Package 'regional'

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| reg_distinction | *Distinction* |

Description

Distinction is an average distance between the focus region and all of the other regions. This value is between 0 and 1, where large value indicates that the values in the region stands out from the other regions.

Usage

```
reg_distinction(
  region,
  raster,
  dist_fun = "euclidean",
  sample_size = 1,
  unit = "log2"
)
```

Arguments

region	An object of class `sf` with a `POLYGON` or `MULTIPOLYGON` geometry type
raster	An object of class SpatRaster (terra)
dist_fun	Distance measure used. This function uses the `philentropy::distance` function in the background. Run `philentropy::getDistMethods()` to find possible distance measures.
sample_size	Proportion of the cells inside of each region to be used in calculations. Value between 0 and 1. It is also possible to specify an integer larger than 1, in which case the specified number of cells of each region will be used in calculations.
unit	a character string specifying the logarithm unit that should be used to compute distances that depend on log computations.

Value

A vector with the distinction values

Examples

```
## Not run:
  library(terra)
  if (requireNamespace("sf", quietly = TRUE)) {
    library(sf)
    volcano = rast(system.file("raster/volcano.tif", package = "regional"))
    vr = read_sf(system.file("regions/volcano_regions.gpkg", package = "regional"))
    vr$dis = reg_distinction(vr, volcano, sample_size = 0.5)

    mean(vr$dis)
```

```
    plot(volcano)
    plot(vect(vr), add = TRUE)
    plot(volcano)
    plot(vr["dis"], add = TRUE)
 }

## End(Not run)
```

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reg_inhomogeneity   *Inhomogeneity*

Description

Inhomogeneity measures a degree of mutual dissimilarity between values of all cells in a region. This value is between 0 and 1, where small value indicates that values of all cells in the region represent consistent patterns so the cluster is pattern-homogeneous.

Usage

```
reg_inhomogeneity(
  region,
  raster,
  dist_fun = "euclidean",
  sample_size = 1,
  unit = "log2"
)
```

Arguments

region	An object of class sf with a POLYGON or MULTIPOLYGON geometry type
raster	An object of class SpatRaster (terra)
dist_fun	Distance measure used. This function uses the philentropy::distance function in the background. Run philentropy::getDistMethods() to find possible distance measures.
sample_size	Proportion of the cells inside of each region to be used in calculations. Value between 0 and 1. It is also possible to specify an integer larger than 1, in which case the specified number of cells of each region will be used in calculations.
unit	a character string specifying the logarithm unit that should be used to compute distances that depend on log computations.

Value

A vector with the inhomogeneity values

Examples

```
## Not run:
  library(terra)
  if (requireNamespace("sf", quietly = TRUE)) {
    library(sf)
    volcano = rast(system.file("raster/volcano.tif", package = "regional"))
    vr = read_sf(system.file("regions/volcano_regions.gpkg", package = "regional"))
    vr$inh = reg_inhomogeneity(vr, volcano, sample_size = 1)

    mean(vr$inh)

    plot(volcano)
    plot(vect(vr), add = TRUE)
    plot(volcano)
    plot(vr["inh"], add = TRUE)
  }

## End(Not run)
```

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reg_isolation   *Isolation*

Description

Isolation is an average distance between the focus region and all of its neighbors. This value is between 0 and 1, where large value indicates that values of the region stands out from its surroundings.

Usage

```
reg_isolation(
  region,
  raster,
  dist_fun = "euclidean",
  sample_size = 1,
  unit = "log2"
)
```

Arguments

region	An object of class `sf` with a `POLYGON` or `MULTIPOLYGON` geometry type
raster	An object of class SpatRaster (terra)
dist_fun	Distance measure used. This function uses the `philentropy::distance` function in the background. Run `philentropy::getDistMethods()` to find possible distance measures.
sample_size	Proportion of the cells inside of each region to be used in calculations. Value between 0 and 1. It is also possible to specify an integer larger than 1, in which case the specified number of cells of each region will be used in calculations.

unit   a character string specifying the logarithm unit that should be used to compute distances that depend on log computations.

Value

A vector with the isolation values

Examples

```
## Not run:
 library(terra)
 if (requireNamespace("sf", quietly = TRUE)) {
   library(sf)
   volcano = rast(system.file("raster/volcano.tif", package = "regional"))
   vr = read_sf(system.file("regions/volcano_regions.gpkg", package = "regional"))
   vr$iso = reg_isolation(vr, volcano, sample_size = 1)

   mean(volcano$iso)

   plot(volcano)
   plot(vect(vr), add = TRUE)
   plot(volcano)
   plot(vr["iso"], add = TRUE)
 }

## End(Not run)
```

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