Package: fisheryO (via r-universe)

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Type Package

Title Fisheries Overviews for ICES Advice

Version 0.2

Description Functions that work with International Council for the Exploration of the Sea (ICES) web services and databases to collate, aggregate, and plot Fisheries Overview products.

Depends R (>= 3.3.1), dplyr (>= 0.7), ggplot2 (>= 2.2.1)

Imports tidyr (>= 0.6.3), ggrepel (>= 0.6.4), stringr (>= 1.2.0), icesSAG (>= 1.3-3), ggthemes (>= 3.4.0), lubridate (>= 1.6.0), ggiraph (>= 0.3.3), gridExtra (>= 2.2.1), countrycode (>= 0.19), rnaturalearth (>= 0.1.0), flextable (>= 0.2.0), officer (>= 0.1.4), sf (>= 0.5), devtools (>= 0.13.2), htmltools (>= 0.3.6), DT (>= 0.2), rlang

Suggests testthat

License GPL (>= 2)

LazyData TRUE

RoxygenNote 6.0.1

Repository https://ices-tools-prod.r-universe.dev

RemoteUrl https://github.com/ices-tools-prod/fisheryO

RemoteRef HEAD

RemoteSha 289159dd4e738178e7a597f08f56a0eb180eea93

Contents

---

area_definition   *ICES Area and Ecoregion definitions*

Description

`area_definition` returns list of sf dataframes with shape information of Europe, ICES Areas and
ICES Ecoregions.

Usage

```
area_definition(ecoregion = "Greater North Sea Ecoregion")
```

Arguments

ecoregion   character of the ecoregion to plot. e.g., "Greater North Sea Ecoregion"

Value

list of ices_shape (data frame), eco_shape (data frame), europe_shape (data frame) and centroids (data frame)

Note

European map is from Natural Earth (scale = 10) via the rnaturalearth package

Author(s)

Scott Large

See Also

Used in [area_definition_map](#) to a map describing potential mismatches between ICES Ecoregions and ICES Areas.

Input data: [ices_shape](#), [eco_shape](#), and [europe_shape](#).

---

area_definition_map *ICES Area and Ecoregion map*

Description

area_definition_map returns a map describing potential mismatches between ICES Ecoregions and ICES Areas

Usage

```
area_definition_map(ecoregion, data_caption = TRUE, save_plot = FALSE,
  return_plot = TRUE, output_path = NULL, file_name = NULL)
```

Arguments

ecoregion   ecoregion name, e.g. Greater North Sea Ecoregion

data_caption print the data source as a caption, boolean.

Value

A png or ggplot plot

Author(s)

Scott Large

See Also

SAG summary table and reference points come from [clean_sag](#). [frmt_summary_table](#) evaluates status relative to reference points and formats the table for .html.

Examples

```
## Not run:
area_definition_map("Greater North Sea")

## End(Not run)
```

---

clean_sag   *Clean SAG reference points and summary table*

Description

`clean_sag` returns a merged and tidied SAG reference points and summary table and a formatted (.html) stock list

Usage

```
clean_sag(active_year = 2016)
```

Arguments

active_year   numeric of the stock database version. e.g., 2016

Value

list of stock_list_frmt (data frame) and sag_complete_summary (tbl_df)

Note

Periodically, ICES adds or removes stocks from the advisory process. The function returns the SAG reference points and summary table for all published (in SAG) and active stocks for a given year.

Author(s)

Scott Large

See Also

Used in `stock_trends_fun` to make clickable information on dynamic line plots of F and SSB relative to F_{MSY} and MSY $B_{trigger}$ reference points for stocks of a fish category for an ecoregion. Also, used in `frmt_summary_table`.

Input data: `stock_list_raw`, `sag_summary_raw`, `sag_refpts_raw`, and `sag_keys_raw`.

Examples

```
head(clean_sag(active_year = 2016))
```

---

clean_stock_trends *Clean stock status trends*

Description

clean_stock_trends returns list of 2: data frame of F and SSB relative to F_{MSY} and MSY $B_{trigger}$ reference points for stocks of a fish category for an ecoregion and sag_complete_summary from [clean_sag](#).

Usage

```
clean_stock_trends(active_year = 2016, grouping_var = c("EcoGuild",
  "EcoRegion", "FisheriesGuild")[1], plotting_var = c("StockCode",
  "FisheriesGuild")[1], metric = c("MSY", "MEAN")[1])
```

Arguments

active_year	numeric of the stock database version (year). e.g., 2016
grouping_var	character string of the desired grouping. Options include: EcoRegion, EcoGuild, or FisheriesGuild
plotting_var	character string of the variable to plot. Options include: StockCode or FisheriesGuild (mean)
metric	character string of the desired metric. Options include: MSY or MEAN (according to grouping_var)

Value

A list of 2: 1) data frame of F and SSB relative to F_{MSY} and MSY $B_{trigger}$ reference points for stocks of a fish category for an ecoregion and 2) sag_complete_summary from [clean_sag](#).

Note

Stocks are linked to ecoregions and fish categories via the ICES Stock database. Reference points are as published in ICES Stock Assessment Graphs database. In some cases, status relative to reference points may vary from published ICES advice when reported F or SSB are very close to reference points (e.g., $F = 0.201 > F_{MSY} = 0.20$).

Author(s)

Scott Large

See Also

Used in [stock_trends_fun](#) for line plots of F and SSB relative to F_{MSY} and MSY $B_{trigger}$ reference points for stocks of a fish category for an ecoregion. Input data: From [clean_sag](#)

Examples

```
## Not run:
clean_stock_trends(2016)

## End(Not run)
```

---

eco_shape   *ICES Ecoregions*

Description

ICES Ecoregions. Accessed 23 May 2017.

- OBJECTIDadd text
- Ecoregionadd text
- Shape_Lengadd text
- Shape_Le_1add text
- Shape_Areaadd text
- geometryadd text

Usage

```
eco_shape
```

Format

A sf data frame with 17 rows and 6 variables.

Source

http://gis.ices.dk/shapefiles/ICES_ecoregions.zip

---

europe_shape   *Europe map*

Description

ICES Ecoregions. Accessed 23 May 2017.

- iso_a3add text
- iso_n3add text
- adminadd text
- geometryadd text

Usage

```
europe_shape
```

Format

A sf data frame with 51 rows and 6 variables. From Natural Earth via the rnaturalearth package

Source

<http://www.naturalearthdata.com/>, <https://cran.r-project.org/package=rnaturalearth>

---

fisheryO	*fisheryO: A "Research Compendium" for ICES Fisheries Overviews*

Description

The fisheryO package is offered to provide documentation of the processes used to download, aggregate, and analyze data for ICES Fisheries Overviews. Further, the package contains R functions to facilitate the standard plotting of these data.

fisheryO plotting functions

area_definition_map stockSummaryTable_fun stockPie_fun gesPie_fun stock_trends_fun plot_kobe guild_discards_fun ices_catch_plot stecf_plot

fisheryO data cleaning functions

area_definition clean_sag frmt_summary_tbl stock_props ices_stock_props ges_stock_props clean_stock_trends stock_catch stock_status ices_catch_data stecf_data

fisheryO raw data

stock_list_raw sag_summary_raw sag_refpts_raw sag_keys_raw ices_catch_historical_raw ices_catch_official_raw species_list_raw stecf_effort_raw stecf_landings_raw ices_shape eco_shape europe_shape

---

frmt_summary_tbl   *Format stock summary table*

Description

`frmt_summary_tbl` returns the stock summary table plain and formatted with html (e.g., glyphicons and italics)

Usage

```
frmt_summary_tbl(active_year = active_year,
  calculate_status = calculate_status, return_clean_sag = FALSE)
```

Arguments

active_year   numeric of the stock database version. e.g., 2016

calculate_status

                   logical on whether to use raw SAG output to calculate stock status or to use the
                   hard-coded values from stock summary table

return_clean_sag

                   logical to return objects from clean_sag()

Value

data frame

Note

Periodically, ICES adds or removes stocks from the advisory process. The function returns the stock summary table for all published (in SAG) and active stocks for a given year. `calculate_status = TRUE` calculates stock status relative to published reference points. This will represent PA and SBL for ecoregions with proxy reference points. `calculate_status = TRUE` takes the raw icons from published advice. Note, before 2017 not all stocks status tables have been added to the SAG database and only few stocks had MSY proxy reference points.

Author(s)

Scott Large

See Also

Used in [stockSummaryTable_fun](#) to create the "Status of stock summary relative to reference points" table for all stocks for an ecoregion. Input data: SAG summary table and reference points come from [clean_sag](#).

Examples

```
head(frmt_summary_tbl(active_year = 2016)$summary_table)
```

---

gesPie_fun   *Pie chart of proportion of stocks relative to GES reference points*

Description

The gesPie_fun function returns pie charts of the proportion of stocks relative to GES reference points in an ecoregion.

Usage

```
gesPie_fun(ecoregion, fisheries_guild = c("pelagic", "demersal", "crustacean",
  "elasmobranch", "benthic"), calculate_status = FALSE, data_caption = TRUE,
  file_name = NULL, active_year = 2016, save_plot = FALSE,
  return_plot = TRUE, return_data = FALSE, output_path = NULL)
```

Arguments

ecoregion	ecoregion name, e.g. Greater North Sea
fisheries_guild	
	fisheries guild to include in proportions
calculate_status	
	logical on whether to use raw SAG output to calculate stock status or to use the hard-coded values from stock summary table
data_caption	print the data source as a caption, boolean.
file_name	name for the output.
active_year	numeric of the stock database version (year). e.g., 2016
save_plot	logical to save plot.
return_plot	logical to return plot to current environment.
return_data	logical on returning a .csv of plotted data
output_path	path for output to live.

Value

A ggplot2 object or .png saved as file_name to output_path. When file_name is NULL, the file name is the ecoregion. When output_path is NULL, the file is saved to "~/".

Note

Stocks are linked to ecoregions via the ICES Stock database. Reference points are as published in ICES Stock Assessment Graphs database. In some cases, status relative to reference points may vary from published ICES advice when reported F or SSB are very close to reference points (e.g., F = 0.201 > F_{MSY} = 0.20). calculate_status = TRUE calculates stock status relative to published reference points. This will represent PA and SBL for ecoregions with proxy reference points. calculate_status = TRUE takes the raw icons from published advice. Note, before 2017 not all stocks status tables have been added to the SAG database and only few stocks had MSY proxy reference points.

Author(s)

Scott Large

Examples

```
## Not run:
gesPie_fun("Greater North Sea Ecoregion", return_plot = TRUE)

## End(Not run)
```

---

ges_stock_props   *Proportion of stocks relative to GES reference points*

Description

ges_stock_props returns a data frame of the proportion of stocks relative to GES reference points for all ecoregion.

Usage

```
ges_stock_props(active_year = active_year, ecoregion = ecoregion,
  calculate_status = calculate_status, fisheries_guild = fisheries_guild)
```

Arguments

active_year   numeric of the stock database version (year). e.g., 2016

ecoregion   vector of ecoregions to include

calculate_status
                logical on whether to use raw SAG output to calculate stock status or to use the hard-coded values from stock summary table

fisheries_guild
                vector of fisheries guilds to include

Value

returns a data frame of the proportion of stocks relative to ICES reference points for fish categories in ecoregions.

Note

Periodically, ICES adds or removes stocks from the advisory process. The function returns the SAG reference points and summary table for all published (in SAG) and active stocks for a given year.calculate_status = TRUE calculates stock status relative to published reference points. This will represent PA and SBL for ecoregions with proxy reference points. calculate_status = TRUE takes the raw icons from published advice. Note, before 2017 not all stocks status tables have been added to the SAG database and only few stocks had MSY proxy reference points.

Author(s)

Scott Large

See Also

Used in `gesPie_fun` to plot proportion of stocks relative to GES reference points for all ecoregions. Input data: From `stock_props`, which brings sag_complete_summary and stock_list_frmt from `clean_sag`.

Examples

```
## Not run:
ges_stock_props(2016)

## End(Not run)
```

---

guild_discards_fun   *Discard rate over time*

Description

The `guild_discards_fun` function returns a series of plots of discard rate and landings by fish category for an ecoregion.

Usage

```
guild_discards_fun(ecoregion, active_year = 2016, data_caption = TRUE,
  output_path = NULL, save_plot = FALSE, return_plot = TRUE,
  return_data = FALSE, file_name = NULL)
```

Arguments

ecoregion	ecoregion name, e.g. Greater North Sea Ecoregion
active_year	numeric of the stock database version (year). e.g., 2016
data_caption	print the data source as a caption, boolean.
output_path	path for output to live.
save_plot	logical to save plot.
return_plot	logical to return plot to current environment.
return_data	logical on returning a .csv of plotted data
file_name	name for the output.

Value

A ggplot2 object when `return_plot` is TRUE, html when `dynamic` is TRUE or .png when `dynamic` is FALSE. Output is saved as `file_name` in `output_path`. When `file_name` is NULL, the file name is the ecoregion. When `output_path` is NULL, the file is saved to "~/".

Note

Stocks are linked to ecoregions and fish categories via the ICES Stock database. Reference points are as published in ICES Stock Assessment Graphs database. In some cases, status relative to reference points may vary from published ICES advice when reported F or SSB are very close to reference points (e.g., $F = 0.201 > F_{MSY} = 0.20$). There is an assumption that discard rates for biannual stocks and are consistent over the years that we don't provide new advice.

Author(s)

Scott Large

Examples

```
## Not run:
guild_discards_fun("Greater North Sea Ecoregion", return_plot = TRUE)

## End(Not run)
```

---

ices_catch_data   *ICES catch time series*

Description

`ices_catch_data` returns a data frame of landings by country, species, and fish category

Usage

```
ices_catch_data()
```

Value

a data frame of landings by country, species, and fish category.

Author(s)

Scott Large

See Also

Used in `ices_catch_plot` to create an area or line plot of landings (historic and official catch) for an ecoregion by country, fish category, or species. Input data: `ices_catch_official_raw`, `ices_catch_historical_raw`, `species_list_raw`, and `stock_list_raw`.

Examples

```
head(ices_catch_data())
```

---

ices_catch_historical_raw

Historical Nominal Catches 1950-2010

Description

Catches in FAO area 27 by country, species, area and year as provided by the national authorities. Source: Eurostat/ICES data compilation of catch statistics - ICES 2011, Copenhagen. Version: 30-11-2011

Usage

ices_catch_historical_raw

Format

A data frame with 28582 rows and 64 variables:

Details

- CountryAdd text
- SpeciesAdd text
- DivisionAdd text
- X1950Add text ...
- X2010Add text

Source

http://www.ices.dk/marine-data/dataset-collections/Pages/Fish-catch-and-stock-assessment.aspx

---

ices_catch_official_raw

Official Nominal Catches 2006-2015

Description

Catches in FAO area 27 by country, species, area and year. Source: Eurostat/ICES database on catch statistics - ICES 2017, Copenhagen. Version 12-06-2017

- SpeciesAdd text
- AreaAdd text
- UnitsAdd text
- CountryAdd text

- X2015Add text
- X2014Add text
- X2013Add text
- X2012Add text
- X2011Add text
- X2010Add text
- X2009Add text
- X2008Add text
- X2007Add text
- X2006Add text

Usage

```
ices_catch_official_raw
```

Format

A data frame with 50203 rows and 14 variables:

Source

http://www.ices.dk/marine-data/dataset-collections/Pages/Fish-catch-and-stock-assessment.aspx

---

ices_catch_plot   *Landings over time by country, guild, or species*

Description

The `ices_catch_plot` function returns an area or line plot of landings (historic and official catch) for an ecoregion by country, guild, or species.

Usage

```
ices_catch_plot(ecoregion, type = c("COMMON_NAME", "COUNTRY", "GUILD")[1],
  line_count = 4, plot_type = c("line", "area")[1], data_caption = TRUE,
  output_path = NULL, file_name = "figure2", save_plot = FALSE,
  return_plot = TRUE, return_data = FALSE, fig.width = 174,
  fig.height = 68, text.size = 9)
```

Arguments

`ecoregion`	ecoregion name, e.g. Greater North Sea Ecoregion
`type`	the variable that will be used to group and display data: COMMON_NAME, GUILD, or COUNTRY
`line_count`	number of lines to display
`plot_type`	area or line plot
`data_caption`	print the data source as a caption, boolean.
`output_path`	path for output to live.
`file_name`	name for the output.
`save_plot`	logical to save plot.
`return_plot`	logical to return plot to current environment.
`return_data`	logical on returning a .csv of plotted data
`fig.width`	width pf combined set of plots
`fig.height`	height of combined set of plots
`text.size`	= size of text in plots

Value

A ggplot2 object when `return_plot` is TRUE or .png when `save_plot` is TRUE. Output is saved as `file_name` in `output_path`. When `file_name` is NULL, the file name is the ecoregion. When `output_path` is NULL, the file is saved to "~/".

Note

Historic and official nominal catch are actually only the landings and do not account for discards, misreporting, or other potential issues.

Author(s)

Scott Large

Examples

```
## Not run:
ices_catch_plot("Greater North Sea Ecoregion", type = "COMMON_NAME", return_plot = TRUE, line_count = 4)

## End(Not run)
```

| ices_shape | *ICES Statistical Areas* |

Usage

```
ices_shape
```

Format

A sf data frame with 66 rows and 11 variables.

Source

<http://gis.ices.dk/shapefiles/ICES_areas.zip>

| ices_stock_props | *Proportion of stocks relative to ICES reference points* |

Description

`ices_stock_props` returns a data frame of the proportion of stocks relative to ICES reference points for fish categories in ecoregions.

Usage

```
ices_stock_props(active_year = active_year, ecoregion = ecoregion,
  calculate_status = calculate_status, fisheries_guild = fisheries_guild)
```

Arguments

active_year	numeric of the stock database version (year). e.g., 2016
ecoregion	vector of ecoregions to include
calculate_status	
	logical on whether to use raw SAG output to calculate stock status or to use the hard-coded values from stock summary table
fisheries_guild	
	vector of fisheries guilds to include

Value

returns a data frame of the proportion of stocks relative to ICES reference points for fish categories in ecoregions.

Note

Periodically, ICES adds or removes stocks from the advisory process. The function returns the SAG reference points and summary table for all published (in SAG) and active stocks for a given year. `calculate_status = TRUE` calculates stock status relative to published reference points. This will represent PA and SBL for ecoregions with proxy reference points. `calculate_status = TRUE` takes the raw icons from published advice. Note, before 2017 not all stocks status tables have been added to the SAG database and only few stocks had MSY proxy reference points.

Author(s)

Scott Large

See Also

Used in `stockPie_fun` to plot proportion of stocks relative to ICES reference points for fish categories in all ecoregions. Input data: From `stock_props`.

Examples

```
## Not run:
ices_stock_props(2016)

## End(Not run)
```

---

plot_kobe   *Kobe plot of stock status*

Description

The `plot_kobe` function returns a 2 plots: a scatter plot of F/F$_{MSY}$ and SSB/MSY B$_{trigger}$ by fish category and ecoregion and a "lollipop" plot of total catch (divided into discards and landings) by stock.

Usage

```
plot_kobe(ecoregion, guild = c("all", "benthic", "demersal", "pelagic",
  "crustacean", "elasmobranch", "large-scale stocks")[1], active_year = 2016,
  data_caption = TRUE, output_path = NULL, return_plot = TRUE,
  return_data = FALSE, save_plot = FALSE, catch_limit = 0,
  file_name = NULL, plotTitle = NULL, fig.width = 131.32,
  fig.height = 88.9, units = "mm", res = 300, dynamic = FALSE)
```

Arguments

`ecoregion`	ecoregion name, e.g. Greater North Sea Ecoregion
`guild`	fish category (options: "all", "benthic", "demersal", "pelagic", "crustacean", "elasmobranch", "large-scale stocks"), e.g. demersal
`active_year`	numeric of the stock database version (year). e.g., 2016
`data_caption`	print the data source as a caption, boolean.
`output_path`	path for output to live.
`return_plot`	logical to return plot to current environment.
`return_data`	logical on returning a .csv of plotted data
`save_plot`	logical to save plot.
`catch_limit`	lower limit of catch to be included in the plot. Useful to cull the herd if there are many stocks with minimal catch.
`file_name`	name for the output.
`fig.width`	width pf combined set of plots
`fig.height`	height of combined set of plots,
`units`	defaults to "mm"
`res`	defaults to "300"
`dynamic`	logical to generate html output with dynamic features.

Value

A ggplot2 object when `return_plot` is TRUE, html when `dynamic` is TRUE or .png when `dynamic` is FALSE. Output is saved as `file_name` in `output_path`. When `file_name` is NULL, the file name is the ecoregion. When `output_path` is NULL, the file is saved to "~/".

Note

Stocks are linked to ecoregions and fish categories via the ICES Stock database. Reference points are as published in ICES Stock Assessment Graphs database. In some cases, status relative to reference points may vary from published ICES advice when reported F or SSB are very close to reference points (e.g., $F = 0.201 > F_{MSY} = 0.20$).

Author(s)

Scott Large

Examples

```
## Not run:
plot_kobe("Greater North Sea Ecoregion", guild = "demersal", return_plot = TRUE)

## End(Not run)
```

---

sag_keys_raw	*ICES Stock Assessment Graphs database - keys*

Description

Data from published ICES advice from 2014-2017. Accessed Accessed 5 July 2017. <e2><80><9c>ICES Stock Assessment Database, 2017/July ICES, Copenhagen<e2><80><9d>

Usage

```
sag_keys_raw
```

Format

A data frame with 545 rows and 3 variables:

Details

- AssessmentYearAdd text
- AssessmentKeyAdd text
- StockKeyLabelAdd text

Source

<https://standardgraphs.ices.dk/>

---

sag_refpts_raw	*ICES Stock Assessment Graphs database - reference points*

Description

Data from published ICES advice from 2014-2017. Accessed Accessed 5 July 2017. <e2><80><9c>ICES Stock Assessment Database, 2017/July ICES, Copenhagen<e2><80><9d>

Usage

```
sag_refpts_raw
```

Format

A data frame with 545 rows and 15 variables:

Details

- AssessmentKeyAdd text

- StockKeyLabelAdd text

- StockDatabaseIDAdd text

- StockKeyAdd text

- AssessmentYearAdd text

- FLimAdd text

- FpaAdd text

- BpaAdd text

- BlimAdd text

- FMSYAdd text

- MSYBtriggerAdd text

- FmanagementAdd text

- BmanagementAdd text

- RecruitmentAgeAdd text

- RecruitmentLengthAdd text

Source

<https://standardgraphs.ices.dk/>

---

sag_stock_status_raw   *ICES Stock Assessment Graphs database - stock status output*

Description

Data from published ICES advice from 2014-2017. Accessed Accessed 5 July 2017. <e2><80><9c>ICES Stock Assessment Database, 2017/July. ICES, Copenhagen<e2><80><9d>

Usage

    sag_stock_status_raw

Format

A data frame with 6163 rows and 13 variables:

Details

- AssessmentYearAdd text
- AssessmentKeyAdd text
- StockKeyLabelAdd text
- yearAdd text
- statusAdd text
- statusiconAdd text
- typeAdd text
- lineNumberAdd text
- lineDescriptionAdd text
- fishingPressureAdd text
- stockSizeAdd text
- stockSizeStatusAdd text
- fishingPressureStatusAdd text

Source

<https://standardgraphs.ices.dk/>

---

sag_summary_raw	*ICES Stock Assessment Graphs database - summary information from assessment output*

Description

Data from published ICES advice from 2014-2017. Accessed Accessed 5 July 2017. ICES Stock Assessment Database, 2017/July ICES, Copenhagen

Usage

```
sag_summary_raw
```

Format

A data frame with 20204 rows and 23 variables:

Details

- YearAdd text

- recruitmentAdd text

- high_recruitmentAdd text

- low_recruitmentAdd text

- low_SSBAdd text

- SSBAdd text

- high_SSBAdd text

- catchesAdd text

- landingsAdd text

- discardsAdd text

- low_FAdd text

- FAdd text

- high_FAdd text

- StockPublishNoteAdd text

- FageAdd text

- fishstockAdd text

- recruitment_ageAdd text

- AssessmentYearAdd text

- unitsAdd text

- stockSizeDescriptionAdd text

- stockSizeUnitsAdd text

- fishingPressureDescriptionAdd text

- fishingPressureUnitsAdd text

Source

https://standardgraphs.ices.dk/

---

species_list_raw *ASFIS list of species*

Description

ASFIS list of species includes 12 700 species items selected according to their interest or relation to fisheries and aquaculture. For each species item stored in a record, codes (ISSCAAP group, taxonomic and 3-alpha) and taxonomic information (scientific name, author(s), family, and higher taxonomic classification) are provided.

Usage

```
species_list_raw
```

Format

A data frame with 12700 rows and 11 variables:

Details

Version 2-2016

- ISSCAAPAdd text
- TAXOCODEAdd text
- X3A_CODEAdd text
- Scientific_nameAdd text
- English_nameAdd text
- French_nameAdd text
- Spanish_nameAdd text
- AuthorAdd text
- FamilyAdd text
- OrderAdd text
- Stats_dataAdd text

Source

<http://www.fao.org/fishery/collection/asfis/en>

---

stecf_data   *STECF catch and effort time series*

Description

`stecf_data` returns a data frame of effort and landings by country, species, and fish category

Usage

```
stecf_data()
```

Value

a data frame of stock status relative to reference points and catch, discards, and landings by stock for the most recent assessment.

Author(s)

Scott Large

See Also

Used in `stecf_plot` to create an area or line plot of landings and effort for an ecoregion by country and guild. Input data: `stecf_effort_raw` and `stecf_landings_raw`.

Examples

```
head(stecf_data())
```

---

stecf_effort_raw   *STECF nominal effort*

Description

STECF nominal effort from the FDI data call 2016. Accessed 16 March 2017.

Usage

```
stecf_effort_raw
```

Format

A data frame with 23993 rows and 13 variables.

Details

- measure.calculationadd text
- annexadd text
- countryadd text
- fishing_activityadd text
- fishing_capacityadd text
- gt_days_at_seaadd text
- no_vesselsadd text
- nominal_effortadd text
- regulated.areaadd text
- regulated.gearadd text
- speconadd text
- vessel.lengthadd text
- yearadd text

Source

https://stecf.jrc.ec.europa.eu/dd/effort/graphs-annex

---

stecf_landings_raw   *STECF landings and discards*

Usage

```
stecf_landings_raw
```

Format

A data frame with 530230 rows and 11 variables.

Source

<https://stecf.jrc.ec.europa.eu/dd/effort/graphs-annex>

---

stecf_plot   *STECF Landings over time by country, guild, or species*

Description

The stecf_plot function returns an area or line plot of landings (historic and official catch) for an ecoregion by country guild, or species.

Usage

```
stecf_plot(ecoregion, metric = c("EFFORT", "LANDINGS")[1], type = c("GEAR",
  "COUNTRY")[1], line_count = 4, plot_type = c("line", "area")[1],
  data_caption = TRUE, file_name = NULL, save_plot = FALSE,
  output_path = NULL, return_plot = TRUE, return_data = FALSE,
  fig.width = 174, fig.height = 68, text.size = 9, ...)
```

Arguments

ecoregion	ecoregion name, e.g. Greater North Sea Ecoregion
metric	the value to plot e.g., EFFORT or LANDINGS
type	the variable that will be used to group and display data: COMMON_NAME, GUILD, or COUNTRY
line_count	number of lines to display
plot_type	area or line plot
data_caption	print the data source as a caption, boolean.
file_name	name for the output.
save_plot	logical to save plot.
output_path	path for output to live.

return_plot	logical to return plot to current environment.
return_data	logical on returning a .csv of plotted data
fig.width	width pf combined set of plots
fig.height	height of combined set of plots
text.size	= size of text in plots

Value

A ggplot2 object when `return_plot` is TRUE or .png when `save_plot` is TRUE. Output is saved as `file_name` in `output_path`. When `file_name` is NULL, the file name is the ecoregion. When `output_path` is NULL, the file is saved to "~/".

Note

Some considerable errors have been identified in the STECF data. Finland and Estonia effort data are not reliable, and Germany recorded an erroneous haul in 2013. These values have been removed.

Author(s)

Scott Large

Examples

```
## Not run:
stecf_plot("Greater North Sea Ecoregion", metric = "EFFORT", type = "GEAR", return_plot = TRUE, line_count = 4)

## End(Not run)
```

---

stockPie_fun   *Pie chart of proportion of stocks relative to reference points*

Description

The `stockPie_fun` function returns pie charts of the proportion of stocks relative to reference points for fish categories in an ecoregion.

Usage

```
stockPie_fun(ecoregion, fisheries_guild = c("pelagic", "demersal",
  "crustacean", "elasmobranch", "benthic"), calculate_status = FALSE,
  data_caption = TRUE, file_name, active_year = 2016, save_plot = FALSE,
  return_plot = TRUE, return_data = FALSE, output_path = NULL)
```

Arguments

`ecoregion`	ecoregion name, e.g. Greater North Sea
`fisheries_guild`	
	fisheries guild to include in proportions
`calculate_status`	
	logical on whether to use raw SAG output to calculate stock status or to use the hard-coded values from stock summary table
`data_caption`	print the data source as a caption, boolean.
`file_name`	name for the output.
`active_year`	numeric of the stock database version (year). e.g., 2016
`save_plot`	logical to save plot.
`return_plot`	logical to return plot to current environment.
`return_data`	logical on returning a .csv of plotted data
`output_path`	path for output to live.

Value

A ggplot2 object or .png saved as `file_name` to `output_path`. When `file_name` is NULL, the file name is the ecoregion. When `output_path` is NULL, the file is saved to "~/".

Note

Stocks are linked to ecoregions and fish categories via the ICES Stock database. Reference points are as published in ICES Stock Assessment Graphs database. In some cases, status relative to reference points may vary from published ICES advice when reported F or SSB are very close to reference points (e.g., F = 0.201 > F$_{MSY}$ = 0.20). `calculate_status` = TRUE calculates stock status relative to published reference points. This will represent PA and SBL for ecoregions with proxy reference points. `calculate_status` = TRUE takes the raw icons from published advice. Note, before 2017 not all stocks status tables have been added to the SAG database and only few stocks had MSY proxy reference points.

Author(s)

Scott Large

Examples

```
## Not run:
stockPie_fun("Greater North Sea Ecoregion", return_plot = TRUE)

## End(Not run)
```

---

stockSummaryTable_fun   *Render html stock summary table*

Description

This function returns "Status of stock summary relative to reference points" for all stocks in an ecoregion.

Usage

```
stockSummaryTable_fun(ecoregion, active_year = 2016,
  table_type = c("static_docx", "dynamic_html")[1], output_path = NULL,
  file_name = NULL, return_data = FALSE)
```

Arguments

ecoregion	ecoregion name, e.g. Greater North Sea
active_year	numeric of the stock database version (year). e.g., 2016
table_type	type of table, "dynamic_html" (using DT) and "static_docx" (using flextable and officer) .docx tables.
output_path	path for output to live.
file_name	name for the output.
return_data	logical on returning a .csv of plotted data

Value

A html file. When file_name is NULL, the file name is the ecoregion. When output_path is NULL, the file is saved to "~/". When table_type is "static" or "both", it might take a bit of time...

Note

Stocks are linked to ecoregions via the ICES Stock database. Reference points are as published in ICES Stock Assessment Graphs database. In some cases, status relative to reference points may vary from published ICES advice when reported F or SSB are very close to reference points (e.g., $F = 0.201 > F_{MSY} = 0.20$).

Periodically, ICES adds or removes stocks from the advisory process. The function returns the SAG reference points and summary table for all published (in SAG) and active stocks for a given year.

Author(s)

Scott Large

See Also

SAG summary table and reference points come from clean_sag. frmt_summary_table evaluates status relative to reference points and formats the table for .html.

Examples

```
## Not run:
stockSummaryTable_fun("Greater North Sea Ecoregion")

## End(Not run)
```

---

stock_catch   *Catch, discards, and landings by stock*

Description

`stock_catch` returns a data frame of reference points, catch, discards, and landings by stock over time.

Usage

```
stock_catch(active_year = 2016)
```

Arguments

active_year   numeric of the stock database version (year). e.g., 2016

Value

a data frame of reference points, catch, discards, and landings by stock over time.

Note

Stocks are linked to ecoregions and fish categories via the ICES Stock database. Reference points are as published in ICES Stock Assessment Graphs database. In some cases, status relative to reference points may vary from published ICES advice when reported F or SSB are very close to reference points (e.g., $F = 0.201 > F_{MSY} = 0.20$).

Author(s)

Scott Large

See Also

Used in `guild_discards_fun` for plots of discard rate and landings by fish category for an ecoregion. Input data: From `clean_sag`

Examples

```
head(stock_catch(2016))
```

---

stock_list_raw   *ICES Stock database*

Description

Data describing ICES Stocks. Accessed 5 July 2017

Usage

stock_list_raw

Format

A data frame with 1296 rows and 31 variables.

Details

- StockDatabaseIDAdd text
- StockKeyAdd text
- StockKeyLabelAdd text
- StockKeyDescriptionAdd text
- PreviousStockKeyAdd text
- PreviousStockKeyLabelAdd text
- ActiveYearAdd text
- SpeciesScientificNameAdd text
- SpeciesCommonNameAdd text
- EcoRegionAdd text
- ExpertGroupAdd text
- ExpertGroupDescriptionAdd text
- AdviceDraftingGroupAdd text
- AdviceDraftingGroupDescriptionAdd text
- DataCategoryAdd text
- YearOfLastAssessmentAdd text
- AssessmentFrequencyAdd text
- YearOfNextAssessmentAdd text
- AssessmentTypeAdd text
- AdviceReleaseDateAdd text
- AdviceCategoryAdd text
- AdviceTypeAdd text
- UseOfDiscardsInAdviceAdd text

- PABufferAppliedAdd text

- TrophicGuildAdd text

- FisheriesGuildAdd text

- SizeGuildAdd text

- PublishedAdd text

- GeneratedOnAdd text

- SectionNumberAdd text

- AssessmentKeyAdd text

Source

<https://sd.ices.dk/>

---

stock_props   *Proportion of stocks relative to reference points*

Description

`stock_props` returns a list of the proportion of stocks relative to reference points for fish categories in ecoregions.

Usage

```
stock_props(active_year = active_year, ecoregion = ecoregion,
  calculate_status = calculate_status, fisheries_guild = fisheries_guild,
  return_clean_sag = FALSE)
```

Arguments

`active_year`	numeric of the stock database version (year). e.g., 2016
`ecoregion`	vector of ecoregions to include
`calculate_status`	
	logical on whether to use raw SAG output to calculate stock status or to use the hard-coded values from stock summary table
`fisheries_guild`	
	vector of fisheries guilds to include
`return_clean_sag`	
	logical to return objects from clean_sag()

Value

returns a list with the data frame `stock_props` of the proportion of stocks relative to reference points for all ecoregions. When `return_clean_sag = TRUE`, `sag_complete_summary` and `stock_list_frmt` are also returned from [clean_sag](#).

Note

Periodically, ICES adds or removes stocks from the advisory process. The function returns the
SAG reference points and summary table for all published (in SAG) and active stocks for a given
year.`calculate_status` = TRUE calculates stock status relative to published reference points. This
will represent PA and SBL for ecoregions with proxy reference points. `calculate_status` = TRUE
takes the raw icons from published advice. Note, before 2017 not all stocks status tables have been
added to the SAG database and only few stocks had MSY proxy reference points.

Author(s)

Scott Large

See Also

Used in `ices_stock_props` and `ges_stock_props` to evaluate stocks relative to ICES and GES
reference points. Input data: SAG summary table and reference points come from `clean_sag`.
`frmt_summary_table` evaluates status relative to reference points and formats the table for .html.

Examples

```
## Not run:
stock_props(2016)

## End(Not run)
```

---

stock_status   *Stock status and catch relative to reference points*

Description

`stock_status` returns a data frame of stock status relative to reference points and catch, discards,
and landings by stock for the most recent assessment.

Usage

```
stock_status(active_year = 2016)
```

Arguments

active_year   numeric of the stock database version (year). e.g., 2016

Value

a data frame of stock status relative to reference points and catch, discards, and landings by stock
for the most recent assessment.

Note

Stocks are linked to ecoregions and fish categories via the ICES Stock database. Reference points are as published in ICES Stock Assessment Graphs database. In some cases, status relative to reference points may vary from published ICES advice when reported F or SSB are very close to reference points (e.g., $F = 0.201 > F_{MSY} = 0.20$).

Author(s)

Scott Large

See Also

Used in `plot_kobe` to plot a scatter plot of F/F_{MSY} and SSB/MSY $B_{trigger}$ by fish category and ecoregion and a "lollipop" plot of total catch (divided into discards and landings) by stock. Input data: From `stock_catch`

Examples

```
head(stock_status(2016))
```

---

stock_trends_fun   *Stock status over time*

Description

The `stock_trends_fun` function returns a series of line plots of F and SSB relative to F_{MSY} and MSY $B_{trigger}$ reference points for stocks of a fish category for an ecoregion.

Usage

```
stock_trends_fun(object, plotting_var = c("StockCode", "FisheriesGuild")[1],
  grouping_var = c("EcoGuild", "EcoRegion", "FisheriesGuild")[1],
  metric = c("MSY", "MEAN")[1], active_year = 2016, dynamic = FALSE,
  data_caption = TRUE, file_name = NULL, save_plot = FALSE,
  return_plot = TRUE, return_data = FALSE, output_path = NULL,
  stackable = FALSE)
```

Arguments

object	name of data to plot. Must agree with the grouping_var argument. E.g., EcoGuild must be the combined ecoregion name and fish category, e.g. "Greater North Sea Ecoregion - demersal stocks"
plotting_var	character string of the variable to plot. Options include: StockCode or FisheriesGuild (mean)
grouping_var	character string of the desired grouping. Options include: EcoRegion, EcoGuild, or FisheriesGuild

metric	character string of the desired metric. Options include: MSY or MEAN (according to grouping_var)
active_year	numeric of the stock database version (year). e.g., 2016
dynamic	logical to generate html output with dynamic features.
data_caption	print the data source as a caption, boolean.
file_name	name for the output.
save_plot	logical to save plot.
return_plot	logical to return plot to current environment.
return_data	logical on returning a .csv of plotted data
output_path	path for output to live.

Value

A ggplot2 object when `return_plot` is TRUE, html when `dynamic` is TRUE or .png when `dynamic` is FALSE. Output is saved as `file_name` in `output_path`. When `file_name` is NULL, the file name is the ecoregion. When `output_path` is NULL, the file is saved to "~/".

Note

Stocks are linked to ecoregions and fish categories via the ICES Stock database. Reference points are as published in ICES Stock Assessment Graphs database. In some cases, status relative to reference points may vary from published ICES advice when reported F or SSB are very close to reference points (e.g., $F = 0.201 > F_{MSY} = 0.20$).

Author(s)

Scott Large

Examples

```
## Not run:
stock_trends_fun(object = "Greater North Sea Ecoregion - demersal", grouping_var = "EcoGuild", return_plot = TRUE)

## End(Not run)
```

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