Appendix S1: Additional model summary statistics and sensitivity analyses

TABLES

Table S1: Summary statistics of the final model resulting from five model replicates at five-fold cross-validation. Percent contribution represents the increase in gain to the environmental variable that the feature depends on. This score is converted to a percentage at the end of the training process. Permutation importance represents the contribution for each variable determined by randomly permuting the values of that variable among the training points (both presence and background) and measuring the resulting decrease in the training AUC. Values are normalized to give percentages.

Variable	Percent Contribution	Permutation Importance
Precipitation Seasonality	31.1	3.2
Soil Type	13.8	10.1
Mean Temperature of Coldest Quarter	12.5	18.4
Annual Precipitation	9.1	9.3
Distance to water	9.1	12
Temperature Annual Range	8.7	12.4
Precipitation of Warmest Quarter	5.9	3.8
Precipitation of Driest Quarter	5.9	20.2
Mean Temperature of Driest Quarter	3.9	9.6

Table S2: Results of sensitivity analysis to assess the effect of threshold value on the presence of the biogeographical barrier in northern Argentina. Thresholds calculated using Maxent (Minimum Training Presence (MTP), Equal Test, Maximum (Max) Training, Equal Training, and 10th Percentile Training Presence (TPTP)) are included. Barrier presence is assessed qualitatively as either absent (-), partially present (P), or present (Y) in the West, Central region, and East (see Figure 2 for divisions). * indicates first threshold value at which the barrier is partially present. ** indicates threshold value at which barrier is considered fully present. All Maxent thresholds except MTP result in at least partial presence of the barrier, with Equal Training and TPTP resulting in a full barrier.

Threshold Value	Barrier Description		
	West	Central	East
0.020	-	-	-
0.024 (MTP)	-	-	-
0.040	-	-	-
0.060*	P	-	P
0.080	P	-	P
0.100	P	-	P
0.120	Y	-	P
0.140	Y	-	P
0.156 (Equal Test)	Y	-	P
0.160	Y	-	P
0.180	Y	-	P

0.200	Y	P	Y
0.220	Y	P	Y
0.239 (Max Training)	Y	P	Y
0.240**	Y	Y	Y
0.260	Y	Y	Y
0.265 (Equal Training)	Y	Y	Y
0.276 (TPTP)	Y	Y	Y
0.280	Y	Y	Y
0.300	Y	Y	Y

Table S3: Results of jack-knife analysis to assess which variables are driving the presence of the biogeographical barrier in northern Argentina. *Soil Type was the only variable at which there was any evidence of the barrier.

Removed Variable	Barrier
Temperature Annual Range	No
Mean Temperature of Driest Quarter	No
Mean Temperature of Coldest Quarter	No
Annual Precipitation	No
Precipitation Seasonality	No
Precipitation of Driest Quarter	No
Precipitation of Warmest Quarter	No
Soil Type*	Yes
Distance to Water	No

Figure S1: Logistic Maxent probability surface indicating areas of suitable habitat for *E. notaeus*. Habitat suitability ranges from 1 (most suitable) to 0 (least suitable). Arrow indicates the boundary representing known highly suitable, wetland habitat in Formosa Province and low suitability, dry upland habitat to the south in the Province of Chaco.