

SUPPLEMENTAL MATERIAL

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Temporal stability in patterns of genetic diversity and structure of a marine foundation species (*Zostera marina*)

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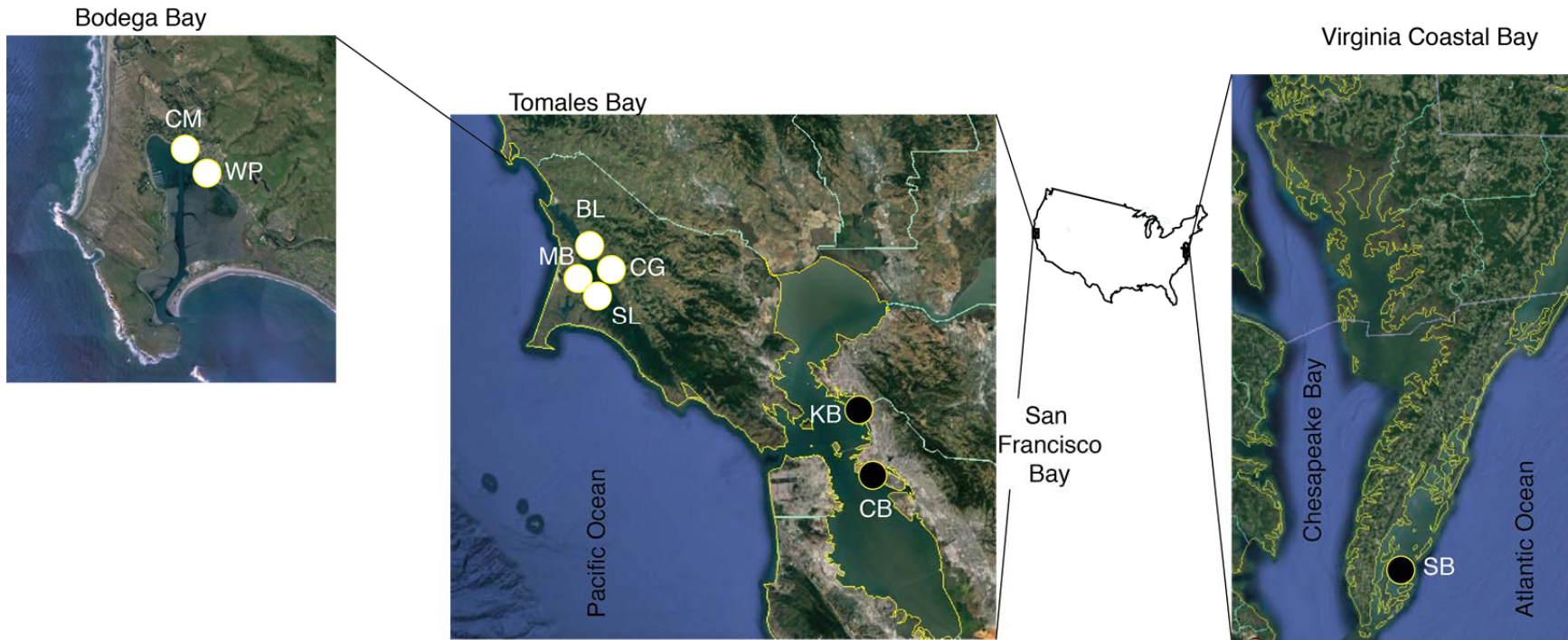
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		Historical								Present							
		WTB		ETB		BB		SFB		WTB		ETB		BB		SFB	
		BL	CG	MB	SL	WP	CM	KB	CB	BL	CG	MB	SL	WP	CM	KB	CB
Historical	WTB		0.062	0.080	0.138	0.148	0.112	0.407	0.356	0.023	0.054	0.051	0.090	0.075	0.071	0.363	0.380
	CG	0.039		0.029	0.052	0.208	0.231	0.466	0.432	0.016	0.029	0.031	0.057	0.141	0.157	0.426	0.458
	MB	0.053	0.017		0.104	0.286	0.300	0.483	0.440	0.072	0.097	0.044	0.122	0.191	0.200	0.444	0.452
	SL	0.128	0.104	0.129		0.208	0.291	0.693	0.677	0.055	0.048	0.058	0.020	0.198	0.198	0.671	0.693
	WP	0.111	0.191	0.203	0.114		0.018	0.418	0.474	0.115	0.164	0.238	0.207	0.030	0.043	0.461	0.424
	CM	0.127	0.238	0.234	0.166	0.005		0.306	0.328	0.124	0.174	0.249	0.227	0.022	0.044	0.322	0.318
	KB	0.440	0.527	0.494	0.521	0.427	0.431		0.069	0.513	0.526	0.539	0.620	0.347	0.421	0.042	0.010
	CB	0.442	0.536	0.503	0.535	0.432	0.436	0.109		0.425	0.511	0.510	0.589	0.371	0.437	0.062	0.004
	BL	0.022	0.034	0.055	0.060	0.097	0.130	0.454	0.460		0.004	0.028	0.027	0.057	0.061	0.451	0.424
	Present	CG	0.035	0.013	0.039	0.072	0.140	0.186	0.478	0.484	0.002		0.027	0.007	0.102	0.096	0.532
MB		0.035	0.000	0.009	0.099	0.180	0.222	0.520	0.532	0.032	0.022		0.033	0.153	0.156	0.538	0.500
SL		0.088	0.077	0.101	0.001	0.094	0.136	0.498	0.508	0.029	0.046	0.078		0.158	0.147	0.631	0.585
WP		0.079	0.151	0.159	0.106	0.007	0.012	0.415	0.420	0.060	0.101	0.140	0.073		0.004	0.340	0.363
CM		0.091	0.167	0.184	0.131	0.018	0.023	0.415	0.416	0.075	0.117	0.164	0.093	0.000		0.406	0.434
KB		0.436	0.526	0.490	0.516	0.422	0.423	0.005	0.092	0.449	0.474	0.516	0.494	0.407	0.412		0.045
CB		0.455	0.550	0.517	0.550	0.447	0.454	0.061	0.005	0.474	0.497	0.548	0.523	0.435	0.427	0.073	

24 Table S1. *Z. marina* pairwise Jost DST (above diagonal) and F_{ST} (below diagonal) values for historical and present samples collected
 25 from West Tomales Bay (WTB), East Tomales Bay (ETB), Bodega Bay (BB), and San Francisco Bay (SFB). BL=Blake's Landing,
 26 CG=Cypress Grove, MB=Marshall Beach, SL=Sacramento Landing, WP=Westside Park, CM=Channel Marker, KB=Keller Beach,
 27 CB=Crown Beach. Bold F_{ST} values are not significantly different from zero.

Region	Site	Tidal Height	r (across all genets)	r (mean of quadrats)
WTB	MB	HI	0.15	0.35
		S	0.04	0.06
	SL	HI	0.29	0.32
		S	0.08	0.19
ETB	BL	HI	0.15	0.20
		S	0.21	0.23
	CG	HI	0.12	0.20
		S	0.30	0.25
BB	WP	HI	-0.04	0.02
		S	0.08	0.19
	CM	HI	0.03	0.03
		S	-0.06	-0.06

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 29 Table S2. *Z. marina* within-group relatedness values for each tidal height. Relatedness (r) was calculated using all genets within a tidal
 30 height and also using the mean relatedness of all genets within a 1m² quadrat (n=4). BL=Blake's Landing, CG=Cypress Grove,
 31 MB=Marshall Beach, SL=Sacramento Landing, WP=Westside Park, CM=Channel Marker, KB=Keller Beach, CB=Crown Beach.



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 33 Fig. S1. Map of *Z. marina* sampling locations. Dark circles represent sites where samples were collected by a haphazard swim. White
 34 circles represent locations where replicate 1m² quadrats (n=4) at the high intertidal and subtidal were established for sample
 35 collections. BL=Blake's Landing, CG=Cypress Grove, MB=Marshall Beach, SL=Sacramento Landing, WP=Westside Park,
 36 CM=Channel Marker, KB=Keller Beach, CB=Crown Beach, SB=South Bay.

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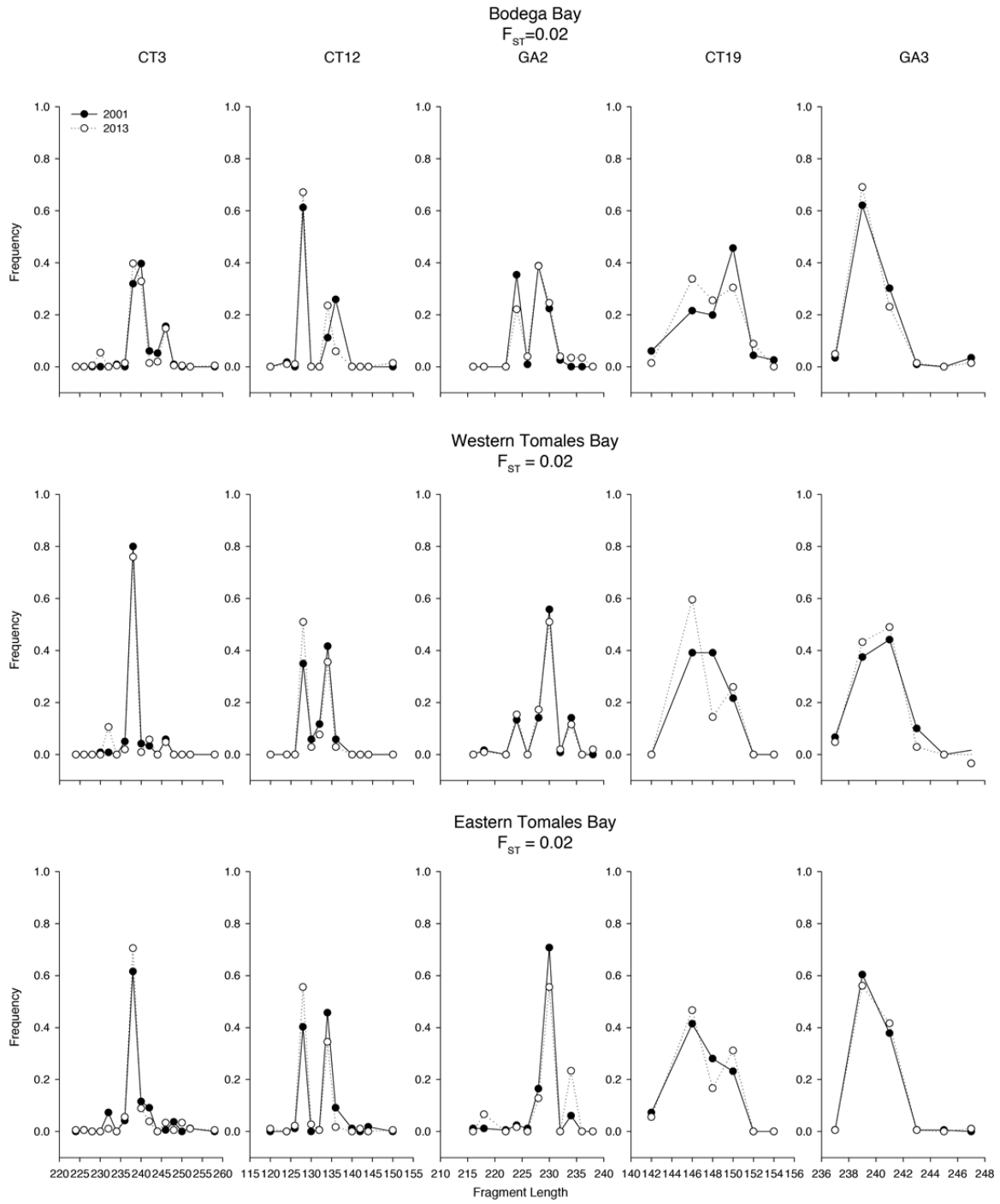


Fig. S2. *Zostera marina* allele frequencies at two sampling periods showing few differences among time periods.

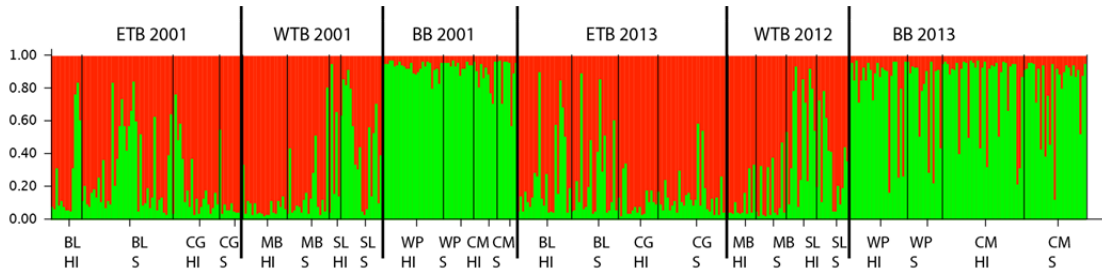


Fig. S3 *Zostera marina* Bayesian clustering using the program STRUCTURE from 3 regions (BB=Bodega Bay, ETB=East Tomales Bay, and WTB=West Tomales Bay) at two sampling periods showing few differences among times and consistent patterns among sites. BL=Blake's Landing, CG=Cypress Grove, MB=Marshall Beach, SL=Sacramento Landing, WP=Westside Park, CM=Channel Marker.

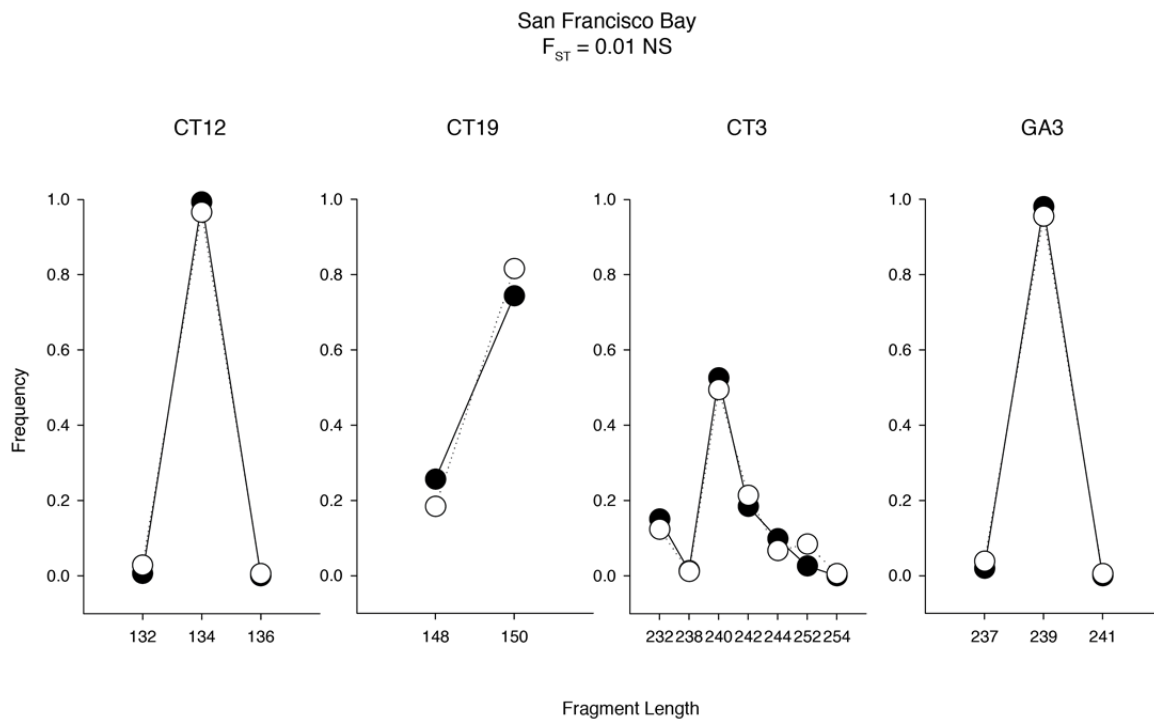


Fig. S4 *Zostera marina* allele frequencies at two sampling periods showing few differences among time periods.

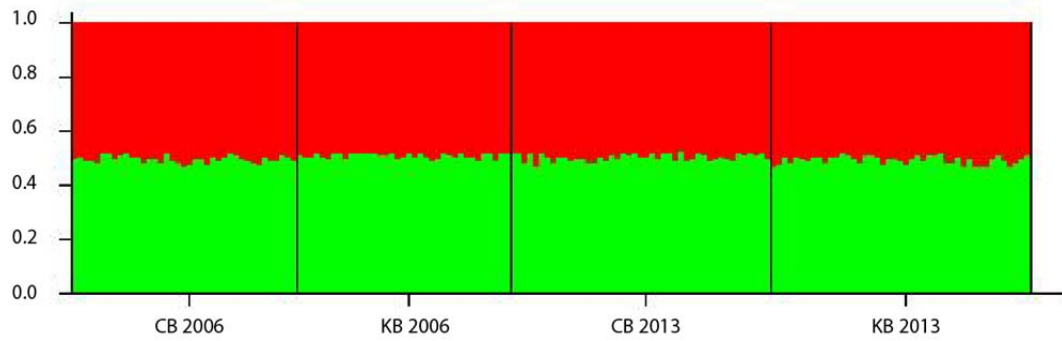


Fig. S5 *Zostera marina* Bayesian clustering using the program STRUCTURE from 2 meadows within San Francisco Bay (CB=Crown Beach, KB=Keller Beach) at two sampling periods showing few differences among times and consistent patterns among sites.

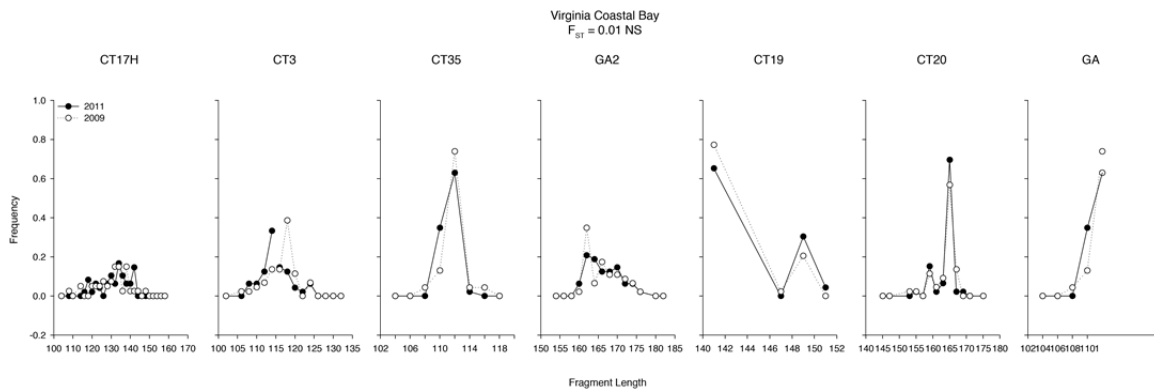


Fig. S6 *Zostera marina* allele frequencies at two sampling periods showing few differences among time periods.



Fig. S7 *Zostera marina* Bayesian clustering using the program STRUCTURE from two sampling periods in the Virginia Coastal Bays showing few temporal differences.

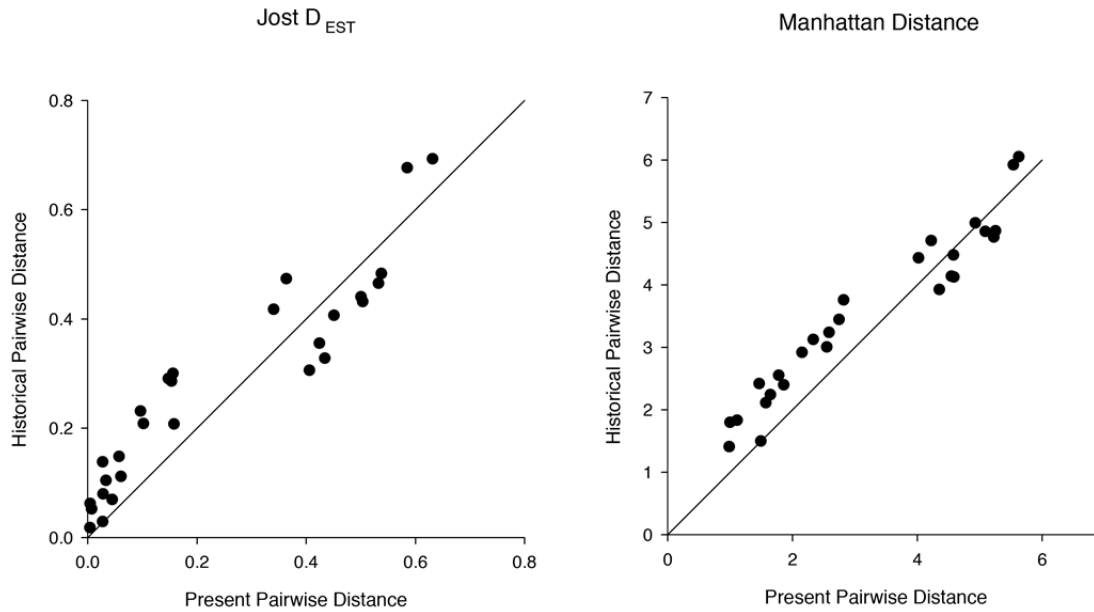


Fig. S8 *Zostera marina* population differentiation, estimated by D_{EST} and Manhattan distance (using 4 loci), between meadows in Bodega Bay, Tomales Bay, and San Francisco Bay did not change between two sampling times 6 to 12 years apart. Historical samples are from Kamel et al. 2012 and Ort et al. 2012. The reference line is a 1:1 line