

Package ‘earthtones’

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Title Derive a Color Palette from a Particular Location on Earth

Version 0.2.0

Description Downloads a satellite image via ESRI and maptiles (these are originally from a variety of aerial photography sources), translates the image into a perceptually uniform color space, runs one of a few different clustering algorithms on the colors in the image searching for a user-supplied number of colors, and returns the resulting color palette.

Depends R (>= 3.1.0)

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Encoding UTF-8

Imports maptiles, terra, sf, grDevices

Suggests testthat, cluster, knitr, rmarkdown, ggplot2

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NeedsCompilation no

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`get_earthtones`*Extract Color Palettes from Satellite Imagery*

Description

Download a satellite image from a selected provider, extract dominant colors, and generate an earth-tone palette.

Usage

```
get_earthtones(  
  latitude = 50.759,  
  longitude = -125.673,  
  zoom = 11,  
  number_of_colors = 3,  
  method = "pam",  
  sampleRate = 500,  
  include.map = TRUE,  
  provider = "Esri.WorldImagery",  
  ...  
)
```

Arguments

<code>latitude</code>	Numeric. Latitude coordinate for the center of the satellite image.
<code>longitude</code>	Numeric. Longitude coordinate for the center of the satellite image.
<code>zoom</code>	Numeric. Zoom level between 0 (whole world) and 13 (high detail). Higher values zoom in closer.
<code>number_of_colors</code>	Numeric. Number of dominant colors to extract.
<code>method</code>	Character. Clustering method to identify dominant colors. Options are "kmeans" (kmeans) or "pam" (pam - partitioning around medoids).
<code>sampleRate</code>	Numeric. Subsampling factor; higher values reduce computation by sampling fewer pixels.
<code>include.map</code>	Logical. If TRUE, returns both the color palette and the satellite image raster. If FALSE, returns only the color palette.
<code>provider</code>	Character. Tile provider for satellite imagery. Currently supports "Esri.WorldImagery".
<code>...</code>	Additional arguments passed to internal functions (currently unused).

Details

The function retrieves satellite imagery from the specified provider, extracts colors by converting the imagery into a perceptually uniform color space, and applies a clustering algorithm to determine dominant colors. Zoom level and location significantly influence the palette generated.

Value

An object of class "palette" if `include.map = TRUE`, containing:

- `pal`: A vector of hexadecimal color codes representing the dominant colors.
- `map`: A raster image object of the satellite imagery.

If `include.map = FALSE`, returns a vector of hexadecimal color codes.

See Also

[get_tiles](#), [kmeans](#), [pam](#)

Examples

```
## Not run:
# Get a palette for a location in the Bahamas
get_earthtones(latitude = 24.2, longitude = -77.88, zoom = 11, number_of_colors = 5)

# Return palette only, without map
get_earthtones(latitude = 24.2, longitude = -77.88,
               zoom = 11, number_of_colors = 5, include.map = FALSE)

## End(Not run)
```

print.palette	<i>Print Method for Palette Objects</i>
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Description

Visualizes the palette and associated satellite image.

Usage

```
## S3 method for class 'palette'
print(x, ...)
```

Arguments

<code>x</code>	An object of class "palette".
<code>...</code>	Additional arguments passed to plotting methods.

Value

No return value; called for its side effect of plotting.

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