Sensitivity of leaf physiognomy to climate: applications to habitat-scaled and species-based climate proxy

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Supplementary material

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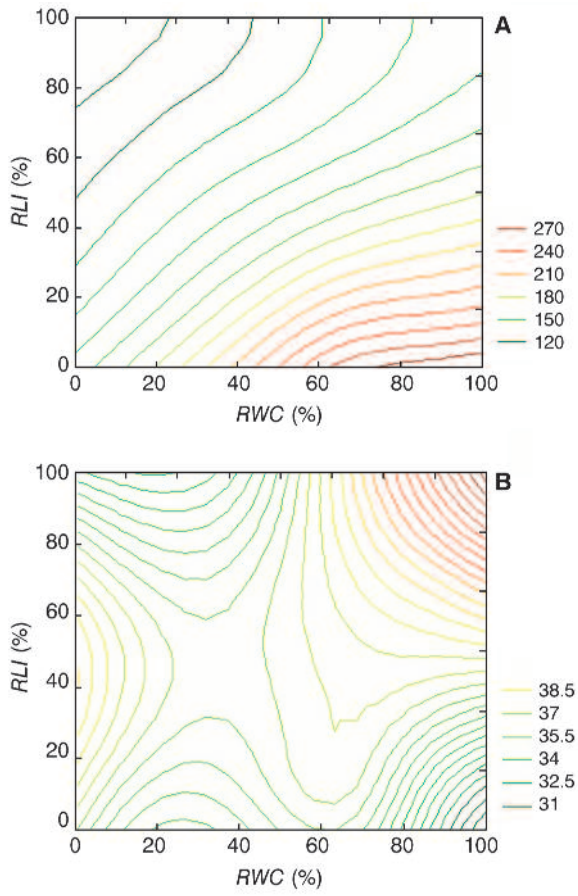

FIG. S1. Contour plots for specific leaf area (A) and number of leaf teeth (B) of *Q. acutissima* in the different gradients of water and light availability. The lines with different colors represent the different values of leaf morphological parameters. The spline function is employed in the fitted curve and n = 120 for each variable contained climate information.

TABLE S1. Mean values and significance tests of leaf morphological parameters of *Q. acutissima* under different water and light treatments. Values in the parentheses are standard errors of means (n = 15). For the lack of four groups of values (W2L1, W4L1, W2L3, and W4L3), the type III sums of squares are used in the two-way ANOVA to analyze the main and interactive effects of water and light on leaf physiognomy. Significance level: $^{ns}p > 0.05$, $^{*}p \leq 0.05$, $^{**}p \leq 0.01$, $^{***}p \leq 0.001$

Variable	L1				L2				L3				Water	Light	Water × Light
	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4			
LA (cm^2)	42.30 (1.60)	–	37.84 (2.91)	–	45.85 (1.65)	39.15 (1.04)	32.79 (1.65)	31.24 (1.18)	29.25 (1.07)	–	31.35 (2.69)	–	**	***	***
LDM (g)	0.38 (0.02)	–	0.28 (0.02)	–	0.34 (0.01)	0.29 (0.01)	0.27 (0.01)	0.24 (0.01)	0.17 (0.01)	–	0.13 (0.01)	–	***	***	ns
SLA ($cm^2\ g^{-1}$)	136.59 (5.78)	–	113.66 (3.65)	–	148.77 (6.86)	135.75 (3.39)	134.93 (4.18)	121.09 (2.88)	236.01 (5.36)	–	182.59 (12.56)	–	***	***	**
LL (cm)	13.39 (0.30)	–	12.88 (0.37)	–	13.93 (0.35)	13.27 (0.22)	11.84 (0.29)	12.22 (0.24)	11.69 (0.22)	–	11.78 (0.38)	–	***	***	**
LW (cm)	4.95 (0.13)	–	4.52 (0.22)	–	5.14 (0.08)	4.62 (0.07)	4.31 (0.14)	4.38 (0.09)	3.91 (0.08)	–	4.10 (0.19)	–	**	***	**
LPL (cm)	0.42 (0.01)	–	0.42 (0.01)	–	0.48 (0.02)	0.41 (0.01)	0.34 (0.01)	0.33 (0.01)	0.33 (0.01)	–	0.42 (0.02)	–	***	**	***
LE	2.73 (0.10)	–	2.89 (0.07)	–	2.71 (0.06)	2.88 (0.04)	2.77 (0.07)	2.80 (0.06)	3.00 (0.05)	–	2.90 (0.07)	–	ns	**	ns
LL/LPL	32.12 (1.22)	–	31.03 (1.30)	–	29.56 (0.83)	32.48 (1.01)	35.28 (0.97)	37.62 (1.46)	35.96 (1.22)	–	28.92 (1.57)	–	**	ns	***
LWD	0.54 (0.01)	–	0.45 (0.02)	–	0.57 (0.01)	0.54 (0.03)	0.56 (0.03)	0.53 (0.01)	0.50 (0.02)	–	0.59 (0.02)	–	ns	**	***
LBD	1.67 (0.06)	–	1.46 (0.04)	–	1.64 (0.05)	1.80 (0.10)	1.87 (0.11)	1.60 (0.04)	1.57 (0.06)	–	2.08 (0.09)	–	**	**	***
NLT (ea)	40.53 (1.18)	–	33.73 (1.08)	–	38.13 (1.33)	37.60 (1.24)	35.73 (1.15)	37.33 (1.69)	36.80 (1.20)	–	35.47 (1.40)	–	*	ns	ns
MDV (cm)	0.63 (0.01)	–	0.73 (0.03)	–	0.70 (0.03)	0.68 (0.02)	0.63 (0.02)	0.64 (0.03)	0.61 (0.02)	–	0.64 (0.02)	–	ns	*	**