Package ‘icesDatras’

February 10, 2022

Version 1.4.0
Date 2022-02-10
Title DATRAS Trawl Survey Database Web Services
Imports utils
Suggests icesVocab
Description R interface to access the web services of the ICES (International Council for the Exploration of the Sea) DATRAS trawl survey database <https://datras.ices.dk/WebServices/Webservices.aspx>.
License GPL (>= 2)
BugReports https://github.com/ices-tools-prod/icesDatras/issues
RoxygenNote 7.1.2
Encoding UTF-8
NeedsCompilation no
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Repository CRAN
Date/Publication 2022-02-10 21:00:02 UTC

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### Description

R interface to access the web services of the ICES DATRAS trawl survey database.

### Details

**Exchange data:**

- `getHHdata` haul data
- `getHLdata` length-based data
- `getCAdata` age-based data
- `getDATRAS` exchange data

**Catch weights:**

- `getCatchWgt` catch weights

**Survey indices:**

- `getIndices` survey indices

**Overview of available data:**

- `getSurveyList` surveys
- `getSurveyYearList` years
- `getSurveyYearQuarterList` quarters
- `getDatrasDataOverview` surveys, years, and quarters
checkSurveyOK

Basic queries (thin web service wrappers):
getCAdata, getHHdata, getHLdata, getIndices, getSurveyList, getSurveyYearList, getSurveyYearQuarterList

Derived queries (combining web services with R computations):
getCatchWgt, getDatrasDataOverview, getDATRAS

Author(s)
Colin Millar, Scott Large, and Arni Magnusson.

References
ICES DATRAS database: http://datras.ices.dk.
ICES DATRAS web services: https://datras.ices.dk/WebServices/Webservices.aspx.

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checkSurveyOK | Check that a survey name is in the database

Description
Checks a survey name against a list of all survey names in the DATRAS database. If the name is not matched it puts up a message showing the available survey names.

Usage
checkSurveyOK(survey)

Arguments
survey the survey acronym, e.g. NS-IBTS.

Value
logical.

See Also
checkSurveyYearOK and getSurveyYearQuarterList also perform checks against the DATRAS database.
icesDatras-package gives an overview of the package.

Examples
## Not run:
checkSurveyOK(survey = "ROCKALL")
checkSurveyOK(survey = "NOTALL")

## End(Not run)
checkSurveyYearOK

Check that a survey and year combination is in the database

Description

Checks a year and/or survey name against a list of all survey year combinations in the DATRAS database. If the combination is not matched it puts up a message showing the available options.

Usage

checkSurveyYearOK(survey, year, checksurvey = TRUE)

Arguments

survey the survey acronym, e.g. NS-IBTS.
year the year of the survey, e.g. 2010.
checksurvey logical, should the survey name also be checked.

Value

logical.

See Also

checkSurveyOK and checkSurveyYearQuarterOK also perform checks against the DATRAS database.

icesDatras-package gives an overview of the package.

Examples

## Not run:
checkSurveyYearOK(survey = "ROCKALL", 2015)
checkSurveyYearOK(survey = "ROCKALL", 2000)
checkSurveyYearOK(survey = "NOTALL", 2000)

## End(Not run)
checkSurveyYearQuarterOK

Check that a survey, year and quarter combination is in the database

Description

Checks a quarter and/or year and/or survey name against a list of all survey year quarter combinations in the DATRAS database. If the combination is not matched it puts up a message showing the available options.

Usage

checkSurveyYearQuarterOK(
  survey,
  year,
  quarter,
  checksurvey = TRUE,
  checkyear = TRUE
)

Arguments

survey the survey acronym, e.g. NS-IBTS.
year the year of the survey, e.g. 2010.
quarter the quarter of the year the survey took place, i.e. 1, 2, 3 or 4.
checksurvey logical, should the survey name also be checked.
checkyear logical, should the year also be checked.

Value

logical.

See Also

checkSurveyOK and checkSurveyYearOK also perform checks against the DATRAS database. icesDatras-package gives an overview of the package.

Examples

## Not run:
checkSurveyYearQuarterOK(survey = "ROCKALL", 2015, 3)
checkSurveyYearQuarterOK(survey = "ROCKALL", 2015, 1)
checkSurveyYearQuarterOK(survey = "ROCKALL", 2000, 1)
checkSurveyYearQuarterOK(survey = "NOTALL", 2000, 1)

# be careful of unexpected results with checksurvey and checkyear!
checkSurveyYearQuarterOK(survey = "NOTALL", 2000, 1, checksurvey=FALSE)
getCAdata

Get Age-Based Data

Description
Get age-based data such as sex, maturity, and age counts per length of sampled species.

Usage
getCAdata(survey, year, quarter)

Arguments
- `survey`: the survey acronym, e.g. NS-IBTS.
- `year`: the year of the survey, e.g. 2010.
- `quarter`: the quarter of the year the survey took place, i.e. 1, 2, 3 or 4.

Value
A data frame.

Author(s)
Colin Millar.

See Also
- `getDATRAS` supports querying many years and quarters in one function call.
- `getHHdata` and `getHLdata` get haul data and length-based data.
- `icesDatras-package` gives an overview of the package.

Examples
```r
## Not run:
cadata <- getCAdata(survey = "ROCKALL", year = 2002, quarter = 3)
str(cadata)
## End(Not run)
```
getCatchWgt

Get Catch Weights

Description

Calculate the total reported catch weight by species and haul.

Usage

getchCatchWgt(survey, years, quarters, aphia)

Arguments

survey the survey acronym e.g. NS-IBTS.
years a vector of years of the survey, e.g. c(2010, 2012) or 2005:2010.
quarters a vector of quarters of the year the survey took place, e.g. c(1, 4) or 1:4.
aphia a vector of Aphia species codes defined in the WoRMS database, e.g. c(126436, 1264374).

Value

A data frame.

Note

The icesVocab package provides findAphia, a function to look up Aphia species codes.

See Also

getSurveyYearList, getSurveyYearQuarterList, and getDatrasDataOverview also list available data.

icesDatras-package gives an overview of the package.

Examples

## Not run:
getchCatchWgt(survey = "ROCKALL", years = 2002, quarters = 3, aphia = 126437)

# look up specific species
aphia <- icesVocab::findAphia(c("cod", "haddock"))
cwt <- getCatchWgt(survey = "ROCKALL", years = 2002, quarters = 3, aphia = aphia)

## End(Not run)
getCPUEAge

Get CPUE per Age per Haul per Hour for a given Survey, year and Quarter

Description

Get CPUE per Age per Haul per Hour for a given Survey, year and Quarter

Usage

getCPUEAge(survey, year, quarter)

Arguments

- **survey**: the survey acronym, e.g. NS-IBTS.
- **year**: the year of the survey, e.g. 2010.
- **quarter**: the quarter of interest, e.g. 1

Value

A data frame.

Author(s)

Adriana Villamor.

See Also

getHHdata and getCAdata get haul data and age-based data., and getIndices, and getCPUELength.

icesDatras-package gives an overview of the package.

Examples

```r
## Not run:
getCPUEperAge(survey = "NS-IBTS", year = 2018, quarter = 1)

## End(Not run)
```
getCPUELength

*Get CPUE per Length per Haul per Hour for a given Survey, year and Quarter*

**Description**

Get CPUE per Length per Haul per Hour for a given Survey, year and Quarter

**Usage**

```r
getCPUELength(survey, year, quarter)
```

**Arguments**

- `survey`: the survey acronym, e.g. NS-IBTS.
- `year`: the year of the survey, e.g. 2010.
- `quarter`: the quarter of interest, e.g. 1

**Value**

A data frame.

**Author(s)**

Adriana Villamor.

**See Also**

`getHHdata` and `getCAdata` get haul data and age-based data., and `getIndices`, and `getCPUEAge`. `icesDatras-package` gives an overview of the package.

**Examples**

```r
## Not run:
getCPUELength(survey = "NS-IBTS", year = 2018, quarter = 1)

## End(Not run)
```
getDATRAS  Get Any DATRAS Data

Description
This function combines the functionality of getHHdata, getHLdata, and getCAdata. It supports querying many years and quarters in one function call.

Usage
getDATRAS(record = "HH", survey, years, quarters)

Arguments
- record: the data type required: "HH" haul data, "HL" length-based data, "CA" age-based data.
- survey: the survey acronym e.g. NS-IBTS.
- quarters: a vector of quarters of the year the survey took place, i.e. c(1, 4) or 1:4.

Value
A data frame.

Author(s)
Scott Large and Colin Millar.

See Also
gethHdata, getHLdata, and getCAdata get haul data, length-based data, and age-based data.
icesDatras-package gives an overview of the package.

Examples
## Not run:
hhdata <- getDATRAS(record = "HH", survey = "ROCKALL", years = 2002, quarters = 3)
hldata <- getDATRAS(record = "HL", survey = "ROCKALL", years = 2002, quarters = 3)
cadata <- getDATRAS(record = "CA", survey = "ROCKALL", years = 2002, quarters = 3)
## End(Not run)
getDatrasDataOverview

**Summarize Data Availability**

**Description**

Evaluate a presence-absence table for each survey with '1' where there is data and '0' (printed as '.') otherwise.

**Usage**

```r
getDatrasDataOverview(surveys = NULL, long = TRUE)
```

**Arguments**

- `surveys`: a vector of survey names, or `NULL` to process all surveys.
- `long`: whether tables should have year as row names (default) or column names.

**Value**

A list of tables.

**See Also**

- `getSurveyList`, `getSurveyYearList`, and `getSurveyYearQuarterList` also list available data.
- `icesDatras-package` gives an overview of the package.

**Examples**

```r
## Not run:
getDatrasDataOverview(surveys = "ROCKALL", long = FALSE)
## End(Not run)
```

---

getFlexFile

**Get Flex File**

**Description**

Get all information in HH plus estimates of Door Spread, Wing Spread and Swept Area per square km. Only available for NS-IBTS survey.

**Usage**

```r
getFlexFile(survey, year, quarter)
```
getHHdata

Get Haul Data

Description
Get haul data such as position, depth, sampling method, etc.

Usage
getHHdata(survey, year, quarter)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>survey</td>
<td>the survey acronym, e.g. NS-IBTS.</td>
</tr>
<tr>
<td>year</td>
<td>the year of the survey, e.g. 2010.</td>
</tr>
<tr>
<td>quarter</td>
<td>the quarter of the year the survey took place, i.e. 1, 2, 3 or 4.</td>
</tr>
</tbody>
</table>

Examples

```r
## Not run:
flex <- getFlexFile(survey = "ROCKALL", year = 2002, quarter = 3)
str(flex)

# error checking examples:
flex <- getFlexFile(survey = "NS_IBTS", year = 2016, quarter = 1)
flex <- getFlexFile(survey = "NS-IBTS", year = 2030, quarter = 1)
flex <- getFlexFile(survey = "NS-IBTS", year = 2016, quarter = 6)
## End(Not run)
```
getHLdata

Value
A data frame.

Author(s)
Colin Millar.

See Also
getDATRAS supports querying many years and quarters in one function call.
getHLdata and getCAdata get length-based data and age-based data.
icesDatras-package gives an overview of the package.

Examples

## Not run:
hhdata <- getHHdata(survey = "ROCKALL", year = 2002, quarter = 3)
str(hhdata)

# error checking examples:
hhdata <- getHHdata(survey = "NS_IBTS", year = 2016, quarter = 1)
hhdata <- getHHdata(survey = "NS-IBTS", year = 2030, quarter = 1)
hhdata <- getHHdata(survey = "NS-IBTS", year = 2016, quarter = 6)
## End(Not run)

getHLdata

Get Length-Based Data

Description
Get length-based information such as measured length, individual counts, and sub-factors of sampled species.

Usage
getHLdata(survey, year, quarter)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>survey</td>
<td>the survey acronym, e.g. NS-IBTS.</td>
</tr>
<tr>
<td>year</td>
<td>the year of the survey, e.g. 2010.</td>
</tr>
<tr>
<td>quarter</td>
<td>the quarter of the year the survey took place, i.e. 1, 2, 3 or 4.</td>
</tr>
</tbody>
</table>

Value
A data frame.
getIndices

See Also

getDATRAS supports querying many years and quarters in one function call.
getHlidata and getCAdata get haul data and age-based data.
icesDatras-package gives an overview of the package.

Examples

```r
# Not run:
hlidata <- getHlidata(survey = "ROCKALL", year = 2002, quarter = 3)
str(hlidata)
# End(Not run)
```

getIndices Get Survey Indices

Description

Get age based indices of abundance by species, survey and year.

Usage

getIndices(survey, year, quarter, species)

Arguments

- `survey`: the survey acronym, e.g. NS-IBTS.
- `year`: the year of the survey, e.g. 2010.
- `quarter`: the quarter of the year the survey took place, i.e. 1, 2, 3 or 4.
- `species`: the aphia species code for the species of interest.

Value

A data frame.

Note

The icesAdvice package provides findAphia, a function to look up Aphia species codes.

See Also

getDATRAS supports querying many years and quarters in one function call.
getHlidata and getCAdata get haul data and age-based data.
icesDatras-package gives an overview of the package.
getLTassessment

Examples

```r
## Not run:
haddock_aphia <- icesVocab::findAphia("haddock")
index <- getIndices(survey = "NS-IBTS", year = 2002, quarter = 3, species = haddock_aphia)
str(index)
## End(Not run)
```

---

getLTassessment  Get Litter assessment output

Description

Get Litter assessment output by survey, year and quarter. The raw data are also included in this file.

Usage

getLTassessment(survey, year, quarter)

Arguments

- `survey` the survey acronym, e.g. NS-IBTS.
- `year` the year of the survey, e.g. 2010.
- `quarter` the quarter of the year the survey took place, i.e. 1, 2, 3 or 4.

Value

A data frame.

Note

The icesAdvice package provides findAphia, a function to look up Aphia species codes.

See Also

- `getDATRAS` supports querying many years and quarters in one function call.
- `getHHdata` and `getCAdata` get haul data and age-based data.
- icesDatras-package gives an overview of the package.

Examples

```r
## Not run:
index <- getLTassessment(survey = "NS-IBTS", year = 2002, quarter = 3)
str(index)
## End(Not run)
```
getSurveyList  

*Get a List of All Surveys*

**Description**

Get a list of all survey acronyms.

**Usage**

```r
getSurveyList()
```

**Value**

A character vector.

**Author(s)**

Colin Millar.

**See Also**

`getSurveyYearList`, `getSurveyYearQuarterList`, and `getDatrasDataOverview` also list available data. `icesDatras-package` gives an overview of the package.

**Examples**

```r
## Not run:
getSurveyList()
## End(Not run)
```

getSurveyYearList  

*Get a List of Survey Years*

**Description**

Get a list of all data years for a given survey.

**Usage**

```r
getSurveyYearList(survey)
```

**Arguments**

- `survey` the survey acronym, e.g. NS-IBTS.
getSurveyYearQuarterList

Value

A numeric vector.

Author(s)

Colin Millar.

See Also

getsurveyList, getsurveyYearQuarterList, and getDatrasDataOverview also list available data.
icesDatras-package gives an overview of the package.

Examples

## Not run:
getSurveyYearList(survey = "ROCKALL")

## End(Not run)

getSurveyYearQuarterList

Get a List of Quarters

Description

Get a list of quarters available for a given survey and year.

Usage

getsurveyYearQuarterList(survey, year)

Arguments

survey the survey acronym, e.g. NS-IBTS.
year the year of the survey, e.g. 2010.

Value

A numeric vector.

Author(s)

Colin Millar.
See Also

`getSurveyYearList`, `getSurveyYearQuarterList`, and `getDatrasDataOverview` also list available data.

`icesDatras-package` gives an overview of the package.

Examples

```r
## Not run:
getSurveyYearQuarterList(survey = "ROCKALL", year = 2002)

## End(Not run)
```
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