

**Table S1.** Primer pairs used to generate the 534 repeatable, polymorphic AFLP loci used in our analyses. The number of loci yielded by each primer pair is also provided.

Primer	(Sequence 5' – 3')	Number of loci
Preselective		
Eco + C	GACTGCGTACCAATTCC	
Mse + C	GATGAGTCCTGAGTAAC	
Selective		
Eco + CTC	GACTGCGTACCAATTCCTC	
Eco + CAG	GACTGCGTACCAATTCCAG	
Mse + CTG	GATGAGTCCTGAGTAACTG	
Mse + CGA	GATGAGTCCTGAGTAACGA	
Mse + CAA	GATGAGTCCTGAGTAACAA	
Mse + CCT	GATGAGTCCTGAGTAACCT	
Primer		
Combinations		
D	Eco + CTC / Mse + CGA	105
E	Eco + CTC / Mse + CAA	62
F	Eco + CTC / Mse + CCT	70
G	Eco + CTC / Mse + CTG	66
I	Eco + CAG / Mse + CGA	49
J	Eco + CAG / Mse + CAA	52
K	Eco + CAG / Mse + CCT	58
L	Eco + CTC / Mse + CGC	72

**Table S2.** Baseline information about population variability. For AFLPs, the mean (s.e.) within-population expected heterozygosity (i.e., Nei's gene diversity within populations) is provided, as estimated in AFLP-SURV following the methods of Lynch and Milligan (1994). For mtDNA, within-population pairwise sequence divergence is provided, as estimated in MEGA v. 3.1 (Kumar et al. 2004) and corrected for multiple hits using the Kimura 2-parameter model (Kimura 1980). Also reported is host-plant patch size estimated from aerial photographs as in Sandoval (1994a) and Nosil et al. (2003). Host-plant patch size is correlated with insect population size (Sandoval 1994a).

Pop.	AFLPs expected heterozygosity (s.e.)	mtDNA sequence divergence (s.e.)	Host-plant patch size m <sup>2</sup>
1.PRC	0.117 (0.007)	0.023 (0.006)	68,181
2. VPC	0.107 (0.006)	0.023 (0.006)	100,000
3. HVC	0.120 (0.007)	0.018 (0.005)	1,048
4. HVA	0.113 (0.007)	0.019 (0.005)	2,141
5. LA	0.132 (0.007)	0.019 (0.005)	35,857
6. R23A	0.132 (0.006)	0.027 (0.005)	23,478



D67				X											
I15				X		X									
D23				X		X						X			
D30				X		X						X			
D93				X		X						X	X		
D125				X	X	X	X					X			
D59, D98, G14, G20, G78, I35, J132, L37												X			X
K31							X					X			
G						X						X			
L70					X							X			
I20, I					X							X			
G75				X	X			X				X	X	X	
D87			X												
L30			X				X						X	X	
D20			X			X							X	X	
F28, G28, K65		X													
F31, I6		X										X			
I53		X				X						X			X
E10	X	X													X
L97	X	X					X								X
G18						X			X						
I16						X	X		X						



**Table S4.** Results of simple and partial mantel tests examining how  $F_{ST}$ , estimated using all AFLP loci within a class, is related to indices of adaptive divergence and to geographic distance. All distance matrices were log-transformed. Results are also shown for mtDNA divergence, where the only significantly positive associations were detected (in bold). The simple mantel test of genetic distance against geographic distance is the same for each index of adaptive divergence. AD = Adaptive Divergence. GeoD = Geographic Distance. Analogous analyses using raw distance matrices are presented in the main text.

	Class of AFLP loci								mtDNA	
	Total Loci		Neutral Loci		Other Outlier		DH-Specific Outliers			
	r	p	r	p	r	p	r	p	r	p
<b>GeoD simple</b>										
All indices	0.33	0.16	0.35	0.15	0.28	0.15	-0.01	0.50	<b>0.73</b>	<b>0.02</b>
<b>GeoD partial</b>										
Host Preference	0.30	0.10	0.33	0.11	0.24	0.18	-0.12	0.36	<b>0.50</b>	<b>0.04</b>
Ecomorphology	0.32	0.19	0.33	0.17	0.31	0.15	-0.08	0.40	<b>0.71</b>	<b>0.03</b>
% <i>Ceanothus</i>	0.34	0.17	0.33	0.19	0.34	0.12	-0.05	0.42	<b>0.67</b>	<b>0.04</b>
<b>AD simple</b>										
Host Preference	0.16	0.31	0.16	0.32	0.15	0.27	0.13	0.33	<b>0.72</b>	<b>&lt;0.01</b>
Ecomorphology	0.05	0.39	0.14	0.30	-0.08	0.46	0.25	0.20	0.40	0.08
% <i>Ceanothus</i>	0.04	0.41	0.12	0.34	-0.09	0.44	0.10	0.30	<b>0.58</b>	<b>&lt;0.01</b>
<b>AD partial</b>										
Host Preference	-0.07	0.43	-0.10	0.35	-0.04	0.51	0.17	0.27	0.46	0.06
Ecomorphology	-0.03	0.52	0.06	0.38	-0.17	0.33	0.26	0.20	0.31	0.14
% <i>Ceanothus</i>	-0.10	0.42	-0.02	0.51	-0.22	0.24	0.12	0.29	<b>0.46</b>	<b>0.05</b>

**GeoD simple** = simple mantel of  $F_{ST}$  vs. geographic distance

**GeoD partial** = partial mantel of  $F_{ST}$  vs. geographic divergence, controlling for adaptive divergence

**AD simple** = simple mantel of  $F_{ST}$  vs. adaptive divergence

**AD partial** = partial mantel of  $F_{ST}$  vs. adaptive divergence, controlling for geographic distance

**Table S5.** Summary of the distribution of mantel correlation coefficients from analyses of  $F_{ST}$  at individual loci against adaptive divergence and geographic distance (n =206, of which 155 were non-outliers in the genome scan). Distance matrices were log-transformed prior to analysis (three loci were excluded due to negative distance in all comparisons). Binomial tests examine whether significant associations were positive more often than expected by chance. One-sample t-tests examine whether the mean of a distribution differs from zero (d.f. = 1 minus the sample size). Significant results are in bold. The simple mantel test of genetic distance against geographic distance is the same for each index of adaptive divergence. AD = Adaptive Divergence. GeoD = Geographic Distance. No. sig. + = number of loci exhibiting a significant positive relationships at  $p < 0.05$ ; in parentheses are the number of loci with significant positive associations that were outliers in the Dfdist analyses. No. sig. - = number of loci exhibiting a significant negative relationship at  $p < 0.05$ . Analogous analyses using raw distance matrices are presented in the main text.

	No. sig. +	No. sig. -	Binomial p	Significant Loci Only			All Loci		
				Mean	t-test	p	Mean	t-test	p
<b>GeoD simple</b>									
All indices	27 (5)	11	<b>0.014</b>	0.35	4.70	<b>&lt;0.001</b>	0.11	4.57	<b>&lt;0.001</b>
<b>GeoD partial</b>									
Host Preference	29 (7)	5	<b>&lt;0.001</b>	0.44	6.76	<b>&lt;0.001</b>	0.07	3.35	<b>0.001</b>
Ecomorphology	27 (5)	7	<b>0.001</b>	0.43	5.50	<b>&lt;0.001</b>	0.10	4.10	<b>&lt;0.001</b>
% <i>Ceanothus</i>	26 (5)	10	<b>0.011</b>	0.35	4.23	<b>&lt;0.001</b>	0.09	3.64	<b>&lt;0.001</b>
<b>AD simple</b>									
Host Preference	16 (3)	3	<b>0.004</b>	0.47	5.06	<b>&lt;0.001</b>	0.09	4.54	<b>&lt;0.001</b>
Ecomorphology	14 (1)	7	0.189	0.26	2.53	<b>0.020</b>	0.04	2.43	<b>0.016</b>
% <i>Ceanothus</i>	12 (1)	6	0.238	0.19	1.85	0.081	0.06	3.36	<b>0.001</b>
<b>AD partial</b>									
Host Preference	14 (4)	6	0.115	0.25	2.20	<b>0.040</b>	0.02	1.40	0.163

Ecomorphology	18 (2)	9	0.122	0.26	2.57	<b>0.016</b>	0.01	0.24	0.814
% <i>Ceanothus</i>	18 (2)	7	<b>0.043</b>	0.23	2.45	<b>0.022</b>	0.01	0.22	0.830

**GeoD simple** = simple mantel of  $F_{ST}$  vs. geographic distance

**GeoD partial** = partial mantel of  $F_{ST}$  vs. geographic divergence, controlling for adaptive divergence

**AD simple** = simple mantel of  $F_{ST}$  vs. adaptive divergence

**AD partial** = partial mantel of  $F_{ST}$  vs. adaptive divergence, controlling for geographic distance