SUPPLEMENTS

Preferable and limiting conditions of trans-Palearctic *Orthocephalus* species (Heteroptera: Miridae)

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Table SI1. Results of the Kruskal — Wallis test

	Bio01	Bio02	Bio03	Bio04	Bio05	Bio06	Bio07	Bio08	Bio09	Bio10
O. bivittatus	0.02607	2.817e-08	0.01581	0.03823	2.124e-12	0.1108	0.0001184	3.641e-05	0.001993	8.414e-09
O. brevis	2.965e-10	0.02944	2.981e-12	1.304e-13	2.667e-10	7.792e-11	2.022e-12	1.149e-07	1.499e-09	3.932e-12
O. coriaceus	0.01225	0.0007389	0.006272	0.002718	0.004921	0.0006888	0.004875	0.2015	0.001016	0.004316
O. fulvipes	0.04124	0.00384	0.5279	0.001797	0.005249	0.03012	0.001621	0.7783	0.008843	0.011
O. funestus	7.89e-08	0.04805	0.0006163	0.0002619	0.00638	1.112e-05	0.0008244	5.893e-06	2.552e-06	0.003812
O. proserpinae	0.1434	0.36	0.3579	0.201	0.6478	0.2005	0.3609	0.1438	0.1436	0.1438
O. saltator	< 2.2e-16	2.545e-06	< 2.2e-16	< 2.2e-16	< 2.2e-16	< 2.2e-16	< 2.2e-16	1.502e-08	< 2.2e-16	< 2.2e-16
O. vittipennis	< 2.2e-16	2.423e-08	7.28e-13	1.258e-13	9.104e-07	7.862e-15	3.601e-13	0.006108	2.443e-14	8.742e-11

	Bio11	Bio12	Bio13	Bio14	Bio15	Bio16	Bio17	Bio18	Bio19
O. bivittatus	0.192	1.818e-13	2.826e-05	1.832e-12	0.001779	2.028e-06	2.912e-11	3.714e-13	4.51e-06
O. brevis	1.085e-10	1.073e-13	2.343e-12	1.302e-09	0.0181	2.852e-13	8.085e-09	1.605e-13	6.288e-08
O. coriaceus	0.001513	0.0007282	0.001249	0.0006862	0.0006936	0.000809	0.0007138	0.0007041	0.002988
O. fulvipes	0.1278	0.06445	0.02367	0.009721	0.06857	0.035	0.02428	0.0308	0.004758
O. funestus	9.124e-07	9.699e-06	4.813e-09	0.002319	0.00275	6.32e-09	0.00319	3.186e-09	0.003582
O. proserpinae	0.1429	0.465	0.2729	0.8529	0.7835	0.2729	0.7839	0.8549	0.2731
O. saltator	< 2.2e-16	6.027e-08	4.95e-08	3.552e-16	1.2e-09	3.351e-09	1.326e-13	< 2.2e-16	< 2.2e-16
O. vittipennis	2.023e-15	9.128e-14	7.843e-06	6.183e-16	1.928e-10	4.898e-06	2.148e-15	0.0001544	1.48e-14

Table SI2. All sets of parameters and variables, used for the niche modelling, with corresponding AUC values and omission rates. Omission rate corresponds to "10 percentile training presence test omission" in Maxent results. The sets of parameters and variables used for the visualization and niche comparison are in bold

species	parameters	variables	AUC (Training)	AUC (Test)	Omission rate
bivittatus 8.039+06	**LQH4**	**all**	**0.9442**	**0.9411**	**0.1024**
bivittatus	LQH3.5	all	0.9420	0.9355	0.1195
bivittatus	LQH3	all	0.9465	0.9343	0.1390
bivittatus	LQH4.5	all	0.9393	0.9300	0.1268
Bivittatus 7.349+06	**LQH3.5**	**14 variables**	**0.9434**	**0.9393**	**0.1171**
bivittatus	LQH4	14 variables	0.9451	0.9377	0.1488
bivittatus	LQH3	14 variables	0.9473	0.9418	0.1341
brevis	H4.5	all	0.9278	0.9042	0.1618
brevis	H4	all	0.9305	0.9212	0.1382
brevis	**H5**	**all**	**0.9256**	**0.9166**	**0.1265**
brevis	H5.5	15 variables	0.9175	0.9135	0.1118
brevis	H3.5	15 variables	0.9273	0.9114	0.1529
brevis	**LQHP8**	**15 variables**	**0.9074**	**0.8998**	**0.0970**
brevis	LQHPT8	15 variables	0.9144	0.8980	0.1088
brevis	H5	15 variables	0.9216	0.9149	0.1117
coriaceus	**LQHP 2.5**	**all**	**0.9672**	**0.9500**	**0.1471**
coriaceus	LQHPT 2.5	all	0.9698	0.9506	0.1765
coriaceus	LQHP 2	all	0.9724	0.9494	0.1471
coriaceus	LQHPT 2	all	0.9756	0.9554	0.1471
coriaceus	H3	13 variabes	0.9598	0.9402	0.1471
coriaceus	LQHP3	13 variabes	0.9650	0.9449	0.1471
coriaceus	**LQHPT3**	**13 variabes**	**0.9635**	**0.9487**	**0.1471**
coriaceus	LQ7.5	13 variabes	0.9291	0.9199	0.1765
coriaceus	LQH7.5	13 variabes	0.9345	0.9218	0.1765
fulvipes	**L 0.5**	**all**	**0.9886**	**0.9844**	**1.1667**
fulvipes	**L 0.5**	**8 variables**	**0.9759**	**0.9676**	**0.1667**
funestus	**H 3**	**all**	**0.9793**	**0.9807**	**0.0631**
funestus	H 3.5	all	0.9797	0.9717	0.1474
funestus	**LQHP5**	**11 variables**	**0.9750**	**0.9771**	**0.0631**
funestus	LQHPT5	11 variables	0.9776	0.9683	0.1474
funestus	H3.5	11 variables	0.9734	0.9620	0.1474
funestus	LQHP3	11 variables	0.9807	0.9768	0.1053
funestus	LQHPT3	11 variables	0.9818	0.9734	0.1316
funestus	LQHP3.5	11 variables	0.9805	0.9775	0.1105
funestus	LQHPT3.5	11 variables	0.9826	0.9706	0.1474
proserpinae	LQ 3.5	all	0.9926	0.9877	0.1667
proserpinae	**LQ 4**	**all**	**0.9883**	**0.9862**	**0.1667**
proserpinae	**LQ 4**	**9 variables**	**0.9882**	**0.9839**	**0.1111**
saltator	**LQH 4.5**	**all**	**0.9191**	**0.9132**	**0.1089**
saltator	LQH 4	all	0.9246	0.9131	0.1482
saltator	H 3	all	0.9282	0.9131	0.1518
saltator	LQHP 5	all	0.9229	0.9130	0.1304
saltator	LQHPT 5	all	0.9306	0.9171	0.1750
saltator	H5	all	0.9193	0.9073	0.1250
saltator	H 2.5	14 variables	0.9283	0.9131	0.1571
saltator	**H 3**	**14 variables**	**0.9243**	**0.9200**	**0.1018**
saltator	H 3.5	14 variables	0.9238	0.9184	0.1125
saltator	H 4	14 variables	0.9189	0.9089	0.1214
saltator	H 4.5	14 variables	0.9177	0.9096	0.1125

species	parameters	variables	AUC (Training)	AUC (Test)	Omission rate
vittipennis	**LQ 0.5**	**all**	**0.8815**	**0.8616**	**0.1240**
vittipennis	LQH 3.5	14 variables	0.8179	0.7833	0.1460
vittipennis	LQH 2	14 variables	0.8677	0.8290	0.1800
vittipennis	H 3	14 variables	0.7910	0.7394	0.1660
vittipennis	**LQHP 3.5**	**14 variables**	**0.8353**	**0.8056**	**0.1320**
vittipennis	LQHPT 3.5	14 variables	0.8595	0.8292	0.1400
vittipennis	LQHP 4	14 variables	0.8294	0.8021	0.1460
vittipennis	**LQHPT 4**	**14 variables**	**0.8447**	**0.8017**	**0.1780**

Table SI3. Niche overlap (in bold), identity test and background test results. The results for the I and D metrics are separated with the bold line. If the niche overlap values are significantly lower than 5 % threshold for permuted values, this means that the models are different (in this case it is true for all species pairs). If the niche overlap values are higher or lower than those from background test, this means that the niches are more similar (green) or more different (pink) than expected from random data respectively

	Niche overlap I (CFB models)	Niche overlap I (CR models)	Identity test 5 % threshold for permuted I values	Background test I values, forward comparison	Background test I values, reverse comparison	Niche overlap D (CFB models)	Niche overlap D (CR models)	Identity test 5 % threshold for permuted D values	Background test D values, forward comparison	Background test D values, reverse comparison
bivittatus vs brevis	**0.809**	**0.828**	0.952	0.599	0.619	**0.485**	**0.314**	0.805	0.287	0.337
bivittatus vs coriaceus	**0.736**	**0.756**	0.922	0.559	0.544	**0.413**	**0.440**	0.729	0.283	0.255
bivittatus vs fulvipes	**0.273**	**0.299**	0.861	0.588	0.379	**0.101**	**0.107**	0.623	0.280	0.163
bivittatus vs funestus	**0.482**	**0.516**	0.947	0.592	0.427	**0.230**	**0.253**	0.767	0.284	0.201
bivittatus vs proserpinae	**0.346**	**0.481**	0.880	0.586	0.249	**0.107**	**0.170**	0.642	0.280	0.076
bivittatus vs saltator	**0.849**	**0.833**	0.966	0.590	0.696	**0.541**	**0.527**	0.825	0.280	0.346
bivittatus vs vittipennis	**0.822**	**0.749**	0.967	0.594	0.694	**0.529**	**0.438**	0.827	0.284	0.415
brevis vs coriaceus	**0.847**	**0.868**	0.897	0.614	0.537	**0.536**	**0.577**	0.825	0.336	0.251
brevis vs fulvipes	**0.124**	**0.237**	0.848	0.614	0.373	**0.030**	**0.078**	0.602	0.337	0.160
brevis vs funestus	**0.753**	**0.767**	0.937	0.620	0.430	**0.457**	**0.492**	0.766	0.337	0.203
brevis vs proserpinae	**0.354**	**0.470**	0.867	0.606	0.251	**0.113**	**0.162**	0.638	0.326	0.077
brevis vs saltator	**0.939**	**0.934**	0.953	0.618	0.623	**0.778**	**0.765**	0.801	0.335	0.343
brevis vs vittipennis	**0.901**	**0.888**	0.958	0.621	0.695	**0.654**	**0.632**	0.819	0.338	0.415
coriaceus vs fulvipes	**0.274**	**0.366**	0.852	0.539	0.371	**0.105**	**0.159**	0.600	0.253	0.159
coriaceus vs funestus	**0.494**	**0.497**	0.876	0.538	0.420	**0.234**	**0.251**	0.649	0.258	0.198
coriaceus vs proserpinae	**0.496**	**0.573**	0.860	0.537	0.234	**0.183**	**0.236**	0.629	0.253	0.072
coriaceus vs saltator	**0.872**	**0.879**	0.907	0.546	0.615	**0.595**	**0.618**	0.725	0.256	0.340
coriaceus vs vittipennis	**0.765**	**0.766**	0.924	0.540	0.695	**0.444**	**0.441**	0.738	0.253	0.415
fulvipes vs funestus	**0.028**	**0.141**	0.755	0.370	0.413	**0.004**	**0.060**	0.469	0.157	0.193
fulvipes vs proserpinae	**0.592**	**0.636**	0.833	0.367	0.254	**0.350**	**0.380**	0.571	0.154	0.076
fulvipes vs saltator	**0.285**	**0.319**	0.864	0.368	0.613	**0.116**	**0.130**	0.631	0.155	0.336
fulvipes vs vittipennis	**0.176**	**0.324**	0.722	0.375	0.681	**0.053**	**0.127**	0.477	0.160	0.402
funestus vs proserpinae	**0.185**	**0.240**	0.774	0.407	0.254	**0.056**	**0.080**	0.501	0.189	0.079

funestus vs saltator	**0.678**	**0.679**	0.942	0.427	0.625	**0.392**	**0.420**	0.760	0.200	0.346
funestus vs vittipennis	**0.698**	**0.667**	0.948	0.424	0.692	**0.410**	**0.383**	0.784	0.199	0.411
proserpinae vs saltator	**0.512**	**0.600**	0.871	0.246	0.615	**0.195**	**0.240**	0.640	0.075	0.339
proserpinae vs vittipennis	**0.312**	**0.496**	0.877	0.251	0.686	**0.098**	**0.190**	0.646	0.077	0.405
saltator vs vittipennis	**0.861**	**0.796**	0.967	0.625	0.693	**0.634**	**0.524**	0.836	0.345	0.411

Table SI4. Number of records of the *Orthocephalus* species corresponding to each biome. Rare and local species are highlighted in yellow

	arnoldii	bivittatus	brevis	championi	coriaceus	fulvipes	funestus	medvedevi	melas	minimus	modaressi
	points	points									
Tropical and subtropical moist broadleaf forests											
Tropical and subtropical dry broadleaf forests											
Tropical and subtropical coniferous forests							1/90				
Temperate broadleaf and mixed forests	3/6	23/171	90/146		32/39	8/18	63/90	1/4	2/2		
Temperate conifer forests		2/171	21/146		2/39	3/18	1/90				1/3
Boreal forests/taiga		1/171	17/146				17/90				
Tropical and subtropical grasslands, savannas and shrublands											
Temperate grasslands savannahs and shrubs	1/6	103/171	12/146		3/39		1/90	3/4		1/1	
Flooded grasslands and savannas							7/90				
Montane grasslands and shrublands		9/171									1/3
Tundra											
Mediterranean forests, woodlands & scrub	2/6		5/146	3/3	2/39	4/18					
Deserts and xeric shrublands		33/171	1/146			3/18					1/3
Mangroves											

	proserpinae	putschkovi	rhyparopus	scorzonerae	sefrensis	solidus	styx	tibialis	tristis	turkmenicus	vittipennis
	points	points	points								
Tropical and subtropical moist broadleaf forests											
Tropical and subtropical dry broadleaf forests											
Tropical and subtropical coniferous forests											
Temperate broadleaf and mixed forests						1/1				2/6	85/208
Temperate conifer forests	1/19							1/2			6/208
Boreal forests/taiga											52/208

Tropical and subtropical grasslands, savannas and shrublands											
Temperate grasslands savannahs and shrubs		2/2	1/1	2/10							53/208
Flooded grasslands and savannas											
Montane grasslands and shrublands							2/4			2/6	4/208
Tundra											
Mediterranean forests, woodlands & scrub	18/19				2/2			1/2	1/1		
Deserts and xeric shrublands				8/10			2/4			2/6	8/208
Mangroves											

Table SI5. Number of records of the *Orthocephalus* species corresponding to each climate zone. Rare and local species are highlighted in yellow

	arnoldii	bivittatus	brevis	cham-pioni	coriaceus	fulvipes	fulvipes	funestus	medvedevi	melas	minimus	modaressi
Tropical monsoon climate (Am)												
Tropical dry savanna climate (As)												
Tropical savanna, wet (Av)												
Cold semi-arid (steppe) climate (Bsk)		30/171	1/146				CF, CR					1/3
Hot semi-arid (steppe) climate (Bsh)						6/18	CFB, CR					
Hot desert climate (BWh)						1/18	CFB, CRB, CF, CR					
Cold desert climate (BWk)		3/171				2/18						
Humid subtropical climate (Cfa)		14/171	2/146		1/39			5/90	1/4			
Temperate oceanic climate (Cfb)		5/171	58/146		25/39							
Subpolar oceanic climate (Cfc)			1/146									
Hot-summer Mediterranean climate (Csa)	1/6	6/171	4/146	1/3	2/39	7/18	CFB, CRB, CF, CR					1/3
Warm-summer Mediterranean climate (Csb)	1/6		1/146	2/3						1/2		
Monsoon-influenced humid subtropical climate (Cwa)								2/90				
Subtropical highland climate or temperate oceanic climate with dry winters (Cwb)												
Cold subtropical highland climate or subpolar oceanic climate with dry winters (Cwc)												
Hot-summer humid continental climate (Dfa)		35/171	3/146						1/4			
Warm-summer humid continental climate (Dfb)	4/6	50/171	56/146		8/39			22/90	2/4			
Subarctic climate (Dfc)		6/171	12/146		1/39			25/90				
Extremely cold subarctic climate (Dfd)			2/146									
Hot, dry-summer continental climate (Dsa)		9/171			2/39						1/1	1/3
Warm, dry-summer continental climate (Dsb)		5/171			2/39					1/2		
Dry-summer subarctic climate (Dsc)		5/171										

Mediterranean-influenced extremely cold subarctic climate (Dsd)												
Monsoon-influenced hot-summer humid continental climate (Dwa)								7/90				
Monsoon-influenced warm-summer humid continental climate (Dwb)			2/146					27/90				
Monsoon-influenced subarctic climate (Dwc)		1/171	2/146									
Monsoon-influenced extremely cold subarctic climate (Dwd)												
Ice cap climate (EF)												
Tundra (ET)		2/171	2/146									

	proserpinae	putschkovi	rhyparopus	saltator	scorzonerae	sefrensis	solidus	styx	tibialis	tristis	turkmenicus	vittipennis
	points	points	points									
Tropical monsoon climate (Am)												
Tropical dry savanna climate (As)												
Tropical savanna, wet (Av)												
Cold semi-arid (steppe) climate (Bsk)	1/19	1/2		7/237	**1/10**			3/4			3/6	14/211
Hot semi-arid (steppe) climate (Bsh)									1/2			
Hot desert climate (BWh)					6/10						1/6	
Cold desert climate (BWk)						2/2		1/4				
Humid subtropical climate (Cfa)				12/237							1/6	5/211
Temperate oceanic climate (Cfb)				64/237								12/211
Subpolar oceanic climate (Cfc)												
Hot-summer Mediterranean climate (Csa)	18/19			33/237					1/2	1/1	1/6	
Warm-summer Mediterranean climate (Csb)				7/237			1/1					
Monsoon-influenced humid subtropical climate (Cwa)												

	proserpinae	putschkovi	rhyparopus	saltator	scorzonerae	sefrensis	solidus	styx	tibialis	tristis	turkmenicus	vittipennis
	points	points	points									
Subtropical highland climate or temperate oceanic climate with dry winters (Cwb)												
Cold subtropical highland climate or subpolar oceanic climate with dry winters (Cwc)												
Hot-summer humid continental climate (Dfa)			1/1	5/237								6/211
Warm-summer humid continental climate (Dfb)		1/2		101/237								110/211
Subarctic climate (Dfc)				19/237								30/211
Extremely cold subarctic climate (Dfd)												8/211
Hot, dry-summer continental climate (Dsa)				5/237	3/102|							3/211
Warm, dry-summer continental climate (Dsb)				1/237								1/211
Dry-summer subarctic climate (Dsc)												
Mediterranean-influenced extremely cold subarctic climate (Dsd)												
Monsoon-influenced hot-summer humid continental climate (Dwa)												
Monsoon-influenced warm-summer humid continental climate (Dwb)												
Monsoon-influenced subarctic climate (Dwc)				4/237								15/211
Monsoon-influenced extremely cold subarctic climate (Dwd)												4/211
Ice cap climate (EF)												
Tundra (ET)				1/237								

Table SI6. Percentage of the biomes and climate zones, occupying by the geographic projection of the models, relatively to the entire geographic projection of the models (columns 3 and 6), and relatively to the corresponding entire biome or climate zone area in Palearctic (columns 4 and 7). The ranges of percentages obtained for the biomes and climate zones from all the models (CBF, CBR, CF, CR) for each species are provided

Species	Biome	% from geographic projection of the model	% from entire biome area in Palearctic	Climate zone	% from geographic projection of the model	% from entire climatic zone area in Palearctic
O. bivittatus	Temperate grasslands, savannas and shrublands	28–43 %	53–69 %	Warm-summer humid continental climate (Dfb)	29–36 %	30–36 %
				Cold semi-arid (steppe) climate (Bsk)	17–23 %	39–46 %
	Deserts and xeric shrublands	26–33 %	12–18 %	Cold desert, climate (Bwk)	7–17 %	14–42 %
	Temperate broadleaf and mixed forests	19–27 %	15–29 %	Hot-summer humid continental climate (Dfa)	7–9 %	94–96 %
				Warm, dry-summer continental climate (Dsb)	3–5 %	66–83 %
O. brevis	Temperate broadleaf and mixed forests	58–74 %	54–63 %	Warm-summer humid continental climate (Dfb)	39–41 %	54–65 %
	Temperate grasslands, savannas and shrublands	9–12 %	13–22 %	Temperate oceanic climate (Cfb)	26–34 %	75–82 %
				Humid subtropical climate (Cfa)	10–12 %	31–40 %
	Boreal forests/taiga	7–20 %	4–14 %	Subarctic climate (Dfc)	5–14 %	4–13 %
O. coriaceus	Temperate broadleaf and mixed forests	50–62 %	33–58 %	Temperate oceanic climate (Cfb)	32–45 %	75–86 %
	Mediterranean forests, woodlands & scrub	16–18 %	44–63 %	Warm-summer humid continental climate (Dfb)	10–20 %	10–32 %
	Temperate grasslands, savannas and shrublands	5–10 %	5–18 %	Hot-summer Mediterranean climate (Csa)	9–11 %	23–40 %
				Warm-summer Mediterranean climate (Csb)	4–6 %	71–88 %
O. fulvipes	Deserts and xeric shrublands	17–57 %	2–28 %	Hot-summer Mediterranean climate (Csa)	22–45 %	34–73 %
	Mediterranean forests, woodlands & scrub	20–45 %	39–77 %	Hot desert, climate (Bwh)	21–42 %	4–32 %
	Temperate broadleaf and mixed forests	9–24 %	5–9 %	Cold semi-arid (steppe) climate (Bsk)	9–17 %	4–28 %
	Temperate conifer forests	2–10 %	7–21 %	Hot semi-arid (steppe) climate (Bsh)	5–14 %	17–52 %
O. funestus	Temperate broadleaf and mixed forests	45–65 %	19–32 %	Warm-summer humid continental climate (Dfb)	16–34 %	14–26 %
	Boreal forests/taiga	17–29 %	7–13 %	Humid subtropical climate (Cfa)	15–24 %	31–52 %
	Tropical and subtropical moist broadleaf forests	5–11 %	8–18 %	Subarctic climate (Dfc)	10–17 %	5–8 %
				Monsoon-influenced warm summer humid continental climate (Dwb)	8–16 %	22–57 %
	Flooded grasslands and savannas	3–4 %	32–54 %	Monsoon-influenced humid subtropical climate (Cwa)	7–13 %	11–28 %
				Monsoon-influenced hot summer humid continental climate (Dwa)	6–11 %	35–81 %

Species	Biome	% from geographic projection of the model	% from entire biome area in Palearctic	Climate zone	% from geographic projection of the model	% from entire climatic zone area in Palearctic
O. proserpinae	Mediterranean forests, woodlands & scrub	71–100 %	54–100 %	Hot-summer Mediterranean climate (Csa)	50–56 %	29–44 %
				Cold semi-arid (steppe) climate (Bsk)	7–15 %	3–8 %
	Deserts and xeric shrublands	0–14 %	0–1 %	Warm-summer Mediterranean climate (Csb)	11 %	29–50 %
				Hot desert, climate (Bwh)	3–15 %	0–3 %
O. saltator	Temperate broadleaf and mixed forests	45–50 %	51–59 %	Warm-summer humid continental climate (Dfb)	30–34 %	60–65 %
	Temperate grasslands, savannas and shrublands	13–15 %	27–35 %	Temperate oceanic climate (Cfb)	23–25 %	73–86 %
				Hot-summer Mediterranean climate (Csa)	11–14 %	44–56 %
				Subarctic climate (Dfc)	8–11 %	11–13 %
	Mediterranean forests, woodlands & scrub	14–15 %	65–80 %	Warm-summer Mediterranean climate (Csb)	4 %	91–92 %
	Boreal forests/taiga	12–14 %	11–16 %	Warm, dry-summer continental climate (Dsb)	2–3 %	47–56 %
O. vittipennis	Temperate broadleaf and mixed forests	32–43 %	46–67 %	Warm-summer humid continental climate (Dfb)	25–35 %	81–90 %
	Boreal forests/taiga	23–29 %	33–40 %	Subarctic climate (Dfc)	18–23 %	27–42 %
	Temperate grasslands, savannas and shrublands	18–24 %	52–69 %	Temperate oceanic climate (Cfb)	9–17 %	38–86 %
	Montane grasslands and shrublands	3–12 %	12–62 %	Monsoon-influenced warm summer humid continental climate (Dwb)	3–7 %	42–72 %

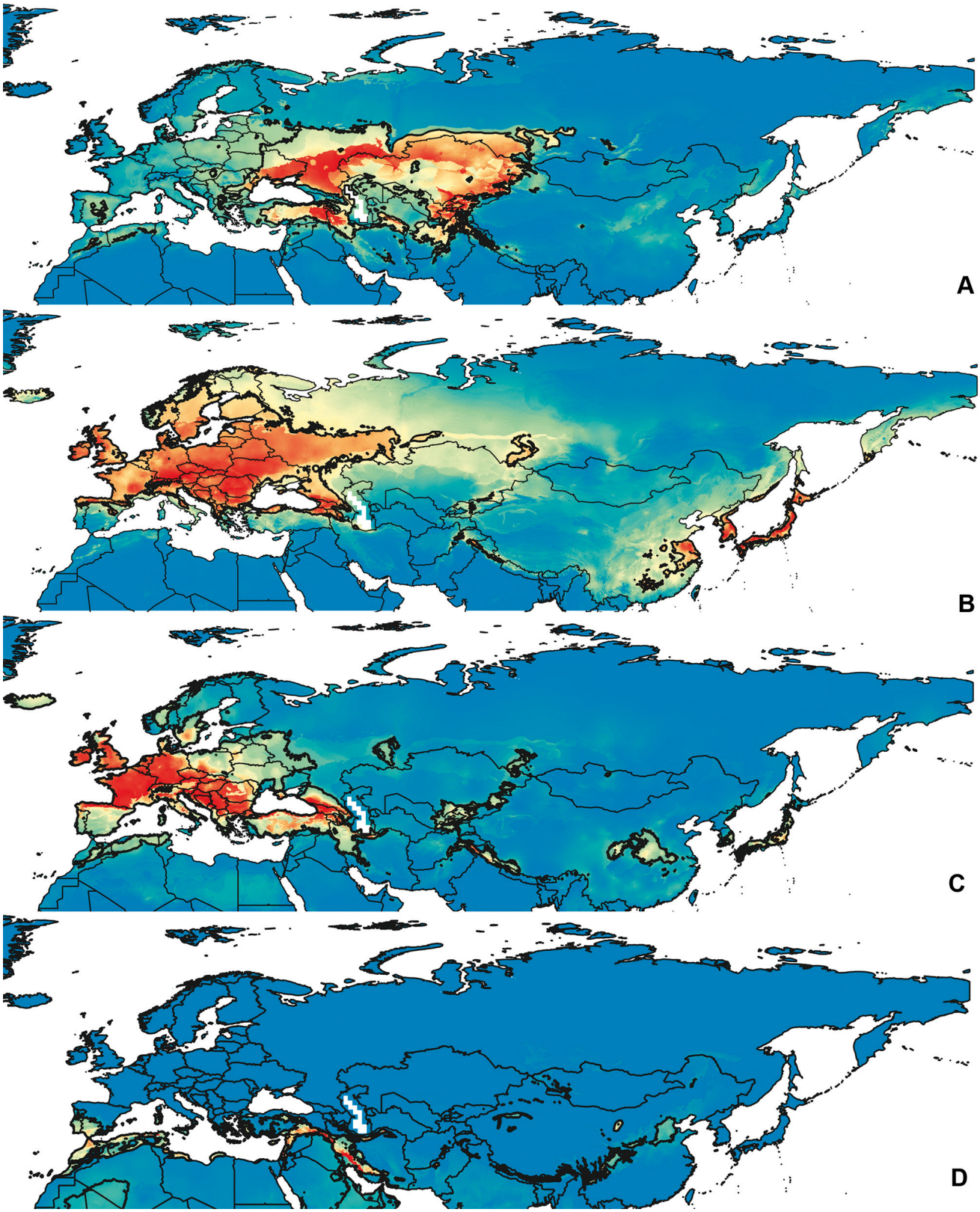

Fig. SI1. Environmental niche models obtained with reduced set of variables and biomes (CRF). A. *O. bivittatus*. B. *O. brevis*. C. *O. coriaceus*. D. *O. fulvipes*.

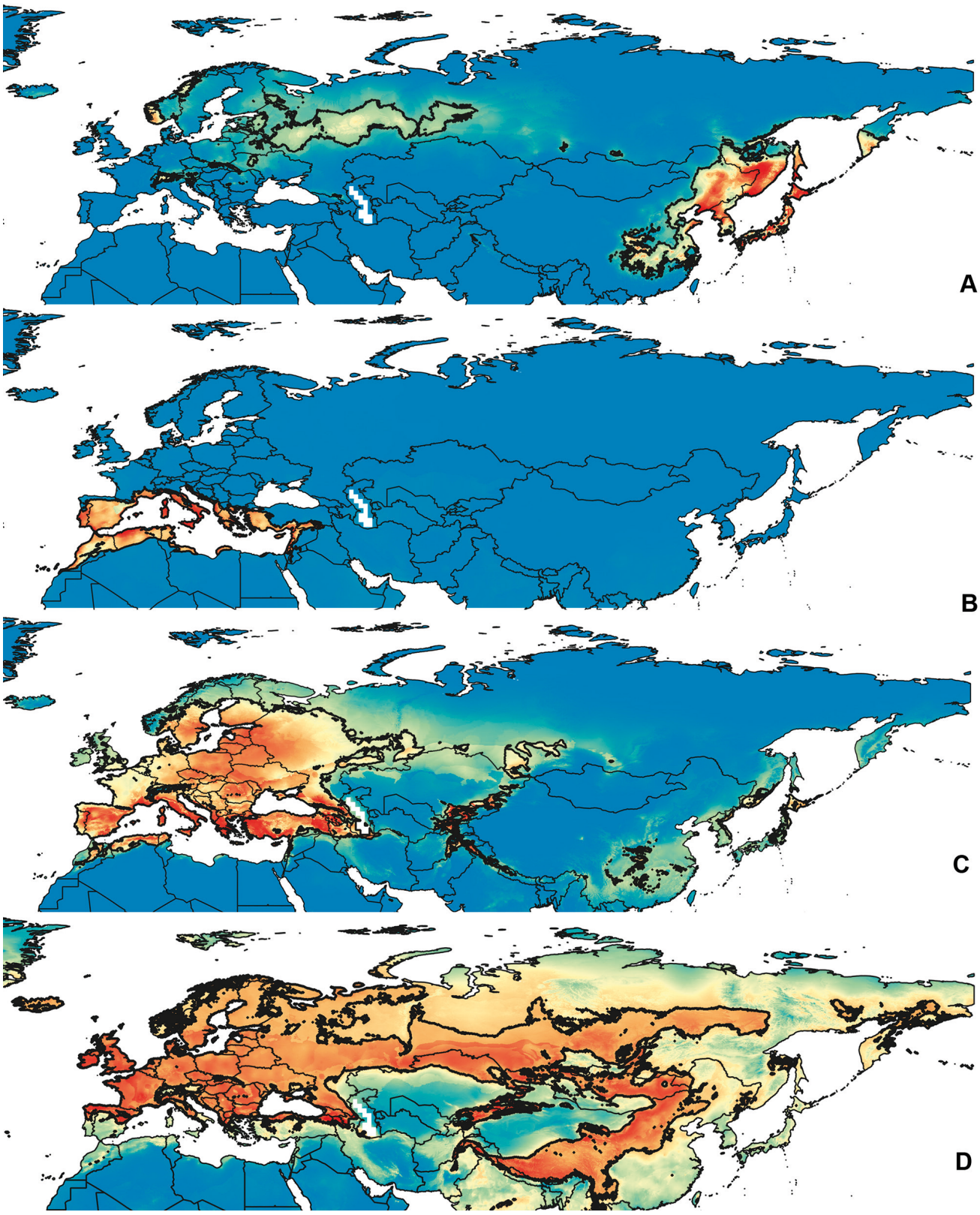

Fig. SI2. Environmental niche models obtained with reduced set of variables and biomes (CRF). A. *O. funestus*. B. *O. proserpinae*. C. *O. saltator*. D. *O. vittipennis*.

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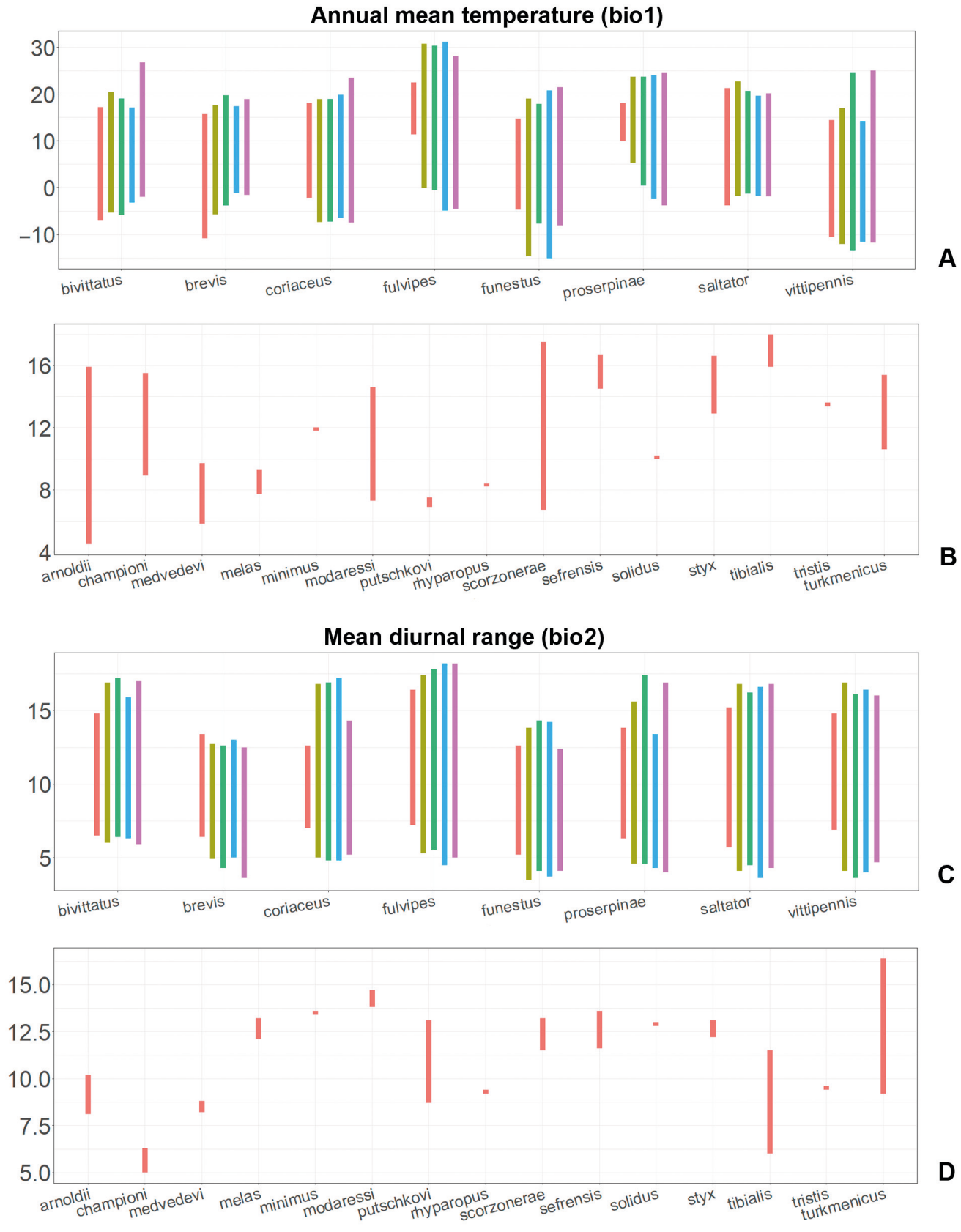

Fig. SI3. Climatic variable ranges for bio1 and bio2. A, C. Species with available environmental niche models. First (red) line — records. Second (olive) line — CBF model. Third (green) line — CBR model. Fourth (blue) line — CF model. Fifth (rose) line — CR model. B, D. Rare and local species, records only.

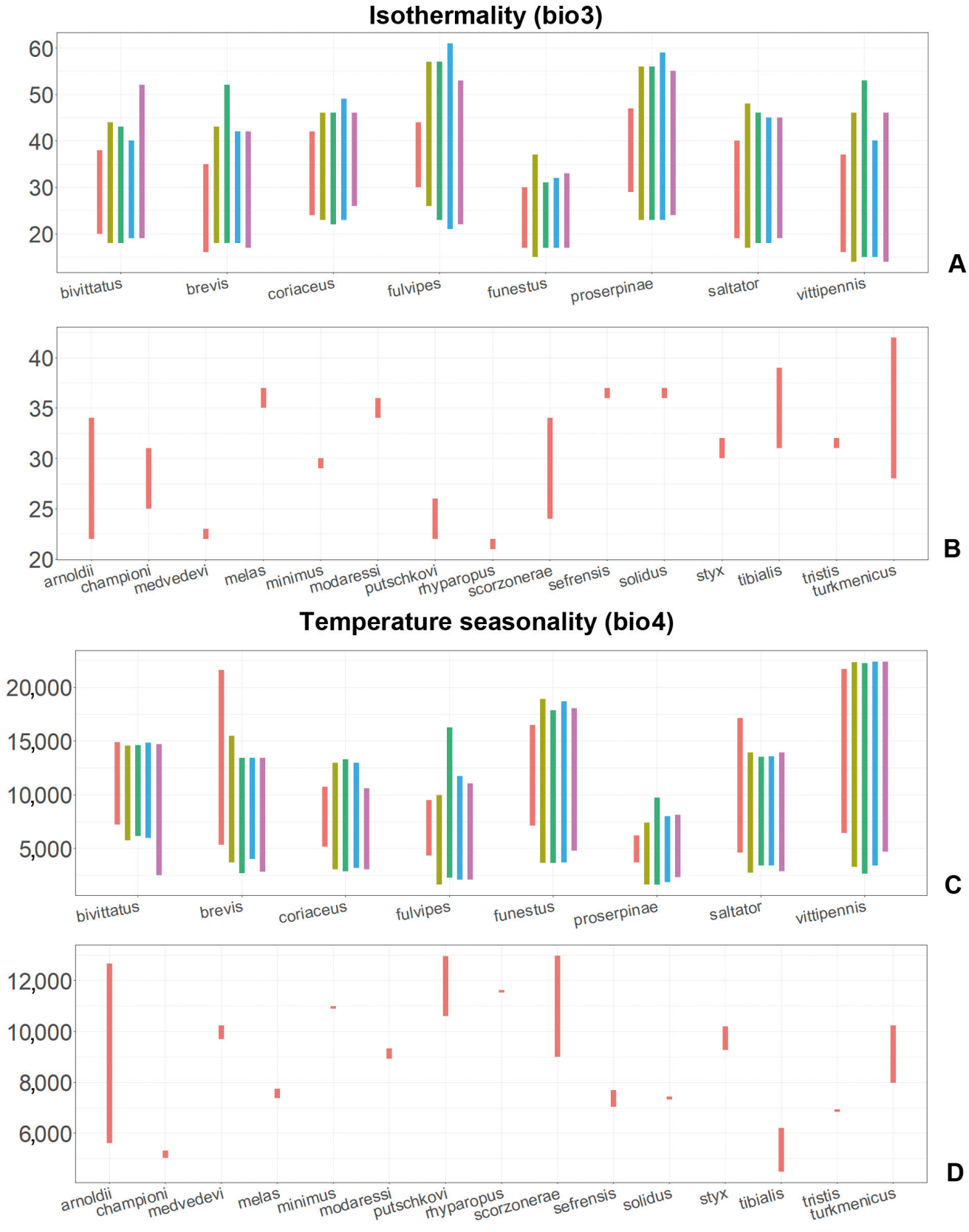

Fig. SI4. Climatic variable ranges for bio3 and bio4. A, C. Species with available environmental niche models. First (red) line — records. Second (olive) line — CBF model. Third (green) line — CBR model. Fourth (blue) line — CF model. Fifth (rose) line — CR model. B, D. Rare and local species, records only.

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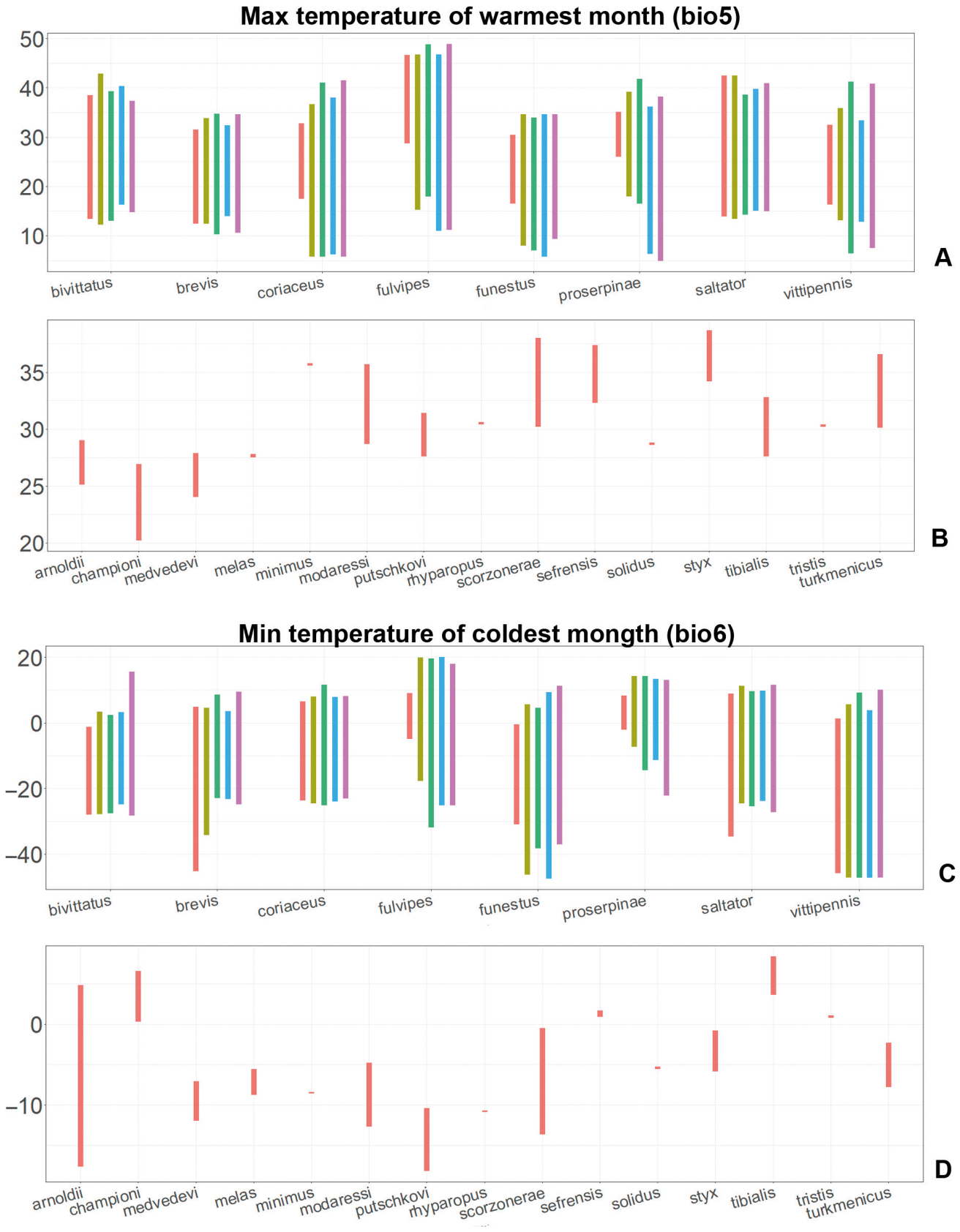

Fig. SI5. Climatic variable ranges for bio5 and bio6. A, C. Species with available environmental niche models. First (red) line — records. Second (olive) line — CBF model. Third (green) line — CBR model. Fourth (blue) line — CF model. Fifth (rose) line — CR model. B, D. Rare and local species, records only.

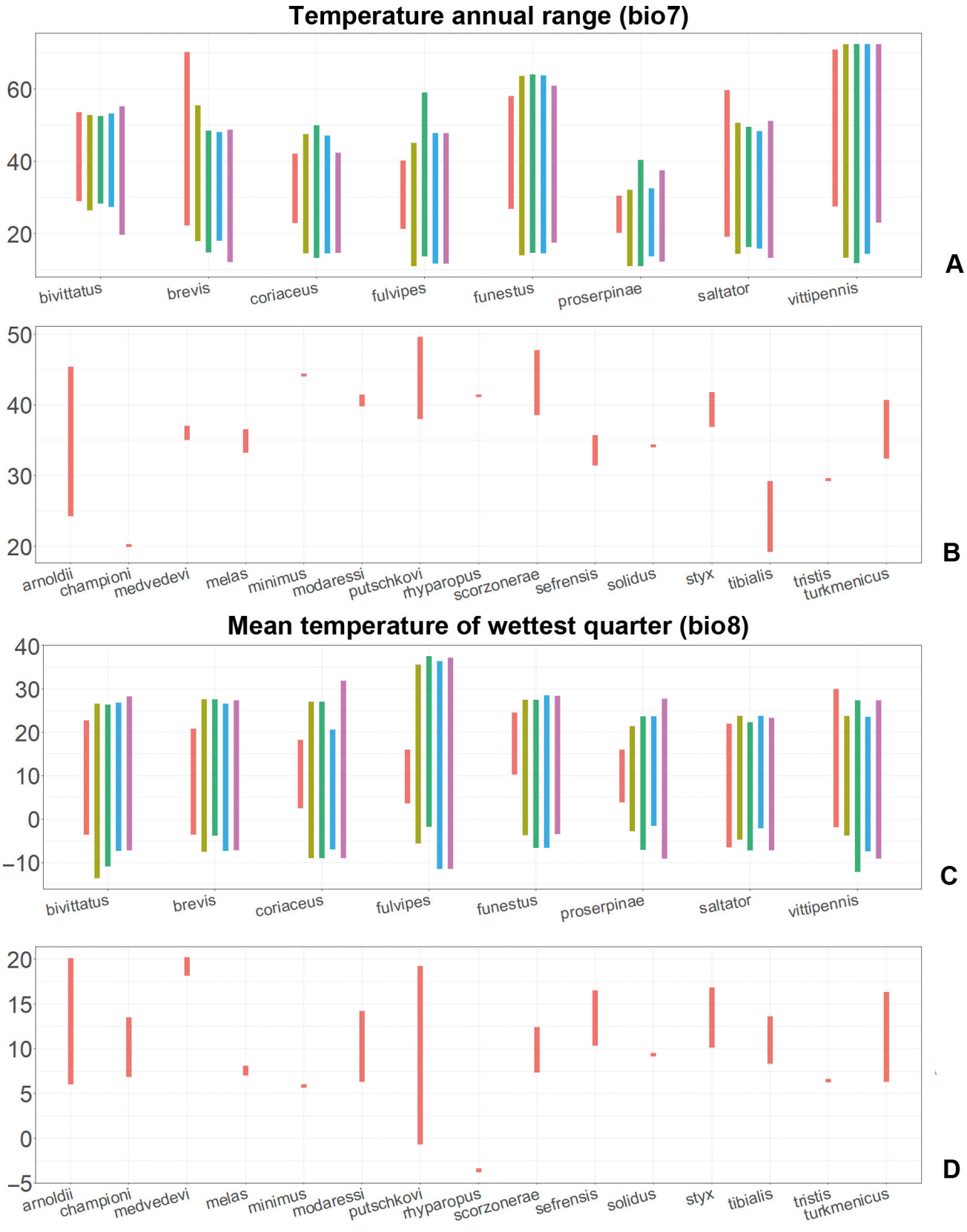

Fig. SI6. Climatic variable ranges for bio7 and bio8. A, C. Species with available environmental niche models. First (red) line — records. Second (olive) line — CBF model. Third (green) line — CBR model. Fourth (blue) line — CF model. Fifth (rose) line — CR model. B, D. Rare and local species, records only.

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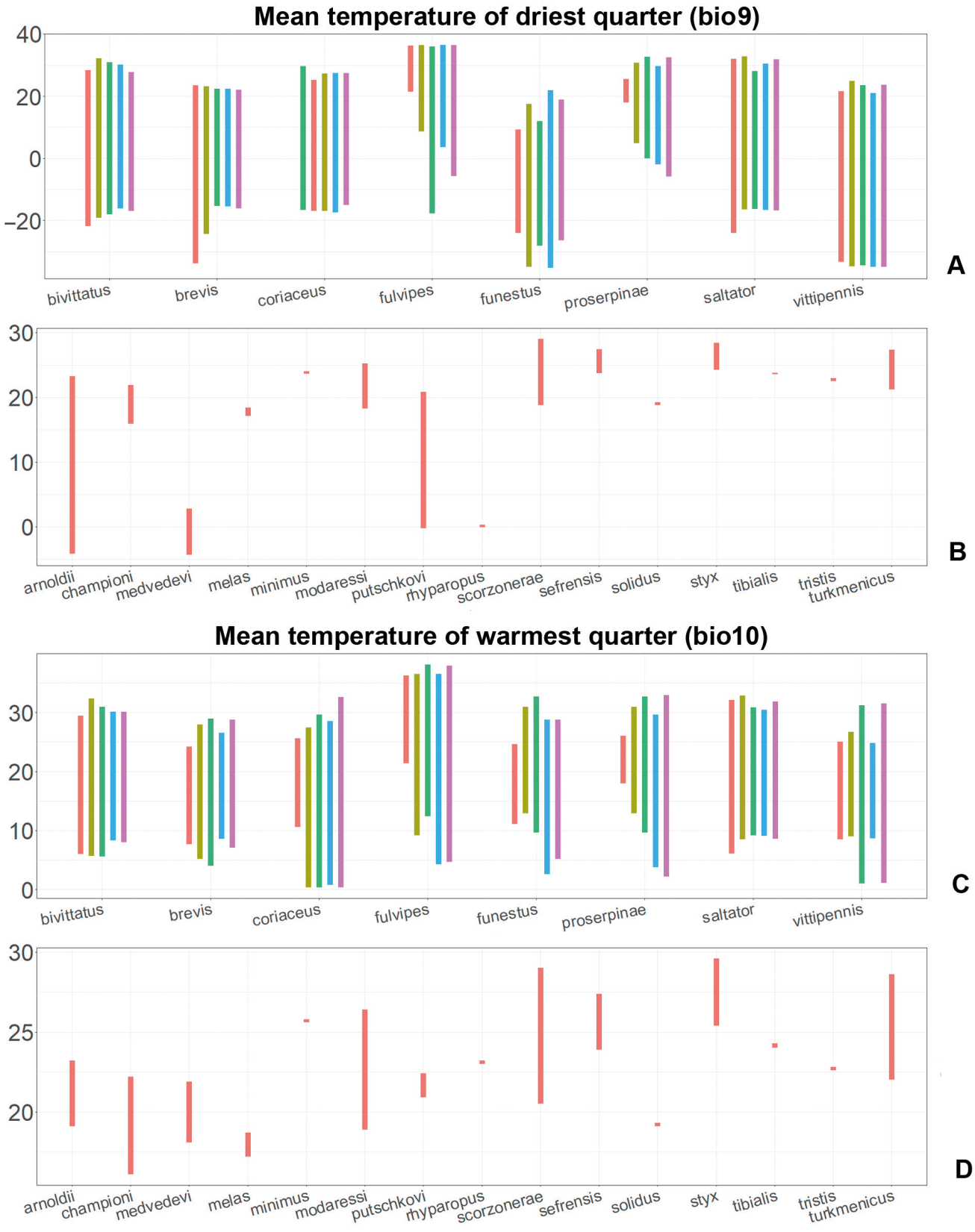

Fig. SI7. Climatic variable ranges for bio9 and bio10. A, C. Species with available environmental niche models. First (red) line — records. Second (olive) line — CBF model. Third (green) line — CBR model. Fourth (blue) line — CF model. Fifth (rose) line — CR model. B, D. Rare and local species, records only.

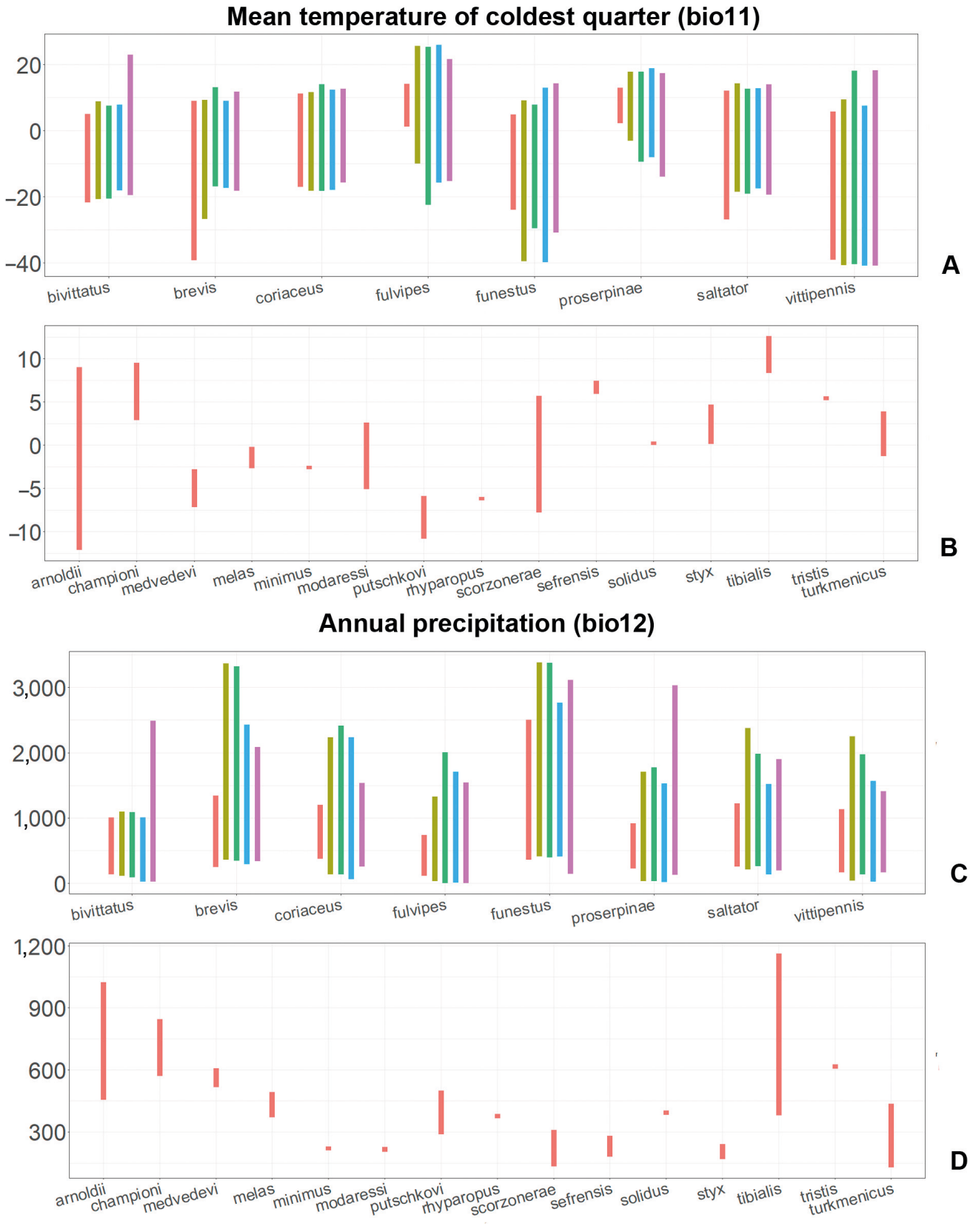

Fig. SI8. Climatic variable ranges for bio11 and bio12. A, C. Species with available environmental niche models. First (red) line — records. Second (olive) line — CBF model. Third (green) line — CBR model. Fourth (blue) line — CF model. Fifth (rose) line — CR model. B, D. Rare and local species, records only.

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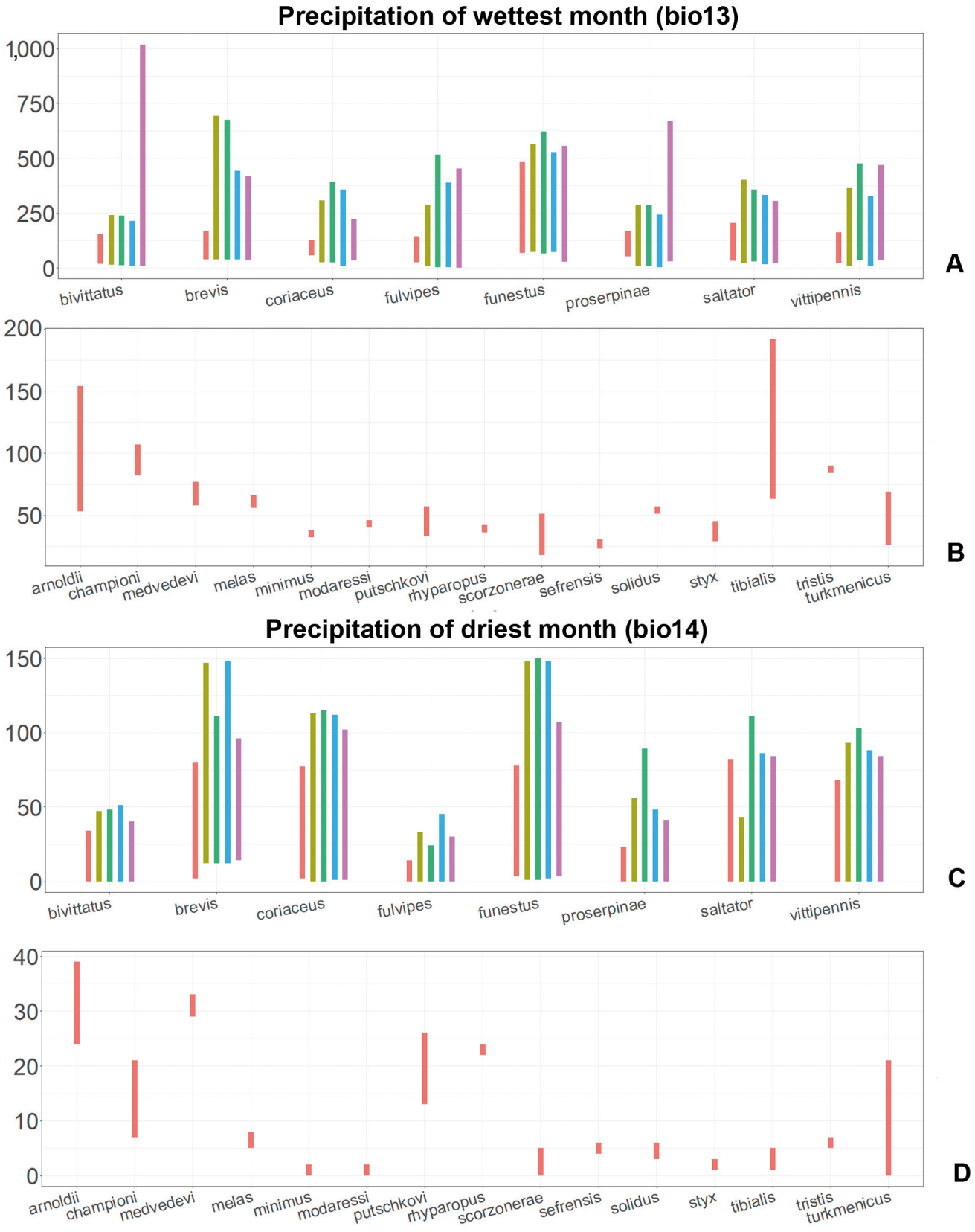

Fig. SI9. Climatic variable ranges for bio13 and bio14. A, C. Species with available environmental niche models. First (red) line — records. Second (olive) line — CBF model. Third (green) line — CBR model. Fourth (blue) line — CF model. Fifth (rose) line — CR model. B, D. Rare and local species, records only.

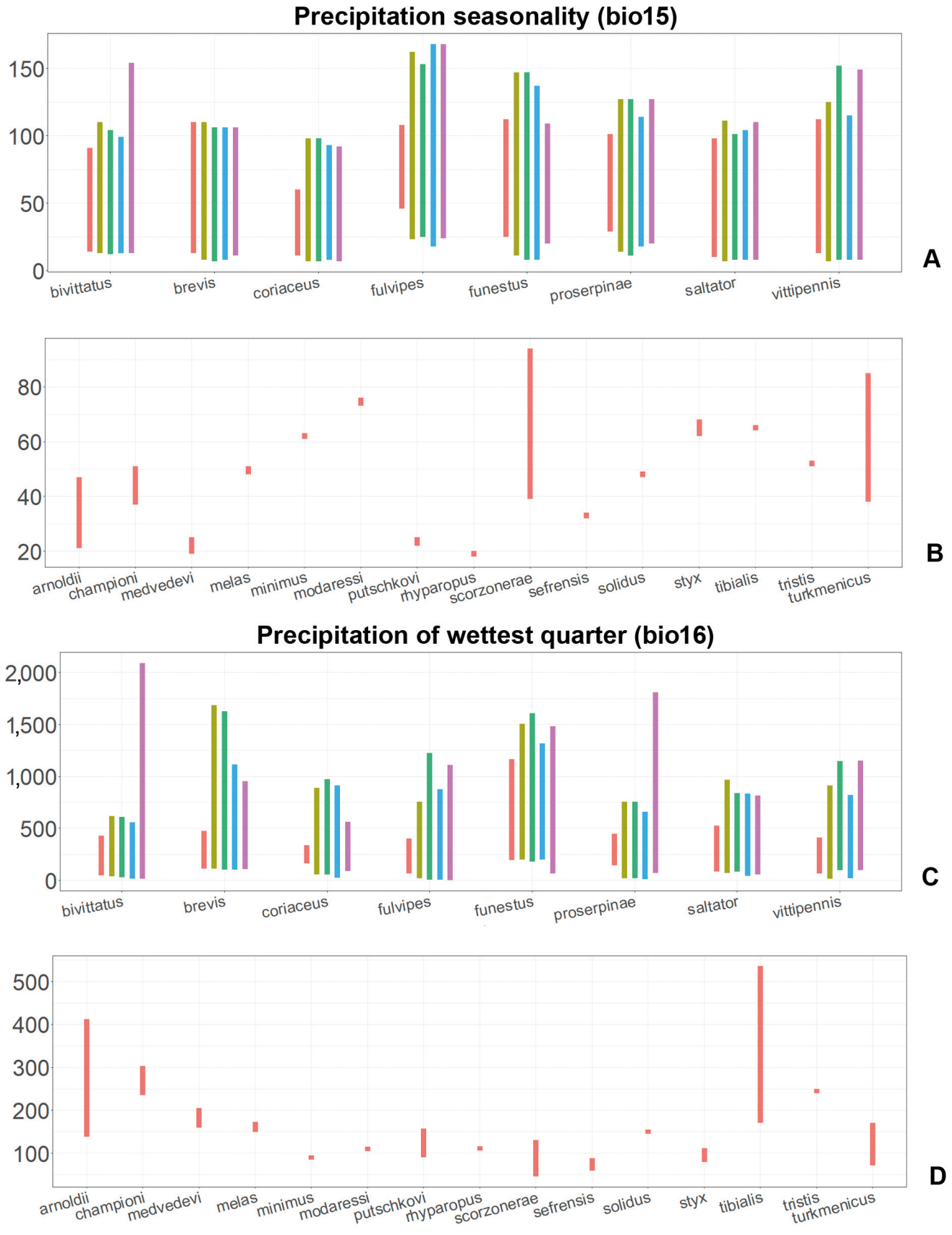

Fig. SI10. Climatic variable ranges for bio15 and bio16. A, C. Species with available environmental niche models. First (red) line — records. Second (olive) line — CBF model. Third (green) line — CBR model. Fourth (blue) line — CF model. Fifth (rose) line — CR model. B, D. Rare and local species, records only.

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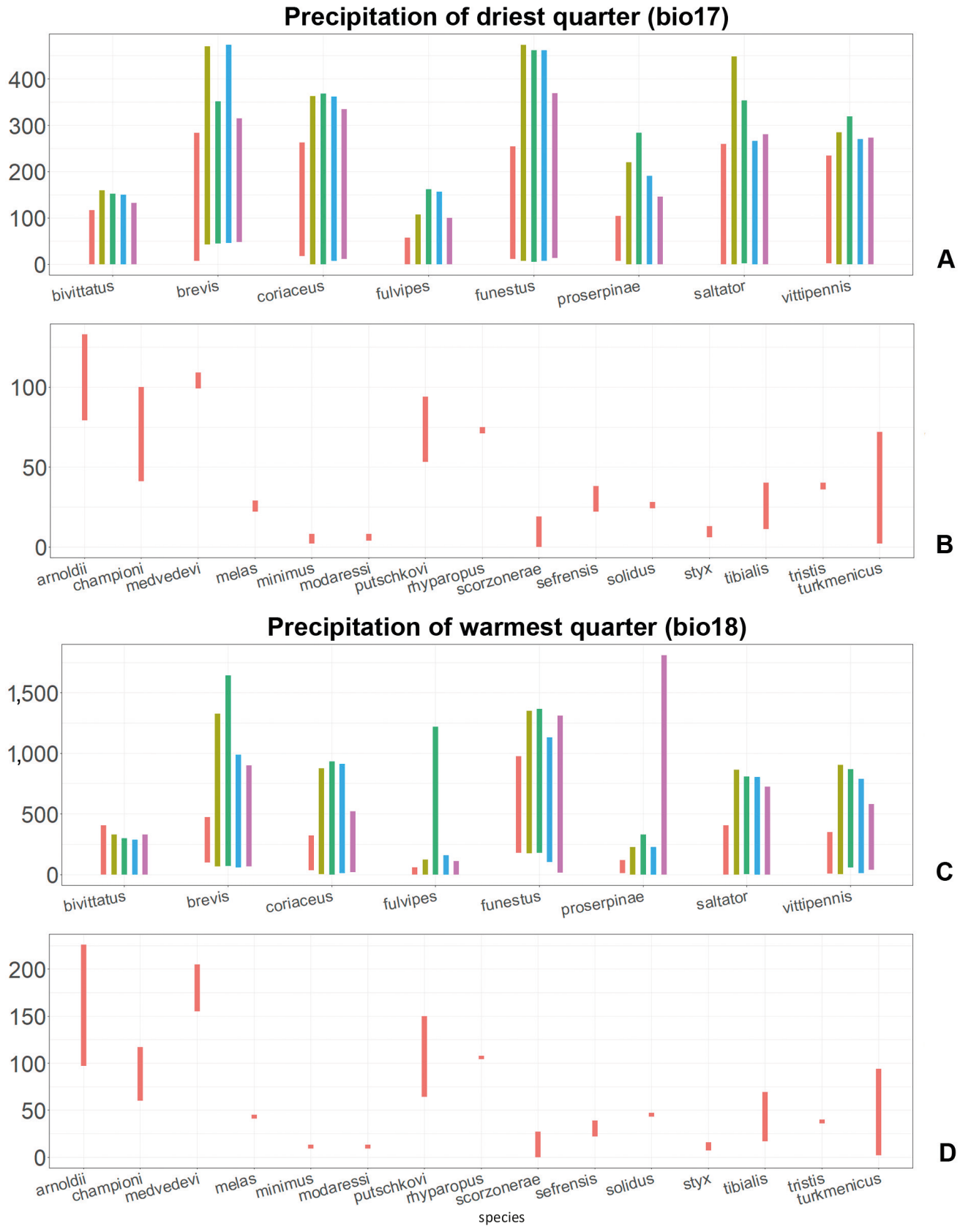

Fig. SI11. Climatic variable ranges for bio17 and bio18. A, C. Species with available environmental niche models. First (red) line — records. Second (olive) line — CBF model. Third (green) line — CBR model. Fourth (blue) line — CF model. Fifth (rose) line — CR model. B, D. Rare and local species, records only.

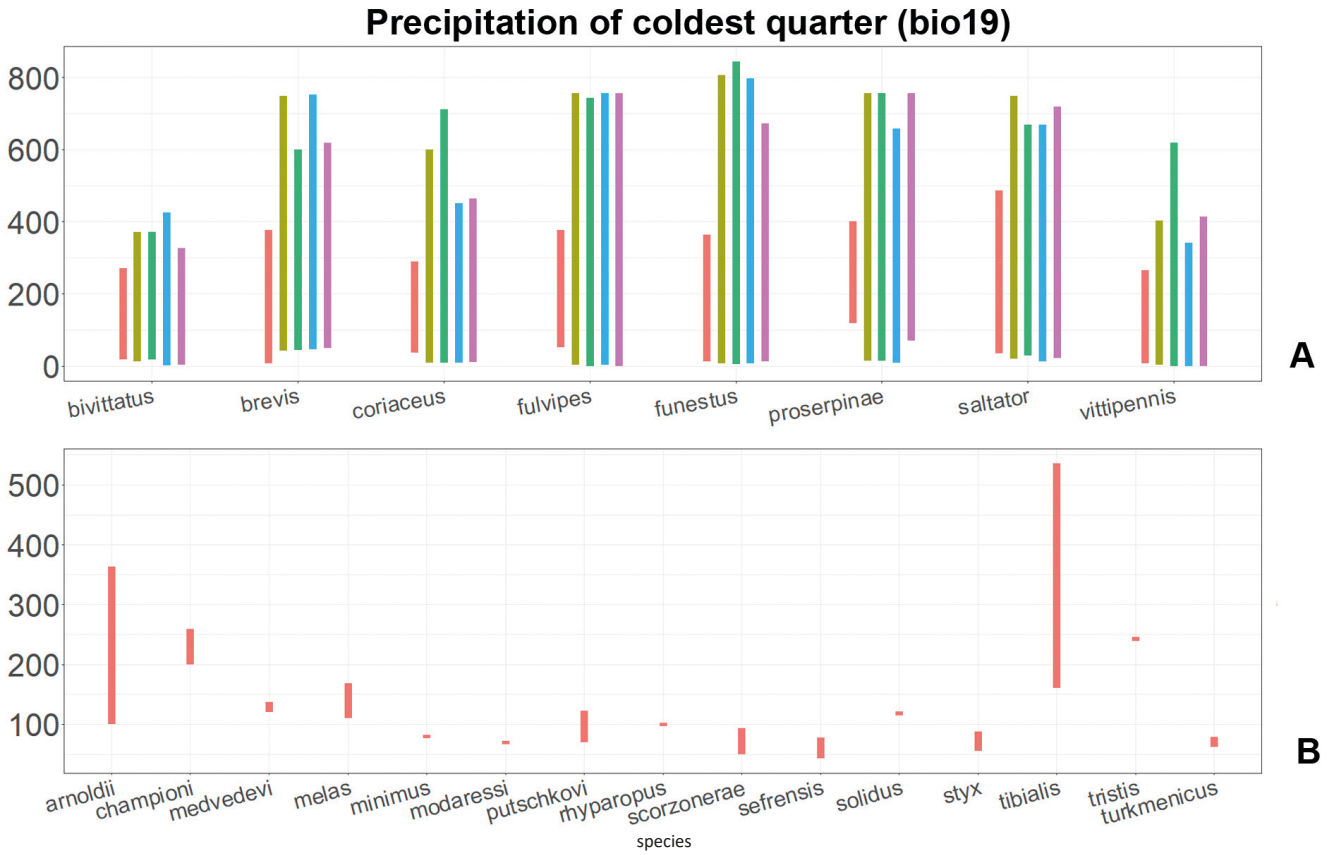

Fig. SI12. Climatic variable ranges for bio17 and bio18. A. Species with available environmental niche models. First (red) line — records. Second (olive) line — CBF model. Third (green) line — CBR model. Fourth (blue) line — CF model. Fifth (rose) line — CR model. B. Rare and local species, records only.