Evidence for rangewide panmixia despite barriers to dispersal in a marine mussel

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Supplementary information

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Table S1 - Pairwise ϕ_{ST} comparison of *Perna perna* populations. All P-values were corrected and non-significant. Locations codes as in Table S6.

	KR	BZ	AN	PN	CG	BM	AM	LA	TG	LP	AT	PM	TV	VL	SG	LR	RB	CB	SB	EB	ES	IM	ML	TT	BJ	LB	DK
KR	-	0.000	0.008	0.000	0.000	0.000	0.025	0.000	0.013	0.195	0.017	0.027	0.000	0.000	0.127	0.000	0.000	0.000	0.000	0.011	0.013	0.030	0.000	0.014	0.029	0.000	0.000
BZ		-	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.115	0.000	0.002	0.000	0.000	0.121	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000
AN			-	0.000	0.000	0.000	0.026	0.006	0.000	0.216	0.014	0.058	0.029	0.015	0.256	0.020	0.000	0.002	0.000	0.011	0.054	0.019	0.026	0.020	0.026	0.000	0.000
PN				-	0.000	0.000	0.000	0.000	0.000	0.114	0.000	0.000	0.000	0.000	0.155	0.002	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.002
CG					-	0.000	0.006	0.000	0.000	0.082	0.008	0.085	0.000	0.014	0.236	0.017	0.000	0.000	0.000	0.024	0.037	0.043	0.003	0.026	0.040	0.000	0.000
BM						-	0.020	0.001	0.000	0.219	0.004	0.025	0.018	0.002	0.219	0.007	0.000	0.000	0.000	0.002	0.033	0.005	0.014	0.006	0.010	0.000	0.000
AM							-	0.000	0.009	0.153	0.000	0.012	0.000	0.013	0.255	0.018	0.000	0.000	0.000	0.002	0.000	0.015	0.000	0.000	0.000	0.022	0.037
LA								-	0.000	0.039	0.000	0.014	0.000	0.000	0.127	0.000	0.000	0.000	0.000	0.001	0.000	0.017	0.000	0.000	0.004	0.000	0.000
TG									-	0.142	0.000	0.046	0.013	0.020	0.234	0.025	0.000	0.000	0.000	0.012	0.032	0.011	0.015	0.002	0.016	0.000	0.012
LP										-	0.252	0.432	0.063	0.212	0.201	0.087	0.156	0.197	0.092	0.225	0.167	0.390	0.128	0.225	0.350	0.229	0.158
AT											-	0.005	0.000	0.000	0.300	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.026
PM												-	0.014	0.000	0.324	0.000	0.005	0.003	0.008	0.000	0.000	0.005	0.006	0.000	0.000	0.026	0.044
TV													-	0.000	0.113	0.000	0.000	0.000	0.000	0.006	0.000	0.031	0.000	0.003	0.015	0.010	0.008
VL														-	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.006	0.000	0.000
SG															-	0.048	0.192	0.189	0.146	0.210	0.172	0.349	0.177	0.217	0.332	0.196	0.113
LR																-	0.000	0.000	0.000	0.001	0.000	0.013	0.000	0.004	0.012	0.000	0.000
RB																	-	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.003
CB																		-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SB																			-	0.000	0.001	0.006	0.000	0.000	0.000	0.000	0.002
EB																				-	0.005	0.000	0.000	0.000	0.000	0.002	0.020
ES																					-	0.028	0.000	0.000	0.005	0.028	0.031
IM																						-	0.020	0.000	0.000	0.009	0.038
ML																							-	0.001	0.005	0.011	0.013
TT																								-	0.000	0.006	0.027
BJ																									-	0.015	0.041
LB																										-	0.000
DK																											-

Table S2 – a) Pairwise F_{ST} (above) and Jost's Dest (below) comparisons of *P. perna* populations. Locations codes as in Table S6.

a)	KR	BZ	OR	PN	CG	BM	AM	LA	TG	LP	AT	PM	TV	VL	SG	LR	RB	CB	SB	EB	ES	IM	ML	TT	BJ	LB	DK
KR		0.000	0.001	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.021	0.000	0.000	0.000	0.002	0.000	0.000	0.004	0.004	0.000	0.001	0.000	0.000
BZ	0.000		0.000	0.003	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.019	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OR	0.001	0.004		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.006	0.001	0.000	0.000	0.000	0.000	0.000	0.003	0.006	0.003	0.002	0.000	0.000
PN	0.007	0.016	0.002		0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.006	0.011	0.001	0.012	0.002	0.003	0.000	0.009	0.004	0.001	0.010	0.011	0.003	0.006	0.003	0.000
CG	0.005	0.000	0.000	0.003		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BM	0.000	0.000	0.000	0.005	0.001		0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.007	0.000	0.000
AM	0.000	0.000	0.002	0.001	0.001	0.000		0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.001	0.002	0.000	0.001	0.000	0.000	0.005	0.000	0.000
LA	0.000	0.000	0.000	0.000	0.001	0.000	0.000		0.000	0.000	0.000	0.000	0.004	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.002	0.000	0.000
TG	0.000	0.000	0.000	0.004	0.003	0.000	0.000	0.000		0.000	0.003	0.003	0.005	0.000	0.021	0.000	0.004	0.001	0.001	0.000	0.000	0.007	0.004	0.001	0.001	0.000	0.002
LP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.002	0.000	0.008	0.000	0.000	0.000	0.003	0.000	0.002	0.000	0.002	0.000	0.007	0.000	0.000
PM	0.000	0.000	0.001	0.002	0.002	0.000	0.000	0.001	0.003	0.000	0.000		0.000	0.000	0.024	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TV	0.001	0.000	0.013	0.039	0.003	0.003	0.001	0.006	0.019	0.000	0.000	0.007		0.000	0.027	0.000	0.002	0.003	0.006	0.009	0.002	0.003	0.000	0.000	0.001	0.000	0.007
VL	0.000	0.000	0.004	0.001	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.024	0.000	0.000	0.000	0.001	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.001
SG	0.001	0.000	0.001	0.008	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.008		0.009	0.009	0.000	0.003	0.010	0.018	0.025	0.024	0.018	0.034	0.021	0.011
LR	0.000	0.001	0.000	0.004	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.002	0.000	0.000		0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.002	0.000	0.000
RB	0.001	0.000	0.001	0.014	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.005	0.000	0.007	0.000	0.001		0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000
CB	0.000	0.003	0.001	0.009	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.003	0.000	0.000	0.000	0.000		0.005	0.001	0.003	0.007	0.005	0.000	0.007	0.000	0.000
SB	0.003	0.001	0.004	0.010	0.000	0.002	0.011	0.000	0.000	0.000	0.000	0.002	0.028	0.000	0.000	0.000	0.008	0.015		0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.003
EB	0.002	0.004	0.000	0.017	0.006	0.001	0.006	0.000	0.000	0.000	0.000	0.003	0.041	0.003	0.003	0.002	0.000	0.006	0.000		0.002	0.001	0.001	0.000	0.005	0.000	0.000
ES	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.001	0.000	0.002		0.003	0.001	0.001	0.000	0.000	0.000
IM	0.002	0.001	0.003	0.026	0.002	0.000	0.007	0.001	0.008	0.000	0.000	0.000	0.002	0.013	0.002	0.002	0.000	0.009	0.006	0.005	0.012		0.000	0.000	0.007	0.000	0.003
ML	0.004	0.000	0.015	0.007	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.003	0.006	0.000	0.004	0.000	0.003		0.000	0.004	0.000	0.002
TT	0.000	0.000	0.007	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.004	0.000	0.000	0.000	0.001	0.000	0.007	0.006	0.000	0.000		0.003	0.000	0.000
BJ	0.005	0.002	0.000	0.014	0.002	0.012	0.012	0.004	0.006	0.000	0.003	0.004	0.009	0.004	0.008	0.002	0.006	0.010	0.001	0.013	0.001	0.016	0.016	0.010		0.000	0.006
LB	0.000	0.001	0.000	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.005	0.000	0.000	0.000	0.003	0.000	0.000	0.001	0.003	0.000	0.000		0.000
DK	0.002	0.001	0.002	0.004	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.027	0.002	0.002	0.005	0.001	0.001	0.000	0.000	0.000	0.010	0.002	0.000	0.015	0.001	

Table S2 – b) 95% Confidence intervals of pairwise F_{ST} (above) and Jost's Dest (below) comparisons of *P. perna* populations. Locations codes as in Table S6.

	KR	BZ	OR	PN	CG	BM	AM	LA	TG	LP	AT	PM	TV	VL	SG	LR	RB	CB	SB	EB	ES	IM	ML	TT	BJ	LB	DK
KR		(-0.014 - 0.012)	(-0.013 - 0.022)	(-0.011 - 0.017)	(-0.021 - 0.021)	(-0.010 - 0.014)	(-0.010 - 0.015)	(-0.014 - 0.010)	(-0.013 - 0.009)	(-0.097 - 0.076)	(-0.013 - 0.016)	(-0.016 - 0.019)	(-0.011 - 0.015)	(-0.014 - 0.011)	(-0.031 - 0.100)	(-0.015 - 0.009)	(-0.011 - 0.015)	(-0.013 - 0.014)	(-0.011 - 0.018)	(-0.013 - 0.011)	(-0.012 - 0.013)	(-0.008 - 0.021)	(-0.008 - 0.023)	(-0.014 - 0.010)	(-0.010 - 0.017)	(-0.013 - 0.008)	(-0.012 - 0.016)
BZ	(-0.027 - 0.046)		(-0.015 - 0.016)	(-0.010 - 0.021)	(-0.025 - 0.017)	(-0.011 - 0.012)	(-0.012 - 0.012)	(-0.016 - 0.010)	(-0.009 - 0.015)	(-0.101 - 0.078)	(-0.012 - 0.017)	(-0.017 - 0.010)	(-0.014 - 0.013)	(-0.013 - 0.010)	(-0.037 - 0.109)	(-0.013 - 0.013)	(-0.014 - 0.010)	(-0.013 - 0.020)	(-0.013 - 0.011)	(-0.012 - 0.013)	(-0.013 - 0.010)	(-0.012 - 0.013)	(-0.014 - 0.008)	(-0.014 - 0.008)	(-0.013 - 0.010)	(-0.015 - 0.010)	(-0.013 - 0.015)
OR	(-0.035 - 0.062)	(-0.023 - 0.049)		(-0.016 - 0.018)	(-0.029 - 0.020)	(-0.016 - 0.012)	(-0.013 - 0.018)	(-0.019 - 0.009)	(-0.015 - 0.020)	(-0.089 - 0.105)	(-0.016 - 0.016)	(-0.016 - 0.020)	(-0.009 - 0.033)	(-0.014 - 0.020)	(-0.050- 0.102)	(-0.014 - 0.021)	(-0.016 - 0.011)	(-0.016 - 0.015)	(-0.012 - 0.015)	(-0.016 - 0.014)	(-0.014 - 0.019)	(-0.009 - 0.021)	(-0.008 - 0.025)	(-0.010 - 0.023)	(-0.013 - 0.025)	(-0.018 - 0.016)	(-0.016 - 0.017)
PN	(-0.028 - 0.062)	(-0.024 - 0.071)	(-0.028 - 0.052)		(-0.021 - 0.030)	(-0.010 - 0.016)	(-0.012 - 0.013)	(-0.013 - 0.011)	(-0.010 - 0.016)	(-0.096 - 0.080)	(-0.012 - 0.015)	(-0.011 - 0.029)	(-0.004 - 0.031)	(-0.012 - 0.020)	(-0.045 - 0.109)	(-0.010 - 0.020)	(-0.008 - 0.016)	(-0.011 - 0.015)	(-0.005 - 0.026)	(-0.008 - 0.021)	(-0.010 - 0.018)	(-0.004 - 0.029)	(-0.004 - 0.031)	(-0.009 - 0.019)	(-0.008 - 0.026)	(-0.009 - 0.021)	(-0.012 - 0.015)
CG	(-0.039 - 0.080)	(-0.039 - 0.074)	(-0.043 - 0.070)	(-0.044 - 0.088)		(-0.022 - 0.023)	(-0.026 - 0.020)	(-0.023 - 0.020)	(-0.018 - 0.025)	(-0.121 - 0.101)	(-0.026 - 0.015)	(-0.026 - 0.021)	(-0.023 - 0.023)	(-0.020 - 0.021)	(-0.051 - 0.108)	(-0.024 - 0.018)	(-0.025 - 0.014)	(-0.022 - 0.022)	(-0.025 - 0.018)	(-0.017 - 0.022)	(-0.023 - 0.019)	(-0.020 - 0.024)	(-0.021 - 0.024)	(-0.022 - 0.019)	(-0.021 - 0.022)	(-0.023 - 0.019)	(-0.026 - 0.024)
BM	(-0.034 - 0.044)	(-0.024 - 0.043)	(-0.026 - 0.045)	(-0.026 - 0.053)	(-0.047 - 0.078)		(-0.013 - 0.009)	(-0.014 - 0.006)	(-0.011 - 0.016)	(-0.083 - 0.091)	(-0.015 - 0.008)	(-0.015 - 0.018)	(-0.008 - 0.020)	(-0.011 - 0.013)	(-0.048 - 0.093)	(-0.013 - 0.010)	(-0.012 - 0.010)	(-0.013 - 0.014)	(-0.011 - 0.011)	(-0.011 - 0.011)	(-0.011 - 0.012)	(-0.013 - 0.010)	(-0.010 - 0.015)	(-0.014 - 0.011)	(-0.007 - 0.024)	(-0.015 - 0.010)	(-0.013 - 0.011)
AM	(-0.036 - 0.052)	(-0.031 - 0.043)	(-0.031 - 0.055)	(-0.030 - 0.043)	(-0.042 - 0.077)	(-0.037 - 0.036)		(-0.014 - 0.007)	(-0.009 - 0.017)	(-0.106 - 0.077)	(-0.016 - 0.010)	(-0.014 - 0.020)	(-0.013 - 0.016)	(-0.016 - 0.009)	(-0.051 - 0.098)	(-0.013 - 0.011)	(-0.012 - 0.009)	(-0.014 - 0.012)	(-0.010 - 0.016)	(-0.009 - 0.017)	(-0.015 - 0.009)	(-0.011 - 0.016)	(-0.012 - 0.013)	(-0.014 - 0.009)	(-0.008 - 0.022)	(-0.014 - 0.009)	(-0.015 - 0.011)
LA	(-0.022 - 0.040)	(-0.027 - 0.038)	(-0.023 - 0.039)	(-0.030 - 0.044)	(-0.038 - 0.071)	(-0.038 - 0.022)	(-0.040 - 0.028)		(-0.013 - 0.014)	(-0.095 - 0.080)	(-0.013 - 0.013)	(-0.014 - 0.020)	(-0.010 - 0.022)	(-0.015 - 0.012)	(-0.046 - 0.092)	(-0.014 - 0.010)	(-0.014 - 0.007)	(-0.015 - 0.008)	(-0.014 - 0.008)	(-0.014 - 0.010)	(-0.015 - 0.011)	(-0.010 - 0.015)	(-0.013 - 0.015)	(-0.013 - 0.011)	(-0.011 - 0.020)	(-0.015 - 0.012)	(-0.015 - 0.010)
TG	(-0.031 - 0.045)	(-0.024 - 0.056)	(-0.030 - 0.048)	(-0.028 - 0.051)	(-0.044 - 0.082)	(-0.037 - 0.045)	(-0.037 - 0.050)	(-0.040 - 0.035)		(-0.108 - 0.065)	(-0.010 - 0.020)	(-0.011 - 0.023)	(-0.008 - 0.021)	(-0.013 - 0.012)	(-0.033 - 0.117)	(-0.011 - 0.013)	(-0.007 - 0.019)	(-0.011 - 0.017)	(-0.012 - 0.020)	(-0.013 - 0.010)	(-0.011 - 0.015)	(-0.007 - 0.025)	(-0.009 - 0.021)	(-0.009 - 0.013)	(-0.011 - 0.018)	(-0.013 - 0.010)	(-0.011 - 0.018)
LP	(-0.085 - 0.194)	(-0.093 - 0.194)	(-0.094 - 0.248)	(-0.075 - 0.175)	(-0.102 - 0.230)	(-0.101 - 0.227)	(-0.088 - 0.205)	(-0.100 - 0.203)	(-0.084 - 0.149)		(-0.082 - 0.082)	(-0.105 - 0.095)	(-0.082 - 0.088)	(-0.084 - 0.086)	(-0.174 - 0.209)	(-0.087 - 0.080)	(-0.089 - 0.085)	(-0.097 - 0.064)	(-0.089 - 0.082)	(-0.096 - 0.079)	(-0.091 - 0.092)	(-0.080 - 0.112)	(-0.080 - 0.093)	(-0.083 - 0.090)	(-0.091 - 0.077)	(-0.08 - 0.093)	(-0.105 - 0.090)
AT	(-0.041 - 0.058)	(-0.036 - 0.054)	(-0.039 - 0.062)	(-0.039 - 0.048)	(-0.047 - 0.066)	(-0.050 - 0.029)	(-0.052 - 0.031)	(-0.042 - 0.044)	(-0.044 - 0.058)	(-0.101 - 0.214)		(-0.015 - 0.022)	(-0.012 - 0.020)	(-0.013 - 0.013)	(-0.044 - 0.094)	(-0.017 - 0.006)	(-0.014 - 0.009)	(-0.016 - 0.011)	(-0.010 - 0.018)	(-0.012 - 0.014)	(-0.012 - 0.018)	(-0.013 - 0.017)	(-0.010 - 0.021)	(-0.014 - 0.015)	(-0.007 - 0.027)	(-0.016 - 0.011)	(-0.014 - 0.015)
PM	(-0.033 - 0.053)	(-0.042 - 0.033)	(-0.031 - 0.055)	(-0.042 - 0.063)	(-0.045 - 0.086)	(-0.036 - 0.061)	(-0.044 - 0.058)	(-0.035 - 0.056)	(-0.038 - 0.062)	(-0.101 - 0.243)	(-0.041 - 0.064)		(-0.015 - 0.019)	(-0.016 - 0.019)	(-0.033 - 0.106)	(-0.015 - 0.021)	(-0.014 - 0.018)	(-0.013 - 0.031)	(-0.013 - 0.017)	(-0.014 - 0.017)	(-0.016 - 0.015)	(-0.016 - 0.015)	(-0.014 - 0.014)	(-0.015 - 0.016)	(-0.014 - 0.015)	(-0.017 - 0.017)	(-0.017 - 0.021)
TV	(-0.038 - 0.056)	(-0.030 - 0.046)	(-0.037 - 0.088)	(-0.007 - 0.096)	(-0.044 - 0.080)	(-0.037 - 0.062)	(-0.032 - 0.052)	(-0.028 - 0.064)	(-0.021 - 0.072)	(-0.089 - 0.212)	(-0.043 - 0.066)	(-0.034 - 0.065)		(-0.015 - 0.012)	(-0.026 - 0.112)	(-0.013 - 0.013)	(-0.011 - 0.018)	(-0.011 - 0.024)	(-0.007 - 0.022)	(-0.005 - 0.027)	(-0.010 - 0.016)	(-0.011 - 0.021)	(-0.014 - 0.012)	(-0.013 - 0.015)	(-0.011 - 0.017)	(-0.014 - 0.014)	(-0.009 - 0.027)
VL	(-0.032 - 0.049)	(-0.030 - 0.044)	(-0.037 - 0.067)	(-0.040 - 0.053)	(-0.041 - 0.078)	(-0.031 - 0.046)	(-0.034 - 0.039)	(-0.038 - 0.047)	(-0.038 - 0.050)	(-0.095 - 0.209)	(-0.049 - 0.049)	(-0.043 - 0.060)	(-0.034 - 0.052)		(-0.029 - 0.120)	(-0.015 - 0.011)	(-0.010 - 0.013)	(-0.016 - 0.012)	(-0.010 - 0.015)	(-0.012 - 0.012)	(-0.016 - 0.008)	(-0.008 - 0.019)	(-0.014 - 0.015)	(-0.011 - 0.013)	(-0.012 - 0.015)	(-0.017 - 0.005)	(-0.012 - 0.017)

SG	(-0.167 - 0.220)	(-0.157 - 0.221)	(-0.121 - 0.225)	(-0.118 - 0.263)	(-0.141 - 0.226)	(-0.136 - 0.193)	(-0.133 - 0.220)	(-0.138 - 0.213)	(-0.158 - 0.241)	(-0.175 - 0.279)	(-0.135 - 0.228)	(-0.153 - 0.222)	(-0.179 - 0.213)	(-0.152 - 0.236)		(-0.041 - 0.090)	(-0.042 - 0.092)	(-0.052 - 0.087)	(-0.050 - 0.084)	(-0.043 - 0.093)	(-0.037 - 0.109)	(-0.032 - 0.110)	(-0.028 - 0.110)	(-0.037 - 0.104)	(-0.021 - 0.119)	(-0.034 - 0.112)	(-0.046 - 0.108)
LR	(-0.027 - 0.053)	(-0.029 - 0.052)	(-0.043 - 0.070)	(-0.038 - 0.072)	(-0.046 - 0.080)	(-0.032 - 0.054)	(-0.036 - 0.048)	(-0.028 - 0.049)	(-0.032 - 0.048)	(-0.106 - 0.228)	(-0.058 - 0.025)	(-0.044 - 0.066)	(-0.032 - 0.053)	(-0.044 - 0.051)	(-0.144 - 0.213)		(-0.013 - 0.011)	(-0.014 - 0.011)	(-0.012 - 0.013)	(-0.012 - 0.010)	(-0.010 - 0.016)	(-0.011 - 0.018)	(-0.014 - 0.012)	(-0.015 - 0.007)	(-0.011 - 0.018)	(-0.016 - 0.007)	(-0.013 - 0.018)
RB	(-0.027 - 0.048)	(-0.021 - 0.037)	(-0.025 - 0.043)	(-0.017 - 0.058)	(-0.035 - 0.064)	(-0.023 - 0.036)	(-0.023 - 0.036)	(-0.019 - 0.032)	(-0.026 - 0.047)	(-0.088 - 0.224)	(-0.027 - 0.037)	(-0.030 - 0.059)	(-0.038 - 0.056)	(-0.024 - 0.052)	(-0.142 - 0.221)	(-0.026 - 0.050)		(-0.016 - 0.010)	(-0.008 - 0.015)	(-0.011 - 0.010)	(-0.010 - 0.014)	(-0.012 - 0.014)	(-0.011 - 0.013)	(-0.013 - 0.012)	(-0.010 - 0.020)	(-0.014 - 0.010)	(-0.014 - 0.010)
CB	(-0.036 - 0.060)	(-0.035 - 0.060)	(-0.036 - 0.057)	(-0.025 - 0.058)	(-0.050 - 0.077)	(-0.041 - 0.050)	(-0.036 - 0.042)	(-0.026 - 0.047)	(-0.038 - 0.054)	(-0.093 - 0.188)	(-0.049 - 0.044)	(-0.049 - 0.074)	(-0.041 - 0.064)	(-0.053 - 0.041)	(-0.135 - 0.234)	(-0.032 - 0.059)	(-0.027 - 0.046)		(-0.007 - 0.022)	(-0.010 - 0.015)	(-0.011 - 0.020)	(-0.007 - 0.027)	(-0.008 - 0.023)	(-0.012 - 0.016)	(-0.008 - 0.027)	(-0.018 - 0.009)	(-0.014 - 0.015)
SB	(-0.034 - 0.056)	(-0.026 - 0.040)	(-0.027 - 0.051)	(-0.041 - 0.073)	(-0.044 - 0.064)	(-0.032 - 0.047)	(-0.028 - 0.067)	(-0.035 - 0.035)	(-0.038 - 0.060)	(-0.098 - 0.225)	(-0.048 - 0.060)	(-0.037 - 0.056)	(-0.017 - 0.081)	(-0.038 - 0.053)	(-0.123 - 0.217)	(-0.040 - 0.053)	(-0.020 - 0.050)	(-0.025 - 0.082)		(-0.013 - 0.009)	(-0.012 - 0.013)	(-0.009 - 0.014)	(-0.011 - 0.011)	(-0.011 - 0.014)	(-0.012 - 0.019)	(-0.012 - 0.017)	(-0.009 - 0.021)
EB	(-0.024 - 0.045)	(-0.025 - 0.049)	(-0.028 - 0.052)	(-0.016 - 0.064)	(-0.040 - 0.077)	(-0.026 - 0.039)	(-0.029 - 0.054)	(-0.027 - 0.040)	(-0.023 - 0.035)	(-0.080 - 0.202)	(-0.035 - 0.053)	(-0.032 - 0.057)	(-0.007 - 0.105)	(-0.030 - 0.045)	(-0.124 - 0.202)	(-0.027 - 0.047)	(-0.026 - 0.041)	(-0.029 - 0.058)	(-0.031 - 0.042)		(-0.010 - 0.017)	(-0.009 - 0.014)	(-0.009 - 0.014)	(-0.009 - 0.015)	(-0.007 - 0.023)	(-0.013 - 0.010)	(-0.012 - 0.016)
ES	(-0.030 - 0.044)	(-0.025 - 0.036)	(-0.039 - 0.056)	(-0.035 - 0.045)	(-0.048 - 0.071)	(-0.035 - 0.045)	(-0.047 - 0.029)	(-0.048 - 0.026)	(-0.036 - 0.050)	(-0.089 - 0.218)	(-0.053 - 0.056)	(-0.039 - 0.048)	(-0.029 - 0.049)	(-0.045 - 0.029)	(-0.147 - 0.222)	(-0.043 - 0.065)	(-0.030 - 0.043)	(-0.043 - 0.060)	(-0.034 - 0.048)	(-0.032 - 0.050)		(-0.009 - 0.020)	(-0.011 - 0.016)	(-0.010 - 0.016)	(-0.011 - 0.016)	(-0.014 - 0.010)	(-0.012 - 0.018)
IM	(-0.030 - 0.053)	(-0.024 - 0.041)	(-0.029 - 0.062)	(-0.016 - 0.077)	(-0.042 - 0.076)	(-0.029 - 0.040)	(-0.029 - 0.053)	(-0.027 - 0.043)	(-0.031 - 0.063)	(-0.100 - 0.241)	(-0.036 - 0.049)	(-0.030 - 0.057)	(-0.038 - 0.056)	(-0.019 - 0.056)	(-0.149 - 0.196)	(-0.029 - 0.057)	(-0.022 - 0.035)	(-0.032 - 0.063)	(-0.025 - 0.049)	(-0.016 - 0.043)	(-0.023 - 0.061)		(-0.011 - 0.016)	(-0.012 - 0.013)	(-0.007 - 0.026)	(-0.012 - 0.015)	(-0.009 - 0.020)
ML	(-0.040 - 0.075)	(-0.029 - 0.040)	(-0.030 - 0.076)	(-0.043 - 0.075)	(-0.050 - 0.090)	(-0.037 - 0.060)	(-0.039 - 0.051)	(-0.041 - 0.059)	(-0.043 - 0.066)	(-0.102 - 0.219)	(-0.047 - 0.067)	(-0.040 - 0.055)	(-0.034 - 0.047)	(-0.043 - 0.063)	(-0.148 - 0.205)	(-0.033 - 0.052)	(-0.029 - 0.049)	(-0.038 - 0.063)	(-0.032 - 0.045)	(-0.029 - 0.053)	(-0.046 - 0.056)	(-0.03 - 0.058)		(-0.014 - 0.013)	(-0.008 - 0.021)	(-0.012 - 0.013)	(-0.012 - 0.021)
TT	(-0.031 - 0.044)	(-0.022 - 0.038)	(-0.025 - 0.059)	(-0.037 - 0.051)	(-0.035 - 0.073)	(-0.037 - 0.039)	(-0.031 - 0.038)	(-0.032 - 0.036)	(-0.031 - 0.038)	(-0.082 - 0.200)	(-0.036 - 0.056)	(-0.038 - 0.048)	(-0.027 - 0.055)	(-0.028 - 0.049)	(-0.144 - 0.209)	(-0.022 - 0.041)	(-0.022 - 0.035)	(-0.031 - 0.051)	(-0.034 - 0.045)	(-0.020 - 0.053)	(-0.031 - 0.052)	(-0.022 - 0.036)	(-0.035 - 0.042)		(-0.009 - 0.019)	(-0.013 - 0.007)	(-0.015 - 0.012)
BJ	(-0.027 - 0.054)	(-0.022 - 0.042)	(-0.038 - 0.067)	(-0.022 - 0.073)	(-0.041 - 0.077)	(-0.026 - 0.066)	(-0.026 - 0.069)	(-0.026 - 0.054)	(-0.028 - 0.058)	(-0.087 - 0.186)	(-0.045 - 0.075)	(-0.031 - 0.056)	(-0.028 - 0.061)	(-0.037 - 0.057)	(-0.156 - 0.255)	(-0.039 - 0.069)	(-0.029 - 0.062)	(-0.034 - 0.077)	(-0.034 - 0.054)	(-0.024 - 0.068)	(-0.030 - 0.055)	(-0.019 - 0.068)	(-0.026 - 0.072)	(-0.023 - 0.059)		(-0.013 - 0.017)	(-0.008 - 0.026)
LB	(-0.024 - 0.042)	(-0.022 - 0.039)	(-0.048 - 0.038)	(-0.024 - 0.069)	(-0.047 - 0.075)	(-0.036 - 0.034)	(-0.028 - 0.041)	(-0.029 - 0.046)	(-0.031 - 0.047)	(-0.094 - 0.227)	(-0.049 - 0.036)	(-0.032 - 0.056)	(-0.030 - 0.058)	(-0.039 - 0.027)	(-0.136 - 0.228)	(-0.048 - 0.028)	(-0.023 - 0.039)	(-0.028 - 0.051)	(-0.035 - 0.066)	(-0.029 - 0.046)	(-0.036 - 0.047)	(-0.025 - 0.043)	(-0.033 - 0.053)	(-0.020 - 0.033)	(-0.039 - 0.056)		(-0.013 - 0.014)
DK	(-0.029 - 0.054)	(-0.025 - 0.045)	(-0.024 - 0.052)	(-0.022 - 0.046)	(-0.038 - 0.076)	(-0.029 - 0.038)	(-0.033 - 0.040)	(-0.035 - 0.038)	(-0.034 - 0.045)	(-0.082 - 0.198)	(-0.043 - 0.047)	(-0.036 - 0.058)	(-0.022 - 0.096)	(-0.037 - 0.056)	(-0.127 - 0.223)	(-0.032 - 0.065)	(-0.020 - 0.033)	(-0.037 - 0.057)	(-0.038 - 0.055)	(-0.032 - 0.049)	(-0.035 - 0.046)	(-0.019 - 0.051)	(-0.041 - 0.060)	(-0.025 - 0.041)	(-0.018 - 0.067)	(-0.028 - 0.044)	

Table S3 - Mean validation scores obtained using each of the distinct techniques (GLM, GBM, GAM, FDA, MARS and RF).

Model	AUC mean (±SD)	ROC sensitivity	ROC specificity	TSS mean (±SD)	Sensitivity (±SD)	Specificity (±SD)
GLM	0.901 ±0.022	86.182 ± 7.892	83.694 ± 6.395	0.689 ± 0.049	83.939 ± 7.579	84.792 ± 6.078
GBM	0.931 ±0.021	87.515 ± 5.829	87.745 ± 4.851	0.744 ± 0.059	85.757 ± 6.879	88.451 ± 4.338
GAM	0.903 ±0.025	89.758 ± 6.119	81.370 ± 4.660	0.699 ± 0.049	88.545 ± 6.429	81.311 ± 5.471
FDA	0.879 ±0.030	78.727 ± 7.231	87.260 ± 6.424	0.652 ± 0.064	76.303 ± 6.864	88.502 ± 4.241
MARS	0.879 ±0.099	82.121 ± 15.049	84.213 ± 7.620	0.657 ± 0.112	80.182 ± 14.632	85.311 ± 7.167
RF	0.939 ±0.018	92.424 ± 5.095	86.026 ± 4.060	0.775 ± 0.044	90.848 ± 4.762	86.417 ± 3.823

Table S4 - One-way ANOVA on the effect of minimum sea surface temperature (SST min) and surface air temperature (SAT min) on *P. perna* presence/absence along the warm temperate and cool temperate southwest South African provinces at three trials (Trial 1, Trial 2 and Trial 3). Statistical significant values are depicted in bold.

	Trial 1				Trial 2				Trial 3			
Source	df	MS	F-ratio	P-value	df	MS	F-ratio	P-value	df	MS	F-ratio	P-value
SST min												
Record	1	29.668	28.147	**0.000071**	1	35.149	31.860	**0.000037**	1	46.263	46.658	**0.000004**
Error	16	1.054			16	1.103			16	0.992		
SAT min												
Record	1	0.0775	0.0709	0.796	1	0.722	0.4607	0.511	1	6.5342	3.9276	0.063
Error	16	1.0929			16	1.5672			16	1.6637		

Table S5 – Atlantic and Mediterranean surveyed locations along Iberian shores. Presence of *Mytilus galloprovincialis* depicts potential suitable locations for *P. perna.*

Country	Location	Coordinates	*M. galloprovincialis*
Portugal	Viana do Castelo	41°41’57.85”N; 08°51’23.81”W	Present
Portugal	Ericeira	38°57’21.03”N; 09°25’00.97”W	Present
Portugal	Lizandro	38°56’28.13”N; 09°25’02.28”W	Present
Portugal	Malhão	37°46’44.64”N; 08°48’09.35”W	Present
Portugal	Vila Nova de Milfontes	37°43’04.79”N; 08°47’27.73”W	Present
Portugal	Amoreira	37°20’59.18”N; 08°50’53.15”W	Present
Portugal	Castelejo	37°06’08.00”N; 08°56’44.29”W	Present
Portugal	Sagres	37°00’23.69”N; 08°56’55.80”W	Present
Portugal	Lagos	37°05’55.10”N; 08°40’02.38”W	Present
Portugal	Alvor	37°07’44.45”N; 08°35’47.71”W	Present
Portugal	Pintadinho	37°06’32.07”N; 08°31’11.63”W	Present
Portugal	Albufeira	37°05’21.03”N; 08°11’29.76”W	Present

Portugal	Vilamoura	37°04’05.50”N; 08°06’42.64”W	Present
Portugal	Farol	36°58’29.95”N; 07°51’42.17”W	Present
Portugal	Tavira	37°06’41.06”N; 07°36’57.99”W	Present
Portugal	V. R. de Santo	37°10’03.78”N; 07°24’09.03”W	Present
Spain	Punta del Moral	37°10’57.76”N; 07°19’46.83”W	Present
Spain	Punta Umbria	37°09’53.78”N; 06°56’54.38”W	Present
Spain	Huelva	37°07’45.19”N; 06°51’09.43”W	Absent
Spain	Rota	36°36’55.50”N; 06°21’27.85”W	Absent
Spain	Puerto Sherry	36°34’48.65”N; 06°15’55.07”W	Absent
Spain	Barbate	36°11’00.22”N; 05°56’10.82”W	Absent
Spain	Atlanterra	36°05’24.78”N; 05°48’43.02”W	Present
Spain	Paloma Baja	36°03’49.70”N; 05°43’39.89”W	Absent
Spain	Tarifa	36°00’27.89”N; 05°36’26.09”W	Absent
Spain	Los Palmones	36°10’34.28”N; 05°25’28.26”W	Present
Spain	Torreguadiaro	36°18’00.14”N; 05°16’04.77”W	Present
Spain	La Araña	36°42’41.35”N; 04°19’37.50”W	Present
Spain	Almuñecar	36°43’39.84”N; 03°41’39.86”W	Present
Spain	Balerma	36°41’56.20”N; 02°51’33.99”W	Present
Spain	Roquetas de Mar	36°45’27.41”N; 02°36’15.26”W	Absent
Spain	Aguadulce	36°48’40.91”N; 02°34’00.66”W	Absent
Spain	Cabo de Gata	36°44’00.26”N; 02°12’14.70”W	Present
Spain	La Isleta	36°47’53.54”N; 02°03’42.64”W	Absent
Spain	Garrucha	37°10’21.02”N; 01°49’18.30”W	Absent
Spain	Villaricos	37°14’49.74”N; 01°46’15.80”W	Absent
Spain	Aguilas	37°24’15.16”N; 01°33’56.64”W	Absent
Spain	Calabardina	37°25’53.29”N; 01°30’27.11”W	Absent
Spain	Cape Cope	37°26’12.49”N; 01°29’02.88”W	Absent
Spain	Puerto de Mazarron	37°33’28.51”N; 01°17’10.24”W	Absent
Spain	Portman	37°34’50.35”N; 00°51’13.23”W	Absent
Spain	Cape Palos	37°38’00.94”N; 00°41’23.95”W	Absent
Spain	Guardamar del	38°06’37.33”N; 00°38’27.07”W	Absent
Spain	Santa Pola	38°11’18.94”N; 00°33’06.45”W	Absent
Spain	Alicante	38°21’07.64”N; 00°24’40.40”W	Absent
Spain	Calpe	38°38’25.71”N; 00°03’56.53”E	Absent
Spain	Cape de la Nau	38°43’51.27”N; 00°13’08.85”E	Absent
Spain	Dénia	38°57’50.66”N; 00°07’43.58”W	Present
Spain	Cullera	39°11’16.26”N; 00°13’17.20”W	Present

Table S6 – List of sampling sites for genetic samples of *P. perna* populations.

Country/Territory	Location	Code	Coordinates
Tunisia	Korbous	KR	36°49’29.04”N; 10°33’59.97”E
Tunisia	Bizerte	BZ	37°15’10.41”N; 09°56’41.15”E
Algeria	Annaba bay	AN	36°50’32.48”N; 07°51’17.48”E
Morocco	Punta Negri	PN	35º16’46.33”N; 03º08’06.63”W
Spain	Cape Gata	CG	36º44’00.26”N; 02º12’14.70”W
Spain	Balerma	BM	36º41’56.20”N; 02º51’33.99”W
Spain	Almuñecar	AM	36º43’39.84”N; 03º41’39.86”W
Spain	La Araña	LA	36º42’41.35”N; 04º19’37.50”W
Spain	Torreguadiaro	TG	36º18’00.14”N; 05º16’04.77”W
Spain	Los Palmones	LP	36º10’34.28”N; 05º25’28.26”W
Spain	Atlanterra	AT	36º05’24.78”N; 05º48’43.02”W
Spain	Punta del Moral	PM	37º10’57.76”N; 07º19’46.83”W
Portugal	Tavira	TV	37º06’41.06”N; 07º36’57.99”W
Portugal	Vilamoura	VL	37º04’05.50”N; 08º06’42.64”W
Portugal	Sagres	SG	37º00’23.69”N; 08º56’55.80”W
Morocco	Larache	LR	35°11’48.14”N; 06°09’30.61”W
Morocco	Rabat	RB	34°01’57.26”N; 06°50’27.96"W
Morocco	Casablanca	CB	33°39’07.22”N; 07°29’03.11"W
Morocco	Sidi Bouzid	SB	33°13’06.11”N; 08°34’23.19"W
Morocco	El Beddouza	EB	32°32’42.33”N; 09°16’55.34"W
Morocco	Essaouira	ES	31°30’42.78”N; 09°46’24.31"W
Morocco	Imsouane	IM	30°50’24.43”N; 09°49’21.92"W
Morocco	Mirleft	ML	29°35’06.58”N; 10°02’50.78"W
Morocco	Tan Tan plage	TT	28°30’05.58”N; 11°20’06.38"W
Western Sahara	Boujdour	BJ	26º07’38.95”N; 14º30’02.38’’W
Western Sahara	Nouifed	LB	24º54’30.29”N; 14º49’45.36’’W
Western Sahara	Dakhla	DK	23º46’06.97”N; 15º55’32.16’’W

Table S7 – Presence/absence records of *P. perna* used for the environmental niche modelling approach.

Country	Location	Coordinates	Presence	Reference
Tunisia	Zembra Island	37°08'25.96"N; 10°48'28.94"E	Present	1
Tunisia	Korbous	36°49'29.04"N; 10°33'59.97"E	Present	This study
Tunisia	La Goulette	36°49'18.84"N; 10°18'42.14"E	Present	1
Tunisia	Bizerte	37°15'10.41"N; 09°56'41.15"E	Present	This study
Tunisia	Tabarka	36°57'39.05"N; 08°45'02.62"E	Present	1
Algeria	La Kyenne Beach	36°58'02.00"N; 07°46'24.00"E	Present	2
Algeria	Saint Cloud Beach	36°55'22.20"N; 07°45'50.20"E	Present	2

Algeria	Sunrise Beach	36°54'33.90"N; 07°46'20.90"E	Present	2
Algeria	Sidi Salem Beach	36°52'02.00"N; 07°46'26.60"E	Present	2
Algeria	Annaba Bay	36°50'32.48"N; 07°51'17.48"E	Present	This study
Algeria	Boubouaou El Bahri	36°46'33.56"N; 03°23'15.41"E	Present	3
Algeria	Bordj El Kiffan	36°45'37.72"N; 03°12'45.24"E	Present	3
Spain	Cullera	39°11'16.26"N; 00°13'17.20"W	Absent	This study
Spain	Dénia	38°57'50.66"N; 00°07'43.58"W	Absent	This study
Spain	Cape de la Nau	38°43'51.27"N; 00°13'08.85"E	Absent	This study
Spain	Calpe	38°38'25.71"N; 00°03'56.53"E	Absent	This study
Spain	Alicante	38°21'07.64"N; 00°24'40.40"W	Absent	This study
Spain	Santa Pola	38°11'18.94"N; 00°33'06.45"W	Absent	This study
Spain	Guardamar del Segura	38°06'37.33"N; 00°38'27.07"W	Absent	This study
Spain	Cape Palos	37°38'00.94"N; 00°41'23.95"W	Absent	This study
Spain	Portman	37°34'50.35"N; 00°51'13.23"W	Absent	This study
Spain	Puerto de Mazarron	37°33'28.51"N; 01°17'10.24"W	Absent	This study
Spain	Cape Cope	37°26'12.49"N; 01°29'02.88"W	Absent	This study
Spain	Calabardina	37°25'53.29"N; 01°30'27.11"W	Absent	This study
Spain	Aguilas (beach)	37°24'15.16"N; 01°33'56.64"W	Absent	This study
Spain	Villaricos	37°14'49.74"N; 01°46'15.80"W	Absent	This study
Spain	Garrucha	37°10'21.02"N; 01°49'18.30"W	Absent	This study
Spain	La Isleta (village)	36°48'47.17"N; 02°03'05.46"W	Absent	This study
Spain	La Isleta (beach)	36°47'53.54"N; 02°03'42.64"W	Absent	This study
Spain	Cape Gata	36°44'00.26"N; 02°12'14.70"W	Present	This study
Spain	Aguadulce	36°48'40.91"N; 02°34'00.66"W	Absent	This study
Spain	Roquetas de Mar	36°45'27.41"N; 02°36'15.26"W	Absent	This study
Spain	Balerma	36°41'56.20"N; 02°51'33.99"W	Present	This study
Spain	Almuñecar	36°43'39.84"N; 03°41'39.86"W	Present	This study
Spain	La Araña	36°42'41.35"N; 04°19'37.50"W	Present	This study
Spain	Torreguadiaro	36°18'00.14"N; 05°16'04.77"W	Present	This study
Spain	Los Palmones	36°10'34.28"N; 05°25'28.26"W	Present	This study
Spain	Tarifa	36°00'27.89"N; 05°36'26.09"W	Absent	This study
Spain	Paloma Baja	36°03'49.70"N; 05°43'39.89"W	Absent	This study
Spain	Atlanterra	36°05'24.78"N; 05°48'43.02"W	Present	This study
Spain	Barbate	36°11'00.22"N; 05°56'10.82"W	Absent	This study
Spain	Puerto Sherry	36°34'48.65"N; 06°15'55.07"W	Absent	This study
Spain	Rota	36°36'55.50"N; 06º21'27.85"W	Absent	This study
Spain	Huelva	37°07'45.19"N; 06º51'09.43"W	Absent	This study
Spain	Punta Umbria	37°09'53.78"N; 06º56'54.38"W	Absent	This study
Spain	Punta del Moral	37°10'57.76"N; 07º19'46.83"W	Present	This study
Portugal	Vila Real de Santo António	37°10'03.78"N; 07º24'09.03"W	Present	This study
Portugal	Tavira	37°06'41.06"N; 07º36'57.99"W	Present	This study
Portugal	Farol	36°58'29.95"N; 07º51'42.17"W	Present	This study

Portugal	Vilamoura	37°04'05.50"N; 08º06'42.64"W	Present	This study
Portugal	Albufeira	37°05'21.03"N; 08°11'29.76"W	Absent	This study
Portugal	Pintadinho	37°06'32.07"N; 08°31'11.63"W	Absent	This study
Portugal	Lagos	37°06'01.04"N; 08°40'02.80"W	Absent	This study
Portugal	Sagres	37°00'23.69"N; 08º56'55.80"W	Present	This study
Portugal	Castelejo	37°06'08.00"N; 08º56'44.29"W	Present	This study
Portugal	Amoreira	37°20'59.18"N; 08º50'53.15"W	Absent	This study
Portugal	Vila Nova de Milfontes	37°43'04.79"N; 08º47'27.73"W	Absent	This study
Portugal	Malhão	37°46'44.64"N; 08º48'09.35"W	Absent	This study
Portugal	Lizandro	38°56'28.13"N; 09°25'02.28"W	Absent	This study
Portugal	Ericeira	38°57'21.03"N; 09°25'00.97"W	Absent	This study
Portugal	Viana do Castelo	41°41'57.85"N; 08°51'23.81"W	Absent	This study
Morocco	Punta Negri	35°16'46.33"N; 03º08'06.63"W	Present	This study
Morocco	Larache	35°11'48.14"N; 06°09'30.61"W	Present	This study
Morocco	Bouknadel	34°07'40.74"N; 06°45'14.63"W	Present	4
Morocco	Rabat	34°01'57.26"N; 06°50'27.96"W	Present	This study
Morocco	Skhirat	33°52'15.84"N; 07°03'54.72"W	Present	5
Morocco	Mohammedia	33°42'13.04"N; 07°24'49.62"W	Present	4
Morocco	Casablanca	33°39'07.22"N; 07°29'03.11"W	Present	This study
Morocco	Sidi Bouzid	33°13'06.11"N; 08°34'23.19"W	Present	This study
Morocco	El Beddouza	32°32'42.33"N; 09°16'55.34"W	Present	This study
Morocco	Essaouira	31°30'42.78"N; 09°46'24.31"W	Present	This study
Morocco	Imsouane	30°50'24.43"N; 09°49'21.92"W	Present	This study
Morocco	Anza	30°27'00.18"N; 09°39'44.47"W	Present	This study
Morocco	Mirleft	29°35'06.58"N; 10°02'50.78"W	Present	This study
Morocco	Tan-Tan	28°30'05.58"N; 11°20'06.38"W	Present	This study
Morocco	Tarfaya	27°45'33.64"N; 13°02'40.40"W	Absent	This study
Western Sahara	Boujdour	26°07'38.95"N; 14º30'02.38"W	Present	This study
Western Sahara	Nouifed	24°54'30.29"N; 14º49'45.36"W	Present	This study
Western Sahara	Hassi El kraa	24°41'06.18"N; 14°54'08.87"W	Present	This study
Western Sahara	Dakhla	23°46'06.97"N; 15º55'32.16"W	Present	This study
Mauritania	Cansado – IMROP	20°51'27.19"N; 17°01'52.10"W	Present	6
Mauritania	Cansado – COMECA	20°50'19.68"N; 17°02'01.57"W	Present	6
Mauritania	Cansado – Oil port	20°49'54.71"N; 17°02'07.66"W	Present	6
Mauritania	Nouadhibou	20°58'27.91"N; 17°00'32.18"W	Present	7
Mauritania	Nouakchott	18°05'09.87"N; 16°01'35.15"W	Present	7
Senegal	Dakar	14°40'47.39"N; 17°28'11.23"W	Present	8
Ivory Coast	Ebrie Lagoon	05°17'36.29"N; 04°00'37.57"W	Present	9
Ghana	Benya lagoon	05°04'57.21"N; 01°20'48.94"W	Present	10

Ghana	Sakumo lagoon	05°31'02.85"N; 00°16'52.32"W	Present	10
Congo	Pointe-Noire	04°45'32.64"S; 11°50'13.97"E	Present	11
Angola	Luanda	08°52'11.28"S; 13°11'42.93"E	Present	This study
Namibia	Rocky Point	18°59'36.13"S; 12°28'36.54"E	Present	This study
Namibia	Mowey Bay	19°22'22.61"S; 12°42'19.38"E	Present	This study
Namibia	Terrace Bay	19°59'49.09"S; 13°02'01.24"E	Present	This study
Namibia	Swakopmound	22°40'07.52"S; 14°31'23.08"E	Present	This study
Namibia	Walvis Bay	22°55'28.69"S 14°31'03.66"E	Present	This study
Namibia	Sylvia Hill	25°08'46.62"S; 14°50'43.44"E	Present	This study
Namibia	Luderitz	26°38'43.31"S; 15°05'25.62"E	Absent	This study
South Africa	Alexander Bay	28°40'05.74"S; 16°30'20.35"E	Absent	This study
South Africa	Port Nolloth	29°15'01.53"S; 16°52'02.30"E	Absent	This study
South Africa	Brand-se-Baai	31°17'30.09"S; 17°52'46.86"E	Absent	This study
South Africa	Paternoster	32°48'07.22"S 17°53'51.95"E	Absent	This study
South Africa	Elands Bay	32°18'59.49"S; 18°18'54.50"E	Absent	This study
South Africa	Saldanha Bay	33°01'34.14"S; 17°56'30.55"E	Absent	This study
South Africa	Yzerfontein	33°21'14.99"S; 18°09'01.07"E	Absent	This study
South Africa	Bloubergstrand	33°48'06.18"S; 18°27'30.45"E	Absent	This study
South Africa	Camps Bay	33°57'11.26"S; 18°22'27.61"E	Absent	This study
South Africa	Scarborough	34°11'55.95"S; 18°22'16.49"E	Present	This study
South Africa	Outland Point	34°14'20.82"S; 18°28'38.02"E	Present	This study
South Africa	Pringle Bay	34°20'16.52"S; 18°49'41.04"E	Present	This study
South Africa	Betty's Bay	34°21'23.82"S; 18°55'59.54"E	Present	This study
South Africa	Kleinmond	34°20'37.84"S; 19°02'12.05"E	Present	This study
South Africa	Hermanus	34°24'40.64"S; 19°15'40.67"E	Present	This study
South Africa	Gans Bay	34°33'17.92"S; 19°21'49.38"E	Present	This study
South Africa	Cape Aghullas	34°49'26.40"S; 20°01'01.59"E	Present	This study
South Africa	Arniston	34°40'08.12"S; 20°14'05.13"E	Present	This study
South Africa	Mossel Bay-lighthouse	34°10'58.42"S; 22°09'30.73"E	Present	This study
South Africa	Mossel Bay-Dias strand	34°10'27.36"S; 22°08'09.70"E	Present	This study
South Africa	Mossel Bay-Hartenbos	34°09'56.22"S; 22°06'51.08"E	Present	This study
South Africa	Glentana	34°03'07.41"S; 22°19'19.01"E	Present	This study
South Africa	Wilderness	33°59'49.68"S; 22°33'57.53"E	Present	This study
South Africa	Sedgefield	34°01'44.56"S; 22°46'05.08"E	Present	This study
South Africa	Brenton-on-Sea	34°04'28.83"S; 23°01'12.56"E	Present	This study
South Africa	Robberg-open	34°06'08.06"S; 23°22'52.92"E	Present	This study
South Africa	Robberg-in	34°05'57.04"S; 23°22'37.86"E	Present	This study
South Africa	Plettenberg Bay-Beacon Isle	34°03'35.65"S; 23°22'50.22"E	Present	This study
South Africa	Plettenberg Bay-Lookout	34°03'06.08"S; 23°22'39.02"E	Present	This study
South Africa	Pletternberg Bay-Keurboomstrand	34°00'17.78"S; 23°27'18.61"E	Present	This study
South Africa	Oubosstrand	34°04'22.88"S; 24°13'29.60"E	Present	This study

South Africa	Seal Point	34°12'35.27"S; 24°49'31.96"E	Present	This study
South Africa	Sea Vista	34°10'15.24"S; 24°50'05.23"E	Present	This study
South Africa	Jeffrey's Bay	34°03'37.00"S; 24°55'43.64"E	Present	This study
South Africa	Noordkloofspunt	34°01'34.07"S; 24°55'50.90"E	Present	This study
South Africa	Kini Bay	34°01'17.91"S; 25°22'48.39"E	Present	This study
South Africa	Skoenmakerskop	34°02'28.06"S; 25°32'01.70"E	Present	This study
South Africa	Chelsea Point	34°02'45.66"S; 25°38'04.55"E	Present	This study
South Africa	Port Elizabeth-Bird Rock	33°59'00.57"S; 25°40'17.17"E	Present	This study
South Africa	Port Elizabeth-Shark Rock	33°58'47.18"S; 25°39'28.38"E	Present	This study
South Africa	Port Elizabeth-Deal Park	33°52'54.56"S; 25°37'37.39"E	Present	This study
South Africa	Hougham Park	33°45'17.09"S; 25°46'01.20"E	Present	This study
South Africa	Kenton-on-Sea	33°41'37.49"S; 26°40'13.70"E	Present	This study
South Africa	Old Womans	33°28'56.45"S; 27°09'06.98"E	Present	This study
South Africa	Kayser's Beach	33°12'44.21"S; 27°36'41.05"E	Present	This study
South Africa	Kidd's Beach	33°08'49.12"S; 27°42'11.29"E	Present	This study
South Africa	Gonubie	32°56'18.43"S; 28°01'58.06"E	Present	This study
South Africa	Glen Muir	32°53'04.40"S; 28°06'00.23"E	Present	This study
South Africa	Haga Haga	32°45'54.29"S; 28°14'56.51"E	Present	This study
South Africa	Morgan Bay	32°42'36.11"S; 28°20'30.00"E	Present	This study
South Africa	Kei mounth	32°41'03.70"S; 28°22'56.63"E	Present	This study
South Africa	Port St Johns	31°39'15.23"S; 29°30'56.40"E	Present	This study
South Africa	Port Edward	31°03'15.39"S; 30°13'42.30"E	Present	This study
South Africa	Durban	29°51'10.77"S; 31°02'27.68"E	Present	This study
South Africa	Ballito	29°32'42.96"S; 31°12'57.11"E	Present	This study
South Africa	Mapelane	28°24'27.04"S; 32°25'37.35"E	Present	This study
South Africa	Kosi Bay	27°00'45.82"S; 32°52'02.40"E	Present	This study
South Africa	Marion Island	46°49'57.95"S; 37°47'13.61"E	Absent	This study
Mozambique	Punta Douro	26°50'39.15"S; 32°53'41.39"E	Present	This study
Mozambique	Praia de Xai-Xai	25°06'42.09"S; 33°45'17.90"E	Present	This study
Mozambique	Praia de Závora	24°31'15.10"S; 35°12'22.40"E	Present	This study
Mozambique	Baía de Inhambane	23°52'04.68"S; 35°22'47.26"E	Absent	This study
Mozambique	Chicamane	21°53'09.91"S; 35°18'18.13"E	Absent	This study
Mozambique	Macunhe	21°50'30.97"S; 35°17'43.32"E	Absent	This study
Mozambique	Nhagonzo	21°43'50.44"S; 35°17'01.16"E	Absent	This study
Mozambique	Bazaruto	21°32'25.26"S; 35°28'14.60"E	Absent	This study
Yemen	Ash-shehr	14°44'49.88"N; 49°35'31.46"E	Present	12
Yemen	Bandar Fuqum	12°44'52.37"N; 44°49'31.63"E	Present	13
Yemen	Ras Marbat	12°47'08.56"N; 44°58'17.13"E	Present	13
Yemen	Sira Island	12°46'37.04"N; 45°02'55.42"E	Present	13
Oman	Salalah - Raysut	16°59'49.12"N; 54°05'23.18"E	Present	14
Oman	Muscat	23°37'19.37"N; 58°35'22.14"E	Present	15

Table S8 – Environmental variables used to model *P. perna* likelihood of presence. SST indicates sea surface temperature. SAT indicates surface air temperature.

	Study area		Presences	
Predictors (units)	Min-Max	Mean	Min-Max	Mean
Cloud cover	0.069-0.943	0.531	0.251-0.872	0.49
Waves (m)	0.388-5.774	2.008	0.625-3.829	2.183
Minimum SST (^{o}C)	-1.585-28.827	17.403	13.817-25.977	17.316
Maximum SST	6.979-37.600	27.335	18.908-31.705	24.028
Minimum SAT (^{o}C)	-7.757-25.477	12.414	5.925-23.069	13.878
Maximum SAT	8.298-35.289	28.169	22.055-34.562	26.511
Salinity	1.634-41.475	34.66	33.953-37.277	35.827
Nitrate (µmol/L)	0.003-12.494	1.355	0.548-6.695	2.12
Phosphate	0.0184-	0.229	0.049-0.995	0.33

Table S9 – Microsatellite data of 732 individuals of *P. perna* used in nuclear genetic analyses. POP refers to populations as in Supplementary Table S6. The 0 value depicted null alleles.

	P08		P16		P20		P26		P01		P05		P27		P02	
POP	Allele A	Allele B	Allele A	Allele B	Allele A	Allele B	Allele A	Allele B	Allele A	Allele B	Allele A	Allele B	Allele A	Allele B	Allele A	Allele B
KR	111	111	103	172	213	213	100	109	157	157	130	132	108	140	112	112
KR	111	126	0	0	207	326	100	104	165	167	127	132	108	142	112	116
KR	115	115	98	103	330	356	94	98	165	167	119	127	136	153	112	112
KR	111	115	103	103	202	202	92	100	169	169	115	125	108	138	112	112
KR	111	119	107	122	353	353	100	102	165	167	109	119	83	142	112	112
KR	115	115	105	105	209	215	100	107	166	167	115	117	144	174	112	120
KR	111	115	103	132	215	215	96	98	175	175	123	130	108	146	112	112
KR	115	119	103	103	351	360	98	104	167	167	121	123	103	178	112	112
KR	119	126	153	153	213	311	100	102	158	165	123	123	140	142	112	280
KR	111	126	103	105	207	317	98	100	167	167	121	123	140	142	112	112
KR	111	119	103	103	202	315	98	102	167	167	115	117	108	138	112	220
KR	111	119	103	103	338	338	102	106	160	167	119	136	108	138	112	112
KR	115	126	115	115	200	202	102	104	157	157	119	125	108	165	112	112
KR	115	119	103	113	230	344	102	115	157	167	132	132	108	153	112	290
KR	111	115	103	103	206	334	94	98	169	177	119	121	108	140	112	112
KR	111	115	103	113	207	310	104	104	157	165	115	130	108	108	112	116
KR	111	115	103	126	202	226	92	107	171	173	121	130	140	174	112	114
KR	115	115	105	105	300	355	102	236	173	173	113	119	110	144	112	112
KR	111	115	122	122	212	356	102	109	165	165	119	134	140	151	112	112
KR	115	115	98	98	221	295	102	102	167	167	115	115	108	142	112	112
KR	111	115	105	105	358	358	102	166	165	169	123	130	113	142	106	112
KR	111	115	115	115	249	353	94	208	162	171	119	134	146	159	112	112

KR	111	119	103	103	221	221	96	102	167	173	115	117	140	140	89	110
KR	111	119	105	118	204	215	104	107	160	167	107	119	108	174	0	0
KR	111	115	105	113	291	338	100	102	171	185	119	134	108	134	112	112
KR	111	119	103	103	308	334	104	107	165	167	125	150	108	138	0	0
KR	111	115	109	109	226	353	98	100	157	169	113	127	108	108	112	259
KR	111	111	109	134	309	309	102	104	167	167	115	115	138	140	112	417
KR	111	111	103	126	206	317	94	102	167	169	115	115	146	153	112	112
KR	111	119	126	126	321	338	102	104	165	165	117	119	108	140	112	112
BZ	115	119	140	140	332	332	102	107	165	165	115	119	138	153	110	112
BZ	111	115	103	103	234	370	96	104	165	165	115	123	108	140	112	135
BZ	111	126	103	105	202	217	100	100	167	167	119	119	140	202	112	112
BZ	107	115	103	103	202	368	102	102	165	175	115	127	108	151	112	112
BZ	115	126	103	103	326	368	102	104	167	167	117	125	107	144	110	112
BZ	115	119	102	102	326	364	100	106	171	171	130	138	108	108	89	112
BZ	111	115	103	126	206	375	100	102	165	167	115	121	108	140	112	112
BZ	111	115	0	0	206	347	100	106	157	167	117	130	110	140	112	112
BZ	111	111	103	120	305	379	102	106	157	162	130	134	108	108	112	131
BZ	111	115	103	103	192	383	102	102	167	177	115	121	140	144	110	112
BZ	115	115	105	120	332	332	98	197	165	165	115	136	138	138	112	251
BZ	115	115	128	128	353	364	106	109	169	173	123	125	138	163	112	112
BZ	111	119	124	124	207	364	96	100	157	157	123	125	108	138	112	112
BZ	111	111	98	111	202	313	92	104	167	167	115	132	108	108	112	112
BZ	111	115	103	103	202	351	98	102	165	165	119	125	163	170	112	290
BZ	111	115	103	103	207	347	98	104	165	165	119	123	140	142	112	112
BZ	115	115	100	105	207	246	98	104	165	165	117	140	144	149	112	131
BZ	111	119	126	126	209	362	100	100	165	171	115	117	138	146	112	112
BZ	111	111	103	103	225	315	98	102	165	165	123	138	138	149	112	118
BZ	107	115	103	103	226	362	102	102	167	167	119	127	138	140	112	290
BZ	119	119	260	260	283	360	98	106	167	167	115	115	140	140	0	0
BZ	115	119	105	105	215	344	100	104	165	165	119	152	108	146	112	112
BZ	111	111	98	103	370	371	102	104	169	171	117	119	108	138	112	273
BZ	111	111	103	128	206	207	98	98	165	169	130	130	108	136	112	112
BZ	111	111	107	107	0	0	102	106	167	175	119	130	108	108	112	245
BZ	111	111	102	102	234	358	100	100	158	167	113	134	108	187	112	112
BZ	111	111	128	128	334	336	100	102	165	173	115	136	110	138	112	112
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BZ	111	115	105	124	332	371	100	102	159	167	119	127	108	151	112	255
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OR	111	115	136	136	200	317	98	109	165	167	115	127	108	168	112	261
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CG	115	130	118	130	299	299	104	104	167	167	109	132	138	140	110	112
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CG	115	119	0	0	206	347	102	102	167	167	115	138	108	108	112	112
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TG	115	115	0	0	206	225	94	98	165	167	115	138	111	124	0	0
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TG	115	115	128	163	283	303	102	109	167	167	115	123	140	140	0	0
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LP	111	115	103	103	202	347	106	164	167	169	115	152	157	157	112	112
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AT	115	119	103	132	309	330	94	102	167	171	115	125	108	157	112	112
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AT	111	111	103	103	204	342	98	104	167	171	115	119	108	149	112	112
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AT	111	111	346	346	207	356	94	104	155	171	116	125	138	140	112	112
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AT	111	115	98	124	328	353	102	104	157	167	119	127	108	180	112	116
PM	111	111	103	103	347	356	98	102	157	167	130	132	155	166	112	112
PM	111	115	100	103	207	321	102	104	165	165	115	119	138	201	112	129

PM	111	130	103	115	215	296	107	109	159	171	119	132	140	151	112	112
PM	115	115	130	130	313	371	109	172	167	173	109	134	108	176	112	206
PM	115	115	109	109	192	360	98	102	167	168	125	130	108	174	112	112
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PM	111	126	103	103	304	321	94	100	165	167	121	145	144	146	89	112
PM	111	115	103	103	355	364	100	104	165	165	115	127	108	110	112	112
PM	111	134	102	105	344	368	98	100	169	169	123	125	142	146	89	112
PM	115	119	103	103	334	356	109	117	165	165	115	123	108	108	112	112
PM	111	111	107	138	252	324	100	106	158	171	119	119	108	126	112	112
PM	111	115	103	107	206	221	102	104	165	165	119	119	138	146	112	112
PM	111	123	130	130	308	326	98	102	171	171	115	145	108	153	112	245
PM	111	111	0	0	198	228	102	102	167	171	115	130	110	138	112	112
PM	115	115	102	161	215	352	104	107	168	168	115	119	108	140	112	112
PM	111	115	98	98	326	326	92	104	165	165	121	130	138	144	110	110
PM	115	119	155	164	347	347	102	102	165	167	115	143	108	165	0	0
PM	117	126	0	0	221	319	102	102	167	167	132	140	136	142	112	114
PM	111	111	103	103	204	336	98	102	165	165	121	150	108	144	112	112
PM	111	115	0	0	287	287	94	100	165	165	119	121	140	144	112	112
PM	111	119	103	113	202	353	104	109	165	175	134	134	108	191	112	264
TV	111	115	0	0	332	342	102	109	165	165	115	119	140	142	112	112
TV	111	126	103	105	206	246	100	102	167	167	119	140	144	146	112	249
TV	111	119	103	138	209	209	100	208	165	171	123	127	108	110	112	112
TV	111	115	103	109	313	375	100	104	171	173	115	134	108	142	112	112
TV	111	111	0	0	310	355	100	107	165	165	115	121	144	153	112	112
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TV	111	119	98	98	196	360	94	100	165	165	115	123	170	170	112	112
TV	111	115	103	105	202	303	104	104	167	169	115	123	108	138	112	112
TV	111	111	96	111	202	333	102	104	157	165	117	134	108	161	112	112
TV	111	115	113	113	236	351	102	104	167	171	127	130	142	142	112	112
TV	111	115	103	115	347	349	104	107	167	169	115	123	138	140	112	112
TV	111	115	103	103	225	345	104	109	165	167	123	130	138	144	112	112
TV	115	126	269	269	202	328	100	102	158	175	115	117	134	138	110	112
TV	115	119	113	113	202	236	98	102	171	172	125	130	140	142	112	112
TV	111	119	96	111	313	319	98	100	165	171	113	123	138	138	112	112
TV	111	115	113	113	309	353	98	111	162	165	117	143	163	163	112	112
TV	111	119	103	103	200	375	100	106	167	175	121	130	138	180	112	112
TV	119	119	124	124	326	353	100	102	165	167	116	125	138	138	112	112
TV	111	115	0	0	207	375	102	102	173	173	119	119	108	144	114	114

TV	115	115	103	113	215	364	100	102	165	165	113	134	108	144	112	112
TV	111	119	103	103	209	321	100	106	171	171	121	127	142	157	112	112
TV	111	115	102	102	213	340	98	102	165	167	125	130	138	140	110	112
VL	111	115	103	103	219	317	102	104	177	177	134	136	138	146	112	112
VL	111	115	107	107	204	353	102	104	167	167	125	140	108	140	112	114
VL	111	115	103	117	340	340	98	102	165	173	121	121	140	146	112	112
VL	111	115	103	103	213	306	102	170	167	167	115	119	108	157	112	112
VL	111	119	102	102	207	332	100	102	165	171	127	132	134	142	89	112
VL	111	115	103	147	224	224	102	111	169	171	125	143	136	142	112	112
VL	111	111	128	128	225	321	102	107	169	169	123	132	108	138	112	114
VL	115	119	103	155	329	386	100	102	160	167	123	127	108	140	112	112
VL	111	115	109	109	221	360	106	107	167	171	125	134	142	153	112	112
VL	111	111	103	111	202	221	98	100	157	167	117	132	108	161	112	112
VL	115	119	103	113	324	356	102	111	165	167	121	130	140	163	112	112
VL	115	115	103	103	204	347	90	98	167	167	111	119	108	149	112	261
VL	111	126	105	122	200	219	100	100	165	167	109	130	107	142	89	112
VL	111	111	0	0	342	364	100	117	157	167	115	132	108	174	112	253
VL	111	115	105	105	299	371	102	104	165	167	113	116	140	151	112	264
VL	115	115	103	103	317	356	92	102	165	165	115	119	138	138	112	112
VL	115	123	103	103	324	390	98	107	165	175	123	132	108	140	112	112
VL	111	115	105	105	355	355	98	111	167	167	116	116	108	140	112	129
VL	111	119	109	148	209	353	102	104	157	167	115	132	146	151	112	197
VL	111	119	107	111	207	207	94	102	165	171	117	123	112	112	112	290
VL	111	111	105	105	206	332	98	107	167	171	125	130	138	140	112	112
VL	111	111	96	111	231	353	104	109	165	167	115	123	110	110	112	112
VL	115	119	103	103	314	362	106	233	165	165	123	130	138	142	112	112
VL	111	115	103	164	207	207	102	104	165	165	121	125	138	142	106	112
VL	107	126	103	113	206	334	98	100	165	165	115	136	110	138	112	112
VL	111	120	113	128	209	351	98	106	166	167	123	130	108	136	112	114
VL	115	126	134	134	196	206	102	102	165	167	113	125	110	153	106	112
SG	111	111	107	107	196	379	98	104	167	171	121	125	138	155	112	271
SG	107	111	103	103	202	211	104	106	167	167	115	115	108	182	112	112
SG	111	111	103	103	202	336	104	104	158	158	119	140	110	140	112	112
SG	111	111	103	178	311	364	98	102	165	167	119	130	140	165	112	112
LR	115	119	103	103	296	321	98	98	158	158	119	138	108	146	106	112
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LR	111	115	103	103	321	356	100	111	167	167	119	127	108	191	106	112
LR	115	119	103	103	217	217	107	109	167	169	119	125	138	166	112	112
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LR	111	115	103	140	311	321	96	106	165	169	113	130	151	182	110	112
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LR	111	111	103	103	204	206	94	148	165	165	119	132	108	138	112	114
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LR	119	126	105	107	273	340	102	109	173	177	119	132	108	138	106	112
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LR	119	123	159	159	221	356	104	106	157	167	115	115	108	140	89	112
LR	115	119	103	164	300	328	94	109	171	171	119	123	140	157	112	112
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RB	111	126	113	113	209	366	100	104	165	171	115	115	107	153	112	255
RB	111	112	105	105	310	375	100	102	165	165	119	121	140	149	112	112
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RB	111	119	103	103	196	215	102	106	167	167	115	130	108	142	112	296
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CB	115	115	0	0	215	342	100	102	167	167	127	136	110	172	112	112
CB	115	115	103	103	204	308	102	102	167	167	123	130	166	166	112	294
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CB	111	115	172	172	326	353	102	102	167	172	115	121	108	138	112	112
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CB	111	111	0	0	304	304	104	104	159	171	127	127	108	168	112	112
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CB	111	119	103	103	207	353	102	199	167	171	123	125	153	155	112	112
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CB	107	111	103	103	204	336	98	157	158	158	115	123	108	153	112	112
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SB	111	115	103	103	211	232	96	102	158	167	115	125	110	140	112	112
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SB	111	111	136	136	236	356	102	170	163	167	119	130	138	217	110	112
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SB	111	111	109	109	215	217	98	104	167	167	119	134	110	138	112	112
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SB	111	111	103	103	223	336	102	102	167	167	113	119	138	140	112	112
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SB	111	111	128	128	207	231	96	104	165	173	115	121	108	140	112	112
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EB	107	119	102	103	344	351	94	100	165	167	119	119	138	140	112	112
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EB	115	115	103	103	321	338	96	98	165	167	119	125	138	182	0	0
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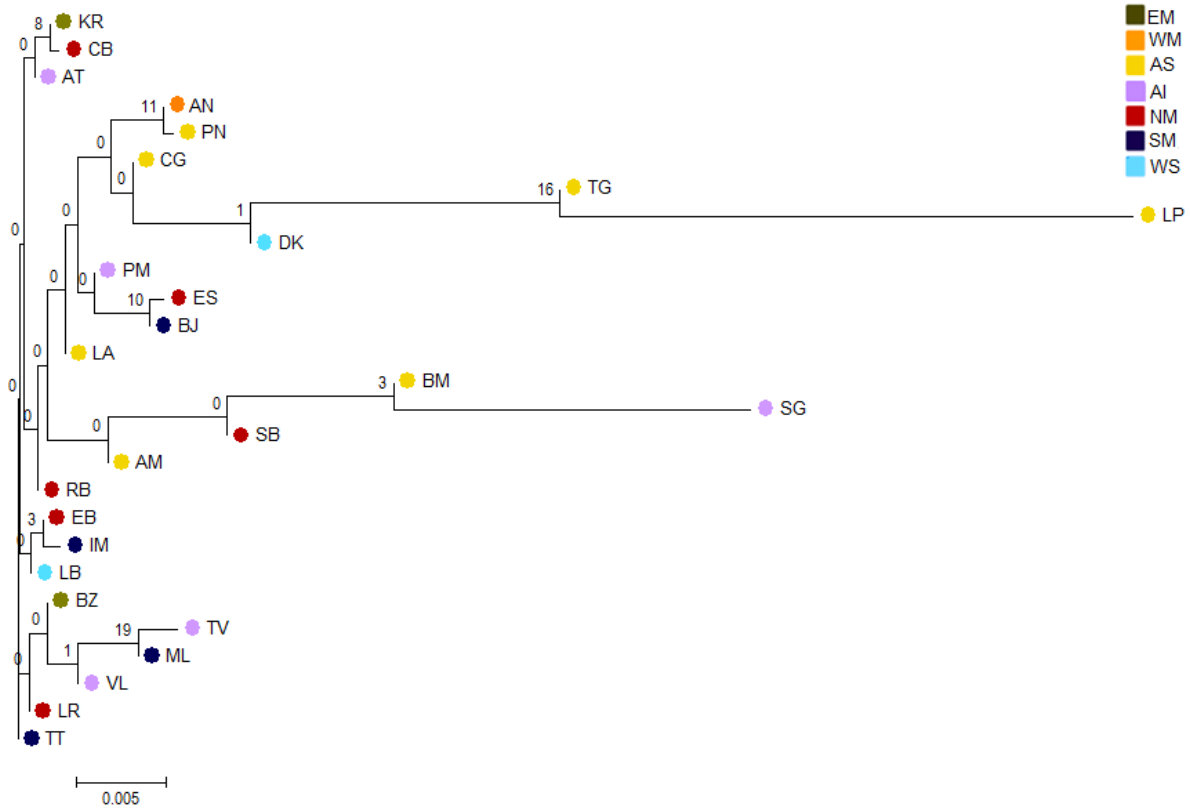

Figure S1 – Unrooted neighbour-joining tree of the pairwise genetic distance between populations of *P. perna* across northeastern Atlantic and Mediterranean shores based on proportion of shared alleles of 7 microsatellite loci, running 999 bootstraps. Colours depict distinct expected oceanographic regions. Numbers above branches correspond to bootstrap support. EM, Eastern Mediterranean; WM, Western Mediterranean; AS, Alboran Sea; AI, Atlantic Iberia; NM, northwestern Morocco; SM, Southern Morocco; WS, Western Sahara. Locations codes as in Table S6.

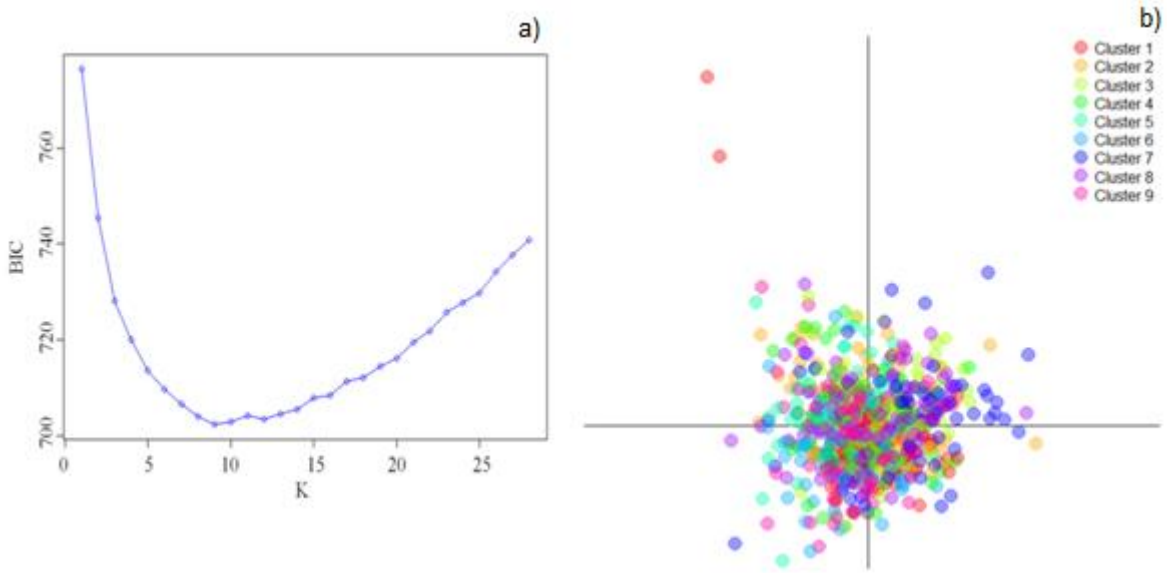

Figure S2 – Discriminant analyses of principal components (DAPC) results. a) Selection of best fitting number of clusters, K (K=9) based on Bayesian Information Criterion (BIC), b) DAPC spatial plot of the 27 populations distributed through nine clusters. Colours correspond to distinct clusters. Each individual was assigned to a cluster and solid dots correspond to the overlapping of several individuals.

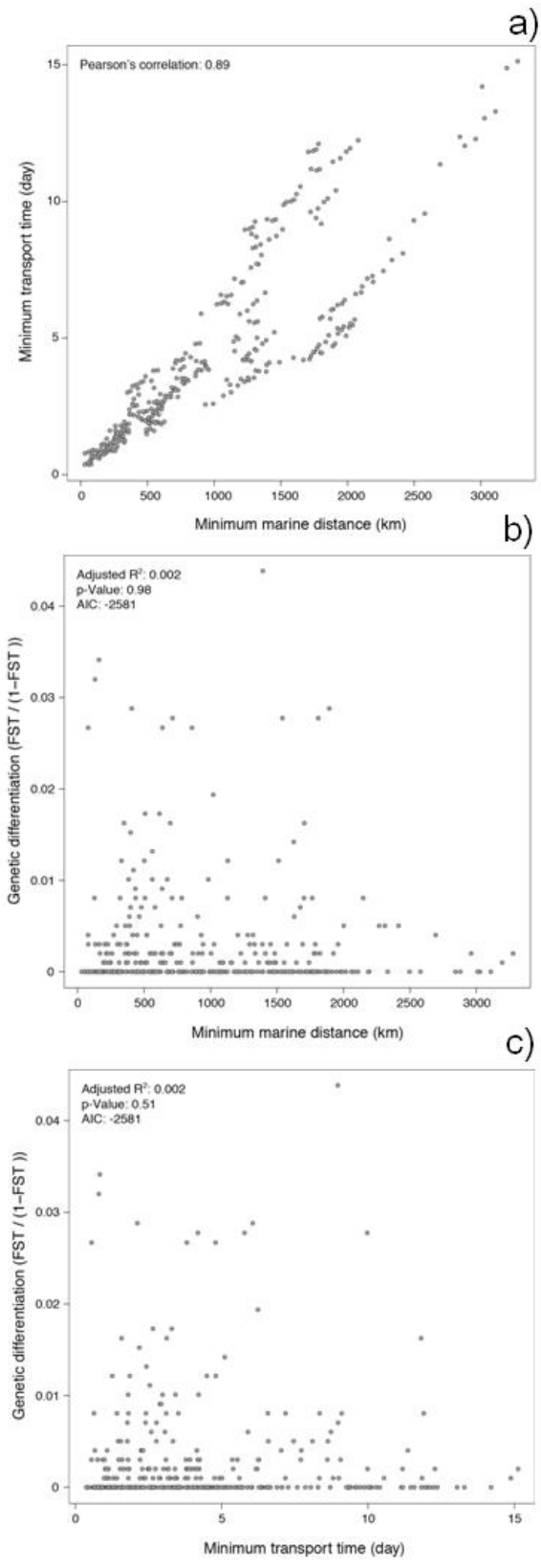

Figure S3 – Dispersal simulation of *P. perna* larvae. a) Correlation between minimum transport time (day) and minimum marine distance (km); Correlation between genetic differentiation and b) minimum marine distance (km) and c) minimum transport time (days).

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