

Package ‘RivRetrieve’

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Title Retrieve Global River Gauge Data

Version 0.2.0

Description Provides access to global river gauge data from a variety of national-level river agencies. The package interfaces with the national-level agency websites to provide access to river gauge locations, river discharge, and river stage. Currently, the package is available for the following countries: Argentina, Australia, Brazil, Canada, Chile, France, Germany, Japan, South Africa, the United Kingdom, and the United States.

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URL <https://github.com/Ryan-Riggs/RivRetrieve>

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Depends R (>= 4.1)

Imports BBmisc, dataRetrieval, data.table, devtools, dplyr, http,
jsonlite, lubridate, readr, rlang, rlist, RSelenium, rvest,
stringr, tibble, tidyhydat, tidyr

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

VignetteBuilder knitr

Config/testthat/edition 3

NeedsCompilation no

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RivRetrieve-package	<i>RivRetrieve: Retrieve global river and stage data</i>
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Description

Provides access to global river gauge data from a variety of national-level river agencies. The package interfaces with the national-level agency websites to provide access to river gauge locations, river discharge, and river stage. Currently, the package is available for the following countries: Argentina, Australia, Brazil, Canada, Chile, France, Germany, Japan, South Africa, the United Kingdom, and the United States.

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See Also

- Useful links:
- <https://github.com/Ryan-Riggs/RivRetrieve>

Examples

```
## Not run:  
print("TODO")  
  
## End(Not run)
```

argentina	<i>argentina</i>
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Description

Retrieve Argentine gauge.

Usage

```
argentina(  
  site,  
  variable = "discharge",  
  start_date = NULL,  
  end_date = NULL,  
  sites = FALSE,  
  ...  
)
```

Arguments

site	Argentine gauge number.
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
## Not run:
df <- argentina("29", variable = "discharge")
plot(df$Date, df$Q, type = "l")

## End(Not run)
```

australia

australia

Description

Retrieve Australian gauge data

Usage

```
australia(
  site,
  variable = "discharge",
  start_date = NULL,
  end_date = NULL,
  sites = FALSE,
  ...
)
```

Arguments

site	Australian gauge number
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
## Not run:
sites <- australia(sites = TRUE)
df <- australia(sites$site[1], "stage")
plot(df$Date, df$H, type='l')

## End(Not run)
```

brazil	<i>brazil</i>
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Description

Retrieve Brazilian gauge data

Usage

```
brazil(  
  site,  
  variable = "discharge",  
  start_date = NULL,  
  end_date = NULL,  
  sites = FALSE,  
  ...  
)
```

Arguments

site	Brazilian gauge number
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
## Not run:  
df <- brazil('12650000')  
plot(df$Date, df$Q, type='l')  
  
## End(Not run)
```

canada	<i>canada</i>
--------	---------------

Description

Retrieve Canadian gauge data

Usage

```
canada(  
  site,  
  variable = "discharge",  
  start_date = NULL,  
  end_date = NULL,  
  sites = FALSE,  
  ...  
)
```

Arguments

site	Canadian gauge number
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
## Not run:  
#Note this no longer relies on tidyhydat but rather retrieves data from an API.  
df = canada("01AD003")  
plot(df$Date, df$Q, type='l')  
  
## End(Not run)
```

chile	<i>chile</i>
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Description

Retrieve Chilean gauge data

Usage

```
chile(  
  site,  
  variable = "discharge",  
  start_date = NULL,  
  end_date = NULL,  
  sites = FALSE,  
  ...  
)
```

Arguments

site	Chilean gauge number
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
## Not run:  
df <- chile('01201005')  
plot(df$Date, df$Q, type='l')  
  
## End(Not run)
```

france	<i>france</i>
--------	---------------

Description

Retrieve French gauge data

Usage

```
france(  
  site,  
  variable = "discharge",  
  start_date = NULL,  
  end_date = NULL,  
  sites = FALSE,  
  ...  
)
```

Arguments

site	French gauge number
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
## Not run:  
df <- france('K027401001')  
plot(df$Date, df$Q, type='l')  
  
## End(Not run)
```

germany	<i>germany</i>
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Description

Retrieve German gauge data.

Usage

```
germany(  
  site,  
  variable = "discharge",  
  start_date = NULL,  
  end_date = NULL,  
  sites = FALSE,  
  ...  
)
```

Arguments

site	German gauge id.
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
## Not run:  
# Note the German API currently only provides access to stage data from the previous 30 days.  
site <- "593647aa-9fea-43ec-a7d6-6476a76ae868"  
stage <- germany(site, variable = "stage")  
plot(stage$Date, stage$H, type = "l")  
  
## End(Not run)
```

<code>get_timeseries_id</code>	<i>Retrieve the timeseries ID</i>
--------------------------------	-----------------------------------

Description

`get_timeseries_id` retrieves the timeseries ID that can be used to obtain values for a parameter type, station and timeseries combination.

Usage

```
get_timeseries_id(parameter_type, station_number, ts_name)
```

Arguments

<code>parameter_type</code>	The parameter of interest (e.g. Water Course Discharge).
<code>station_number</code>	The AWRC station number.
<code>ts_name</code>	The BoM time series name (e.g. DMQaQc.Merged.DailyMean.24HR).

Value

Returns a tibble with columns `station_name`, `station_no`, `station_id`, `ts_id`, `ts_name`, `parameter_type_id`, `parametertype_name`.

<code>ireland</code>	<i>ireland</i>
----------------------	----------------

Description

Retrieve Ireland gauge data

Usage

```
ireland(site, variable, start_date = NULL, end_date = NULL, sites = FALSE, ...)
```

Arguments

<code>site</code>	Ireland gauge number
<code>variable</code>	Character. Either stage or discharge.
<code>start_date</code>	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
<code>end_date</code>	Character. End date with format YYYY-MM-DD. Default is the current date.
<code>sites</code>	Logical. If TRUE, returns a list of measurement sites.
<code>...</code>	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
## Not run:
df <- ireland('25014',"discharge")
plot(df$Date, df$Q)

## End(Not run)
```

japan

*japan***Description**

Retrieve Japanese gauge data

Usage

```
japan(
  site,
  variable = "discharge",
  start_date = NULL,
  end_date = NULL,
  sites = FALSE,
  ...
)
```

Arguments

site	Japanese gauge number
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Value

list

plot.rr_tbl

*Plot values***Description**

Plot values

Usage

```
## S3 method for class 'rr_tbl'
plot(x, ...)
```

Arguments

x Tibble.

... Additional arguments. None implemented.

Value

ggplot2

quebec

*quebec***Description**

Retrieve Quebec gauge data

Usage

```
quebec(site, variable, start_date = NULL, end_date = NULL, sites = FALSE, ...)
```

Arguments

site quebec gauge number

variable Character. Either stage or discharge.

start_date Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.

end_date Character. End date with format YYYY-MM-DD. Default is the current date.

sites Logical. If TRUE, returns a list of measurement sites.

... Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
site <- "074903"
x <- quebec(site, variable = "stage")
plot(x$Date, x$H, type='l')
```

scotland	<i>scotland</i>
----------	-----------------

Description

Retrieve Scotland gauge data

Usage

```
scotland(
  site,
  variable = "discharge",
  start_date = NULL,
  end_date = NULL,
  sites = FALSE,
  ...
)
```

Arguments

site	Scotland gauge number
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
## Not run:
df <- scotland("14969", "discharge")
plot(df$Date, df$Q, type='l')

## End(Not run)
```

southAfrica

*southAfrica***Description**

Retrieve South African gauge data

Usage

```
southAfrica(
  site,
  variable = "stage",
  start_date = NULL,
  end_date = NULL,
  sites = FALSE,
  ...
)
```

Arguments

site	South African gauge number
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
## Not run:
site <- "X3H023"
start_date <- as.Date("2000-01-01")
end_date <- as.Date("2010-01-01")
x <- southAfrica(site, "stage", start_date, end_date)

## End(Not run)
```

sweden	<i>sweden</i>
--------	---------------

Description

Retrieve Swedish gauge data

Usage

```
sweden(site, variable, start_date = NULL, end_date = NULL, sites = FALSE, ...)
```

Arguments

site	sweden gauge number
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
df = sweden(site='2000',variable='discharge')
plot(df$Date,df$Q,type='l')
```

uk	<i>uk</i>
----	-----------

Description

Retrieve UK gauge data

Usage

```
uk(site, variable, start_date = NULL, end_date = NULL, sites = FALSE, ...)
```


Arguments

site	UK gauge number
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
site <- "http://environment.data.gov.uk/hydrology/id/stations/3c5cba29-2321-4289-a1fd-c355e135f4cb"
x <- uk(site, variable = "discharge")
plot(x$Date, x$Q, type='l')
```

usa

usa

Description

Retrieve USA gauge data

Usage

```
usa(
  site,
  variable = "stage",
  start_date = NULL,
  end_date = NULL,
  sites = FALSE,
  ...
)
```

Arguments

site	USA gauge number
variable	Character. Either stage or discharge.
start_date	Character. Optional start date with format YYYY-MM-DD. Default is 1900-01-01.
end_date	Character. End date with format YYYY-MM-DD. Default is the current date.
sites	Logical. If TRUE, returns a list of measurement sites.
...	Additional arguments. None implemented.

Value

data frame of discharge time-series

Examples

```
## Not run:  
df <- usa("02471078", variable="discharge")  
plot(df$Date, df$Q, type='l')  
  
## End(Not run)
```

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