

Package: lterdatasampler (via r-universe)

September 2, 2024

Title Educational Dataset Examples from the Long Term Ecological Research Program

Version 0.1.1

Date 2023-08-11

Description Curated datasets from US Long Term Ecological Research sites.

License CC0

Encoding UTF-8

LazyData true

Roxygen list(markdown = TRUE)

RoxygenNote 7.2.3

Depends R (>= 2.10)

Suggests knitr, rmarkdown, janitor, usethis, metajam, tidyverse, here, broom, sf, ggmap, leaflet, lubridate, patchwork, tsibble, feasts, changepoint, gt

URL <https://github.com/lter/lterdatasampler>

BugReports <https://github.com/lter/lterdatasampler/issues>

Repository <https://lter.r-universe.dev>

RemoteUrl <https://github.com/lter/lterdatasampler>

RemoteRef HEAD

RemoteSha ff784768e090bbbb3e49690c8b679ec3d02b8e66

Contents

and_vertebrates	2
arc_weather	3
hbr_maples	4
knz_bison	5
luq_streamchem	5
ntl_airtemp	7

ntl_icecover	7
nwt_pikas	8
pie_crab	9

Index	11
--------------	-----------

and_vertebrates	<i>Cutthroat trout and salamander length and weights in Mack Creek, Andrews Forest LTER</i>
-----------------	---

Description

Includes count and size data for cutthroat trout and salamanders in clear cut or old growth sections of Mack Creek, Andrews Forest LTER.

Usage

and_vertebrates

Format

A tibble with 32,209 rows and 16 variables:

year a number indicating the observation year

sitecode a character denoting the coded name of sample area

section a character denoting the section in Mack Creek (CC = clear cut forest, OG = upstream old growth coniferous forest)

reach a character denoting the reach sampled from each section; L = lower reach (0 - 50 meters), M = middle reach (50 - 100 meters), U = upper reach (100 - 150 meters))

pass a number denoting the electroshocking pass number, either 1 or 2

unitnum a number denoting the channel unit number

unittype a character denoting the channel unit classification type (C = cascade, I = riffle, IP = isolated pool (not connected to channel), P = pool, R = rapid, S = step (small falls), SC = side channel, NA = not sampled by unit)

vert_index a number denoting the unique index for each vertebrate

pitnumber a number denoting the unique tag number embedded into vertebrate (tagging started in 2007)

species a character denoting species measured

length_1_mm a number denoting vertebrate length in millimeters; total or snout-fork length for trout, and snout-vent length for salamanders

length_2_mm a number denoting snout-tail length in millimeters (for Coastal giant salamander only)

weight_g a number denoting vertebrate mass in grams

clip a character denoting the fin clip type for cutthroat trout, ended in 2006 (LV = left ventral fin; LVRV = left and right ventral fins; RV = right ventral fin; NONE = no ventral fin clip)

sampdate a date denoting the date of observation

notes a character denoting additional comments

Source

Gregory, S.V. and I. Arismendi. 2020. Aquatic Vertebrate Population Study in Mack Creek, Andrews Experimental Forest, 1987 to present ver 14. Environmental Data Initiative. doi:10.6073/pasta/7c78d662e847cdbe33584add8f809165

arc_weather	<i>Daily weather data from Toolik Field Station at Toolik Lake, Alaska (1988 - 2018) from Arctic LTER</i>
-------------	---

Description

A subset of daily recorded meteorological data, including mean daily air temperature and wind-speed, and daily total precipitation, measured at Toolik Field Station, Alaska (Arctic LTER) from 1988 - 2018.

Usage

arc_weather

Format

A tibble with 11,171 rows and 5 variables:

date a date denoting recorded date

station a character denoting the station

mean_airtemp a number denoting mean daily air temperature in degrees Celsius

daily_precip a number denoting total daily precipitation in millimeters

mean_windspeed a number denoting daily mean windspeed in meters per second

Source

Shaver, G. 2019. A multi-year DAILY weather file for the Toolik Field Station at Toolik Lake, AK starting 1988 to present. ver 4. Environmental Data Initiative. doi:10.6073/pasta/ce0f300cdf87ec002909012abefd9c5c

Arctic LTER website: <https://arc-lter.ecosystems.mbl.edu/>

hbr_maples	<i>Health of Sugar Maple (Acer saccharum) Seedlings in Response to Calcium Addition (2003-2004), Hubbard Brook LTER</i>
------------	---

Description

Sugar maple seedlings were examined at Hubbard Brook Experimental Forest on calcium-treated and reference sites during August 2003 and June 2004. Seedlings were sampled every ten steps in transects.

Usage

hbr_maples

Format

A tibble with 359 rows and 11 variables

year a number denoting the year that the sample was taken

watershed a factor denoting the watershed where the sample was collected; W1 = calcium-treated, Reference = reference

elevation a factor describing the Elevation of transect; Low = low elevation, Mid = mid elevation

transect a factor denoting the transect number within the watershed

sample a factor denoting the sample number within transect. There are twenty samples in each transect

stem_length a number denoting the height of the seedling in millimeters

leaf1area a number denoting the area of the first sampled leaf in square centimeters

leaf2area a number denoting the area of the second sampled leaf in square centimeters

leaf_dry_mass a number denoting the dry mass of both sampled leaves in grams

stem_dry_mass a number denoting the dry mass of the stem in grams

corrected_leaf_area a number denoting the area of both leaves in addition to the area removed for chlorophyll measurements in square centimeters

Source

Juice, S. and T. Fahey. 2019. Health and mycorrhizal colonization response of sugar maple (*Acer saccharum*) seedlings to calcium addition in Watershed 1 at the Hubbard Brook Experimental Forest ver 3. Environmental Data Initiative. [doi:10.6073/pasta/0ade53ede9a916a36962799b2407097e](https://doi.org/10.6073/pasta/0ade53ede9a916a36962799b2407097e)

knz_bison	<i>Konza Prairie Bison Herd Information, Konza Prairie Biological Station LTER</i>
-----------	--

Description

The purpose of this study is to monitor long-term changes in individual animal mass. The datasets include an annual summary of the bison herd structure, end-of-season weights of individual animals, and maternal parentage of individual bison.

Usage

knz_bison

Format

A tibble with 8,325 rows and 9 columns:

data_code a character denoting the dataset code

rec_year a number denoting the year of observation

rec_month a number denoting the month of observation

rec_day a number denoting the day of observation

animal_code a character denoting the unique individual bison identification code based on ear tag number

animal_sex a character denoting the sex of bison: M = male, F = female, U = unknown

animal_weight a number denoting bison weight in pounds

animal_yob a number denoting the year animal was born

Source

EBlair, J. 2021. CBH01 Konza Prairie bison herd information ver 12. Environmental Data Initiative. <https://doi.org/10.6073/pasta/9c641b35695abc5889edd64c3950517f> (Accessed 2021-05-10). [doi:10.6073/pasta/9c641b35695abc5889edd64c3950517f](https://doi.org/10.6073/pasta/9c641b35695abc5889edd64c3950517f)

luq_streamchem	<i>LUQ Stream Chemistry Data for Quebrada Sonadora (QS) site</i>
----------------	--

Description

Data include stream chemistry data for the Quebrada Sonadora (QS) location part of the Luquillo LTER site

Usage

luq_streamchem

Format

A tibble with 597 rows and 18 variables:

Sample_ID a character denoting Watershed or Collector's location where the sample is taken

Sample_Date a date denoting the date when the sample was collected

Gage_Ht a number denoting the height of the water surface above the gage datum (zero point) at sampling time (in meters)

Temp a number denoting the temperature of the sample collected

pH a number pH (Electrometric with combination electrode)

Cond a number denoting the conductivity (Conductivity bridge in micro siemens/cm)

Cl a number denoting the concentration of Chloride (up to 1989 by automated colorimetric analysis (thiocyanate); after 1989 by liquid chromatography with conductivity detection) in mg Cl/L

NO3 a number denoting the concentration of dissolved nitrate in the stream water in ug N/L

SO4-S a number denoting the concentration of Sulfate (Liquid chromatography; conductivity detection) in mg/L

Na a number denoting the concentration of Sodium (up to 1994 by atomic absorption spectroscopy) in mg/L

K a number denoting the concentration of Potassium (up to 1994 by atomic absorption spectroscopy) in mg/L

Mg a number denoting the concentration of Magnesium (up to 1994 by atomic absorption spectroscopy) in mg/L

Ca a number denoting the concentration of Calcium (up to 1994 by atomic absorption spectroscopy) in mg/L

NH4-N a number denoting the concentration of Ammonium Nitrogen (automated colorimetric analysis (phenolhypochlorite)) in ug N/L

DOC a number denoting Dissolved Organic Carbon in the stream water ion milligrams carbon per liter (mg C/L)

DIC a number denoting Dissolved Inorganic Carbon (by syringe stripping and infrared spectroscopy (Stainton 1973)) in mg C/L

SiO2 a number denoting the concentration of Silica (automated colorimetric analysis (molybdate blue)) in mg SiO₂/L

TSS a number denoting the Total Suspended Sediments in mg/L

Source

McDowell, W. 2021. Chemistry of stream water from the Luquillo Mountains ver 4923056. Environmental Data Initiative. [doi:10.6073/pasta/0a09f5aa2e6f11451553c92b102279a6](https://doi.org/10.6073/pasta/0a09f5aa2e6f11451553c92b102279a6)

ntl_airtemp	<i>Daily Average Temperature Data in Madison, WI (1869 - 2019), North Temperate Lakes LTER</i>
-------------	--

Description

Data includes date of collection, year of collection, and average air temperature in Madison, WI. Daily meteorological data was collected from various sites around Madison, WI since 1869. The final temperature data included is averaged for each year. Note: according to the metadata, temperature data collected prior to 1884 contains biases.

Usage

ntl_airtemp

Format

A tibble with 55151 rows and 3 variables

sampledate a date denoting the day of collection

year a number denoting the year of observation

ave_air_temp_adjusted a number denoting the air temperature in degrees Celsius, collected in Madison, WI and adjusted for biases

Source

Anderson, L. and D. Robertson. 2020. Madison Wisconsin Daily Meteorological Data 1869 - current ver 32. Environmental Data Initiative. doi:[10.6073/pasta/e3ff85971d817e9898bb8a83fb4c3a8b](https://doi.org/10.6073/pasta/e3ff85971d817e9898bb8a83fb4c3a8b)

ntl_icecover	<i>Ice Freeze and Thaw Dates for Madison, WI Area Lakes (1853 - 2019), North Temperate Lakes LTER</i>
--------------	---

Description

Data includes lake name, dates of freeze-up and thaw, and duration of ice cover of lakes in the Madison, WI area. Ice cover duration is the number of days that a lake is frozen, excluding periods where the lake thaws before refreezing again. Lakes Monona and Wingra are considered to be frozen if they are completely ice covered, while Lake Mendota is considered to be frozen if there is ice from Picnic Point to Maple Bluff and more than 50% of the lake is covered by ice.

Usage

ntl_icecover

Format

A tibble with 431 rows and 5 variables

lakeid a factor denoting the lake name

ice_on a date denoting the freeze date of each lake

ice_off a date denoting the ice breakup date of each lake

ice_duration a number denoting the number of days between the freeze and breakup dates of each lake

year a number denoting the year of observation

Source

Magnuson, J.J., S.R. Carpenter, and E.H. Stanley. 2021. North Temperate Lakes LTER: Ice Duration - Madison Lakes Area 1853 - current ver 35. Environmental Data Initiative. [doi:10.6073/pasta/ab31f2489ee436beb73fc8f1d0213d97](https://doi.org/10.6073/pasta/ab31f2489ee436beb73fc8f1d0213d97)

nwt_pikas	<i>American Pika (Ochotona princeps) Stress and Habitat Measurements (2018), Niwot Ridge LTER</i>
-----------	---

Description

Niwot Ridge American pika (*Ochotona princeps*) stress data collected every two weeks from June-September 2018. Stress was measured by observing the amount of glucocorticoid metabolite present in pika feces and sex was determined via genetic analysis of the fecal sample.

Usage

nwt_pikas

Format

A tibble with 109 rows and 7 variables

date a date denoting the observation date of the fecal sample

site a factor denoting the location where the fecal sample was collected within Niwot Ridge

station a factor denoting the sample station where the fecal sample was collected

utm_easting a number denoting the GPS E-W coordinate of the sampling station as Universal Transverse Mercator easting; NAD83, Zone 13. Measured in meters.

utm_northing a number denoting the GPS N-S coordinate of the sampling stations as Universal Transverse Mercator northing; NAD83, Zone 13. Measured in meters.

sex a factor denoting the sex of the observed pika

concentration_pg_m a number denoting the glucocorticoid metabolite (GCM) concentration in picogram GCM/gram dry pika feces

elev_m a number denoting the elevation in meters of the sampling station where the fecal sample was collected

Source

Whipple, A. and Niwot Ridge LTER. 2020. Physiological stress of American pika (*Ochotona princeps*) and associated habitat characteristics for Niwot Ridge, 2018 - 2019 ver 1. Environmental Data Initiative. doi:[10.6073/pasta/9f95baf55f98732f47a8844821ff690d](https://doi.org/10.6073/pasta/9f95baf55f98732f47a8844821ff690d)

pie_crab	<i>Fiddler crab body size in salt marshes from Florida to Massachusetts, USA at PIE and VCR LTER and NOAA NERR sites during summer 2016.</i>
----------	--

Description

We collected ~30 male, adult *Minuca pugnax* from thirteen marshes from Florida to Massachusetts and measured their carapace width with calipers. Water and air temperature data were collected from monitoring programs (i.e., LTER, NERR sites), nearby weather stations, and ocean buoys for 2016.

Usage

pie_crab

Format

A tibble with 392 rows and 9 variables:

date a date denoting the date crabs were collected

latitude a number denoting the latitude of salt marsh (degree)

site a character denoting the location where crabs were collected (abbreviation of site name); GTM=Guana Tolomoto Matanzas NERR | SI=Sapelo Island NERR | NIB=North Inlet Winyah Bay NERR | ZI=Zeke's Island NERR | RC=Rachel Carson NERR | VCR=Virginia Coastal Reserve LTER | DB=Delaware Bay NERR | JC=Jacques Cousteau NERR | CT=Sixpenny Island - Connecticut | NB=Narragansett Bay NERR | CC=Cape Cod | BC=Bare Cove Park | PIE=Plum Island Estuary - West Creek

size a number denoting carapace width of a crab (millimeter)

air_temp a number denoting mean annual air temperature (Celsius)

air_temp_sd a number denoting the standard deviation of mean annual air temperature (Celsius)

water_temp a number denoting mean annual water temperature (Celsius), which is surface temperature (< 1m)

water_temp_sd a number denoting the standard deviation of mean annual water temperature (Celsius)

name full name of research site; LTER, Long-Term Ecological Research site; NERR, National Estuarine Research Reserve

Source

Johnson, D. 2019. Fiddler crab body size in salt marshes from Florida to Massachusetts, USA at PIE and VCR LTER and NOAA NERR sites during summer 2016. ver 1. Environmental Data Initiative. [doi:10.6073/pasta/4c27d2e778d3325d3830a5142e3839bb](https://doi.org/10.6073/pasta/4c27d2e778d3325d3830a5142e3839bb)

Index

* datasets

- and_vertebrates, 2
- arc_weather, 3
- hbr_maples, 4
- knz_bison, 5
- luq_streamchem, 5
- ntl_airtemp, 7
- ntl_icecover, 7
- nwt_pikas, 8
- pie_crab, 9

- and_vertebrates, 2
- arc_weather, 3

- hbr_maples, 4

- knz_bison, 5

- luq_streamchem, 5

- ntl_airtemp, 7
- ntl_icecover, 7
- nwt_pikas, 8

- pie_crab, 9