NAME

r.maxent.lambdas - Computes raw and/or logistic prediction maps from MaxEnt lambdas files

KEYWORDS

raster, MaxEnt, species distribution modelling

SYNOPSIS

r.maxent.lambdas
r.maxent.lambdas help
r.maxent.lambdas [-**rl**] **lambdas_file**=*string* **output_prefix**=*string* [**alias_file**=*string*] [**integer_output**=*integer*] [**output_mapcalc**=*string*] [--**overwrite**] [--**verbose**] [--**quiet**]

Flags:

-r

Produce only raw output (both are computed by default).

-l

Produce only logistic output (both are computed by default).

--overwrite

Allow output files to overwrite existing files

--verbose

Verbose module output

--quiet

Quiet module output

Parameters:

lambdas_file=*string*

MaxEnt lambdas-file to compute distribution-model from

output_prefix=*string*

Prefix for output raster maps

alias_file=*string*

CSV-file to replace alias names from MaxEnt by GRASS map names

integer_output=*integer*

Produce logistic integer output with this number of digits preserved

Default: *0*

output_mapcalc=*string*

Save r.mapcalc expression to file

DESCRIPTION

The script is intended to compute raw and/or logistic prediction maps from a lambdas file produced with MaxEnt 3.3.3e.
It will parse the specified lambdas-file from MaxEnt 3.3.3e and translate it into an r.mapcalc-expression which is then stored in a temporary file and finally piped to r.mapcalc. If alias names had been used in MaxEnt, these alias names can automatically be replaced according to a CSV-like file provided by the user. This file should contain alias names in the first column and map names in the second column, seperated by comma, without header. It should look e.g. like this:

alias_1,map_1
alias_2,map_2
...,...

If such a CSV-file with alias names used in MaxEnt is provided, the alias names from MaxEnt are replaced by map names.

A raw output map is always computed from the MaxEnt model as a first step. If logistic output is requested, the raw output map can be deleted by the script (using the l-flag). The logistic map can be produced as an integer map. To do so the user has to specify the number of decimal places, that

should be preserved in integer output.
Optionally the map calculator expressions can be saved in a text file as especially the one for the raw output is likely to exceed the space in the map history.

NOTES

This script works only if the maps containing the input data to MaxEnt are accessible from the current region.
Due to conversion from double to floating-point in exp()-function, a loss of precision from the 7th decimal place onwards may occur in the logistic output.

SEE ALSO

r.out.maxent_swd, r.in.xyz
MaxEnt 3.3.3e http://www.cs.princeton.edu/~schapire/maxent/
Jane Elith, Steven J. Phillips, Trevor Hastie, Miroslav Dudík, Yung En Chee, Colin J. Yates. 2011: A statistical explanation of MaxEnt for ecologists. Diversity and Distributions, (17):43-57, 2011.
Wilson, Peter D. 2009: Guidelines for computing MaxEnt model output values from a lambdas file. (Avaliable at http://groups.google.com/group/MaxEnt) Steven J. Phillips, Robert P. Anderson, Robert E. Schapire. 2006: Maximum entropy modeling of species geographic distributions. Ecological Modelling, (190):231-259, 2006.
Steven J. Phillips, Miroslav Dudík, Robert E. Schapire. 2004: A maximum entropy approach to species distribution modeling. In: Proceedings of the Twenty-First International Conference on Machine Learning, p. 655-662, 2004.

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