Package 'enerscape'

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Type Package

Title What the Package Does (Title Case)

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Description More about what it does (maybe more than one line)
Use four spaces when indenting paragraphs within the Description.

License GPL-3

Encoding UTF-8

LazyData true

Imports raster, gdalUtils, shiny

Suggests terra

RoxygenNote 7.1.1

R topics documented:

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calc_work   *Calculate work from slope raster and body size*

Description

Calculate work from slope raster and body size

Usage

```
calc_work(
  slope = NULL,
  m = NULL,
  output_to_disk = FALSE,
  output_file = NULL,
  g = 9.80665,
  deg_to_rad = 0.01745329,
  J_to_Kcal = 4184,
  work_in_kcal = FALSE
)
```

Arguments

slope	is the slope raster
m	is the body mass (kg) of the species
output_to_disk	
	if to write output to disk
output_file	is the output destiation, if @param output_to_disc == TRUE
g	is the gravity force
deg_to_rad	is the degree to radiant conversion constant
J_to_Kcal	is the Joule to kilocalory conversion contant
work_in_kcal	if the output should be expressed in kcal

Value

a raster of the energetic costs of locomotion

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dem_to_slope	*Calculate slope from digital elevation model*

Description

Calculate slope from digital elevation model

Usage

```
dem_to_slope(dem, output_to_disk = FALSE, output_file = NULL)
```

Arguments

dem	raster file of the digital elevation model, either a raster or a full path location of the file
output_to_disk	
	(optional) specifies if the slope raster should be also saved to disk
output_file	(optional) specifies the location of the output file. This must be a full path, e.g. "/home/user/Documents"

Details

If @param output_to_disc = FALSE, the raster output will be saved in the temporary R folder, which is deleted at reboot. If @output_to_disc = TRUE, then @output_file must be specified.

Value

raster of slope in degrees

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enerscape   *Calculate the energy landscape*

Description

Calculate the energy landscape

Usage

```
enerscape(dem, m, output_to_disk = FALSE, output_file = NULL, units = "J")
```

Arguments

dem	raster file of the digital elevation model, either a raster or a full path location of the file
m	is the body mass (kg) of the species
output_to_disk	(optional) specifies if the slope raster should be also saved to disk
output_file	(optional) specifies the location of the output file. This must be a full path, e.g. "/home/user/Documents"
units	if Joules ("J") or kilocalories ("kcal)

Details

If @param output_to_disc = FALSE, the raster output will be saved in the temporary R folder, which is deleted at reboot. If @output_to_disc = TRUE, then @output_file must be specified.

Value

raster of slope in degrees

`hello`	*Hello, World!*

Description

Prints 'Hello, world!'.

Usage

```
hello()
```

Examples

```
hello()
```

`launch_shiny`	*Shiny application for enerscape*

Description

Shiny application for enerscape

Usage

```
launch_shiny()
```

`plot_enerscape`	*Plot enerscape object*

Description

Plot enerscape object

Usage

```
plot_enerscape(
  en,
  what = "all",
  contour = TRUE,
  n_contour = 10,
  axes = FALSE,
  max_quantile = 1
)
```

Arguments

`en`	is the output of the enerscape() function
`what`	specifies what to plot. Available are "work", "slope", or "all"
`contour`	specifies if DEM contour plots should be overlayed on the plot
`n_contour`	specifies how many levels of DEM contours should be plotted, if any
`axes`	specifies if axes should be added to the plot
`max_quantile`	specifies the maximum quantile to be displayed, i.e. values above this quantile are re-assigned to the maximum value within the quantile. This is useful for plotting, as sometimes few cells have extremely high values, due to almost vertical displacement. In such cases, a max_quantile = 0.99 removes these outliers.