

Package ‘datana’

June 6, 2021

Type Package

Title Functions for biometrics, applied statistics, and ecological data analysis

Version 0.1

Date June 3, 2020

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Description Provides several functions for biometrics, applied statistics, and ecological analysis,
It helps to accompany applied statistics analysis and exercises beside several data sets
are also included.

License GPL-2

NeedsCompilation no

RoxygenNote 7.1.0

Encoding UTF-8

Imports

Depends R (>= 2.10)

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datana-package	<i>Functions for biometrics, applied statistics, and ecological data analysis</i>
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Description

Provides several functions for biometrics, applied statistics, and ecological analysis. It helps to accompany applied statistics analysis and exercises beside several data sets are also included.

Details

The DESCRIPTION file: This package was not yet installed at build time.

Index: This package was not yet installed at build time.

~~ An overview of how to use the package, including the most important functions ~~

Author(s)

NA

Maintainer: NA

References

~~ Literature or other references for background information ~~

airquality

Contains information of data airquality of datasets library.

Description

Daily air quality measurements in New York, May to September 1973.

Usage

```
data(airquality)
```

Format

Contains 6 variables, as follows:

ozone numeric Ozone (ppb).

solar numeric Solar R (lang).

wind numeric Wind (mph).

temp numeric Temperature (degrees F).

month numeric Month (1–12).

day numeric Day of month (1–31).

Source

The data were provided from datasets library datasets.

References

Chambers J, Cleveland W, Kleiner B, Tukey P. 1983. Graphical Methods for Data Analysis. Belmont. CA: Wadsworth.

Examples

```
data(airquality)
head(airquality)
```

annualppCities	<i>Contains information of annual precipitations in cities of Chile.</i>
----------------	--

Description

Data contains annual precipitations in six cities in Chile (Santiago, Talca, Chillan, Temuco, Valdivia, and Puerto Montt) at different years.

Usage

```
data(annualppCities)
```

Format

The data frame contains three variables as follows:

city Name of city.

year Year of registry.

annual Value of the annual precipitation of a given year (mm).

Source

The data were provided from <http://explorador.cr2.cl/>.

Examples

```
data(annualppCities)
head(annualppCities)
```

araucaria	<i>Contains plot-level variables in Araucaria araucana forests in southern Chile.</i>
-----------	---

Description

These are plot-level measurement data from the Araucaria araucana forests in the Araucania region in southern Chile, measured in 2009. The data inventory was based on fixed-area plots of 1000 m². They are two forest stands.

Usage

```
data(araucaria)
```

Format

Contains plot-level variables as follows:

stand Stand number
plot.no Plot sample identificator number
x.utm UTM coordinate in X-axis, in km
y.utm UTM coordinate in Y-axis, in km
slope Slope, in %
aspect Aspect, in degrees
eleva Elevation, in msnm
nha Tree density, in trees/ha
gha Basal area, in m²/ha
hdom Dominant height, in m
vha Gross stand volume, in m³/ha
dg Diameter of the average basal area tree of the plot, in cm

Source

The data are provided courtesy of Dr. Nelson Ojeda at the Universidad de La Frontera (Temuco, Chile).

References

Salas C, Ene L, Ojeda N, Soto H. 2010. Metodos estadisticos parametricos y no parametricos para predecir variables de rodal basados en Landsat ETM+: una comparacion en un bosque de Araucaria araucana en Chile [Parametric and non-parametric statistical methods for predicting plotwise variables based on Landsat ETM+: a comparison in an Araucaria araucana forest in Chile]. Bosque 31(3): 179-194.

Examples

```
data(araucaria)
head(araucaria)
```

baiTreelines

Contains information of annual basal area increment (BAI) for different species.

Description

Dataset contains 157 observations, of the last 10 years in 6-8 adult trees of different species at three elevations of altitudinal gradients sampled in four locations of Chile and two in Spain.

Usage

```
data(baiTreelines)
```

Format

Contains 7 variables, as follows:

climate Climate of each location, mediterranean and temperate.

site Name of Location of study (termmas:Termas de Chillan , antillanca:Antillanca area within Puyehue National Park, castillo:Cerro Castillo Natural Reserve, farellones:Farellones in Central Chile, pyrenees: Sierra de Cutas area in Spanish Central Pyrenees,sierra:Sierra Nevada).

species name species of study (lenga: Nothofagus pumilio, frangel: Kageneckia angustifolia, uncinata: Pinus uncinata, sylvestris: Pinus sylvestris).

elevation Type of elevation. "Treeline", intermediate named as "inter", and closed or montane forest named as low.

tree Id for tree.

bai Value of annual basal area increment.

mean.bai Mean of annual basal area increment.

Source

The data were provided from DRYAD repository.

References

Piper F, Vinegla B, Linares J, Camarero J, Cavieres L,Fajardo A. 2016. Mediterranean and temperate treelines are controlled by different environmental drivers. Journal Ecology. 104: 691-702. DOI:10.1111/1365-2745.12555

Examples

```
data(baiTreelines)
head(baiTreelines)
```

bears

Age and physical measurement data for wild bears.

Description

Wild bears were anesthetized, and their bodies were measured and weighed. One goal of the study was to make a table (or perhaps a set of tables) for people interested in estimating the weight of a bear based on other measurements. This would be used because in the forest it is easier to measure the length of a bear, for example, than it is to weigh it. Notice that there are missing values for some of the variables.

Usage

```
data(bears)
```

Format

Contains individual-level variables, as follows:

id Bear id
age age in months
month Diameter at breast height, in cm
sex 1 =male, 2 = female
headL length of head, in cm
headW width of head, in cm
neckG girth of neck, in cm
length body length, in cm
chestG girth of chest, in cm
weight body weight, in kg
obs observation number for bear
name name given to bear

Source

Minitab, Inc. The data description is courtesy of Prof. Timothy Gregoire at Yale University (USA).

References

According to Prof. Gregoire, This data set was supplied by Gary Alt. Entertaining references are in Reader's Digest April, 1979, and Sports Afield September, 1981.

Examples

```
data(bears)
head(bears)
```

bears2	<i>Age and physical measurement data for wild bears. Dataframe same as "bears" but without missing values.</i>
--------	--

Description

Wild bears were anesthetized, and their bodies were measured and weighed. One goal of the study was to make a table (or perhaps a set of tables) for people interested in estimating the weight of a bear based on other measurements. This would be used because in the forest it is easier to measure the length of a bear, for example, than it is to weigh it.

Usage

```
data(bears2)
```

Format

Contains individual-level variables, as follows:

id Bear identifier

age age in months

month Diameter at breast height, in cm

sex 1 =male, 2 = female

headL length of head, in cm

headW width of head, in cm

neckG girth of neck, in cm

length body length, in cm

chestG girth of chest, in cm

weight body weight, in kg

obs observation number for bear

name name given to bear

Source

Minitab, Inc. The data description is courtesy of Prof. Timothy Gregoire at Yale University (New Haven, CT, USA).

References

According to Prof. Gregoire, This data set was supplied by Gary Alt. Entertaining references are in Reader's Digest April, 1979, and Sports Afield September, 1981.

Examples

```
data(bears2)
head(bears2)
```

biomass

Contains tree-level biomass data for several species in Canada.

Description

These are tree-level variables for several species in Canada.

Usage

biomass

Format

treenum tree number.
spp species common name.
dbh diameter at breast height, in cm.
height total height, in m.
totbiom total biomass, in kg.
bolebiom stem biomass, in kg.
branchbiom branches biomass, in kg.
foliagebiom foliage biomass, in kg.

Source

The data are provided courtesy of Prof. Timothy Gregoire at the School of Forestry and Environmental Studies at Yale University (New Haven, CT, USA).

Examples

```
data(biomass)
head(biomass)
```

carbohydrateTreelines *Contains information of carbohydrates concentrations .*

Description

Dataset contains 863 observations, about of total soluble carbohydrate, starch, and non structural carbohydrates concentrations per mass unit and per volume unit, in three tissues in early summer and early autumn 6-8 adult trees of different specie at three elevations of altitudinal gradients sampled in four locations of Chile, and Spain.

Usage

```
data(carbohydrateTreelines)
```

Format

Contains 16 variables, as follows:

climate Climate of each location, mediterranean and temperate.
site Name of Location of study (termas:Termas de Chillan , antillanca:Antillanca area within Puyehue National Park, castillo:Cerro Castillo Natural Reserve, farellones:Farellones in Central Chile, pyrenees: Sierra de Cutas area in Spanish Central Pyrenees,sierra:Sierra Nevada).
species name species of study (lenga: Nothofagus pumilio, frangel: Kageneckia angustifolia, uncinata: Pinus uncinata, sylvestris: Pinus sylvestris).
tissue Type of tissue, new developing twigs, stem sapwood and branches.
time Measurement season (spring or autumn).
elevation Type of elevation. "Treeline", intermediate named as "mid", and closed or montane forest named as "low".

tree Id for tree.

tree.site Id site for each location of study.

tss Value of concentrations soluble carbohydrate per mass unit.

st Value of concentrations starch per mass unit.

nsc Value of concentrations non structural carbohydrates per mass unit.

tss.nsc .

wd .

tss.mv Value of concentrations soluble carbohydrate per volume unit.

st.mv Value of concentrations starch per volume unit.

nsc.mv Value of concentrations non structural carbohydrates per volume unit.

Source

The data were provided from DRYAD repository.

References

Piper F, Vinegla B, Linares J, Camarero J, Cavieres L, Fajardo A. 2016. Mediterranean and temperate treelines are controlled by different environmental drivers. *Journal Ecology*. 104: 691-702. DOI:10.1111/1365-2745.12555

Examples

```
data(carbohydrateTreelines)
head(carbohydrateTreelines)
```

chicksw

Contains information of ChichWeigth data of alr4 library.

Description

The body weights of the chicks were measured at birth and every second day thereafter until day 20. They were also measured on day 21. There were four groups on chicks on different protein diets.

Usage

```
data(chicksw)
```

Format

Contains 4 variables, as follows:

weight a numeric vector giving the body weight of the chick (gm).

time a numeric vector giving the number of days since birth when the measurement was made.

chick an ordered factor with levels different giving a unique identifier for the chick. The ordering of the levels groups chicks on the same diet together and orders them according to their final weight (lightest to heaviest) within diet.

diet a factor with levels 1,2,3 and 4 indicating which experimental diet the chick received.

Source

The data were provided from alr4 library of R.

References

Crowder M, Hand D. 1990. Analysis of Repeated Measures. Chapman and Hall

Examples

```
data(chicksw)
head(chicksw)
```

crownradii	<i>Data with information radios crown for different directions on site rucamanque</i>
------------	---

Description

Crown radii measurements in cardinal directions for sample trees at the Rucamanque experimental forest, near Temuco, Chile.

Usage

```
data(crownradii)
```

Format

Contains of variables, as follows:

specie Code of specie. ro is Roble, co is Coigue and ol is Olivillo.

dap Diameter at breast height.

htot Total height in meters.

north Radio of crown in direction north in meters.

east Radio of crown in direction east in meters.

south Radio of crown in direction south in meters.

west Radio of crown in direction west in meters.

x Coordinate x.

y Coordinate y.

crown Diameter of crown in meters.

Source

not yet

References

not yer

Examples

```
data(crownradii)
head(crownradii)
```

demograph

Contains information of demography of species.

Description

Dataset contains 61 observations about life histories values for each species and site, as obtained from the parameterization carried out in studies that used the model SORTIE

Usage

```
data(demograph)
```

Format

Contains 15 variables, as follows:

sp Name specie.

site Name of site of study.

country Name of country.

site.n Code of site.

code Code of specie.

genus Genus of specie.

sps Abbreviated name specie.

family Family of specie.

phyl Type of phylogeny.

l.hab Type of leaf habit.

l.type .

leaf Type of leaf.

growth.l Growth at full light (time in years).

growth.d Growth in shade.

surv.d Survival in shade.

Source

The data were provided from DRYAD repository

References

- Ameztegui A, Paquette A, Shipley B, Heym M, Messier C, Gravel D. 2016 . Shade tolerance and the functional trait: demography relationship in temperate and boreal forests. Functional Ecology, 31: 821-830. DOI:10.1111/1365-2435.12804

Examples

```
data(demograph)
head(demograph)
```

descstat	<i>A descriptive statistics table for continuous variables</i>
----------	--

Description

It creates a descriptive statistics table for all continuous variables in a dataframe excluding missing values.

Usage

```
descstat(data = data, decnum = NA)
```

Arguments

data	a dataframe containing variables as columns
decnum	the number of decimals to be used in the output

Details

As always, please check the output after applying the function.

Value

This function wraps descriptive statistics into a summarize table having the following descriptive statistics: sample size, minimum, maximum, mean, median, SD, and coefficient of variation (

Author(s)

Christian Salas-Eljatib and Tomas Cayul.

Examples

```
#creating a fake dataframe
set.seed(1234)
df <- as.data.frame(cbind(variable1=rnorm(5, 0), variable2=rnorm(5, 2)))
## adding one missing value
df[3,1] <- NA
df
#using the function
descstat(data=df)
descstat(data=df,decnum=1)
descstat(df,2)
```

election	<i>Contains information of florida datasets of alr4 library .</i>
----------	---

Description

County-by-county vote for president in Florida in 2000 for Bush, Gore and Buchanan.

Usage

```
data(election)
```

Format

Contains 3 variables, as follows:

gore Vote for Gore.

bush Vote for Bush.

buchaman Vote for Buchaman.

Source

The data were provided from alr4 library of R.

References

Weisberg S. 2014. Applied Linear Regression. 4th edition. Hoboken NJ: Wiley

Examples

```
data(election)
head(election)
```

eucaleaf	<i>Leaf measurements for Eucalyptus nitens trees in Tasmania, Australia.</i>
----------	--

Description

The length, width, and area of Eucalyptus nitens leaves were measured.

Usage

```
data(eucaleaf)
```

Format

Contains leaf-level variables, as follows:

time Early or Late

tree an identifier for a given sample tree

shoot shoot description

l length of the leaf, in mm

w width of the leaf, in mm

la leaf area, in cm²

Source

Although the original source of the measurements is the Dissertation of Dr. Candy (1999), the data file used here was courtesy of Prof. Timothy Gregoire at Yale University (New Haven, CT, USA). Furthermore, these data were used by Gregoire and Salas (2008).

References

- Candy SG. (1999). Predictive models for integrated pest management of the leaf beetle *Chrysophtharta bimaculata* in *Eucalyptus nitens* in Tasmania. Doctoral dissertation, University of Tasmania, Hobart, Australia.
- Gregoire TG, and Salas C. 2009. Ratio estimation with measurement error in the auxiliary variate. *Biometrics* 65(2):590-598

Examples

```
data(eucaleaf)
head(eucaleaf)
```

fertilizaexpe	<i>Contains information of.</i>
---------------	---------------------------------

Description

Data contains.

Usage

```
data(fertilizaexpe)
```

Format

Contains 3 variables, as follows:

years Year at capture.

length Length at capture (mm).

Source

The data were provided.

References

not yet

Examples

```
data(fertilizaexpe)
head(fertilizaexpe)
```

fishgrowth

Contains information of wblake datasets of alr4 library .

Description

Data on samples of small mouth bass collected in West Bearskin Lake, Minnesota, in 1991. The file wblake includes only fish of ages 8 or younger.

Usage

```
data(fishgrowth)
```

Format

Contains 3 variables, as follows:

years Year at capture.

length Length at capture (mm).

scale radius of a key scale (mm).

Source

The data were provided from alr4 library of R.

References

Weisberg S. 2014. Applied Linear Regression. 4th edition. Hoboken NJ: Wiley

Examples

```
data(fishgrowth)
head(fishgrowth)
```

floraChile

Contains information of .

Description

Dataset contains E

Usage

```
data(floraChile)
```


Format

Contains xx variables, as follows:

family .
genus .
scientific.name .
author .
origin .
life.form .
lat... .

Source

The data were provided from Jan Bannister researcher at Institute National Forest in Chile (INFOR).

References

not yet

Examples

```
data(floraChile)
head(floraChile)
```

forestHawaiian

Contains information of plants Hawaiians.

Description

Dataset contains 43590 observations,

Usage

```
data(forestHawaiian)
```

Format

Contains 18 variables, as follows:

island Island name.
plot.id Unique numeric identifier for each plot.
study Brief name of study.
plot.area Plot area in m2.
longitude Longitude of plot in decimal degrees; WGS84 coordinate system.
latitude Latitude of plot in decimal degrees; WGS84 coordinate system.
year Year in which plot data was collected.
census Numeric identifier for each census.
tree.id Unique numeric identifier for each individual.

scientific.name Genus and species of each individual following TPL v. 1.1.

family Family of each individual following TPL v. 1.1.

angiosperm Binary variable (1 = yes, 0 = no) indicating whether an individual is classified as an angiosperm following APG III.

monocot Binary variable (1 = yes, 0 = no) indicating whether an individual is classified as a monocot following APG III.

native.status Categorical variable ('native', 'alien', 'uncertain') indicating alien status of each individual following Wagner et al. (2005).

cultivated.status Binary variable (1 = yes, 0 = no, NA = not applicable) indicating if species is cultivated following PIER.

abundance Number of individuals (all = 1).

abundance.ha Abundance of each individual on a per hectare basis.

dbh Diameter at 1.3 m (DBH in cm) for each individual; NA indicates that size was not measured, but was classified by size class.

Source

The data were provided from DRYAD repository.

References

- Craven D, Knight T, Barton K, Bialic-Murphy L, Cordell S, Giardina C, Gillespie T, Ostertag R, Sack L, Chase J. 2018. OpenNahele: the open Hawaiian forest plot database. Biodiversity Data Journal 6: e28406. <https://doi.org/10.3897/BDJ.6.e28406>

Examples

```
data(forestHawaiian)
head(forestHawaiian)
```

hawaii

Metrosideros polymorpha in Hawaii

Description

Data containing 64 observations at the current annual growth rate (defined as dbh increment within one calendar year) of each tree was measured from 1986 to 1988 using band dendrometers.

Usage

```
data(hawaii)
```

Format

The data frame contains eight variables as follows:

tree.code Tree number identification.

dbh Initial stem diameter, in cm.

htot Total height in m.

crown.area Crown outline area, in square meters.

comp.ind Competition index (Basal area of nearest neighbor divided by square of distance to nearest neighbor plus basal area of second nearest neighbor divided by square of distance to second nearest neighbor).

cai.1986 Current annual stem diameter increment during 1986, in mm.

cai.1987 Current annual stem diameter increment during 1987, in mm.

cai.1988 Current annual stem diameter increment during 1988, in mm.

Source

The data were provided from .

References

Gerrish G, Mueller-Dombois D. 1999. Measuring stem growth rates for determining age and cohort analysis of a tropical evergreen tree. *Pacific Science*. 53(4): 418-429.

Examples

```
data(hawaii)
head(hawaii)
```

idahohd

Contains information of data ufc of alr4 library.

Description

These data are forest inventory measures from the Upper Flat Creek stand of the University of Idaho Experimental Forest, dated 1991.

Usage

```
data(idahohd)
```

Format

Contains 5 variables, as follows:

plot plot number.

tree tree within plot.

species a factor with levels DF = Douglas-fir, GF = Grand fir, SF = Subalpine fir, WL = Western larch, WC = Western red cedar, WP = White pine.

dbh Diameter 137 cm perpendicular to the bole, mm.

height Height of the tree, in decimeters.

Source

The data were provided from alr4 library of R.

References

Weisberg S. 2014. Applied Linear Regression. 4th edition. New York: Wiley.

Examples

```
data(idahohd)
head(idahohd)
```

idahohd2

Contains information of data ufc of alr4 library.

Description

These data are forest inventory measures from the Upper Flat Creek stand of the University of Idaho Experimental Forest, dated 1991.

Usage

```
data(idahohd2)
```

Format

Contains 5 variables, as follows:

parce plot number.

narb tree within plot.

spp a factor with levels DF = Douglas-fir, GF = Grand fir, SF = Subalpine fir, WL = Western larch, WC = Western red cedar, WP = White pine.

d Diameter 137 cm perpendicular to the bole, cm.

h Height of the tree, in meters.

Source

The data were provided from alr4 library of R.

References

Weisberg S. 2014. Applied Linear Regression. 4th edition. New York: Wiley.

Examples

```
data(idahohd2)
head(idahohd2)
```

invasivesRCI	<i>Contains regeneration microsite data in Robinson Crusoe Island forest</i>
--------------	--

Description

These are plot-level measurement data from the forests in the Robinson Crusoe Island, located in the Pacific Ocean, 667 km from mainland Chile. Measurements correspond to transects of 100 to 240 meters

Usage

```
data(invasivesRCI)
```

Format

Base de datos que contiene 14 columnas y 51 filas:

plot.id Plot identification code

Gap.type Canopy gap classified as invaded=Inv, non invaded= Nat or treated =Treat(considering the estimated cover of invasive plant species)

Forest.zone Location of the plot (gap, border or forest)

Ferns Estimated cover of fern species (in 2x2 plots)

Moss.liverw Estimated cover of mosses and liverworts (in 2x2 plots)

Cwd Estimated cover of coarse woody debris > 3 cm diameter (in 2x2 plots)

Litter Estimated cover of litter (in 2x2 plots)

Ms Estimated cover of mineral soil (in 2x2 plots)

Rock Estimated cover of rocks (in 2x2 plots)

Est.age Age category for the canopy gap associated to each plot

Source

The data are provided courtesy of Prof. Rodrigo Vargas-Gaete at Universidad de La Frontera (Temuco, Chile).

References

Vargas R, Salas C, Gartner SM, Vidal OJ, Bannister JR, Pauchard A. (2018). Invasive plant species thresholds in the forests of Robinson Crusoe Island, Chile. *Plant Ecology & Diversity*. 11(2): 205-215.

l1euque	<i>Contains specie composition data L1euque forest</i>
---------	--

Description

—

Usage

l1euque

Format

Base de datos que contiene 72 columnas y 26 filas:

stand —

plot.num —

Aus.chi —

May.dis —

Not.obl —

Pru.and —

Source

The data are provided courtesy of Prof. Rodrigo Vargas-Gaete at Universidad de La Frontera (Temuco, Chile).

References

Vargas R, Salas C, Penneckamp D, Neira Z, Diez C, Vargas R. 2020. Estructura y regeneracion de bosques de Prumnopitys andina en los Andes del sur de Chile. Gayana botanica (to appear)

orange	<i>Diameter growth of orange trees</i>
--------	--

Description

The orange data frame has 35 rows and four columns of records of the growth of orange trees.

Usage

data(orange)

Format

An object of class `c("nfnGroupedData", "nfGroupedData", "groupedData", "data.frame")` containing the following columns:

tree.id an ordered factor indicating the tree on which the measurement is made. The ordering is according to increasing maximum diameter.

time a numeric vector giving the numbers of days since 1968/12/31

girth a numeric vector of trunk perimeter (mm). This is probably a circumference at breast height, a standard measurement in forestry.

dbh a numeric vector of diameter at breast height (mm).

Source

Draper NR and Smith H. (1998), Applied Regression Analysis (3rd ed), Wiley (exercise 24.N).

Examples

```
#data(orange)

#coplot(dbh ~ time | tree.id, data = orange, show.given = FALSE)
#m1 <- nls(dbh ~ SSlogis(age, Asym, xmid, scal),
#          data = orange, subset = tree.id == 3)
#plot(dbh ~ time, data = orange, subset = tree.id == 3,
#      xlab = "Time (number of days since 1968/12/31)",
#      ylab = "Tree diameter (mm)", las = 1,
#      main = "Diameter growth data of orange trees and fitted model (tree.id 3 only)")
#time <- seq(0, 1600, length.out = 101)
#lines(time, predict(m1, list(time = time)))
```

pinaster

Contains tree-level variables for Pinus pinaster in the Baixo-Mino, Galicia, Spain.

Description

These are tree-level measurement data of sample trees in the Baixo-Mino region in Galicia, Spain.

Usage

```
data(pinaster)
```

Format

Contains tree-level variables, as follows:

stand stand number from the sample tree was selected.

si Site index of the stand.

tree.no tree number.

dbh Diameter at breast height, in cm.

htot Total height, in m.

d4 Upper-stem diameter at 4 m, in cm.

vol.wb Tree gross volume, in m³ with bark.

vol.wob Tree gross volume, in m³ without bark.

Source

The data are provided courtesy of Dr. Christian Salas at the Universidad Mayor (Santiago, Chile).

References

- Salas C, Nieto L, Irisarri A. 2005. Modelos de volumen para *Pinus pinaster* Ait. en la comarca del Baixo Mino, Galicia, Espana. *Quebracho* 12: 11-22.

Examples

```
data(pinaster)
head(pinaster)
```

pinusContorta	<i>Contains information of invasive of pinus contorta.</i>
---------------	--

Description

These are tree-level measurement data, with x,y location of each tree, from *Pinus contorta* invasion in Patagonian steppe in Coyhaique in southern Chile, measured in 2011. The plots area was 10000 square meters.

Usage

```
data(pinusContorta)
```

Format

Contains 8 variables, as follows:

plot.id Plot sample identificativo number.

tree.id Tree identifier number in each plot. Same indiv/id for multi-stem trees.

y.coord coordinate of S latitude.

x.coord coordinate of W longitude.

substrate Ground cover in which each pine grow. Bare soil, *Festuca pallescens*, *Baccharis magellanica*, *Oreopulus glacialis*, *Acaena integerrima* and others species.

drc Diameter at the root collar on trees, in mm.

h Height of trees, in cm.

canopy.area Projection of canopy area of each tree, in square meters.

Source

The data are provided courtesy of Drs. Anibal Pauchard and Rafael Garcia at the Laboratorio de Invasiones Biologicas, Universidad de Concepcion (Chile).

References

Pauchard A, A Escudero, RA Garcia, M de la Cruz, B Langdon, LA Cavieres & J Esquivel. 2016. Pine invasions in treeless environments: dispersal overruns microsite heterogeneity. *Ecology and Evolution*. 6(2): 447 - 459

Examples

```
data(pinusContorta)
head(pinusContorta)
```

pinusSpp	<i>Contains information of invasive of pinus spp.</i>
----------	---

Description

These are tree-level measurement data from Pinus spp invasion in Araucaria-Nothofagus forests in the Malalcahuello National Reserve in La Araucania region in southern Chile, measured in 2012. The plots area was 100 square meters

Usage

```
data(pinusSpp)
```

Format

Contains 8 variables, as follows:

plot.id Plot sample indentificator number.

size.plot Plot size in square meters.

Lat.s Decimal coordinate of S latitude.

Long.w Decimal coordinate of W longitude.

indv.id Tree identifier number in each plot. Same indv/id for multi-stem trees.

stem.id Stem identifier number in each plot.

sp Specie.

dbh Diameter at breast height on trees, in cm.

h Height of trees, in m.

canopy.h Height at which the live canopy begins, in m.

canopy.lenght Lenght of live canopy, in m.

obs Extra information.

Source

The data are provided courtesy of Drs. Anibal Pauchard and Rafael Garcia at the Laboratorio de Invasiones Biologicas, Universidad de Concepcion (Chile).

References

Cobar-Carranza A, Garcia R, Pauchard A & Pena E. 2014. Effect of Pinus contorta invasion on forest fuel properties and its potential implications on the fire regime of Araucaria araucana and Nothofagus antarctica forests. Biological Invasions. 16(11): 2273 - 2291

Examples

```
data(pinusSpp)
head(pinusSpp)
```

plantsHawaiian	<i>Contains information of plants Hawaiians.</i>
----------------	--

Description

Dataset contains 58 observations,

Usage

```
data(plantsHawaiian)
```

Format

Contains 6 variables, as follows:

scientific.name Genus and epithet of each individual following The Plant List v. 1.1 (2013).

family Family of each individual following The Plant List v. 1.1 (2013).

native.status Categorical variable ('native', 'alien', 'uncertain') indicating alien status of each individual following Wagner et al. (2005).

n Number of individuals used to estimate maximum plant size.

d.95 Maximum plant size, estimated as D950.1 (King et al. 2006).

d.max.3 Maximum plant size, estimated as Dmax3 (King et al. 2006).

Source

The data were provided from DRYAD repository.

References

- Craven D, Knight T, Barton K, Bialic-Murphy L, Cordell S, Giardina C, Gillespie T, Ostertag R, Sack L, Chase J. 2018. OpenNahele: the open Hawaiian forest plot database. Biodiversity Data Journal 6: e28406. <https://doi.org/10.3897/BDJ.6.e28406>

Examples

```
data(plantsHawaiian)
head(plantsHawaiian)
```

plotLleuque	<i>Contains plot level data Lleuque forest</i>
-------------	--

Description

—

Usage

```
plotLleuque
```

Format

Base de datos que contiene 15 columnas y 26 filas:

stand —
plot.num —
elevation —
aspect —
slope —
stump —
cattle.faeces —
dist.to.river —
fruits.ha —
browse —

Source

The data are provided courtesy of Prof. Rodrigo Vargas-Gaete at Universidad de La Frontera (Temuco, Chile).

References

Vargas R, Salas C, Penneckamp D, Neira Z, Diez C, Vargas R. Estructura y regeneracion de bosques de Prumnopitys andina en los Andes del sur de Chile (in Press). Gayana botanica

presenceIce	<i>Presence or absence of sea ice from logbook records of annual cruises</i>
-------------	--

Description

Data containing 52717 observations , about presence of sea ice from logbook records of annual cruises to the B-C-B in an unbroken record between years 1850 to 1910.

Usage

```
data(presenceIce)
```

Format

The data frame contains nine variables as follows:

ship.id The code number for ships.

move.type Type of movement of ships. 0 indicates a sail-powered vessel and 1 indicates an auxiliary-powered vessel.

year Year of registry.

month Month of registry.

day Day of registry.

lat.dec Decimal latitude.

long.dec Decimal longitude.

e.w East or west of the Prime Meridian.

ice.cov Sea Ice Observed. 0 no see (Not registered) and 1 presence sea ice (Registered).

Source

The data were provided from Sea Ice Group at the Geophysical Institute.

References

Mahoney A, Bockstoe J, Botkin D, Eicken H, Nisbet R. 2011. Sea-Ice Distribution in the Bering and Chukchi Seas: Information from Historical Whaleships' Logbooks and Journals ARCTIC. 64(4): 465-477.

Examples

```
data(presenceIce)
head(presenceIce)
```

pspLlancahue

Tree locations for a sample plot in the Llancahue experimental forest, near Valdivia, Chile.

Description

The Cartesian position, species, and diameter of trees within a plot were measured. The sample plot is rectangular of 130 m by 70 m. Further details can be #’ reviewed in the reference.

Usage

```
data(pspLlancahue)
```

Format

Contains tree-level variables, as follows:

tree.code Tree identifier

spp.name species abbreviation as follows: AP= Aextocicon punctatum, EC=Eucryphia cordifolia, GA=Gevuina avellana, LP= Laureliopsis philippiana, LS= Laurelia sempervirens, ND=Nothofagus dombeyi, Ot=Other, PS=Podocarpus saligna

dbh diameter at breast height, in cm

x.coord Cartesian position in the X-axis, in m

y.coord Cartesian position in the Y-axis, in m

Source

The data are provided courtesy of Prof. Daniel Soto at Universidad de Aysen (Coyhaique, Chile).

References

- Soto DP, Salas C, Donoso PJ, Uteau D. 2010. Heterogeneidad estructural y espacial de un bosque mixto dominado por Nothofagus dombeyi despues de un disturbio parcial. Revista Chilena de Historia Natural 83(3): 335-347.

Examples

```
data(pspLlancahue)
head(pspLlancahue)
```

ptaeda

Height growth of Pinus taeda (Loblolly pine) trees

Description

The Loblolly data frame has 84 rows and tree columns of records of the tree height growth of Loblolly pine trees. This dataframe is a slight modification to the original dataframe "Loblolly" from the datasets R package.

Usage

```
data(ptaeda)
```

Format

An object of class c("nfnGroupedData", "nfGroupedData", "groupedData", "data.frame") containing the following columns:

seed.id an ordered factor indicating the seed source for the tree. The ordering is according to increasing maximum height.

age a numeric vector of tree ages, in yr.

height a numeric vector of tree heights, in m.

Source

Pinheiro, J. C. and Bates, D. M. (2000) Mixed-effects Models in S and S-PLUS. Springer.

Examples

```
#data(ptaeda)
#plot(height ~ age, data = ptaeda, subset = seed.id == 329,
#      xlab = "Tree age (yr)", las = 1,
#      ylab = "Tree height (m)",
#      main = "Loblolly data and fitted curve (seed.id 329 only)")
#fm1 <- nls(height ~ SSasym(age, Asym, R0, lrc),
#           data = ptaeda, subset = seed.id == 329)
#age <- seq(0, 30, length.out = 101)
#lines(age, predict(fm1, list(age = age)))
```

radiatapl

Data from a Pinus radiata plantation near Capitan Pastene, Region de La Araucania, Chile.

Description

Tree-level information collected within sample plots in a forestry plantation of *Pinus radiata* near Capitan Pastene, Southern Chile. Sample plots size is 150 square meters.

Usage

```
data(radiatapl)
```

Format

The data frame contains four variables as follows:

plot Plot number identification.

tree Tree number identification.

dbh Diameter at breast height in cm.

heigth Total height in m.

Source

The data are provided courtesy of Dr. Christian Salas at the Universidad Mayor (Santiago, Chile).

Examples

```
data(radiatapl)
head(radiatapl)
```

regeneraNothofagus	<i>Contains information about regeneration of nothofagus.</i>
--------------------	---

Description

Dataset contains 442 observations.

Usage

```
data(regenerationNothofagus)
```

Source

The data were provided from DRYAD repository

References

- Soto D, Puettmann K. 2018. Topsoil removal through scarification improves natural regeneration in high-graded Nothofagus old-growth forests. *Journal Applied Ecology*. 55: 967- 976. <https://doi.org/10.1111/1365-2664.12989>

Examples

```
data(regeneraNothofagus)
head(regeneraNothofagus)
```

simula	<i>Simulated yield of forestry plantations of exotic species in Chile.</i>
--------	--

Description

The yield tables of simulated plantations of *Pinus radiata*, *Eucalyptus globulus*, and *Eucalyptus nitens* are obtained from the Radiata simulator and EucaSim simulator built in Chile. Several stand-level variables are part of the output.

Usage

```
data(simula)
```

Format

Contains stand-level variables, as follows:

species "P. radiata" is *Pinus radiata*, "E. globulus" is *Eucalyptus globulus*, and "E. nitens" is *Eucalyptus nitens*.

age plantation age, in years

tph Tree density, in trees/ha

gha Basal area, in m²/ha

toph Dominant height, in m

qmd quadratic mean diameter, in cm
totvol gross stand volume, in m³/ha
viu.10 stand volume below an utilizacion index of 10 cm, in m³/ha
viu.15 stand volume below an utilizacion index of 15 cm, in m³/ha
viu.20 stand volume below an utilizacion index of 20 cm, in m³/ha
viu.25 stand volume below an utilizacion index of 25 cm, in m³/ha

Source

The data were obtained as outputs for plantations without management in Chile. The academic version of the simulator was used. You can visit mnssimulacion.cl

Examples

```
data(simula)
```

sludge	<i>Contains information of sludge in a different cities, with a value of concentration zinc.</i>
--------	--

Description

Dataset contains 36 observations

Usage

```
data(sludge)
```

Format

Contains 4 variables, as follows:

city Name of city.
rate Concentration rate of sludge.
zinc Value of concentration (in ppm).
trt.comb Combination between city and rate factors.

Source

The data were provided from.

References

not yet

Examples

```
data(sludge)
head(sludge)
```

snaspeChile	<i>Data with information on the National System of State Protected Wild Areas (SNASPE)</i>
-------------	--

Description

Dataset contains the protected wild areas of Chile that are part of the National System of State Protected Wild Areas (SNASPE).

Usage

```
data(snaspeChile)
```

Format

Contains of variables, as follows:

g.id Id.

unit Name of the protected area.

category Category of the unit. It can be either a National Park, a National Reserve or a Natural Monument.

commune Name of the commune (the smallest Chilean territorial division) where the unit is located.

province Province where the comunne is located (one territorial division level above the commune).

region Region where the province is located (one territorial division level above the province and the biggest Chilean territorial division).

perim.km Perimeter of the unit in kilometers.

area.ha Area of the unit in hectares.

area.m2 Area of the unit in square meters.

Source

These data is freely available at <http://ide.minagri.gob.cl/geoweb/2019/11/21/medio-ambiente/>

References

The SNASPE has been created and is currently managed by the National Forest Corporation (CONAF). More information and documentation can be found at <https://www.conaf.cl/parques-nacionales/parques-de-chile/>

Examples

```
data(snaspeChile)
head(snaspeChile)
```

spatAustria

Tree locations for different plots of the spruce Norway

Description

The Cartesian position, species, year, ID tree, and diameter of trees within a plot were measured.

Usage

```
data(spatAustria)
```

Format

Contains tree-level variables, as follows:

plot.code Plot identifier

tree.code Tree identifier

spp.name species abbreviation as follows: PCAB=Picea abies, FASY=Fagus sylvatica, QCPE=Quercus petraea, PNSY=Pinus Sylvestris, LADC=Larix decidua

x.coord Cartesian position in the X-axis, in m

y.coord Cartesian position in the Y-axis, in m

year Measurement year

dbh diameter at breast height, in cm

References

- Kindermann G, Kristofel F, Neumann M, Rossler G, Ledermann T & Schueler. 2018. 109 years of forest growth measurements from individual Norway spruce trees. Sci. Data 5:180077 DOI: 10.1038/sdata.2018.77.

Examples

```
# data(spatAustria)
#head(spatAustria)
#graphics for tree by plots
#pos<-data(spatAustria)
#par(mar=c(4,4,0,0))
#bord<-data.frame(x=c(min(pos$x.coord),max(pos$x.coord),min(pos$x.coord),max(pos$x.coord)),
#                  y=c(min(pos$y.coord),min(pos$y.coord),max(pos$y.coord),min(pos$y.coord))),
#                  plot.code=pos$plot.code)
#plot(bord,type="n", xlab="x [m]", ylab="y [m]", asp=1, bty='n')
#points(pos$x.coord,pos$y.coord,col=pos$plot.code,cex=0.5)
```

speciesList

*Names and other information of plant species (mainly trees)***Description**

This data set provides names (taxonomy), of plant species. Includes codes and name abbreviations used by the Biometrics group at the Center for Ecosystem Modeling (CEM), Universidad Mayor, Santiago, Chile.

Usage

```
data(speciesList)
```

Format

A data frame with 63 observations on 31 variables

nesp Unique correlative specie number

spp.ci.name Species scientific name

spp.ci.abb Species scientific name abbreviation

common.name Species common name. No blank spaces, no special characters

common.nameBlank Species common name. With blank spaces, no special characters

esp Species code: code given by CEM Biometrics to identify species for different processing routines

common.nameLatex Species common name formatted for Latex

nTaxon Unique number of the taxon (i.e., species)

kingdom Taxonomic rank Kingdom. In this dataset, all species belong to the Kingdom Plantae

division Taxonomic rank division or phylum within the Kingdom

class Taxonomic rank Class within the Kingdom

order Taxonomic rank Order within the Class

family Taxonomic rank Family within the Order

spp.ci.full Full scientific name including author

genus Taxonomic rank Genus within the Family

epithet Specific epithet

sppAuthor Species author

subSpp Subspecies: one of two or more populations of a species varying from one another by morphological characteristics

subSppAuthor Subspecies author

varSpp Species variety or varietas

varSppAuthor Variety author

formSpp Form or forma

formSppAuthor Form author

commonNamesList List of common names per species, separated by commas

synonyms Synonyms of the scientific name by which the species has been or is known

borCountries Border countries given the species distribution range

habit Habit. The general appearance, growth form, or architecture e.g., tree, shrub, grass

lifeCycle Life cycle

statusOri Status according to the species origin: Native or Endemic

regDist Distribution range of the species, within Chile administrative regions

elevRange Distribution range of the species, in terms of elevation. Meters above sea level

notes Notes

Source

Data provided from https://investigacion.conaf.cl/repositorio/documento/ficha-repositorio.php?redo_id=1080946

References

Proyecto 004/2016 Lista sistematica actualizada de la flora vascular nativa de Chile, origen y distribucion geografica. VII Concurso del Fondo de Investigacion del Bosque Nativo

sppAbundance	<i>Contains information of abundance of plant species in the central-southern Andes of Chile.</i>
--------------	---

Description

Abundance of plant species [50 total] (at parcel scale [100 m²]) in burned Araucaria-Nothofagus forests with different levels of fire severity (ie, unburned = unburned, low_sev = low severity, mid_sev = medium severity , high_sev = high severity) in the China Muerta National Reserve, Andes of central-southern Chile.

Usage

```
data(sppAbundance)
```

Format

Contains 6 variables, as follows:

sp.name name of specie.

sp.code.name code of specie

unburned Abundance of plants unburned.

low.sev Abundance of plants for low severity of burned.

mid.sev Abundance of plants for middle severity of burned.

high.sev Abundance of plants for high severity of burned.

Source

The data are provided courtesy of Dr. Christian Salas at the Universidad Mayor (Santiago, Chile) and Dr. Andres Fuentes at the Universidad of La Frontera (Temuco, Chile)

References

- Fuentes A, Salas C, Gonzalez M, Urrutia J, Arroyo P, Santibanez P. 2020. Initial response of understorey vegetation and tree regeneration to a mixed-severity fire in old-growth Araucaria-Nothofagus forests. *Applied Vegetation Science*. 23:210-222.

Examples

```
data(sppAbundance)
head(sppAbundance)
```

sppTraits	<i>Contains information of functional traits of species.</i>
-----------	--

Description

Dataset contains 48 observations about functional trait values for each of the 48 study species, including 23 evergreen and 25 deciduous.

Usage

```
data(sppTraits)
```

Format

Contains 17 variables, as follows:

sp Abbreviated name of specie.
sp.name Name of specie.
family Family of specie.
genus Genus of specie.
phyl Type of phylogeny.
l.hab Type of leaf habit.
leaf Type of leaf.
lt .
lma Leaf mass area.
amass Photosynthetic capacity per unit leaf mass.
n.mass Leaf N content per unit mass.
p.mass Leaf P content per unit mass.
l.lifespan Leaf life span.
l.length Leaf length.
sem Seed mass.
wd Wood density.
max.h Maximum height.

Source

The data were provided from DRYAD repository

References

- Ameztegui A, Paquette A, Shipley B, Heym M, Messier C, Gravel D. 2016 . Shade tolerance and the functional trait: demography relationship in temperate and boreal forests. *Functional Ecology*, 31: 821-830. DOI:10.1111/1365-2435.12804

Examples

```
data(sppTraits)
head(sppTraits)
```

trailCameraTrap	<i>Contains information of Camera trap data on medium to large terrestrial mammals collected at 54 camera stations in Ruaha National Park, southern Tanzania.</i>
-----------------	---

Description

Dataset contains 14604 observations and sampling was carried out for two months during the dry season of 2013 and two months during the wet season of 2014. Each camera station is associated with a randomly placed camera and a trail-based camera, with the aim of comparing communities resulting from the two camera trap placement strategies.

Usage

```
data(trailCameraTrap)
```

Format

Contains 6 variables, as follows:

reference Number of observation of datasets.

placement Type of "placement" placed in each station (random or trail).

season Season where were made the samplings.

station Station where were collected the data.

specie Name of specie medium to large terrestrial mammals.

date.time The date and time of each photographic event is also given.

Source

The data are provided courtesy of Dr. Jeremy Cusack at the Universidad Mayor (Santiago, Chile)

References

- Cusack J, Dickman A, Rowcliffe M, Carbone C, Macdonald D, Coulson T. 2016 . Random versus game trail-based camera trap placement strategy for monitoring terrestrial mammal communities. *PLoS ONE* 10(5): e0126373.

Examples

```
data(trailCameraTrap)
head(trailCameraTrap)
```

traits

Contains information of functional traits of vegetative species in Chile.

Description

Functional traits of vegetative species in Chile. Includes column with codified name (esp)

Usage

```
data(traits)
```

Format

esp species codified name

shadeTolerance indicates the species tolerance to shade. There are three main classes: shade-tolerant, shade-midtolerant and shade-intolerant

spp.ci.name Scientific name.

spp.ci.abb. .

wd wood density in kg per cubic meters.

Source

Some of the information on shade tolerance can be found in Soto et al 2010. Heterogeneidad estructural y espacial de un bosque mixto dominado por *Nothofagus dombeyi* despues de un disturbio parcial. Revista Chilena de Historia Natural 83: 335-347, 2010

treegrowth

Contains information of.

Description

Data contains.

Usage

```
data(treegrowth)
```

Format

Contains 7 variables, as follows:

tree.id .

forest .

habitat .

tree.code .

age .

dbh .

htot .

Source

The data were provided.

References

not yet

Examples

```
data(treegrowth)
head(treegrowth)
```

treevol	<i>Diameter, height and volume for Black Cherry Trees</i>
---------	---

Description

This data set provides measurements of the diameter, height and volume of timber in 31 felled black cherry trees. This dataframe is a slight modification to the original dataframe "trees" from the datasets R package.

Usage

```
data(treevol)
```

Format

A data frame with 31 observations on three variables

dbh diameter at breast height, in cm

htot total height, in m

volume volume of timber, in cubic meters

Source

Ryan, T. A., Joiner, B. L. and Ryan, B. F. (1976) The Minitab Student Handbook. Duxbury Press.

Examples

```
#pairs(treevol, panel = panel.smooth, main = "treevol dataframe")
#plot(volume ~ dbh, data = treevol, log = "xy")
#coplot(log(volume) ~ log(dbh) | htot, data = treevol,
#       panel = panel.smooth)
#summary(m1 <- lm(log(volume) ~ log(dbh), data = treevol))
#summary(m2 <- update(m1, ~ . + log(htot), data = treevol))
#anova(m1,m2)
```

treevollaurel	<i>Contains tree-level variables for laurel (laurelia sempervirens) in the Rucamanque experimental forest, near Temuco, Chile.</i>
---------------	--

Description

These are tree-level measurement data of sample trees in the Rucamanque experimental forest, near Temuco, in the Araucania region in south-central Chile, measured in 1999. The data are the same as in the dataframe "treevolruca", but only having observations for the species laurel (*laurelia sempervirens*).

Usage

```
data(treevollaurel)
```

Format

Contains tree-level variables, as follows:

tree.no Tree id

spp Species

dbh Diameter at breast height, in cm

htot Total height (m)

d6 Upper-stem diameter at 6 m, in cm

vtot Tree gross volume, in m³ with bark.

Source

The data are provided courtesy of Dr. Christian Salas at the Universidad Mayor (Santiago, Chile).

References

Salas C. 2002. Ajuste y validacion de ecuaciones de volumen para un relicto del bosque de Roble-Laurel-Lingue [Fitness and validation of volume equations for a relict forest of Roble-Laurel-Lingue]. Bosque 23(2): 81-92.

Examples

```
data(treevollaurel)
head(treevollaurel)
```

treevollingue	<i>Contains tree-level variables for lingue (Persea lingue) in the Rucamanque experimental forest, near Temuco, Chile.</i>
---------------	--

Description

These are tree-level measurement data of sample trees in the Rucamanque experimental forest, near Temuco, in the Araucania region in south-central Chile, measured in 1999. The data are the same as in the dataframe "treevolruca", but only having observations for the species lingue (Persea lingue).

Usage

```
data(treevollingue)
```

Format

Contains tree-level variables, as follows:

tree.no Tree id

spp Species

dbh Diameter at breast height, in cm

htot Total height (m)

d6 Upper-stem diameter at 6 m, in cm

vtot Tree gross volume, in m³ with bark.

Source

The data are provided courtesy of Dr. Christian Salas at the Universidad Mayor (Santiago, Chile).

References

Salas C. 2002. Ajuste y validacion de ecuaciones de volumen para un relicto del bosque de Roble-Laurel-Lingue [Fitness and validation of volume equations for a relict forest of Roble-Laurel-Lingue]. Bosque 23(2): 81-92.

Examples

```
data(treevollingue)
head(treevollingue)
```

treevololivillo	<i>Contains tree-level variables for olivillo (Aextocicon punctatum) in the Rucamanque experimental forest, near Temuco, Chile.</i>
-----------------	---

Description

These are tree-level measurement data of sample trees in the Rucamanque experimental forest, near Temuco, in the Araucania region in south-central Chile, measured in 1999. The data are the same as in the dataframe "treevolruca", but only having observations for the species olivillo (*Aextocicon punctatum*).

Usage

```
data(treevololivillo)
```

Format

Contains tree-level variables, as follows:

tree.no Tree id

spp Species

dbh Diameter at breast height, in cm

htot Total height (m)

d6 Upper-stem diameter at 6 m, in cm

vtot Tree gross volume, in m³ with bark.

Source

The data are provided courtesy of Dr. Christian Salas at the Universidad Mayor (Santiago, Chile).

References

Salas C. 2002. Ajuste y validacion de ecuaciones de volumen para un relicto del bosque de Roble-Laurel-Lingue [Fitness and validation of volume equations for a relict forest of Roble-Laurel-Lingue]. Bosque 23(2): 81-92.

Examples

```
data(treevololivillo)
head(treevololivillo)
```

treevolroble	<i>Contains tree-level variables for roble (Nothofagus obliqua) in the Rucamanque experimental forest, near Temuco, Chile.</i>
--------------	--

Description

These are tree-level measurement data of sample trees in the Rucamanque experimental forest, near Temuco, in the Araucania region in south-central Chile, measured in 1999. The data are the same as in the dataframe "treevolruca", but only having observations for the species roble (Nothofagus obliqua).

Usage

```
data(treevolroble)
```

Format

Contains tree-level variables, as follows:

tree.no Tree id

spp Species

dbh Diameter at breast height, in cm

htot Total height (m)

d6 Upper-stem diameter at 6 m, in cm

vtot Tree gross volume, in m³ with bark.

Source

The data are provided courtesy of Dr. Christian Salas at the Universidad Mayor (Santiago, Chile).

References

Salas C. 2002. Ajuste y validacion de ecuaciones de volumen para un relicto del bosque de Roble-Laurel-Lingue [Fitness and validation of volume equations for a relict forest of Roble-Laurel-Lingue]. Bosque 23(2): 81-92.

Examples

```
data(treevolroble)
head(treevolroble)
```

treevolruca	<i>Contains tree-level variables of several species in the Rucamanque experimental forest, near Temuco, Chile.</i>
-------------	--

Description

These are tree-level measurement data of sample trees in the Rucamanque experimental forest, near Temuco, in the Araucania region in south-central Chile, measured in 1999. The following species are part of the data: laurel (*laurelia sempervirens*), lingue (*Persea lingue*), olivillo (*Aextocicon punctatum*), roble (*Nothofagus obliqua*), tepa (*Laurelissia philippiana*), y tineo (*Weinmannia trichosperma*).

Usage

```
data(treevolruca)
```

Format

Contains tree-level variables, as follows:

tree.no Tree id.

spp Species.

dbh Diameter at breast height, in cm.

htot Total height, in m.

d6 Upper-stem diameter at 6 m, in cm.

vtot Tree gross volume, in m³ with bark.

Source

The data are provided courtesy of Dr. Christian Salas of the Universidad Mayor (Santiago, Chile). The data were used in the study of Salas (2002).

References

Salas C. 2002. Ajuste y validacion de ecuaciones de volumen para un relicto del bosque de Roble-Laurel-Lingue [Fitness and validation of volume equations for a relict forest of Roble-Laurel-Lingue]. *Bosque* 23(2): 81-92.

Examples

```
data(treevolruca)
head(treevolruca)
```

treevoltepa	<i>Contains tree-level variables for tepa (Laureliosis philippiana) in the Rucamanque experimental forest, near Temuco, Chile.</i>
-------------	--

Description

These are tree-level measurement data of sample trees in the Rucamanque experimental forest, near Temuco, in the Araucania region in south-central Chile, measured in 1999. The data are the same as in the dataframe "treevolruca", but only having observations for the species tepa (*Laureliosis philippiana*).

Usage

```
data(treevoltepa)
```

Format

Contains tree-level variables, as follows:

tree.no Tree id

spp Species

dbh Diameter at breast height, in cm

htot Total height (m)

d6 Upper-stem diameter at 6 m, in cm

vtot Tree gross volume, in m³ with bark.

Source

The data are provided courtesy of Dr. Christian Salas at the Universidad Mayor (Santiago, Chile).

References

Salas C. 2002. Ajuste y validacion de ecuaciones de volumen para un relicto del bosque de Roble-Laurel-Lingue [Fitness and validation of volume equations for a relict forest of Roble-Laurel-Lingue]. Bosque 23(2): 81-92.

Examples

```
data(treevoltepa)
head(treevoltepa)
```

treevoltineo	<i>Contains tree-level variables for tineo (Weinmannia trichosperma) in the Rucamanque experimental forest, near Temuco, Chile.</i>
--------------	---

Description

These are tree-level measurement data of sample trees in the Rucamanque experimental forest, near Temuco, in the Araucania region in south-central Chile, measured in 1999. The data are the same as in the dataframe "treevolruca", but only having observations for the species tineo (*Weinmannia trichosperma*).

Usage

```
data(treevoltineo)
```

Format

Contains tree-level variables, as follows:

tree.no Tree id

spp Species

dbh Diameter at breast height, in cm

htot Total height (m)

d6 Upper-stem diameter at 6 m, in cm

vtot Tree gross volume, in m³ with bark.

Source

The data are provided courtesy of Dr. Christian Salas at the Universidad Mayor (Santiago, Chile).

References

Salas C. 2002. Ajuste y validacion de ecuaciones de volumen para un relicto del bosque de Roble-Laurel-Lingue [Fitness and validation of volume equations for a relict forest of Roble-Laurel-Lingue]. Bosque 23(2): 81-92.

Examples

```
data(treevoltineo)
head(treevoltineo)
```

treevolulmo	<i>Contains tree-level variables for ulmo (Eucryphia cordifolia) in the Rucamanque experimental forest, near Temuco, Chile.</i>
-------------	---

Description

These are tree-level measurement data of sample trees in the Rucamanque experimental forest, near Temuco, in the Araucania region in south-central Chile, measured in 1999. The data are the same as in the dataframe "treevolruca", but only having observations for the species ulmo (*Eucryphia cordifolia*).

Usage

```
data(treevolulmo)
```

Format

Contains tree-level variables, as follows:

tree.no Tree id
spp Species
dbh Diameter at breast height, in cm
htot Total height (m)
d6 Upper-stem diameter at 6 m, in cm
vtot Tree gross volume, in m³ with bark.

Source

The data are provided courtesy of Dr. Christian Salas at the Universidad Mayor (Santiago, Chile).

References

Salas C. 2002. Ajuste y validacion de ecuaciones de volumen para un relicto del bosque de Roble-Laurel-Lingue [Fitness and validation of volume equations for a relict forest of Roble-Laurel-Lingue]. Bosque 23(2): 81-92.

Examples

```
data(treevolulmo)
head(treevolulmo)
```


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