

Package ‘rnpn’

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Title Interface to the National 'Phenology' Network 'API'

Description Programmatic interface to the Web Service methods provided by the National 'Phenology' Network (<<https://usanpn.org/>>), which includes data on various life history events that occur at specific times.

Version 0.1.0

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LazyData yes

Imports stats, httr (>= 1.1.0), jsonlite (>= 0.9.19), plyr, data.table (>= 1.9.6)

Suggests ggplot2, testthat, covr

RoxygenNote 5.0.1

NeedsCompilation no

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R topics documented:

rnpn-package	2
lookup_names	2
npn_allobssp	3
npn_indsatstations	4
npn_indspatstations	4
npn_obsspbyday	5
npn_species	6
npn_stationsbystate	7
npn_stationswithspp	8
taxonlist	8
Index	9

rnpn-package	<i>Interface to the National Phenology Network API</i>
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Description

Interface to the National Phenology Network API

lookup_names	<i>Look up species IDs by taxonomic or common name</i>
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Description

Look up species IDs by taxonomic or common name

Usage

```
lookup_names(name, type = "genus", fuzzy = FALSE)
```

Arguments

name	A scientific or common name
type	One of common_name, genus, epithet, or genus_epithet
fuzzy	One of TRUE or FALSE, if FALSE, uses fuzzy search via agrep, if FALSE, uses grep

Examples

```
## Not run:
lookup_names(name='Pinus', type='genus')
lookup_names(name='pine', type='common_name')
lookup_names(name='bird', type='common_name', fuzzy=TRUE)

## End(Not run)
```

nbn_allobssp	<i>Get all observations for a particular species or set of species</i>
--------------	--

Description

Get all observations for a particular species or set of species

Usage

```
nbn_allobssp(speciesid, startdate = NULL, enddate = NULL, ...)
```

Arguments

speciesid	species id numbers, from 1 to infinity, potentially, use e.g., c(52, 53, etc.) if more than one species desired (numeric)
startdate	start date of data period desired, see format in examples (character)
enddate	end date of data period desired, see format in examples (character)
...	Curl options passed on to GET

Value

A list with slots for taxa, stations, phenophase (metadata) and data

Examples

```
## Not run:  
# Lookup names  
lookup_names(name='Pinus', type='genus')  
  
# Get data on one species  
nbn_allobssp(speciesid = 52, startdate='2008-01-01', enddate='2011-12-31')  
  
# Get data on two species  
nbn_allobssp(speciesid = c(52, 53), startdate='2008-01-01', enddate='2011-12-31')  
  
# Get data on one species, convert to a single data.frame  
nbn_allobssp(speciesid = 52, startdate='2008-01-01', enddate='2011-12-31')  
  
## End(Not run)
```

nbn_indsatstations *Get all observations for a particular species or set of species.*

Description

Get all observations for a particular species or set of species.

Usage

```
nbn_indsatstations(stationid, ...)
```

Arguments

stationid	Required. Use e.g., c(4881, 4882, etc.) if more than one species desired (numeric)
...	Curl options passed on to GET

Value

Observations for each species by date in a data.frame

Examples

```
## Not run:
nbn_indsatstations(stationid = c(507, 523))

## End(Not run)
```

nbn_indspatstations *Get all observations for a particular species or set of species.*

Description

Get all observations for a particular species or set of species.

Usage

```
nbn_indspatstations(speciesid, stationid, year = NULL, ...)
```

Arguments

speciesid	Required. Species id numbers, from 1 to infinity, potentially, use e.g., c(52, 53, etc.) if more than one species desired (numeric)
stationid	Required. Use e.g., c(4881, 4882, etc.) if more than one species desired (numeric)
year	Year (numeric).
...	Curl options passed on to GET

Value

Observations for each species by date.

Examples

```
## Not run:
nnp_indspatstations(speciesid = 35, stationid = c(60, 259), year = 2009)
nnp_indspatstations(35, c(60, 259), 2009)

## End(Not run)
```

nnp_obsbyday	<i>Get observations by day for a particular species or set of species.</i>
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Description

Get observations by day for a particular species or set of species.

Usage

```
nnp_obsbyday(speciesid = NULL, startdate = NULL, enddate = NULL, ...)
```

Arguments

speciesid	Required. Species id numbers, from 1 to infinity, potentially, use e.g., c(52, 53, etc.) if more than one species desired (numeric)
startdate	start date of data period desired, see format in examples (character)
enddate	end date of data period desired, see format in examples (character)
...	Curl options passed on to GET

Value

Number of observations by day, in a list

Examples

```
## Not run:
out <- nnp_obsbyday(speciesid=357, startdate='2010-04-01', enddate='2012-01-05')
head(out[[1]])

# Lookup names
temp <- lookup_names(name='bird', type='common')
comnames <- temp[temp$species_id %in% c(357, 359, 1108), 'common_name']

out <- nnp_obsbyday(speciesid=c(357, 359, 1108), startdate='2010-04-01', enddate='2013-09-31')
names(out) <- comnames
library("plyr")
df <- ldply(out)
```

```
df$date <- as.Date(df$date)

library('ggplot2')
ggplot(df, aes(date, count)) +
  geom_line() +
  theme_grey(base_size=20) +
  facet_grid(.id ~.)

## End(Not run)
```

npn_species

Get scientific names.

Description

Get scientific names.

Usage

```
npn_species(...)

npn_species_itis(ids, ...)

npn_species_id(ids, ...)

npn_species_state(state, kingdom = NULL, ...)

npn_species_sci(genus, species, ...)

npn_species_comm(name, ...)

npn_species_search(network = NULL, year = NULL, groups = NULL,
  stationid = NULL, ...)
```

Arguments

...	Curl options passed on to GET
ids	One or more ITIS taxonomic serial numbers (tsn), or NPN ID numbers.
state	Required. A US state, two-letter abbreviation.
kingdom	Optional. A taxonomic kingdom.
genus	A genus name
species	A specific epithet, the second part of a full species name
name	A common name
network	The primary key of the network for which to filter species.
year	Year of obseration
groups	One or more primary keys associated with a species type.
stationid	Station ID. Use e.g., c(4881, 4882, etc.) if more than one species desired

Value

data.frame of species and their IDs

Examples

```
## Not run:
head( npn_species() )
nnp_species_itis(ids = 27806)
nnp_species_itis(ids = c(27806,36616))
nnp_species_id(ids = 3)
nnp_species_state(state = "HI")
nnp_species_state(state = "HI", kingdom = "Plantae")
nnp_species_sci(genus = "Clintonia", species = "borealis")
nnp_species_comm(name = "thickleaved wild strawberry")
nnp_species_comm(name = c("thickleaved wild strawberry","bluebead"))
nnp_species_search(groups = 3, year = 2010)
nnp_species_search(groups = c(3,9), year = 2010)

library('httr')
nnp_species_itis(ids = 27806, config=verbose())

## End(Not run)
```

nnp_stationsbystate *Get number of stations by state.*

Description

Get number of stations by state.

Usage

```
nnp_stationsbystate(...)
```

Arguments

... Curl options passed on to [GET](#)

Value

Number of stations by state as a data.frame.

Examples

```
## Not run:
head( npn_stationsbystate() )

## End(Not run)
```

`npn_stationswithsp` *Get a list of all stations which have an individual whom is a member of a set of species.*

Description

Get a list of all stations which have an individual whom is a member of a set of species.

Usage

```
npn_stationswithsp(speciesid, ...)
```

Arguments

`speciesid` Required. Species id numbers, from 1 to infinity, potentially, use e.g., `c(52, 53, etc.)` if more than one species desired (numeric)

`...` Curl options passed on to [GET](#)

Value

Stations' latitude and longitude, names, and ids.

Examples

```
## Not run:
npn_stationswithsp(speciesid = c(52,53,54))
npn_stationswithsp(speciesid = 53)

## End(Not run)
```

`taxonlist` *Lookup-table for IDs of species and common names*

Description

Lookup-table for IDs of species and common names

Format

A data.frame with 897 rows and 6 columns

species_id species identifiers

common_name common (vernacular) name

genus genus name

epithet epithet name

itis_tsn ITIS taxonomic serial number (tsn)

genus_epithet genus name + epithet name

Index

*Topic **data**

taxonlist, 8

*Topic **package**

rnpn-package, 2

GET, 3–8

lookup_names, 2

nnpn_allobssp, 3

nnpn_indsatstations, 4

nnpn_indspatstations, 4

nnpn_obsspbyday, 5

nnpn_species, 6

nnpn_species_comm (nnpn_species), 6

nnpn_species_id (nnpn_species), 6

nnpn_species_itis (nnpn_species), 6

nnpn_species_sci (nnpn_species), 6

nnpn_species_search (nnpn_species), 6

nnpn_species_state (nnpn_species), 6

nnpn_stationsbystate, 7

nnpn_stationswithsp, 8

rnpn (rnpn-package), 2

rnpn-package, 2

taxonlist, 8