

Maxent Documentation

[Here](#) is where you download Maxent and read more about it, with a tutorial included.

Find Maxent Data.zip in this repository. You will need a password to unlock the GGM sightings (.csv) data; please contact J. Mak (the owner of the Github repository). Otherwise, you may import your own sample file in .csv format that follows this setup:

	A	B	C
1	Golden_monkey	108.7	27.97
2	Golden_monkey	108.7	28
3	Golden_monkey	108.	27.97
4	Golden_monkey	108.	27.97
5	Golden_monkey	108.	27.97
6	Golden_monkey	108.7	27.97
7	Golden_monkey	108.	27.97
8	Golden_monkey	108.	27.97
9	Golden_monkey	108.7	27.97
10	Golden_monkey	108.7	27.97

Column A should have no spaces and feature the name of the animal you are tracking.

Column B should feature the longitude (E) to as many decimal places as possible.

Column C should feature the latitude (N) to as many decimal places as possible.

Try to have a minimum of 40 or so values; see my thesis for more details.

Start the Maxent program by clicking the .bat file. Input the attached files as seen in the screenshot on the next page (when adding the .asc, be sure to select 'All Files' if you can't see them, and don't forget to select Vegetation Categories as 'Categorical'):

Maximum Entropy Species Distribution Modeling, Version 3.4.1

Samples

File:

☒ Golden_monkey

Environmental layers

Directory/File:

<input checked="" type="checkbox"/> Isothermality	Continuous	▼
<input checked="" type="checkbox"/> Precipitation Seasonality	Continuous	▼
<input checked="" type="checkbox"/> Slope	Continuous	▼
<input checked="" type="checkbox"/> Vegetation Categories	Categorical	▼

☒ Linear features
☒ Quadratic features
☒ Product features
☐ Threshold features
☒ Hinge features
☒ Auto features

☒ Create response curves
☒ Make pictures of predictions
☒ Do jackknife to measure variable importance

Output format:
Output file type:

Output directory:
Projection layers directory/file:

*ggm_maxent.csv is a list of sightings we found of golden monkeys through camera trapping. You should either use this or import your own sample file, as detailed in the previous page.

Then you should open Settings and check/input the following in the Basic and Advanced tabs:

Basic **Advanced** **Experimental**

☐ Random seed
☐ Give visual warnings
☐ Show tooltips
☐ Ask before overwriting
☐ Skip if output exists
☐ Remove duplicate presence records
☒ Write clamp grid when projecting
☒ Do MESS analysis when projecting

Random test percentage:
Regularization multiplier:
Max number of background points:
Replicates:
Replicated run type:
Test sample file:

Advanced **Basic** **Experimental**

☒ Add samples to background
☐ Add all samples to background
☐ Write plot data
☒ Extrapolate
☒ Do clamping
☒ Write output grids
☒ Write plots
☐ Append summary results to maxentResults.csv file
☒ Cache ascii files

Maximum iterations:
Convergence threshold:
Adjust sample radius:
Log file:
Default prevalence:
Apply threshold rule:
Bias file:

After this, you can run the Maxent model, which will generate a few plots and a Golden_monkey.html webpage. Open that webpage to see results; you should get an AUC of about 0.929 as well as an image that looks exactly like Figure 4.2 in my thesis. My thesis has more info on what the results mean as well.

