

Package: etn (via r-universe)

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Title Access Data from the European Tracking Network

Version 3.0.0.9000

Description Access data from the European Tracking Network ('ETN', <https://www.lifewatch.be/etn/>). With etn you can query metadata (animals, tags, deployments, receivers, projects) and data (acoustic detections, sensor data) from the 'ETN' database and use these in your analyses. Data access requires user credentials and is subject to a data policy.

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URL <https://github.com/inbo/etn>, <https://inbo.github.io/etn/>

BugReports <https://github.com/inbo/etn/issues>

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example_dataset	<i>Read an example dataset</i>
-----------------	--------------------------------

Description

Reads an example dataset, formatted as a **Frictionless Data Package**.

Usage

```
example_dataset(dataset = "2014_demer")
```

Arguments

`dataset` Name of the example dataset to load. Defaults to the only available dataset: "2014_DEMER".

Value

Frictionless data package.

2014_demer

2014_demer is a **river acoustic telemetry** dataset. It contains 66 tagged animals across four species. Over 235,000 detections were observed between 2014 and 2019 by acoustic receivers deployed in Belgian rivers. Data are deposited at <https://doi.org/10.14284/432>.

The dataset was included in the package with:

```
get_package(animal_project_code = "2014_demer") |>
  write_package("inst/extdata/2014_demer")
```

After which the `detections.csv` file was compressed and its path manually updated in `datapackage.json`.

Examples

```
example_dataset()
```

```
get_acoustic_deployment_logs
```

Get acoustic deployment logs

Description

Get log data for deployments of acoustic receivers. These contain diagnostic information that may be helpful to figure what happened with a receiver during deployment. For example, a deviation in tilt angle may decrease detection capabilities. For some receivers, other information such as water temperature is available.

Usage

```
get_acoustic_deployment_logs(deployment_id, limit = FALSE)
```

Arguments

`deployment_id` Integer (vector). One or more deployment identifiers.

`limit` Logical. Limit the number of returned records to 100 (useful for testing purposes). Defaults to FALSE.

Details

The log data are returned as a tibble with one row per log entry. The columns of the tibble may vary depending on the deployment and receiver. If no log entries are found for a deployment id, an empty tibble is returned.

Value

A tibble with acoustic deployment log data.

Name repair

It is possible that the columns contained in the log data overlap with the default columns always returned by `get_acoustic_deployment_logs()`. If duplicate columns are found, their names are made unique with `make.unique()` and a message is returned, which can be silenced with `suppressMessages()`.

See Also

Other access functions: `get_acoustic_deployments()`, `get_acoustic_detections()`, `get_acoustic_projects()`, `get_acoustic_receivers()`, `get_animal_projects()`, `get_animals()`, `get_archival_data()`, `get_bibliography()`, `get_cpod_projects()`, `get_package()`, `get_tags()`

Examples

```
get_acoustic_deployment_logs(deployment_id = 25259, limit = TRUE)
get_acoustic_deployment_logs(deployment_id = 74535)
```

`get_acoustic_deployments`*Get acoustic deployment data*

Description

Get data for deployments of acoustic receivers, with options to filter results.

Usage

```
get_acoustic_deployments(  
  connection,  
  deployment_id = NULL,  
  receiver_id = NULL,  
  acoustic_project_code = NULL,  
  station_name = NULL,  
  open_only = FALSE  
)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
deployment_id	Integer (vector). One or more deployment identifiers.
receiver_id	Character (vector). One or more receiver identifiers.
acoustic_project_code	Character (vector). One or more acoustic project codes. Case-insensitive.
station_name	Character (vector). One or more deployment station names.
open_only	Logical. Restrict deployments to those that are currently open (i.e. no end date defined). Defaults to FALSE.

Value

A tibble with acoustic deployment data, sorted by acoustic_project_code, station_name and deploy_date_time.

See Also

Other access functions: [get_acoustic_deployment_logs\(\)](#), [get_acoustic_detections\(\)](#), [get_acoustic_projects\(\)](#), [get_acoustic_receivers\(\)](#), [get_animal_projects\(\)](#), [get_animals\(\)](#), [get_archival_data\(\)](#), [get_bibliography\(\)](#), [get_cpod_projects\(\)](#), [get_package\(\)](#), [get_tags\(\)](#)

Examples

```
# Get all acoustic deployments
get_acoustic_deployments()

# Get specific acoustic deployment
get_acoustic_deployments(deployment_id = 1437)

# Get acoustic deployments for a specific receiver
get_acoustic_deployments(receiver_id = "VR2W-124070")

# Get open acoustic deployments for a specific receiver
get_acoustic_deployments(receiver_id = "VR2W-124070", open_only = TRUE)

# Get acoustic deployments for a specific acoustic project
get_acoustic_deployments(acoustic_project_code = "demer")

# Get acoustic deployments for two specific stations
get_acoustic_deployments(station_name = c("de-9", "de-10"))
```

get_acoustic_detections

Get acoustic detections data

Description

Get data for acoustic detections, with options to filter results. Use `limit` to limit the number of returned records.

Usage

```
get_acoustic_detections(
  connection,
  start_date = NULL,
  end_date = NULL,
  tag_serial_number = NULL,
  acoustic_tag_id = NULL,
  animal_project_code = NULL,
  scientific_name = NULL,
  acoustic_project_code = NULL,
  receiver_id = NULL,
  station_name = NULL,
  limit = FALSE,
  progress = TRUE
)
```

Arguments

<code>connection</code>	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
<code>start_date</code>	Character. Start date (inclusive) in ISO 8601 format (yyyy-mm-dd, yyyy-mm or yyyy).
<code>end_date</code>	Character. End date (exclusive) in ISO 8601 format (yyyy-mm-dd, yyyy-mm or yyyy).
<code>tag_serial_number</code>	Character (vector). One or more acoustic tag serial numbers.
<code>acoustic_tag_id</code>	Character (vector). One or more acoustic tag ids.
<code>animal_project_code</code>	Character (vector). One or more animal project codes. Case-insensitive.
<code>scientific_name</code>	Character (vector). One or more scientific names.
<code>acoustic_project_code</code>	Character (vector). One or more acoustic project codes. Case-insensitive.
<code>receiver_id</code>	Character (vector). One or more receiver identifiers.

station_name	Character (vector). One or more deployment station names.
limit	Logical. Limit the number of returned records to 100 (useful for testing purposes). Defaults to FALSE.
progress	Logical. Show a progress bar while fetching data. Defaults to TRUE.

Value

A tibble with acoustic detections data, sorted by acoustic_tag_id and date_time.

See Also

Other access functions: [get_acoustic_deployment_logs\(\)](#), [get_acoustic_deployments\(\)](#), [get_acoustic_projects\(\)](#), [get_acoustic_receivers\(\)](#), [get_animal_projects\(\)](#), [get_animals\(\)](#), [get_archival_data\(\)](#), [get_bibliography\(\)](#), [get_cpod_projects\(\)](#), [get_package\(\)](#), [get_tags\(\)](#)

Examples

```
# Get limited sample of acoustic detections
get_acoustic_detections(limit = TRUE)

# Get all acoustic detections from a specific animal project
get_acoustic_detections(animal_project_code = "2014_demer")

# Get 2015 acoustic detections from that animal project
get_acoustic_detections(
  animal_project_code = "2014_demer",
  start_date = "2015",
  end_date = "2016",
)

# Get April 2015 acoustic detections from that animal project
get_acoustic_detections(
  animal_project_code = "2014_demer",
  start_date = "2015-04",
  end_date = "2015-05",
)

# Get April 24, 2015 acoustic detections from that animal project
get_acoustic_detections(
  animal_project_code = "2014_demer",
  start_date = "2015-04-24",
  end_date = "2015-04-25",
)

# Get acoustic detections for a specific tag at two specific stations
get_acoustic_detections(
  acoustic_tag_id = "A69-1601-16130",
  station_name = c("de-9", "de-10")
)

# Get acoustic detections for a specific species, receiver and acoustic project
```

```
get_acoustic_detections(
  scientific_name = "Rutilus rutilus",
  receiver_id = "VR2W-124070",
  acoustic_project_code = "demer"
)
```

get_acoustic_projects *Get acoustic project data*

Description

Get data for acoustic projects, with options to filter results.

Usage

```
get_acoustic_projects(
  connection,
  acoustic_project_code = NULL,
  citation = FALSE
)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
acoustic_project_code	Character (vector). One or more acoustic project codes. Case-insensitive.
citation	Logical. If TRUE, adds extra columns with citation information for each project from MarineInfo using the <code>imis_dataset_id</code> : • <code>citation</code>: Formatted citation with DOI if available. • <code>doi</code>: DOI for the dataset if available. • <code>contact_name</code>: Contact person, usually the first author. If no contact person is provided, the first author with status creator. • <code>contact_email</code>: Email address of the contact person. • <code>contact_affiliation</code>: Institute of the contact person.

Value

A tibble with acoustic project data, sorted by `project_code`.

See Also

Other access functions: [get_acoustic_deployment_logs\(\)](#), [get_acoustic_deployments\(\)](#), [get_acoustic_detections\(\)](#), [get_acoustic_receivers\(\)](#), [get_animal_projects\(\)](#), [get_animals\(\)](#), [get_archival_data\(\)](#), [get_bibliography\(\)](#), [get_cpod_projects\(\)](#), [get_package\(\)](#), [get_tags\(\)](#)

Examples

```
# Get all acoustic projects
get_acoustic_projects()

# Get a specific acoustic project with citation
get_acoustic_projects(acoustic_project_code = "demer", citation = TRUE)
```

```
get_acoustic_receivers
```

Get acoustic receiver data

Description

Get data for acoustic receivers, with options to filter results.

Usage

```
get_acoustic_receivers(connection, receiver_id = NULL, status = NULL)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
receiver_id	Character (vector). One or more receiver identifiers.
status	Character. One or more statuses, e.g. available or broken.

Value

A tibble with acoustic receiver data, sorted by receiver_id. Values for owner_organization will only be visible if you are member of the group.

See Also

Other access functions: [get_acoustic_deployment_logs\(\)](#), [get_acoustic_deployments\(\)](#), [get_acoustic_detections\(\)](#), [get_acoustic_projects\(\)](#), [get_animal_projects\(\)](#), [get_animals\(\)](#), [get_archival_data\(\)](#), [get_bibliography\(\)](#), [get_cpod_projects\(\)](#), [get_package\(\)](#), [get_tags\(\)](#)

Examples

```
# Get all acoustic receivers
get_acoustic_receivers()

# Get lost and broken acoustic receivers
get_acoustic_receivers(status = c("lost", "broken"))

# Get a specific acoustic receiver
get_acoustic_receivers(receiver_id = "VR2W-124070")
```

get_animal_projects	<i>Get animal project data</i>
---------------------	--------------------------------

Description

Get data for animal projects, with options to filter results.

Usage

```
get_animal_projects(connection, animal_project_code = NULL, citation = FALSE)
```

Arguments

- | | |
|---------------------|--|
| connection | [Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead. |
| animal_project_code | Character (vector). One or more animal project codes. Case-insensitive. |
| citation | Logical. If TRUE, adds extra columns with citation information for each project from MarineInfo using the imis_dataset_id: <ul style="list-style-type: none"> • citation: Formatted citation with DOI if available. • doi: DOI for the dataset if available. • contact_name: Contact person, usually the first author. If no contact person is provided, the first author with status creator. • contact_email: Email address of the contact person. • contact_affiliation: Institute of the contact person. |

Value

A tibble with animal project data, sorted by project_code.

See Also

Other access functions: [get_acoustic_deployment_logs\(\)](#), [get_acoustic_deployments\(\)](#), [get_acoustic_detection\(\)](#), [get_acoustic_projects\(\)](#), [get_acoustic_receivers\(\)](#), [get_animals\(\)](#), [get_archival_data\(\)](#), [get_bibliography\(\)](#), [get_cpod_projects\(\)](#), [get_package\(\)](#), [get_tags\(\)](#)

Examples

```
# Get all animal projects
get_animal_projects()

# Get a specific animal project with citation
get_animal_projects(animal_project_code = "2014_demer", citation = TRUE)
```

get_animals

Get animal data

Description

Get data for animals, with options to filter results. Associated tag information is available in columns starting with tag and acoustic_tag_id. If multiple tags are associated with a single animal, the information is comma-separated.

Usage

```
get_animals(
  connection,
  animal_id = NULL,
  tag_serial_number = NULL,
  animal_project_code = NULL,
  scientific_name = NULL
)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
animal_id	Integer (vector). One or more animal identifiers.
tag_serial_number	Character (vector). One or more tag serial numbers.
animal_project_code	Character (vector). One or more animal project codes. Case-insensitive.
scientific_name	Character (vector). One or more scientific names.

Value

A tibble with animals data, sorted by animal_project_code, release_date_time and tag_serial_number.

See Also

Other access functions: [get_acoustic_deployment_logs\(\)](#), [get_acoustic_deployments\(\)](#), [get_acoustic_detections\(\)](#), [get_acoustic_projects\(\)](#), [get_acoustic_receivers\(\)](#), [get_animal_projects\(\)](#), [get_archival_data\(\)](#), [get_bibliography\(\)](#), [get_cpod_projects\(\)](#), [get_package\(\)](#), [get_tags\(\)](#)

Examples

```
# Get all animals
get_animals()

# Get specific animals
```

```

get_animals(animal_id = 305) # Or string value "305"
get_animals(animal_id = c(304, 305, 2827))

# Get animals from specific animal project(s)
get_animals(animal_project_code = "2014_demer")
get_animals(animal_project_code = c("2014_demer", "2015_dijle"))

# Get animals associated with a specific tag_serial_number
get_animals(tag_serial_number = "1187450")

# Get animals of specific species (across all projects)
get_animals(scientific_name = c("Rutilus rutilus", "Silurus glanis"))

# Get animals of a specific species from a specific project
get_animals(animal_project_code = "2014_demer", scientific_name = "Rutilus rutilus")

```

get_archival_data	<i>Get processed tag archival data</i>
-------------------	--

Description

Fetches processed archival data from tags. The data downloaded from csv files hosted on life-watch.com and then read into R. Providing at least one of the following arguments is required: tag_serial_number, animal_id, or animal_project_code.

Usage

```

get_archival_data(
  tag_serial_number = NULL,
  animal_id = NULL,
  animal_project_code = NULL,
  path = NULL,
  limit = FALSE,
  progress = TRUE,
  return_as = c("tibble", "arrow")
)

```

Arguments

tag_serial_number	Character (vector). One or more tag serial numbers.
animal_id	Integer (vector). One or more animal identifiers.
animal_project_code	[Experimental] Character (vector). One or more animal project codes. Case-insensitive. An animal project can contain many gigabytes of archival data. Downloading this data may take a while and exceed the available RAM or Storage of your computer.

path	[Experimental] Character. A path to an existing directory where the csv files will be stored. If NULL, the csv files will be stored in a temporary directory that is deleted when R is restarted.
limit	Logical. Limit the number of returned records to 100 (useful for testing purposes). Defaults to FALSE.
progress	Logical. Show a progress bar while fetching data. Defaults to TRUE.
return_as	[Experimental] Character. One of "tibble" or "arrow". Whether to return the data as an in memory tibble or an out of memory arrow dataset. The latter is recommended for large datasets, but requires more disk space and may be slower to query. When selecting "arrow" keep in mind that the downloaded data will remain stored on your computer until R is restarted.

Value

Depending on the value of return_as, either an [arrow::Dataset](#) or a data.frame with the archival data values. The resulting table has the following columns:

- tag_id: The tag id of the tag that recorded the data.
- timestamp_utc: The timestamp of the measurement in UTC.
- measurement_type: The type of measurement (e.g. "Temp", "Pressure, etc.).
- measurement_value: The value of the measurement.
- measurement_unit: The unit of the measurement (e.g. "C", "Pa", etc.).
- animal_project_code: The animal project code of the animal that recorded the data.
- animal_id: The animal id of the animal the tag was attached to.
- tag_serial_number: The tag serial number of the tag that recorded the data.

Returning large amounts of data out of memory

If you are fetching a large amount of data, it is recommended to use return_as = "arrow" to return an out of memory object. This will allow you to query the data without loading it all into memory at once. Keep in mind that the downloaded data will remain stored on your computer until R is restarted. If you want to keep the data, you can provide a path to an existing directory where the csv files will be stored via the path argument. See [arrow::Dataset](#) for more information.

Temporary storage of csv files

When return_as is set to arrow, the downloaded csv files will be stored in tempdir() even when no path has been provided. This is necessary because of the way arrow datasetquery objects work; they need to be able to access the csv files on disk. To remove these files from your computer, you can either restart R or manually delete the files from the temporary directory.

See Also

Other access functions: [get_acoustic_deployment_logs\(\)](#), [get_acoustic_deployments\(\)](#), [get_acoustic_detections\(\)](#), [get_acoustic_projects\(\)](#), [get_acoustic_receivers\(\)](#), [get_animal_projects\(\)](#), [get_animals\(\)](#), [get_bibliography\(\)](#), [get_cpod_projects\(\)](#), [get_package\(\)](#), [get_tags\(\)](#)

Examples

```
get_archival_data(tag_serial_number = "A15757", limit = TRUE)
```

get_bibliography

Create bibliography from detections

Description

Creates a bibliography from a table of detections, with references for:

- The ETN data platform.
- The etn R package.
- Animal project(s) associated with the animals that were detected.
- Acoustic project(s) associated with the receivers from which the detections were obtained.

It is recommended to cite these when using the data, see the [ETN Citation Guidelines](#) for details.

Usage

```
get_bibliography(detections)
```

Arguments

detections A data frame containing at least the columns `animal_project_code` and `acoustic_project_code`. Typically a data frame returned by [get_acoustic_detections\(\)](#).

Value

A data frame with three columns (`item`, `type`, and `citation`) containing the references.

See Also

Other access functions: [get_acoustic_deployment_logs\(\)](#), [get_acoustic_deployments\(\)](#), [get_acoustic_detections\(\)](#), [get_acoustic_projects\(\)](#), [get_acoustic_receivers\(\)](#), [get_animal_projects\(\)](#), [get_animals\(\)](#), [get_archival_data\(\)](#), [get_cpod_projects\(\)](#), [get_package\(\)](#), [get_tags\(\)](#)

Examples

```
# Create a bibliography from queried detections
get_acoustic_detections(scientific_name = "Mola mola") |>
  get_bibliography()

# Or obtain the bibliography from a Data Package
read_resource(example_dataset(), "bibliography")
```

get_cpod_projects	<i>Get cpod project data</i>
-------------------	------------------------------

Description

Get data for cpod projects, with options to filter results.

Usage

```
get_cpod_projects(connection, cpod_project_code = NULL, citation = FALSE)
```

Arguments

- | | |
|-------------------|--|
| connection | [Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead. |
| cpod_project_code | Character (vector). One or more cpod project codes. Case-insensitive. |
| citation | Logical. If TRUE, adds extra columns with citation information for each project from MarineInfo using the imis_dataset_id: <ul style="list-style-type: none"> • citation: Formatted citation with DOI if available. • doi: DOI for the dataset if available. • contact_name: Contact person, usually the first author. If no contact person is provided, the first author with status creator. • contact_email: Email address of the contact person. • contact_affiliation: Institute of the contact person. |

Value

A tibble with animal project data, sorted by project_code.

See Also

Other access functions: [get_acoustic_deployment_logs\(\)](#), [get_acoustic_deployments\(\)](#), [get_acoustic_detections\(\)](#), [get_acoustic_projects\(\)](#), [get_acoustic_receivers\(\)](#), [get_animal_projects\(\)](#), [get_animals\(\)](#), [get_archival_data\(\)](#), [get_bibliography\(\)](#), [get_package\(\)](#), [get_tags\(\)](#)

Examples

```
# Get all animal projects
get_cpod_projects()

# Get a specific animal project with citation
get_cpod_projects(cpod_project_code = "cpod-lifewatch", citation = TRUE)
```

get_package

Get animal project data as a Data Package

Description

Gets all data related to an **animal project** as a **Data Package**.

Usage

```
get_package(animal_project_code)
```

Arguments

animal_project_code

Animal project you want to get data from.

Value

A Data Package object. Write it to disk with `write_package()`.

Included resources

The Data Package will contain and describe the following resources:

- animals: Animals related to an animal_project_code, as returned by `get_animals()`.
- tags: Tags associated with the selected animals, as returned by `get_tags()`.
- detections: Acoustic detections for the selected animals, as returned by `get_acoustic_detections()`.
- deployments: Acoustic deployments for the acoustic_project_code(s) found in detections, as returned by `get_acoustic_deployments()`, but excluding deployments that started after the last detection. This allows you to see when and where receivers were deployed, even if these did not detect the selected animals.
- receivers: Acoustic receivers for the selected deployments, as returned by `get_acoustic_receivers()`.
- bibliography: Bibliography with references for ETN, the etn R package, and animal and acoustic projects associated with the detections. It is recommended to cite these when using the dataset.

Data quality

The data are downloaded from the ETN database *as is*, i.e. no quality or consistency checks are performed. Verifying the data before publication is therefore recommended. You can validate the technical consistency of your Data Package using **Frictionless Framework** with:

```
pip install frictionless
frictionless validate datapackage.json
```

See Also

Other access functions: [get_acoustic_deployment_logs\(\)](#), [get_acoustic_deployments\(\)](#), [get_acoustic_detections\(\)](#), [get_acoustic_projects\(\)](#), [get_acoustic_receivers\(\)](#), [get_animal_projects\(\)](#), [get_animals\(\)](#), [get_archival_data\(\)](#), [get_bibliography\(\)](#), [get_cpod_projects\(\)](#), [get_tags\(\)](#)

Examples

```
# Get a Data Package for a project
(package <- get_package(animal_project_code = "2014_demer"))

# Read a resource
read_resource(package, "animals")
```

get_tags

Get tag data

Description

Get data for tags, with options to filter results. Note that there can be multiple records (`acoustic_tag_id`) per tag device (`tag_serial_number`).

Usage

```
get_tags(
  connection,
  tag_type = NULL,
  tag_subtype = NULL,
  tag_serial_number = NULL,
  acoustic_tag_id = NULL
)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
tag_type	Character (vector). acoustic or archival. Some tags are both, find those with acoustic-archival.
tag_subtype	Character (vector). animal, built-in, range or sentinel.
tag_serial_number	Character (vector). One or more tag serial numbers.
acoustic_tag_id	Character (vector). One or more acoustic tag identifiers, i.e. identifiers found in get_acoustic_detections() .

Value

A tibble with tags data, sorted by tag_serial_number. Values for owner_organization and owner_pi will only be visible if you are member of the group.

See Also

Other access functions: [get_acoustic_deployment_logs\(\)](#), [get_acoustic_deployments\(\)](#), [get_acoustic_detections\(\)](#), [get_acoustic_projects\(\)](#), [get_acoustic_receivers\(\)](#), [get_animal_projects\(\)](#), [get_animals\(\)](#), [get_archival_data\(\)](#), [get_bibliography\(\)](#), [get_cpod_projects\(\)](#), [get_package\(\)](#)

Examples

```
# Get all tags
get_tags()

# Get archival tags, including acoustic-archival
get_tags(tag_type = c("archival", "acoustic-archival"))

# Get tags of specific subtype
get_tags(tag_subtype = c("built-in", "range"))

# Get specific tags (note that these can return multiple records)
get_tags(tag_serial_number = "1187450")
get_tags(acoustic_tag_id = "A69-1601-16130")
get_tags(acoustic_tag_id = c("A69-1601-16129", "A69-1601-16130"))
```

```
list_acoustic_project_codes
```

List all available acoustic project codes

Description

List all available acoustic project codes

Usage

```
list_acoustic_project_codes(connection)
```

Arguments

connection **[Deprecated]** A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.

Value

A vector of all unique project_code of type = "acoustic" in project.sql.

See Also

Other list functions: `list_acoustic_tag_ids()`, `list_animal_ids()`, `list_animal_project_codes()`, `list_cpod_project_codes()`, `list_deployment_ids()`, `list_receiver_ids()`, `list_scientific_names()`, `list_station_names()`, `list_tag_serial_numbers()`, `list_values()`

Examples

```
list_acoustic_project_codes()
```

```
list_acoustic_tag_ids
```

List all available acoustic tag ids

Description

List all available acoustic tag ids

Usage

```
list_acoustic_tag_ids(connection)
```

Arguments

connection **[Deprecated]** A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.

Value

A vector of all unique acoustic_tag_id values that are available.

See Also

Other list functions: `list_acoustic_project_codes()`, `list_animal_ids()`, `list_animal_project_codes()`, `list_cpod_project_codes()`, `list_deployment_ids()`, `list_receiver_ids()`, `list_scientific_names()`, `list_station_names()`, `list_tag_serial_numbers()`, `list_values()`

Examples

```
list_acoustic_tag_ids()
```

list_animal_ids	<i>List all available animal ids</i>
-----------------	--------------------------------------

Description

List all available animal ids

Usage

```
list_animal_ids(connection)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
------------	--

Value

A vector of all unique id_pk present in common.animal_release.

See Also

Other list functions: [list_acoustic_project_codes\(\)](#), [list_acoustic_tag_ids\(\)](#), [list_animal_project_codes\(\)](#), [list_cpod_project_codes\(\)](#), [list_deployment_ids\(\)](#), [list_receiver_ids\(\)](#), [list_scientific_names\(\)](#), [list_station_names\(\)](#), [list_tag_serial_numbers\(\)](#), [list_values\(\)](#)

Examples

```
list_animal_ids()
```

list_animal_project_codes	<i>List all available animal project codes</i>
---------------------------	--

Description

List all available animal project codes

Usage

```
list_animal_project_codes(connection)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
------------	--

Value

A vector of all unique project_code of type = "animal" that are available.

See Also

Other list functions: [list_acoustic_project_codes\(\)](#), [list_acoustic_tag_ids\(\)](#), [list_animal_ids\(\)](#), [list_cpod_project_codes\(\)](#), [list_deployment_ids\(\)](#), [list_receiver_ids\(\)](#), [list_scientific_names\(\)](#), [list_station_names\(\)](#), [list_tag_serial_numbers\(\)](#), [list_values\(\)](#)

Examples

```
list_animal_project_codes()
```

```
list_cpod_project_codes
```

List all available cpod project codes

Description

List all available cpod project codes

Usage

```
list_cpod_project_codes(connection)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
------------	--

Value

A vector of all unique project_code of type = "cpod" that are available.

See Also

Other list functions: [list_acoustic_project_codes\(\)](#), [list_acoustic_tag_ids\(\)](#), [list_animal_ids\(\)](#), [list_animal_project_codes\(\)](#), [list_deployment_ids\(\)](#), [list_receiver_ids\(\)](#), [list_scientific_names\(\)](#), [list_station_names\(\)](#), [list_tag_serial_numbers\(\)](#), [list_values\(\)](#)

Examples

```
list_cpod_project_codes()
```

list_deployment_ids	<i>List all available receiver ids</i>
---------------------	--

Description

List all available receiver ids

Usage

```
list_deployment_ids(connection)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
------------	--

Value

A vector of all unique id_pk present in acoustic.deployments.

See Also

Other list functions: [list_acoustic_project_codes\(\)](#), [list_acoustic_tag_ids\(\)](#), [list_animal_ids\(\)](#), [list_animal_project_codes\(\)](#), [list_cpod_project_codes\(\)](#), [list_receiver_ids\(\)](#), [list_scientific_names\(\)](#), [list_station_names\(\)](#), [list_tag_serial_numbers\(\)](#), [list_values\(\)](#)

Examples

```
list_deployment_ids()
```

list_receiver_ids	<i>List all available receiver ids</i>
-------------------	--

Description

List all available receiver ids

Usage

```
list_receiver_ids(connection)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
------------	--

Value

A vector of all unique receiver present in `acoustic.receivers`.

See Also

Other list functions: `list_acoustic_project_codes()`, `list_acoustic_tag_ids()`, `list_animal_ids()`, `list_animal_project_codes()`, `list_cpod_project_codes()`, `list_deployment_ids()`, `list_scientific_names()`, `list_station_names()`, `list_tag_serial_numbers()`, `list_values()`

Examples

```
list_receiver_ids()
```

list_scientific_names	<i>List all available scientific names</i>
-----------------------	--

Description

List all available scientific names

Usage

```
list_scientific_names(connection)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
------------	--

Value

A vector of all unique scientific_name present in `common.animal_release`.

See Also

Other list functions: `list_acoustic_project_codes()`, `list_acoustic_tag_ids()`, `list_animal_ids()`, `list_animal_project_codes()`, `list_cpod_project_codes()`, `list_deployment_ids()`, `list_receiver_ids()`, `list_station_names()`, `list_tag_serial_numbers()`, `list_values()`

Examples

```
list_scientific_names()
```

list_station_names	<i>List all available station names</i>
--------------------	---

Description

List all available station names

Usage

```
list_station_names(connection)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
------------	--

Value

A vector of all unique station_name present in acoustic.deployments.

See Also

Other list functions: [list_acoustic_project_codes\(\)](#), [list_acoustic_tag_ids\(\)](#), [list_animal_ids\(\)](#), [list_animal_project_codes\(\)](#), [list_cpod_project_codes\(\)](#), [list_deployment_ids\(\)](#), [list_receiver_ids\(\)](#), [list_scientific_names\(\)](#), [list_tag_serial_numbers\(\)](#), [list_values\(\)](#)

Examples

```
list_station_names()
```

list_tag_serial_numbers	<i>List all available tag serial numbers</i>
-------------------------	--

Description

List all available tag serial numbers

Usage

```
list_tag_serial_numbers(connection)
```

Arguments

connection	[Deprecated] A connection to the ETN database. This argument is no longer used. You will be prompted for credentials instead.
------------	--

Value

A vector of all unique tag_serial_numbers present in common.tag_device.

See Also

Other list functions: [list_acoustic_project_codes\(\)](#), [list_acoustic_tag_ids\(\)](#), [list_animal_ids\(\)](#), [list_animal_project_codes\(\)](#), [list_cpod_project_codes\(\)](#), [list_deployment_ids\(\)](#), [list_receiver_ids\(\)](#), [list_scientific_names\(\)](#), [list_station_names\(\)](#), [list_values\(\)](#)

Examples

```
list_tag_serial_numbers()
```

list_values	<i>List all unique values from a data.frame column</i>
-------------	--

Description

Get a vector with all unique values found in a given column of a data.frame. Concatenated values (A,B) in the column can be returned as single values (A and B).

Usage

```
list_values(.data, column, split = ",")
```

Arguments

- | | |
|--------|---|
| .data | Data frame. Data.frame to select column from. |
| column | Character or integer. Quoted or unquoted column name or column position. |
| split | Character (vector). Character or regular expression(s) passed to strsplit() to split column values before returning unique values. Defaults to ,. |

Value

A vector of the same type as the given column.

See Also

Other list functions: [list_acoustic_project_codes\(\)](#), [list_acoustic_tag_ids\(\)](#), [list_animal_ids\(\)](#), [list_animal_project_codes\(\)](#), [list_cpod_project_codes\(\)](#), [list_deployment_ids\(\)](#), [list_receiver_ids\(\)](#), [list_scientific_names\(\)](#), [list_station_names\(\)](#), [list_tag_serial_numbers\(\)](#)

Examples

```
# List unique scientific_name from a dataframe containing animal information
df <- get_animals(animal_project_code = "2014_demer")
list_values(df, "scientific_name")

# Or using pipe and unquoted column name
df |> list_values(scientific_name)

# Or using column position
df |> list_values(8)

# tag_serial_number can contain comma-separated values
df <- get_animals(animal_id = 5841)
df$tag_serial_number

# list_values() will split those and return unique values
list_values(df, tag_serial_number)

# Another expression can be defined to split values (here ".")
list_values(df, tag_serial_number, split = "\\.")
```

read_package

Read a Data Package descriptor file (datapackage.json)

Description

Read a Data Package descriptor file (datapackage.json)

Usage

```
read_package(file = "datapackage.json")
```

Arguments

file Path or URL to a datapackage.json file.

See Also

Other frictionless functions: [read_resource](#), [write_package](#)

read_resource	<i>Read data from a Data Resource into a tibble data frame</i>
---------------	--

Description

Read data from a Data Resource into a tibble data frame

Usage

```
read_resource(package, resource_name, col_select = NULL)
```

Arguments

package	Data Package object, as returned by read_package() or create_package() .
resource_name	Name of the Data Resource.
col_select	Character vector of the columns to include in the result, in the order provided. Selecting columns can improve read speed.

See Also

Other frictionless functions: [read_package](#), [write_package](#)

write_dwc	<i>Transform a Data Package with ETN data to a Darwin Core Archive</i>
-----------	--

Description

Transforms a Data Package with European Tracking Network (ETN) data to a **Darwin Core Archive**.

Usage

```
write_dwc(  
  package,  
  directory,  
  dataset_id = package$id,  
  dataset_name = NULL,  
  license = c("CC-BY-4.0", "CC0-1.0"),  
  rights_holder = NULL  
)
```

Arguments

package	A Data Package with ETN data, as returned by <code>read_package()</code> or <code>get_package()</code> . It is expected to contain the resources animals, tags, detections and deployments.
directory	Path to local directory to write files to.
dataset_id	Identifier for the dataset.
dataset_name	Title of the dataset.
license	License of the dataset.
rights_holder	Acronym of the organization owning or managing the rights over the data.

Details

The resulting files can be uploaded to an **IPT** for publication to GBIF and/or OBIS. A corresponding `eml.xml` metadata file is not created.

Value

CSV and `meta.xml` files written to disk. And invisibly, a list of data frames with the transformed data.

Transformation details

This function **follows recommendations** discussed and created by Peter Desmet, Jonas Mortelmans, Jonathan Pye, John Wiecezorek and others and transforms data to:

- An **Occurrence core**.
- An **Extended Measurement Or Facts extension**
- A `meta.xml` file.

Key features of the Darwin Core transformation:

- Deployments (animal+tag associations) are parent events, with capture, surgery, release, recapture (human observations) and acoustic detections (machine observations) as child events. No information about the parent event is provided other than its ID, meaning that data can be expressed in an Occurrence Core with one row per observation and `parentEventID` shared by all occurrences in a deployment.
- The release event often contains metadata about the animal (sex, life stage, comments) and deployment as a whole. Sex, life stage and weight are (additionally) provided in an Extended Measurement Or Facts extension, where values are mapped to a controlled vocabulary recommended by **OBIS**.
- Acoustic detections are subsampled to the **first detection per hour**, to reduce the size of high-frequency data. The `coordinateUncertaintyInMeters` is set to 1000 m to account for imprecise receiver location and acoustic detection range. Duplicate detections (same animal, tag and timestamp) are excluded. It is possible for a deployment to contain no detections, e.g. if the tag malfunctioned right after deployment.
- Parameters or metadata are used to set the following record-level terms:
 - `dwc:datasetID`: `dataset_id`, defaulting to `package$id`.

- dwc:datasetName: dataset_name.
- dcterms:license: license.
- dcterms:rightsHolder: rights_holder.

Examples

```
package <- example_dataset()
write_dwc(
  package,
  directory = "my_directory",
  dataset_name = paste(
    "2014_DEMER - Acoustic telemetry data for four fish species in the",
    "Demer river (Belgium)"
  ),
  license = "CC0-1.0",
  rights_holder = "INBO"
)

# Clean up (don't do this if you want to keep your files)
unlink("my_directory", recursive = TRUE)
```

write_package

Write a Data Package to disk

Description

Write a Data Package to disk

Usage

```
write_package(package, directory, compress = FALSE)
```

Arguments

package	Data Package object, as returned by read_package() or create_package() .
directory	Path to local directory to write files to.
compress	If TRUE, data of added resources will be gzip compressed before being written to disk (e.g. deployments.csv.gz).

See Also

Other frictionless functions: [read_package](#), [read_resource](#)

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