Supplementary Material

Supplementary Tables

Table S1. The geographical occurrences of the Hyrcanian wood frog, *R. pseudodalmatina* used in environmental niche modelling and assess niche divergence.

	Clade	Longitude	Latitude	Use in final analyzes (*)	References
1	WRC	48.932	37.68	*	Amiri et al. (2021)
2	WRC	50	37.48	*	Amiri et al. (2021)
3	WRC	49.41	37.48	*	Amiri et al. (2021)
4	WRC	51.184	36.662	*	Amiri et al. (2021)
5	WRC	51.091	36.523	*	Amiri et al. (2021)
6	WRC	51.188	36.67	*	Amiri et al. (2021)
7	WRC	51.2	36.69	*	Amiri et al. (2021)
8	WRC	51.21	36.7	*	Amiri et al. (2021)
9	WRC	50.081	36.992	*	Amiri et al. (2021)
10	WRC	49.665	37.137	*	Amiri et al. (2021)
11	WRC	48.92	37.66	*	Amiri et al. (2021)
12	WRC	48.91	37.67	*	Amiri et al. (2021)
13	WRC	51.19	36.64	*	Najibzadeh et al. (2018)
14	WRC	49.75	36.75	*	Kidov et al. (2021)
15	WRC	50.57	36.89	*	Kidov et al. (2021)
16	WRC	49.52	37.15	*	Najibzadeh et al. (2018 and 2021)
17	WRC	49.04	37.16	*	Kidov et al. (2021)
18	WRC	50.16	37.17	*	Najibzadeh et al. (2018 and 2021)
19	WRC	48.58	37.44	*	Kidov et al. (2021)
20	WRC	49.42	37.48		Kidov et al. (2021)
21	WRC	48.52	37.6	*	Kidov et al. (2021)
22	WRC	48.71	37.61	*	Kidov et al. (2021)
23	WRC	48.86	37.69	*	Kidov et al. (2021)
24	WRC	48.91	37.71	*	Kidov et al. (2021)
25	WRC	48.68	37.88	*	Kidov et al. (2021)
26	WRC	48.7	37.92	*	Kidov et al. (2021)
27	WRC	48.83	38.34	*	Kidov et al. (2021)
28	WRC	48.87	38.38	*	Kidov et al. (2021)
29	WRC	48.53	38.42	*	Kidov et al. (2021)
30	WRC	49.759536	36.75411		https://www.gbif.org/species/2426752
31	WRC	49.760835	36.75311	*	https://www.gbif.org/species/2426752
32	WRC	48.763	38.754	*	https://www.gbif.org/species/2426752
33	WRC	48.884468	37.93165	*	https://www.gbif.org/species/2426752
34	WRC	48.866667	37.7	*	https://www.gbif.org/species/2426752
35	ERC	55.65	37.35	*	Najibzadeh et al. (2018 and 2021)
36	ERC	55.41	37.19	*	Kidov et al. (2021)
37	ERC	55.22	37.04	*	Amiri et al. (2021)
38	ERC	55.0599	36.9944		Amiri et al. (2021)
39	ERC	55.03	37.035	*	Amiri et al. (2021)
40	ERC	54.5	36.83	*	Amiri et al. (2021)
41	ERC	54.45	36.81	*	Amiri et al. (2021)
42	ERC	53.53	36.68	*	Amiri et al. (2021)
43	ERC	53.59	36.66	*	Najibzadeh et al. (2018)
44	ERC	53.598	36.654	*	Amiri et al. (2021)
45	ERC	52.997	36.458	*	Amiri et al. (2021)
46	ERC	52.833	36.069	*	Amiri et al. (2021)
47	ERC	52.823	36.082		Amiri et al. (2021)
48	ERC	52.823	36.089	*	Amiri et al. (2021)
49	ERC	52.60	36.33	*	Najibzadeh et al. (2018 and 2021)
50	ERC	52.36	36.365	*	Amiri et al. (2021)
51	ERC	52.032	36.57	*	Amiri et al. (2021)
52	ERC	53.05	36.15	*	Kidov et al. (2021)
53	ERC	52.37	36.28	*	Kidov et al. (2021)
54	ERC	52.35	36.4	*	Kidov et al. (2021)
55	ERC	53.38	36.45	*	Kidov et al. (2021)
56	ERC	52.02	36.48	*	Kidov et al. (2021)
57	ERC	53.08	36.51	*	Kidov et al. (2021)

58	ERC	52.55	36.67	*	Kidov et al. (2021)
59	ERC	54.44	36.82	*	Kidov et al. (2021)
60	ERC	55.31	36.84	*	Kidov et al. (2021)
61	ERC	55.04	36.95	*	Kidov et al. (2021)
62	ERC	55.18	37.07	*	Kidov et al. (2021)
63	ERC	56.02	37.35		Kidov et al. (2021)
64	ERC	52.654679	36.7049	*	https://www.gbif.org/species/2426752
65	ERC	54.614787	36.80711		https://www.gbif.org/species/2426752
66	ERC	54.614592	36.8071		https://www.gbif.org/species/2426752
67	ERC	53.278792	36.50891	*	https://www.gbif.org/species/2426752
68	ERC	54.615958	36.80743	*	https://www.gbif.org/species/2426752
69	ERC	55.073887	37.01414	*	https://www.gbif.org/species/2426752
70	ERC	55.073412	37.01417	*	https://www.gbif.org/species/2426752
71	ERC	55.059838	36.99745		https://www.gbif.org/species/2426752
72	ERC	55.05481	37.00063	*	https://www.gbif.org/species/2426752
73	ERC	55.073745	37.01397		https://www.gbif.org/species/2426752
74	ERC	55.05981	36.99744		https://www.gbif.org/species/2426752
75	ERC	55.054722	37.00063		https://www.gbif.org/species/2426752
76	ERC	54.892002	36.88844	*	https://www.gbif.org/species/2426752
77	ERC	54.893388	36.88747		https://www.gbif.org/species/2426752
78	ERC	54.893413	36.8875		https://www.gbif.org/species/2426752
79	ERC	52.939253	36.26227	*	https://www.gbif.org/species/2426752
80	ERC	52.130252	36.45032	*	https://www.gbif.org/species/2426752
81	ERC	56.2	37.35	*	https://www.gbif.org/species/2426752
82	ERC	56.016667	37.35	*	https://www.gbif.org/species/2426752
83	ERC	52.35	36.28333	*	https://www.gbif.org/species/2426752

Table S2. Environmental data were collected for the Hyrcanian wood frog, *Rana pseudodalmatina*, to use in environmental niche modelling and assess niche divergence.

Abbreviation	Variable name	Use in final analyzes (yes/no)	Source
Bio1	Annual Mean Temperature [°C*10]	yes	CHELSA
Bio2	Mean Diurnal Range (Mean of monthly (max temp - min temp)) [°C]	yes	CHELSA
Bio3	Isothermality (BIO2/BIO7) (×100)	no	CHELSA
Bio4	Temperature Seasonality (standard deviation ×100)	no	CHELSA
Bio5	Max Temperature of Warmest Month [°C*10]	no	CHELSA
Bio6	Min Temperature of Coldest Month [°C*10]	no	CHELSA
Bio7	Temperature Annual Range (BIO5-BIO6) [°C*10]	no	CHELSA
Bio8	Mean Temperature of Wettest Quarter [°C*10]	yes	CHELSA
Bio9	Mean Temperature of Driest Quarter [°C*10]	no	CHELSA
Bio10	Mean Temperature of Warmest Quarter [°C*10]	no	CHELSA
Bio11	Mean Temperature of Coldest Quarter [°C*10]	no	CHELSA
Bio12	Annual Precipitation [mm/year]	yes	CHELSA
Bio13	Precipitation of Wettest Month [mm/month]	yes	CHELSA
Bio14	Precipitation of Driest Month [mm/month]	yes	CHELSA
Bio15	Precipitation Seasonality (Coefficient of Variation)	no	CHELSA
Bio16	Precipitation of Wettest Quarter [mm/quarter]	no	CHELSA
Bio17	Precipitation of Driest Quarter [mm/quarter]	yes	CHELSA
Bio18	Precipitation of Warmest Quarter [mm/quarter]	yes	CHELSA
Bio19	Precipitation of Coldest Quarter [mm/quarter]	no	CHELSA
SM	Soil moisture	no	Atlas of the Biosphere
SOC	Soil organic carbon	no	Atlas of the Biosphere
SpH	Soil pH	no	Atlas of the Biosphere
AET	Annual aridity evapotranspiration	yes	Consortium for Spatial Information
AI	Annual aridity index	yes	Consortium for Spatial Information
SolRad	Extraterrestrial solar radiation	no	Worldclim database
alpha	Priestley Talor alpha coefficient	no	Consortium for Spatial Information
PET	Annual potential evapotranspiration	yes	Consortium for Spatial Information
LandCov	Land cover	yes	Google Earth Engine
HF	Human footprint index	no	Socioeconomic Data and Applications Center
Aspect	Aspect	yes	Worldclim database
Slope	Slope	yes	Worldclim database
Alt	Altitude	yes	Worldclim database

Supplementary Figures

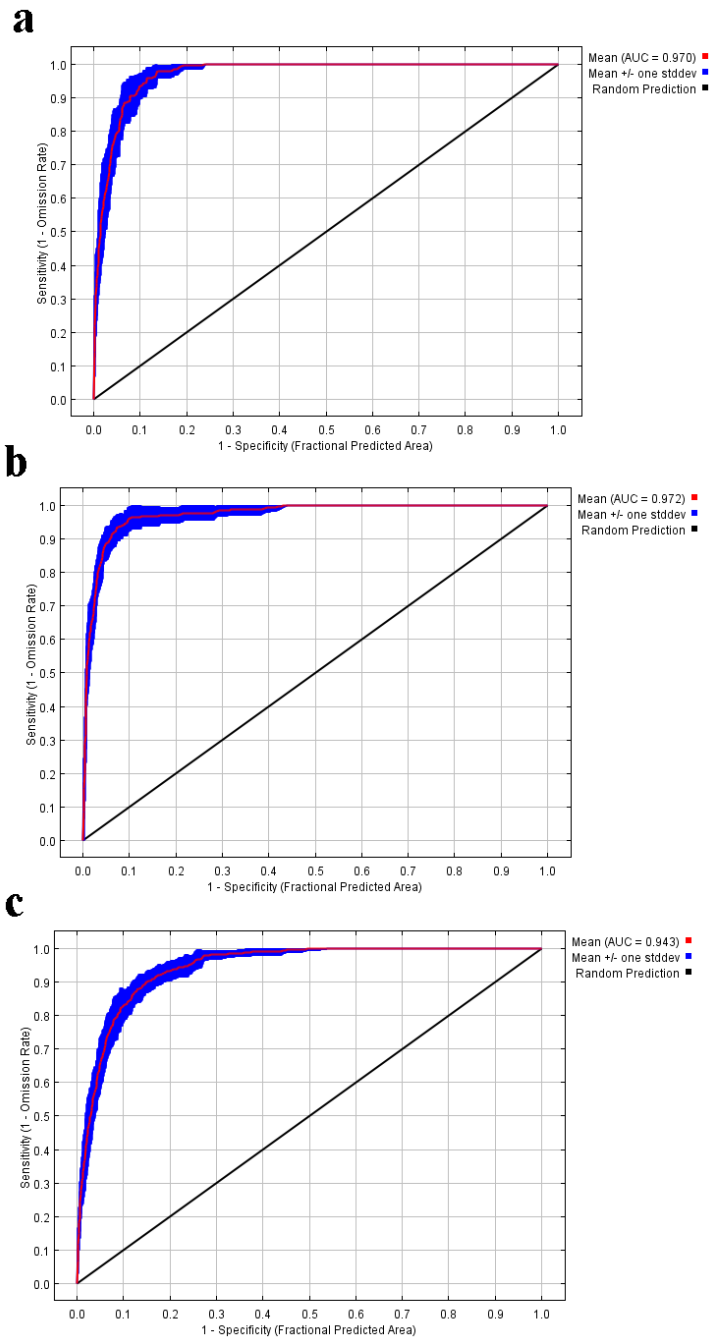

Figure S1. The AUC metric (the area under the ROC curve) for western (a) and eastern (b) regional clades (WRC and ERC) as well as at species-level (SL) (c) based on bio-climatic (BCV) variables.

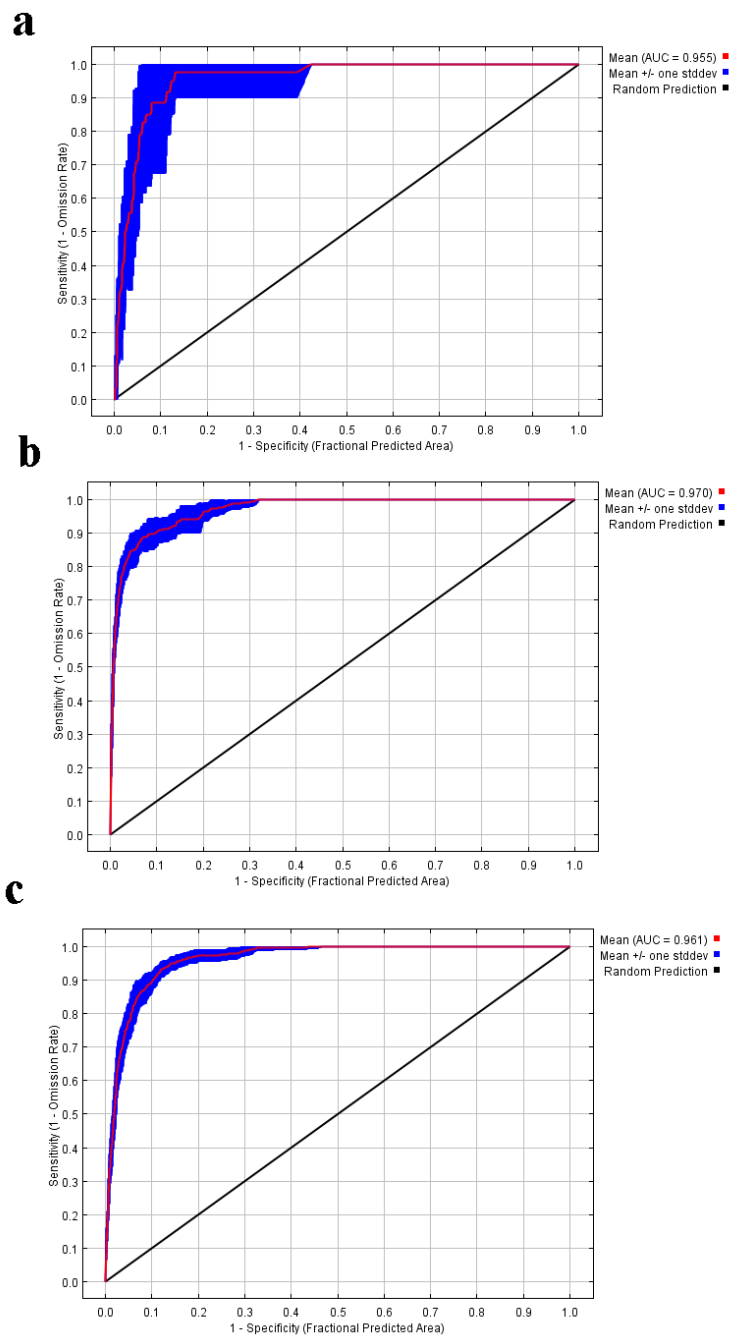

Figure S2. The AUC metric (the area under the ROC curve) for western (a) and eastern (b) regional clades (WRC and ERC) as well as at species-level (SL) (c) based on macro-environmental (MCV) variables.

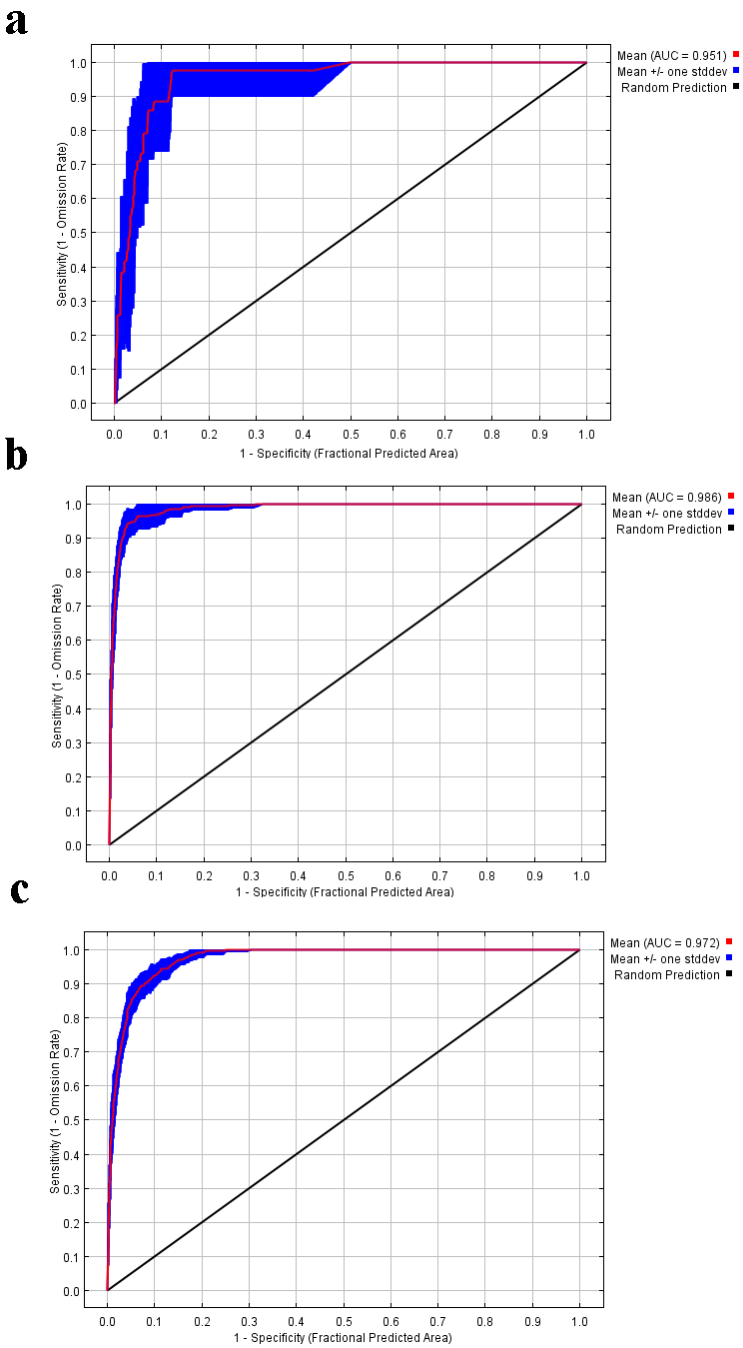

Figure S3. The AUC metric (the area under the ROC curve) for western (a) and eastern (b) regional clades (WRC and ERC) as well as at species-level (SL) (c) based on integrated bio-climatic (BCV) and macro-environmental (MCV) variables.

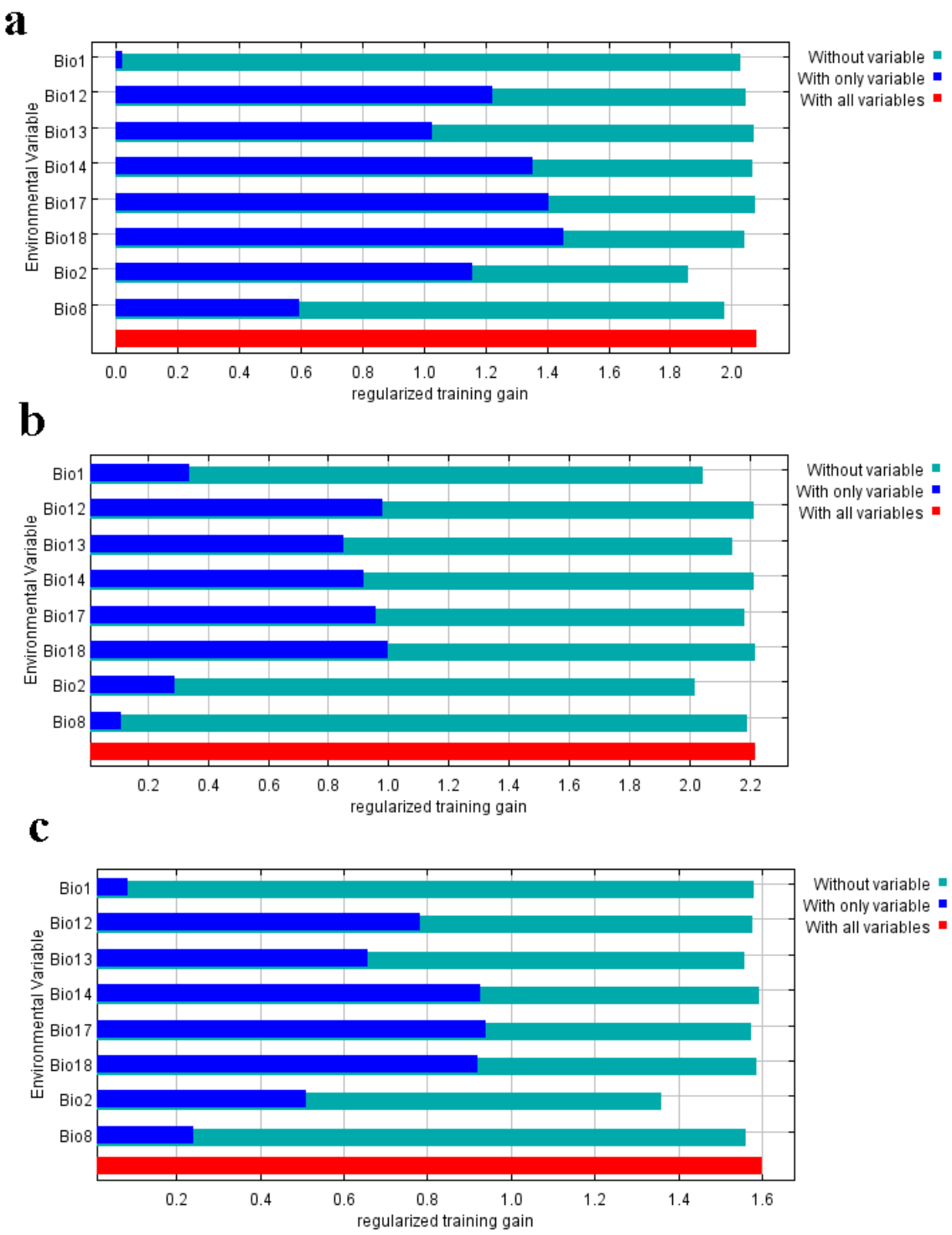

Figure S4. The jackknife analyses for western (a) and eastern (b) regional clades (WRC and ERC) as well as at species-level (SL) (c) based on bio-climatic (BCV) variables.

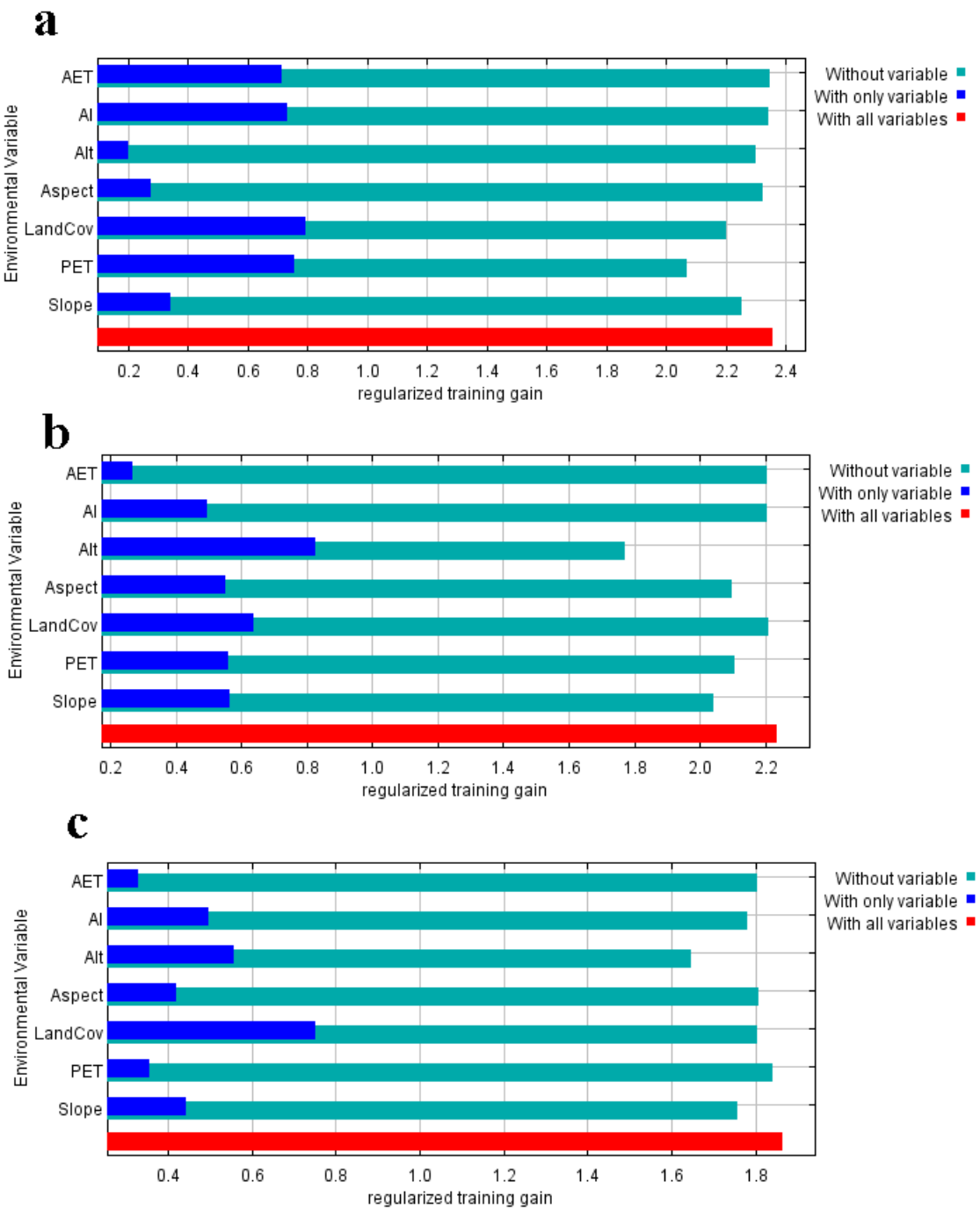

Figure S5. The jackknife analyses for western (a) and eastern (b) regional clades (WRC and ERC) as well as at species-level (SL) (c) based on macro-environmental (MCV) variables.

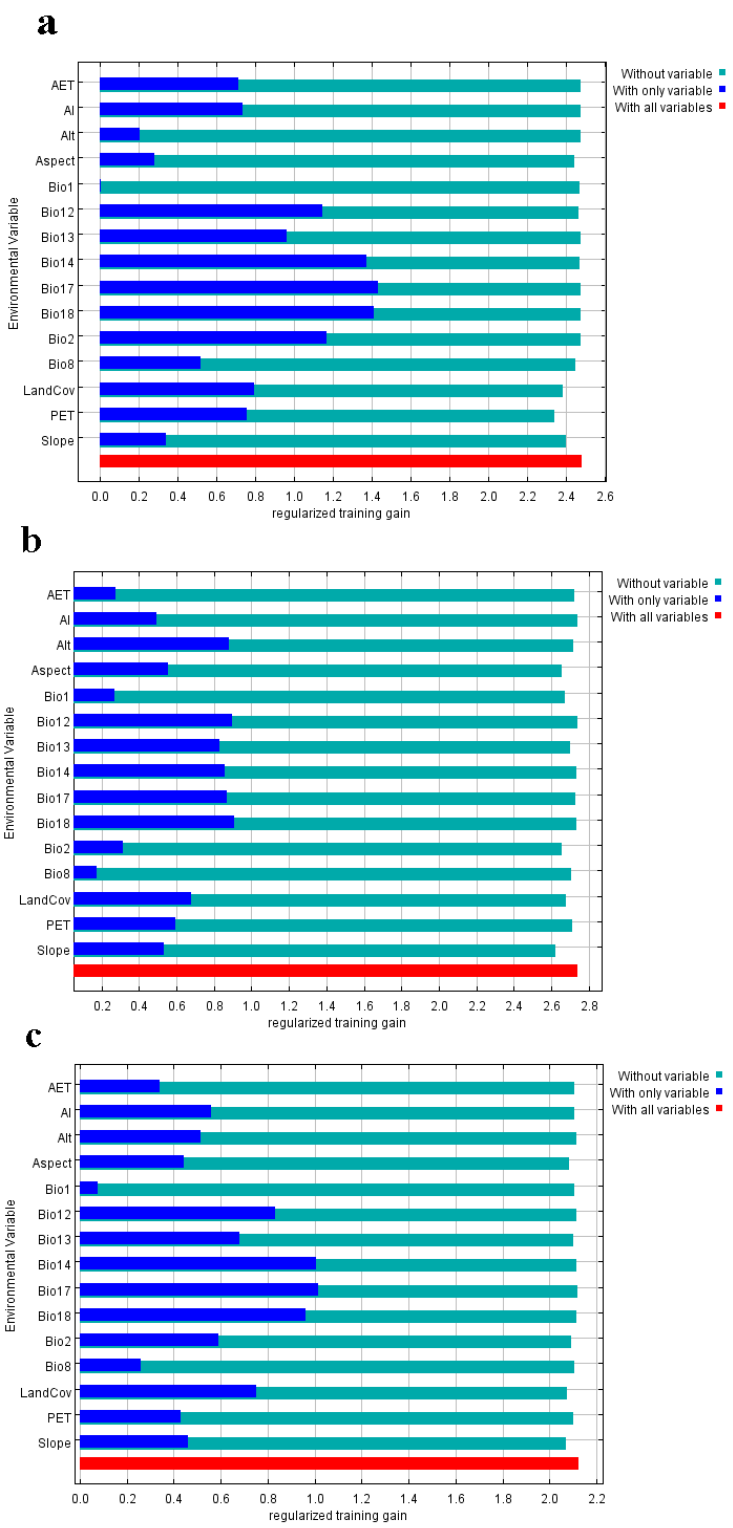

Figure S6. The jackknife analyses for western (a) and eastern (b) regional clades (WRC and ERC) as well as at species-level (SL) (c) based on integrated bio-climatic (BCV) and macro-environmental (MCV) variables.

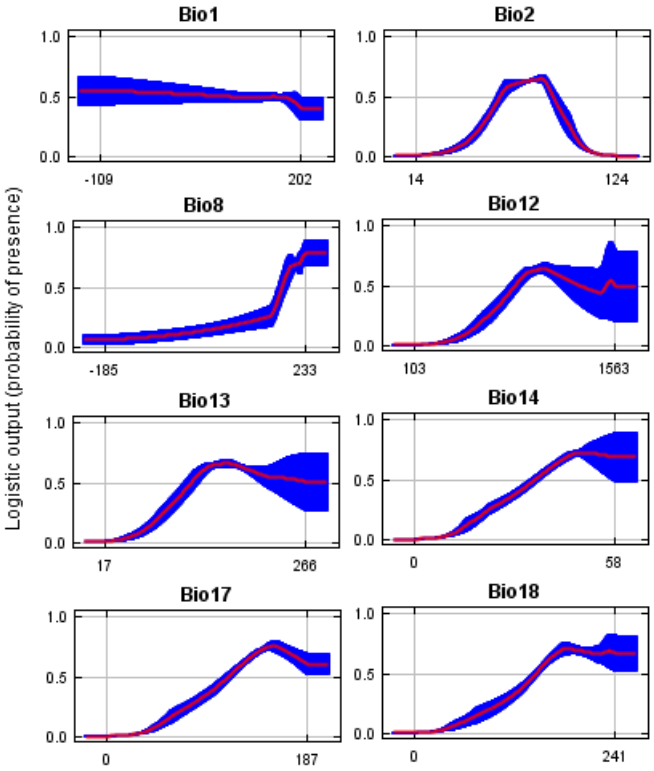

Figure S7. Western regional clades (WRC) response curves to bio-climatic (BCV) variables.

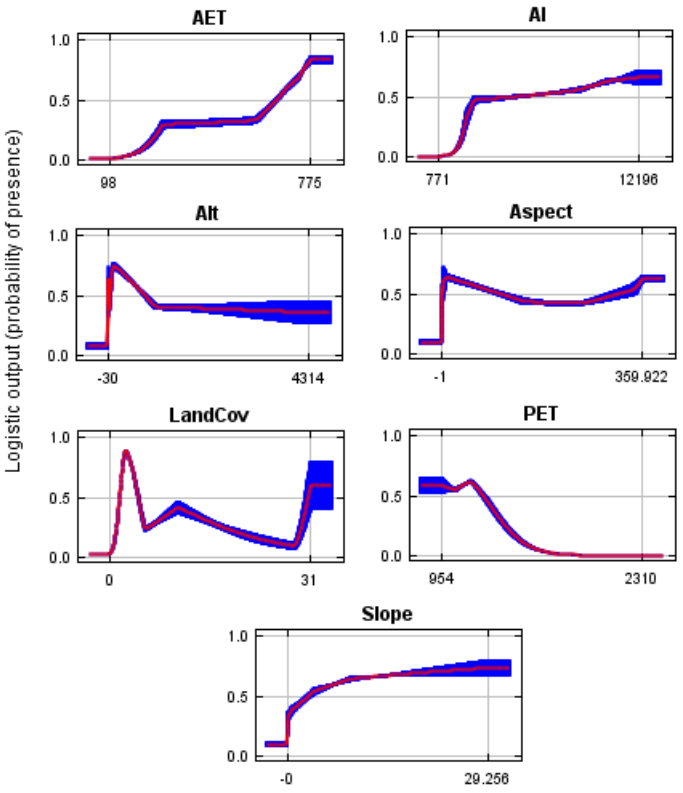

Figure S8. Western regional clades (WRC) response curves to macro-environmental (MCV) variables.

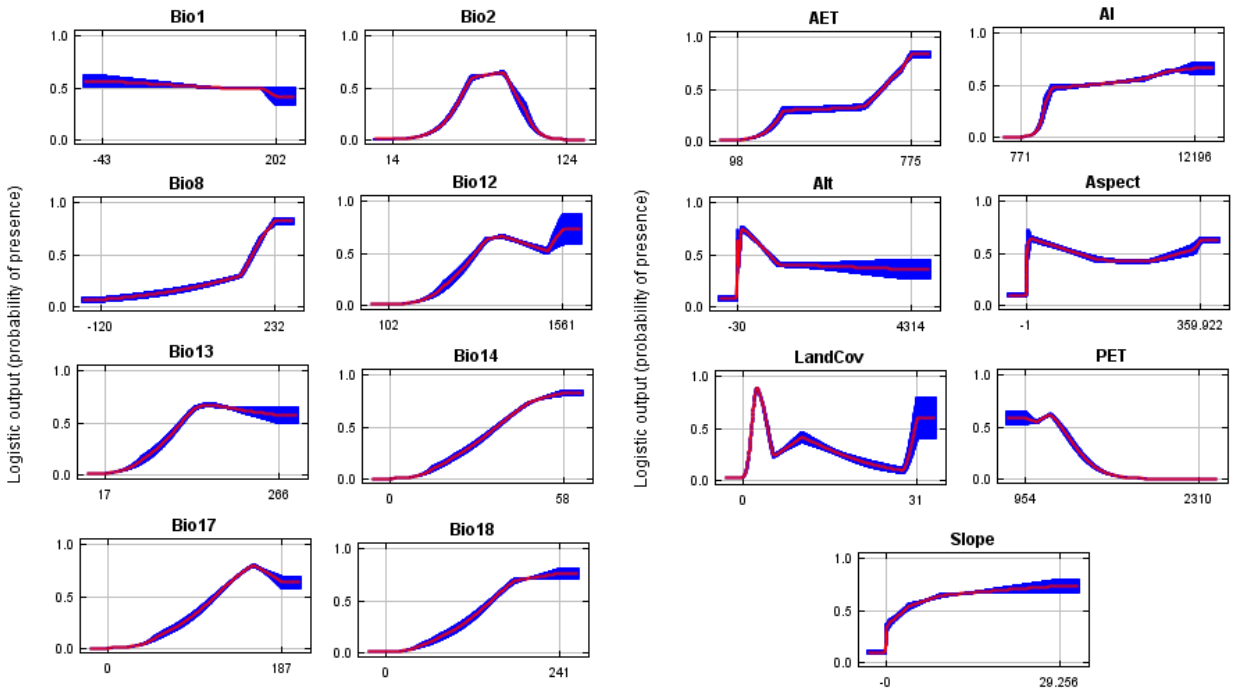

Figure S9. Western regional clades (WRC) response curves to integrated bio-climatic (BCV) and macro-environmental (MCV) variables.

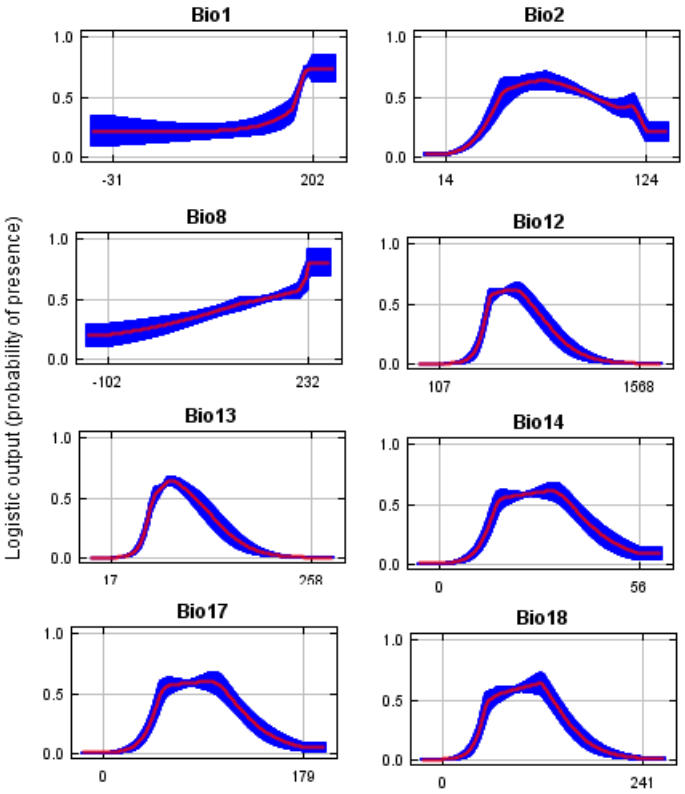

Figure S10. Eastern regional clades (ERC) response curves to bio-climatic (BCV) variables.

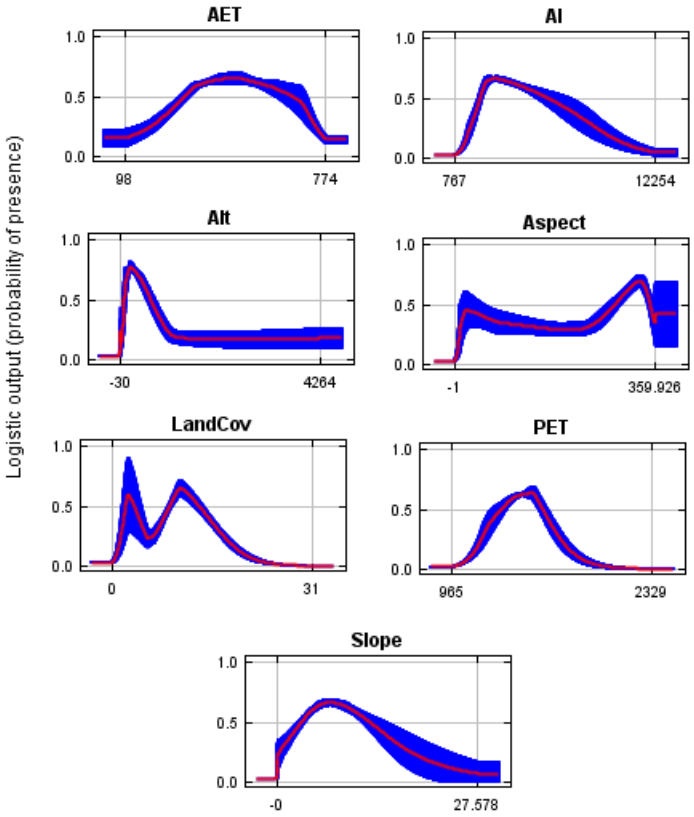

Figure S11. Eastern regional clades (ERC) response curves to macro-environmental (MCV) variables.

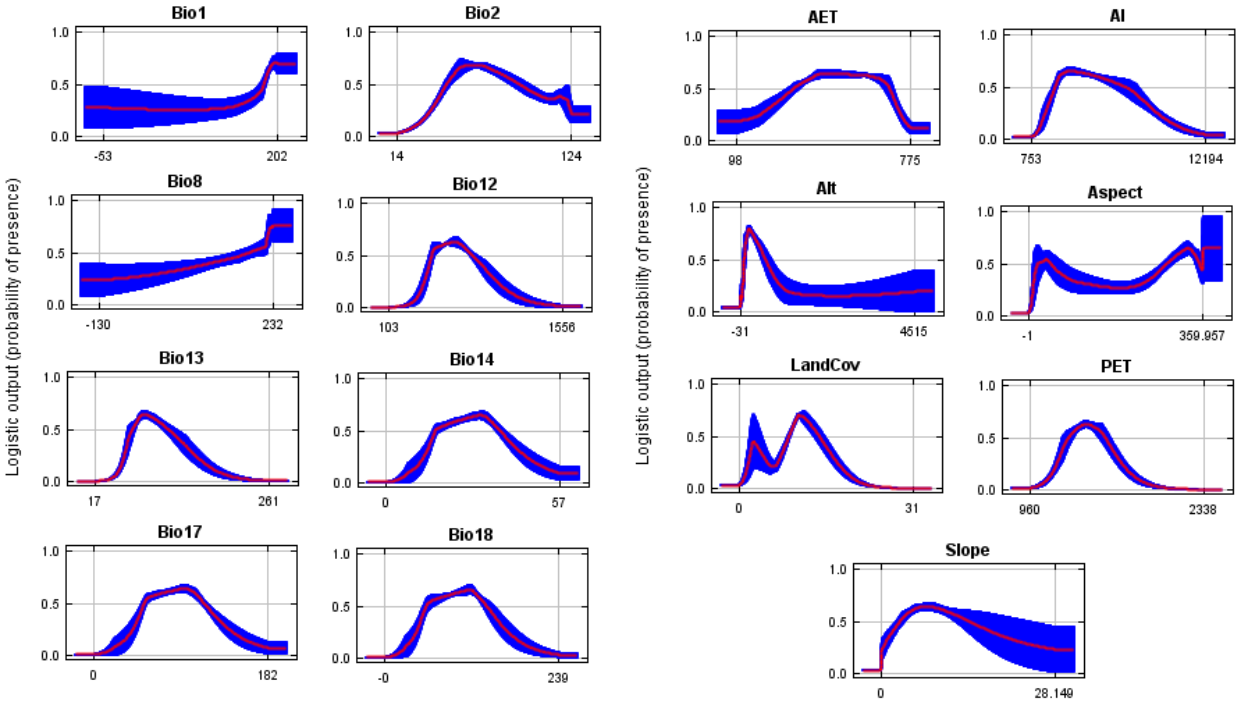

Figure S12. Eastern regional clades (ERC) response curves to integrated bio-climatic (BCV) and macro-environmental (MCV) variables.

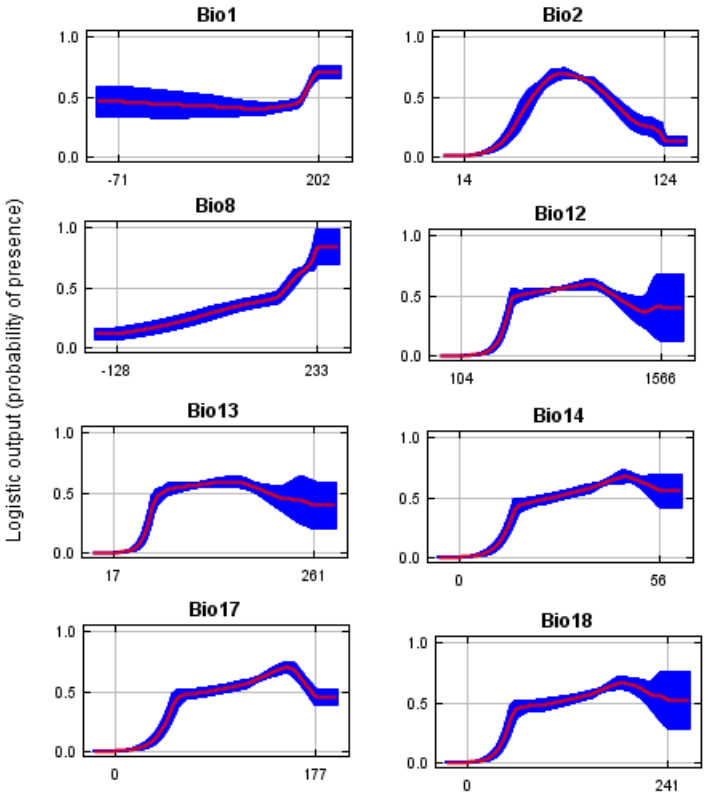

Figure S13. Species (SL) response curves to bio-climatic (BCV) variables.

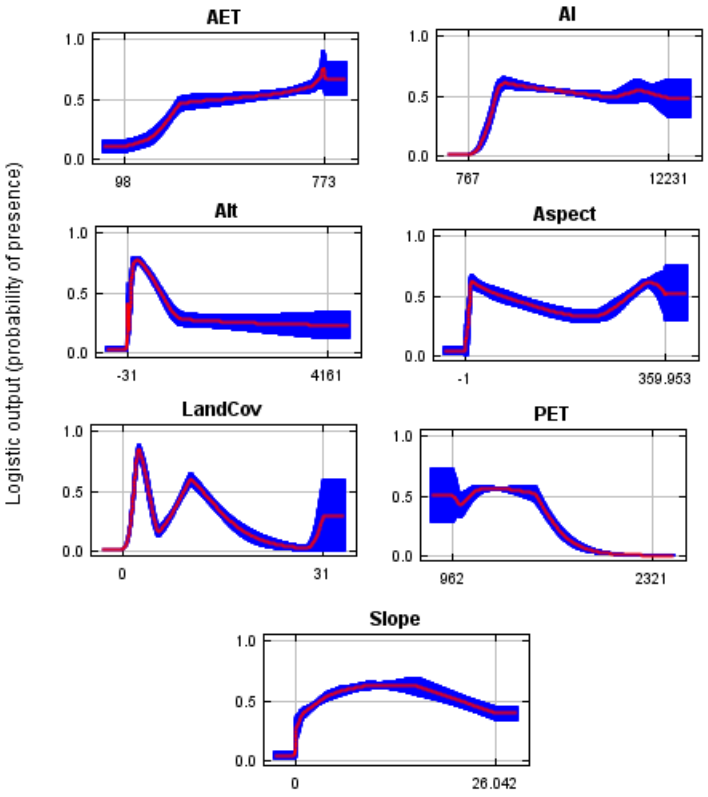

Figure S14. Species (SL) response curves to macro-environmental (MCV) variables.

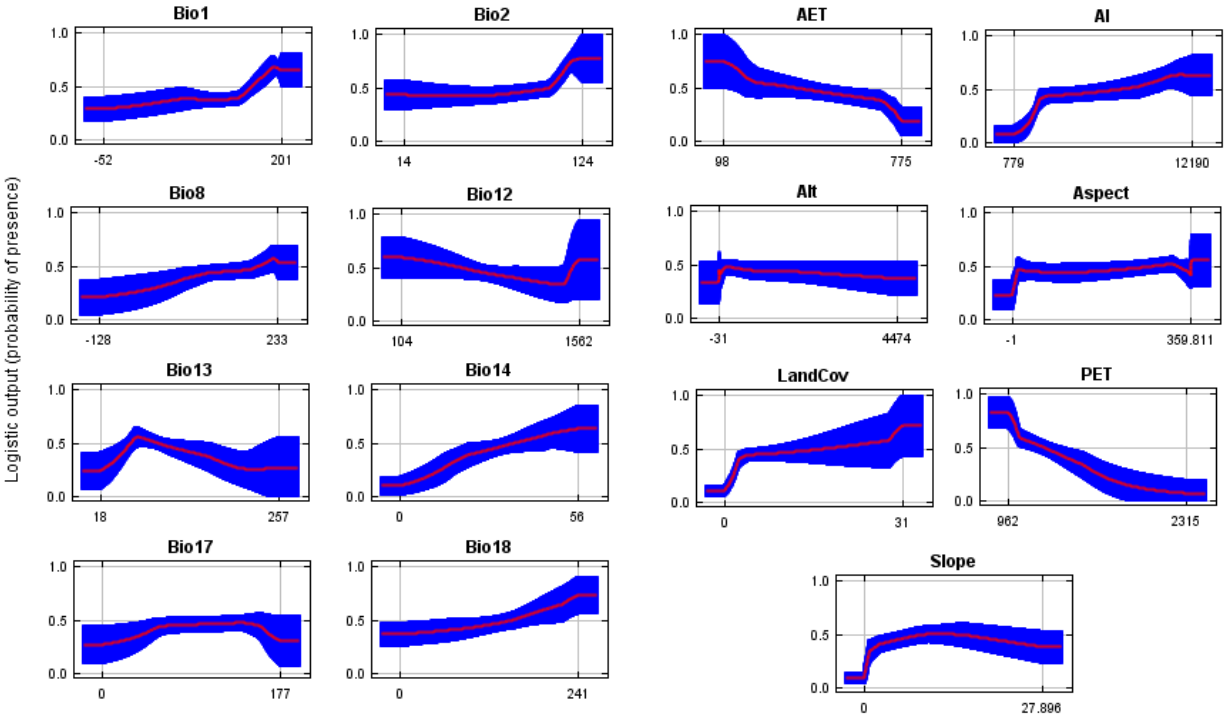

Figure S15. Species (SL) response curves to integrated bio-climatic (BCV) and macro-environmental (MCV) variables.