Package 'khroma'

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Title Colour Schemes for Scientific Data Visualization

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Description Color schemes ready for each type of data (qualitative, diverging or sequential), with colors that are distinct for all people, including color-blind readers. This package provides an implementation of Paul Tol (2018) and Fabio Crameri (2018) <doi:10.5194/gmd-11-2541-2018> color schemes for use with 'graphics' or 'ggplot2'. It provides tools to simulate color-blindness and to test how well the colors of any palette are identifiable. Several scientific thematic schemes (geologic timescale, land cover, FAO soils, etc.) are also implemented.

License GPL (>= 3)

URL https://packages.tesselle.org/khroma/, https://github.com/tesselle/khroma

BugReports https://github.com/tesselle/khroma/issues

Depends R (>= 3.5.0)

Imports graphics, grDevices, grid, stats, utils

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NeedsCompilation no

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Contents

`change` *Simulate Color-Blindness*

Description

Simulate Color-Blindness

Usage

```
change(x, mode)
```

Arguments

x	A palette function that when called with a single integer argument (the number of levels) returns a vector of colors (see color()).
mode	A character string giving the colorblind vision to be used. It must be one of "deuteranopia", "protanopia", "tritanopia" or "achromatopsia". Any unambiguous substring can be given.

Value

A palette function that returns a vector of anomalized colors. All the attributes of the initial palette function are inherited, with a supplementary attribute "mode" giving the corresponding color-blind vision.

Author(s)

N. Frerebeau

References

Brettel, H., Viénot, F. and Mollon, J. D. (1997). Computerized Simulation of Color Appearance for Dichromats. *Journal of the Optical Society of America A*, 14(10), p. 2647-2655. doi:10.1364/JOSAA.14.002647.

Tol, P. (2018). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.1. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

Viénot, F., Brettel, H. and Mollon, J. D. (1999). Digital Video Colourmaps for Checking the Legibility of Displays by Dichromats. *Color Research & Application*, 24(4), p. 243-52. doi:10.1002/(SICI)15206378(199908)24:4<243::AIDCOL5>3.0.CO;23.

See Also

Other diagnostic tools: compare(), plot.color_scheme(), plot_map(), plot_scheme(), plot_scheme_colourblind(), plot_tiles()

Examples

```
# Trichromat
pal <- colour("bright")
plot_scheme(pal(7))

# Deuteranopia
deu <- change(pal, mode = "deuteranopia")
plot_scheme(deu(7))

# Protanopia
pro <- change(pal, mode = "protanopia")
plot_scheme(pro(7))

# Tritanopia
tri <- change(pal, mode = "tritanopia")
```

```
plot_scheme(tri(7))

# Achromatopsia
ach <- change(pal, mode = "achromatopsia")
plot_scheme(ach(7))

## Plot simulated color blindness
plot_scheme_colorblind(pal(7))
```

---

colour *Color Schemes*

Description

Provides qualitative, diverging and sequential color schemes.

Usage

```
colour(
  palette,
  reverse = FALSE,
  names = FALSE,
  lang = "en",
  force = FALSE,
  ...
)

color(palette, reverse = FALSE, names = FALSE, lang = "en", force = FALSE, ...)
```

Arguments

palette	A character string giving the name of the scheme to be used (see info()).
reverse	A logical scalar: should the resulting vector of colors should be reversed?
names	A logical scalar: should the names of the colors should be kept in the resulting vector?
lang	A character string specifying the language for the color names. It must be one of "en" (English, the default) or "fr" (French).
force	A logical scalar. If TRUE, forces the color scheme to be interpolated. It should not be used routinely with qualitative color schemes, as they are designed to be used as is to remain color-blind safe.
...	Further arguments passed to colorRampPalette.

Value

A `function` function with the following attributes, that when called with a single argument (an `integer` specifying the number of colors) returns a (named) vector of colors.

palette A `character` string giving the name of the color scheme.

type A `character` string giving the corresponding data type. One of `"qualitative"`, `"diverging"` or `"sequential"`.

interpolate A `logical` scalar: can the color palette be interpolated?

missing A `character` string giving the the hexadecimal representation of the color that should be used for `NA` values.

max An `integer` giving the maximum number of color values. Only relevant for non-interpolated color schemes.

For color schemes that can be interpolated (diverging and sequential data), the color range can be limited with an additional argument. `range` allows to remove a fraction of the color domain (before being interpolated; see examples).

Author(s)

N. Frerebeau

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

Jones, A., Montanarella, L. & Jones, R. (Ed.) (2005). *Soil atlas of Europe*. Luxembourg: European Commission, Office for Official Publications of the European Communities. 128 pp. ISBN: 92-894-8120-X.

Okabe, M. & Ito, K. (2008). *Color Universal Design (CUD): How to Make Figures and Presentations That Are Friendly to Colorblind People*. URL: `https://jfly.uni-koeln.de/color/`.

Tol, P. (2021). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.2. URL: `https://personal.sron.nl/~pault/data/colourschemes.pdf`

Commission for the Geological Map of the World

See Also

Other color schemes: `info()`

Examples

```
## Okabe and Ito colour scheme
colour("okabe ito")(8)
plot_scheme(colour("okabe ito")(8))

## Paul Tol's colour schemes
```

```
### Qualitative data
plot_scheme(colour("bright")(7))
plot_scheme(colour("high contrast")(3))
plot_scheme(colour("vibrant")(7))
plot_scheme(colour("muted")(9))
plot_scheme(colour("medium contrast")(6))
plot_scheme(colour("pale")(6))
plot_scheme(colour("dark")(6))
plot_scheme(colour("light")(9))
### Diverging data
plot_scheme(colour("sunset")(11))
plot_scheme(colour("BuRd")(9))
plot_scheme(colour("PRGn")(9))
### Sequential data
plot_scheme(colour("YlOrBr")(9))
plot_scheme(colour("iridescent")(23))
plot_scheme(colour("discrete rainbow")(14))
plot_scheme(colour("discrete rainbow")(23))
plot_scheme(colour("smooth rainbow")(34))

## Scientific colour schemes
### Geologic timescale
plot_scheme(colour("stratigraphy")(175))
### AVHRR global land cover classification
plot_scheme(colour("land")(14))
### FAO soil reference groups
plot_scheme(colour("soil")(24))

## Adjust colour levels
PRGn <- colour("PRGn")
plot_scheme(PRGn(9, range = c(0.5, 1)))
```

`compare` *Color Difference*

Description

Computes CIELAB distance metric.

Usage

```
compare(x, metric = 2000, diag = FALSE, upper = FALSE)
```

Arguments

`x`	A `character` vector of colors.
`metric`	An `integer` value giving the year the metric was recommended by the CIE. It must be one of `"1976"`, `"1994"`, or `"2000"` (default; see `spacesXYZ::DeltaE()`).
`diag`	A `logical` scalar: should the diagonal of the distance matrix be printed?

upper — A logical scalar: should the upper triangle of the distance matrix should be printed?

Value

A distance matrix.

Author(s)

N. Frerebeau

See Also

Other diagnostic tools: change(), plot.color_scheme(), plot_map(), plot_scheme(), plot_scheme_colourblind(), plot_tiles()

Examples

```
# Trichromat
pal <- colour("bright")
compare(pal(5))

# Deuteranopia
deu <- change(pal, mode = "deuteranopia")
compare(deu(5))

# Protanopia
pro <- change(pal, mode = "protanopia")
compare(pro(5))

# Tritanopia
tri <- change(pal, mode = "tritanopia")
compare(tri(5))

# Achromatopsia
ach <- change(pal, mode = "achromatopsia")
compare(ach(5))
```

---

info *Available Schemes*

Description

Returns information about the available schemes.

Usage

```
info()
```

Value

A data.frame with the following columns:

palette Names of palette.

type Types of schemes: sequential, diverging or qualitative.

max Maximum number of colors that are contained in each palette. Only relevant for qualitative schemes.

missing The hexadecimal color value for mapping missing values.

Author(s)

N. Frerebeau

See Also

Other color schemes: colour()

Examples

```
## Get a table of available palettes
info()
```

---

palette_color_continuous

Color Mapping (continuous)

Description

Maps continuous values to an interpolated colors gradient.

Usage

```
palette_color_continuous(
  colors = NULL,
  domain = NULL,
  midpoint = NULL,
  missing = "#DDDDDD"
)

palette_colour_continuous(
  colors = NULL,
  domain = NULL,
  midpoint = NULL,
  missing = "#DDDDDD"
)
```

Arguments

colors	A vector of colors or a function that when called with a single argument (an integer specifying the number of colors) returns a vector of colors. If NULL (the default), uses *YlOrRd*.
domain	A numeric range specifying the possible values that can be mapped.
midpoint	A length-one numeric vector specifying the mid-point of input range.
missing	The color to return for NA values.

Value

A palette function that when called with a single argument (a numeric vector of continuous values) returns a character vector of colors.

See Also

grDevices::colorRamp()

Other palettes: palette_color_discrete(), palette_color_picker(), palette_shape(), palette_size

Examples

```
## Visualize a simple DEM model
## Distribution of elevation values
elevation <- hist(volcano)

## Where are breaks?
elevation$breaks

## Build palette functions
BuRd <- color("BuRd")
ramp_BuRd <- palette_color_continuous(colors = BuRd(10))

## Plot image
image(volcano, col = ramp_BuRd(elevation$breaks))
legend("topright", legend = elevation$breaks, fill = ramp_BuRd(elevation$breaks))

## Scatter plot
## Build color palette functions
YlOrBr <- color("YlOrBr")
pal_color <- palette_color_continuous(colors = YlOrBr)

## Build symbol palette functions
pal_size <- palette_size_sequential(range = c(1, 3))

## Plot
plot(
  x = iris$Petal.Length,
  y = iris$Sepal.Length,
  pch = 16,
  col = pal_color(iris$Petal.Length),
  cex = pal_size(iris$Petal.Length),
```

```
  xlab = "Petal length",
  ylab = "Sepal length",
  panel.first = grid(),
  las = 1
)
```

`palette_color_discrete` *Color Mapping (discrete)*

Description

Maps categorical values to colors.

Usage

```
palette_color_discrete(
  colors = NULL,
  domain = NULL,
  ordered = FALSE,
  missing = "#DDDDDD"
)

palette_colour_discrete(
  colors = NULL,
  domain = NULL,
  ordered = FALSE,
  missing = "#DDDDDD"
)
```

Arguments

`colors`	A vector of colors or a `function` that when called with a single argument (an integer specifying the number of colors) returns a vector of colors. If `NULL` (the default), uses *discrete rainbow*.
`domain`	A vector of categorical data specifying the possible values that can be mapped.
`ordered`	A `logical` scalar: should the levels be treated as already in the correct order?
`missing`	The color to return for `NA` values.

Value

A palette `function` that when called with a single argument (a vector of categorical values) returns a `character` vector of colors.

See Also

Other palettes: `palette_color_continuous()`, `palette_color_picker()`, `palette_shape()`, `palette_size`

Examples

```
## Scatter plot
## Build color palette functions
bright <- c(versicolor = "#4477AA", virginica = "#EE6677", setosa = "#228833")
pal_color <- palette_color_discrete(colors = bright)

## Build symbol palette functions
symbols <- c(versicolor = 15, virginica = 16, setosa = 17)
pal_shapes <- palette_shape(symbols)

## Plot
plot(
  x = iris$Petal.Length,
  y = iris$Sepal.Length,
  pch = pal_shapes(iris$Species),
  col = pal_color(iris$Species),
  xlab = "Petal length",
  ylab = "Sepal length",
  panel.first = grid(),
  las = 1
)
legend("topleft", legend = names(bright), col = bright, pch = symbols)
```

---

palette_color_picker *Color Mapping*

Description

Maps values to colors.

Usage

```
palette_color_picker(
  scheme,
  domain = NULL,
  midpoint = NULL,
  ordered = FALSE,
  missing = NULL,
  ...
)

palette_colour_picker(
  scheme,
  domain = NULL,
  midpoint = NULL,
  ordered = FALSE,
  missing = NULL,
  ...
)
```

Arguments

scheme	A character string giving the name of the scheme to be used (see color()).
domain	A numeric range or a vector of categorical data specifying the possible values that can be mapped.
midpoint	A length-one numeric vector specifying the mid-point of input range.
ordered	A logical scalar: should the levels be treated as already in the correct order?
missing	The color to return for NA values.
...	Further parameters to be passed to color().

Details

A wrapper around palette_color_continuous() and palette_color_discrete().

Value

A palette function that when called with a single argument returns a character vector of colors.

See Also

Other palettes: palette_color_continuous(), palette_color_discrete(), palette_shape(), palette_size

Examples

```
## Visualize a simple DEM model
## Distribution of elevation values
elevation <- hist(volcano)

## Where are breaks?
elevation$breaks

## Build palette functions
ramp_BuRd <- palette_color_picker("BuRd")

(col <- ramp_BuRd(elevation$breaks))
image(volcano, col = col)
legend("topright", legend = elevation$breaks, fill = col)

## Rescale to midpoint
ramp_BuRd <- palette_color_picker("BuRd", midpoint = 160)

(col <- ramp_BuRd(elevation$breaks))
image(volcano, col = col)
legend("topright", legend = elevation$breaks, fill = col)
```

palette_shape *Symbol Mapping*

Description

Symbol Mapping

Usage

```
palette_shape(symbols = NULL, domain = NULL, ordered = FALSE, ...)

palette_line(types = NULL, domain = NULL, ordered = FALSE, ...)
```

Arguments

symbols, types	A vector of symbols or line types.
domain	A vector of categorical data specifying the possible values that can be mapped.
ordered	A logical scalar: should the levels be treated as already in the correct order?
...	Currently not used.

Value

A palette function that when called with a single argument (a character vector of categorical values) returns a vector of symbols.

See Also

Other palettes: palette_color_continuous(), palette_color_discrete(), palette_color_picker(), palette_size

Examples

```
## Scatter plot
## Build color palette functions
bright <- c(versicolor = "#4477AA", virginica = "#EE6677", setosa = "#228833")
pal_color <- palette_color_discrete(colors = bright)

## Build symbol palette functions
symbols <- c(versicolor = 15, virginica = 16, setosa = 17)
pal_shapes <- palette_shape(symbols)

## Plot
plot(
  x = iris$Petal.Length,
  y = iris$Sepal.Length,
  pch = pal_shapes(iris$Species),
  col = pal_color(iris$Species),
  xlab = "Petal length",
```

```
  ylab = "Sepal length",
  panel.first = grid(),
  las = 1
)
legend("topleft", legend = names(bright), col = bright, pch = symbols)
```

---

palette_size *Symbol Size Mapping*

Description

Symbol Size Mapping

Usage

```
palette_size_sequential(range = c(1, 6), ...)

palette_size_diverging(range = c(1, 6), midpoint = 0, ...)
```

Arguments

range	A length-two numeric vector giving range of possible sizes (greater than 0).
...	Currently not used.
midpoint	A length-one numeric vector specifying the data mid-point.

Value

A palette function that when called with a single argument (a numeric vector of continuous values) returns a numeric vector giving the amount by which plotting text and symbols should be magnified relative to the default.

See Also

Other palettes: palette_color_continuous(), palette_color_discrete(), palette_color_picker(), palette_shape()

Examples

```
## Visualize a simple DEM model
## Distribution of elevation values
elevation <- hist(volcano)

## Where are breaks?
elevation$breaks

## Build palette functions
BuRd <- color("BuRd")
ramp_BuRd <- palette_color_continuous(colors = BuRd(10))
```

```
## Plot image
image(volcano, col = ramp_BuRd(elevation$breaks))
legend("topright", legend = elevation$breaks, fill = ramp_BuRd(elevation$breaks))

## Scatter plot
## Build color palette functions
YlOrBr <- color("YlOrBr")
pal_color <- palette_color_continuous(colors = YlOrBr)

## Build symbol palette functions
pal_size <- palette_size_sequential(range = c(1, 3))

## Plot
plot(
  x = iris$Petal.Length,
  y = iris$Sepal.Length,
  pch = 16,
  col = pal_color(iris$Petal.Length),
  cex = pal_size(iris$Petal.Length),
  xlab = "Petal length",
  ylab = "Sepal length",
  panel.first = grid(),
  las = 1
)
```

`plot.color_scheme` *Plot Color Scheme*

Description

Quickly displays a color scheme returned by `color()`.

Usage

```
## S3 method for class 'color_scheme'
plot(x, ...)
```

Arguments

`x`	A `character` vector of colors.
`...`	Currently not used.

Value

`plot()` is called for its side-effects: it results in a graphic being displayed (invisibly returns `x`).

Author(s)

N. Frerebeau

See Also

Other diagnostic tools: change(), compare(), plot_map(), plot_scheme(), plot_scheme_colourblind(), plot_tiles()

Examples

```
plot(colour("bright")(7))
plot(colour("smooth rainbow")(256))

## Plot colour schemes
plot_scheme(colour("bright")(7))
plot_scheme(colour("sunset")(11))
plot_scheme(colour("YlOrBr")(9))
plot_scheme(colour("discrete rainbow")(14))

## Plot diagnostic maps
plot_map(colour("bright")(7))
plot_map(colour("sunset")(11))
plot_map(colour("YlOrBr")(9))
plot_map(colour("discrete rainbow")(14))

## Plot diagnostic images
plot_tiles(colour("discrete rainbow")(14), n = 256)
plot_tiles(colour("discrete rainbow")(23), n = 256)
plot_tiles(colour("smooth rainbow")(256), n = 256)
```

---

plot_map *Diagnostic Map*

Description

Produces a diagnostic map for a given color scheme.

Usage

```
plot_map(x)
```

Arguments

x	A character vector of colors.

Value

plot_map() is called for its side-effects: it results in a graphic being displayed (invisibly returns x).

Author(s)

N. Frerebeau, V. Arel-Bundock

See Also

Other diagnostic tools: change(), compare(), plot.color_scheme(), plot_scheme(), plot_scheme_colourblind(), plot_tiles()

Examples

```
plot(colour("bright")(7))
plot(colour("smooth rainbow")(256))

## Plot colour schemes
plot_scheme(colour("bright")(7))
plot_scheme(colour("sunset")(11))
plot_scheme(colour("YlOrBr")(9))
plot_scheme(colour("discrete rainbow")(14))

## Plot diagnostic maps
plot_map(colour("bright")(7))
plot_map(colour("sunset")(11))
plot_map(colour("YlOrBr")(9))
plot_map(colour("discrete rainbow")(14))

## Plot diagnostic images
plot_tiles(colour("discrete rainbow")(14), n = 256)
plot_tiles(colour("discrete rainbow")(23), n = 256)
plot_tiles(colour("smooth rainbow")(256), n = 256)
```

---

plot_scheme *Plot Color Scheme*

Description

Shows colors in a plot.

Usage

```
plot_scheme(x, colours = FALSE, names = FALSE, size = 1)
```

Arguments

x	A character vector of colors.
colours	A logical scalar: should the hexadecimal representation of the colors be displayed?
names	A logical scalar: should the name of the colors be displayed?
size	A numeric value giving the amount by which plotting text should be magnified relative to the default. Works the same as cex parameter of graphics::par().

Value

`plot_scheme()` is called for its side-effects: it results in a graphic being displayed (invisibly returns `x`).

Author(s)

N. Frerebeau

See Also

Other diagnostic tools: `change()`, `compare()`, `plot.color_scheme()`, `plot_map()`, `plot_scheme_colourblind()`, `plot_tiles()`

Examples

```
plot(colour("bright")(7))
plot(colour("smooth rainbow")(256))

## Plot colour schemes
plot_scheme(colour("bright")(7))
plot_scheme(colour("sunset")(11))
plot_scheme(colour("YlOrBr")(9))
plot_scheme(colour("discrete rainbow")(14))

## Plot diagnostic maps
plot_map(colour("bright")(7))
plot_map(colour("sunset")(11))
plot_map(colour("YlOrBr")(9))
plot_map(colour("discrete rainbow")(14))

## Plot diagnostic images
plot_tiles(colour("discrete rainbow")(14), n = 256)
plot_tiles(colour("discrete rainbow")(23), n = 256)
plot_tiles(colour("smooth rainbow")(256), n = 256)
```

---

plot_scheme_colourblind

Plot Simulated Color Blindness

Description

Shows colors in a plot with different types of simulated color blindness.

Usage

```
plot_scheme_colourblind(x)

plot_scheme_colorblind(x)
```

Arguments

x	A character vector of colors.

Value

plot_scheme_colourblind() is called for its side-effects: it results in a graphic being displayed (invisibly returns x).

Author(s)

N. Frerebeau, V. Arel-Bundock

See Also

Other diagnostic tools: change(), compare(), plot.color_scheme(), plot_map(), plot_scheme(), plot_tiles()

Examples

```
# Trichromat
pal <- colour("bright")
plot_scheme(pal(7))

# Deuteranopia
deu <- change(pal, mode = "deuteranopia")
plot_scheme(deu(7))

# Protanopia
pro <- change(pal, mode = "protanopia")
plot_scheme(pro(7))

# Tritanopia
tri <- change(pal, mode = "tritanopia")
plot_scheme(tri(7))

# Achromatopsia
ach <- change(pal, mode = "achromatopsia")
plot_scheme(ach(7))

## Plot simulated color blindness
plot_scheme_colorblind(pal(7))
```

---

plot_tiles *Diagnostic Map*

Description

Produces a diagnostic map for a given color scheme.

Usage

```
plot_tiles(x, n = 512)
```

Arguments

x	A character vector of colors.
n	An integer specifying the size of the grid (defaults to 512).

Value

plot_tiles() is called for its side-effects: it results in a graphic being displayed (invisibly returns x).

Author(s)

N. Frerebeau

See Also

Other diagnostic tools: change(), compare(), plot.color_scheme(), plot_map(), plot_scheme(), plot_scheme_colourblind()

Examples

```
plot(colour("bright")(7))
plot(colour("smooth rainbow")(256))

## Plot colour schemes
plot_scheme(colour("bright")(7))
plot_scheme(colour("sunset")(11))
plot_scheme(colour("YlOrBr")(9))
plot_scheme(colour("discrete rainbow")(14))

## Plot diagnostic maps
plot_map(colour("bright")(7))
plot_map(colour("sunset")(11))
plot_map(colour("YlOrBr")(9))
plot_map(colour("discrete rainbow")(14))

## Plot diagnostic images
plot_tiles(colour("discrete rainbow")(14), n = 256)
plot_tiles(colour("discrete rainbow")(23), n = 256)
plot_tiles(colour("smooth rainbow")(256), n = 256)
```

scale_colour_land *AVHRR Global Land Cover Classification Color Scheme for* **ggplot2** *and* **ggraph**

Description

Provides the AVHRR Global Land Cover classification as modified by Paul Tol (colorblind safe).

Usage

```
scale_colour_land(..., lang = "en", aesthetics = "colour")

scale_color_land(..., lang = "en", aesthetics = "colour")

scale_fill_land(..., lang = "en", aesthetics = "fill")

scale_edge_colour_land(..., lang = "en")

scale_edge_color_land(..., lang = "en")

scale_edge_fill_land(..., lang = "en")
```

Arguments

...	Arguments passed on to ggplot2::discrete_scale().
lang	A character string specifying the language for the color names (see details). It must be one of "en" (english, the default), "fr" (french) or NULL. If not NULL, the values will be matched based on the color names.
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Details

Values will be matched based on the land classification names.

Value

A discrete scale.

Author(s)

N. Frerebeau

References

Tol, P. (2018). *Colour Schemes.* SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.1. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other themed color schemes: scale_colour_soil(), scale_colour_stratigraphy()

Other qualitative color schemes: scale_colour_soil(), scale_colour_stratigraphy(), scale_okabeito_discrete, scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_pale, scale_tol_vibrant

Examples

```
library(ggplot2)

land <- data.frame(
  name = c(
    "water", "evergreen needleleaf forest", "deciduous needleleaf forest",
    "mixed forest", "evergreen broadleaf forest", "deciduous broadleaf forest",
    "woodland", "wooded grassland", "grassland", "cropland", "closed shrubland",
    "open shrubland", "bare ground", "urban and built"
  )
)

ggplot2::ggplot(land) +
  ggplot2::geom_rect(ggplot2::aes(xmin = rep(0, 14), xmax = rep(1, 14),
                                  ymin = 1:14, ymax = 1:14+1, fill = name)) +
  ggplot2::scale_y_reverse() +
  scale_fill_land(name = "land")
```

---

scale_colour_soil *FAO Soil Reference Groups Color Scheme for* **ggplot2** *and* **ggraph**

Description

Provides the FAO Soil Reference Groups color scheme.

Usage

```
scale_colour_soil(..., lang = "en", aesthetics = "colour")

scale_color_soil(..., lang = "en", aesthetics = "colour")

scale_fill_soil(..., lang = "en", aesthetics = "fill")

scale_edge_colour_soil(..., lang = "en")

scale_edge_color_soil(..., lang = "en")

scale_edge_fill_soil(..., lang = "en")
```

Arguments

...	Arguments passed on to ggplot2::discrete_scale().
lang	A character string specifying the language for the color names (see details). It must be one of "en" (english, the default), "fr" (french) or NULL. If not NULL, the values will be matched based on the color names.
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Details

Values will be matched based on the soil names.

Value

A discrete scale.

Author(s)

N. Frerebeau

References

Jones, A., Montanarella, L. & Jones, R. (Ed.) (2005). *Soil atlas of Europe*. Luxembourg: European Commission, Office for Official Publications of the European Communities. 128 pp. ISBN: 92-894-8120-X.

See Also

Other themed color schemes: scale_colour_land(), scale_colour_stratigraphy()

Other qualitative color schemes: scale_colour_land(), scale_colour_stratigraphy(), scale_okabeito_discrete, scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_pale, scale_tol_vibrant

Examples

```
library(ggplot2)

soil <- data.frame(
  name = c(
    "Acrisol", "Albeluvisol", "Andosol", "Anthrosol", "Arenosol", "Calcisol",
    "Cambisol", "Chernozem", "Cryosol", "Fluvisol", "Kastanozem", "Gleysol",
    "Gypsisol", "Histosol", "Leptosol", "Luvisol", "Phaeozem", "Planosol",
    "Podzol", "Regosol", "Solonchak", "Solonetz", "Umbrisol", "Vertisol"
  )
)

ggplot2::ggplot(soil) +
  ggplot2::geom_rect(ggplot2::aes(xmin = rep(0, 24), xmax = rep(1, 24),
                                  ymin = 1:24, ymax = 1:24+1, fill = name)) +
  ggplot2::scale_y_reverse() +
```

```
scale_fill_soil(name = "Soil")
```

`scale_colour_stratigraphy` *Geologic Timescale Color Scheme for* **ggplot2** *and* **ggraph**

Description

Provides the geologic timescale color scheme.

Usage

```
scale_colour_stratigraphy(..., lang = "en", aesthetics = "colour")

scale_color_stratigraphy(..., lang = "en", aesthetics = "colour")

scale_fill_stratigraphy(..., lang = "en", aesthetics = "fill")

scale_edge_colour_stratigraphy(..., lang = "en")

scale_edge_color_stratigraphy(..., lang = "en")

scale_edge_fill_stratigraphy(..., lang = "en")
```

Arguments

`...`	Arguments passed on to `ggplot2::discrete_scale()`.
`lang`	A `character` string specifying the language for the color names (see details). It must be one of "`en`" (english, the default), "`fr`" (french) or `NULL`. If not `NULL`, the values will be matched based on the color names.
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Details

Values will be matched based on the geological unit names.

Value

A discrete scale.

Author(s)

N. Frerebeau

References

Commission for the Geological Map of the World.

See Also

Other themed color schemes: scale_colour_land(), scale_colour_soil()

Other qualitative color schemes: scale_colour_land(), scale_colour_soil(), scale_okabeito_discrete, scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_pale, scale_tol_vibrant

Examples

```
library(ggplot2)

strati <- data.frame(
  name = c("Phanerozoic", "Paleozoic", "Cambrian", "Ordovician", "Silurian",
           "Devonian", "Carboniferous", "Mesozoic", "Triassic", "Cretaceous",
           "Jurassic", "Cenozoic", "Paleogene", "Neogene", "Quaternary"),
  type = c("Eon", "Era", "Period", "Period", "Period", "Period", "Period",
           "Era", "Period", "Period", "Period", "Era", "Period", "Period",
           "Period"),
  start = c(541, 541, 541, 485, 444, 419, 359,
            252, 252, 201, 145, 66, 66, 23, 2.6),
  end = c(0, 252, 485, 444, 419, 359, 252,
          66, 201, 145, 66, 2.6, 23, 2.6, 0)
)

## Keep chronological order in the legend
strati$name <- factor(strati$name, levels = rev(unique(strati$name)),
                      ordered = TRUE)

## Workaround: use `limits = force` to remove unused values
ggplot2::ggplot(strati) +
  ggplot2::geom_rect(ggplot2::aes(xmin = rep(0, 15), xmax = rep(1, 15),
                                  ymin = start, ymax = end, fill = name)) +
  ggplot2::scale_y_reverse() +
  ggplot2::facet_grid(. ~ type) +
  scale_fill_stratigraphy(name = "Stratigraphy", limits = force)
```

---

scale_crameri_acton *Fabio Crameri's* acton *Sequential Color Scheme*

Description

Fabio Crameri's *acton* Sequential Color Scheme

Usage

```
scale_colour_acton(
  ...,
  reverse = FALSE,
  range = c(0, 1),
```

```
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_acton(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_acton(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_acton(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_acton(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_acton(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?

range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_bam *Fabio Crameri's* bam *Diverging Color Scheme*

Description

Fabio Crameri's *bam* Diverging Color Scheme

Usage

```
scale_colour_bam(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_bam(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_bam(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_bam(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_bam(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_bam(
  ...,
```

```
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.
midpoint	A length-one numeric vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256
broc0*	256
cork0*	256
vik0*	256
roma0*	256
bam0*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other diverging color schemes: scale_crameri_berlin, scale_crameri_broc, scale_crameri_cork, scale_crameri_lisbon, scale_crameri_roma, scale_crameri_tofino, scale_crameri_vanimo, scale_crameri_vik, scale_tol_BuRd, scale_tol_PRGn, scale_tol_nightfall, scale_tol_sunset

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam0, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_broc0, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_cork0, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

---

scale_crameri_bamako *Fabio Crameri's* bamako *Sequential Color Scheme*

Description

Fabio Crameri's *bamako* Sequential Color Scheme

Usage

```
scale_colour_bamako(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_bamako(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_bamako(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_bamako(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_bamako(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_bamako(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

scale_crameri_bamO *Fabio Crameri's* bamO *Cyclic Color Scheme*

Description

Fabio Crameri's *bamO* Cyclic Color Scheme

Usage

```
scale_colour_bamO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_bamO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_bamO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256
brocO*	256
corkO*	256
vikO*	256
romaO*	256
bamO*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other cyclic color schemes: scale_crameri_brocO, scale_crameri_corkO, scale_crameri_romaO, scale_crameri_vikO

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon,

scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

---

scale_crameri_batlow *Fabio Crameri's* batlow *Sequential Color Scheme*

Description

Fabio Crameri's *batlow* Sequential Color Scheme

Usage

```
scale_colour_batlow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_batlow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_batlow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)
```

```
scale_edge_colour_batlow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_batlow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_batlow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256

devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda,

scale_crameri_bukavu, scale_crameri_cork, scale_crameri_cork0, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_batlowK *Fabio Crameri's* batlowK *Sequential Color Scheme*

Description

Fabio Crameri's *batlowK* Sequential Color Scheme

Usage

```
scale_colour_batlowK(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_batlowK(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)
```

```
scale_fill_batlowK(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_batlowK(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_batlowK(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_batlowK(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bam0, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_broc0, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_cork0, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_batlowW *Fabio Crameri's* batlowW *Sequential Color Scheme*

Description

Fabio Crameri's *batlowW* Sequential Color Scheme

Usage

```
scale_colour_batlowW(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
```

```
  aesthetics = "colour"
)

scale_color_batlowW(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_batlowW(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_batlowW(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_batlowW(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_batlowW(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color do-

main to keep.

`discrete` A `logical` scalar: should the color scheme be used as a discrete scale?

`aesthetics` A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bam0, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_broc0, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_cork0, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_berlin *Fabio Crameri's* berlin *Diverging Color Scheme*

Description

Fabio Crameri's *berlin* Diverging Color Scheme

Usage

```
scale_colour_berlin(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_berlin(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_berlin(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_berlin(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_berlin(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_berlin(
  ...,
```

```
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.
midpoint	A length-one numeric vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256
broc0*	256
cork0*	256
vik0*	256
roma0*	256
bam0*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_broc, scale_crameri_cork, scale_crameri_lisbon, scale_crameri_roma, scale_crameri_tofino, scale_crameri_vanimo, scale_crameri_vik, scale_tol_BuRd, scale_tol_PRGn, scale_tol_nightfall, scale_tol_sunset

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

---

scale_crameri_bilbao *Fabio Crameri's* bilbao *Sequential Color Scheme*

Description

Fabio Crameri's *bilbao* Sequential Color Scheme

Usage

```
scale_colour_bilbao(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_bilbao(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_bilbao(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_bilbao(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_bilbao(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_bilbao(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

scale_crameri_broc *Fabio Crameri's* broc *Diverging Color Scheme*

Description

Fabio Crameri's *broc* Diverging Color Scheme

Usage

```
scale_colour_broc(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_broc(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_broc(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_broc(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_broc(
  ...,
```

```
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_broc(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`midpoint`	A length-one `numeric` vector giving the midpoint (in data value) of the diverging scale. Defaults to `0`.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
`broc`	256
`cork`	256
`vik`	256
`lisbon`	256
`tofino`	256
`berlin`	256
`roma`	256
`bam`	256
`vanimo`	256

broc0*	256
cork0*	256
vik0*	256
roma0*	256
bam0*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_berlin, scale_crameri_cork, scale_crameri_lisbon, scale_crameri_roma, scale_crameri_tofino, scale_crameri_vanimo, scale_crameri_vik, scale_tol_BuRd, scale_tol_PRGn, scale_tol_nightfall, scale_tol_sunset

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bam0, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc0, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_cork0, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

scale_crameri_brocO *Fabio Crameri's* brocO *Cyclic Color Scheme*

Description

Fabio Crameri's *brocO* Cyclic Color Scheme

Usage

```
scale_colour_brocO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_brocO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_brocO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256
brocO*	256
corkO*	256
vikO*	256
romaO*	256
bamO*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other cyclic color schemes: scale_crameri_bamO, scale_crameri_corkO, scale_crameri_romaO, scale_crameri_vikO

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon,

scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

---

scale_crameri_buda *Fabio Crameri's* buda *Sequential Color Scheme*

Description

Fabio Crameri's *buda* Sequential Color Scheme

Usage

```
scale_colour_buda(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_buda(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_buda(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)
```

```
scale_edge_colour_buda(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_buda(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_buda(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256

devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO,

scale_crameri_bukavu, scale_crameri_cork, scale_crameri_cork0, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_bukavu *Fabio Crameri's* bukavu *Multi-Sequential Color Scheme*

Description

Fabio Crameri's *bukavu* Multi-Sequential Color Scheme

Usage

```
scale_colour_bukavu(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  aesthetics = "colour"
)

scale_color_bukavu(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  aesthetics = "colour"
)
```

```
scale_fill_bukavu(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  aesthetics = "fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`midpoint`	A length-one `numeric` vector giving the midpoint (in data value) of the diverging scale. Defaults to `0`.
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256

bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other multi sequential color schemes: scale_crameri_fes, scale_crameri_oleron

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(volcano)

volcan <- data.frame(
  x = rep(1:ncol(volcano), each = nrow(volcano)),
  y = rep(1:nrow(volcano), times = ncol(volcano)),
  z = as.numeric(volcano)
)

ggplot2::ggplot(volcan, ggplot2::aes(x, y, fill = z)) +
  ggplot2::geom_raster() +
  scale_fill_oleron(midpoint = 125)
```

scale_crameri_cork *Fabio Crameri's* cork *Diverging Color Scheme*

Description

Fabio Crameri's *cork* Diverging Color Scheme

Usage

```
scale_colour_cork(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_cork(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_cork(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_cork(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_cork(
  ...,
```

```
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_cork(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`midpoint`	A length-one `numeric` vector giving the midpoint (in data value) of the diverging scale. Defaults to `0`.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256

brocO*	256
corkO*	256
vikO*	256
romaO*	256
bamO*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_berlin, scale_crameri_broc, scale_crameri_lisbon, scale_crameri_roma, scale_crameri_tofino, scale_crameri_vanimo, scale_crameri_vik, scale_tol_BuRd, scale_tol_PRGn, scale_tol_nightfall, scale_tol_sunset

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

scale_crameri_corkO *Fabio Crameri's* corkO *Cyclic Color Scheme*

Description

Fabio Crameri's *corkO* Cyclic Color Scheme

Usage

```
scale_colour_corkO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_corkO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_corkO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256
brocO*	256
corkO*	256
vikO*	256
romaO*	256
bamO*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other cyclic color schemes: scale_crameri_bamO, scale_crameri_brocO, scale_crameri_romaO, scale_crameri_vikO

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon,

scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

---

scale_crameri_davos *Fabio Crameri's* davos *Sequential Color Scheme*

Description

Fabio Crameri's *davos* Sequential Color Scheme

Usage

```
scale_colour_davos(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_davos(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_davos(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)
```

```
scale_edge_colour_davos(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_davos(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_davos(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256

devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO,

scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_cork0, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_devon *Fabio Crameri's* devon *Sequential Color Scheme*

Description

Fabio Crameri's *devon* Sequential Color Scheme

Usage

```
scale_colour_devon(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_devon(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)
```

```
scale_fill_devon(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_devon(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_devon(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_devon(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_fes *Fabio Crameri's* fes *Multi-Sequential Color Scheme*

Description

Fabio Crameri's *fes* Multi-Sequential Color Scheme

Usage

```
scale_colour_fes(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
```

```
  aesthetics = "colour"
)

scale_color_fes(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  aesthetics = "colour"
)

scale_fill_fes(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  aesthetics = "fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`midpoint`	A length-one `numeric` vector giving the midpoint (in data value) of the diverging scale. Defaults to `0`.
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256

nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other multi sequential color schemes: scale_crameri_bukavu, scale_crameri_oleron

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(volcano)

volcan <- data.frame(
  x = rep(1:ncol(volcano), each = nrow(volcano)),
  y = rep(1:nrow(volcano), times = ncol(volcano)),
  z = as.numeric(volcano)
)

ggplot2::ggplot(volcan, ggplot2::aes(x, y, fill = z)) +
  ggplot2::geom_raster() +
  scale_fill_oleron(midpoint = 125)
```

---

scale_crameri_grayC *Fabio Crameri's* grayC *Sequential Color Scheme*

Description

Fabio Crameri's *grayC* Sequential Color Scheme

Usage

```
scale_colour_grayC(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_grayC(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_grayC(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_grayC(
```

```
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_grayC(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_grayC(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
`batlow`	256
`batlowW`	256
`batlowK`	256
`devon`	256
`lajolla`	256

bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_hawaii,

scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_hawaii *Fabio Crameri's* hawaii *Sequential Color Scheme*

Description

Fabio Crameri's *hawaii* Sequential Color Scheme

Usage

```
scale_colour_hawaii(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_hawaii(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_hawaii(
  ...,
```

```
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_hawaii(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_hawaii(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_hawaii(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_imola *Fabio Crameri's* imola *Sequential Color Scheme*

Description

Fabio Crameri's *imola* Sequential Color Scheme

Usage

```
scale_colour_imola(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_imola(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
```

```
  aesthetics = "colour"
)

scale_fill_imola(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_imola(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_imola(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_imola(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_lajolla *Fabio Crameri's* lajolla *Sequential Color Scheme*

Description

Fabio Crameri's *lajolla* Sequential Color Scheme

Usage

```
scale_colour_lajolla(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
```

```
  aesthetics = "colour"
)

scale_color_lajolla(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_lajolla(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_lajolla(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_lajolla(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_lajolla(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color do-

	main to keep.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_lapaz *Fabio Crameri's* lapaz *Sequential Color Scheme*

Description

Fabio Crameri's *lapaz* Sequential Color Scheme

Usage

```
scale_colour_lapaz(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_lapaz(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_lapaz(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_lapaz(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_lapaz(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_lapaz(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

scale_crameri_lisbon *Fabio Crameri's* lisbon *Diverging Color Scheme*

Description

Fabio Crameri's *lisbon* Diverging Color Scheme

Usage

```
scale_colour_lisbon(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_lisbon(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_lisbon(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_lisbon(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_lisbon(
  ...,
```

```
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_lisbon(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`midpoint`	A length-one `numeric` vector giving the midpoint (in data value) of the diverging scale. Defaults to `0`.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256

broc0*	256
cork0*	256
vik0*	256
roma0*	256
bam0*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_berlin, scale_crameri_broc, scale_crameri_cork, scale_crameri_roma, scale_crameri_tofino, scale_crameri_vanimo, scale_crameri_vik, scale_tol_BuRd, scale_tol_PRGn, scale_tol_nightfall, scale_tol_sunset

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bam0, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_broc0, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_cork0, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

scale_crameri_nuuk *Fabio Crameri's* nuuk *Sequential Color Scheme*

Description

Fabio Crameri's *nuuk* Sequential Color Scheme

Usage

```
scale_colour_nuuk(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_nuuk(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_nuuk(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_nuuk(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_nuuk(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
```

```
)

scale_edge_fill_nuuk(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256

oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
```

```
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

`scale_crameri_oleron` *Fabio Crameri's* oleron *Multi-Sequential Color Scheme*

Description

Fabio Crameri's *oleron* Multi-Sequential Color Scheme

Usage

```
scale_colour_oleron(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  aesthetics = "colour"
)

scale_color_oleron(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  aesthetics = "colour"
)

scale_fill_oleron(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  aesthetics = "fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.

`midpoint`	A length-one `numeric` vector giving the midpoint (in data value) of the diverging scale. Defaults to `0`.
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other multi sequential color schemes: scale_crameri_bukavu, scale_crameri_fes

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bam0, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_broc0, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_cork0, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(volcano)

volcan <- data.frame(
  x = rep(1:ncol(volcano), each = nrow(volcano)),
  y = rep(1:nrow(volcano), times = ncol(volcano)),
  z = as.numeric(volcano)
)

ggplot2::ggplot(volcan, ggplot2::aes(x, y, fill = z)) +
  ggplot2::geom_raster() +
  scale_fill_oleron(midpoint = 125)
```

---

scale_crameri_oslo *Fabio Crameri's* oslo *Sequential Color Scheme*

Description

Fabio Crameri's *oslo* Sequential Color Scheme

Usage

```
scale_colour_oslo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
```

```
  aesthetics = "colour"
)

scale_color_oslo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_oslo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_oslo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_oslo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_oslo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color do-

	main to keep.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_roma *Fabio Crameri's* roma *Diverging Color Scheme*

Description

Fabio Crameri's *roma* Diverging Color Scheme

Usage

```
scale_colour_roma(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_roma(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_roma(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_roma(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_roma(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_roma(
  ...,
```

```
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.
midpoint	A length-one numeric vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256
broc0*	256
cork0*	256
vik0*	256
roma0*	256
bam0*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_berlin, scale_crameri_broc, scale_crameri_cork, scale_crameri_lisbon, scale_crameri_tofino, scale_crameri_vanimo, scale_crameri_vik, scale_tol_BuRd, scale_tol_PRGn, scale_tol_nightfall, scale_tol_sunset

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

---

scale_crameri_romaO *Fabio Crameri's* romaO *Cyclic Color Scheme*

Description

Fabio Crameri's *romaO* Cyclic Color Scheme

Usage

```
scale_colour_romaO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_romaO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_romaO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256

vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256
brocO*	256
corkO*	256
vikO*	256
romaO*	256
bamO*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other cyclic color schemes: scale_crameri_bamO, scale_crameri_brocO, scale_crameri_corkO, scale_crameri_vikO

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

---

scale_crameri_tofino *Fabio Crameri's* tofino *Diverging Color Scheme*

Description

Fabio Crameri's *tofino* Diverging Color Scheme

Usage

```
scale_colour_tofino(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_tofino(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_tofino(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)
```

```
scale_edge_colour_tofino(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_tofino(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_tofino(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`midpoint`	A length-one `numeric` vector giving the midpoint (in data value) of the diverging scale. Defaults to `0`.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256
broc0*	256
cork0*	256
vik0*	256
roma0*	256
bam0*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_berlin, scale_crameri_broc, scale_crameri_cork, scale_crameri_lisbon, scale_crameri_roma, scale_crameri_vanimo, scale_crameri_vik, scale_tol_BuRd, scale_tol_PRGn, scale_tol_nightfall, scale_tol_sunset

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bam0, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_broc0, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_cork0, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vik0

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

---

scale_crameri_tokyo *Fabio Crameri's* tokyo *Sequential Color Scheme*

Description

Fabio Crameri's *tokyo* Sequential Color Scheme

Usage

```
scale_colour_tokyo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_tokyo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_tokyo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_tokyo(
  ...,
  reverse = FALSE,
```

```
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_tokyo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_tokyo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256

bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO,

scale_crameri_tofino, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_turku *Fabio Crameri's* turku *Sequential Color Scheme*

Description

Fabio Crameri's *turku* Sequential Color Scheme

Usage

```
scale_colour_turku(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_turku(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_turku(
  ...,
  reverse = FALSE,
  range = c(0, 1),
```

```
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_turku(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_turku(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_turku(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
batlow	256
batlowW	256
batlowK	256
devon	256
lajolla	256
bamako	256
davos	256
bilbao	256
nuuk	256
oslo	256
grayC	256
hawaii	256
lapaz	256
tokyo	256
buda	256
acton	256
turku	256
imola	256
oleron*	256
bukavu*	256
fes*	256

*: multisequential color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other sequential color schemes: `scale_crameri_acton`, `scale_crameri_bamako`, `scale_crameri_batlow`, `scale_crameri_batlowK`, `scale_crameri_batlowW`, `scale_crameri_bilbao`, `scale_crameri_buda`, `scale_crameri_davos`, `scale_crameri_devon`, `scale_crameri_grayC`, `scale_crameri_hawaii`, `scale_crameri_imola`, `scale_crameri_lajolla`, `scale_crameri_lapaz`, `scale_crameri_nuuk`, `scale_crameri_oslo`, `scale_crameri_tokyo`, `scale_tol_YlOrBr`, `scale_tol_incandescent`, `scale_tol_iridescent`, `scale_tol_smoothrainbow`

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_vanimo, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_batlow()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_bamako()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_hawaii(reverse = TRUE)
```

---

scale_crameri_vanimo *Fabio Crameri's* vanimo *Diverging Color Scheme*

Description

Fabio Crameri's *vanimo* Diverging Color Scheme

Usage

```
scale_colour_vanimo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_vanimo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
```

```
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_vanimo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_vanimo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_vanimo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_vanimo(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.

midpoint	A length-one numeric vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256
broc0*	256
cork0*	256
vik0*	256
roma0*	256
bam0*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_berlin, scale_crameri_broc, scale_crameri_cork, scale_crameri_lisbon, scale_crameri_roma, scale_crameri_tofino, scale_crameri_vik, scale_tol_BuRd, scale_tol_PRGn, scale_tol_nightfall, scale_tol_sunset

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vik, scale_crameri_vikO

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

---

scale_crameri_vik *Fabio Crameri's* vik *Diverging Color Scheme*

Description

Fabio Crameri's *vik* Diverging Color Scheme

Usage

```
scale_colour_vik(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_vik(
  ...,
  reverse = FALSE,
```

```
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_vik(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_vik(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_vik(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_vik(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.

midpoint	A length-one numeric vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.
discrete	A logical scalar: should the color scheme be used as a discrete scale?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256
broc0*	256
cork0*	256
vik0*	256
roma0*	256
bam0*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_berlin, scale_crameri_broc, scale_crameri_cork, scale_crameri_lisbon, scale_crameri_roma, scale_crameri_tofino, scale_crameri_vanimo, scale_tol_BuRd, scale_tol_PRGn, scale_tol_nightfall, scale_tol_sunset

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bamO, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_brocO, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_corkO, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_romaO, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vikO

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

---

scale_crameri_vikO *Fabio Crameri's* vikO *Cyclic Color Scheme*

Description

Fabio Crameri's *vikO* Cyclic Color Scheme

Usage

```
scale_colour_vikO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_vikO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
```

```
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_vikO(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.
broc	256
cork	256
vik	256
lisbon	256
tofino	256
berlin	256
roma	256
bam	256
vanimo	256
brocO*	256
corkO*	256
vikO*	256
romaO*	256
bamO*	256

*: cyclic color schemes.

Author(s)

N. Frerebeau

Source

Crameri, F. (2021). Scientific colour maps. *Zenodo*, v7.0. doi:10.5281/zenodo.4491293

References

Crameri, F. (2018). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geosci. Model Dev.*, 11, 2541-2562. doi:10.5194/gmd1125412018

Crameri, F., Shephard, G. E. & Heron, P. J. (2020). The misuse of colour in science communication. *Nature Communications*, 11, 5444. doi:10.1038/s41467020191607

See Also

Other cyclic color schemes: scale_crameri_bam0, scale_crameri_broc0, scale_crameri_cork0, scale_crameri_roma0

Other Fabio Crameri's color schemes: scale_crameri_acton, scale_crameri_bam, scale_crameri_bam0, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_berlin, scale_crameri_bilbao, scale_crameri_broc, scale_crameri_broc0, scale_crameri_buda, scale_crameri_bukavu, scale_crameri_cork, scale_crameri_cork0, scale_crameri_davos, scale_crameri_devon, scale_crameri_fes, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_lisbon, scale_crameri_nuuk, scale_crameri_oleron, scale_crameri_oslo, scale_crameri_roma, scale_crameri_roma0, scale_crameri_tofino, scale_crameri_tokyo, scale_crameri_turku, scale_crameri_vanimo, scale_crameri_vik

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_colour_berlin(midpoint = 9000)
```

---

scale_okabeito_discrete

Okabe and Ito's Discrete Color Scheme for **ggplot2** *and* **ggraph**

Description

Provides the qualitative color scale from Okabe and Ito 2008.

Usage

```
scale_colour_okabeito(
  ...,
  reverse = FALSE,
  black_position = c("first", "last"),
  aesthetics = "colour"
)

scale_color_okabeito(
  ...,
  reverse = FALSE,
  black_position = c("first", "last"),
  aesthetics = "colour"
)

scale_fill_okabeito(
  ...,
  reverse = FALSE,
  black_position = c("first", "last"),
  aesthetics = "fill"
)

scale_edge_colour_okabeito(
  ...,
  reverse = FALSE,
  black_position = c("first", "last"),
  aesthetics = "edge_colour"
)

scale_edge_color_okabeito(
  ...,
  reverse = FALSE,
  black_position = c("first", "last"),
  aesthetics = "edge_colour"
)

scale_edge_fill_okabeito(
  ...,
  reverse = FALSE,
  black_position = c("first", "last"),
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::discrete_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?

black_position A character string giving the position of the black color. It must be one of "first" or "last". Any unambiguous substring can be given.

aesthetics A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Details

This qualitative color scheme is used as given (no interpolation): colors are picked up to the maximum number of supported values (8).

Value

A discrete scale.

Author(s)

N. Frerebeau

References

Okabe, M. & Ito, K. (2008). *Color Universal Design (CUD): How to Make Figures and Presentations That Are Friendly to Colorblind People*. URL: https://jfly.uni-koeln.de/color/.

See Also

Other qualitative color schemes: scale_colour_land(), scale_colour_soil(), scale_colour_stratigraphy(), scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_pale, scale_tol_vibrant

Examples

```
library(ggplot2)

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_okabeito()

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_okabeito(black_position = "last")
```

scale_picker *Color Scale Builder*

Description

Builds a color scale for **ggplot2** or **ggraph**.

Usage

```
scale_colour_picker(..., palette = "YlOrBr")

scale_color_picker(..., palette = "YlOrBr")

scale_fill_picker(..., palette = "YlOrBr")

scale_edge_colour_picker(..., palette = "YlOrBr")

scale_edge_color_picker(..., palette = "YlOrBr")

scale_edge_fill_picker(..., palette = "YlOrBr")
```

Arguments

...	Extra parameters to be passed to the color scale function.
palette	A character string giving the name of the color scheme to be used (see info()).

Value

A discrete or continuous scale.

Author(s)

N. Frerebeau

Examples

```
library(ggplot2)

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_picker(palette = "okabeito")
```

scale_tol_bright *Paul Tol's* bright *Discrete Color Scheme*

Description

Paul Tol's *bright* Discrete Color Scheme

Usage

```
scale_colour_bright(..., reverse = FALSE, aesthetics = "colour")

scale_color_bright(..., reverse = FALSE, aesthetics = "colour")

scale_fill_bright(..., reverse = FALSE, aesthetics = "fill")

scale_edge_colour_bright(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_color_bright(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_fill_bright(..., reverse = FALSE, aesthetics = "edge_fill")
```

Arguments

...	Arguments passed to ggplot2::discrete_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A discrete scale.

Qualitative Color Schemes

The qualitative color schemes are used as given (no interpolation): colors are picked up to the maximum number of supported values.

Palette	Max.
bright	7
highcontrast	3
vibrant	7
muted	9
mediumcontrast	6
pale	6
dark	6
light	9

According to Paul Tol's technical note, the `bright`, `highcontrast`, `vibrant` and `muted` color schemes are color-blind safe. The `mediumcontrast` color scheme is designed for situations needing color pairs.

The `light` color scheme is reasonably distinct for both normal or colorblind vision and is intended to fill labeled cells.

The `pale` and `dark` schemes are not very distinct in either normal or colorblind vision and should be used as a text background or to highlight a cell in a table.

Refer to the original document for details about the recommended uses (see references)

Author(s)

N. Frerebeau

References

Tol, P. (2021). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.2. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other qualitative color schemes: `scale_colour_land()`, `scale_colour_soil()`, `scale_colour_stratigraphy()`, `scale_okabeito_discrete`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_light`, `scale_tol_mediumcontrast`, `scale_tol_muted`, `scale_tol_pale`, `scale_tol_vibrant`

Other Paul Tol's color schemes: `scale_tol_BuRd`, `scale_tol_PRGn`, `scale_tol_YlOrBr`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_incandescent`, `scale_tol_iridescent`, `scale_tol_light`, `scale_tol_mediumcontrast`, `scale_tol_muted`, `scale_tol_nightfall`, `scale_tol_pale`, `scale_tol_smoothrainbow`, `scale_tol_sunset`, `scale_tol_vibrant`

Examples

```
data(mpg, package = "ggplot2")

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_bright()

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_vibrant()

data(diamonds, package = "ggplot2")

ggplot2::ggplot(diamonds, ggplot2::aes(clarity, fill = cut)) +
  ggplot2::geom_bar() +
  scale_fill_muted()
```

scale_tol_BuRd *Paul Tol's* BuRd *Diverging Color Scheme*

Description

Paul Tol's *BuRd* Diverging Color Scheme

Usage

```
scale_colour_BuRd(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_BuRd(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_BuRd(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_BuRd(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_BuRd(
  ...,
```

```
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_BuRd(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`midpoint`	A length-one `numeric` vector giving the midpoint (in data value) of the diverging scale. Defaults to `0`.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale? If `TRUE`, it is a departure from Paul Tol's recommendations and likely a very poor use of color.
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.	NA value
`sunset`	11	#FFFFFF
`nightfall`	17	#FFFFFF
`BuRd`	9	#FFEE99
`PRGn`	9	#FFEE99

Author(s)

N. Frerebeau

References

Tol, P. (2018). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.1. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_berlin, scale_crameri_broc, scale_crameri_cork, scale_crameri_lisbon, scale_crameri_roma, scale_crameri_tofino, scale_crameri_vanimo, scale_crameri_vik, scale_tol_PRGn, scale_tol_nightfall, scale_tol_sunset

Other Paul Tol's color schemes: scale_tol_PRGn, scale_tol_YlOrBr, scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_incandescent, scale_tol_iridescent, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_nightfall, scale_tol_pale, scale_tol_smoothrainbow, scale_tol_sunset, scale_tol_vibrant

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_sunset(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_BuRd(midpoint = 9000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_PRGn(midpoint = 9000, range = c(0.25, 1))
```

---

scale_tol_dark *Paul Tol's* dark *Discrete Color Scheme*

Description

Paul Tol's *dark* Discrete Color Scheme

Usage

```
scale_colour_dark(..., reverse = FALSE, aesthetics = "colour")

scale_color_dark(..., reverse = FALSE, aesthetics = "colour")

scale_fill_dark(..., reverse = FALSE, aesthetics = "fill")

scale_edge_colour_dark(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_color_dark(..., reverse = FALSE, aesthetics = "edge_colour")
```

```
scale_edge_fill_dark(..., reverse = FALSE, aesthetics = "edge_fill")
```

Arguments

`...`	Arguments passed to `ggplot2::discrete_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A discrete scale.

Qualitative Color Schemes

The qualitative color schemes are used as given (no interpolation): colors are picked up to the maximum number of supported values.

Palette	Max.
`bright`	7
`highcontrast`	3
`vibrant`	7
`muted`	9
`mediumcontrast`	6
`pale`	6
`dark`	6
`light`	9

According to Paul Tol's technical note, the `bright`, `highcontrast`, `vibrant` and `muted` color schemes are color-blind safe. The `mediumcontrast` color scheme is designed for situations needing color pairs.

The `light` color scheme is reasonably distinct for both normal or colorblind vision and is intended to fill labeled cells.

The `pale` and `dark` schemes are not very distinct in either normal or colorblind vision and should be used as a text background or to highlight a cell in a table.

Refer to the original document for details about the recommended uses (see references)

Author(s)

N. Frerebeau

References

Tol, P. (2021). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.2. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other qualitative color schemes: scale_colour_land(), scale_colour_soil(), scale_colour_stratigraphy(), scale_okabeito_discrete, scale_tol_bright, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_pale, scale_tol_vibrant

Other Paul Tol's color schemes: scale_tol_BuRd, scale_tol_PRGn, scale_tol_YlOrBr, scale_tol_bright, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_incandescent, scale_tol_iridescent, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_nightfall, scale_tol_pale, scale_tol_smoothrainbow, scale_tol_sunset, scale_tol_vibrant

Examples

```
data(mpg, package = "ggplot2")

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_bright()

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_vibrant()

data(diamonds, package = "ggplot2")

ggplot2::ggplot(diamonds, ggplot2::aes(clarity, fill = cut)) +
  ggplot2::geom_bar() +
  scale_fill_muted()
```

---

scale_tol_discreterainbow

Paul Tol's discrete rainbow *Sequential Color Scheme*

Description

Paul Tol's *discrete rainbow* Sequential Color Scheme

Usage

```
scale_colour_discreterainbow(..., reverse = FALSE, aesthetics = "colour")

scale_color_discreterainbow(..., reverse = FALSE, aesthetics = "colour")

scale_fill_discreterainbow(..., reverse = FALSE, aesthetics = "fill")

scale_edge_colour_discreterainbow(
  ...,
  reverse = FALSE,
  aesthetics = "edge_colour"
```

```
)

scale_edge_color_discreterainbow(
  ...,
  reverse = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_discreterainbow(..., reverse = FALSE, aesthetics = "edge_fill")
```

Arguments

`...`	Arguments passed to `ggplot2::discrete_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A discrete scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.	NA value
`YlOrBr`	9	#888888
`iridescent`	23	#999999
`discreterainbow`	23	#777777
`smoothrainbow`	34	#666666

Rainbow Color Scheme

As a general rule, ordered data should not be represented using a rainbow scheme. There are three main arguments against such use (Tol 2018):

- The spectral order of visible light carries no inherent magnitude message.
- Some bands of almost constant hue with sharp transitions between them, can be perceived as jumps in the data.
- Color-blind people have difficulty distinguishing some colors of the rainbow.

If such use cannot be avoided, Paul Tol's technical note provides two color schemes that are reasonably clear in color-blind vision. To remain color-blind safe, these two schemes must comply with the following conditions:

`discreterainbow` This scheme must not be interpolated.

`smoothrainbow` This scheme does not have to be used over the full range.

Author(s)

N. Frerebeau

References

Tol, P. (2018). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.1. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other qualitative color schemes: scale_colour_land(), scale_colour_soil(), scale_colour_stratigraphy(), scale_okabeito_discrete, scale_tol_bright, scale_tol_dark, scale_tol_highcontrast, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_pale, scale_tol_vibrant

Other Paul Tol's color schemes: scale_tol_BuRd, scale_tol_PRGn, scale_tol_YlOrBr, scale_tol_bright, scale_tol_dark, scale_tol_highcontrast, scale_tol_incandescent, scale_tol_iridescent, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_nightfall, scale_tol_pale, scale_tol_smoothrainbow, scale_tol_sunset, scale_tol_vibrant

Examples

```
data(mpg, package = "ggplot2")

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_bright()

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_vibrant()

data(diamonds, package = "ggplot2")

ggplot2::ggplot(diamonds, ggplot2::aes(clarity, fill = cut)) +
  ggplot2::geom_bar() +
  scale_fill_muted()
```

---

scale_tol_highcontrast

Paul Tol's high contrast *Discrete Color Scheme*

Description

Paul Tol's *high contrast* Discrete Color Scheme

Usage

```
scale_colour_highcontrast(..., reverse = FALSE, aesthetics = "colour")

scale_color_highcontrast(..., reverse = FALSE, aesthetics = "colour")

scale_fill_highcontrast(..., reverse = FALSE, aesthetics = "fill")

scale_edge_colour_highcontrast(
  ...,
  reverse = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_highcontrast(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_fill_highcontrast(..., reverse = FALSE, aesthetics = "edge_fill")
```

Arguments

`...`	Arguments passed to `ggplot2::discrete_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A discrete scale.

Qualitative Color Schemes

The qualitative color schemes are used as given (no interpolation): colors are picked up to the maximum number of supported values.

Palette	Max.
bright	7
highcontrast	3
vibrant	7
muted	9
mediumcontrast	6
pale	6
dark	6
light	9

According to Paul Tol's technical note, the `bright`, `highcontrast`, `vibrant` and `muted` color schemes are color-blind safe. The `mediumcontrast` color scheme is designed for situations needing color pairs.

The `light` color scheme is reasonably distinct for both normal or colorblind vision and is intended to fill labeled cells.

The `pale` and `dark` schemes are not very distinct in either normal or colorblind vision and should be used as a text background or to highlight a cell in a table.

Refer to the original document for details about the recommended uses (see references)

Author(s)

N. Frerebeau

References

Tol, P. (2021). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.2. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other qualitative color schemes: `scale_colour_land()`, `scale_colour_soil()`, `scale_colour_stratigraphy()`, `scale_okabeito_discrete`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_light`, `scale_tol_mediumcontrast`, `scale_tol_muted`, `scale_tol_pale`, `scale_tol_vibrant`

Other Paul Tol's color schemes: `scale_tol_BuRd`, `scale_tol_PRGn`, `scale_tol_YlOrBr`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_incandescent`, `scale_tol_iridescent`, `scale_tol_light`, `scale_tol_mediumcontrast`, `scale_tol_muted`, `scale_tol_nightfall`, `scale_tol_pale`, `scale_tol_smoothrainbow`, `scale_tol_sunset`, `scale_tol_vibrant`

Examples

```
data(mpg, package = "ggplot2")

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_bright()

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_vibrant()

data(diamonds, package = "ggplot2")

ggplot2::ggplot(diamonds, ggplot2::aes(clarity, fill = cut)) +
  ggplot2::geom_bar() +
  scale_fill_muted()
```

scale_tol_incandescent *Paul Tol's* incandescent *Sequential Color Scheme*

Description

Paul Tol's *incandescent* Sequential Color Scheme

Usage

```
scale_colour_incandescent(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_incandescent(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_incandescent(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_incandescent(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_incandescent(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
```

```
  aesthetics = "edge_colour"
)

scale_edge_fill_incandescent(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale? If `TRUE`, it is a departure from Paul Tol's recommendations and likely a very poor use of color.
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.	NA value
`YlOrBr`	9	#888888
`iridescent`	23	#999999
`discreterainbow`	23	#777777
`smoothrainbow`	34	#666666

Author(s)

N. Frerebeau

References

Tol, P. (2018). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.1. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_iridescent, scale_tol_smoothrainbow

Other Paul Tol's color schemes: scale_tol_BuRd, scale_tol_PRGn, scale_tol_YlOrBr, scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_iridescent, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_nightfall, scale_tol_pale, scale_tol_smoothrainbow, scale_tol_sunset, scale_tol_vibrant

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_YlOrBr()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_iridescent(reverse = TRUE)

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_smoothrainbow(range = c(0.25, 1))
```

---

scale_tol_iridescent *Paul Tol's* iridescent *Sequential Color Scheme*

Description

Paul Tol's *iridescent* Sequential Color Scheme

Usage

```
scale_colour_iridescent(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_iridescent(
  ...,
```

```
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_iridescent(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_iridescent(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_iridescent(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_iridescent(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale? If `TRUE`, it is a departure from Paul Tol's recommendations and likely a very poor use of color.

aesthetics A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.	NA value
YlOrBr	9	#888888
iridescent	23	#999999
discreterainbow	23	#777777
smoothrainbow	34	#666666

Author(s)

N. Frerebeau

References

Tol, P. (2018). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.1. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_smoothrainbow

Other Paul Tol's color schemes: scale_tol_BuRd, scale_tol_PRGn, scale_tol_YlOrBr, scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_incandescent, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_nightfall, scale_tol_pale, scale_tol_smoothrainbow, scale_tol_sunset, scale_tol_vibrant

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_YlOrBr()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
```

```
  ggplot2::geom_raster() +
  scale_fill_iridescent(reverse = TRUE)

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_smoothrainbow(range = c(0.25, 1))
```

`scale_tol_light` *Paul Tol's* light *Discrete Color Scheme*

Description

Paul Tol's *light* Discrete Color Scheme

Usage

```
scale_colour_light(..., reverse = FALSE, aesthetics = "colour")

scale_color_light(..., reverse = FALSE, aesthetics = "colour")

scale_fill_light(..., reverse = FALSE, aesthetics = "fill")

scale_edge_colour_light(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_color_light(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_fill_light(..., reverse = FALSE, aesthetics = "edge_fill")
```

Arguments

`...`	Arguments passed to `ggplot2::discrete_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A discrete scale.

Qualitative Color Schemes

The qualitative color schemes are used as given (no interpolation): colors are picked up to the maximum number of supported values.

Palette	Max.
`bright`	7
`highcontrast`	3

vibrant	7
muted	9
mediumcontrast	6
pale	6
dark	6
light	9

According to Paul Tol's technical note, the `bright`, `highcontrast`, `vibrant` and `muted` color schemes are color-blind safe. The `mediumcontrast` color scheme is designed for situations needing color pairs.

The `light` color scheme is reasonably distinct for both normal or colorblind vision and is intended to fill labeled cells.

The `pale` and `dark` schemes are not very distinct in either normal or colorblind vision and should be used as a text background or to highlight a cell in a table.

Refer to the original document for details about the recommended uses (see references)

Author(s)

N. Frerebeau

References

Tol, P. (2021). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.2. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other qualitative color schemes: `scale_colour_land()`, `scale_colour_soil()`, `scale_colour_stratigraphy()`, `scale_okabeito_discrete`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_mediumcontrast`, `scale_tol_muted`, `scale_tol_pale`, `scale_tol_vibrant`

Other Paul Tol's color schemes: `scale_tol_BuRd`, `scale_tol_PRGn`, `scale_tol_YlOrBr`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_incandescent`, `scale_tol_iridescent`, `scale_tol_mediumcontrast`, `scale_tol_muted`, `scale_tol_nightfall`, `scale_tol_pale`, `scale_tol_smoothrainbow`, `scale_tol_sunset`, `scale_tol_vibrant`

Examples

```
data(mpg, package = "ggplot2")

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_bright()

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_vibrant()
```

```
data(diamonds, package = "ggplot2")

ggplot2::ggplot(diamonds, ggplot2::aes(clarity, fill = cut)) +
  ggplot2::geom_bar() +
  scale_fill_muted()
```

`scale_tol_mediumcontrast` *Paul Tol's* medium contrast *Discrete Color Scheme*

Description

Paul Tol's *medium contrast* Discrete Color Scheme

Usage

```
scale_colour_mediumcontrast(..., reverse = FALSE, aesthetics = "colour")

scale_color_mediumcontrast(..., reverse = FALSE, aesthetics = "colour")

scale_fill_mediumcontrast(..., reverse = FALSE, aesthetics = "fill")

scale_edge_colour_mediumcontrast(
  ...,
  reverse = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_mediumcontrast(
  ...,
  reverse = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_mediumcontrast(..., reverse = FALSE, aesthetics = "edge_fill")
```

Arguments

`...`	Arguments passed to `ggplot2::discrete_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A discrete scale.

Qualitative Color Schemes

The qualitative color schemes are used as given (no interpolation): colors are picked up to the maximum number of supported values.

Palette	Max.
bright	7
highcontrast	3
vibrant	7
muted	9
mediumcontrast	6
pale	6
dark	6
light	9

According to Paul Tol's technical note, the `bright`, `highcontrast`, `vibrant` and `muted` color schemes are color-blind safe. The `mediumcontrast` color scheme is designed for situations needing color pairs.

The `light` color scheme is reasonably distinct for both normal or colorblind vision and is intended to fill labeled cells.

The `pale` and `dark` schemes are not very distinct in either normal or colorblind vision and should be used as a text background or to highlight a cell in a table.

Refer to the original document for details about the recommended uses (see references)

Author(s)

N. Frerebeau

References

Tol, P. (2021). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.2. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other qualitative color schemes: `scale_colour_land()`, `scale_colour_soil()`, `scale_colour_stratigraphy()`, `scale_okabeito_discrete`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_light`, `scale_tol_muted`, `scale_tol_pale`, `scale_tol_vibrant`

Other Paul Tol's color schemes: `scale_tol_BuRd`, `scale_tol_PRGn`, `scale_tol_YlOrBr`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_incandescent`, `scale_tol_iridescent`, `scale_tol_light`, `scale_tol_muted`, `scale_tol_nightfall`, `scale_tol_pale`, `scale_tol_smoothrainbow`, `scale_tol_sunset`, `scale_tol_vibrant`

Examples

```
data(mpg, package = "ggplot2")
```

```
ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_bright()

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_vibrant()

data(diamonds, package = "ggplot2")

ggplot2::ggplot(diamonds, ggplot2::aes(clarity, fill = cut)) +
  ggplot2::geom_bar() +
  scale_fill_muted()
```

`scale_tol_muted` *Paul Tol's* muted *Discrete Color Scheme*

Description

Paul Tol's *muted* Discrete Color Scheme

Usage

```
scale_colour_muted(..., reverse = FALSE, aesthetics = "colour")

scale_color_muted(..., reverse = FALSE, aesthetics = "colour")

scale_fill_muted(..., reverse = FALSE, aesthetics = "fill")

scale_edge_colour_muted(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_color_muted(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_fill_muted(..., reverse = FALSE, aesthetics = "edge_fill")
```

Arguments

`...`	Arguments passed to `ggplot2::discrete_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A discrete scale.

Qualitative Color Schemes

The qualitative color schemes are used as given (no interpolation): colors are picked up to the maximum number of supported values.

Palette	Max.
bright	7
highcontrast	3
vibrant	7
muted	9
mediumcontrast	6
pale	6
dark	6
light	9

According to Paul Tol's technical note, the `bright`, `highcontrast`, `vibrant` and `muted` color schemes are color-blind safe. The `mediumcontrast` color scheme is designed for situations needing color pairs.

The `light` color scheme is reasonably distinct for both normal or colorblind vision and is intended to fill labeled cells.

The `pale` and `dark` schemes are not very distinct in either normal or colorblind vision and should be used as a text background or to highlight a cell in a table.

Refer to the original document for details about the recommended uses (see references)

Author(s)

N. Frerebeau

References

Tol, P. (2021). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.2. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other qualitative color schemes: `scale_colour_land()`, `scale_colour_soil()`, `scale_colour_stratigraphy()`, `scale_okabeito_discrete`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_light`, `scale_tol_mediumcontrast`, `scale_tol_pale`, `scale_tol_vibrant`

Other Paul Tol's color schemes: `scale_tol_BuRd`, `scale_tol_PRGn`, `scale_tol_YlOrBr`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_incandescent`, `scale_tol_iridescent`, `scale_tol_light`, `scale_tol_mediumcontrast`, `scale_tol_nightfall`, `scale_tol_pale`, `scale_tol_smoothrainbow`, `scale_tol_sunset`, `scale_tol_vibrant`

Examples

```
data(mpg, package = "ggplot2")

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_bright()

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_vibrant()

data(diamonds, package = "ggplot2")

ggplot2::ggplot(diamonds, ggplot2::aes(clarity, fill = cut)) +
  ggplot2::geom_bar() +
  scale_fill_muted()
```

---

scale_tol_nightfall *Paul Tol's* nightfall *Diverging Color Scheme*

Description

Paul Tol's *nightfall* Diverging Color Scheme

Usage

```
scale_colour_nightfall(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_nightfall(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_nightfall(
  ...,
  reverse = FALSE,
  range = c(0, 1),
```

```
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_nightfall(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_nightfall(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_nightfall(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`midpoint`	A length-one `numeric` vector giving the midpoint (in data value) of the diverging scale. Defaults to `0`.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale? If `TRUE`, it is a departure from Paul Tol's recommendations and likely a very poor use of color.
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.	NA value
sunset	11	#FFFFFF
nightfall	17	#FFFFFF
BuRd	9	#FFEE99
PRGn	9	#FFEE99

Author(s)

N. Frerebeau

References

Tol, P. (2018). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.1. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_berlin, scale_crameri_broc, scale_crameri_cork, scale_crameri_lisbon, scale_crameri_roma, scale_crameri_tofino, scale_crameri_vanimo, scale_crameri_vik, scale_tol_BuRd, scale_tol_PRGn, scale_tol_sunset

Other Paul Tol's color schemes: scale_tol_BuRd, scale_tol_PRGn, scale_tol_YlOrBr, scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_incandescent, scale_tol_iridescent, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_pale, scale_tol_smoothrainbow, scale_tol_sunset, scale_tol_vibrant

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_sunset(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_BuRd(midpoint = 9000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_PRGn(midpoint = 9000, range = c(0.25, 1))
```

scale_tol_pale *Paul Tol's* pale *Discrete Color Scheme*

Description

Paul Tol's *pale* Discrete Color Scheme

Usage

```
scale_colour_pale(..., reverse = FALSE, aesthetics = "colour")

scale_color_pale(..., reverse = FALSE, aesthetics = "colour")

scale_fill_pale(..., reverse = FALSE, aesthetics = "fill")

scale_edge_colour_pale(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_color_pale(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_fill_pale(..., reverse = FALSE, aesthetics = "edge_fill")
```

Arguments

...	Arguments passed to ggplot2::discrete_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A discrete scale.

Qualitative Color Schemes

The qualitative color schemes are used as given (no interpolation): colors are picked up to the maximum number of supported values.

Palette	Max.
bright	7
highcontrast	3
vibrant	7
muted	9
mediumcontrast	6
pale	6
dark	6
light	9

According to Paul Tol's technical note, the `bright`, `highcontrast`, `vibrant` and `muted` color schemes are color-blind safe. The `mediumcontrast` color scheme is designed for situations needing color pairs.

The `light` color scheme is reasonably distinct for both normal or colorblind vision and is intended to fill labeled cells.

The `pale` and `dark` schemes are not very distinct in either normal or colorblind vision and should be used as a text background or to highlight a cell in a table.

Refer to the original document for details about the recommended uses (see references)

Author(s)

N. Frerebeau

References

Tol, P. (2021). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.2. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other qualitative color schemes: `scale_colour_land()`, `scale_colour_soil()`, `scale_colour_stratigraphy()`, `scale_okabeito_discrete`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_light`, `scale_tol_mediumcontrast`, `scale_tol_muted`, `scale_tol_vibrant`

Other Paul Tol's color schemes: `scale_tol_BuRd`, `scale_tol_PRGn`, `scale_tol_YlOrBr`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_incandescent`, `scale_tol_iridescent`, `scale_tol_light`, `scale_tol_mediumcontrast`, `scale_tol_muted`, `scale_tol_nightfall`, `scale_tol_smoothrainbow`, `scale_tol_sunset`, `scale_tol_vibrant`

Examples

```
data(mpg, package = "ggplot2")

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_bright()

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_vibrant()

data(diamonds, package = "ggplot2")

ggplot2::ggplot(diamonds, ggplot2::aes(clarity, fill = cut)) +
  ggplot2::geom_bar() +
  scale_fill_muted()
```

scale_tol_PRGn *Paul Tol's* PRGn *Diverging Color Scheme*

Description

Paul Tol's *PRGn* Diverging Color Scheme

Usage

```
scale_colour_PRGn(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_PRGn(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_PRGn(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_PRGn(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_PRGn(
  ...,
```

```
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_PRGn(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`midpoint`	A length-one `numeric` vector giving the midpoint (in data value) of the diverging scale. Defaults to `0`.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale? If `TRUE`, it is a departure from Paul Tol's recommendations and likely a very poor use of color.
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.	NA value
`sunset`	11	#FFFFFF
`nightfall`	17	#FFFFFF
`BuRd`	9	#FFEE99
`PRGn`	9	#FFEE99

Author(s)

N. Frerebeau

References

Tol, P. (2018). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.1. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_berlin, scale_crameri_broc, scale_crameri_cork, scale_crameri_lisbon, scale_crameri_roma, scale_crameri_tofino, scale_crameri_vanimo, scale_crameri_vik, scale_tol_BuRd, scale_tol_nightfall, scale_tol_sunset

Other Paul Tol's color schemes: scale_tol_BuRd, scale_tol_YlOrBr, scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_incandescent, scale_tol_iridescent, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_nightfall, scale_tol_pale, scale_tol_smoothrainbow, scale_tol_sunset, scale_tol_vibrant

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_sunset(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_BuRd(midpoint = 9000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_PRGn(midpoint = 9000, range = c(0.25, 1))
```

---

scale_tol_smoothrainbow

Paul Tol's smooth rainbow *Sequential Color Scheme*

Description

Paul Tol's *smooth rainbow* Sequential Color Scheme

Usage

```
scale_colour_smoothrainbow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)
```

```
scale_color_smoothrainbow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_smoothrainbow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_smoothrainbow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_smoothrainbow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_smoothrainbow(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

...	Arguments passed to ggplot2::continuous_scale().
reverse	A logical scalar. Should the resulting vector of colors be reversed?
range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.
discrete	A logical scalar: should the color scheme be used as a discrete scale? If TRUE,

it is a departure from Paul Tol's recommendations and likely a very poor use of color.

`aesthetics` A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.	NA value
`YlOrBr`	9	#888888
`iridescent`	23	#999999
`discreterainbow`	23	#777777
`smoothrainbow`	34	#666666

Rainbow Color Scheme

As a general rule, ordered data should not be represented using a rainbow scheme. There are three main arguments against such use (Tol 2018):

- The spectral order of visible light carries no inherent magnitude message.
- Some bands of almost constant hue with sharp transitions between them, can be perceived as jumps in the data.
- Color-blind people have difficulty distinguishing some colors of the rainbow.

If such use cannot be avoided, Paul Tol's technical note provides two color schemes that are reasonably clear in color-blind vision. To remain color-blind safe, these two schemes must comply with the following conditions:

`discreterainbow` This scheme must not be interpolated.

`smoothrainbow` This scheme does not have to be used over the full range.

Author(s)

N. Frerebeau

References

Tol, P. (2018). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.1. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_YlOrBr, scale_tol_incandescent, scale_tol_iridescent

Other Paul Tol's color schemes: scale_tol_BuRd, scale_tol_PRGn, scale_tol_YlOrBr, scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_incandescent, scale_tol_iridescent, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_nightfall, scale_tol_pale, scale_tol_sunset, scale_tol_vibrant

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_YlOrBr()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_iridescent(reverse = TRUE)

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_smoothrainbow(range = c(0.25, 1))
```

---

scale_tol_sunset *Paul Tol's* sunset *Diverging Color Scheme*

Description

Paul Tol's *sunset* Diverging Color Scheme

Usage

```
scale_colour_sunset(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_sunset(
```

```
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_sunset(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "fill"
)

scale_edge_colour_sunset(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_sunset(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_sunset(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  midpoint = 0,
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?

range	A length-two numeric vector specifying the fraction of the scheme's color domain to keep.
midpoint	A length-one numeric vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.
discrete	A logical scalar: should the color scheme be used as a discrete scale? If TRUE, it is a departure from Paul Tol's recommendations and likely a very poor use of color.
aesthetics	A character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Diverging Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.	NA value
sunset	11	#FFFFFF
nightfall	17	#FFFFFF
BuRd	9	#FFEE99
PRGn	9	#FFEE99

Author(s)

N. Frerebeau

References

Tol, P. (2018). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.1. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other diverging color schemes: scale_crameri_bam, scale_crameri_berlin, scale_crameri_broc, scale_crameri_cork, scale_crameri_lisbon, scale_crameri_roma, scale_crameri_tofino, scale_crameri_vanimo, scale_crameri_vik, scale_tol_BuRd, scale_tol_PRGn, scale_tol_nightfall

Other Paul Tol's color schemes: scale_tol_BuRd, scale_tol_PRGn, scale_tol_YlOrBr, scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_incandescent, scale_tol_iridescent, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_nightfall, scale_tol_pale, scale_tol_smoothrainbow, scale_tol_vibrant

Examples

```
data(economics, package = "ggplot2")

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_sunset(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_BuRd(midpoint = 9000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemploy)) +
  ggplot2::geom_point() +
  scale_color_PRGn(midpoint = 9000, range = c(0.25, 1))
```

---

scale_tol_vibrant *Paul Tol's* vibrant *Discrete Color Scheme*

Description

Paul Tol's *vibrant* Discrete Color Scheme

Usage

```
scale_colour_vibrant(..., reverse = FALSE, aesthetics = "colour")

scale_color_vibrant(..., reverse = FALSE, aesthetics = "colour")

scale_fill_vibrant(..., reverse = FALSE, aesthetics = "fill")

scale_edge_colour_vibrant(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_color_vibrant(..., reverse = FALSE, aesthetics = "edge_colour")

scale_edge_fill_vibrant(..., reverse = FALSE, aesthetics = "edge_fill")
```

Arguments

`...`	Arguments passed to `ggplot2::discrete_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A discrete scale.

Qualitative Color Schemes

The qualitative color schemes are used as given (no interpolation): colors are picked up to the maximum number of supported values.

Palette	Max.
bright	7
highcontrast	3
vibrant	7
muted	9
mediumcontrast	6
pale	6
dark	6
light	9

According to Paul Tol's technical note, the `bright`, `highcontrast`, `vibrant` and `muted` color schemes are color-blind safe. The `mediumcontrast` color scheme is designed for situations needing color pairs.

The `light` color scheme is reasonably distinct for both normal or colorblind vision and is intended to fill labeled cells.

The `pale` and `dark` schemes are not very distinct in either normal or colorblind vision and should be used as a text background or to highlight a cell in a table.

Refer to the original document for details about the recommended uses (see references)

Author(s)

N. Frerebeau

References

Tol, P. (2021). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.2. URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other qualitative color schemes: `scale_colour_land()`, `scale_colour_soil()`, `scale_colour_stratigraphy()`, `scale_okabeito_discrete`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_light`, `scale_tol_mediumcontrast`, `scale_tol_muted`, `scale_tol_pale`

Other Paul Tol's color schemes: `scale_tol_BuRd`, `scale_tol_PRGn`, `scale_tol_YlOrBr`, `scale_tol_bright`, `scale_tol_dark`, `scale_tol_discreterainbow`, `scale_tol_highcontrast`, `scale_tol_incandescent`, `scale_tol_iridescent`, `scale_tol_light`, `scale_tol_mediumcontrast`, `scale_tol_muted`, `scale_tol_nightfall`, `scale_tol_pale`, `scale_tol_smoothrainbow`, `scale_tol_sunset`

Examples

```
data(mpg, package = "ggplot2")

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_bright()

ggplot2::ggplot(mpg, ggplot2::aes(displ, hwy, colour = class)) +
  ggplot2::geom_point() +
  scale_colour_vibrant()

data(diamonds, package = "ggplot2")

ggplot2::ggplot(diamonds, ggplot2::aes(clarity, fill = cut)) +
  ggplot2::geom_bar() +
  scale_fill_muted()
```

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scale_tol_YlOrBr *Paul Tol's* YlOrBr *Sequential Color Scheme*

Description

Paul Tol's *YlOrBr* Sequential Color Scheme

Usage

```
scale_colour_YlOrBr(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_color_YlOrBr(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_YlOrBr(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
```

```
)

scale_edge_colour_YlOrBr(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_color_YlOrBr(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_colour"
)

scale_edge_fill_YlOrBr(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "edge_fill"
)
```

Arguments

`...`	Arguments passed to `ggplot2::continuous_scale()`.
`reverse`	A `logical` scalar. Should the resulting vector of colors be reversed?
`range`	A length-two `numeric` vector specifying the fraction of the scheme's color domain to keep.
`discrete`	A `logical` scalar: should the color scheme be used as a discrete scale? If `TRUE`, it is a departure from Paul Tol's recommendations and likely a very poor use of color.
`aesthetics`	A `character` string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with.

Value

A continuous scale.

Sequential Color Schemes

If more colors than defined are needed from a given scheme, the color coordinates are linearly interpolated to provide a continuous version of the scheme.

Palette	Max.	NA value
YlOrBr	9	#888888
iridescent	23	#999999
discreterainbow	23	#777777
smoothrainbow	34	#666666

Author(s)

N. Frerebeau

References

Tol, P. (2018). *Colour Schemes*. SRON. Technical Note No. SRON/EPS/TN/09-002, issue 3.1.
URL: https://personal.sron.nl/~pault/data/colourschemes.pdf

See Also

Other sequential color schemes: scale_crameri_acton, scale_crameri_bamako, scale_crameri_batlow, scale_crameri_batlowK, scale_crameri_batlowW, scale_crameri_bilbao, scale_crameri_buda, scale_crameri_davos, scale_crameri_devon, scale_crameri_grayC, scale_crameri_hawaii, scale_crameri_imola, scale_crameri_lajolla, scale_crameri_lapaz, scale_crameri_nuuk, scale_crameri_oslo, scale_crameri_tokyo, scale_crameri_turku, scale_tol_incandescent, scale_tol_iridescent, scale_tol_smoothrainbow

Other Paul Tol's color schemes: scale_tol_BuRd, scale_tol_PRGn, scale_tol_bright, scale_tol_dark, scale_tol_discreterainbow, scale_tol_highcontrast, scale_tol_incandescent, scale_tol_iridescent, scale_tol_light, scale_tol_mediumcontrast, scale_tol_muted, scale_tol_nightfall, scale_tol_pale, scale_tol_smoothrainbow, scale_tol_sunset, scale_tol_vibrant

Examples

```
data(faithfuld, package = "ggplot2")

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_YlOrBr()

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_iridescent(reverse = TRUE)

ggplot2::ggplot(faithfuld, ggplot2::aes(waiting, eruptions, fill = density)) +
  ggplot2::geom_raster() +
  scale_fill_smoothrainbow(range = c(0.25, 1))
```

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