Package 'rglobi'

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Type Package

Title R Interface to Global Biotic Interactions

Description A programmatic interface to the web service methods
provided by Global Biotic Interactions (GloBI). GloBI provides
access to spatial-temporal species interaction records from
sources all over the world. rglobi provides methods to search
species interactions by location, interaction type, and
taxonomic name. In addition, it supports Cypher, a graph query
language, to allow for executing custom queries on the GloBI
aggregate species interaction data set.

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URL https://github.com/ropensci/rglobi

BugReports https://github.com/ropensci/rglobi/issues

VignetteBuilder knitr

Depends R (>= 3.0.1)

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Imports rjson (>= 0.2.13), RCurl

Suggests testthat(>= 0.7), knitr

RoxygenNote 6.0.1

NeedsCompilation no

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R topics documented:

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get_child_taxa   *Returns all known child taxa with known interaction of specified taxa and rank.*

Description

Returns all known child taxa with known interaction of specified taxa and rank.

Usage

```
get_child_taxa(taxon.names, rank = "Species", skip = 0, limit = 25,
  opts = list())
```

Arguments

taxon.names	list of taxa of which child taxa should be included.
rank	selected taxonomic rank of child taxa
skip	number of child taxon names to skip before returning result. May be used for pagination.
limit	maximum number of child taxon names returned
opts	list of options including web service configuration like "port" and "host"

Value

list of child taxon names

See Also

Other interactions: `get_interaction_matrix`, `get_interaction_table`, `get_interaction_types`, `get_interactions_by_taxa`, `get_interactions_by_type`, `get_interactions`, `get_predators_of`, `get_prey_of`

Examples

```
## Not run:
get_child_taxa(list("Aves"))

## End(Not run)
```

---

get_data_fields   *List data fields identified in GloBI database*

Description

Returns data frame with supported data fields

Usage

```
get_data_fields(opts = list())
```

Arguments

opts   list of named options to configure GloBI API

Value

Returns data frame of supported data fields

Examples

```
## Not run:
get_data_fields()

## End(Not run)
```

---

get_interactions   *Get Species Interaction from GloBI*

Description

Get Species Interaction from GloBI

Usage

```
get_interactions(taxon = "Homo sapiens", interaction.type = "preysOn", ...)
```

Arguments

`taxon`	canonical scientific name of source taxon (e.g. Homo sapiens)
`interaction.type`	
	the preferred interaction type (e.g. preysOn)
`...`	list of options to configure GloBI API

Value

species interactions between source and target taxa

See Also

Other interactions: `get_child_taxa`, `get_interaction_matrix`, `get_interaction_table`, `get_interaction_types`, `get_interactions_by_taxa`, `get_interactions_by_type`, `get_predators_of`, `get_prey_of`

Examples

```
## Not run:
get_interactions("Homo sapiens", "preysOn")
get_interactions("Insecta", "parasiteOf")

## End(Not run)
```

---

get_interactions_by_taxa

Return interactions involving specific taxa

Description

Returns interactions involving specific taxa. Secondary (target) taxa and spatial boundaries may also be set

Usage

```
get_interactions_by_taxa(sourcetaxon, targettaxon = NULL,
  interactiontype = NULL, accordingto = NULL,
  showfield = c("source_taxon_external_id", "source_taxon_name",
  "source_taxon_path", "source_specimen_life_stage", "interaction_type",
  "target_taxon_external_id", "target_taxon_name", "target_taxon_path",
  "target_specimen_life_stage", "latitude", "longitude", "study_citation",
  "study_external_id", "study_source_citation"), otherkeys = NULL,
  bbox = NULL, returnobservations = F, opts = list())
```

Arguments

sourcetaxon	Taxa of interest (consumer, predator, parasite); may be specified as "Genus species" or higher level (e.g., Genus, Family, Class).
targettaxon	Taxa of interest (prey, host); may be specified as "Genus species" or higher level (e.g., Genus, Family, Class)
interactiontype	
	Interaction types of interest (prey, host); may be specified as listed by get_interaction_types()
accordingto	Data source of interest
showfield	Data fields of interest (e. g. source_taxon_external_id, source_taxon_name); may be specified as listed by get_data_fields()
otherkeys	list of key-value pairs to query any field not covered by other parameters; keys may be specified as listed by get_data_fields()
bbox	Coordinates in EPSG:4326 decimal degrees defining "left, bottom, right, top" of bounding box
returnobservations	
	if true, all individual observations are returned, else only distinct relationships
opts	list of named options to configure GloBI API

Value

Returns data frame of interactions

Note

For data sources in which type of interactions were not specified, the interaction is labeled "interacts_with"

See Also

Other interactions: get_child_taxa, get_interaction_matrix, get_interaction_table, get_interaction_types, get_interactions_by_type, get_interactions, get_predators_of, get_prey_of

Examples

```
## Not run:
get_interactions_by_taxa(sourcetaxon = "Rattus")
get_interactions_by_taxa(sourcetaxon = "Aves", targettaxon = "Rattus")
get_interactions_by_taxa(sourcetaxon = "Rattus rattus",
bbox = c(-67.87,12.79,-57.08,23.32))

## End(Not run)
```

---

get_interactions_by_type

Get Species Interactions by Interaction Type from GloBI

Description

Get Species Interactions by Interaction Type from GloBI

Usage

```
get_interactions_by_type(interactiontype = c("interactsWith"), ...)
```

Arguments

interactiontype

                the requested interaction type (e.g. preysOn)

`...`   list of options to configure GloBI API

Value

species interactions given provided interaction type(s)

See Also

Other interactions: `get_child_taxa`, `get_interaction_matrix`, `get_interaction_table`, `get_interaction_types`, `get_interactions_by_taxa`, `get_interactions`, `get_predators_of`, `get_prey_of`

Examples

```
## Not run:
get_interactions_by_type(interactiontype = c("eats", "eatenBy"))
get_interactions_by_type(interactiontype = "parasiteOf")

## End(Not run)
```

---

get_interactions_in_area

Return all interactions in specified area

Description

Returns all interactions in data base in area specified in arguments

Usage

```
get_interactions_in_area(bbox, ...)
```

Arguments

bbox	Coordinates in EPSG:4326 decimal degrees defining "left, bottom, right, top" of bounding box
...	list of named options to configure GloBI API

Value

Returns data frame of interactions

See Also

Other areas: `get_interaction_areas`

Examples

```
## Not run:
get_interactions_in_area(bbox = c(-67.87, 12.79, -57.08, 23.32))

## End(Not run)
```

---

get_interaction_areas *Find locations at which interactions were observed*

Description

Returns all locations (latitude,longitude) of interactions in data base or area specified in arguments

Usage

```
get_interaction_areas(bbox = NULL, ...)
```

Arguments

bbox	Coordinates in EPSG:4326 decimal degrees defining "left, bottom, right, top" of bounding box
...	list of named options to configure GloBI API

Value

Returns data frame of coordinates

See Also

Other areas: `get_interactions_in_area`

Examples

```
## Not run:
get_interaction_areas ()
get_interaction_areas (bbox=c(-67.87,12.79,-57.08,23.32))

## End(Not run)
```

---

get_interaction_matrix

> *Get Interaction Matrix. Constructs an interaction matrix indicating whether source taxa (rows) or target taxa (columns) are known to interact with given type.*

Description

Get Interaction Matrix. Constructs an interaction matrix indicating whether source taxa (rows) or target taxa (columns) are known to interact with given type.

Usage

```
get_interaction_matrix(source.taxon.names = list("Homo sapiens"),
  target.taxon.names = list("Mammalia"), interaction.type = "eats",
  opts = list())
```

Arguments

source.taxon.names

                  list of source taxon names (e.g. list('Mammalia', 'Aves', 'Ariopsis felis'))

target.taxon.names

                  list of target taxon names

interaction.type

                  the preferred interaction type (e.g. preysOn)

opts   list of options to configure GloBI API

Value

matrix representing species interactions between source and target taxa

See Also

Other interactions: get_child_taxa, get_interaction_table, get_interaction_types, get_interactions_by_taxa, get_interactions_by_type, get_interactions, get_predators_of, get_prey_of

Examples

```
## Not run:
get_interaction_matrix("Homo sapiens", "Mammalia", "interactsWith")

## End(Not run)
```

get_interaction_table *Returns all known child taxa with known interaction of specified source and target taxa on any rank.*

Description

Returns all known child taxa with known interaction of specified source and target taxa on any rank.

Usage

```
get_interaction_table(source.taxon.names = list(),
  target.taxon.names = list(), interaction.type = "preysOn", skip = 0,
  limit = 100, opts = list())
```

Arguments

source.taxon.names
                  list of taxon names for source
target.taxon.names
                  list of taxon names for target
interaction.type
                  kind of interaction
skip   number of records skipped before including record in result table, used in pagination
limit   maximum number of interaction to include
opts   connection parameters and other options

Value

table of matching source, target and interaction types

See Also

Other interactions: [get_child_taxa](), [get_interaction_matrix](), [get_interaction_types](), [get_interactions_by_taxa](), [get_interactions_by_type](), [get_interactions](), [get_predators_of](), [get_prey_of]()

Examples

```
## Not run:
get_interaction_table(source.taxon.names = list("Aves"), target.taxon.names = list('Insecta'))

## End(Not run)
```

---

get_interaction_types   *List interactions identified in GloBI database*

Description

Returns data frame with supported interaction types

Usage

```
get_interaction_types(opts = list())
```

Arguments

opts   list of named options to configure GloBI API

Value

Returns data frame of supported interaction types

See Also

Other interactions: `get_child_taxa`, `get_interaction_matrix`, `get_interaction_table`, `get_interactions_by_taxa`
`get_interactions_by_type`, `get_interactions`, `get_predators_of`, `get_prey_of`

Examples

```
## Not run:
get_interaction_types()

## End(Not run)
```

---

get_predators_of   *Get a List of Predators of a Given Prey Taxon*

Description

Get a List of Predators of a Given Prey Taxon

Usage

```
get_predators_of(taxon = "Rattus rattus", ...)
```

Arguments

taxon   scientific name of prey taxon. Can be any taxonomic rank (e.g. Rattus rattus,
                Decapoda)

...   list of named options to configure the GloBI API

Value

list of recorded prey-predator interactions that involve the desired prey taxon.

See Also

Other interactions: [get_child_taxa](), [get_interaction_matrix](), [get_interaction_table](), [get_interaction_types](), [get_interactions_by_taxa](), [get_interactions_by_type](), [get_interactions](), [get_prey_of]()

Examples

```
## Not run:
get_predators_of("Rattus rattus")
get_predators_of("Primates")

## End(Not run)
```

---

get_prey_of   *Get a List of Prey for given Predator Taxon*

Description

Get a List of Prey for given Predator Taxon

Usage

```
get_prey_of(taxon = "Homo sapiens", ...)
```

Arguments

taxon   scientific name of predator taxon. Can be any taxonomic rank (e.g. Homo
               sapiens, Animalia)
...   list of named options to configure GloBI API

Value

list of recorded predator-prey interactions that involve the desired predator taxon

See Also

Other interactions: [get_child_taxa](), [get_interaction_matrix](), [get_interaction_table](), [get_interaction_types](), [get_interactions_by_taxa](), [get_interactions_by_type](), [get_interactions](), [get_predators_of]()

Examples

```
## Not run:
get_prey_of("Homo sapiens")
get_prey_of("Primates")

## End(Not run)
```

---

query   *Executes a Cypher Query Against GloBI's Neo4j Instance*

Description

Executes a Cypher Query Against GloBI's Neo4j Instance

Usage

```
query(cypherQuery, opts = list())
```

Arguments

cypherQuery   Cypher query (see http://github.com/jhpoelen/eol-globi-data/wiki/cypher for examples)

opts   list of named options to configure GloBI API

Value

result of cypher query string

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