Description

A data.frame containing list of California counties. Useful for most functions since the data is primarily state based.

Usage

data(california_counties)

Format

A data table with 58 rows and 3 variables. Contains county name, FIPS state code (06 in this case) and FIPS county code. See Wikipedia for more information.

Description

Will return details on any checklist

Usage

checklist_details(list_name, ...)

checklist_details

checklist_details
Arguments

<table>
<thead>
<tr>
<th>list_name</th>
<th>URL of a checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>Additional arguments (currently not implemented)</td>
</tr>
</tbody>
</table>

Value
data.frame

See Also

ee_checklists

Examples

```r
## Not run:
spiders <- ee_checklists(subject = "Spiders")
# Now retrieve all the details for each species on both lists
library(plyr)
spider_details <- ldply(spiders$url, checklist_details)
## End(Not run)
```

Description

The Berkeley Ecoengine provides an open API to a wealth of museum data contained in the Berkeley natural history museums. This R package provides a programmatic interface to this rich repository of data allowing for the data to be easily analyzed and visualized or brought to bear in other contexts. This vignette provides a brief overview of the package's capabilities. The current version of the package works with API version 0.0.3

Details

The Berkeley Ecoengine provides an open API to a wealth of museum data contained in the Berkeley natural history museums. This R package provides a programmatic interface to this rich repository of data allowing for the data to be easily analyzed and visualized or brought to bear in other contexts. This vignette provides a brief overview of the package's capabilities. The current version of the package works with API version 0.0.3
**ee_about**

Description

Function returns the current status of fast-evolving API. Returns endpoints and category. Default return is a list but one can also request a nicely formatted data.frame by setting the as.df argument to TRUE.

Usage

```r
ee_about(as.df = TRUE, type = NA)
```

Arguments

- `as.df` FALSE Returns a list unless this set to TRUE
- `type` The type of end point. Options include data, meta-data, and actions

Value

list

Examples

```r
## Not run:
ee_about()
# set as.df = FALSE to return a list rather than a data.frame
ee_about(as.df = FALSE)
# You can also filter by methods by data, meta-data, and actions.
# ee_about(type = "data")
# ee_about(type = "meta-data")
# ee_about(type = "actions")

## End(Not run)
```

**ee_cbind**

Description

Allows for combining split ecoengine calls (e.g. paginated calls) back into one single result object

Usage

```r
ee_cbind(results)
```
ee_checklists

Arguments

results  A list of objects of class ecoengine

Examples

## Not run:
x1 <- ee_observations(genus = "Lynx", page = 1)
x2 <- ee_observations(genus = "Lynx", page = 2)
x12 <- ee_cbind(list(x1, x2))

## End(Not run)

description

Ecoengine checklists

Description

Retrieves existing checklists from the ecoengine database

Usage

ee_checklists(subject = NULL, foptions = list())

Arguments

subject  Enter one of the following subjects: Mammals, Mosses, Beetles, Spiders, Amphibians, Ants, Fungi, Lichen, Plants.

foptions  A list of additional arguments for httr. There is no reason to use this argument except for debugging purposes.

Value

data.frame

Examples

# all_lists <- ee_checklists()
# mammals_list <- ee_checklists(subject = "Mammals")
# spiders  <- ee_checklists(subject = "Spiders")
ee_footprints

Description
List of ecoengine footprints.

Usage
ee_footprints(foptions = list())

Arguments
foptions A list of additional arguments for httr. There is no reason to use this argument except for debugging purposes.

Value
data.frame

Examples
# footprints <- ee_footprints()

ee_observations

Description
API endpoint that represents a list of observations.

Usage
ee_observations(
  page = NULL,
  page_size = 1000,
  country = "United States",
  state_province = NULL,
  county = NULL,
  kingdom = NULL,
  phylum = NULL,
  order = NULL,
  clss = NULL,
  family = NULL,
  genus = NULL,
  scientific_name = NULL,
kingdom__exact = NULL,
phylum__exact = NULL,
order__exact = NULL,
class__exact = NULL,
family__exact = NULL,
genus__exact = NULL,
scientific_name__exact = NULL,
remote_id = NULL,
collection_code = NULL,
source = NULL,
min_date = NULL,
max_date = NULL,
georeferenced = FALSE,
bbox = NULL,
exclude = NULL,
extra = NULL,
quiet = FALSE,
progress = FALSE,
foptions = list()
)

Arguments

page  Page number
page_size  The number of observations per page returned by the query. The package default is 250 observations. The API default, however, is 10. Setting this number higher will require fewer calls (i.e. pages) but a large size may also fail or timeout.
country  country name
state_province  description needed.
county  California county. See data(california_counties)
kingdom  kingdom name
phylum  phylum name
order  order name
class  class name
family  family name
genus  genus name.
scientific_name  A full scientific name
kingdom__exact  exact kingdom name
phylum__exact  exact phylum name
order__exact  exact order name
class__exact  class name
family__exact  exact family name
genus__exact  exact genus name
scientific_name__exact
  exact scientific name
remote_id
  remote ID
collection_code
  collections code
source
  data source. See ee_sources
min_date
  Lower date bound. Most be in format Y-m-D h:m:s. This package uses lubridate’s ymd_hms function to format dates.
max_date
  upper date bound. Most be in format Y-m-D h:m:s. This package uses lubridate’s ymd_hms function to format dates.
georeferenced
  Default is FALSE. Set to TRUE to return only georeferenced records.
bbox
  Set a bounding box for your search. Use format bbox=-124,32,-114,42. Order is min Longitude, min Latitude, max Longitude, max Latitude. Use http://boundingbox.klokantech.com/ this website to quickly grab a bounding box (set format to csv on lower right)
exclude
  Default is NULL. Pass a list of fields to exclude.
extra
  Default is NULL. Pass a list of extra fields to be returned. Additional fields include: # "id", "record", "source", "remote_resource", "begin_date", "end_date", # "collection_code", "institution_code", "state_province", "county", # "last_modified", "original_id", "geometry", "coordinate_uncertainty_in_meters" # "md5", "scientific_name", "observation_type", "date_precision", "locality" # "earliest_period_or_lowest_system", "latest_period_or_highest_system", "kingdom" # "phylum", "clss", "order", "family", "genus", "specific_epithet", # "infraspecific_epithet", "minimum_depth_in_meters", "maximum_depth_in_meters", "maximum_elevation_in_meters", "minimum_elevation_in_meters", "catalog_number" # "preparations", "sex", "life_stage", "water_body", "country", "individual_count", "associated_resources"
quiet
  Default is FALSE. Set to TRUE to suppress messages.
progress
  Progress bar is set to TRUE by default. Use FALSE especially when calling functions inside documents.
foptions
  A list of additional arguments for httr. There is no reason to use this argument except for debugging purposes.

Value

data.frame

Examples

# vulpes <- ee_observations(genus = "vulpes")
## Not run:
# pinus <- ee_observations(scientific_name = "Pinus", page_size = 100)
# lynx_data <- ee_observations(genus = "Lynx")
# Georeferenced data only
# lynx_data <- ee_observations(genus = "Lynx", georeferenced = TRUE)
# animalia <- ee_observations(kingdom = "Animalia")
# Artemisia <- ee_observations(scientific_name = "Artemisia douglasiana")
# asteraceae <- ee_observations(family = "asteraceae")
# vulpes <- ee_observations(genus = "vulpes")
# Anas <- ee_observations(scientific_name = "Anas cyanoptera", page = "all")
# loons <- ee_observations(scientific_name = "Gavia immer", page = "all")
# plantae <- ee_observations(kingdom = "plantae")
# chordata <- ee_observations(phylum = "chordata")
# Class is clss since the former is a reserved keyword in SQL.
# aves <- ee_observations(clss = "aves")
# You can also exclude fields using the exclude field
# aves <- ee_observations(clss = "aves", exclude = "remote_resource")
# aves <- ee_observations(clss = "aves", exclude = "source,remote_resource")
# or request additional fields using extra
# aves <- ee_observations(clss = "aves", extra = "kingdom,genus")
# aves <- ee_observations(clss = "aves", bbox = '-124.32,-114.42')
# aves <- ee_observations(clss = "aves", county = "Alameda county")

## End(Not run)

---

**ee_pages**

**ee_pages** - Returns total number of pages for any ecoengine request

---

**Description**

*ee_pages* - Returns total number of pages for any ecoengine request

**Usage**

*ee_pages*(ee, page_size = 1000)

**Arguments**

- **ee**
  
  Object of class *ecoengine*

- **page_size**
  
  Default page size. Currently set to 1000 package wide.

**Value**

integer
Description

Takes a page range and total number of observations to return the right sequence of pages that need to be crawled.

Usage

ee Paginator(page, total_obs, page_size = 1000)

Arguments

page | requested page number or page range. Can also be "all"
total_obs | Total number of records available for any search query
page_size | Default is 25. Set higher if needed.

Examples

## Not run:
pee Paginator(1, 100)
pee Paginator("all", 100)
pee Paginator(1:2, 1000)
pee Paginator(1:4, 3800)
# This will return an error since there are only 4 pages per 100 observations
pee Paginator(1:5, 10000)

## End(Not run)

Description

Search the photos methods in the ecoengine API.

Usage

ee photos(
    page = NULL,
    state_province = NULL,
    county = NULL,
    genus = NULL,
    scientific_name = NULL,
    authors = NULL,
remote_id = NULL,
collection_code = NULL,
source = NULL,
min_date = NULL,
max_date = NULL,
related_type = NULL,
related = NULL,
page_size = 1000,
quiet = FALSE,
georeferenced = FALSE,
progress = FALSE,
other_catalog_numbers = NULL,
foptions = list()
)

Arguments

page Page number
state_province Need to describe these parameters
county California counties. Package include a full list of counties. To load dataset
data(california_counties)
genus genus name
scientific_name scientific name
authors author name
remote_id remote id
collection_code Type of collection. Can be CalAcademy, Private, VTM, CDFA. CalFlora Others TBA
source data source. See ee_sources
min_date Lower date bound. Most be in format Y-m-D h:m:s. This package uses lubridate’s ymd_hms function to format dates.
max_date upper date bound. Most be in format Y-m-D h:m:s. This package uses lubridate’s ymd_hms function to format dates.
related_type Need to describe these parameters
related Need to describe these parameters
page_size The number of observations per page returned by the query. The package default is 250 observations. The API default, however, is 10. Setting this number higher will require fewer calls (i.e. pages) but a large size may also fail or timeout.
quiet Default is FALSE. Set to TRUE to suppress messages.
georeferenced Default is FALSE. Set to TRUE to filter by photos that have geo data.
progress Progress bar is set to TRUE by default. Use FALSE especially when calling functions inside documents.
other_catalog_numbers

Need to describe these parameters

foptions

A list of additional arguments for http. There is no reason to use this argument except for debugging purposes.

See Also
related: ee_photos california_counties

Examples

# Request all photos. This request will paginate.
# merced <- ee_photos(county = "Merced County")
  ee_photos(page_size = 10)
# Search by collection code. See notes above on options
# ee_photos(collection_code = "CalAcademy")
# ee_photos(collection_code = "VTM")
# ee_photos(collection_code = "CalFlora")
# ee_photos(collection_code = "CDFA")
# Search by county.
# sc_county <- ee_photos(county = "Santa Clara County")
# merced <- ee_photos(county = "Merced County")
# merced <- ee_photos(county = "Merced County", page = "all")
# The package also contains a full list of counties
data(california_counties)
# alameda <- ee_photos(county = california_counties[1, 1])
# alameda$data
# You can also get all the data for Alameda county with one request
# alameda <- ee_photos(county = "Alameda county", page = "all")
# Spidering through the rest of the counties can easily be automated.
# Or by author
# charles_results <- ee_photos(author = "Charles Webber", page = 1:2)
# You can also request all pages in a single call by using ee_photos()
# In this example below, there are 6 pages of results (52 result items).
# Function will return all at once.
# racoons <- ee_photos(scientific_name = "Procyon lotor", page = "all")

```r

ee_search

Ecoengine search

Description

Search across the entire ecoengine database.

Usage

ee_search(query = NULL, foptions = list())
```
ee_search_obs

Arguments

query = The search term
page = Page number
page_size = The number of observations per page returned by the query. The package default is 250 observations. The API default, however, is 10. Setting this number higher will require fewer calls (i.e. pages) but a large size may also fail or timeout.
quiet = Default is FALSE. Set to TRUE to suppress messages.
progress = Progress bar is set to TRUE by default. Use FALSE especially when calling functions inside documents.
foptions = A list of additional arguments for http. There is no reason to use this argument except for debugging purposes.

Value

data.frame
ee_sources

See Also

ee_search

Examples

# general_lynx_query <- ee_search_obs(query = "Lynx")
## Not run:
# lynx_data <- ee_search_obs(query = "genus:Lynx")
# all_lynx_data <- ee_search_obs(query = "Lynx", page = "all")

## End(Not run)

---

ee_sources  Ecoengine data sources

Description

Returns a full list of data sources supported by the ecoengine

Usage

ee_sources(foptions = list())

Arguments

foptions  A list of additional arguments for httr. There is no reason to use this argument except for debugging purposes.

Value

data.frame

Examples

# source_list <- ee_sources()
### Description

A data.frame containing all the sensors currently available through the engine. This list can be updated anytime by calling the `ee_sensors()` function.

### Usage

```r
data(full_sensor_list)
```

### Format

A data table with 40 rows and 13 variables. Contains units, variable, data_url, source, record, site_code, method_name, begin_date, end_date, station_name, geojson.type, geojson.coordinates1, geojson.coordinates2

### Description

Print a summary for an ecoengine object

### Usage

```r
## S3 method for class 'ecoengine'
print(x, ...)
```

### Arguments

- `x`: An object of class ecoengine
- `...`: additional arguments
view_photos

Browse photo queries in your default browser.

Description
Browse photo queries in your default browser.

Usage
view_photos(input = NULL, output = NULL, browse = TRUE)

Arguments
input Input, usually output from a call to ee_photos
output Path and file name for output file. If NULL, a temp file is used.
browse Browse file in your default browser immediately after file creation. If FALSE, the file is written, but not opened.

Examples
# view_photos(ee_photos())
# Pictures of racoons
# view_photos(ee_photos(scientific_name = "Procyon lotor", quiet = TRUE))
# or the California Condor
# view_photos(ee_photos(scientific_name = "Gymnogyps californianus", quiet = TRUE))
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