

Neither variation loss, nor change in selfing rate is associated with the worldwide invasion of *Physa acuta* from its native North America

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Supplementary material

10530_2013_626_MOESM1_ESM.docx (385 kb)

Supplementary material 1 (DOCX 384 kb)

Table S1. Characteristics of the populations of *Physa gyrina*, *Physa fontinalis*, and *Aplexa marmorata* included in the study. Date is the sampling date and N is the number of individuals analyzed at nine microsatellite loci.

Species	Country	Locality	Coordinates	Date	Sampler	N
<i>Physa gyrina</i>	Ireland	Lough Eske	N 55°00' W 08°00'	aug 1997	R. Anderson	6
<i>Physa fontinalis</i>	Ireland	M1 BR, R Lagan	N 54°50' W 07°00'	jun 1999	R. Anderson	12
	Poland	Biebrza (Goniadz)	N 53°50' E 23°00'	mai 2002	F. Munoz	12
	Poland	Zimne wody (SW Lodz)	N 51°50' E 19°00'	jun 2002	A. Sulikowska	6
<i>Aplexa marmorata</i>	France (Guadeloupe)	Mare Moule	N 16°50' W 62°00'	dec 2000	Authors	12
	France (Guadeloupe)	Etang Gommier	N 16°50' W 62°00'	dec 2000	Authors	6
	France (Martinique)	Ravine des Cèllets	N 14°90' W 61°50'	avr 2000	Authors	12

Table S2. Pairwise F_{st} estimates between the 44 populations (above diagonal) and associated P-value in % (below diagonal). P-values larger than 1% are highlighted in yellow. See Table 1 in main text for population acronyms.

	Mos1	FL	FRJ	UkD	DaB	SwV	IrG	PoB	SpM	ItP	MIF	TuI	DuD	EgQ	TuB
FL	--	0.271	0.035	0.294	0.145	0.224	0.131	0.133	0.093	0.139	0.159	0.340	0.228	0.261	0.078
FRJ	0.00	--	0.324	0.421	0.303	0.386	0.317	0.391	0.374	0.311	0.350	0.516	0.374	0.448	0.377
Mos1	2.20	0.00	--	0.298	0.149	0.292	0.187	0.151	0.133	0.095	0.215	0.297	0.263	0.235	0.149
UkD	0.00	0.00	0.00	--	0.252	0.403	0.340	0.362	0.352	0.401	0.425	0.547	0.441	0.497	0.304
DaB	0.00	0.00	0.00	0.00	--	0.293	0.134	0.271	0.289	0.183	0.290	0.344	0.259	0.342	0.192
SwV	0.00	0.00	0.00	0.00	0.00	--	0.262	0.348	0.364	0.332	0.394	0.486	0.315	0.454	0.283
IrG	0.00	0.00	0.00	0.10	0.00	0.00	--	0.305	0.308	0.224	0.263	0.419	0.199	0.379	0.203
PoB	0.00	0.00	0.00	0.00	0.00	0.10	0.00	--	0.142	0.286	0.271	0.462	0.362	0.377	0.211
SpM	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.10	--	0.217	0.171	0.371	0.394	0.299	0.112
ItP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.250	0.257	0.235	0.189	0.220
MIF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.492	0.375	0.396	0.145
TkI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.572	0.312	0.376
DuD	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	--	0.491	0.337
EgQ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	--	0.337
TuB	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
MoE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.10	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00
CaN	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.00	0.00	0.10	0.00	0.00	0.00	0.00
SaD	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
MaF	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MrB	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00
AuD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NzA	0.10	0.10	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NzK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.10
MyK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
ViD	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00
JaK	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.00
ToT	0.20	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ChM	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40	0.10
ChE	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CoB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VeC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MtP	0.20	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GuP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
PrS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CuH	0.50	0.00	0.00	0.00	0.10	0.00	0.10	0.20	0.20	0.10	0.00	0.00	0.00	0.00	0.20
CuJ	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MxV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MxT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
UsB	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UsC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
UsF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	0.00
UsN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80	0.00
UsD	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table S2. (continued)

	CoB	VeC	MtP	GuP	PrS	CuH	CuJ	MxV	MxT	UsB	UsC	UsF	UsN	UsD
FL	0.492	0.151	0.405	0.237	0.182	0.329	0.121	0.381	0.302	0.098	0.263	0.297	0.179	0.426
FRJ	0.622	0.358	0.544	0.368	0.391	0.514	0.281	0.483	0.397	0.204	0.382	0.339	0.424	0.550
Mos1	0.473	0.196	0.452	0.286	0.206	0.349	0.163	0.414	0.352	0.156	0.294	0.312	0.159	0.433
UkD	0.672	0.343	0.634	0.310	0.407	0.519	0.346	0.624	0.529	0.298	0.461	0.481	0.367	0.626
DaB	0.551	0.191	0.507	0.237	0.247	0.391	0.191	0.380	0.366	0.124	0.328	0.348	0.243	0.458
SwV	0.429	0.239	0.535	0.348	0.208	0.376	0.276	0.509	0.315	0.228	0.265	0.370	0.329	0.539
IrG	0.546	0.209	0.485	0.276	0.238	0.365	0.175	0.448	0.361	0.159	0.317	0.383	0.195	0.445
PoB	0.640	0.267	0.525	0.356	0.356	0.486	0.232	0.531	0.452	0.169	0.372	0.239	0.322	0.595
SpM	0.591	0.276	0.452	0.248	0.325	0.441	0.247	0.481	0.406	0.186	0.335	0.313	0.277	0.569
ItP	0.563	0.254	0.455	0.301	0.261	0.396	0.230	0.397	0.326	0.185	0.229	0.360	0.284	0.500
MIF	0.660	0.295	0.474	0.241	0.411	0.496	0.274	0.471	0.421	0.204	0.360	0.374	0.378	0.593
TuI	0.775	0.439	0.699	0.421	0.458	0.580	0.387	0.688	0.565	0.301	0.390	0.571	0.436	0.821
DuD	0.609	0.253	0.582	0.412	0.310	0.453	0.246	0.486	0.379	0.210	0.349	0.430	0.355	0.499
EgQ	0.713	0.368	0.539	0.382	0.404	0.551	0.341	0.595	0.478	0.272	0.325	0.530	0.396	0.713
TuB	0.559	0.152	0.403	0.224	0.269	0.386	0.253	0.490	0.384	0.185	0.311	0.322	0.273	0.514
MoE	0.645	0.320	0.410	0.298	0.359	0.509	0.249	0.417	0.360	0.196	0.300	0.376	0.368	0.546
CaQ	0.619	0.242	0.459	0.299	0.281	0.452	0.188	0.338	0.299	0.146	0.291	0.367	0.318	0.467
CaN	0.741	0.426	0.575	0.412	0.445	0.604	0.349	0.503	0.402	0.317	0.409	0.597	0.493	0.630
SaD	0.622	0.291	0.543	0.334	0.289	0.434	0.260	0.538	0.427	0.228	0.339	0.373	0.313	0.615
MaF	0.568	0.207	0.528	0.336	0.202	0.417	0.162	0.448	0.355	0.145	0.377	0.438	0.264	0.430
MrB	0.617	0.450	0.647	0.444	0.477	0.540	0.398	0.626	0.555	0.323	0.388	0.465	0.380	0.700
AuD	0.634	0.264	0.476	0.280	0.274	0.380	0.216	0.484	0.387	0.179	0.357	0.410	0.272	0.538
NzA	0.603	0.189	0.423	0.320	0.263	0.452	0.164	0.473	0.401	0.147	0.348	0.409	0.277	0.533
NzK	0.747	0.393	0.637	0.386	0.459	0.574	0.376	0.654	0.539	0.289	0.449	0.492	0.370	0.759
MyK	0.617	0.302	0.582	0.367	0.294	0.445	0.145	0.517	0.445	0.169	0.352	0.409	0.252	0.531
ViD	0.682	0.311	0.643	0.440	0.346	0.524	0.225	0.545	0.458	0.221	0.428	0.485	0.355	0.541
JaK	0.607	0.311	0.513	0.311	0.290	0.420	0.206	0.440	0.375	0.163	0.279	0.347	0.275	0.522
ToT	0.626	0.337	0.494	0.292	0.372	0.453	0.303	0.431	0.428	0.214	0.283	0.346	0.335	0.579
ChM	0.638	0.150	0.405	0.290	0.243	0.446	0.104	0.378	0.294	0.071	0.324	0.370	0.303	0.463
ChE	0.569	0.183	0.434	0.309	0.186	0.398	0.067	0.287	0.284	0.060	0.294	0.312	0.231	0.385
CoB	--	0.498	0.797	0.614	0.497	0.622	0.554	0.773	0.628	0.489	0.549	0.652	0.544	0.800
VeC	0.00	--	0.381	0.336	0.166	0.383	0.162	0.473	0.336	0.160	0.269	0.361	0.245	0.416
MtP	0.00	0.00	--	0.497	0.564	0.689	0.429	0.682	0.552	0.394	0.400	0.659	0.565	0.709
GuP	0.00	0.00	0.00	--	0.357	0.441	0.307	0.410	0.397	0.195	0.344	0.391	0.336	0.564
PrS	0.00	0.00	0.00	0.00	--	0.303	0.172	0.494	0.306	0.174	0.316	0.407	0.205	0.430
CuH	0.00	0.10	0.00	0.00	2.10	--	0.381	0.641	0.505	0.321	0.410	0.489	0.357	0.681
CuJ	0.00	0.00	0.10	0.00	0.10	0.40	--	0.401	0.322	0.065	0.272	0.356	0.176	0.406
MxV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.388	0.281	0.494	0.610	0.548	0.664
MxT	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.10	--	0.204	0.391	0.477	0.438	0.513
UsB	0.00	0.00	0.00	0.00	0.00	0.50	0.20	0.10	0.00	--	0.229	0.212	0.189	0.387
UsC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.401	0.345	0.592
UsF	0.00	0.00	0.00	0.00	1.40	2.10	0.00	0.00	0.00	0.00	0.00	--	0.439	0.708
UsN	0.00	0.00	0.00	0.00	2.00	2.70	0.00	0.00	0.00	0.00	0.00	1.40	--	0.549
UsD	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	--

Figure S1 Plots of individuals from the 44 populations studied among the six STRUCTURE clusters ($K = 6$ is the most likely number of plots). 20 simulations were run at $K = 6$, and results from six simulations are reported here. Color code from a given cluster is not identical across plots. See Table 4 in main text for population identity and the cluster to which they were attributed.

