquin Exper. Range (SJQ)
Santa Rita Exper. Range (SRE)
Hubbard Brook (HB)
Jepson Prairie (JEP)
Kankankee Sands (KAN)
Ordway-Swisher (ORD)
Short Grass Steppe (SGS)

northern California
Luquillo Experimental Forest (LEF) - lower (L) - upper (U)
western Europe
Scotland
Colorado (Fraser Experimental Forest, Routt National Forest)
Minnesota (Marcel and Cutfood Experimental Forest)
Michigan (industrial lands, Technological University's Alberta Forestry Center)
Kentucky (Daniel Boone National Forest, University of Kentucky Robinson Forest)
South Carolina (Santee Experimental Forest, Francis Marion National Forest)
Georgia (University of Georgia Agricultural Experiment Station)
Termunck, Belgium
Mata (Brazil)
Cerrado (Brazil)
Jaiba (Brazil)
Silsoe (England)
Fosters (England)
Woburn (England)
Indian Head, SK (ARGCN)
Mandan, ND (NGPRL)
Akron, CO (CGPRS)
Vernon, TX (Waggoner Ranch)
Alajuela, Costa Rica N/A (Alejula Research Station)
Rondonia, Brazil (Nova Vida Ranch)
Abisko, northern Sweden
University of York, UK
Garwood Valley, southern Victoria Land (Ross Sea region), Antarctica
Snowy Mountains, NSW Australia
interior alaska
northen alaska
Oensingen, Switzerland
Fairbanks
Chandalar
Toolik Lake
Sagwon
Harads, northern Sweden
Jaedraas, central Sweden
Brandstorp, southern Sweden
Czerlonka, north-eastern Poland
Otobok, western Poland
LaViale, southern France
Biescas, northern Spain
Davos, Switzerland; ridge
Davos, Switzerland; gully
Hainich
Collelongo
Hesse
Roccarespampani
Tharandt
Harwood
Wetztsein
Loobos
Caribou Poker Creeks Research Watershed
Haibei Alpine Meadow Ecosystem Experimental Station, Qinghai-Tibet Plateau, China
Sioux City, IA (IA)

Temperate	Cold	Semi-arid	Cool temperate	Tropical	Sub-tropical	Cool-temperate	
mediterranean	borean to mediterranean		temperate	tropical vs. temperate		Boreal	10.6
							9.7
							8.5
							8.9
							6.2
							9.7
							0.8

541	cold
890	
788	
660	
632	
887	
411	

Kellog Biological Station, MI (MI)
Saginaw, MI (MIS)
Lamberton, MN (MN)
Mead, NE (NE)
Wauseon, OH (OH)
Melfort, Sk (SK)
Pasture 100 m
Pasture 800 m
Pasture 1700 m
Forest 900 m
Forest 1500 m
Beijicun1
Beijicun2
Tuqiang1
Tuqiang2
Zhuanglin1
Zhuanglin2
Huzhong1
Huzhong2
Feihushan1
Feihushan2
Well drained site, Delta Junction, central Alaska
Moderately well drained site, Delta Junction, central Alaska
Poorly Drained site, Fairbanks, Alaska
Duke forest: Durham, NC, USA
PP, Beipei, Chongqing
RP, Jinxian, Jiangxi
EP, Xiantao, Hubei
farm soil, University of California at Santa Cruz campus
grassland soil, University of California at Santa Cruz campus

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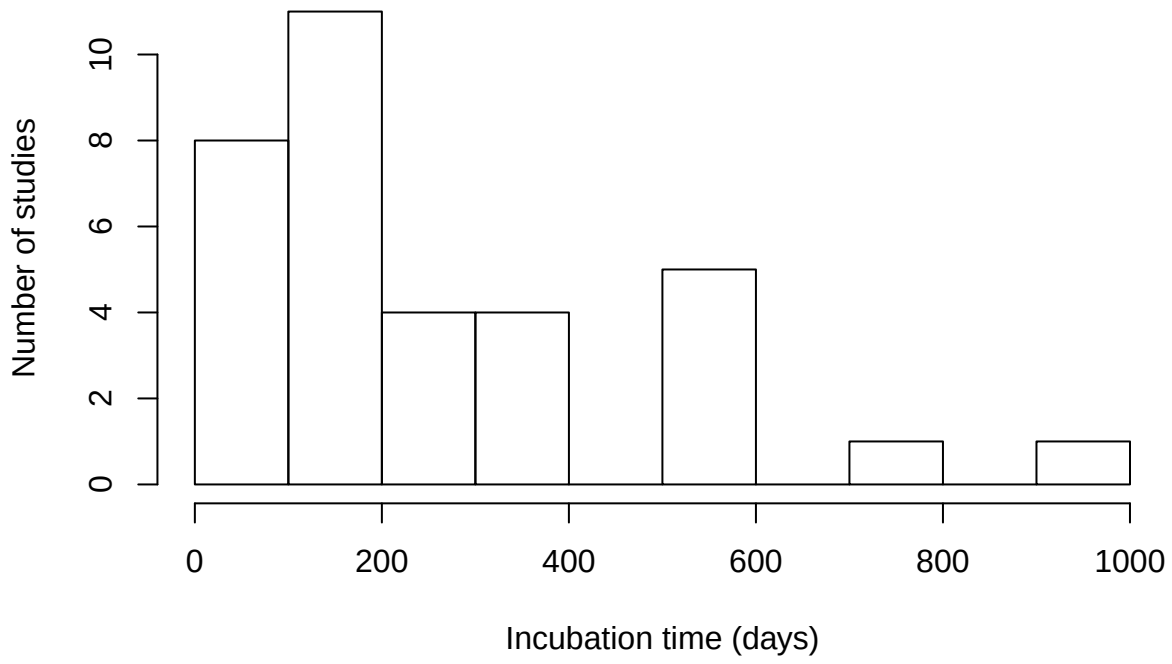
```
kable(unique(climate))
```

```
#kable(data.frame(Site=studySite,Ecosystem=ecosystemType))
```

A histogram of the incubation time for all entries can be obtained as

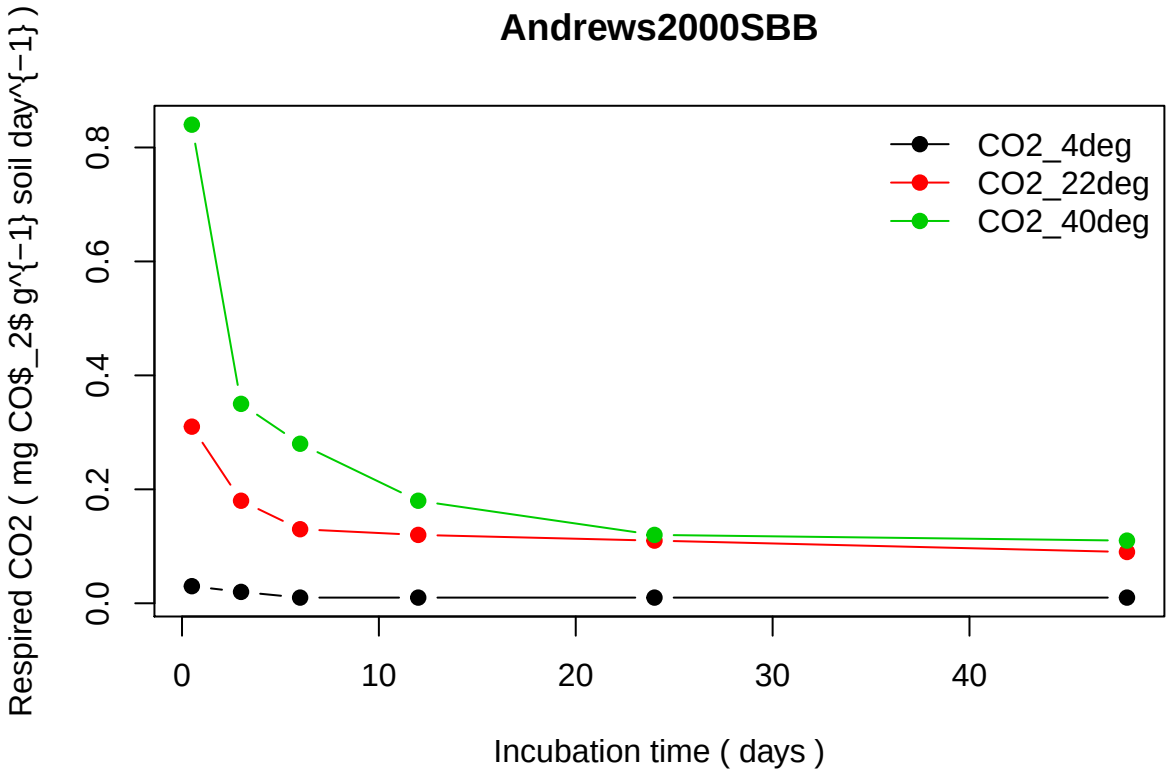
```
hist(incubationTime, xlab="Incubation time (days)", main ="", ylab="Number of studies")
```



Datasets

The file `~/scripts/plotEntry.R` can be used to plot individual entries from the database. For example

```
source("~/sidb/scripts/plotEntry.R")
plotEntry(entry=Andrews2000SBB)
```


Andrews2000SBB
Respired CO2 (mg CO$_2$ g^{−1} soil day^{−1})
0.0
0.2
0.4
0.6
0.8
0
10
20
30
40
Incubation time (days)
CO2_4deg
CO2_22deg
CO2_40deg