

Package ‘snotelr’

September 16, 2023

Title Calculate and Visualize 'SNOTEL' Snow Data and Seasonality

Version 1.2

Description Programmatic interface to the 'SNOTEL' snow data (<https://www.nrcs.usda.gov/wps/portal/wcc/home>). Provides easy downloads of snow data into your R work space or a local directory. Additional post-processing routines to extract snow season indexes are provided.

URL <https://github.com/bluegreen-labs/snotelr>

BugReports <https://github.com/bluegreen-labs/snotelr/issues>

Depends R (>= 4.2)

Imports shiny, httr, utils, stats, rvest, dplyr, memoise

Suggests knitr, rmarkdown, covr, testthat, shinydashboard, leaflet, plotly, DT

VignetteBuilder knitr

License AGPL-3

ByteCompile true

RoxygenNote 7.2.3

Encoding UTF-8

NeedsCompilation no

Author Koen Hufkens [aut, cre] (<https://orcid.org/0000-0002-5070-8109>), BlueGreen Labs [cph, fnd]

Maintainer Koen Hufkens <koen.hufkens@gmail.com>

Repository CRAN

Date/Publication 2023-09-16 09:50:01 UTC

R topics documented:

snotel_download	2
snotel_explorer	2
snotel_info	3
snotel_metric	3
snotel_phenology	4

Index**5**

snotel_download	<i>Downloads snotel data based upon a subset of the sno-tel info as provided by snotel_info()</i>
-----------------	---

Description

Downloads snotel data based upon a subset of the sno-tel info as provided by snotel_info()

Usage

```
snotel_download(site_id, network = "sntl", path = tempdir(), internal = FALSE)
```

Arguments

site_id	subset of the sites listed by snotel_info()
network	network list to query (default = sntl, for SNOTEL)
path	where to save downloaded files (default = tempdir())
internal	return data to workspace, TRUE or FALSE (default = FALSE)

Examples

```
## Not run:
# download data for SNOTEL site 429 and 1287, returning data to
# the R workspace
df <- snotel_download(site_id = c(429,1287), internal = TRUE)

# list a few first rows
head(df)

## End(Not run)
```

snotel_explorer	<i>Start the SNOTEL shiny interface</i>
-----------------	---

Description

Start the SNOTEL shiny interface

Usage

```
snotel_explorer()
```

Examples

```
# snotel_explorer()
```

snotel_info	<i>Downloads a SNOTEL site listing for further processing</i>
-------------	---

Description

Downloads a SNOTEL site listing for further processing

Usage

```
snotel_info(network = "sntl", path)
```

Arguments

network	network list to query (default = sntl, for SNOTEL)
path	path where to save the snotel information (site list)

Examples

```
## Not run:  
# download the meta-data from the SNOTEL server  
meta_data <- snotel_info()  
  
# show a couple of lines  
head(meta_data)  
  
## End(Not run)
```

snotel_metric	<i>Convert snotel data to metric from imperial units</i>
---------------	--

Description

Data is read from either a snotel data frame and returned as such.

Usage

```
snotel_metric(df)
```

Arguments

df	snotel data frame
----	-------------------

Details

By default the conversion is done upon download. This function might serve some a purpose in processing of data grabbed straight from the server rather than through the package.

This is an internal function only. Hence, no examples are given.

Value

a data frame with imperial values converted to metric ones

snotel_phenology	<i>Calculates snow phenology from the snow water equivalent data</i>
------------------	--

Description

First snow melt, first continuous snow melt, first snow accumulation and continuous snow accumulation are reported.

Usage

```
snotel_phenology(df, threshold = 0)
```

Arguments

df	a snotel data file or data frame
threshold	threshold for mapping continuous snow cover

Details

Be sure to execute this code on individual sites when loading a combined tidy data frame containing data for multiple sites.

Examples

```
## Not run:  
# download one of the longer time series  
df <- snotel_download(site_id = 670, internal = TRUE)  
  
# calculate the snow phenology  
phenology <- snotel_phenology(df)  
  
# show a couple of lines  
head(phenology)  
  
## End(Not run)
```

Index

snotel_download, 2
snotel_explorer, 2
snotel_info, 3
snotel_metric, 3
snotel_phenology, 4