

Supplementary Information

**Ecological character displacement in mandibular morphology of three sympatric horseshoe bats
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**Table S1 List of specimens investigated. (NHMW: Naturhistorisches Museum, Wien;
HNHM: Hungarian Natural History Museum)**

1) *Rhinolophus blasii*: Zem Cave/Albania (HNHM 2498.2.2); Archaea Korinth (NHMW 29717; NHMW 29718); Moni Katholiko Cave, Akrotiri, Chania Kr (NHMW 36149); Morea (NHMW10805); Demir Kapija (HNHM 2961, HNHM 2963, HNHM 2964, HNHM 2965, HNHM 2966, HNHM 2975, HNHM 2977, HNHM 2978, HNHM 2979); Kef Aziza (NHMW 28022, NHMW 28023, NHMW 28024, NHMW 28025, NHMW 28026, NHMW 28027, NHMW 28029, NHMW 28030, NHMW 28032, NHMW 28033, NHMW 28034, NHMW 28036, NHMW 28037, NHMW 28039, NHMW 28047); Cloșani Cave (România); Apollo Cave, E Ahmetbeyli (NHMW 24589); Cave at Dutalan, Bucak (NHMW 24591, NHMW 24592, NHMW 24594, NHMW 24595); Cave at Farilya köyü (NHMW 24597); Cave at Havran (NHMW 24596); Cave by the Sea of Kiyiköy (NHMW 13424, NHMW 13436, NHMW 13437, NHMW 13438, NHMW 13439); Insuyu Cave (NHMW 24590); Kadi Pinari-Magarasi (NHMW 62695); Ngwerere Cave (HNHM 76.157.1).

2) *Rhinolophus euryale*: Austria (NHMW 64160, NHMW 64161); Poljes at Bilek (NHMW 10809, NHMW 10810, NHMW 10811); Vilina Kuca cave (HNHM 66.237.1, HNHM 66.237.2, HNHM 66.237.3, HNHM 66.237.4, HNHM 66.237.5, HNHM 66.237.6, HNHM 66.237.7, HNHM 66.237.8, HNHM 66.237.9, HNHM 66.237.10, HNHM 66.237.11, HNHM 66.237.12, HNHM 66.237.13, HNHM 66.237.14, HNHM 66.237.15); Grotte de Sagone (NHMW 64167); Archaea Korinth (NHMW 29716); Bat Cave, Petralona (NHMW 31342, NHMW 31343, NHMW 31344, NHMW 31345, NHMW 31346, NHMW 31347, NHMW 31353, NHMW 31354, NHMW 31355, NHMW 31356, NHMW 31357); Kouvobono, Didymotichon (NHMW 10413, NHMW 10414, NHMW 10415); Baradla Cave (HNHM 59.129.1, HNHM 63.31.2, HNHM 63.31.3, HNHM 63.32.1); Görömbölytapolcai Cave (HNHM 56.54.1, HNHM 56.54.3, HNHM 56.54.5, HNHM 56.54.7, HNHM 56.54.8, HNHM 59.125.1, HNHM 59.125.2, HNHM 59.125.3, HNHM 59.125.4, HNHM 59.125.5, HNHM 59.126.1, HNHM 63.27.4, HNHM 63.28.1, HNHM 63.28.2, HNHM 63.29.1, HNHM 63.30.2); István Cave, Lillafüred (HNHM 62.26.1); Pisznice Cave (HNHM 59.127.1, HNHM 59.128.1, HNHM 63.34.1, HNHM 63.34.2, HNHM 63.35.1, HNHM 63.38.2, HNHM 95.5.1, HNHM 95.5.2); Finalborgo (NHMW 10803); Grotte de Sagone (NHMW 32106); Demir Kapija (HNHM 96.7.1, HNHM 96.7.2, HNHM 96.7.3, HNHM 96.7.4, HNHM 96.7.5); Grotte du Chameau, Taforalt (NHMW 28065, NHMW 28066); Cloșani Cave (3 ind.); Isverna Cave (România, 1 ind.); Runcu (România, 1 ind.); Sfodea Cave (România, 1 ind.); Agurszki Cave (HNHM 58.107.1); Jasovska cave (HNHM 58.39.1);

Akropolis in Bergama (NHMW 24603); Balıkesir (NHMW 20508); Cave at Dereköy (NHMW 24598); Cave İcme Pınarı at Arak (NHMW 24599); Cave South of Kiyiköy (NHMW 13421, NHMW 13422, NHMW 13440, NHMW 13441, NHMW 13442, NHMW 13443, NHMW 13444, NHMW 13445, NHMW 13446, NHMW 13447, NHMW 13448).

3) *Rhinolophus mehelyi*: Cheurfas Barrage (HNHM 95.83.2, HNHM 10775, HNHM 2000.18.2, HNHM 2000.18.4, HNHM 2000.18.5); Bat Cave, Petralona (NHMW 31358); Kastro Moria at Rio, Nomos Pátra, Achaia (NHMW 45864); Kouvobono Cave, Didymotichon (NHMW 10416, NHMW 10417, NHMW 10419, NHMW 10420); Nycterida Cave in the mountain Katsika (NHMW 10898, NHMW 10899, NHMW 10901); El Hasfa Cave (HNHM 81.32.1, HNHM 81.32.2, HNHM 81.34.1, HNHM 81.34.2, HNHM 81.34.3); Haditha Cave_Al Anbar (HNHM 81.26.1, HNHM 81.26.2, HNHM 81.26.3, HNHM 81.26.4, HNHM 81.26.5, HNHM 81.26.6, HNHM 81.26.7); Beirut (NHMW 26359); Libia - 20 km W Beida Post-Office (NHMW 27350); Kouf National Park (NHMW 27351, NHMW 27352); Demir Kapija (HNHM 2972); Grottes d'Hercule, Cap Spartel SE Tanger (NHMW 28060, NHMW 28062, NHMW 28063, NHMW 28064); București, Ilfov (HNHM 68.574.1); Limanu Cave (HNHM 2714.2, NHMW 8933, NHMW 19736, NHMW 19737); Alcazar von Sevilla (NHMW 19741); Haleb/Aleppo (NHMW 21976, NHMW 21977, NHMW 21978, NHMW 21979, NHMW 21980, NHMW 21981, NHMW 21983, NHMW 21985, NHMW 21986, NHMW 21987, NHMW 21989, NHMW 21991, NHMW 21992); El Haouaria/Dj. Sidi Abiod (NHMW 28606, NHMW 28607, NHMW 28608, NHMW 28609, NHMW 28611, NHMW 64183); Burgruine (NHMW 11791, NHMW 11792); Höhle bei Dereköy (NHMW 24607, NHMW 24608).

Table S2. Influence of species (*Rhinolophus euryale*, *R. mehelyi*, *R. blasii*), sex (female, male), population (allopatric, sympatric) and two and three-way interactions among species, sex and population on centroid size of the lateral and ventral sides of the skull and the mandible.

		<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>
Lateral skull						
	Species	2	0.00000000033	0.00000000017	0.611	0.544
	Sex	1	0.00000000008	0.00000000008	0.290	0.591
	Population	1	0.00000000026	0.00000000026	0.969	0.326
	Species*Population	1	0.00000000020	0.00000000020	0.734	0.393
	Species*Sex*Population	1	0.00000000046	0.00000000046	17.002	0.194
	Residuals	170	0.00000004618	0.00000000027		
Ventral skull						
	Species	2	0.00000000056	0.00000000028	10.443	0.354
	Sex	1	0.00000000016	0.00000000016	0.592	0.443
	Population	1	0.00000000049	0.00000000049	18.241	0.179
	Species*Population	1	0.00000000010	0.00000000010	0.362	0.548
	Sex*Population	1	0.00000000056	0.00000000056	20.837	0.151
	Species*Sex*Population	1	0.00000000000	0.00000000000	0.001	0.976
	Residuals	170	0.00000004574	0.00000000027		
Mandibule						
	Species	2	0.00000000008	0.00000000004	0.349	0.706
	Sex	1	0.00000000008	0.00000000008	0.698	0.405
	Population	1	0.00000000004	0.00000000004	0.380	0.539
	Species*Population	1	0.00000000041	0.00000000041	37.264	0.055
	Species*Sex*Population	1	0.00000000003	0.00000000003	0.251	0.617
	Residuals	170	0.00000001881	0.00000000011		