

Package: getCRUCLdata (via r-universe)

July 31, 2026

Type Package

Title 'CRU' 'CL' v. 2.0 Climatology Client

Version 2.0.0

Description Provides functions that automate downloading and importing University of East Anglia Climate Research Unit ('CRU') 'CL' v. 2.0 climatology data, facilitates the calculation of minimum temperature and maximum temperature and formats the data into a data.table object or a 'terra' 'SpatRaster' object. 'CRU' 'CL' v. 2.0 data are a gridded climatology of 1961-1990 monthly means released in 2002 and cover all land areas (excluding Antarctica) at 10 arc minutes (0.1666667 degree) resolution. For more information see the description of the data provided by the University of East Anglia Climate Research Unit, <<https://crudata.uea.ac.uk/cru/data/hrg/tmc/readme.txt>>.

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URL <https://codeberg.org/ropensci/getCRUCLdata>,
<https://docs.ropensci.org/getCRUCLdata/>

BugReports <https://codeberg.org/ropensci/getCRUCLdata/issues>

Depends R (>= 4.1.0)

Imports brio, cli, data.table, fs, httr2, rlang, terra

Suggests knitr, R.utils, rmarkdown, roxygen2, roxyglobals, spelling, testthat, withr

VignetteBuilder knitr

ByteCompile TRUE

Config/Needs/build moodymudskipper/devtag

Config/roxygen2/version 8.0.0

Config/roxyglobals/filename globals.R

Config/roxyglobals/unique FALSE

Config/roxylintr list(linters = roxylintr::tidy)

Config/testthat/edition 3

```
Config/testthat/parallel true
Encoding UTF-8
Language en-US
Roxygen list(markdown = TRUE, roclets = c("`collate", "`namespace",
  "`rd", "`roxygenals::global_roclet", "`roxygenals::roxygenals",
  "`devtag::dev_roclet"))
X-schema.org-applicationCategory Tools
X-schema.org-isPartOf https://ropensci.org
X-schema.org-keywords anglia-cru, climate-data, cru-cl2, temperature,
  rainfall, elevation, data-access, wind, relative-humidity,
  solar-radiation, diurnal-temperature, frost
Config/pak/sysreqs
  cmake libgdal-dev gdal-bin libgeos-dev make libuv1-dev libssl-dev libproj-dev libsqlite3-dev
Repository https://ropensci.r-universe.dev
Date/Publication 2026-05-20 10:24:29 UTC
RemoteUrl https://github.com/ropensci/getCRUCLdata
RemoteRef main
RemoteSha bf3787580a66293b881f2caf59675c4758696daa
```

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.add_derived_dt	Add derived temperature values for TMAX and TMIN
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Description

Add derived temperature values for TMAX and TMIN

Usage

```
.add_derived_dt(dt, vars)
```

Arguments

- dt A data.table object of CRU data containing tmp and dtr in order to calculate tmin and tmax.
- vars A named logical vector.

Value

A data.table with tmin and or tmax cols.

<code>.drop_source_vars_dt</code>	<i>Remove source vars if not requested</i>
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Description

If tmin or tmax are requested but tmp or dtr are not requested, this function drops the unrequested vars.

Usage

```
.drop_source_vars_dt(dt, vars)
```

Arguments

dt	A data.table object of CRU data containing tmp and dtr in order to calculate tmin and tmax.
vars	A named logical vector.

Value

A data.table with the unrequested var columns removed.

<code>read_cru_dt</code>	<i>Create a data.table of CRU CL v. 2.0 climatology elements</i>
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Description

Automates importing CRU CL v.2.0 climatology data and from either the CRU server or local files and creates a **data.table** of the data. If requested, minimum and maximum temperature may also be calculated as described in the data [readme.txt](#) file and returned.

Usage

```
read_cru_dt(  
  pre = FALSE,  
  pre_cv = FALSE,  
  rd0 = FALSE,  
  tmp = FALSE,  
  dtr = FALSE,  
  reh = FALSE,  
  tmn = FALSE,  
  tmx = FALSE,
```

```

    sunp = FALSE,
    frs = FALSE,
    wnd = FALSE,
    elv = FALSE,
    x = NULL
  )

```

Arguments

pre	Read precipitation (millimetres/month) and return it, TRUE. Defaults to FALSE.
pre_cv	Read cv of precipitation (percent) and return it, TRUE. Defaults to FALSE. NOTE. Setting this to TRUE will always results in pre being set to TRUE and returned as well.
rd0	Read wet-days (number days with >0.1 millimetres rain per month) and return it, TRUE. Defaults to FALSE.
tmp	Reads temperature (degrees Celsius) and return it, TRUE. Defaults to FALSE.
dtr	Read mean diurnal temperature range (degrees Celsius) and return it, TRUE. Defaults to FALSE.
reh	Read relative humidity and return it, TRUE. Defaults to FALSE.
tmn	Calculate minimum temperature values (degrees Celsius) and return it, TRUE. Defaults to FALSE.
tmx	Calculate maximum temperature (degrees Celsius) and return it, TRUE. Defaults to FALSE.
sunp	Read sunshine, percent of maximum possible (percent of day length) and return it, TRUE. Defaults to FALSE.
frs	Read ground-frost records (number of days with ground- frost per month) and return it, TRUE. Defaults to FALSE.
wnd	Read 10 m wind speed (metres/second) and return it, TRUE. Defaults to FALSE.
elv	Read elevation (converted to metres) and return it, TRUE. Defaults to FALSE.
x	An optional local file path where CRU CL v.2.0 .dat.gz files are located. If this is empty, the requested data will automatically be downloaded from the server.

Value

A [data.table::data.table](#) object of CRU CL v. 2.0 climatology elements.

Nomenclature and Units

pre precipitation (millimetres/month)
cv cv of precipitation (percent)
rd0 wet-days (number days with >0.1 millimetres rain per month)
tmp mean temperature (degrees Celsius)
dtr mean diurnal temperature range (degrees Celsius)
reh relative humidity (percent)

sunp sunshine (percent of maximum possible (percent of day length))

frs ground-frost (number of days with ground-frost per month)

wnd 10 metre wind speed (metres/second)

elv elevation (automatically converted to metres from kilometres)

For more information see the description of the data provided by CRU, <https://crudata.uea.ac.uk/cru/data/hrg/tmc/readme.txt>

Author(s)

Adam H. Sparks, <adamhsparks@gmail.com>

Source

pre https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_pre.dat.gz

rd0 https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_rd0.dat.gz

tmp https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_tmp.dat.gz

dtr https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_dtr.dat.gz

reh https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_reh.dat.gz

sunp https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_sunp.dat.gz

frs https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_frs.dat.gz

wnd https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_wnd.dat.gz, areas originally including Antarctica are removed.

elv https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_elv.dat.gz, values are converted from kilometres to metres.

This package crops all spatial outputs to an extent of ymin = -60, ymax = 85, xmin = -180, xmax = 180.

References

New, Mark, et al. "A high-resolution data set of surface climate over global land areas." Climate research 21.1 (2002): 1-25. https://crudata.uea.ac.uk/cru/data/hrg/tmc/new_et_al_10minute_climate_CR.pdf

See Also

[read_cru_rast](#).

Examples

```
# Create a data frame of temperature from locally available files in the
# tempdir() directory.
library(fs)

f <- path(path_temp(), "grid_10min_tmp.dat.gz")

download.file(
```

```

url = "https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_tmp.dat.gz",
destfile = f
)

cru_tmp <- read_cru_dt(tmp = TRUE, x = f)

cru_tmp

# or downloading directly from the CRU server

cru_tmp <- read_cru_dt(tmp = TRUE)

cru_tmp

```

read_cru_rast	<i>Create a terra SpatRaster object of CRU CL v. 2.0 climatology elements</i>
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Description

Create a [terra::SpatRaster](#) object or list of objects from CRU CL 2.0 data.

Usage

```

read_cru_rast(
  pre = FALSE,
  pre_cv = FALSE,
  rd0 = FALSE,
  tmp = FALSE,
  dtr = FALSE,
  reh = FALSE,
  tmn = FALSE,
  tmx = FALSE,
  sunp = FALSE,
  frs = FALSE,
  wnd = FALSE,
  elv = FALSE,
  x = NULL
)

```

Arguments

pre	Read precipitation (millimetres/month) and return it, TRUE. Defaults to FALSE.
pre_cv	Read cv of precipitation (percent) and return it, TRUE. Defaults to FALSE. NOTE. Setting this to TRUE will always results in pre being set to TRUE and returned as well.

rd0	Read wet-days (number days with >0.1 millimetres rain per month) and return it, TRUE. Defaults to FALSE.
tmp	Reads temperature (degrees Celsius) and return it, TRUE. Defaults to FALSE.
dtr	Read mean diurnal temperature range (degrees Celsius) and return it, TRUE. Defaults to FALSE.
reh	Read relative humidity and return it, TRUE. Defaults to FALSE.
tmn	Calculate minimum temperature values (degrees Celsius) and return it, TRUE. Defaults to FALSE.
tmx	Calculate maximum temperature (degrees Celsius) and return it, TRUE. Defaults to FALSE.
sunp	Read sunshine, percent of maximum possible (percent of day length) and return it, TRUE. Defaults to FALSE.
frs	Read ground-frost records (number of days with ground-frost per month) and return it, TRUE. Defaults to FALSE.
wnd	Read 10 m wind speed (metres/second) and return it, TRUE. Defaults to FALSE.
elv	Read elevation (converted to metres) and return it, TRUE. Defaults to FALSE.
x	An optional local file path where CRU CL v.2.0 .dat.gz files are located. If this is empty, the requested data will automatically be downloaded from the server.

Value

A `terra::SpatRaster` object.

Nomenclature and Units

pre precipitation (millimetres/month)
cv cv of precipitation (percent)
rd0 wet-days (number days with >0.1 millimetres rain per month)
tmp mean temperature (degrees Celsius)
dtr mean diurnal temperature range (degrees Celsius)
reh relative humidity (percent)
sunp sunshine (percent of maximum possible (percent of day length))
frs ground-frost (number of days with ground-frost per month)
wnd 10 metre wind speed (metres/second)
elv elevation (automatically converted to metres from kilometres)

For more information see the description of the data provided by CRU, <https://crudata.uea.ac.uk/cru/data/hrg/tmc/readme.txt>

Author(s)

Adam H. Sparks, <adamhsparks@gmail.com>

Source

pre https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_pre.dat.gz
rd0 https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_rd0.dat.gz
tmp https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_tmp.dat.gz
dtr https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_dtr.dat.gz
reh https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_reh.dat.gz
sunp https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_sunp.dat.gz
frs https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_frs.dat.gz
wnd https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_wnd.dat.gz, areas originally including Antarctica are removed.
elv https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_elv.dat.gz, values are converted from kilometres to metres.

This package crops all spatial outputs to an extent of ymin = -60, ymax = 85, xmin = -180, xmax = 180.

References

New, Mark, et al. "A high-resolution data set of surface climate over global land areas." Climate research 21.1 (2002): 1-25. https://crudata.uea.ac.uk/cru/data/hrg/tmc/new_et_al_10minute_climate_CR.pdf

See Also

[read_cru_rast](#).

Examples

```

# Create a data frame of temperature from locally available files in the
# tempdir() directory.
library(fs)

f <- path(path_temp(), "grid_10min_tmp.dat.gz")

download.file(
  url = "https://crudata.uea.ac.uk/cru/data/hrg/tmc/grid_10min_tmp.dat.gz",
  destfile = f
)

cru_tmp <- read_cru_rast(tmp = TRUE, x = f)

cru_tmp

# or downloading directly from the CRU server

cru_tmp <- read_cru_rast(tmp = TRUE)

cru_tmp

```


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