

Niche differentiation among genetic lineages in the Mediterranean Pond turtle, *Mauremys leprosa*, across its geographical range

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Supplementary material

Table S1. Loadings of bioclimatic variables in the first two axis of the Principal Component Analysis based on environmental background variables across the study area.

Climatic variable	ID	Axis 1	Axis 2
Explained variance		57.40	18.80
Annual Precipitation	Bio12	90.13	-23.50
Precipitation of Driest Quarter	Bio17	87.89	23.90
Precipitation of Warmest Quarter	Bio18	87.10	22.93
Precipitation of Driest Month	Bio14	83.59	28.29
Precipitation of Wettest Month	Bio13	77.80	-42.98
Precipitation of Wettest Quarter	Bio16	76.57	-44.02
Precipitation of Coldest Quarter	Bio19	66.77	-51.46
Temperature Seasonality (standard deviation $\times 100$)	Bio4	-41.00	77.06
Isothermality (BIO2/BIO7) ($\times 100$)	Bio3	-43.26	-37.05
Min Temperature of Coldest Month	Bio6	-50.37	-76.73
Temperature Annual Range (BIO5-BIO6)	Bio7	-64.36	64.01
Mean Temperature of Wettest Quarter	Bio8	-64.38	1.55
Precipitation Seasonality (Coefficient of Variation)	Bio15	-70.09	-56.67
Mean Diurnal Range (Mean of monthly max/min difference)	Bio2	-73.55	41.65
Mean Temperature of Driest Quarter	Bio9	-75.24	-19.78
Mean Temperature of Coldest Quarter	Bio11	-78.54	-55.29

Annual Mean Temperature	Bio1	-91.03	-28.22
Max Temperature of Warmest Month	Bio5	-92.37	17.52
Mean Temperature of Warmest Quarter	Bio10	-93.70	-0.29

Table S2. Pearson correlation matrix among the climatic variables used in Maxent models. Correlation values were computed with the complete data table used in the analyses (background points and species occurrence localities).

	Bio3	Bio5	Bio6	Bio7	Bio8	Bio9	Bio13	Bio14
Bio5	0.26							
Bio6	0.34	0.34						
Bio7	0.06	0.82	-0.26					
Bio8	0.26	0.57	0.48	0.29				
Bio9	0.28	0.71	0.49	0.43	0.23			
Bio13	-0.25	-0.66	-0.12	-0.60	-0.59	-0.38		
Bio14	-0.38	-0.71	-0.55	-0.40	-0.30	-0.76	0.45	
Bio15	0.59	0.57	0.68	0.17	0.33	0.60	-0.23	-0.76

Table S3. Accuracy measures of ENM for each split and lumped model resulting from the 10-fold cross validation procedure, including the Area Under the ROC Curve (AUC) for each test bin, the difference between the training and the testing AUC (DiffAUC), the omission rates of testing localities with output values lower than the minimum training presence (MTP).

Model number	AUC		Omission rates
	Test	DiffAUC	(<MTP)
<i>Lineage A - Mauremys leprosa leprosa</i>			
1	0.813	0.107	0.000
2	0.904	0.004	0.000
3	0.903	0.005	0.000
4	0.897	0.006	0.091
5	0.937	0.000	0.000
6	0.911	0.000	0.083
7	0.910	0.000	0.000
8	0.884	0.027	0.000
9	0.893	0.015	0.083
10	0.827	0.087	0.182
<i>Lineage B - Mauremys leprosa saharica</i>			
1	0.822	0.097	0.000
2	0.915	0.000	0.000
3	0.896	0.006	0.000
4	0.818	0.100	0.000
5	0.983	0.000	0.000
6	0.940	0.000	0.000
7	0.890	0.020	0.000

8	0.834	0.084	0.200
9	0.851	0.063	0.200
10	0.905	0.002	0.000
Lumped occurrences			
1	0.867	0.000	0.000
2	0.795	0.058	0.000
3	0.772	0.085	0.000
4	0.867	0.000	0.000
5	0.838	0.015	0.000
6	0.866	0.000	0.000
7	0.863	0.000	0.000
8	0.852	0.000	0.000
9	0.853	0.000	0.000
10	0.709	0.151	0.067

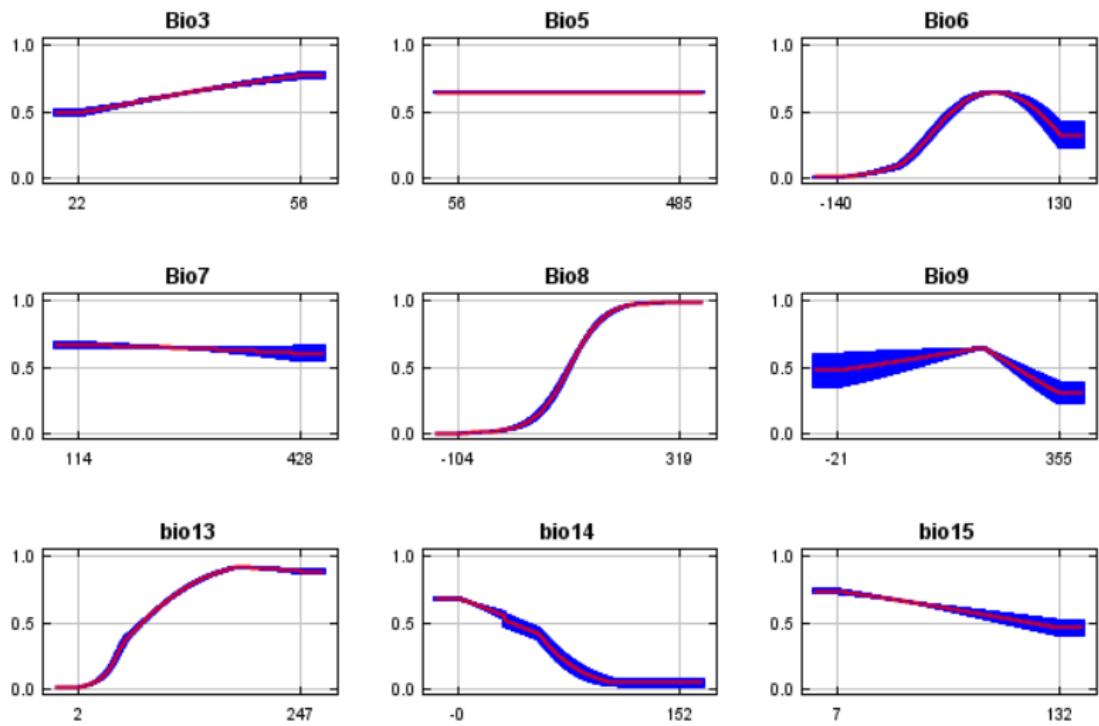


Figure S1. Partial responses of bioclimatic variables included in the environmental niche model of lineage A (*M. l. leprosa*). Blue areas represents the standard deviation from the 10 models resulting from the 10-fold crossvalidation.

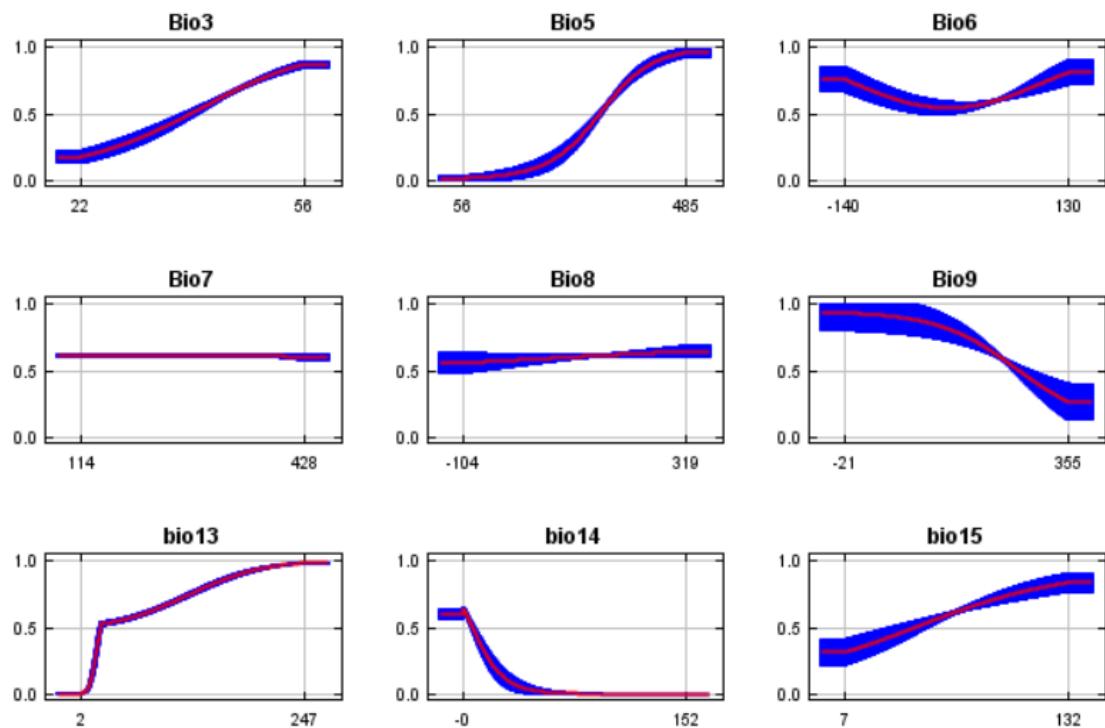


Figure S2. Partial responses of bioclimatic variables included in the environmental niche model of lineage B (*M. l. saharica*). Blue areas represents the standard deviation from the 10 models resulting from the 10-fold crossvalidation.

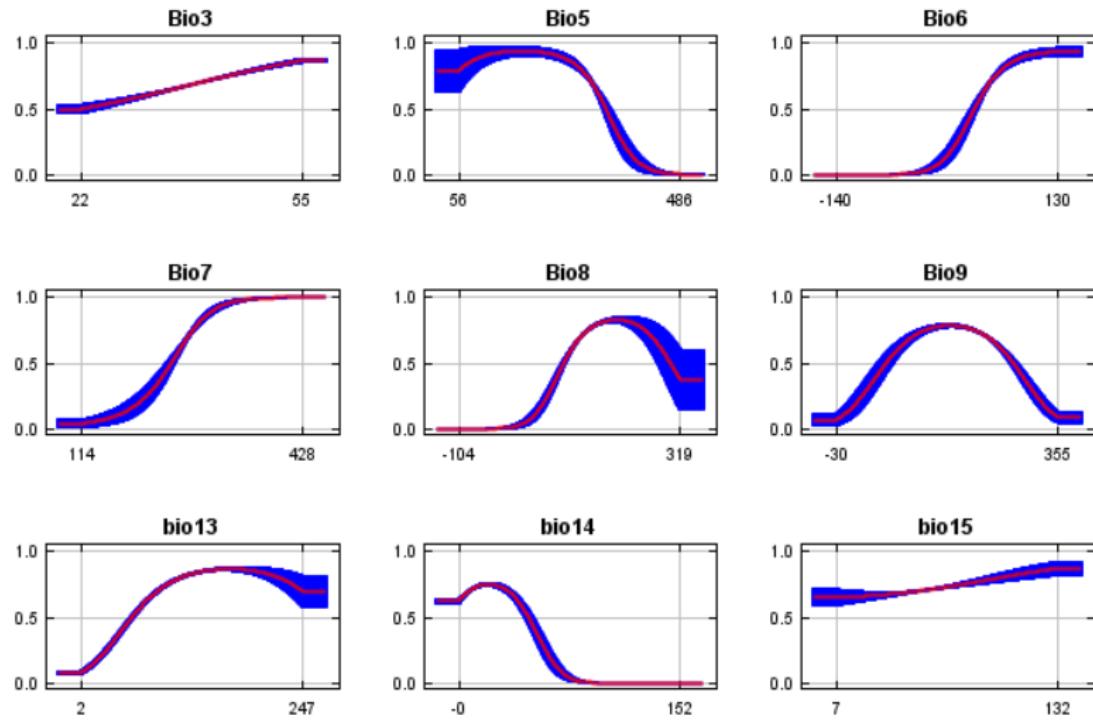


Figure S3. Partial responses of bioclimatic variables included in the environmental niche model of *M. leprosa* lumped occurrences. Blue areas represents the standard deviation from the 10 models resulting from the 10-fold crossvalidation.