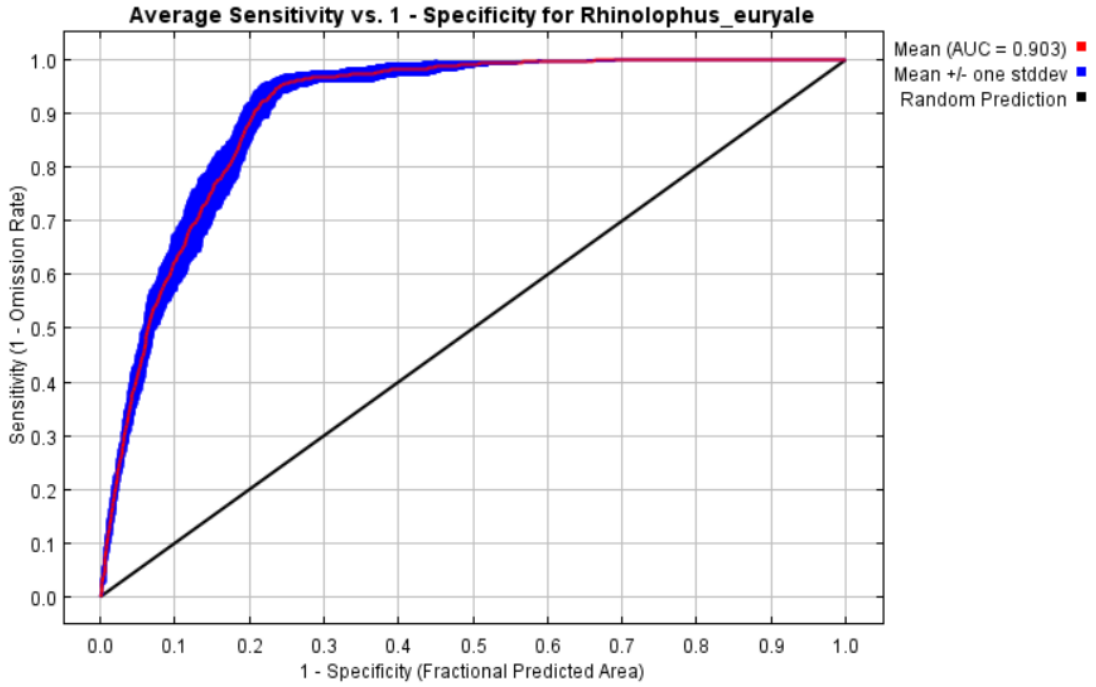
Maxent outputs

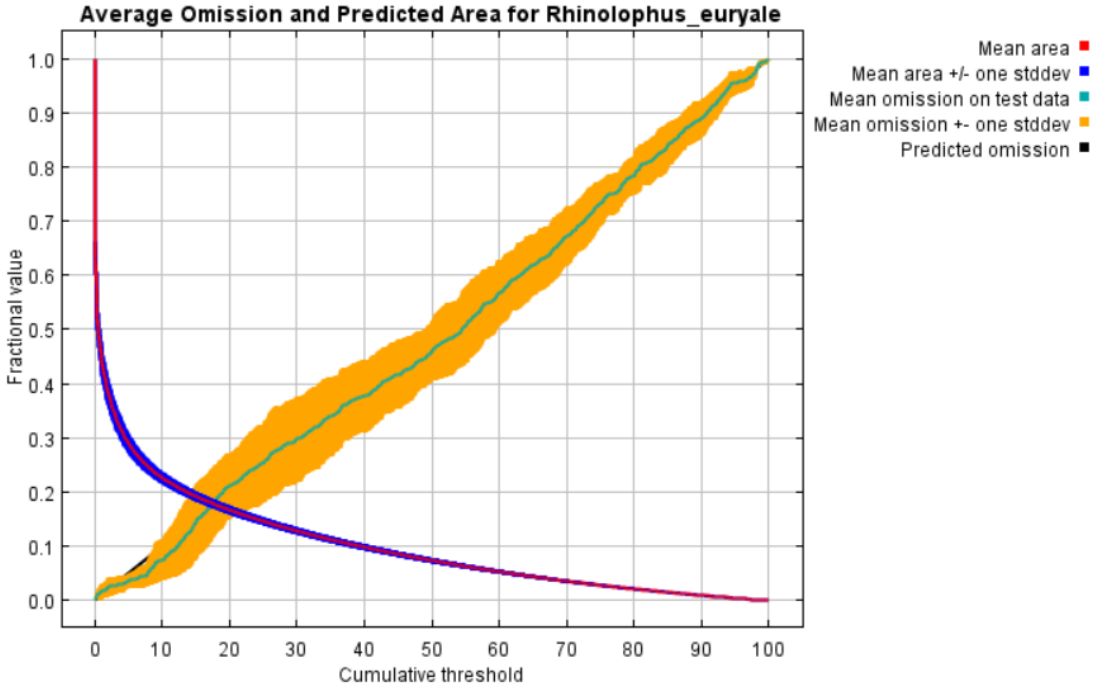
Results Folder

- View your maxent results in practical > maxent > results
- You will see html files for each model that you have run with a number from 0 – n after your species name.
- There will be an html file that summarizes the results of each model, showing mean and standard deviation on each graph and maps showing mean, std dev. Maps of min max are also available though not displayed in the html.
- Your results folder will also contain ascii files for each of the resulting images. These you can import into ArcGIS in order to create an informative map. Be sure to project these layers as WGS84.

Examples of content



ROC curve averaged over the replicate models.



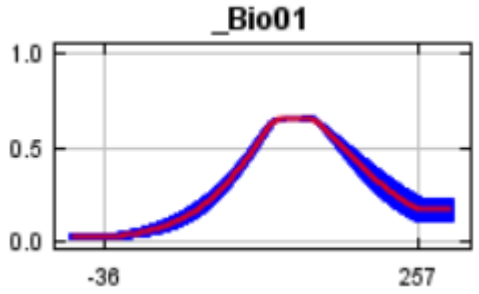
Shows how area of predicted probability decreases and omission on test data increases with rising cumulative threshold

N-fold cross-validation (replicate summary) pictures:

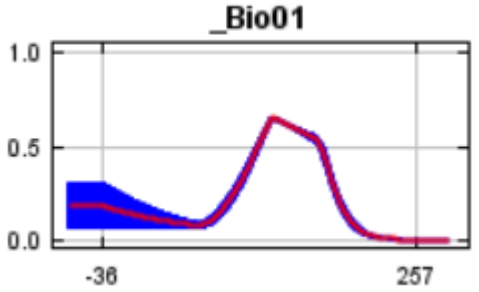
- Mean and standard deviation of all your replicate models applied to:
  - present, clipped (AOI)
  - future scenario/s clipped (AOI)
  - present, unclipped (WLD)
  - scenario/s, unclipped (WLD)
- Note: min, max, and median also available through link

Response curves

- Looks at the contribution of each variable to the maxent prediction – how the predicted probability of presence changes as the variable is varied
  - Keeping all other environmental variables at their average sample value
  - A curve that represents a model using only that variable.



Keeping all other environmental variables at their average sample value



A curve that represents a model using only that variable

Analysis of variable contributions

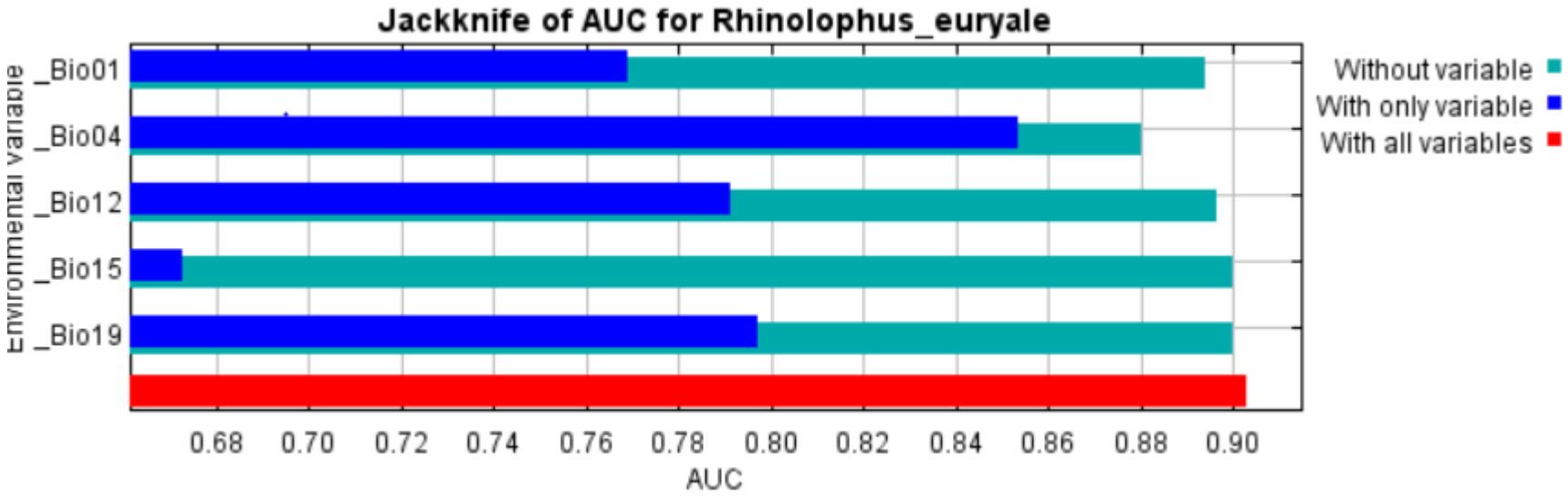
- Relative contributions of the environmental variables to Maxent model.

- Permutation importance: relative drop in training AUC when the values of the variable on training presence and background data are randomly permuted.

Variable	Percent contribution	Permutation importance
_Bio04	56.6	36.6
_Bio12	32.4	49.2
_Bio01	7.8	7.9
_Bio15	2	1.6
_Bio19	1.2	4.8

Jackknife tests of variable importance

- Test variable importance by measuring model performance using each variable in isolation and how much performance decreases when omitted.



Individual models - pictures

- Maxent will output the probability of occurrence onto your training area and for each of your projected areas, e.g.
  - future scenario/s clipped (AOI)
  - present, unclipped (WLD)
  - scenario/s, unclipped (WLD)
- Also for each of your projected areas, maxent will output
  - Where the prediction is most affected by variables being outside their training range: difference in predictions when using vs. not using clamping.
    - Clamping: variables are restricted to range of values used for training.
  - Comparison of scenario data to the training data.
    - Red: one or more variables are outside the range of the training data.
  - Variable/s that are most outside their training range.
  - ** Take note of this is your maps as these areas have the most uncertainty

Threshold table

Cumulative threshold	Logistic threshold	Description	Fractional predicted area	Training omission rate	Test omission rate	P-value
1.000	0.032	Fixed cumulative value 1	0.420	0.011	0.034	0E0
5.000	0.131	Fixed cumulative value 5	0.281	0.026	0.046	0E0
10.000	0.256	Fixed cumulative value 10	0.222	0.064	0.089	0E0
0.023	0.001	Minimum training presence	0.687	0.000	0.003	5.377E-34
12.727	0.304	10 percentile training presence	0.203	0.100	0.116	0E0
17.460	0.362	Equal training sensitivity and specificity	0.178	0.178	0.193	0E0
7.687	0.203	Maximum training sensitivity plus specificity	0.243	0.037	0.055	0E0
16.789	0.356	Equal test sensitivity and specificity	0.181	0.166	0.180	0E0
7.933	0.209	Maximum test sensitivity plus specificity	0.241	0.043	0.055	0E0
1.785	0.053	Balance training omission, predicted area and threshold value	0.372	0.015	0.037	0E0
5.626	0.148	Equate entropy of thresholded and original distributions	0.270	0.029	0.049	0E0

This shows the values of the threshold types in your model and the corresponding predicted presence area, omission rates, and p-value. For this exercise we are interested in maximum training sensitivity plus specificity. Average these values for creating your change maps.