

# Package ‘tanaka’

October 7, 2019

**Type** Package

**Title** Design Shaded Contour Lines (or Tanaka) Maps

**Version** 0.1.1

**Description** The Tanaka method enhances the representation of topography on a map using shaded contour lines. In this simplified implementation of the method, north-west white contours represent illuminated topography and south-east black contours represent shaded topography. See Tanaka (1950) <doi:10.2307/211219>.

**License** GPL-3

**Imports** raster, sf, isoband, methods, lwgeom, grDevices, graphics

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 6.1.1

**Suggests** testthat, sp, covr

**URL** <https://github.com/rcarto/tanaka/>

**BugReports** <https://github.com/rcarto/tanaka/issues/>

**NeedsCompilation** no

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**Repository** CRAN

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 tanaka-package

*Tanaka Contours Package*


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### Description

The tanaka package is a simplified implementation of the Tanaka method. Also called "relief contours method", "illuminated contour method", or "shaded contour lines method", the Tanaka method enhances the representation of topography on a map using shaded contour lines. North-west white contours represent illuminated topography and south-east black contours represent shaded topography.

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 tanaka

*Plot a Tanaka Map*


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### Description

This function plots a tanaka map.

### Usage

```
tanaka(x, nclass = 8, breaks, col, mask, light = "#ffffff70",
       dark = "#00000090", shift, legend.pos = "left",
       legend.title = "Elevation", add = FALSE)
```

### Arguments

<code>x</code>	a raster or an sf contour layer (e.g. the result of <code>tanaka_contour()</code> ).
<code>nclass</code>	a number of class.
<code>breaks</code>	a vector of break values.
<code>col</code>	a color palette (a vector of colors).
<code>mask</code>	a mask layer, a POLYGON or MULTIPOLYGON sf object.
<code>light</code>	light shadow (NW color).
<code>dark</code>	dark shadow (SE color).
<code>shift</code>	size of the shadow (in map units).
<code>legend.pos</code>	position of the legend, one of "topleft", "top", "topright", "right", "bottomright", "bottom", "bottomleft", "left" or a vector of two coordinates in map units (c(x, y)). If legend.pos="n" then the legend is not plotted.
<code>legend.title</code>	title of the legend.
<code>add</code>	whether to add the layer to an existing plot (TRUE) or not (FALSE).

### Value

A Tanaka contour map is plotted.

## References

Tanaka, K. (1950). The relief contour method of representing topography on maps. *Geographical Review*, 40(3), 444-456.

## Examples

```
library(tanaka)
library(raster)
library(sf)
com <- st_read(system.file("gpkg/com.gpkg", package = "tanaka"),
               quiet = TRUE)
ras <- raster(system.file("grd/elev.grd", package = "tanaka"))
tanaka(ras)
tanaka(ras, mask = com)
tanaka(ras, breaks = seq(80,400,20),
       legend.pos = "topright",
       legend.title = "Elevation\n(meters)")
tanaka(ras, nclass = 15,
       col = hcl.colors(15, "YlOrRd"),
       legend.pos = "topright",
       legend.title = "Elevation\n(meters)")
```

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tanaka_contour	<i>Create a Contour Layer</i>
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## Description

Create a contour layer.

## Usage

```
tanaka_contour(x, nclass = 8, breaks, mask)
```

## Arguments

x	a raster object.
nclass	a number of class.
breaks	a vector of break values.
mask	a mask layer, a POLYGON or MULTIPOLYGON sf object.

## Value

A MULTIPOLYGON sf object is return. The data.frame contains 3 fields: id, min (minimum value of the raster in the MULTIPOLYGON) and max (maximum value of the raster in the MULTIPOLYGON).

**Examples**

```
library(tanaka)
library(raster)
library(sf)
ras <- raster(system.file("grd/elev.grd", package = "tanaka"))
iso <- tanaka_contour(x = ras)
plot(st_geometry(iso), col = c("#FBDEE1", "#F0BFC3", "#E7A1A6",
                              "#DD8287", "#D05A60", "#C03239",
                              "#721B20", "#1D0809"))
```

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