Supporting Information

Kraft et al. 10.1073/pnas.1413650112

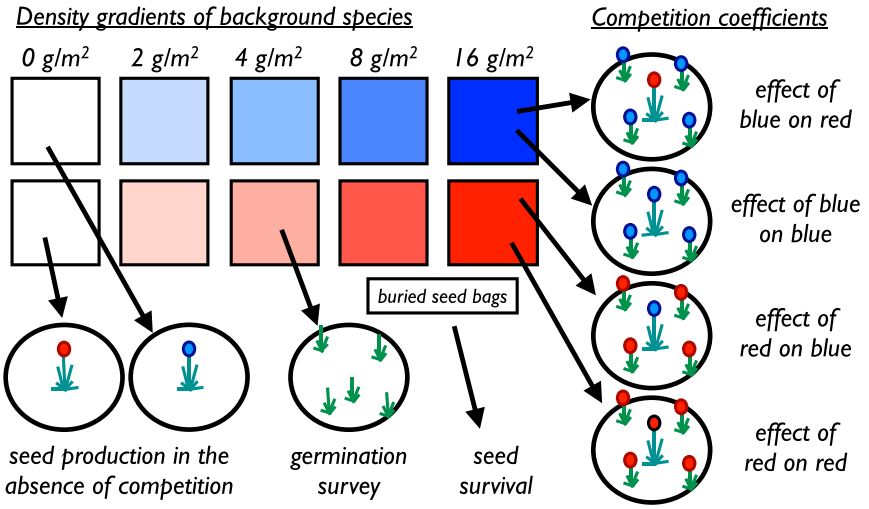

Fig. S1. Schematic of parameter estimation from the experiment. Each species (here, "red" and "blue") is sown in a density gradient and focal individuals of all species are planted into these plots. Germination of the background species is measured early in the year. Seed survival is measured from buried seed bags. Seed production at low density and competition coefficients are measured from seed production of focal plants at each neighbor density. These parameters are then combined to estimate fitness and stabilizing niche differences for each species pair.

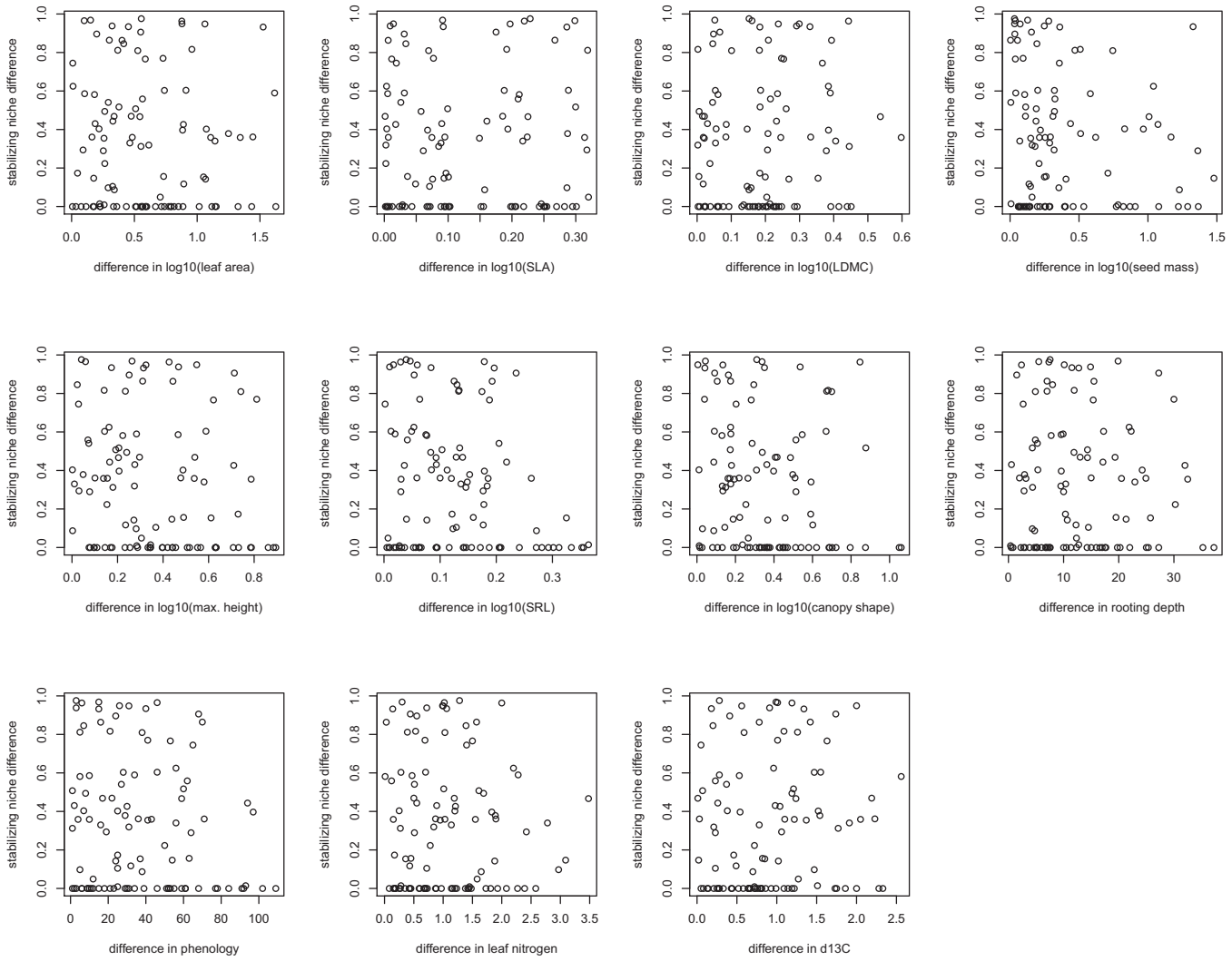

Fig. S2. (Continued)

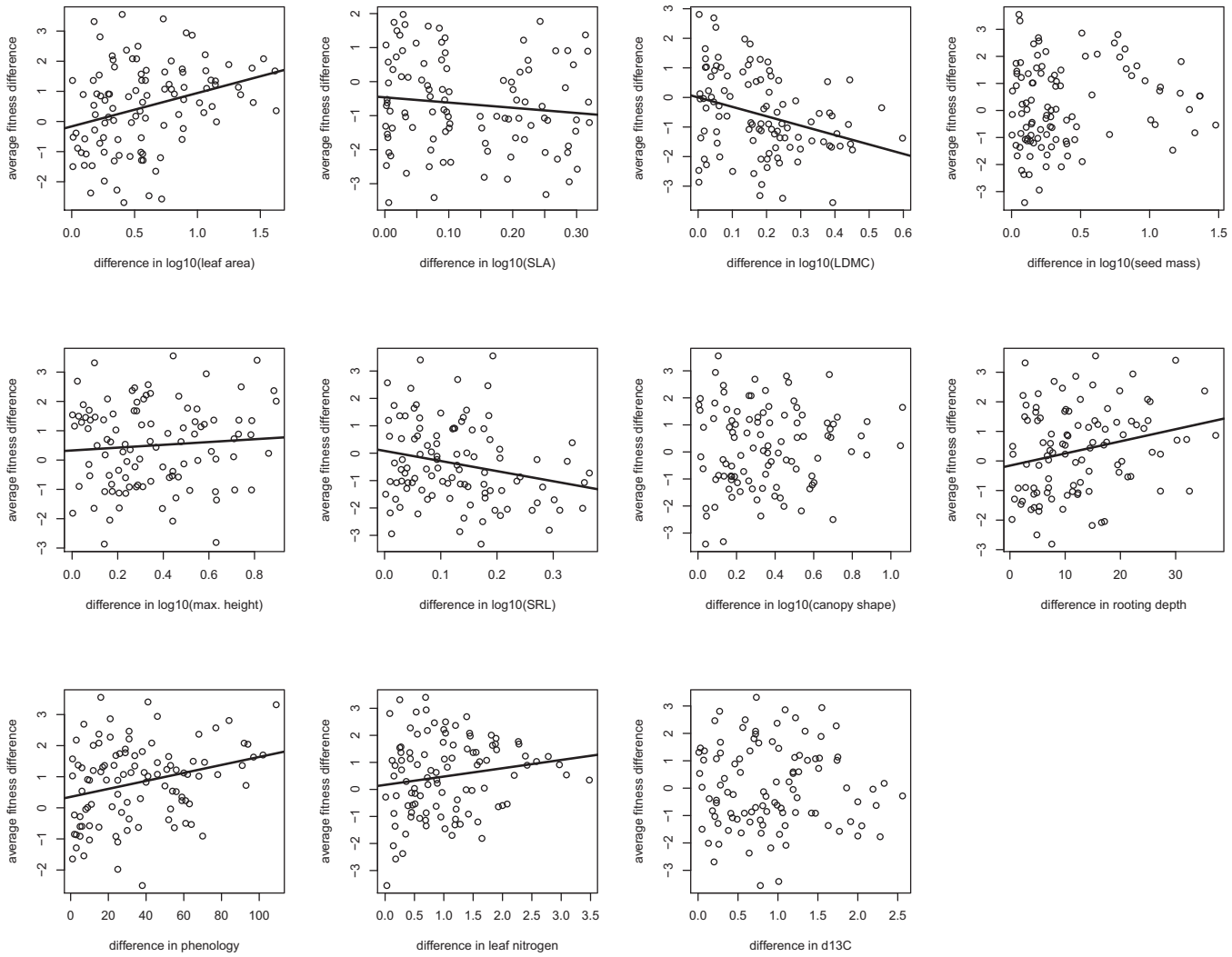

Fig. S2. The relationship between trait differences and both average fitness and stabilizing niche differences for species pairs in the experiment. See Table S2 for additional details.

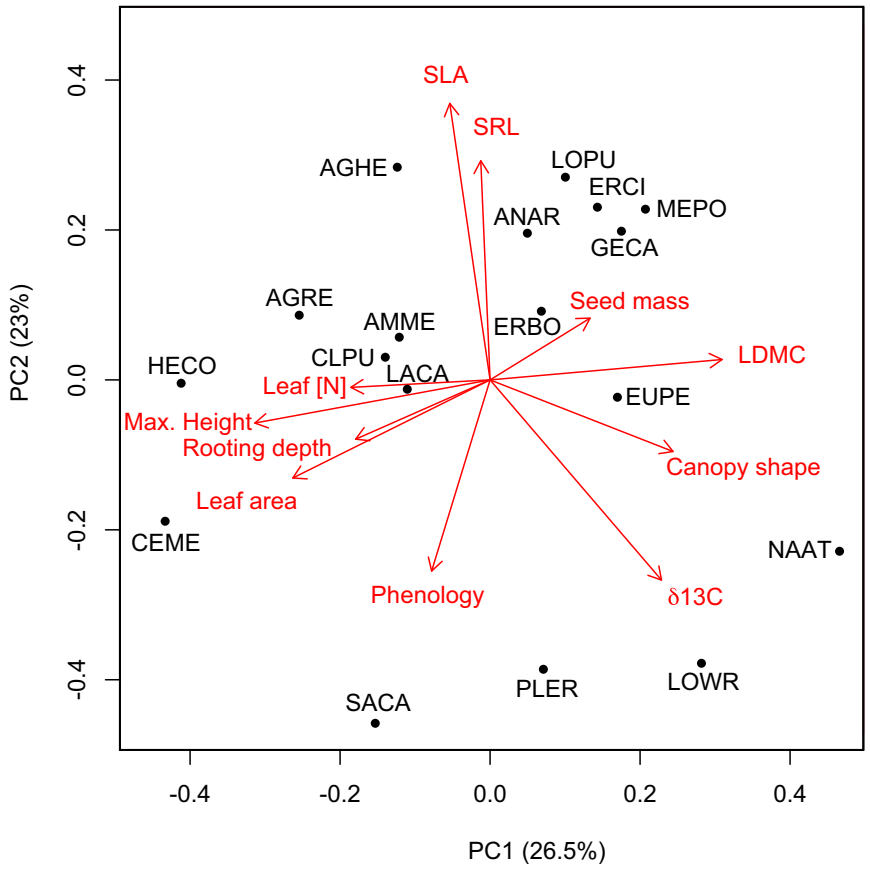

Fig. S3. Principal components analysis of trait differences between species in the experiment. For species codes see Table 1; for trait abbreviations see Table 2.

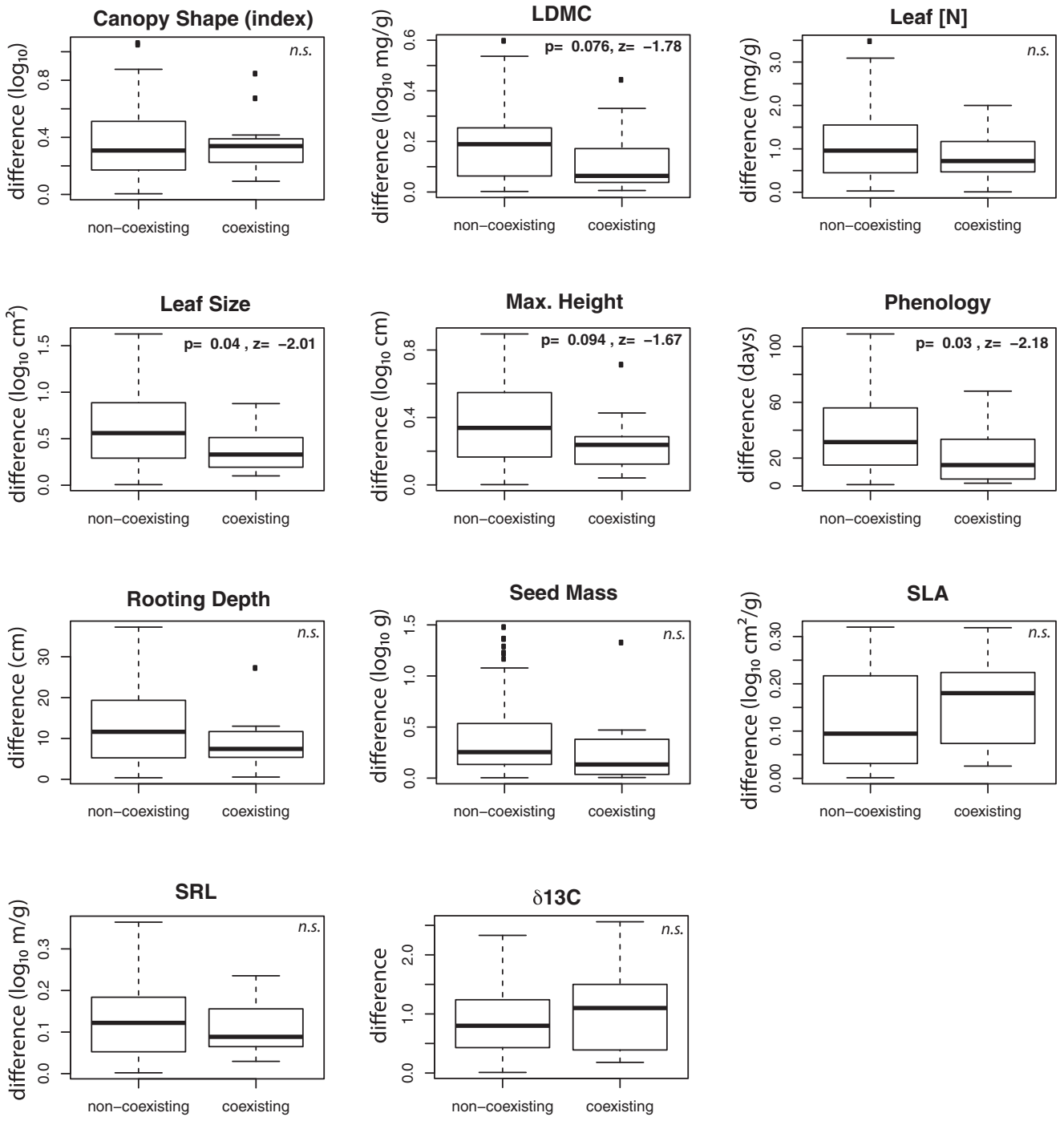

Fig. S4. Trait differences between pairs of species that are predicted to coexist in contrast with differences between pairs not predicted to coexist long-term, from Fig. 2. Test statistics correspond to a two-tailed Wilcoxon test implemented in the R package coin. Pairs predicted to coexist are significantly more similar in leaf area and phenology ($P < 0.05$) and tend to have more similar LDMC and maximum height ($P < 0.1$) than pairs that are not predicted to coexist long-term.

Table S1. Pairwise functional trait correlations (Pearson's r)

	Leaf area	SLA	LDMC	Seed mass	Maximum height	SRL	Canopy shape	Rooting depth	Phenology	Leaf [N]
SLA	−0.09									
LDMC	−0.64	0.01								
Seed mass	−0.06	0.21	0.30							
Maximum height	0.54	−0.18	−0.36	0.00						
SRL	−0.09	0.53	−0.16	−0.12	−0.11					
Canopy shape	−0.34	−0.11	0.34	0.37	−0.54	0.00				
Rooting depth	0.23	0.04	0.04	0.47	0.51	−0.03	0.14			
Phenology	0.07	−0.46	−0.40	−0.32	−0.05	−0.42	−0.02	−0.12		
Leaf [N]	0.24	0.20	−0.39	−0.09	0.01	−0.14	−0.04	−0.08	0.23	
δ13C	−0.23	−0.70	0.38	−0.10	−0.10	−0.42	0.20	−0.24	0.13	−0.29

Table S2. Correlations between trait differences and coexistence parameters, with results from Mantel tests

Trait	Niche difference	*P*	Fitness difference	*P*
Leaf area	0.059	0.676	**0.469**	**<0.001**
SLA	−0.003	0.942	**−0.367**	**0.008**
LDMC	−0.084	0.476	**−0.584**	**<0.001**
Leaf [N]	0.055	0.734	**0.383**	**0.006**
Seed mass	0.137	0.346	0.172	0.112
Maximum height	0.178	0.102	**0.411**	**<0.001**
Canopy shape	0.172	0.146	0.066	0.598
Rooting depth	0.044	0.832	**0.361**	**<0.001**
SRL	0.225	0.058	**−0.300**	**0.022**
Phenology	0.174	0.144	**0.552**	**<0.001**
δ13C	−0.077	0.502	−0.122	0.354
	Demographic response ratio	*P*	Competitive response ratio	*P*
Leaf area	**0.461**	**<0.001**	0.166	0.192
SLA	**−0.303**	**0.012**	−0.216	0.094
LDMC	**−0.443**	**0.002**	**−0.402**	**0.002**
Leaf [N]	**0.343**	**0.004**	0.185	0.122
Seed mass	**0.287**	**0.006**	−0.117	0.282
Maximum height	**0.547**	**<0.001**	−0.071	0.518
Canopy shape	0.064	0.63	0.025	0.872
Rooting depth	**0.594**	**<0.001**	−0.234	0.046
SRL	**−0.386**	**0.002**	0.031	0.82
Phenology	**0.563**	**<0.001**	0.164	0.196
δ13C	−0.105	0.336	−0.066	0.492

Values in bold correspond to tests that are significant at $\alpha = 0.05$ following the Benjamini–Hochberg correction for multiple comparisons.