

# Package ‘khroma’

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**Title** Colour Schemes for Scientific Data Visualization

**Version** 1.16.0

**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](https://doi.org/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://codeberg.org/tesselle/khroma>,  
<https://packages.tesselle.org/khroma/>

**BugReports** <https://codeberg.org/tesselle/khroma/issues>

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'palettes.R' 'plot.R' 'plot\_map.R' 'plot\_scheme.R'  
'plot\_scheme\_colorblind.R' 'plot\_tiles.R' 'print.R'  
'scale\_colour\_crameri.R' 'scale\_colour\_okabeito.R'  
'scale\_colour\_picker.R' 'scale\_colour\_science.R'  
'scale\_colour\_tol.R'

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|                                     |    |
|-------------------------------------|----|
| change . . . . .                    | 4  |
| colour . . . . .                    | 5  |
| compare . . . . .                   | 8  |
| info . . . . .                      | 9  |
| palette_color_continuous . . . . .  | 10 |
| palette_color_discrete . . . . .    | 11 |
| palette_color_picker . . . . .      | 13 |
| palette_shape . . . . .             | 14 |
| palette_size . . . . .              | 15 |
| plot.color_scheme . . . . .         | 17 |
| plot_map . . . . .                  | 18 |
| plot_scheme . . . . .               | 19 |
| plot_scheme_colourblind . . . . .   | 20 |
| plot_tiles . . . . .                | 21 |
| scale_colour_land . . . . .         | 22 |
| scale_colour_soil . . . . .         | 24 |
| scale_colour_stratigraphy . . . . . | 25 |
| scale_crameri_acton . . . . .       | 27 |
| scale_crameri_bam . . . . .         | 30 |
| scale_crameri_bamako . . . . .      | 33 |
| scale_crameri_bamO . . . . .        | 36 |
| scale_crameri_batlow . . . . .      | 39 |
| scale_crameri_batlowK . . . . .     | 42 |
| scale_crameri_batlowW . . . . .     | 45 |
| scale_crameri_berlin . . . . .      | 48 |
| scale_crameri_bilbao . . . . .      | 51 |
| scale_crameri_broc . . . . .        | 54 |
| scale_crameri_brocO . . . . .       | 57 |
| scale_crameri_buda . . . . .        | 60 |
| scale_crameri_bukavu . . . . .      | 63 |

|                                     |     |
|-------------------------------------|-----|
| scale_crameri_cork . . . . .        | 65  |
| scale_crameri_corkO . . . . .       | 68  |
| scale_crameri_davos . . . . .       | 71  |
| scale_crameri_devon . . . . .       | 74  |
| scale_crameri_fes . . . . .         | 77  |
| scale_crameri_grayC . . . . .       | 80  |
| scale_crameri_hawaii . . . . .      | 83  |
| scale_crameri_imola . . . . .       | 86  |
| scale_crameri_lajolla . . . . .     | 89  |
| scale_crameri_lapaz . . . . .       | 92  |
| scale_crameri_lisbon . . . . .      | 95  |
| scale_crameri_nuuk . . . . .        | 98  |
| scale_crameri_oleron . . . . .      | 102 |
| scale_crameri_oslo . . . . .        | 104 |
| scale_crameri_roma . . . . .        | 107 |
| scale_crameri_romaO . . . . .       | 110 |
| scale_crameri_tofino . . . . .      | 113 |
| scale_crameri_tokyo . . . . .       | 116 |
| scale_crameri_turku . . . . .       | 119 |
| scale_crameri_vanimo . . . . .      | 122 |
| scale_crameri_vik . . . . .         | 125 |
| scale_crameri_vikO . . . . .        | 128 |
| scale_okabeito_discrete . . . . .   | 130 |
| scale_picker . . . . .              | 132 |
| scale_tol_bright . . . . .          | 133 |
| scale_tol_BuRd . . . . .            | 135 |
| scale_tol_dark . . . . .            | 138 |
| scale_tol_discreterainbow . . . . . | 140 |
| scale_tol_highcontrast . . . . .    | 142 |
| scale_tol_incandescent . . . . .    | 145 |
| scale_tol_iridescent . . . . .      | 147 |
| scale_tol_light . . . . .           | 150 |
| scale_tol_mediumcontrast . . . . .  | 152 |
| scale_tol_muted . . . . .           | 154 |
| scale_tol_nightfall . . . . .       | 156 |
| scale_tol_pale . . . . .            | 159 |
| scale_tol_PRGn . . . . .            | 161 |
| scale_tol_smoothrainbow . . . . .   | 163 |
| scale_tol_sunset . . . . .          | 166 |
| scale_tol_vibrant . . . . .         | 169 |
| scale_tol_YlOrBr . . . . .          | 171 |

---

change

---

*Simulate Color-Blindness*


---

## Description

Simulate Color-Blindness

## Usage

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

## Arguments

|      |                                                                                                                                                                                                      |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| x    | A palette <a href="#">function</a> that when called with a single integer argument (the number of levels) returns a vector of colors (see <a href="#">color()</a> ).                                 |
| mode | A <a href="#">character</a> 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

```
if (requireNamespace("spacesXYZ", quietly = TRUE)) {  
  ## 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 <a href="#">character</a> string giving the name of the scheme to be used (see <a href="#">info()</a> ).                                                                                                               |
| reverse | A <a href="#">logical</a> scalar: should the resulting vector of colors should be reversed?                                                                                                                              |
| names   | A <a href="#">logical</a> scalar: should the names of the colors should be kept in the resulting vector?                                                                                                                 |
| lang    | A <a href="#">character</a> string specifying the language for the color names. It must be one of "en" (English, the default) or "fr" (French).                                                                          |
| force   | A <a href="#">logical</a> 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 <a href="#">colorRampPalette</a> .                                                                                                                                                           |

## 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 <a href="#">character</a> vector of colors.                                                                                                                                            |
| metric | An <a href="#">integer</a> value giving the year the metric was recommended by the CIE. It must be one of "1976", "1994", or "2000" (default; see <a href="#">spacesXYZ::DeltaE()</a> ). |
| diag   | A <a href="#">logical</a> scalar: should the diagonal of the distance matrix be printed?                                                                                                 |
| upper  | A <a href="#">logical</a> 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**

```
if (requireNamespace("spacesXYZ", quietly = TRUE)) {
  ## 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 <a href="#">function</a> that when called with a single argument (an integer specifying the number of colors) returns a vector of colors. If NULL (the default), uses <i>YlOrRd</i> . |
| domain   | A <a href="#">numeric</a> range specifying the possible values that can be mapped.                                                                                                                            |
| midpoint | A length-one <a href="#">numeric</a> 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 <a href="#">function</a> that when called with a single argument (an integer specifying the number of colors) returns a vector of colors. If NULL (the default), uses <i>discrete rainbow</i> . |
| domain  | A vector of categorical data specifying the possible values that can be mapped.                                                                                                                                         |
| ordered | A <a href="#">logical</a> 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 <a href="#">character</a> string giving the name of the scheme to be used (see <a href="#">color()</a> ).        |
| domain   | A <a href="#">numeric</a> range or a vector of categorical data specifying the possible values that can be mapped. |
| midpoint | A length-one <a href="#">numeric</a> vector specifying the mid-point of input range.                               |
| ordered  | A <a href="#">logical</a> 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 <a href="#">color()</a> .                                                       |

## 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 | <i>Symbol Mapping</i> |
|---------------|-----------------------|

---

**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 <a href="#">logical</a> 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 <b>numeric</b> vector giving range of possible sizes (greater than 0). |
| ...      | Currently not used.                                                                 |
| midpoint | A length-one <b>numeric</b> 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 | <i>Plot Color Scheme</i> |
|-------------------|--------------------------|

---

## Description

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

## Usage

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

## Arguments

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

## 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**

```
if (requireNamespace("spacesXYZ", quietly = TRUE)) {
  ## 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 | <i>AVHRR Global Land Cover Classification Color Scheme for <b>ggplot2</b> and <b>ggraph</b></i> |
|-------------------|-------------------------------------------------------------------------------------------------|

---

**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 <code>ggplot2::discrete_scale()</code> .                                                                                                                                                                    |
| lang       | A <code>character</code> 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 <code>character</code> 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 <code>ggplot2::discrete_scale()</code> .                                                                                                                                                                       |
| lang       | A <a href="#">character</a> 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 <a href="#">character</a> 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**

|                         |                                                                                                                                                                                                                                       |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>...</code>        | Arguments passed on to <code>ggplot2::discrete_scale()</code> .                                                                                                                                                                       |
| <code>lang</code>       | A <a href="#">character</a> 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. |
| <code>aesthetics</code> | A <a href="#">character</a> 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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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](https://doi.org/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](https://doi.org/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](https://doi.org/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_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_vanim`, `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_bam | <i>Fabio Crameri's bam Diverging Color Scheme</i> |
|-------------------|---------------------------------------------------|

---

**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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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.

| <b>Palette</b> | <b>Max.</b> |
|----------------|-------------|
| 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\\_vanim](#), [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\\_vanim](#), [scale\\_crameri\\_vik](#), [scale\\_crameri\\_vik0](#)

## Examples

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

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

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemployment)) +
  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 <code>ggplot2::continuous_scale()</code> .                                |
| reverse | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?          |
| range   | A length-two <a href="#">numeric</a> 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](https://doi.org/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\\_vanimu](#), [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 | <i>Fabio Crameri's bamO Cyclic Color Scheme</i> |
|--------------------|-------------------------------------------------|

---

## 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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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 cyclic color schemes: [scale\\_crameri\\_broc0](#), [scale\\_crameri\\_cork0](#), [scale\\_crameri\\_roma0](#), [scale\\_crameri\\_vik0](#)

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\\_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\_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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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\\_bam0](#), [scale\\_crameri\\_bamako](#), [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_vanimu,
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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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](https://doi.org/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](https://doi.org/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](https://doi.org/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_vanimu`, `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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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_vanim`, `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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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.

| <b>Palette</b> | <b>Max.</b> |
|----------------|-------------|
| 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\\_vanim](#), [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\\_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\\_vanim](#), [scale\\_crameri\\_vik](#), [scale\\_crameri\\_vik0](#)

## Examples

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

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

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemployment)) +
  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 <code>ggplot2::continuous_scale()</code> .                                |
| reverse | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?          |
| range   | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color do- |

|            |                                                                                                                                       |
|------------|---------------------------------------------------------------------------------------------------------------------------------------|
|            | main to keep.                                                                                                                         |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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](https://doi.org/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\\_bam0](#), [scale\\_crameri\\_bamako](#), [scale\\_crameri\\_batlow](#), [scale\\_crameri\\_batlowK](#), [scale\\_crameri\\_batlowW](#), [scale\\_crameri\\_berlin](#), [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\\_vanim0](#), [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\_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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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 = unemployment)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

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

---

scale\_crameri\_broc0      *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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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](https://doi.org/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](https://doi.org/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](https://doi.org/10.1038/s41467020191607)

### See Also

Other cyclic color schemes: [scale\\_crameri\\_bam0](#), [scale\\_crameri\\_cork0](#), [scale\\_crameri\\_roma0](#), [scale\\_crameri\\_vik0](#)

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\\_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_buda | <i>Fabio Crameri's buda Sequential Color Scheme</i> |
|--------------------|-----------------------------------------------------|

---

**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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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\\_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\\_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_vanimu,
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\\_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\\_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\\_vanimu](#), [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\_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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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\\_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\\_broc](#), [scale\\_crameri\\_broc0](#), [scale\\_crameri\\_buda](#), [scale\\_crameri\\_bukavu](#), [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 = unemployment)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

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

---

scale\_crameri\_cork0      *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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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 cyclic color schemes: [scale\\_crameri\\_bam0](#), [scale\\_crameri\\_broc0](#), [scale\\_crameri\\_roma0](#), [scale\\_crameri\\_vik0](#)

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\\_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 | <i>Fabio Crameri's davos Sequential Color Scheme</i> |
|---------------------|------------------------------------------------------|

---

## 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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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\\_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\\_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_vanimu,
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 | <i>Fabio Crameri's devon Sequential Color Scheme</i> |
|---------------------|------------------------------------------------------|

---

## 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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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_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_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_vanimu`, `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_fes | <i>Fabio Crameri's fes Multi-Sequential Color Scheme</i> |
|-------------------|----------------------------------------------------------|

---

## 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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                |
| aesthetics | A <b>character</b> 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\\_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\\_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(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 | <i>Fabio Crameri's grayC Sequential Color Scheme</i> |
|---------------------|------------------------------------------------------|

---

**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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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\\_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\\_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\\_vanimu](#), [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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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\\_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\\_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_imola | <i>Fabio Crameri's imola Sequential Color Scheme</i> |
|---------------------|------------------------------------------------------|

---

**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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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\\_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_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_vanimu,
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\_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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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_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_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_vanim`, `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_lapaz | <i>Fabio Crameri's lapaz Sequential Color Scheme</i> |
|---------------------|------------------------------------------------------|

---

**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 <code>ggplot2::continuous_scale()</code> .                                |
| reverse | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?          |
| range   | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color do- |

|            |                                                                                                                                       |
|------------|---------------------------------------------------------------------------------------------------------------------------------------|
|            | main to keep.                                                                                                                         |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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](https://doi.org/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\\_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\\_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\_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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| midpoint   | A length-one <a href="#">numeric</a> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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 = unemployment)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemployment)) +
  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 <code>ggplot2::continuous_scale()</code> .                                                                     |
| reverse    | A <code>logical</code> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <code>numeric</code> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <code>logical</code> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <code>character</code> 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\\_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\\_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\_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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                |
| aesthetics | A <b>character</b> 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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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](https://doi.org/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](https://doi.org/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](https://doi.org/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_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_roma`, `scale_crameri_roma0`, `scale_crameri_tofino`, `scale_crameri_tokyo`, `scale_crameri_turku`, `scale_crameri_vanim`, `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_roma | <i>Fabio Crameri's roma Diverging Color Scheme</i> |
|--------------------|----------------------------------------------------|

---

**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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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\\_vanim](#), [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\\_roma0](#), [scale\\_crameri\\_tofino](#), [scale\\_crameri\\_tokyo](#), [scale\\_crameri\\_turku](#), [scale\\_crameri\\_vanim](#), [scale\\_crameri\\_vik](#), [scale\\_crameri\\_vik0](#)

## Examples

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

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

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

---

|                     |                                                  |
|---------------------|--------------------------------------------------|
| scale_crameri_roma0 | <i>Fabio Crameri's romaO Cyclic Color Scheme</i> |
|---------------------|--------------------------------------------------|

---

## Description

Fabio Crameri's *romaO* Cyclic Color Scheme

## Usage

```
scale_colour_roma0(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
```

```

    aesthetics = "colour"
  )

scale_color_roma0(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "colour"
)

scale_fill_roma0(
  ...,
  reverse = FALSE,
  range = c(0, 1),
  discrete = FALSE,
  aesthetics = "fill"
)

```

### Arguments

|            |                                                                                                                                       |
|------------|---------------------------------------------------------------------------------------------------------------------------------------|
| ...        | Arguments passed to <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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 cyclic color schemes: [scale\\_crameri\\_bam0](#), [scale\\_crameri\\_broc0](#), [scale\\_crameri\\_cork0](#), [scale\\_crameri\\_vik0](#)

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\\_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 = unemployment)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemployment)) +
  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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| midpoint   | A length-one <a href="#">numeric</a> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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 = unemployment)) +
  ggplot2::geom_point() +
  scale_colour_broc(reverse = TRUE, midpoint = 12000)

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

---

|                     |                                                      |
|---------------------|------------------------------------------------------|
| scale_crameri_tokyo | <i>Fabio Crameri's tokyo Sequential Color Scheme</i> |
|---------------------|------------------------------------------------------|

---

**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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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\\_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\\_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_turku | <i>Fabio Crameri's turku Sequential Color Scheme</i> |
|---------------------|------------------------------------------------------|

---

## 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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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\\_Yl0rBr](#), [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\\_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\\_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\_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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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\\_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_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_vik | <i>Fabio Crameri's vik Diverging Color Scheme</i> |
|-------------------|---------------------------------------------------|

---

## 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 <code>ggplot2::continuous_scale()</code> .                                                                        |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                             |
| midpoint   | A length-one <a href="#">numeric</a> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                |
| discrete   | A <a href="#">logical</a> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <a href="#">character</a> 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\\_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_vanimu,
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 | <i>Fabio Crameri's vikO Cyclic Color Scheme</i> |
|--------------------|-------------------------------------------------|

---

## 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 <code>ggplot2::continuous_scale()</code> .                                                               |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                  |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                             |
| discrete   | A <b>logical</b> scalar: should the color scheme be used as a discrete scale?                                                |
| aesthetics | A <b>character</b> 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 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\\_vanimu](#), [scale\\_crameri\\_vik](#)

## Examples

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

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

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemployment)) +
  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 <code>ggplot2::discrete_scale()</code> .                                                                                            |
| reverse        | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                                    |
| black_position | A <a href="#">character</a> string giving the position of the black color. It must be one of "first" or "last". Any unambiguous substring can be given. |
| aesthetics     | A <a href="#">character</a> 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 | <i>Paul Tol's bright Discrete Color Scheme</i> |
|------------------|------------------------------------------------|

---

**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 <code>ggplot2::continuous_scale()</code> .                                                                                                                |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                                                                   |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                                                                              |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                                                                 |
| discrete   | A <b>logical</b> 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 <b>character</b> 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 <code>ggplot2::discrete_scale()</code> .                                                                       |
| reverse    | A <code>logical</code> scalar. Should the resulting vector of colors be reversed?                                                  |
| aesthetics | A <code>character</code> 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\\_Yl0rBr](#), [scale\\_tol\\_iridescent](#), [scale\\_tol\\_smoothrainbow](#)

Other Paul Tol's color schemes: [scale\\_tol\\_BuRd](#), [scale\\_tol\\_PRGn](#), [scale\\_tol\\_Yl0rBr](#), [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_Yl0rBr()

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 <code>ggplot2::continuous_scale()</code> .                                                                                                                |
| reverse  | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                                                                   |
| range    | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                                                                              |
| discrete | A <b>logical</b> 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 | <i>Paul Tol's light Discrete Color Scheme</i> |
|-----------------|-----------------------------------------------|

---

**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 <code>ggplot2::discrete_scale()</code> .                                                                          |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| aesthetics | A <a href="#">character</a> 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 <code>ggplot2::discrete_scale()</code> .                                                                          |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| aesthetics | A <a href="#">character</a> 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

|                         |                                                                                                                                       |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <code>...</code>        | Arguments passed to <code>ggplot2::discrete_scale()</code> .                                                                          |
| <code>reverse</code>    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| <code>aesthetics</code> | A <a href="#">character</a> 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 | <i>Paul Tol's nightfall Diverging Color Scheme</i> |
|---------------------|----------------------------------------------------|

---

### 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 <code>ggplot2::continuous_scale()</code> .                                                                                                                |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                                                                   |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                                                                              |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                                                                 |
| discrete   | A <b>logical</b> 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 <b>character</b> 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 = unemployment)) +
  ggplot2::geom_point() +
  scale_color_sunset(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemployment)) +
  ggplot2::geom_point() +
  scale_color_BuRd(midpoint = 9000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemployment)) +
  ggplot2::geom_point() +
  scale_color_PRGn(midpoint = 9000, range = c(0.25, 1))
```

---

|                |                                              |
|----------------|----------------------------------------------|
| scale_tol_pale | <i>Paul Tol's pale Discrete Color Scheme</i> |
|----------------|----------------------------------------------|

---

**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 | <i>Paul Tol's PRGn Diverging Color Scheme</i> |
|----------------|-----------------------------------------------|

---

**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 <code>ggplot2::continuous_scale()</code> .                                                                                                                |
| reverse    | A <b>logical</b> scalar. Should the resulting vector of colors be reversed?                                                                                                   |
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme's color domain to keep.                                                                              |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                                                                 |
| discrete   | A <b>logical</b> 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 <b>character</b> 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 = unemployment)) +
  ggplot2::geom_point() +
  scale_color_sunset(reverse = TRUE, midpoint = 12000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemployment)) +
  ggplot2::geom_point() +
  scale_color_BuRd(midpoint = 9000)

ggplot2::ggplot(economics, ggplot2::aes(psavert, pce, colour = unemployment)) +
  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 <code>ggplot2::continuous_scale()</code> .                                            |
| reverse  | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                      |
| range    | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep. |
| discrete | A <a href="#">logical</a> 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\\_Yl0rBr](#), [scale\\_tol\\_incandescent](#), [scale\\_tol\\_iridescent](#)

Other Paul Tol's color schemes: [scale\\_tol\\_BuRd](#), [scale\\_tol\\_PRGn](#), [scale\\_tol\\_Yl0rBr](#), [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_Yl0rBr()

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 <code>ggplot2::continuous_scale()</code> .              |
| reverse | A <b>logical</b> scalar. Should the resulting vector of colors be reversed? |

|            |                                                                                                                                                                               |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| range      | A length-two <b>numeric</b> vector specifying the fraction of the scheme’s color domain to keep.                                                                              |
| midpoint   | A length-one <b>numeric</b> vector giving the midpoint (in data value) of the diverging scale. Defaults to 0.                                                                 |
| discrete   | A <b>logical</b> 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 <b>character</b> 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 <code>ggplot2::discrete_scale()</code> .                                                                          |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                  |
| aesthetics | A <a href="#">character</a> 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()
```

---

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 <code>ggplot2::continuous_scale()</code> .                                                                                                                         |
| reverse    | A <a href="#">logical</a> scalar. Should the resulting vector of colors be reversed?                                                                                                   |
| range      | A length-two <a href="#">numeric</a> vector specifying the fraction of the scheme's color domain to keep.                                                                              |
| discrete   | A <a href="#">logical</a> 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 <a href="#">character</a> 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))
```

# Index

## \* Fabio Crameri's color schemes

- scale\_crameri\_acton, [27](#)
- scale\_crameri\_bam, [30](#)
- scale\_crameri\_bamako, [33](#)
- scale\_crameri\_bam0, [36](#)
- scale\_crameri\_batlow, [39](#)
- scale\_crameri\_batlowK, [42](#)
- scale\_crameri\_batlowW, [45](#)
- scale\_crameri\_berlin, [48](#)
- scale\_crameri\_bilbao, [51](#)
- scale\_crameri\_broc, [54](#)
- scale\_crameri\_broc0, [57](#)
- scale\_crameri\_buda, [60](#)
- scale\_crameri\_bukavu, [63](#)
- scale\_crameri\_cork, [65](#)
- scale\_crameri\_cork0, [68](#)
- scale\_crameri\_davos, [71](#)
- scale\_crameri\_devon, [74](#)
- scale\_crameri\_fes, [77](#)
- scale\_crameri\_grayC, [80](#)
- scale\_crameri\_hawaii, [83](#)
- scale\_crameri\_imola, [86](#)
- scale\_crameri\_lajolla, [89](#)
- scale\_crameri\_lapaz, [92](#)
- scale\_crameri\_lisbon, [95](#)
- scale\_crameri\_nuuk, [98](#)
- scale\_crameri\_oleron, [102](#)
- scale\_crameri\_oslo, [104](#)
- scale\_crameri\_roma, [107](#)
- scale\_crameri\_roma0, [110](#)
- scale\_crameri\_tofino, [113](#)
- scale\_crameri\_tokyo, [116](#)
- scale\_crameri\_turku, [119](#)
- scale\_crameri\_vanimo, [122](#)
- scale\_crameri\_vik, [125](#)
- scale\_crameri\_vik0, [128](#)

## \* Okabe and Ito's color scheme

- scale\_okabeito\_discrete, [130](#)

## \* Paul Tol's color schemes

- scale\_tol\_bright, [133](#)
- scale\_tol\_BuRd, [135](#)
- scale\_tol\_dark, [138](#)
- scale\_tol\_discreterainbow, [140](#)
- scale\_tol\_highcontrast, [142](#)
- scale\_tol\_incandescent, [145](#)
- scale\_tol\_iridescent, [147](#)
- scale\_tol\_light, [150](#)
- scale\_tol\_mediumcontrast, [152](#)
- scale\_tol\_muted, [154](#)
- scale\_tol\_nightfall, [156](#)
- scale\_tol\_pale, [159](#)
- scale\_tol\_PRGn, [161](#)
- scale\_tol\_smoothrainbow, [163](#)
- scale\_tol\_sunset, [166](#)
- scale\_tol\_vibrant, [169](#)
- scale\_tol\_YlOrBr, [171](#)

## \* color schemes

- colour, [5](#)
- info, [9](#)

## \* color-blind safe color schemes

- scale\_okabeito\_discrete, [130](#)

## \* color

- colour, [5](#)

## \* cyclic color schemes

- scale\_crameri\_bam0, [36](#)
- scale\_crameri\_broc0, [57](#)
- scale\_crameri\_cork0, [68](#)
- scale\_crameri\_roma0, [110](#)
- scale\_crameri\_vik0, [128](#)

## \* diagnostic tools

- change, [4](#)
- compare, [8](#)
- plot.color\_scheme, [17](#)
- plot\_map, [18](#)
- plot\_scheme, [19](#)
- plot\_scheme\_colourblind, [20](#)
- plot\_tiles, [21](#)

## \* diverging color schemes

- scale\_crameri\_bam, 30
- scale\_crameri\_berlin, 48
- scale\_crameri\_broc, 54
- scale\_crameri\_cork, 65
- scale\_crameri\_lisbon, 95
- scale\_crameri\_roma, 107
- scale\_crameri\_tofino, 113
- scale\_crameri\_vanimo, 122
- scale\_crameri\_vik, 125
- scale\_tol\_BuRd, 135
- scale\_tol\_nightfall, 156
- scale\_tol\_PRGn, 161
- scale\_tol\_sunset, 166
- \* **ggplot2 scales**
  - scale\_picker, 132
- \* **multi sequential color schemes**
  - scale\_crameri\_bukavu, 63
  - scale\_crameri\_fes, 77
  - scale\_crameri\_oleron, 102
- \* **palettes**
  - palette\_color\_continuous, 10
  - palette\_color\_discrete, 11
  - palette\_color\_picker, 13
  - palette\_shape, 14
  - palette\_size, 15
- \* **qualitative color schemes**
  - scale\_colour\_land, 22
  - scale\_colour\_soil, 24
  - scale\_colour\_stratigraphy, 25
  - scale\_okabeito\_discrete, 130
  - scale\_tol\_bright, 133
  - scale\_tol\_dark, 138
  - scale\_tol\_discreterainbow, 140
  - scale\_tol\_highcontrast, 142
  - scale\_tol\_light, 150
  - scale\_tol\_mediumcontrast, 152
  - scale\_tol\_muted, 154
  - scale\_tol\_pale, 159
  - scale\_tol\_vibrant, 169
- \* **sequential color schemes**
  - scale\_crameri\_acton, 27
  - scale\_crameri\_bamako, 33
  - scale\_crameri\_batlow, 39
  - scale\_crameri\_batlowK, 42
  - scale\_crameri\_batlowW, 45
  - scale\_crameri\_bilbao, 51
  - scale\_crameri\_buda, 60
  - scale\_crameri\_davos, 71
  - scale\_crameri\_devon, 74
  - scale\_crameri\_grayC, 80
  - scale\_crameri\_hawaii, 83
  - scale\_crameri\_imola, 86
  - scale\_crameri\_lajolla, 89
  - scale\_crameri\_lapaz, 92
  - scale\_crameri\_nuuk, 98
  - scale\_crameri\_oslo, 104
  - scale\_crameri\_tokyo, 116
  - scale\_crameri\_turku, 119
  - scale\_tol\_incandescent, 145
  - scale\_tol\_iridescent, 147
  - scale\_tol\_smoothrainbow, 163
  - scale\_tol\_YlOrBr, 171
- \* **themed color schemes**
  - scale\_colour\_land, 22
  - scale\_colour\_soil, 24
  - scale\_colour\_stratigraphy, 25
- change, 4, 8, 17–19, 21, 22
- character, 4, 6, 8, 10, 12–15, 17–21, 23, 24, 26, 28, 32, 35, 37, 40, 43, 46, 50, 53, 56, 58, 61, 64, 67, 69, 72, 75, 78, 81, 84, 87, 90, 94, 97, 100, 102, 105, 109, 111, 114, 117, 120, 123, 126, 129, 131, 133, 134, 137, 139, 141, 143, 146, 149, 150, 152, 154, 157, 159, 162, 165, 168, 169, 172
- color (colour), 5
- color(), 4, 13, 17
- colorRampPalette, 6
- colour, 5, 9
- compare, 4, 8, 17–19, 21, 22
- continuous, 29, 32, 35, 37, 40, 43, 46, 50, 53, 56, 58, 61, 64, 67, 69, 72, 75, 78, 81, 84, 87, 90, 94, 97, 100, 102, 106, 109, 111, 114, 117, 120, 123, 126, 129, 133, 137, 146, 149, 158, 162, 165, 168, 172
- data.frame, 9
- discrete, 23, 24, 26, 132–134, 139, 141, 143, 150, 152, 154, 159, 169
- distance matrix, 8
- function, 4, 6, 10, 12, 14–16
- ggplot2::continuous\_scale(), 28, 32, 34, 37, 40, 43, 46, 50, 52, 56, 58, 61, 64,

- 67, 69, 72, 75, 78, 81, 84, 87, 90, 93,  
97, 100, 102, 105, 109, 111, 114,  
117, 120, 123, 126, 129, 137, 146,  
148, 157, 162, 164, 167, 172
- ggplot2::discrete\_scale(), 23, 24, 26,  
131, 134, 139, 141, 143, 150, 152,  
154, 159, 169
- graphics::par(), 19
- grDevices::colorRamp(), 10
- info, 7, 9
- info(), 6, 133
- integer, 6, 8, 21
- logical, 6, 8, 12–14, 19, 28, 32, 34, 35, 37,  
40, 43, 46, 50, 52, 53, 56, 58, 61, 64,  
67, 69, 72, 75, 78, 81, 84, 87, 90, 93,  
94, 97, 100, 102, 105, 109, 111, 114,  
117, 120, 123, 126, 129, 131, 134,  
137, 139, 141, 143, 146, 148, 150,  
152, 154, 157, 159, 162, 164,  
167–169, 172
- numeric, 10, 13, 16, 19, 28, 32, 34, 37, 40, 43,  
46, 50, 52, 56, 58, 61, 64, 67, 69, 72,  
75, 78, 81, 84, 87, 90, 93, 97, 100,  
102, 105, 109, 111, 114, 117, 120,  
123, 126, 129, 137, 146, 148, 157,  
162, 164, 168, 172
- palette\_color\_continuous, 10, 12, 14–16
- palette\_color\_discrete, 10, 11, 14–16
- palette\_color\_picker, 10, 12, 13, 15, 16
- palette\_colour\_continuous  
(palette\_color\_continuous), 10
- palette\_colour\_discrete  
(palette\_color\_discrete), 11
- palette\_colour\_picker  
(palette\_color\_picker), 13
- palette\_line (palette\_shape), 14
- palette\_shape, 10, 12, 14, 14, 16
- palette\_size, 10, 12, 14, 15, 15
- palette\_size\_diverging (palette\_size),  
15
- palette\_size\_sequential (palette\_size),  
15
- plot.color\_scheme, 4, 8, 17, 18, 19, 21, 22
- plot\_map, 4, 8, 17, 18, 19, 21, 22
- plot\_scheme, 4, 8, 17, 18, 19, 21, 22
- plot\_scheme\_colorblind  
(plot\_scheme\_colourblind), 20
- plot\_scheme\_colourblind, 4, 8, 17–19, 20,  
22
- plot\_tiles, 4, 8, 17–19, 21, 21
- scale\_color\_acton  
(scale\_crameri\_acton), 27
- scale\_color\_bam (scale\_crameri\_bam), 30
- scale\_color\_bamako  
(scale\_crameri\_bamako), 33
- scale\_color\_bam0 (scale\_crameri\_bam0),  
36
- scale\_color\_batlow  
(scale\_crameri\_batlow), 39
- scale\_color\_batlowK  
(scale\_crameri\_batlowK), 42
- scale\_color\_batlowW  
(scale\_crameri\_batlowW), 45
- scale\_color\_berlin  
(scale\_crameri\_berlin), 48
- scale\_color\_bilbao  
(scale\_crameri\_bilbao), 51
- scale\_color\_bright (scale\_tol\_bright),  
133
- scale\_color\_broc (scale\_crameri\_broc),  
54
- scale\_color\_broc0  
(scale\_crameri\_broc0), 57
- scale\_color\_buda (scale\_crameri\_buda),  
60
- scale\_color\_bukavu  
(scale\_crameri\_bukavu), 63
- scale\_color\_BuRd (scale\_tol\_BuRd), 135
- scale\_color\_cork (scale\_crameri\_cork),  
65
- scale\_color\_cork0  
(scale\_crameri\_cork0), 68
- scale\_color\_dark (scale\_tol\_dark), 138
- scale\_color\_davos  
(scale\_crameri\_davos), 71
- scale\_color\_devon  
(scale\_crameri\_devon), 74
- scale\_color\_discreterainbow  
(scale\_tol\_discreterainbow),  
140
- scale\_color\_fes (scale\_crameri\_fes), 77
- scale\_color\_grayC  
(scale\_crameri\_grayC), 80

- scale\_color\_hawaii  
    (scale\_crameri\_hawaii), 83
- scale\_color\_highcontrast  
    (scale\_tol\_highcontrast), 142
- scale\_color\_imola  
    (scale\_crameri\_imola), 86
- scale\_color\_incandescent  
    (scale\_tol\_incandescent), 145
- scale\_color\_iridescent  
    (scale\_tol\_iridescent), 147
- scale\_color\_lajolla  
    (scale\_crameri\_lajolla), 89
- scale\_color\_land (scale\_colour\_land), 22
- scale\_color\_lapaz  
    (scale\_crameri\_lapaz), 92
- scale\_color\_light (scale\_tol\_light), 150
- scale\_color\_lisbon  
    (scale\_crameri\_lisbon), 95
- scale\_color\_mediumcontrast  
    (scale\_tol\_mediumcontrast), 152
- scale\_color\_muted (scale\_tol\_muted), 154
- scale\_color\_nightfall  
    (scale\_tol\_nightfall), 156
- scale\_color\_nuuk (scale\_crameri\_nuuk),  
    98
- scale\_color\_okabeito  
    (scale\_okabeito\_discrete), 130
- scale\_color\_oleron  
    (scale\_crameri\_oleron), 102
- scale\_color\_oslo (scale\_crameri\_oslo),  
    104
- scale\_color\_pale (scale\_tol\_pale), 159
- scale\_color\_picker (scale\_picker), 132
- scale\_color\_PRGn (scale\_tol\_PRGn), 161
- scale\_color\_roma (scale\_crameri\_roma),  
    107
- scale\_color\_roma0  
    (scale\_crameri\_roma0), 110
- scale\_color\_smoothrainbow  
    (scale\_tol\_smoothrainbow), 163
- scale\_color\_soil (scale\_colour\_soil), 24
- scale\_color\_stratigraphy  
    (scale\_colour\_stratigraphy), 25
- scale\_color\_sunset (scale\_tol\_sunset),  
    166
- scale\_color\_tofino  
    (scale\_crameri\_tofino), 113
- scale\_color\_tokyo  
    (scale\_crameri\_tokyo), 116
- scale\_color\_turku  
    (scale\_crameri\_turku), 119
- scale\_color\_vanimo  
    (scale\_crameri\_vanimo), 122
- scale\_color\_vibrant  
    (scale\_tol\_vibrant), 169
- scale\_color\_vik (scale\_crameri\_vik), 125
- scale\_color\_vik0 (scale\_crameri\_vik0),  
    128
- scale\_color\_YlOrBr (scale\_tol\_YlOrBr),  
    171
- scale\_colour\_acton  
    (scale\_crameri\_acton), 27
- scale\_colour\_bam (scale\_crameri\_bam), 30
- scale\_colour\_bamako  
    (scale\_crameri\_bamako), 33
- scale\_colour\_bam0 (scale\_crameri\_bam0),  
    36
- scale\_colour\_batlow  
    (scale\_crameri\_batlow), 39
- scale\_colour\_batlowK  
    (scale\_crameri\_batlowK), 42
- scale\_colour\_batlowW  
    (scale\_crameri\_batlowW), 45
- scale\_colour\_berlin  
    (scale\_crameri\_berlin), 48
- scale\_colour\_bilbao  
    (scale\_crameri\_bilbao), 51
- scale\_colour\_bright (scale\_tol\_bright),  
    133
- scale\_colour\_broc (scale\_crameri\_broc),  
    54
- scale\_colour\_broc0  
    (scale\_crameri\_broc0), 57
- scale\_colour\_buda (scale\_crameri\_buda),  
    60
- scale\_colour\_bukavu  
    (scale\_crameri\_bukavu), 63
- scale\_colour\_BuRd (scale\_tol\_BuRd), 135
- scale\_colour\_cork (scale\_crameri\_cork),  
    65
- scale\_colour\_cork0  
    (scale\_crameri\_cork0), 68
- scale\_colour\_dark (scale\_tol\_dark), 138
- scale\_colour\_davos  
    (scale\_crameri\_davos), 71
- scale\_colour\_devon

- (scale\_crameri\_devon), 74
- scale\_colour\_discreterainbow
  - (scale\_tol\_discreterainbow), 140
- scale\_colour\_fes (scale\_crameri\_fes), 77
- scale\_colour\_grayC
  - (scale\_crameri\_grayC), 80
- scale\_colour\_hawaii
  - (scale\_crameri\_hawaii), 83
- scale\_colour\_highcontrast
  - (scale\_tol\_highcontrast), 142
- scale\_colour\_imola
  - (scale\_crameri\_imola), 86
- scale\_colour\_incandescent
  - (scale\_tol\_incandescent), 145
- scale\_colour\_iridescent
  - (scale\_tol\_iridescent), 147
- scale\_colour\_lajolla
  - (scale\_crameri\_lajolla), 89
- scale\_colour\_land, 22, 25, 26, 132, 135, 140, 142, 144, 151, 153, 155, 160, 170
- scale\_colour\_lapaz
  - (scale\_crameri\_lapaz), 92
- scale\_colour\_light (scale\_tol\_light), 150
- scale\_colour\_lisbon
  - (scale\_crameri\_lisbon), 95
- scale\_colour\_mediumcontrast
  - (scale\_tol\_mediumcontrast), 152
- scale\_colour\_muted (scale\_tol\_muted), 154
- scale\_colour\_nightfall
  - (scale\_tol\_nightfall), 156
- scale\_colour\_nuuk (scale\_crameri\_nuuk), 98
- scale\_colour\_okabeito
  - (scale\_okabeito\_discrete), 130
- scale\_colour\_oleron
  - (scale\_crameri\_oleron), 102
- scale\_colour\_oslo (scale\_crameri\_oslo), 104
- scale\_colour\_pale (scale\_tol\_pale), 159
- scale\_colour\_picker (scale\_picker), 132
- scale\_colour\_PRGn (scale\_tol\_PRGn), 161
- scale\_colour\_roma (scale\_crameri\_roma), 107
- scale\_colour\_roma0
  - (scale\_crameri\_roma0), 110
- scale\_colour\_smoothrainbow
  - (scale\_tol\_smoothrainbow), 163
- scale\_colour\_soil, 23, 24, 26, 132, 135, 140, 142, 144, 151, 153, 155, 160, 170
- scale\_colour\_stratigraphy, 23, 25, 25, 132, 135, 140, 142, 144, 151, 153, 155, 160, 170
- scale\_colour\_sunset (scale\_tol\_sunset), 166
- scale\_colour\_tofino
  - (scale\_crameri\_tofino), 113
- scale\_colour\_tokyo
  - (scale\_crameri\_tokyo), 116
- scale\_colour\_turku
  - (scale\_crameri\_turku), 119
- scale\_colour\_vanimu
  - (scale\_crameri\_vanimu), 122
- scale\_colour\_vibrant
  - (scale\_tol\_vibrant), 169
- scale\_colour\_vik (scale\_crameri\_vik), 125
- scale\_colour\_vik0 (scale\_crameri\_vik0), 128
- scale\_colour\_Yl0rBr (scale\_tol\_Yl0rBr), 171
- scale\_crameri\_acton, 27, 33, 36, 38, 41, 44, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 76, 77, 79, 82, 85, 88, 92, 95, 98, 101, 104, 107, 110, 112, 115, 118, 121, 124, 127, 130, 147, 149, 166, 173
- scale\_crameri\_bam, 30, 30, 36, 38, 41, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 77, 79, 82, 85, 88, 92, 95, 98, 101, 104, 107, 110, 112, 115, 118, 121, 124, 127, 130, 138, 158, 163, 168
- scale\_crameri\_bamako, 30, 33, 33, 38, 41, 44, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 76, 77, 79, 82, 85, 88, 92, 95, 98, 101, 104, 107, 110, 112, 115, 118, 121, 124, 127, 130, 147, 149, 166, 173
- scale\_crameri\_bam0, 30, 33, 36, 36, 41, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 77, 79, 82, 85, 88, 92, 95, 98, 101, 104, 107, 110, 112, 115, 118, 121,

- 124, 127, 130
- scale\_crameri\_batlow, 30, 33, 36, 38, 39,  
44, 45, 48, 51, 54, 57, 59, 62, 65, 68,  
70, 73, 76, 77, 79, 82, 85, 88, 92, 95,  
98, 101, 104, 107, 110, 112, 115,  
118, 121, 124, 127, 130, 147, 149,  
166, 173
- scale\_crameri\_batlowK, 30, 33, 36, 38, 41,  
42, 48, 51, 54, 57, 59, 62, 65, 68, 70,  
73, 76, 77, 79, 82, 85, 88, 92, 95, 98,  
101, 104, 107, 110, 112, 115, 118,  
121, 124, 127, 130, 147, 149, 166,  
173
- scale\_crameri\_batlowW, 30, 33, 36, 38, 41,  
44, 45, 45, 51, 54, 57, 59, 62, 65, 68,  
70, 73, 76, 77, 79, 82, 85, 88, 92, 95,  
98, 101, 104, 107, 110, 112, 115,  
118, 121, 124, 127, 130, 147, 149,  
166, 173
- scale\_crameri\_berlin, 30, 33, 36, 38, 41,  
45, 48, 48, 54, 57, 59, 62, 65, 68, 70,  
73, 77, 79, 82, 85, 88, 92, 95, 98,  
101, 104, 107, 110, 112, 115, 118,  
121, 124, 127, 130, 138, 158, 163,  
168
- scale\_crameri\_bilbao, 30, 33, 36, 38, 41,  
44, 45, 48, 51, 51, 57, 59, 62, 65, 68,  
70, 73, 76, 77, 79, 82, 85, 88, 92, 95,  
98, 101, 104, 107, 110, 112, 115,  
118, 121, 124, 127, 130, 147, 149,  
166, 173
- scale\_crameri\_broc, 30, 33, 36, 38, 41, 45,  
48, 51, 54, 54, 59, 62, 65, 68, 70, 73,  
77, 79, 82, 85, 88, 92, 95, 98, 101,  
104, 107, 110, 112, 115, 118, 121,  
124, 127, 130, 138, 158, 163, 168
- scale\_crameri\_broc0, 30, 33, 36, 38, 41, 45,  
48, 51, 54, 57, 57, 62, 65, 68, 70, 73,  
77, 79, 82, 85, 88, 92, 95, 98, 101,  
104, 107, 110, 112, 115, 118, 121,  
124, 127, 130
- scale\_crameri\_buda, 30, 33, 36, 38, 41, 44,  
45, 48, 51, 54, 57, 59, 60, 65, 68, 70,  
73, 76, 77, 79, 82, 85, 88, 89, 92, 95,  
98, 101, 104, 107, 110, 112, 115,  
118, 121, 124, 127, 130, 147, 149,  
166, 173
- scale\_crameri\_bukavu, 30, 33, 36, 38, 41,  
45, 48, 51, 54, 57, 59, 62, 63, 68, 70,  
73, 77, 79, 82, 85, 89, 92, 95, 98,  
101, 104, 107, 110, 112, 115, 118,  
121, 124, 127, 130
- scale\_crameri\_cork, 30, 33, 36, 38, 41, 45,  
48, 51, 54, 57, 59, 62, 65, 65, 70, 73,  
77, 79, 82, 85, 89, 92, 95, 98, 101,  
104, 107, 110, 112, 115, 118, 121,  
124, 127, 130, 138, 158, 163, 168
- scale\_crameri\_cork0, 30, 33, 36, 38, 41, 45,  
48, 51, 54, 57, 59, 62, 65, 68, 68, 73,  
77, 79, 82, 85, 89, 92, 95, 98, 101,  
104, 107, 110, 112, 115, 118, 121,  
124, 127, 130
- scale\_crameri\_davos, 30, 33, 36, 38, 41, 44,  
45, 48, 51, 54, 57, 59, 62, 65, 68, 70,  
71, 76, 77, 79, 82, 85, 88, 89, 92, 95,  
98, 101, 104, 107, 110, 112, 115,  
118, 121, 124, 127, 130, 147, 149,  
166, 173
- scale\_crameri\_devon, 30, 33, 36, 38, 41, 44,  
45, 48, 51, 54, 57, 59, 62, 65, 68, 70,  
73, 74, 79, 82, 85, 88, 89, 92, 95, 98,  
101, 104, 107, 110, 112, 115, 118,  
121, 124, 127, 130, 147, 149, 166,  
173
- scale\_crameri\_fes, 30, 33, 36, 38, 41, 45,  
48, 51, 54, 57, 59, 62, 65, 68, 70, 73,  
77, 77, 82, 85, 89, 92, 95, 98, 101,  
104, 107, 110, 112, 115, 118, 121,  
124, 127, 130
- scale\_crameri\_grayC, 30, 33, 36, 38, 41, 44,  
45, 48, 51, 54, 57, 59, 62, 65, 68, 70,  
73, 76, 77, 79, 80, 85, 88, 89, 92, 95,  
98, 101, 104, 107, 110, 112, 115,  
118, 121, 124, 127, 130, 147, 149,  
166, 173
- scale\_crameri\_hawaii, 30, 33, 36, 38, 41,  
44, 45, 48, 51, 54, 57, 59, 62, 65, 68,  
70, 73, 76, 77, 79, 82, 83, 88, 89, 92,  
95, 98, 101, 104, 107, 110, 112, 115,  
118, 121, 124, 127, 130, 147, 149,  
166, 173
- scale\_crameri\_imola, 30, 33, 36, 38, 41, 44,  
45, 48, 51, 54, 57, 59, 62, 65, 68, 70,  
73, 76, 77, 79, 82, 85, 86, 92, 95, 98,  
101, 104, 107, 110, 112, 115, 118,  
121, 125, 128, 130, 147, 149, 166,

- 173
- scale\_crameri\_lajolla, 30, 33, 36, 38, 41, 44, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 76, 77, 79, 82, 85, 88, 89, 95, 98, 101, 104, 107, 110, 112, 115, 118, 121, 125, 128, 130, 147, 149, 166, 173
- scale\_crameri\_lapaz, 30, 33, 36, 38, 41, 44, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 76, 77, 79, 82, 85, 88, 89, 92, 98, 101, 104, 107, 110, 112, 115, 118, 121, 125, 128, 130, 147, 149, 166, 173
- scale\_crameri\_lisbon, 30, 33, 36, 38, 41, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 77, 79, 82, 85, 89, 92, 95, 95, 101, 104, 107, 110, 112, 115, 118, 121, 124, 125, 127, 128, 130, 138, 158, 163, 168
- scale\_crameri\_nuuk, 30, 33, 36, 38, 41, 44, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 76, 77, 79, 82, 85, 88, 89, 92, 95, 98, 98, 104, 107, 110, 112, 115, 118, 121, 125, 128, 130, 147, 149, 166, 173
- scale\_crameri\_oleron, 30, 33, 36, 38, 41, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 77, 79, 82, 85, 89, 92, 95, 98, 101, 102, 107, 110, 112, 115, 118, 121, 125, 128, 130
- scale\_crameri\_oslo, 30, 33, 36, 38, 41, 44, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 76, 77, 79, 82, 85, 88, 89, 92, 95, 98, 101, 104, 104, 110, 112, 115, 118, 121, 125, 128, 130, 147, 149, 166, 173
- scale\_crameri\_roma, 30, 33, 36, 38, 41, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 77, 79, 82, 85, 89, 92, 95, 98, 101, 104, 107, 107, 112, 115, 118, 121, 124, 125, 127, 128, 130, 138, 158, 163, 168
- scale\_crameri\_roma0, 30, 33, 36, 38, 41, 45, 48, 51, 54, 57, 59, 62, 65, 68, 70, 73, 77, 79, 82, 85, 89, 92, 95, 98, 101, 104, 107, 110, 110, 115, 118, 121, 125, 128, 130
- scale\_crameri\_tofino, 30, 33, 36, 38, 42, 45, 48, 51, 54, 57, 59, 63, 65, 68, 70, 74, 77, 79, 82, 85, 89, 92, 95, 98, 101, 104, 107, 110, 112, 113, 118, 121, 124, 125, 127, 128, 130, 138, 158, 163, 168
- scale\_crameri\_tokyo, 30, 33, 36, 38, 41, 42, 44, 45, 48, 51, 54, 57, 59, 62, 63, 65, 68, 70, 73, 74, 76, 77, 79, 82, 85, 88, 89, 92, 95, 98, 101, 104, 107, 110, 112, 115, 118, 121, 125, 128, 130, 147, 149, 166, 173
- scale\_crameri\_turku, 30, 33, 36, 38, 41, 42, 44, 45, 48, 51, 54, 57, 59, 62, 63, 65, 68, 70, 73, 74, 76, 77, 79, 82, 85, 88, 89, 92, 95, 98, 101, 104, 107, 110, 112, 115, 118, 119, 125, 128, 130, 147, 149, 166, 173
- scale\_crameri\_vanimo, 30, 33, 36, 38, 42, 45, 48, 51, 54, 57, 59, 63, 65, 68, 70, 74, 77, 79, 82, 85, 89, 92, 95, 98, 101, 104, 107, 110, 112, 115, 118, 121, 122, 127, 128, 130, 138, 158, 163, 168
- scale\_crameri\_vik, 30, 33, 36, 38, 42, 45, 48, 51, 54, 57, 59, 63, 65, 68, 70, 74, 77, 79, 82, 85, 89, 92, 95, 98, 101, 104, 107, 110, 112, 115, 118, 121, 124, 125, 125, 130, 138, 158, 163, 168
- scale\_crameri\_vik0, 30, 33, 36, 38, 42, 45, 48, 51, 54, 57, 59, 63, 65, 68, 70, 74, 77, 79, 82, 85, 89, 92, 95, 98, 101, 104, 107, 110, 112, 115, 118, 121, 125, 128, 128
- scale\_edge\_color\_acton  
(scale\_crameri\_acton), 27
- scale\_edge\_color\_bam  
(scale\_crameri\_bam), 30
- scale\_edge\_color\_bamako  
(scale\_crameri\_bamako), 33
- scale\_edge\_color\_batlow  
(scale\_crameri\_batlow), 39
- scale\_edge\_color\_batlowK  
(scale\_crameri\_batlowK), 42
- scale\_edge\_color\_batlowW  
(scale\_crameri\_batlowW), 45
- scale\_edge\_color\_berlin  
(scale\_crameri\_berlin), 48

scale\_edge\_color\_bilbao  
     (scale\_crameri\_bilbao), 51  
 scale\_edge\_color\_bright  
     (scale\_tol\_bright), 133  
 scale\_edge\_color\_broc  
     (scale\_crameri\_broc), 54  
 scale\_edge\_color\_buda  
     (scale\_crameri\_buda), 60  
 scale\_edge\_color\_BuRd (scale\_tol\_BuRd),  
     135  
 scale\_edge\_color\_cork  
     (scale\_crameri\_cork), 65  
 scale\_edge\_color\_dark (scale\_tol\_dark),  
     138  
 scale\_edge\_color\_davos  
     (scale\_crameri\_davos), 71  
 scale\_edge\_color\_devon  
     (scale\_crameri\_devon), 74  
 scale\_edge\_color\_discreterainbow  
     (scale\_tol\_discreterainbow),  
     140  
 scale\_edge\_color\_grayC  
     (scale\_crameri\_grayC), 80  
 scale\_edge\_color\_hawaii  
     (scale\_crameri\_hawaii), 83  
 scale\_edge\_color\_highcontrast  
     (scale\_tol\_highcontrast), 142  
 scale\_edge\_color\_imola  
     (scale\_crameri\_imola), 86  
 scale\_edge\_color\_incandescent  
     (scale\_tol\_incandescent), 145  
 scale\_edge\_color\_iridescent  
     (scale\_tol\_iridescent), 147  
 scale\_edge\_color\_lajolla  
     (scale\_crameri\_lajolla), 89  
 scale\_edge\_color\_land  
     (scale\_colour\_land), 22  
 scale\_edge\_color\_lapaz  
     (scale\_crameri\_lapaz), 92  
 scale\_edge\_color\_light  
     (scale\_tol\_light), 150  
 scale\_edge\_color\_lisbon  
     (scale\_crameri\_lisbon), 95  
 scale\_edge\_color\_mediumcontrast  
     (scale\_tol\_mediumcontrast), 152  
 scale\_edge\_color\_muted  
     (scale\_tol\_muted), 154  
 scale\_edge\_color\_nightfall  
     (scale\_tol\_nightfall), 156  
 scale\_edge\_color\_nuuk  
     (scale\_crameri\_nuuk), 98  
 scale\_edge\_color\_okabeito  
     (scale\_okabeito\_discrete), 130  
 scale\_edge\_color\_oslo  
     (scale\_crameri\_oslo), 104  
 scale\_edge\_color\_pale (scale\_tol\_pale),  
     159  
 scale\_edge\_color\_picker (scale\_picker),  
     132  
 scale\_edge\_color\_PRGn (scale\_tol\_PRGn),  
     161  
 scale\_edge\_color\_roma  
     (scale\_crameri\_roma), 107  
 scale\_edge\_color\_smoothrainbow  
     (scale\_tol\_smoothrainbow), 163  
 scale\_edge\_color\_soil  
     (scale\_colour\_soil), 24  
 scale\_edge\_color\_stratigraphy  
     (scale\_colour\_stratigraphy), 25  
 scale\_edge\_color\_sunset  
     (scale\_tol\_sunset), 166  
 scale\_edge\_color\_tofino  
     (scale\_crameri\_tofino), 113  
 scale\_edge\_color\_tokyo  
     (scale\_crameri\_tokyo), 116  
 scale\_edge\_color\_turku  
     (scale\_crameri\_turku), 119  
 scale\_edge\_color\_vanimo  
     (scale\_crameri\_vanimo), 122  
 scale\_edge\_color\_vibrant  
     (scale\_tol\_vibrant), 169  
 scale\_edge\_color\_vik  
     (scale\_crameri\_vik), 125  
 scale\_edge\_color\_YlOrBr  
     (scale\_tol\_YlOrBr), 171  
 scale\_edge\_colour\_acton  
     (scale\_crameri\_acton), 27  
 scale\_edge\_colour\_bam  
     (scale\_crameri\_bam), 30  
 scale\_edge\_colour\_bamako  
     (scale\_crameri\_bamako), 33  
 scale\_edge\_colour\_batlow  
     (scale\_crameri\_batlow), 39  
 scale\_edge\_colour\_batlowK  
     (scale\_crameri\_batlowK), 42  
 scale\_edge\_colour\_batlowW

- (scale\_crameri\_batlowW), 45
- scale\_edge\_colour\_berlin
  - (scale\_crameri\_berlin), 48
- scale\_edge\_colour\_bilbao
  - (scale\_crameri\_bilbao), 51
- scale\_edge\_colour\_bright
  - (scale\_tol\_bright), 133
- scale\_edge\_colour\_broc
  - (scale\_crameri\_broc), 54
- scale\_edge\_colour\_buda
  - (scale\_crameri\_buda), 60
- scale\_edge\_colour\_BuRd
  - (scale\_tol\_BuRd), 135
- scale\_edge\_colour\_cork
  - (scale\_crameri\_cork), 65
- scale\_edge\_colour\_dark
  - (scale\_tol\_dark), 138
- scale\_edge\_colour\_davos
  - (scale\_crameri\_davos), 71
- scale\_edge\_colour\_devon
  - (scale\_crameri\_devon), 74
- scale\_edge\_colour\_discreterainbow
  - (scale\_tol\_discreterainbow), 140
- scale\_edge\_colour\_grayC
  - (scale\_crameri\_grayC), 80
- scale\_edge\_colour\_hawaii
  - (scale\_crameri\_hawaii), 83
- scale\_edge\_colour\_highcontrast
  - (scale\_tol\_highcontrast), 142
- scale\_edge\_colour\_imola
  - (scale\_crameri\_imola), 86
- scale\_edge\_colour\_incandescent
  - (scale\_tol\_incandescent), 145
- scale\_edge\_colour\_iridescent
  - (scale\_tol\_iridescent), 147
- scale\_edge\_colour\_lajolla
  - (scale\_crameri\_lajolla), 89
- scale\_edge\_colour\_land
  - (scale\_colour\_land), 22
- scale\_edge\_colour\_lapaz
  - (scale\_crameri\_lapaz), 92
- scale\_edge\_colour\_light
  - (scale\_tol\_light), 150
- scale\_edge\_colour\_lisbon
  - (scale\_crameri\_lisbon), 95
- scale\_edge\_colour\_mediumcontrast
  - (scale\_tol\_mediumcontrast), 152
- scale\_edge\_colour\_muted
  - (scale\_tol\_muted), 154
- scale\_edge\_colour\_nightfall
  - (scale\_tol\_nightfall), 156
- scale\_edge\_colour\_nuuk
  - (scale\_crameri\_nuuk), 98
- scale\_edge\_colour\_okabeito
  - (scale\_okabeito\_discrete), 130
- scale\_edge\_colour\_oslo
  - (scale\_crameri\_oslo), 104
- scale\_edge\_colour\_pale
  - (scale\_tol\_pale), 159
- scale\_edge\_colour\_picker
  - (scale\_picker), 132
- scale\_edge\_colour\_PRGn
  - (scale\_tol\_PRGn), 161
- scale\_edge\_colour\_roma
  - (scale\_crameri\_roma), 107
- scale\_edge\_colour\_smoothrainbow
  - (scale\_tol\_smoothrainbow), 163
- scale\_edge\_colour\_soil
  - (scale\_colour\_soil), 24
- scale\_edge\_colour\_stratigraphy
  - (scale\_colour\_stratigraphy), 25
- scale\_edge\_colour\_sunset
  - (scale\_tol\_sunset), 166
- scale\_edge\_colour\_tofino
  - (scale\_crameri\_tofino), 113
- scale\_edge\_colour\_tokyo
  - (scale\_crameri\_tokyo), 116
- scale\_edge\_colour\_turku
  - (scale\_crameri\_turku), 119
- scale\_edge\_colour\_vanimo
  - (scale\_crameri\_vanimo), 122
- scale\_edge\_colour\_vibrant
  - (scale\_tol\_vibrant), 169
- scale\_edge\_colour\_vik
  - (scale\_crameri\_vik), 125
- scale\_edge\_colour\_YlOrBr
  - (scale\_tol\_YlOrBr), 171
- scale\_edge\_fill\_acton
  - (scale\_crameri\_acton), 27
- scale\_edge\_fill\_bam
  - (scale\_crameri\_bam), 30
- scale\_edge\_fill\_bamako
  - (scale\_crameri\_bamako), 33
- scale\_edge\_fill\_batlow
  - (scale\_crameri\_batlow), 39

- scale\_edge\_fill\_batlowK  
(scale\_crameri\_batlowK), 42
- scale\_edge\_fill\_batlowW  
(scale\_crameri\_batlowW), 45
- scale\_edge\_fill\_berlin  
(scale\_crameri\_berlin), 48
- scale\_edge\_fill\_bilbao  
(scale\_crameri\_bilbao), 51
- scale\_edge\_fill\_bright  
(scale\_tol\_bright), 133
- scale\_edge\_fill\_broc  
(scale\_crameri\_broc), 54
- scale\_edge\_fill\_buda  
(scale\_crameri\_buda), 60
- scale\_edge\_fill\_BuRd (scale\_tol\_BuRd),  
135
- scale\_edge\_fill\_cork  
(scale\_crameri\_cork), 65
- scale\_edge\_fill\_dark (scale\_tol\_dark),  
138
- scale\_edge\_fill\_davos  
(scale\_crameri\_davos), 71
- scale\_edge\_fill\_devon  
(scale\_crameri\_devon), 74
- scale\_edge\_fill\_discreterainbow  
(scale\_tol\_discreterainbow),  
140
- scale\_edge\_fill\_grayC  
(scale\_crameri\_grayC), 80
- scale\_edge\_fill\_hawaii  
(scale\_crameri\_hawaii), 83
- scale\_edge\_fill\_highcontrast  
(scale\_tol\_highcontrast), 142
- scale\_edge\_fill\_imola  
(scale\_crameri\_imola), 86
- scale\_edge\_fill\_incandescent  
(scale\_tol\_incandescent), 145
- scale\_edge\_fill\_iridescent  
(scale\_tol\_iridescent), 147
- scale\_edge\_fill\_lajolla  
(scale\_crameri\_lajolla), 89
- scale\_edge\_fill\_land  
(scale\_colour\_land), 22
- scale\_edge\_fill\_lapaz  
(scale\_crameri\_lapaz), 92
- scale\_edge\_fill\_light  
(scale\_tol\_light), 150
- scale\_edge\_fill\_lisbon  
(scale\_crameri\_lisbon), 95
- scale\_edge\_fill\_mediumcontrast  
(scale\_tol\_mediumcontrast), 152
- scale\_edge\_fill\_muted  
(scale\_tol\_muted), 154
- scale\_edge\_fill\_nightfall  
(scale\_tol\_nightfall), 156
- scale\_edge\_fill\_nuuk  
(scale\_crameri\_nuuk), 98
- scale\_edge\_fill\_okabeito  
(scale\_okabeito\_discrete), 130
- scale\_edge\_fill\_oslo  
(scale\_crameri\_oslo), 104
- scale\_edge\_fill\_pale (scale\_tol\_pale),  
159
- scale\_edge\_fill\_picker (scale\_picker),  
132
- scale\_edge\_fill\_PRGn (scale\_tol\_PRGn),  
161
- scale\_edge\_fill\_roma  
(scale\_crameri\_roma), 107
- scale\_edge\_fill\_smoothrainbow  
(scale\_tol\_smoothrainbow), 163
- scale\_edge\_fill\_soil  
(scale\_colour\_soil), 24
- scale\_edge\_fill\_stratigraphy  
(scale\_colour\_stratigraphy), 25
- scale\_edge\_fill\_sunset  
(scale\_tol\_sunset), 166
- scale\_edge\_fill\_tofino  
(scale\_crameri\_tofino), 113
- scale\_edge\_fill\_tokyo  
(scale\_crameri\_tokyo), 116
- scale\_edge\_fill\_turku  
(scale\_crameri\_turku), 119
- scale\_edge\_fill\_vanimo  
(scale\_crameri\_vanimo), 122
- scale\_edge\_fill\_vibrant  
(scale\_tol\_vibrant), 169
- scale\_edge\_fill\_vik  
(scale\_crameri\_vik), 125
- scale\_edge\_fill\_Yl0rBr  
(scale\_tol\_Yl0rBr), 171
- scale\_fill\_acton (scale\_crameri\_acton),  
27
- scale\_fill\_bam (scale\_crameri\_bam), 30
- scale\_fill\_bamako  
(scale\_crameri\_bamako), 33

- `scale_fill_bam0` (`scale_crameri_bam0`), 36
- `scale_fill_batlow`
  - (`scale_crameri_batlow`), 39
- `scale_fill_batlowK`
  - (`scale_crameri_batlowK`), 42
- `scale_fill_batlowW`
  - (`scale_crameri_batlowW`), 45
- `scale_fill_berlin`
  - (`scale_crameri_berlin`), 48
- `scale_fill_bilbao`
  - (`scale_crameri_bilbao`), 51
- `scale_fill_bright` (`scale_tol_bright`), 133
- `scale_fill_broc` (`scale_crameri_broc`), 54
- `scale_fill_broc0` (`scale_crameri_broc0`), 57
- `scale_fill_buda` (`scale_crameri_buda`), 60
- `scale_fill_bukavu`
  - (`scale_crameri_bukavu`), 63
- `scale_fill_BuRd` (`scale_tol_BuRd`), 135
- `scale_fill_cork` (`scale_crameri_cork`), 65
- `scale_fill_cork0` (`scale_crameri_cork0`), 68
- `scale_fill_dark` (`scale_tol_dark`), 138
- `scale_fill_davos` (`scale_crameri_davos`), 71
- `scale_fill_devon` (`scale_crameri_devon`), 74
- `scale_fill_discreterainbow`
  - (`scale_tol_discreterainbow`), 140
- `scale_fill_fes` (`scale_crameri_fes`), 77
- `scale_fill_grayC` (`scale_crameri_grayC`), 80
- `scale_fill_hawaii`
  - (`scale_crameri_hawaii`), 83
- `scale_fill_highcontrast`
  - (`scale_tol_highcontrast`), 142
- `scale_fill_imola` (`scale_crameri_imola`), 86
- `scale_fill_incandescent`
  - (`scale_tol_incandescent`), 145
- `scale_fill_iridescent`
  - (`scale_tol_iridescent`), 147
- `scale_fill_lajolla`
  - (`scale_crameri_lajolla`), 89
- `scale_fill_land` (`scale_colour_land`), 22
- `scale_fill_lapaz` (`scale_crameri_lapaz`), 92
- `scale_fill_light` (`scale_tol_light`), 150
- `scale_fill_lisbon`
  - (`scale_crameri_lisbon`), 95
- `scale_fill_mediumcontrast`
  - (`scale_tol_mediumcontrast`), 152
- `scale_fill_muted` (`scale_tol_muted`), 154
- `scale_fill_nightfall`
  - (`scale_tol_nightfall`), 156
- `scale_fill_nuuk` (`scale_crameri_nuuk`), 98
- `scale_fill_okabeito`
  - (`scale_okabeito_discrete`), 130
- `scale_fill_oleron`
  - (`scale_crameri_oleron`), 102
- `scale_fill_oslo` (`scale_crameri_oslo`), 104
- `scale_fill_pale` (`scale_tol_pale`), 159
- `scale_fill_picker` (`scale_picker`), 132
- `scale_fill_PRGn` (`scale_tol_PRGn`), 161
- `scale_fill_roma` (`scale_crameri_roma`), 107
- `scale_fill_roma0` (`scale_crameri_roma0`), 110
- `scale_fill_smoothrainbow`
  - (`scale_tol_smoothrainbow`), 163
- `scale_fill_soil` (`scale_colour_soil`), 24
- `scale_fill_stratigraphy`
  - (`scale_colour_stratigraphy`), 25
- `scale_fill_sunset` (`scale_tol_sunset`), 166
- `scale_fill_tofino`
  - (`scale_crameri_tofino`), 113
- `scale_fill_tokyo` (`scale_crameri_tokyo`), 116
- `scale_fill_turku` (`scale_crameri_turku`), 119
- `scale_fill_vanimo`
  - (`scale_crameri_vanimo`), 122
- `scale_fill_vibrant` (`scale_tol_vibrant`), 169
- `scale_fill_vik` (`scale_crameri_vik`), 125
- `scale_fill_vik0` (`scale_crameri_vik0`), 128
- `scale_fill_YlOrBr` (`scale_tol_YlOrBr`), 171
- `scale_okabeito_discrete`, 23, 25, 26, 130, 135, 140, 142, 144, 151, 153, 155, 160, 170

[scale\\_picker](#), [132](#)  
[scale\\_tol\\_bright](#), [23](#), [25](#), [26](#), [132](#), [133](#), [138](#),  
[140](#), [142](#), [144](#), [147](#), [149](#), [151](#), [153](#),  
[155](#), [158](#), [160](#), [163](#), [166](#), [168](#), [170](#),  
[173](#)  
[scale\\_tol\\_BuRd](#), [33](#), [51](#), [57](#), [68](#), [98](#), [110](#), [115](#),  
[124](#), [127](#), [135](#), [135](#), [140](#), [142](#), [144](#),  
[147](#), [149](#), [151](#), [153](#), [155](#), [158](#), [160](#),  
[163](#), [166](#), [168](#), [170](#), [173](#)  
[scale\\_tol\\_dark](#), [23](#), [25](#), [26](#), [132](#), [135](#), [138](#),  
[138](#), [142](#), [144](#), [147](#), [149](#), [151](#), [153](#),  
[155](#), [158](#), [160](#), [163](#), [166](#), [168](#), [170](#),  
[173](#)  
[scale\\_tol\\_discreterainbow](#), [23](#), [25](#), [26](#),  
[132](#), [135](#), [138](#), [140](#), [140](#), [144](#), [147](#),  
[149](#), [151](#), [153](#), [155](#), [158](#), [160](#), [163](#),  
[166](#), [168](#), [170](#), [173](#)  
[scale\\_tol\\_highcontrast](#), [23](#), [25](#), [26](#), [132](#),  
[135](#), [138](#), [140](#), [142](#), [142](#), [147](#), [149](#),  
[151](#), [153](#), [155](#), [158](#), [160](#), [163](#), [166](#),  
[168](#), [170](#), [173](#)  
[scale\\_tol\\_incandescent](#), [30](#), [36](#), [41](#), [44](#), [48](#),  
[54](#), [62](#), [73](#), [76](#), [82](#), [85](#), [88](#), [92](#), [95](#),  
[101](#), [107](#), [118](#), [121](#), [135](#), [138](#), [140](#),  
[142](#), [144](#), [145](#), [149](#), [151](#), [153](#), [155](#),  
[158](#), [160](#), [163](#), [166](#), [168](#), [170](#), [173](#)  
[scale\\_tol\\_iridescent](#), [30](#), [36](#), [41](#), [44](#), [48](#),  
[54](#), [62](#), [73](#), [76](#), [82](#), [85](#), [88](#), [92](#), [95](#),  
[101](#), [107](#), [118](#), [121](#), [135](#), [138](#), [140](#),  
[142](#), [144](#), [147](#), [147](#), [151](#), [153](#), [155](#),  
[158](#), [160](#), [163](#), [166](#), [168](#), [170](#), [173](#)  
[scale\\_tol\\_light](#), [23](#), [25](#), [26](#), [132](#), [135](#), [138](#),  
[140](#), [142](#), [144](#), [147](#), [149](#), [150](#), [153](#),  
[155](#), [158](#), [160](#), [163](#), [166](#), [168](#), [170](#),  
[173](#)  
[scale\\_tol\\_mediumcontrast](#), [23](#), [25](#), [26](#), [132](#),  
[135](#), [138](#), [140](#), [142](#), [144](#), [147](#), [149](#),  
[151](#), [152](#), [155](#), [158](#), [160](#), [163](#), [166](#),  
[168](#), [170](#), [173](#)  
[scale\\_tol\\_muted](#), [23](#), [25](#), [26](#), [132](#), [135](#), [138](#),  
[140](#), [142](#), [144](#), [147](#), [149](#), [151](#), [153](#),  
[154](#), [158](#), [160](#), [163](#), [166](#), [168](#), [170](#),  
[173](#)  
[scale\\_tol\\_nightfall](#), [33](#), [51](#), [57](#), [68](#), [98](#),  
[110](#), [115](#), [124](#), [127](#), [135](#), [138](#), [140](#),  
[142](#), [144](#), [147](#), [149](#), [151](#), [153](#), [155](#),  
[156](#), [160](#), [163](#), [166](#), [168](#), [170](#), [173](#)  
[scale\\_tol\\_pale](#), [23](#), [25](#), [26](#), [132](#), [135](#), [138](#),  
[140](#), [142](#), [144](#), [147](#), [149](#), [151](#), [153](#),  
[155](#), [158](#), [159](#), [163](#), [166](#), [168](#), [170](#),  
[173](#)  
[scale\\_tol\\_PRGn](#), [33](#), [51](#), [57](#), [68](#), [98](#), [110](#), [115](#),  
[124](#), [127](#), [135](#), [138](#), [140](#), [142](#), [144](#),  
[147](#), [149](#), [151](#), [153](#), [155](#), [158](#), [160](#),  
[161](#), [166](#), [168](#), [170](#), [173](#)  
[scale\\_tol\\_smoothrainbow](#), [30](#), [36](#), [41](#), [44](#),  
[48](#), [54](#), [62](#), [73](#), [76](#), [82](#), [85](#), [88](#), [92](#), [95](#),  
[101](#), [107](#), [118](#), [121](#), [135](#), [138](#), [140](#),  
[142](#), [144](#), [147](#), [149](#), [151](#), [153](#), [155](#),  
[158](#), [160](#), [163](#), [163](#), [168](#), [170](#), [173](#)  
[scale\\_tol\\_sunset](#), [33](#), [51](#), [57](#), [68](#), [98](#), [110](#),  
[115](#), [124](#), [127](#), [135](#), [138](#), [140](#), [142](#),  
[144](#), [147](#), [149](#), [151](#), [153](#), [155](#), [158](#),  
[160](#), [163](#), [166](#), [166](#), [170](#), [173](#)  
[scale\\_tol\\_vibrant](#), [23](#), [25](#), [26](#), [132](#), [135](#),  
[138](#), [140](#), [142](#), [144](#), [147](#), [149](#), [151](#),  
[153](#), [155](#), [158](#), [160](#), [163](#), [166](#), [168](#),  
[169](#), [173](#)  
[scale\\_tol\\_Yl0rBr](#), [30](#), [36](#), [41](#), [44](#), [48](#), [54](#), [62](#),  
[73](#), [76](#), [82](#), [85](#), [88](#), [92](#), [95](#), [101](#), [107](#),  
[118](#), [121](#), [135](#), [138](#), [140](#), [142](#), [144](#),  
[147](#), [149](#), [151](#), [153](#), [155](#), [158](#), [160](#),  
[163](#), [166](#), [168](#), [170](#), [171](#)  
[spacesXYZ::DeltaE\(\)](#), [8](#)