Supplementary Table S1. Sexual dimorphism in morphological characteristics of four populations of *Sceloporus grammicus* in central Mexico. Comparisons were made with Student t-tests on raw SVL and the size-corrected morphological variables for the remaining traits. * P ≤ 0.05, ** P ≤ 0.01, *** P ≤ 0.001. Abbreviations: TP, tree population; CP, cactus population; TBP, tree-boulder population; GP, grassland population; n, sample size; SVL, snout–vent length; BM, body mass; AV, abdominal volume; HL, head length; HW, head width; FOL, forearm length; FL, femur length; TL, tibia length.

	TP		CP		TBP		GP	
	Females	Males	Females	Males	Females	Males	Females	Males
Trait / n	50	23	45	28	36	20	69	65
SVL (mm)	58.79 ± 1.03	61.19 ± 1.69	56.91 ± 0.97	64.19 ± 1.44***	52.05 ± 0.92	55.55 ± 1.51*	59.19 ± 0.93	63.78 ± 1.14**
	41.59–70.74	44.58–71.10	43.00–69.85	45.45–75.40	40.89–62.36	41.92–63.78	40.35–75.66	42.32–77.94
BM (g)	7.03 ± 0.34	7.88 ± 0.58	6.47 ± 0.30	8.73 ± 0.52	5.39 ± 0.26	6.15 ± 0.49	7.32 ± 0.33	9.13 ± 0.46
	2.40–12.20	2.50–12.80	3.00–12.20	3.50–12.50	2.50–9.20	2.50–9.80	2.20–15.00	2.50–16.80
AV (mm³)	5357.24 ± 140.89	4557.83 ± 208.12**	4984.32 ± 149.45	4643.01 ± 191.53	5114.30 ± 174.05	4939.82 ± 224.33	5136.98 ± 119.90	4748.19 ± 127.74*
	1336.50–10034.55	1108.47–8087.17	1567.96–9176.43	1998.59–9070.29	1294.65–6174.86	1509.81–5955.99	1368.68–10568.87	1144.03–11151.10
HL (mm)	13.38 ± 0.19	14.33 ± 0.33**	12.70 ± 0.18	14.68 ± 0.30***	12.12 ± 0.19	13.16 ± 0.31*	13.27 ± 0.15	14.66 ± 0.20***
	10.47–15.64	11.01–17.94	10.10–15.60	11.61–17.40	10.04–14.28	11.24–16.54	10.60–16.13	10.37–17.51
HW (mm)	9.36 ± 0.18	10.01 ± 0.33	8.45 ± 0.14	9.79 ± 0.24*	8.28 ± 0.14	9.18 ± 0.29*	9.18 ± 0.15	10.30 ± 0.19**
	6.60–12.33	5.76–12.17	6.30–10.71	6.90–12.36	6.57–10.08	6.54–11.51	6.70–12.34	7.04–13.74
FOL (mm)	8.03 ± 0.13	8.54 ± 0.21	7.85 ± 0.11	9.19 ± 0.22***	6.93 ± 0.12	7.91 ± 0.23***	8.24 ± 0.13	8.96 ± 0.16
	4.80–9.61	6.48–9.90	6.38–9.10	6.83–11.08	5.81–8.45	6.04–9.20	5.85–12.50	5.93–11.10
FL (mm)	10.67 ± 0.19	12.12 ± 0.34***	10.55 ± 0.17	12.41 ± 0.37*	9.40 ± 0.17	11.14 ± 0.37***	10.89 ± 0.19	12.67 ± 0.25***
	7.80–13.78	8.39–14.10	8.15–13.30	6.46–16.12	7.30–11.34	8.92–14.44	5.80–16.30	8.27–17.32
TL (mm)	9.89 ± 0.17	11.20 ± 0.31***	9.76 ± 0.16	11.84 ± 0.28***	8.74 ± 0.21	10.07 ± 0.32**	10.01 ± 0.15	11.46 ± 0.20***
	6.40–11.87	7.65–13.40	7.59–11.76	8.41–14.16	6.32–11.28	7.78–12.50	7.35–14.00	7.31–14.33

Supplementary Table S2. Multiple nonlinear regression between seasons and sexes of the thermal characteristics of the cactus population. Abbreviations are as in Supplementary Table 1. Statistical parameters: ß = standardized regression coefficient, t = obtained t-test value, P = obtained significance value.

	T_b $R^2 = 0.12$ P = 0.02			T_a $R^2 = 0.37$ P < 0.0001			T_s $R^2 = 0.27$ P < 0.0001			ΔT_a $R^2 = 0.10$ P = 0.03			ΔT_s $R^2 = 0.08$ P = 0.08		
	ß	t	P	ß	t	P	ß	t	P	ß	t	P	ß	t	P
Intercept		-2.23	0.03		-4.05	0.0001		-2.98	0.004		1.33	0.19		0.42	0.68
Season	0.36	2.99	0.004	0.61	5.97	< 0.0001	0.52	4.79	< 0.0001	-0.30	-2.48	0.02	-0.21	-1.70	0.09
Sex	0.07	0.59	0.56	0.03	0.29	0.78	-0.01	-0.13	0.90	0.08	0.63	0.53	0.15	1.24	0.22

Supplementary Table S3. Multiple nonlinear regression between seasons and sexes of the thermal characteristics of the tree-boulder population. Abbreviations are as in Supplementary Table 1. Statistical parameters follow Supplementary Table S2.

	T_b $R^2 = 0.05$ P = 0.25			T_a $R^2 = 0.07$ P = 0.14			T_s $R^2 = 0.11$ P = 0.05			ΔT_a $R^2 = 0.05$ P = 0.26			ΔT_s $R^2 = 0.08$ P = 0.13		
	ß	t	P	ß	t	P	ß	t	P	ß	t	P	ß	t	P
Intercept		1.60	0.12		0.78	0.44		1.42	0.16		1.56	0.13		1.34	0.19
Season	-0.02	-0.12	0.91	0.16	1.15	0.26	0.13	0.94	0.35	-0.21	-1.49	0.14	-0.28	-2.07	0.04
Sex	-0.23	-1.62	0.11	-0.25	-1.86	0.07	-0.33	-2.45	0.02	-0.06	-0.45	0.66	0.05	0.40	0.69

Supplementary Table S4. Multiple nonlinear regression between seasons and sexes of the thermal characteristics of the grassland population. Abbreviations are as in Supplementary Table 1. Statistical parameters follow Supplementary Table S2.

	T_b $R^2 = 0.16$ P < 0.0001			T_a $R^2 = 0.01$ P = 0.43			T_s $R^2 = 0.07$ P = 0.01			ΔT_a $R^2 = 0.04$ P = 0.06			ΔT_s $R^2 = 0.01$ P = 0.39		
	ß	t	P	ß	t	P	ß	t	P	ß	t	P	ß	t	P
Intercept		1.79	0.08		1.11	0.27		1.48	0.14		-0.08	0.94		0.03	0.98
Season	-0.35	-4.34	< 0.0001	-0.11	-1.30	0.20	-0.24	-2.84	0.005	-0.14	-1.60	0.11	-0.08	-0.95	0.34
Sex	0.20	2.49	0.01	0.01	0.17	0.86	0.10	1.24	0.22	0.16	1.82	0.07	0.09	1.01	0.31

Supplementary Table S5. Multiple nonlinear regression across populations and between seasons of the thermal characteristics of *Sceloporus grammicus*. Abbreviations are as in Supplementary Table 1. Statistical parameters follow Supplementary Table S2.

	T_b $R^2 = 0.11$ P < 0.0001			T_a $R^2 = 0.02$ P = 0.07			T_s $R^2 = 0.04$ P = 0.0007			ΔT_a $R^2 = 0.07$ P < 0.0001			ΔT_s $R^2 = 0.04$ P = 0.002		
	ß	t	P	ß	t	P	ß	t	P	ß	t	P	ß	t	P
Intercept		-0.28	0.78		-0.88	0.38		-0.37	0.71		0.91	0.36		0.84	0.40
Population	0.31	5.93	< 0.0001	0.13	2.29	0.02	0.20	3.71	< 0.001	0.21	3.93	0.0001	0.15	2.65	0.008
Season	-0.08	-1.55	0.12	0.03	0.59	0.56	-0.03	-0.57	0.57	-0.14	-2.55	0.01	-0.11	-1.93	0.05

Supplementary Table S6. Thermal characteristics of four populations of *Sceloporus grammicus* by season in central Mexico. All characteristics are given in °C. The percentages of negative values of ΔT_a and of ΔT_s for each group are in parentheses. Abbreviations follow Supplementary Table 1. Ranges for each group are shown below mean ± SE. The sample size (n) for each group is shown in the last column of the table.

	T_b	T_a	T_s	ΔT_a	ΔT_s	n
TP						
Wet season	28.82 ± 1.03	24.28 ± 0.75	24.13 ± 0.63	4.94 ± 0.74 (11.1)	4.82 ± 0.60 (5.6)	18
	20.20–34.40	16.80–28.20	17.80–27.80	0.00–9.40	0.60–9.00	
Dry season	27.71 ± 0.84	23.75 ± 0.73	23.76 ± 0.71	4.47 ± 0.41 (9.1)	4.36 ± 0.45 (10.9)	55
	14.00–35.00	12.00–32.00	13.60–34.60	0.40–13.00	0.00–14.00	
Both seasons	27.98 ± 0.50	23.88 ± 0.47	23.85 ± 0.46	4.59 ± 0.39 (9.6)	4.47 ± 0.35 (9.6)	73
	14.00–35.00	12.00–32.00	13.60–34.60	0.00–13.00	0.00–14.00	
CP						
Wet season	28.92 ± 0.71	24.69 ± 0.52	25.21 ± 0.54	4.98 ± 0.46 (10.6)	4.48 ± 0.37 (14.9)	47
	18.80–38.00	17.20–36.00	16.80–34.60	0.00–11.40	0.20–10.80	
Dry season	32.42 ± 0.64	30.53 ± 0.80	29.94 ± 0.72	2.93 ± 0.46 (21.1)	3.22 ± 0.45 (15.8)	19
	26.40–36.40	23.80–36.00	25.00–35.60	0.20–8.60	0.00–7.40	
Both seasons	29.93 ± 0.52	26.37 ± 0.49	26.57 ± 0.48	4.39 ± 0.41 (13.6)	4.12 ± 0.37 (15.2)	66
	18.80–38.00	17.20–36.00	16.80–35.60	0.00–11.40	0.00–10.80	
TBP						
Wet season	29.59 ± 0.53	24.30 ± 0.52	25.20 ± 0.66	5.80 ± 0.56 (4.3)	5.40 ± 0.55 (17.4)	23
	24.00–34.00	20.00–30.00	18.80–31.20	0.00–10.20	1.00–11.40	
Dry season	29.14 ± 0.79	25.05 ± 0.72	25.67 ± 0.77	4.32 ± 0.67 (6.5)	3.81 ± 0.53 (5)	31
	21.00–34.80	19.00–32.40	18.40–32.20	0.20–14.40	0.20–14.00	
Both seasons	29.33 ± 0.58	24.73 ± 0.55	25.47 ± 0.53	4.95 ± 0.45 (5.6)	4.48 ± 0.41 (16.7)	54
	21.00–34.80	19.00–32.40	18.40–32.20	0.00–14.40	0.20–14.00	
GP						
Wet season	32.89 ± 0.28	26.13 ± 0.41	27.27 ± 0.37	6.79 ± 0.46 (2.8)	5.77 ± 0.42 (8.5)	71
	25.80–37.00	20.00–34.60	21.20–34.40	0.00–15.00	0.00–14.40	
Dry season	30.81 ± 0.41	25.36 ± 0.43	25.71 ± 0.42	5.85 ± 0.37 (6.3)	5.24 ± 0.37 (4.8)	63
	22.00–37.40	19.00–31.60	18.60–33.20	0.60–11.80	0.40–12.80	
Both seasons	31.91 ± 0.37	25.77 ± 0.35	26.54 ± 0.34	6.35 ± 0.28 (4.5)	5.52 ± 0.26 (6.7)	134
	22.00–37.40	19.00–34.60	18.60–34.40	0.00–15.00	0.00–14.40	

Supplementary Table S7. Field records of the lizard and snake species that occur in sympatry with *Sceloporus grammicus* in the analysed populations. Abbreviations for populations follow table S1. The "X" denote the presence of each species in a specific population. The final column shows the potential interactive role with *S. grammicus*: potential competitor (PC) and potential predator (PP).

Species	TP	TBP	CP	GP	Interactive role
Lizards					
Abronia taeniata	X	X			PC
Barisia imbricata	X	X		X	PC
Phrynosoma orbiculare		X			PC
Plestiodon lynxe		X			PC
Sceloporus bicanthalis		X			PC
S. mucronatus		X			PC/PP
S. spinosus			X	X	PC/PP
S. variabilis	X				PC
Snakes					
Conopsis lineata		X		X	PC
Crotalus aquilus	X	X			PP
Crotalus ravus				X	PP
Pituophis deppei			X		PP
Salvadora bairdi			X	X	PP
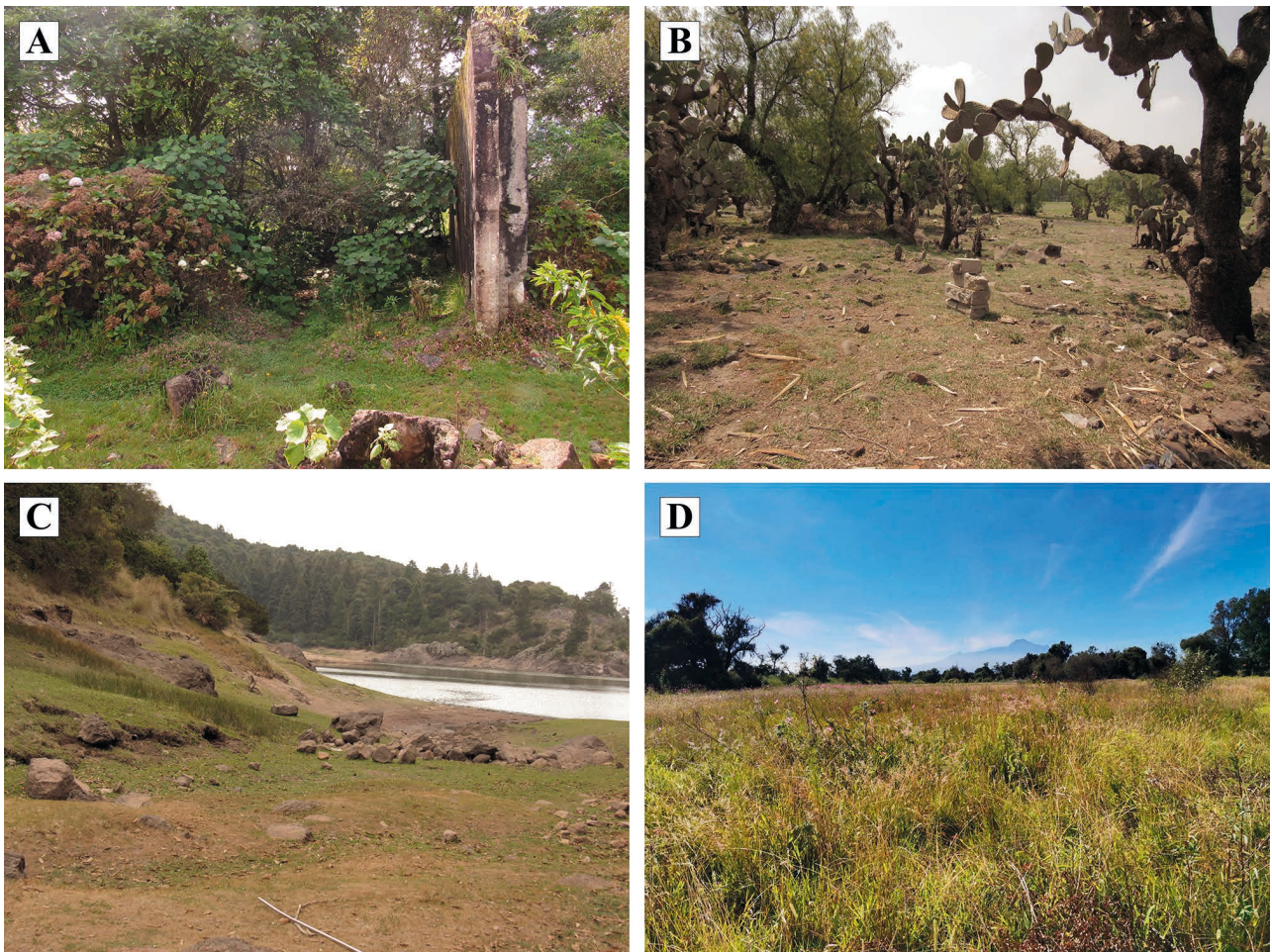
Supplementary Figure S1. Structural differences among habitats used by *Sceloporus grammicus* populations analysed. A, tree population (TP); B, cactus population (CP); C, tree–boulder population (TBP); D, grassland population (GP). Note the marked difference in vegetation type and habitat openness.