**Test Summary**

This test is to check that the output of the bioclim model SDM experiment is accurate. The modeling script includes the production of evaluation measures.

**Preconditions & Test Data-sets Required**

occur.csv (or occur.RData)

bkgd.csv (or bkgd.RData)

current climate layers (current.76to05 | bioclim01-bioclim19.tif)

**Test Steps**

1. Log in to the BCCVL
2. Select Experiments tab
3. Click new SDM Experiment
4. Enter “ABT bioclim model and evaluation” as the name for this experiment.
5. Enter “ABT bioclim model, current projection, and model evaluation” as the description of experiment
6. Click Next
7. Select Bioclim under Species Distribution Model Production Algorithms
8. Click Next
9. Select Occurence Data for ABT
10. Click Next
11. Select Absence Data for ABT
12. Select Current climate layers for Australia, 2.5arcmin (~5km)
13. Click Next
14. Click start Experiment

**Expected output in files:**

1. model object.RData – binary model output file generate by model algorithm
2. model.object.Rascii – ascii representation of the R binary model output
3. current.tif – bioclim model projected onto current climate layers
4. combined.modelEvaluation.csv – table of all accuracy measures provided by dismo and biomod2 packages
5. dismo.eval.object.RData – binary evaluation output provided by dismo’s evaluate() function
6. bioclim.Rout – R output file, text file containing record of commands sent to R, generated automatically when using R CMD BATCH
7. AUC.png – Area Under the Receiver Operating Characteristic (ROC) Curve; threshold-independent plot of model predictive performance with test statistic value as figure title
8. \*\_response.png – response plot for each current climate layer used during model creation
9. biomod2\_like\_VariableImportance.csv – table of variable importance using biomod2’s procedure
10. maxent\_like\_VariableImportance.csv – table of variable importance using maxent’s permutation importance procedure

**Comments**

Step #11 Absence Data is currently called Occurence Data

Step #14 This model takes less than 2 min on my HPC, approximately 4 min on Intersect test site (not including the additional evaluation output\*)

Not sure if the model.object.Rascii representation of the R model object will always be created

Additional model evaluation functions have been added to modeling scripts but do not appear to be integrated into the BCCVL as yet. These include outputs #8-10 above. Output #8 should have one variable per climate layer, e.g., #12 above has 19 layers