Package ‘rnnpn’

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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.

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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

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rnnp-package

*Interface to the National Phenology Network API*

**Description**

Interface to the National Phenology Network API

**lookup_names**

*Look up species IDs by taxonomic or common name*

**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**

```r
## 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)
npn_allobssp

Get all observations for a particular species or set of species

Description

Get all observations for a particular species or set of species

Usage

npn_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
npn_allobssp(speciesid = 52, startdate='2008-01-01', enddate='2011-12-31')

# Get data on two species
npn_allobssp(speciesid = c(52, 53), startdate='2008-01-01', enddate='2011-12-31')

# Get data on one species, convert to a single data.frame
npn_allobssp(speciesid = 52, startdate='2008-01-01', enddate='2011-12-31')

## End(Not run)
npn_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

npn_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:
npn_indsatstations(stationid = c(507, 523))

## End(Not run)

npn_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

npn_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

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

---

## npn_obsspbyday

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

### Description

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

### Usage

```r
npn_obsspbyday(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

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

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

out <- npn_obsspbyday(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

n pn_species(...)

n pn_species_itis(ids, ...)

n pn_species_id(ids, ...)

n pn_species_state(state, kingdom = NULL, ...)

n pn_species_sci(genus, species, ...)

n pn_species_comm(name, ...)

n pn_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 observation

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

```r
## Not run:
head( npn_species() )
npn_species_itis(ids = 27806)
npn_species_itis(ids = c(27806,36616))
npn_species_id(ids = 3)
npn_species_state(state = "HI")
npn_species_state(state = "HI", kingdom = "Plantae")
npn_species_sci(genus = "Clintonia", species = "borealis")
npn_species_comm(name = "thickleaved wild strawberry")
npn_species_comm(name = c("thickleaved wild strawberry","bluebead"))
npn_species_search(groups = 3, year = 2010)
npn_species_search(groups = c(3,3), year = 2010)

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

## End(Not run)
```

---

npn_stationsbystate  

*Get number of stations by state.*

Description

Get number of stations by state.

Usage

```r
npn_stationsbystate(...)"
```

Arguments

```r
...  
Curl options passed on to GET
```

Value

Number of stations by state as a data.frame.

Examples

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

## End(Not run)
```
npn_stationswithspp  
*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
```r
npn_stationswithspp(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
```r
# Not run:
npn_stationswithspp(speciesid = c(52,53,54))
npn_stationswithspp(speciesid = 53)
```

### 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
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