

Package: stockplotr (via r-universe)

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Type Package

Title Tables and Figures for Stock Assessments

Version 0.15.0

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Description Creates exploratory and finished tables and figures for stock assessment documents from U.S. stock assessment model outputs. This packages addresses parts of the stock assessment workflow that interprets outputs of stock assessment models as well as allows the analyst to create report ready tables and figures, reducing the need to create their own and format then when adding into a report. This package is intended to be used in conjunction with 'asar', a partially automated template for writing various stock assessment reports. Throughout development, we will be creating a set of standardized figures and tables for a stock assessment report, developing functions to produce a variety of diagnostic plots, and other helpful materials. The advantage of using this package over others is that it applies to a range of stock assessment model outputs and standardizes them.

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URL <https://github.com/nmfs-ost/stockplotr>,
<https://noaa-fisheries-integrated-toolbox.r-universe.dev/stockplotr>

BugReports <https://github.com/nmfs-ost/stockplotr/issues>

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calc_kqs	<i>Calculate key quantities</i>
----------	---------------------------------

Description

Calculate key quantities

Usage

```
calc_kqs(  
  returned_kq,  
  prepared_data = NULL,  
  dat = NULL,  
  final = NULL,  
  relative = NULL,  
  module = NULL,  
  ...  
)
```

Arguments

- | | |
|---------------|---|
| returned_kq | String. Key quantity to be returned. |
| prepared_data | Data frame. The prepared_data object. |
| dat | Data frame. The original data object. |
| final | ggplot2 object. The final figure. |
| relative | Logical. TRUE/FALSE; specify whether to set y-axis values relative to the ref_line value. |
| module | Character vector. Module name found in 'dat\$module_name'. |
| ... | Additional arguments to be passed to the function. |

Value

The value of the specified key quantity.

Examples

```
## Not run:
calc_kqs(
  returned_kq = "F.min",
  dat = dat
)

## End(Not run)
```

check_label_differences	<i>Create loop to test for differences in column values</i>
-------------------------	---

Description

Create loop to test for differences in column values

Usage

```
check_label_differences(dat, index_variables, id_group = NULL)
```

Arguments

dat	Data frame. Input data into process_table
index_variables	Character vector. The index_variables vector created within process_table
id_group	String. The identifying index variable as a string Default: NULL

convert_output	<i>Convert Output</i>
----------------	-----------------------

Description

Format stock assessment output file to a standardized tibble.

Usage

```
convert_output(file, model = NULL, fleet_names = NULL, save_dir = NULL)
```

Arguments

file	Path. Assessment model output file path. Currently accepts SS3 Report.sso file, BAM .rda file, Rceattle model object, and FIMS model object.
model	String. Assessment model used in evaluation Default: NULL Options: "ss3", "bam", "fims", "rceattle"
fleet_names	Character vector. Names of fleets in the assessment model as shortened in the output file or names of fleets to replace the native fleet names in the output. For example, if fleet names in the model are 1, 2, 3 then fleet_names = c("fleet1" = 1, "fleet2" = 2, "fleet3" = 3). Default: NULL
save_dir	Path. Full file path to save the converted output file. If saved file name is not indicated, the file will be saved as "std_output.rda" in the file path provided. Default: NULL

Details

The resulting object is a long-format, transformed and machine readable version of a model output file. Converted data frame is always returned. It will also be saved if save_dir is not NULL.

Value

A reformatted and standardized tibble of assessment model results for application in building stock assessment reports and to easily adapt results among regional assessments.

Author(s)

Samantha Schiano

Examples

```
## Not run:
convert_output(
  file = here::here("model1", "Report.sso"),
  model = "ss3",
  fleet_names = c("TWL", "NONTWL"),
  save_dir = here::here("standard_output.rda")
)

## End(Not run)
```

create_latex_table	<i>Create the rda package for a plot or table</i>
--------------------	---

Description

Create the rda package for a plot or table

Usage

```
create_latex_table(data, caption, label)
```

Arguments

data	Data frame. A dataframe-based table
caption	String. Table caption
label	String. Table label

Value

A table based in LaTeX.

Examples

```
create_latex_table(
  data = as.data.frame(head(mtcars, 6)),
  caption = "My caption",
  label = "My label"
)
```

create_rda	<i>Create the rda package for a plot or table</i>
------------	---

Description

Create the rda package for a plot or table

Usage

```
create_rda(
  object,
  topic_label,
  fig_or_table,
  dat,
  dir = getwd(),
  ref_line = "msy",
  scale_amount = 1,
  table_df = NULL
)
```

Arguments

object	Object. Table or plot object
topic_label	String. Name of the object
fig_or_table	String. Indicates whether the object is a "table" or "figure"
dat	Data frame. Data which will fill in captions and alternative text for the object
dir	Path. Directory to where the rda will be saved Default: the working directory ('getwd()')
ref_line	String. Reference line value Default: "msy" Options: Including, but not limited to: "msy", "target", "unfished"
scale_amount	Number. A number describing how much to scale down the quantities shown on the y axis. For example, scale_amount = 100 would scale down a value from 500,000 -> 5,000. This scale will be reflected in the y axis label. Default: 1
table_df	Data frame. The data frame that the table will be made into for purposes of exporting a latex formatted table.
year	Number. Assessment year Default: the current year

Value

An rda package for a plot or table object. Requires an object from the R environment such as a ggplot or flextable object.

See Also

[export_rda()], [extract_caps_alttext()]

Examples

```
## Not run:
create_rda(
  object = my_plot,
  topic_label = "my_plot",
  fig_or_table = "figure",
  dat = my_data,
  dir = "path/to/save"
)

## End(Not run)
```

example_data

*SS3 Example data***Description**

Included data set that represents a Report.sso file converted using convert_output(). This example is from the 2022 Petrale sole stock assessment.

Usage

example_data

Format

A tibble with 591109 rows and 33 variables:

label Standard name for estimate or value name

estimate Actual value of the label

year Annual indexing value

fleet Names of fleets or surveys indexed by the data

sex Native reference to male, female, unknown, or none

area Specified areas by the model

growth_pattern Indexing column of data

uncertainty Value of uncertainty associated with the label column

uncertainty_label Uncertainty label or name associated with the label columns

module_name Name of keyword (SS3) or list indexing in the original model output for tracking purposes

time Time sometimes referenced in decimals to the year and month

era "time" for current time series in model; "fore" representing the projected or forecasted years of the model

month Month factor

season Season usually associated with year

subseason Subseason when used

birthseas Birthseason found in SS3

initial Initial input value in the model when available associated with the label column

likelihood Likelihood value for the data point

platoon Platoon also an SS3 indexing value

age Age of fish

bio_pattern Indexing column of data

settlement Indexing column of data

morph Indexing column of data
type Indexing column of data
factor Indexing column of data
part Indexing column of data
kind Indexing column of data
nsim Indexing column of data
bin Indexing column of data
age_a Alternative age column
length_bins Length bins for composition or other length based data
count Indexing column of data
block Indexing column of data

 export_kqs

Export updated key quantities template

Description

Export updated key quantities template

Usage

```
export_kqs(...)
```

Arguments

... Key quantities whose values should be added to the exported "key_quantities.csv"

Value

Exports a file based on key quantities template, with values added next to the names of the key quantities specified as ellipsis arguments. File is saved as "key_quantities.csv" to the working directory.

See Also

[fill_in_kqs()], [insert_kqs()]

Examples

```
## Not run:
export_kqs(
  F.min,
  F.max
)

## End(Not run)
```

export_rda	<i>Export a figure or table to rda</i>
------------	--

Description

Export a figure/table, and its caption and alternative text, to an rda object. Typically used after `stockplotr::extract_caps_alttext()`.

Usage

```
export_rda(
  object = NULL,
  caps_alttext = NULL,
  figures_tables_dir = NULL,
  topic_label = NULL,
  fig_or_table = NULL,
  latex_table = NULL
)
```

Arguments

<code>object</code>	Object. The final figure (ggplot) or table (flextable) object. Default: NULL
<code>caps_alttext</code>	Data frame or list. The object containing a figure's caption and alternative text, in a list, or a table's caption, likely generated with <code>stockplotr::extract_caps_alttext()</code> . Default: NULL
<code>figures_tables_dir</code>	Path. If the user has already created folders containing figures and tables ("figures" and "tables"), <code>figures_tables_dir</code> represents the location of these folders. Otherwise, these two folders will be created automatically, then used to store the exported rda files. Default: NULL
<code>topic_label</code>	String. Figure or table label. These labels are found in the "label" column of the "captions_alt_text.csv" file and are used to link the figure or table with its caption/alt text. Default: NULL
<code>fig_or_table</code>	String. Indicates whether the plot is a figure or table. Default: NULL Options: "figure", "table"
<code>latex_table</code>	Table object. The object containing a LaTeX-based table. Default: NULL

Value

An rda file with a figure's ggplot, caption, and alternative text, or a table's gt-based table, caption, and LaTeX-based table.

See Also

[create_rda()], [extract_caps_alttext()]

Examples

```
## Not run:
export_rda(
  final = final_table_object,
  caps_alttext = caps_alttext_object,
  figures_tables_dir = here::here(),
  topic_label = "biomass_abundance_catch",
  fig_or_table = "table",
  latex_table = "latex_table"
)

export_rda(
  final = final_figure_object,
  caps_alttext = another_caps_alttext_object,
  figures_tables_dir = "my_figures_tables_dir",
  topic_label = "landings",
  fig_or_table = "figure"
)

## End(Not run)
```

extract_caps_alttext *Extract captions and alternative texts*

Description

Extract a figure or table's caption and alternative text for usage when generating a figure or table. Typically used before `stockplotr::export_rda()`.

Usage

```
extract_caps_alttext(topic_label = NULL, fig_or_table = NULL, dir = getwd())
```

Arguments

topic_label	String. Figure or table label. These labels are found in the "label" column of the "captions_alt_text.csv" file and are used to link the figure or table with its caption/alt text. Default: NULL
fig_or_table	String. Indicates whether the plot is a figure or table. Default: NULL
dir	Path. The directory containing the "captions_alt_text.csv" file. Default: the working directory ('getwd()')

Value

A figure’s caption and alternative text, in a list, or a table’s caption.

See Also

[export_rda()], [create_rda()]

Examples

```
## Not run:
extract_caps_altttext(
  topic_label = "biomass",
  fig_or_table = "figure",
  dir = here::here()
)

extract_caps_altttext(
  topic_label = "biomass_abundance_catch",
  fig_or_table = "table",
  dir = getwd()
)

## End(Not run)
```

fill_in_kqs	<i>Substitute key quantities’ values into template</i>
-------------	--

Description

Substitute key quantities’ values into template

Usage

```
fill_in_kqs(df, ...)
```

Arguments

- df Data frame. Dataframe created by importing "key_quantity_template.csv" or "key_quantities.csv", empty or partially-filled templates with key quantity names and other associated information
- ... Key quantity objects whose values will be added to the output dataframe

Details

The returned dataframe is input for [fill_in_kqs()].

Value

Dataframe based on key quantities template that contains newly-added values of key quantities indicated via ellipsis.

See Also

[export_kqs()], [insert_kqs()]

Examples

```
## Not run:
fill_in_kqs(
  df = data,
  F.min,
  F.max
)

## End(Not run)
```

filter_data	<i>Filter data for input into aesthetics for ggplot2</i>
-------------	--

Description

Filter data for input into aesthetics for ggplot2

Usage

```
filter_data(
  dat,
  label_name,
  module = NULL,
  era = NULL,
  geom,
  group = NULL,
  facet = NULL,
  scale_amount = 1,
  interactive = TRUE
)
```

Arguments

- | | |
|------------|---|
| dat | Data frame or list. A tibble or named list of tibbles (input as ‘list()’) returned from convert_output .
If inputting a list of tibbles, the first tibble’s reference point defined in ‘ref_line’ is used to plot a reference line or calculate relative spawning biomass. |
| label_name | String. Name of the label used to filter the data. |

module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
geom	String. Geom used for the plot. Default: "line". Options: "line", "point", or "area"
group	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Column name or names used for faceting. Default: NULL
scale_amount	Number. A number to scale the y-axis values. Default: 1
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'

Value

a data frame that is preformatted for plotting with ggplot2.

Examples

```
## Not run:
filter_data(dat, "biomass", "line", group = "fleet")

## End(Not run)
```

insert_kqs

Insert key quantities into the captions and alternative text file

Description

Insert key quantities into the captions and alternative text file

Usage

```
insert_kqs(...)
```

Arguments

... Key quantities whose values should be added to the exported "captions_alt_text.csv"

Value

Exports a file ("captions_alt_text.csv") containing captions and alternative text for figures and tables, with key quantities inserted into the "captions_alt_text_template.csv" template's placeholders.

See Also

[fill_in_kqs()], [export_kqs()]

Examples

```
## Not run:
insert_kqs(
  F.min,
  F.max
)

## End(Not run)
```

merge_error	<i>Rename columns and merge estimate and uncertainty columns for table presentation</i>
-------------	---

Description

Rename columns and merge estimate and uncertainty columns for table presentation

Usage

merge_error(table_data, id_col_vals, unit_label, uncert_lab)

Arguments

- table_data List of dataframes that will be eventually turned into tables
- id_col_vals List. A list of variables identifying grouping of the data and their unique values.
- unit_label String. The units of the estimate being presented in the table.
- uncert_lab String. Uncertainty label. Typically inherited from another function but is the exact string of the uncertainty in the data (e.g., "sd", "se", "cv", "uncertainty").)

Value

List of formatted dataframes that contain column names formatted for a table along with a merge of values in the estimate and error columns to reduce redundancy in the table.

plot_aa	Create "at-age" plot
---------	----------------------

Description

Create "at-age" plot

Usage

```
plot_aa(  
  dat,  
  x = "year",  
  y = "age",  
  z = "estimate",  
  label = "Abundance",  
  xlab = "Year",  
  ylab = "Age",  
  facet = NULL,  
  proportional = TRUE,  
  ...  
)
```

Arguments

dat	Data frame. Filtered data frame from standard output file(s) preformatted for the target label from filter_data
x	String. Column name of data used to plot on the x-axis Default: "year"
y	String. Column name of data used to plot on the y-axis Default: "age"
z	String. Column name of data used to control the size of the bubbles Default: "estimate"
label	String. Label for the size of the bubbles Default: "Abundance"
xlab	String. X-axis label Default: "Year"
ylab	String. Y-axis label Default: "Age"
facet	Character vector. Column name or names used for faceting. It is not recommended to include more than one facet due to the complexity of the plot. Default: NULL Options: Including, but not limited to: "sex", "area", "fleet"

proportional	Logical. TRUE/FALSE; set size of points relative to z when TRUE, point size are relative to one another while when set to FALSE, point size is relative to z Default: 'TRUE'
...	Inherited arguments from internal functions from geom_point

Value

Create a plot of abundance at age for a stock assessment report.

Examples

```
## Not run:
plot_aa(dat)

## End(Not run)
```

plot_abundance_at_age *Plot Abundance at Age*

Description

Plot Abundance at Age

Usage

```
plot_abundance_at_age(
  dat,
  facet = NULL,
  unit_label = "fish",
  scale_amount = 1000,
  proportional = TRUE,
  module = NULL,
  interactive = TRUE,
  make_rda = FALSE,
  figures_dir = getwd()
)
```

Arguments

dat	Data frame. A data frame returned from convert_output
facet	Character vector. Column name or names used for faceting. Set facet = "none" to summarize the data in a single plot. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
unit_label	String. Abundance units Default: "fish"

scale_amount	Number. A number describing how much to scale down the abundance at age. Please choose a value ranging from 1-1,000,000,000 (one billion) in orders of magnitude (e.g., 1, 10, 100, 1000, etc.). For example, scale_amount = 100 would scale down a value from 500,000 → 5,000 and would report abundance in hundreds of fish (if "fish" was the unit_label). This scale will be reflected in the legend label if proportional is set to FALSE. Default: 1,000
proportional	Logical. TRUE/FALSE; set size of points relative to z when TRUE, point size are relative to one another while when set to FALSE, point size is relative to z Default: 'TRUE'
module	(Optional) A string indicating the module_name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
interactive	A logical value indicating if the environment is interactive. Default: 'FALSE'
make_rda	Logical. TRUE/FALSE; indicate whether to produce an .rda file containing a list with the figure/table, caption, and alternative text (if figure). If TRUE, the .rda will be exported to the folder indicated in the argument "rda_dir". Default: 'FALSE'
figures_dir	Path. Folder containing the generated .rda files ("rda_files") that will be created if the argument 'make_rda' = TRUE. Default: the working directory ('getwd()')

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing total abundance (or numbers) at age.

See Also

[convert_output()], [filter_data()], [process_data()], [plot_aa()], [export_kqs()], [insert_kqs()], [create_rda()]

Examples

```
plot_abundance_at_age(
  dat = stockplotr::example_data,
  facet = "growth_pattern",
  unit_label = "fish",
  scale_amount = 1000,
```

```
    proportional = TRUE
  )
  plot_abundance_at_age(
    dat = stockplotr::example_data,
    facet = "none",
    proportional = FALSE
  )
```

plot_biomass	<i>Plot Total Biomass</i>
--------------	---------------------------

Description

Plot Total Biomass

Usage

```
plot_biomass(
  dat,
  geom = "line",
  group = NULL,
  facet = NULL,
  ref_line = "msy",
  era = NULL,
  unit_label = "mt",
  module = NULL,
  scale_amount = 1,
  relative = FALSE,
  make_rda = FALSE,
  figures_dir = getwd(),
  interactive = TRUE,
  ...
)
```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as ‘list()’) returned from convert_output . If inputting a list of tibbles, the first tibble’s reference point defined in ‘ref_line’ is used to plot a reference line or calculate relative spawning biomass.
geom	String. Geom used for the plot. Default: "line". Options: "line", "point", or "area"
group	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL

facet	Character vector. Column name or names used for faceting. Default: NULL
ref_line	String. Type of reference point to compare biomass to. The default "msy" looks for "biomass_msy" in the "label" column of 'dat'. The actual searching in 'dat' is case-agnostic and will work with either upper- or lower-case letters. However, you must use one of the options specified in the default list to ensure that the label on the figure looks correct regardless of how it is specified in 'dat'. Default: "msy" Options: Including, but not limited to: "target", "MSY", "unfished"
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
unit_label	String. Biomass units Default: "mt"
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
scale_amount	Number. A number to scale the y-axis values. Default: 1
relative	Logical. TRUE/FALSE; specify whether to set y-axis values relative to the ref_line value. Default: 'FALSE'
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.
figures_dir	Path. Path to the "figures" folder. Default: 'getwd()' The folder is created within the path if it does not exist.
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
...	Arguments called from geom_line or geom_point

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing total biomass.

See Also

[convert_output()], [plot_timeseries()], [calculate_reference_point()], [reference_line()], [filter_data()], [process_data()], [export_kqs()], [insert_kqs()], [create_rda()]

Examples

```
plot_biomass(
  dat = stockplotr::example_data,
  unit_label = "mt",
  ref_line = c("target" = 20000),
  scale_amount = 100,
  module = "TIME_SERIES",
  figures_dir = getwd()
)
plot_biomass(
  dat = stockplotr::example_data,
  ref_line = NULL,
  module = "TIME_SERIES",
  figures_dir = getwd()
)
```

plot_biomass_at_age	<i>Plot Total Biomass at Age (BAA)</i>
---------------------	--

Description

Plot Total Biomass at Age (BAA)

Usage

```
plot_biomass_at_age(
  dat,
  facet = NULL,
  unit_label = "mt",
  scale_amount = 1000,
  proportional = TRUE,
  module = NULL,
  interactive = TRUE,
  make_rda = FALSE,
  figures_dir = getwd()
)
```

Arguments

dat Data frame. A data frame returned from [convert_output](#)

facet	Character vector. Column name or names used for faceting. Set facet = "none" to summarize the data in a single plot. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
unit_label	String. Abundance units Default: "fish"
scale_amount	Number. A number describing how much to scale down the biomass at age. For example, scale_amount = 100 would scale down a value from 500,000 → 5,000. This scale will be reflected in the legend label if proportion is set to FALSE. Default: 1,000
proportional	Logical. TRUE/FALSE; set size of points relative to z when TRUE, point size are relative to one another while when set to FALSE, point size is relative to z Default: 'TRUE'
module	(Optional) A string indicating the module_name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
interactive	Logical. TRUE/FALSE; indicate whether the environment in which the function is operating is interactive. This bypasses some options for filtering when preparing data for the plot. Default: 'TRUE'
make_rda	Logical. TRUE/FALSE; indicate whether to produce an .rda file containing a list with the figure/table, caption, and alternative text (if figure). If TRUE, the .rda will be exported to the folder indicated in the argument "rda_dir". Default: 'FALSE'
figures_dir	Path. Folder containing the generated .rda files ("rda_files") that will be created if the argument 'make_rda' = TRUE. Default: the working directory ('getwd()')

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing total biomass at age.

See Also

[[convert_output\(\)](#)], [[filter_data\(\)](#)], [[process_data\(\)](#)], [[plot_aa\(\)](#)], [[export_kqs\(\)](#)], [[insert_kqs\(\)](#)], [[create_rda\(\)](#)]

Examples

```

plot_biomass_at_age(
  dat = stockplotr::example_data,
  unit_label = "mt",
  scale_amount = 100,
  proportional = FALSE, # displays legend
  make_rda = FALSE
)
plot_biomass_at_age(
  dat = stockplotr::example_data,
  unit_label = "mt",
  facet = "none",
  proportional = FALSE
)

```

plot_catch_comp	<i>Plot catch composition</i>
-----------------	-------------------------------

Description

Plot catch composition

Usage

```

plot_catch_comp(
  dat,
  facet = NULL,
  era = "time",
  unit_label = "mt",
  scale_amount = 1,
  proportional = TRUE,
  interactive = TRUE,
  module = NULL,
  make_rda = FALSE,
  figures_dir = getwd()
)

```

Arguments

dat	Data frame. A data frame returned from convert_output
facet	Character vector. Column name or names used for faceting. Set facet = "none" to summarize the data in a single plot. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL

era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
unit_label	String. Units of catch used to label the axis Default: "mt"
scale_amount	Number. A number describing how much to scale down the catch at age. Please choose a value ranging from 1-1,000,000,000 (one billion) in orders of magnitude (e.g., 1, 10, 100, 1000, etc.). For example, scale_amount = 100 would scale down a value from 500,000 → 5,000 and would report catch in hundreds of the 'unit_label'. This scale will be reflected in the legend label if proportional is set to FALSE. Default: 1
proportional	Logical. TRUE/FALSE; set size of points relative to z when TRUE, point size are relative to one another while when set to FALSE, point size is relative to z Default: 'TRUE'
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
make_rda	Logical. TRUE/FALSE; indicate whether to produce an .rda file containing a list with the figure/table, caption, and alternative text (if figure). If TRUE, the .rda will be exported to the folder indicated in the argument "rda_dir". Default: 'FALSE'
figures_dir	Path. Folder containing the generated .rda files ("rda_files") that will be created if the argument 'make_rda' = TRUE. Default: the working directory ('getwd()')

Details

This plot is made only when catch or landings are explicitly named in the output file. The current plot function does not combine all sources of catch. The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing catch or landings composition.

See Also

[[convert_output\(\)](#)], [[filter_data\(\)](#)], [[process_data\(\)](#)], [[plot_aa\(\)](#)], [[export_kqs\(\)](#)], [[insert_kqs\(\)](#)], [[create_rda\(\)](#)]

Examples

```

plot_catch_comp(
  dat = stockplotr::example_data,
  facet = "fleet",
  unit_label = "mt",
  scale_amount = 100,
  interactive = FALSE,
  make_rda = FALSE,
  figures_dir = getwd()
)

plot_catch_comp(
  dat = stockplotr::example_data,
  facet = "none",
  unit_label = "mt",
  scale_amount = 100,
  interactive = FALSE,
  era = "fore",
  proportional = FALSE
)

```

plot_discard	<i>Plot discards</i>
--------------	----------------------

Description

Plot discards as a line graph.

Usage

```

plot_discard(
  dat,
  group = NULL,
  facet = NULL,
  unit_label = "mt",
  era = NULL,
  lbs = FALSE,
  scale_amount = 1,
  interactive = TRUE,
  module = NULL,
  make_rda = FALSE,
  figures_dir = getwd()
)

```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as ‘list()’) returned from convert_output .
-----	--

	If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
group	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Column name or names used for faceting. Default: NULL
unit_label	String. Spawning biomass unit. Default: "mt"
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
lbs	Logical. TRUE/FALSE; indicate whether to convert the y-axis values from kilograms to pounds. The default units match the default in the unit_label argument - 'mt'. Default: 'FALSE'
scale_amount	Number. A number to scale the y-axis values. Default: 1
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.
figures_dir	Path. Path to the "figures" folder. Default: 'getwd()' The folder is created within the path if it does not exist.

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A ggplot showing discards over time, usually by fleet.

Note

All plotting functions automatically recognize indexing variables and will use them in groupings and/or facetting. @seealso [process_data()].

See Also

[convert_output()], [plot_timeseries()], [calculate_reference_point()], [reference_line()], [filter_data()], [process_data()], [export_kqs()], [insert_kqs()], [create_rda()]

Examples

```
plot_discard(
  dat = stockplotr::example_data,
  module = "DISCARD_OUTPUT"
)
```

plot_error	<i>Create plot with error</i>
------------	-------------------------------

Description

Create plot with error

Usage

```
plot_error(
  dat,
  x = "year",
  y = "estimate",
  geom = "point",
  group = NULL,
  facet = NULL,
  xlab = "Year",
  ylab = NULL,
  hline = TRUE,
  ...
)
```

Arguments

dat	Data frame. Filtered data frame from standard output file(s) preformatted for the target label from filter_data
x	String. Column name of data used to plot on the x-axis Default: "year"
y	String. Column name of data used to plot on the y-axis Default: "estimate"

geom	String. Type of geom to use for plotting found in ggplot2 (e.g. "point", "line", etc.). Default: "line" Options: "point" and "area"
group	String. Single column that groups the data. Currently can only have one level of grouping. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Column name or names used for faceting (e.g. "year", "area", etc.) Default: NULL
xlab	String. X-axis label Default: "Year"
ylab	String. Y-axis label. If NULL, it will be set to the name of 'y'. Default: NULL
hline	Logical. TRUE/FALSE; indicate whether to place a horizontal line at 1 Default: 'TRUE'
...	Inherited arguments from internal functions from ggplot2::geom_xx

Details

The user can create a line, point, or area plot, where the x-axis is year and y can vary for any time series quantity. Currently, grouping is restricted to one group where faceting can be any number of facets.

Value

Create a plot with error for a stock assessment report.

plot_fishing_mortality

Plot fishing mortality timeseries

Description

Plot fishing mortality timeseries

Usage

```
plot_fishing_mortality(
  dat,
  geom = "line",
  group = NULL,
  facet = NULL,
```

```

    ref_line = "msy",
    era = NULL,
    module = NULL,
    make_rda = FALSE,
    figures_dir = getwd(),
    interactive = TRUE,
    ...
  )

```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as 'list()') returned from convert_output. If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
geom	String. Geom used for the plot. Default: "line". Options: "line", "point", or "area"
group	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Column name or names used for faceting. Default: NULL
ref_line	String or named vector. Reference point name (and value if custom). When multiple models are being compared, a reference line for each model will appear, if desired. The following options can be used to customize the reference line: 1. all lines are comparing same ref_line = "msy", ref_line = "target", ref_line = "unfished", etc 2. custom input vector - ref_line = c("sable23_msy"=30, "sable25_msy"=40) – user must indicate which model in label otherwise it will assign in order of dat 3. input vector of labels - ref_line = c("msy", "target") Default: "msy" Options: (including, but not limited to) "target", "msy", and "unfished" If the reference point is not found in the data, set ref_line = c("name" = value).
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.

figures_dir	Path. Path to the "figures" folder. Default: 'getwd()' The folder is created within the path if it does not exist.
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
...	Arguments called from geom_line or geom_point

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing fishing mortality over time.

See Also

[[convert_output\(\)](#)], [[filter_data\(\)](#)], [[process_data\(\)](#)], [[plot_timeseries\(\)](#)], [[reference_line\(\)](#)], [[export_kqs\(\)](#)], [[insert_kqs\(\)](#)], [[create_rda\(\)](#)]

Examples

```
plot_fishing_mortality(  
  dat = stockplotr::example_data,  
  ref_line = c("target" = 0.2),  
  group = "fleet",  
  interactive = FALSE,  
  module = "TIME_SERIES"  
)  
plot_fishing_mortality(  
  dat = stockplotr::example_data,  
  ref_line = c("target" = 0.2),  
  group = "none",  
  interactive = FALSE,  
  module = "TIME_SERIES"  
)
```

plot_index	<i>Plot Index of Abundance</i>
------------	--------------------------------

Description

Plot Index of Abundance

Usage

```
plot_index(
  dat,
  unit_label = "",
  group = NULL,
  facet = NULL,
  interactive = TRUE,
  module = NULL,
  focus = NULL,
  make_rda = FALSE,
  figures_dir = getwd(),
  ...
)
```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as 'list()') returned from convert_output . If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
unit_label	String. Index of abundance/CPUE units Default: ""
group	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Column name or names used for faceting. "fleet" is always added on to any faceting selections Default: NULL Options: May include, but is not limited to: "fleet", "year", "area", NULL
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
focus	Character vector. Column name or names used to filter data. (i.e. select names of fleets to zoom into the plot) Default: NULL
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.

figures_dir Path. Path to the "figures" folder.
Default: 'getwd()'
The folder is created within the path if it does not exist.
... Arguments called from [geom_line](#) or [geom_point](#)

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing the expected and predicted index.

See Also

[[convert_output\(\)](#)], [[filter_data\(\)](#)], [[process_data\(\)](#)], [[plot_obsvpred\(\)](#)], [[export_kqs\(\)](#)], [[insert_kqs\(\)](#)], [[create_rda\(\)](#)]

Examples

```
plot_index(  
  dat = stockplotr::example_data,  
  unit_label = "fish/hr",  
  interactive = FALSE  
)
```

plot_landings	<i>Plot observed landings</i>
---------------	-------------------------------

Description

Plot observed landings

Usage

```
plot_landings(  
  dat,  
  unit_label = "mt",  
  geom = "line",  
  group = NULL,  
  facet = NULL,  
  lbs = FALSE,  
  era = NULL,  
  scale_amount = 1,  
  module = NULL,
```

```

    interactive = TRUE,
    make_rda = FALSE,
    figures_dir = getwd(),
    ...
  )

```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as ‘list()’) returned from convert_output. If inputting a list of tibbles, the first tibble’s reference point defined in ‘ref_line’ is used to plot a reference line or calculate relative spawning biomass.
unit_label	String. Spawning biomass unit. Default: "mt"
geom	String. Geom used for the plot. Default: "line". Options: "line", "point", or "area"
group	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Column name or names used for faceting. Default: NULL
lbs	Logical. TRUE/FALSE; indicate whether to convert the y-axis values from kilograms to pounds. The default units match the default in the unit_label argument - 'mt'. Default: 'FALSE'
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
scale_amount	Number. A number to scale the y-axis values. Default: 1
module	Character vector. (Optional) Module name found in ‘dat\$module_name’. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an ‘rda’ object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.

`figures_dir` Path. Path to the "figures" folder.
 Default: `'getwd()'`
 The folder is created within the path if it does not exist.

`...` Arguments called from [geom_line](#) or [geom_point](#)

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing cumulative landings over time.

See Also

[[convert_output\(\)](#)], [[filter_data\(\)](#)], [[process_data\(\)](#)], [[plot_timeseries\(\)](#)], [[export_kqs\(\)](#)], [[insert_kqs\(\)](#)], [[create_rda\(\)](#)]

Examples

```
plot_landings(
  dat = stockplotr::example_data,
  unit_label = "metric tons",
  group = "fleet",
  interactive = FALSE,
  make_rda = FALSE
)
plot_landings(
  dat = stockplotr::example_data,
  unit_label = "metric tons",
  facet = "fleet",
  interactive = FALSE,
  make_rda = FALSE
)
```

`plot_natural_mortality`

Plot natural mortality (M) at age

Description

Plot natural mortality (M) at age

Usage

```
plot_natural_mortality(
  dat,
  group = NULL,
  facet = NULL,
  era = NULL,
  interactive = TRUE,
  module = NULL,
  make_rda = FALSE,
  figures_dir = getwd(),
  ...
)
```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as 'list()') returned from convert_output . If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
group	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Column name or names used for faceting. Default: NULL
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.
figures_dir	Path. Path to the "figures" folder. Default: 'getwd()' The folder is created within the path if it does not exist.
...	Arguments called from geom_line or geom_point

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing natural mortality at age.

See Also

[[convert_output\(\)](#)], [[filter_data\(\)](#)], [[process_data\(\)](#)], [[plot_timeseries\(\)](#)], [[export_kqs\(\)](#)], [[insert_kqs\(\)](#)], [[create_rda\(\)](#)]

Examples

```
plot_natural_mortality(
  dat = stockplotr::example_data,
  module = "Natural_Mortality",
  interactive = FALSE
)
```

plot_obsvpred

Plot observed vs. predicted data

Description

Plot observed vs. predicted data

Usage

```
plot_obsvpred(
  dat,
  x = "year",
  y = "estimate",
  observed_label = "observed",
  predicted_label = "predicted",
  geom = "line",
  xlab = "Year",
  ylab = NULL,
  group = NULL,
  facet = NULL
)
```

Arguments

<code>dat</code>	Data frame. Filtered data frame from standard output file(s) preformatted for the target label from filter_data
<code>x</code>	String. Column name of data used to plot on the x-axis Default: "year"
<code>y</code>	String. Column name of data used to plot on the y-axis Default: "estimate"
<code>observed_label</code>	String. Label used to filter the observed data Default: "observed"
<code>predicted_label</code>	String. Label used to filter the predicted data Default: "predicted"
<code>geom</code>	String. Type of geom to use for plotting found in ggplot2 (e.g. "point", "line", etc.). Default: "line" Options: "point" and "area"
<code>xlab</code>	String. X-axis label Default: "Year"
<code>ylab</code>	String. Y-axis label. If NULL, it will be set to the name of 'y'. Default: NULL
<code>group</code>	String. Single column that groups the data. Currently can only have one level of grouping. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
<code>facet</code>	Character vector. Column name or names used for faceting (e.g. "year", "area", etc.) Default: NULL

Value

A plot of observed vs. predicted data for a stock assessment report.

plot_recruitment	<i>Plot Recruitment</i>
------------------	-------------------------

Description

Plot Recruitment

Usage

```
plot_recruitment(
  dat,
  unit_label = "mt",
  scale_amount = 1,
  era = NULL,
  group = NULL,
  facet = NULL,
  interactive = TRUE,
  module = NULL,
  make_rda = FALSE,
  figures_dir = getwd()
)
```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as 'list()') returned from convert_output . If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
unit_label	String. Units for recruitment Default: "mt"
scale_amount	Number. A number to scale the y-axis values. Default: 1
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
group	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Column name or names used for faceting. Default: NULL
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.

`figures_dir` Path. Path to the "figures" folder.
 Default: `'getwd()'`
 The folder is created within the path if it does not exist.

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing recruitment over time.

See Also

[[convert_output\(\)](#)], [[filter_data\(\)](#)], [[process_data\(\)](#)], [[plot_timeseries\(\)](#)], [[export_kqs\(\)](#)], [[insert_kqs\(\)](#)], [[create_rda\(\)](#)]

Examples

```
plot_recruitment(
  dat = stockplotr::example_data,
  unit_label = "metric tons",
  scale_amount = 100,
  interactive = TRUE,
  module = "TIME_SERIES",
  make_rda = FALSE
)
plot_recruitment(
  dat = stockplotr::example_data,
  era = "fore",
  module = "TIME_SERIES",
  make_rda = FALSE
)
```

plot_recruitment_deviations

Plot recruitment deviations

Description

Plot recruitment deviations

Usage

```
plot_recruitment_deviations(
  dat,
  module = NULL,
  era = NULL,
  interactive = TRUE,
  make_rda = FALSE,
  figures_dir = getwd(),
  ...
)
```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as 'list()') returned from convert_output . If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.
figures_dir	Path. Path to the "figures" folder. Default: 'getwd()' The folder is created within the path if it does not exist.
...	Arguments called from geom_line or geom_point

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing recruitment deviations relative to one, over time.

Note

All plotting functions automatically recognize indexing variables and will use them in groupings and/or facetting.

See Also

[convert_output()], [plot_error()], [filter_data()], [process_data()], [export_kqs()], [insert_kqs()], [create_rda()]

Examples

```
plot_recruitment_deviations(  
  dat = stockplotr::example_data,  
  interactive = FALSE,  
  size = 1.5  
)  
plot_recruitment_deviations(  
  dat = stockplotr::example_data,  
  era = "early",  
  interactive = FALSE,  
  shape = 2  
)
```

plot_selectivity

Plot selectivity

Description

Plot selectivity

Usage

```
plot_selectivity(  
  dat,  
  unit_label = "cm",  
  group = NULL,  
  facet = NULL,  
  interactive = TRUE,  
  module = NULL,  
  make_rda = FALSE,  
  figures_dir = getwd(),  
  ...  
)
```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as 'list()') returned from convert_output . If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
unit_label	units for length-based selectivity. Default: "cm"
group	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Column name or names used for faceting. Default: NULL
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.
figures_dir	Path. Path to the "figures" folder. Default: 'getwd()' The folder is created within the path if it does not exist.
...	Arguments called from geom_line or geom_point

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing selectivity by age or length.

See Also

[[convert_output\(\)](#)], [[filter_data\(\)](#)], [[process_data\(\)](#)], [[plot_timeseries\(\)](#)], [[export_kqs\(\)](#)], [[insert_kqs\(\)](#)], [[create_rda\(\)](#)]

Examples

```

plot_selectivity(
  dat = stockplotr::example_data,
  interactive = TRUE,
  module = "AGE_SELEX",
  make_rda = FALSE
)
plot_selectivity(
  dat = stockplotr::example_data,
  module = "LEN_SELEX",
  make_rda = FALSE
)

```

plot_spawning_biomass *Plot spawning biomass (SB)*

Description

Plot spawning biomass with a reference line as a dashed line. The figure can also be made relative to this reference line rather than in absolute units.

Usage

```

plot_spawning_biomass(
  dat,
  geom = "line",
  group = NULL,
  facet = NULL,
  ref_line = "msy",
  unit_label = "mt",
  era = NULL,
  lbs = FALSE,
  module = NULL,
  scale_amount = 1,
  relative = FALSE,
  make_rda = FALSE,
  figures_dir = getwd(),
  interactive = TRUE,
  ...
)

```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as ‘list()’) returned from convert_output . If inputting a list of tibbles, the first tibble’s reference point defined in ‘ref_line’ is used to plot a reference line or calculate relative spawning biomass.
-----	---

geom	String. Geom used for the plot. Default: "line". Options: "line", "point", or "area"
group	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Column name or names used for faceting. Default: NULL
ref_line	String or named vector. Reference point name (and value if custom). When multiple models are being compared, a reference line for each model will appear, if desired. The following options can be used to customize the reference line: 1. all lines are comparing same ref_line = "msy", ref_line = "target", ref_line = "unfished", etc 2. custom input vector - ref_line = c("sable23_msy"=30, "sable25_msy"=40) – user must indicate which model in label otherwise it will assign in order of dat 3. input vector of labels - ref_line = c("msy", "target") Default: "msy" Options: (including, but not limited to) "target", "msy", and "unfished" If the reference point is not found in the data, set ref_line = c("name" = value).
unit_label	String. Spawning biomass unit. Default: "mt"
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
lbs	Logical. TRUE/FALSE; indicate whether to convert the y-axis values from kilograms to pounds. The default units match the default in the unit_label argument - 'mt'. Default: 'FALSE'
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
scale_amount	Number. A number to scale the y-axis values. Default: 1
relative	Logical. TRUE/FALSE; specify whether to set y-axis values relative to the ref_line value. Default: 'FALSE'
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.

figures_dir	Path. Path to the "figures" folder. Default: 'getwd()' The folder is created within the path if it does not exist.
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
...	Arguments called from geom_line or geom_point

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing spawning biomass over time.

Note

All plotting functions automatically recognize indexing variables and will use them in groupings and/or facetting. @seealso [[process_data\(\)](#)].

See Also

[[convert_output\(\)](#)], [[plot_timeseries\(\)](#)], [[calculate_reference_point\(\)](#)], [[reference_line\(\)](#)], [[filter_data\(\)](#)], [[process_data\(\)](#)], [[export_kqs\(\)](#)], [[insert_kqs\(\)](#)], [[create_rda\(\)](#)]

Examples

```
plot_spawning_biomass(
  dat = stockplotr::example_data,
  geom = "line",
  ref_line = "msy",
  unit_label = "mt",
  scale_amount = 1000,
  interactive = FALSE,
  module = "TIME_SERIES",
  linewidth = 1.5
)
plot_spawning_biomass(
  dat = stockplotr::example_data,
  ref_line = c("target" = 10),
  interactive = FALSE,
  module = "TIME_SERIES"
)
## Not run:
plot_spawning_biomass(
  dat = list("2023" = model1, "2025" = model2),
  ref_line = c("SBF30" = 1500, "SBF40" = 2300)
)
```

```
## End(Not run)
```

```
plot_stock_recruitment
```

Plot Stock Recruit Relationship

Description

Plot Stock Recruit Relationship

Usage

```
plot_stock_recruitment(
  dat,
  spawning_biomass_label = "mt",
  recruitment_label = "mt",
  interactive = TRUE,
  era = NULL,
  module = NULL,
  scale_amount = 1,
  make_rda = FALSE,
  figures_dir = getwd()
)
```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as 'list()') returned from convert_output . If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
spawning_biomass_label	String. Units for spawning biomass Default: "mt"
recruitment_label	String. Units for recruitment Default: "mt"
interactive	Logical. TRUE/FALSE; indicate whether the environment the plot is being made in is interactive. By default, this is set to false. If true, dependent on your data, a option menu will pop-up. Default: TRUE
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)

module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
scale_amount	Number. A number to scale the y-axis values. Default: 1
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.
figures_dir	Path. Path to the "figures" folder. Default: 'getwd()' The folder is created within the path if it does not exist.

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a 'ggplot2' object or export an .rda object containing associated caption and alternative text for the figure.

Value

A plot showing the stock recruitment relationship.

See Also

[[convert_output\(\)](#)], [[filter_data\(\)](#)], [[process_data\(\)](#)], [[plot_timeseries\(\)](#)], [[export_kqs\(\)](#)], [[insert_kqs\(\)](#)], [[create_rda\(\)](#)]

Examples

```
plot_stock_recruitment(
  dat = stockplotr::example_data,
  interactive = FALSE,
  spawning_biomass_label = "metric tons",
  recruitment_label = "metric tons",
  module = "DERIVED_QUANTITIES"
)
```

plot_timeseries	<i>Plot time series trends</i>
-----------------	--------------------------------

Description

Plot time series trends

Usage

```
plot_timeseries(
  dat,
  x = "year",
  y = "estimate",
  geom = "line",
  xlab = "Year",
  ylab = NULL,
  group = NULL,
  facet = NULL,
  ...
)
```

Arguments

dat	Data frame. Filtered data frame from standard output file(s) preformatted for the target label from filter_data
x	String. Column name of data used to plot on the x-axis Default: "year"
y	String. Column name of data used to plot on the y-axis Default: "estimate"
geom	String. Type of geom to use for plotting found in ggplot2 (e.g. "point", "line", etc.). Default: "line" Options: "point" and "area"
xlab	String. X-axis label Default: "Year"
ylab	String. Y-axis label. If NULL, it will be set to the name of 'y'. Default: NULL
group	String. Single column that groups the data. Currently can only have one level of grouping. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Column name or names used for faceting (e.g. "year", "area", etc.) Default: NULL
...	Inherited arguments from internal functions from ggplot2::geom_xx

Details

The user can create a line, point, or area plot, where the x-axis is year and y can vary for any time series quantity. Currently, grouping is restricted to one group where faceting can be any number of facets.

Value

Create a time series plot for a stock assessment report.

Examples

```
## Not run:
plot_timeseries(dat,
  x = "year",
  y = "estimate",
  geom = "line",
  xlab = "Year",
  ylab = "Biomass",
  group = "fleet",
  facet = "area"
)

## End(Not run)
```

process_data

Processing for figures

Description

Processing for figures

Usage

```
process_data(dat, group = NULL, facet = NULL, lbs = FALSE)
```

Arguments

dat	Data frame. Pre-filtered data from filter_data following a long format data.
group	String. Indexing variable of the data. To remove any groups and summarize data across all factors, set group = "none". Setting group = NULL will keep any grouping variables identified in the data by the function. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
facet	Character vector. Faceting variable(s) of the data. Default: NULL

lbs Logical. TRUE/FALSE; indicate whether to convert the y-axis values from kilograms to pounds. The default units match the default in the unit_label argument - 'metric tons'.
Default: 'FALSE'

Details

Automatically detects potential grouping and faceting data from a dataframe output from [filter_data](#).

Value

List of 3 objects:

data A data frame of the processed data ready for plotting.
group Grouping variable of the data. If NULL, no grouping variable is identified. If not NULL, the function will verify that the data is indexed by this variables, otherwise it will overwrite it to a different, valid indexed variable or NULL.
facet Faceting variable(s) identifying the variable(s) of the data. If NULL, no faceting variable is identified. Any identified indexed variables found in this function will be added to facet.

Examples

```
{
  filtered <- stockplotr::filter_data(
    dat = stockplotr::example_data,
    label_name = "fishing_mortality$",
    geom = "line",
    module = "TIME_SERIES"
  )
  process_data(dat = filtered)
}
```

process_table	<i>Processing for tables</i>
---------------	------------------------------

Description

Processing for tables

Usage

```
process_table(dat, group = NULL, method = "sum", label = NULL, digits = 2)
```

Arguments

dat	Data frame. Pre-filtered data from filter_data following a long format data.
group	String. Indexing variable of the data. To remove any groups and summarize data across all factors, set group = "none". Setting group = NULL will keep any grouping variables identified in the data by the function. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
method	String. Method for summarizing data when group is set to "none". Default: "sum" Options: "sum" or "mean"
label	String. Label value or values used to filter the data. Default: NULL
digits	Number. Numeric value indicating the number of rounding digits. Default: 2

Details

Input is an object created with [filter_data](#).

Value

A dataframe of processed data ready for formatting into a table.

Examples

```
{
  filtered <- filter_data(
    dat = stockplotr::example_data,
    label = "landings",
    geom = "line",
    era = "time"
  )
  process_table(dat = filtered, method = "sum")
}
```

reference_line	<i>Preformatted reference line</i>
----------------	------------------------------------

Description

Preformatted reference line

Usage

```
reference_line(label_name, ref_line, scale_amount = 1, model_name = "1")
```

Arguments

label_name	String. Name of the quantity that users want to extract the reference point from
ref_line	String. Reference point(s)
scale_amount	Number. A number to scale the y-axis values. Default: 1
model_name	String. Name of the model that will be present in the legend. Options: Including, but not limited to: "msy", "unfished", "target"

Value

A ggplot2 geom_hline object for a reference point that can be added to a plot

Examples

```
## Not run:
reference_line(dat, "biomass", "msy")

## End(Not run)
```

save_all_plots	<i>Export all figures and tables</i>
----------------	--------------------------------------

Description

Export all figures and tables to Rda files within one function.

Usage

```
save_all_plots(
  dat,
  recruitment_unit_label = "mt",
  recruitment_scale_amount = 1,
  relative = FALSE,
  proportional = TRUE,
  interactive = FALSE,
  figures_tables_dir = getwd(),
  ref_line = "msy",
  biomass_unit_label = "mt",
  biomass_scale_amount = 1,
  landings_unit_label = "mt",
  spawning_biomass_label = "mt",
  spawning_biomass_scale_amount = 1,
  ref_line_sb = "msy",
  abundance_at_age_scale_amount = 1,
  abundance_at_age_unit_label = "fish",
  biomass_at_age_scale_amount = 1,
```

```

    biomass_at_age_unit_label = "mt",
    index_unit_label = "",
    bnc_unit_label = c(biomass = "mt", abundance = "fish", catch = "mt"),
    catch_unit_label = "mt",
    catch_scale_amount = 1,
    projections_unit_label = c(catch = "mt", spawning_biomass = "mt", fishing_mortality =
    "")
  )

```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as 'list()') returned from convert_output. If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
recruitment_unit_label	String. Recruitment units Default: "mt"
recruitment_scale_amount	Number. A number describing how much to scale down the recruitment quantities shown on the y axis. For example, recruitment_scale_amount = 100 would scale down a value from 500,000 → 5,000. This scale will be reflected in the y axis label. Default: 1
relative	Logical. TRUE/FALSE; specify whether to set y-axis values relative to the ref_line value. Default: 'FALSE'
proportional	Logical. TRUE/FALSE; scale size of bubble plots Default: 'TRUE'
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
figures_tables_dir	Path. The location of the folder containing figures and tables ("figures" and "tables"). Default: the working directory ('getwd()')
ref_line	String. Type of reference point to compare biomass to. The default is "msy", which looks for "biomass_msy" in the "label" column of 'dat'. The actual searching in 'dat' is case agnostic and will work with either upper- or lower-case letters but you must use one of the options specified in the default list to ensure that the label on the figure looks correct regardless of how it is specified in 'dat'. Other possibilities may include "target", "MSY", and "unfished". When the reference cannot be found, indicate the reference line in the form c("label" = value). Default: "msy" Options: Including, but not limited to: "target", "MSY", "unfished"

biomass_unit_label
 String. Biomass units
 Default: "mt"
 biomass_scale_amount
 Number. A number describing how much to scale down the biomass quantities shown on the y axis. See 'recruitment_scale_amount'.
 Default: 1
 landings_unit_label
 String. Landings units
 Default: "mt"
 spawning_biomass_label
 String. Spawning biomass units
 Default: "mt"
 spawning_biomass_scale_amount
 Number. A number describing how much to scale down the spawning biomass quantities shown on the y axis. See 'recruitment_scale_amount'.
 Default: 1
 ref_line_sb
 String. Same as 'ref_line', but this argument is applied to plot_spawning_biomass.
 Default: "msy"
 Options: Including, but not limited to: "target", "MSY", "unfished"
 abundance_at_age_scale_amount
 Number. A number describing how much to scale down the abundance quantities shown via bubble size. See 'recruitment_scale_amount'.
 Default: 1
 abundance_at_age_unit_label
 String. Abbreviated abundance at age units
 Default: "fish"
 biomass_at_age_scale_amount
 Number. A number describing how much to scale down the biomass quantities shown via bubble size. See 'recruitment_scale_amount'.
 Default: 1
 biomass_at_age_unit_label
 String. Abbreviated biomass at age units
 Default: "mt"
 index_unit_label
 String. Index of abundance/CPUE units
 Default: ""
 bnc_unit_label
 String. Abbreviated biomass, abundance, and catch units
 Default: c("biomass" = "mt", "abundance" = "fish", "catch" = "mt")
 catch_unit_label
 String. Abbreviated catch units
 Default: "mt"
 catch_scale_amount
 Number. A number describing how much to scale down the catch quantities shown via bubble size. See 'recruitment_scale_amount'.
 Default: 1

```

projections_unit_label
  Units for projections quantities
  Default: c("catch" = "mt", "spawning_biomass" = "mt", "fishing_mortality" =
  "")
projections_uncert_label
  Abbreviated uncertainty label for each quantity
  Default: c("catch" = "stddev", "spawning_biomass" = "stddev", "fishing_mortality"
  = "stddev")

```

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)).

Value

Rda files for each figure/table.

See Also

[[convert_output\(\)](#)], [[create_rda\(\)](#)]

Examples

```

## Not run:
save_all_plots(dat,
  ref_line = "unfished",
  ref_line_sb = "target",
  index_unit_label = "CPUE",
  biomass_at_age_scale_amount = 1,
  biomass_at_age_unit_label = "metric tons"
)

## End(Not run)

```

table_biomass_abundance_catch

Biomass, abundance, and catch time series table

Description

Biomass, abundance, and catch time series table

Usage

```
table_biomass_abundance_catch(
  dat,
  unit_label = c(biomass = "mt", abundance = "fish", catch = "mt"),
  era = NULL,
  interactive = TRUE,
  group = NULL,
  method = "sum",
  module = NULL,
  label = NULL,
  make_rda = FALSE,
  tables_dir = getwd()
)
```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as 'list()') returned from convert_output . If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
unit_label	Character vector. Abbreviated unit label for each quantity Default: c("biomass" = "mt", "abundance" = "fish", "catch" = "mt")
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
group	A string of a single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
method	A string describing the method of summarizing data when group is set to "none". Default: "sum" Options: "sum" or "mean"
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
label	The label that will be chosen from the input file. If unspecified, the function will search the "label" column and use the first matching label in this ordered list: "landings_weight", "landings_numbers", "landings_expected", "landings_predicted", "landings". Default: NULL

make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.
tables_dir	The location of the folder containing the table rda files ("tables") that will be created if the argument 'make_rda' = TRUE. Default: the working directory ('getwd()')

Details

There are options to return a [gt::gt()] object or export an rda object containing a gt-based table, caption, and LaTeX-based table.

Value

A table of biomass, abundance, catch, and spawning biomass.

See Also

[convert_output()], [filter_data()], [process_table()], [export_kqs()], [insert_kqs()], [create_rda()]

Examples

```
table_biomass_abundance_catch(stockplotr::example_data)

table_biomass_abundance_catch(stockplotr::example_data,
  unit_label = c("biomass" = "kg", "abundance" = "eggs", "catch" = "kg"),
  module = c("TIME_SERIES", "CATCH", "TIME_SERIES"),
  interactive = FALSE
)
```

table_index	<i>Index of abundance table</i>
-------------	---------------------------------

Description

Index of abundance table

Usage

```
table_index(
  dat,
  era = NULL,
  interactive = TRUE,
  group = NULL,
  method = "sum",
  module = NULL,
  label = NULL,
```

```

    digits = 2,
    make_rda = FALSE,
    tables_dir = getwd()
  )

```

Arguments

<code>dat</code>	Data frame or list. A tibble or named list of tibbles (input as ‘list()’) returned from convert_output. If inputting a list of tibbles, the first tibble’s reference point defined in ‘ref_line’ is used to plot a reference line or calculate relative spawning biomass.
<code>era</code>	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
<code>interactive</code>	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: ‘FALSE’
<code>group</code>	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
<code>method</code>	String. Method for summarizing data when group is set to "none". Default: "sum" Options: "sum" or "mean"
<code>module</code>	Character vector. (Optional) Module name found in ‘dat\$module_name’. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
<code>label</code>	String. The label that will be chosen from the input file. If unspecified, the function will search the "label" column and use the first matching label in this ordered list: "index_weight", "index_numbers", "index_expected", "index_predicted", "index". Default: NULL
<code>digits</code>	Number. Numeric value indicating the number of digits values in the table will be rounded to. Default: 2
<code>make_rda</code>	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an ‘rda’ object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: ‘FALSE’.
<code>tables_dir</code>	Path. The location of the folder containing the generated table rda files ("tables") that will be created if the argument ‘make_rda’ = TRUE. Default: the working directory (‘getwd()’)

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a `[gt::gt()]` object or export an rda object containing a gt-based table, caption, and LaTeX-based table.

Value

A table of observed annual index of abundance plus error, stratified by fleet.

See Also

`[convert_output()]`, `[filter_data()]`, `[process_table()]`, `[export_kqs()]`, `[insert_kqs()]`, `[create_rda()]`

Examples

```
## Not run:
table_index(dat)

table_index(
  dat,
  make_rda = TRUE,
  tables_dir = getwd()
)

## End(Not run)
```

table_landings	<i>Landed catch by fleet and year table</i>
----------------	---

Description

Landed catch by fleet and year table

Usage

```
table_landings(
  dat,
  unit_label = "mt",
  era = NULL,
  interactive = TRUE,
  group = NULL,
  method = "sum",
  module = NULL,
  label = NULL,
  digits = 2,
  scale_amount = 1,
  make_rda = FALSE,
  tables_dir = getwd()
)
```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as 'list()') returned from convert_output. If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
unit_label	String. Abbreviated landings units Default: "mt"
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
group	String. Single column that groups the data. Set group = "none" to summarize data over all indexing values. Default: NULL Options: Including, but not limited to: "year", "area", "fleet", "sex", "none", NULL
method	String. Method for summarizing data when group is set to "none". Default: "sum" Options: "sum" or "mean"
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
label	String. The label that will be chosen from the input file. If unspecified, the function will search the "label" column and use the first matching label in this ordered list: "landings_weight", "landings_numbers", "landings_expected", "landings_predicted", "landings". Default: NULL
digits	Number. Numeric value indicating the number of digits values in the table will be rounded to. Default: 2
scale_amount	Number. A number to scale the y-axis values. Default: 1
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.
tables_dir	Path. The location of the folder containing the generated table rda files ("tables") that will be created if the argument 'make_rda' = TRUE. Default: the working directory ('getwd()')

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a `[gt::gt()]` object or export an rda object containing a gt-based table, caption, and LaTeX-based table.

Value

A table ready of landed catch by fleet and year.

See Also

`[convert_output()]`, `[filter_data()]`, `[process_table()]`, `[export_kqs()]`, `[insert_kqs()]`, `[create_rda()]`

Examples

```
table_landings(stockplotr::example_data)

table_landings(
  stockplotr::example_data,
  unit_label = "landings label",
  group = "fleet"
)
```

table_projections	<i>Create Projection Summary Table</i>
-------------------	--

Description

Generates a table showing assumed and projected years of Catch, SB, and F.

Usage

```
table_projections(
  dat,
  unit_label = c(catch = "mt", spawning_biomass = "mt", fishing_mortality = ""),
  interactive = TRUE,
  module = NULL,
  make_rda = FALSE,
  tables_dir = getwd()
)
```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as <code>'list()'</code>) returned from convert_output . If inputting a list of tibbles, the first tibble's reference point defined in <code>'ref_line'</code> is used to plot a reference line or calculate relative spawning biomass.
-----	--

unit_label	Character vector. Abbreviated unit label for each quantity Default: <code>c("catch" = "mt", "spawning_biomass" = "mt", "fishing_mortality" = "")</code>
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: <code>'FALSE'</code>
module	Character vector. (Optional) Module name found in <code>'dat\$module_name'</code> . If selecting >1 module, place them in a vector like <code>c("module1", "module2")</code> . Default: <code>NULL</code> If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso <code>[filter_data()]</code>
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an <code>'rda'</code> object. If TRUE, the rda will be exported to the folder indicated in the argument <code>"figures_dir"</code> . Default: <code>'FALSE'</code> .
tables_dir	Path. The location of the folder containing the generated table rda files ("tables") that will be created if the argument <code>'make_rda' = TRUE</code> . Default: the working directory (<code>'getwd()'</code>)

Details

We would like to thank Dan Hennen for sharing his projections table function code, which served as the foundation for this function.

Value

A formatted gt table object.

Examples

```
table_projections(  
  dat = stockplotr::example_data,  
  interactive = FALSE,  
  module = "DERIVED_QUANTITIES"  
)
```

table_total_catch	<i>Catch (table) by fleet, gear type, sector</i>
-------------------	--

Description

Catch (table) by fleet, gear type, sector

Usage

```
table_total_catch(
  dat,
  unit_label = "mt",
  era = NULL,
  interactive = TRUE,
  module = NULL,
  scale_amount = 1,
  digits = 2,
  make_rda = FALSE,
  tables_dir = getwd()
)
```

Arguments

dat	Data frame or list. A tibble or named list of tibbles (input as 'list()') returned from convert_output . If inputting a list of tibbles, the first tibble's reference point defined in 'ref_line' is used to plot a reference line or calculate relative spawning biomass.
unit_label	String. Abbreviated catch units Default: "mt"
era	String. Era of data. Default: "time" Options: "early", "time", "fore" (forecast), or NULL (all data)
interactive	Logical. TRUE/FALSE; indicate whether the environment is interactive. Default: 'FALSE'
module	Character vector. (Optional) Module name found in 'dat\$module_name'. If selecting >1 module, place them in a vector like c("module1", "module2"). Default: NULL If the interactive and >1 module_name is found, user will select the module_name in the console. @seealso [filter_data()]
scale_amount	Number. A number to scale the y-axis values. Default: 1
digits	Number. Numeric value indicating the number of digits catch values in the table will be rounded to. Default: 2
make_rda	Logical. TRUE/FALSE; indicate whether to save the object and make an automated caption and alternative text in the form of an 'rda' object. If TRUE, the rda will be exported to the folder indicated in the argument "figures_dir". Default: 'FALSE'.
tables_dir	Path. The location of the folder containing the generated table rda files ("tables") that will be created if the argument 'make_rda' = TRUE. Default: the working directory ('getwd()')

Details

The input is from an assessment model output file translated to a standardized output ([convert_output](#)). There are options to return a `[gt::gt()]` object or export an rda object containing a gt-based table, caption, and LaTeX-based table.

Value

A table ready of landed catch by fleet and year.

See Also

`[convert_output()]`, `[filter_data()]`, `[process_table()]`, `[export_kqs()]`, `[insert_kqs()]`, `[create_rda()]`

Examples

```
table_total_catch(stockplotr::example_data,
  module = "TIME_SERIES"
)

table_total_catch(
  stockplotr::example_data,
  unit_label = "lbs",
  module = "TIME_SERIES",
  digits = 4,
  scale_amount = 100
)
```

theme_noaa	<i>Add NOAA theming to ggplot2 object</i>
------------	---

Description

The palette is from the 'viridis' package, which contains palettes distinguishable by those with color vision deficiency.

Usage

```
theme_noaa(discrete = TRUE, ...)
```

Arguments

- `discrete` Logical. TRUE/FALSE; indicate whether the color or fill aesthetic is discrete. Default: TRUE
- `...` Arguments passed to `'ggplot2::theme()'`.

Value

A list applying a theme to a ggplot2 object.

Examples

```

ggplot2::ggplot(
  data = OrchardSprays,
  ggplot2::aes(
    x = rowpos,
    y = decrease,
    color = treatment
  )
) +
  ggplot2::geom_point() +
  theme_noaa()

ggplot2::ggplot(
  data = OrchardSprays,
  ggplot2::aes(
    x = rowpos,
    y = decrease,
    color = decrease
  )
) +
  ggplot2::geom_point() +
  theme_noaa(discrete = FALSE)
## Not run:
ggplot2::theme_set(stockplotr::theme_noaa())

## End(Not run)

```

theme_table	Add NOAA formatting to a table
-------------	--------------------------------

Description

Add NOAA formatting to a table

Usage

```
theme_table(x)
```

Arguments

x Object. Table from **gt**, **flextable**, or **kableExtra**

Details

Currently, the function can format table objects from: **flextable** (**flextable** package, when installed), **gt** (**gt**), and **kableExtra** (**kableExtra**).

Value

Add the standard formatting for stock assessment reports for any table.

Examples

```
theme_table(cars |> gt::gt())  
theme_table(cars |> kableExtra::kable())
```

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