

Supplementary

Genetic Data Suggest Multiple Introductions of the Lionfish (*Pterois miles*) into the Mediterranean Sea

Andreas C. Dimitriou ^{1,*}, Niki Chartosia ¹, Jason M. Hall-Spencer ^{2,3}, Periklis Kleitou ², Carlos Jimenez ⁵, Charalampos Antoniou ⁴, Louis Hadjioannou ⁵, Demetris Kletou ⁴ and Spyros Sfenthourakis ¹

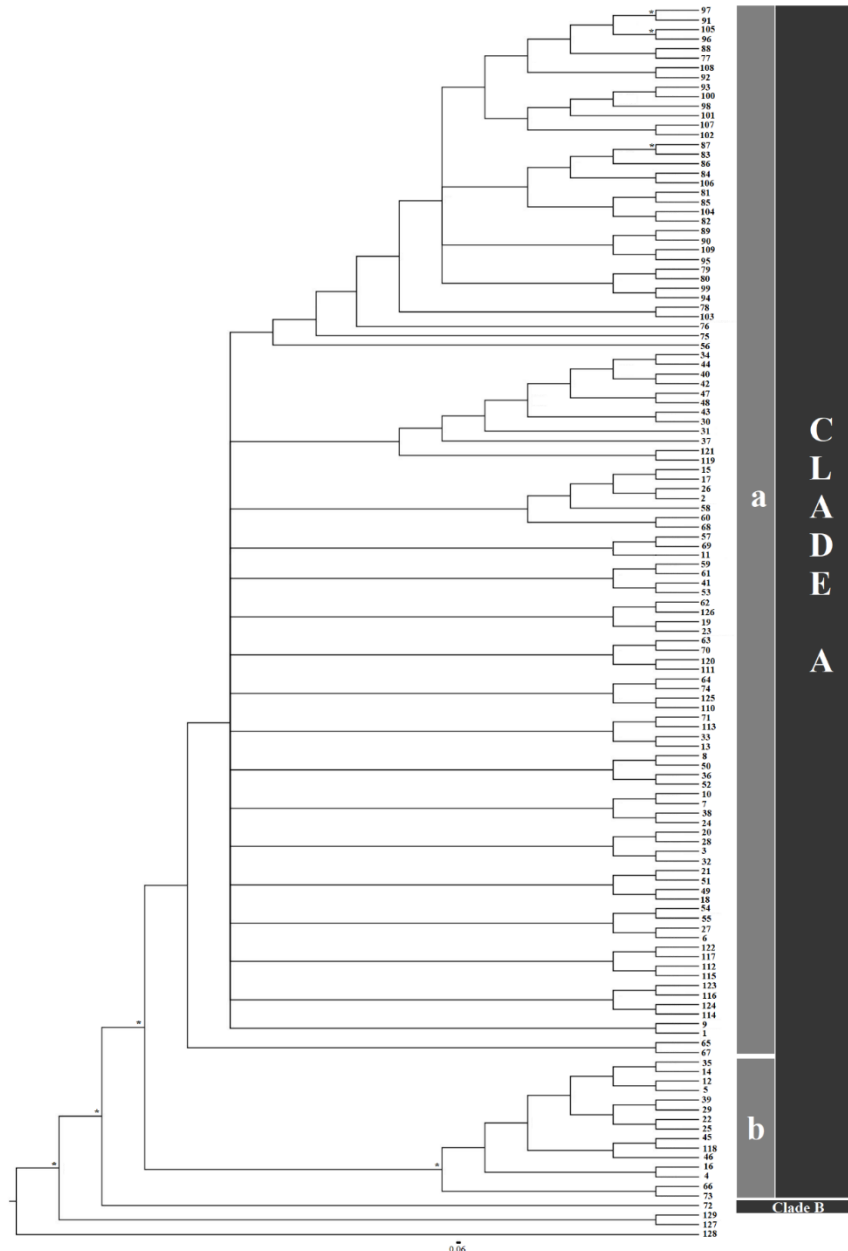


Figure S1. BI phylogram based on concatenated data set including both targeted genes (CR and COI). COI. Stars on nodes represent BI posterior probabilities >0.9 and ML bootstrap values >75. Tip labels correspond to numbers of Table S1.

Table S1. Species, locality of origin, available sequence data from targeted genes, and codes/ Genbank accession numbers of individuals used in the analyses.

No.	Species	Locality	Genes/ Acc. number		Clade(Sub clade)
			COI	CR	
1	<i>P. miles</i>	Cyprus (Cape Greco)	MN150218	MN150272	A (a)
2		Cyprus (Cape Greco)	MN150220	MN150274	A (a)
3		Cyprus (Cape Greco)	MN150222	MN150276	A (a)
4		Cyprus (Cape Greco)	MN150224	MN150278	A (b)
5		Cyprus (Cape Greco)	MN150226	MN150280	A (b)
6		Cyprus (Cape Greco)	MN150228	MN150282	A (a)
7		Cyprus (Cape Greco)	MN150231	MN150285	A (a)
8		Cyprus (Cape Greco)	MN150186	MN150240	A (a)
9		Cyprus (Cape Greco)	MN150188	MN150242	A (a)
10		Cyprus (Cape Greco)	MN150190	MN150244	A (a)
11		Cyprus (Cape Greco)	MN150192	---	A (a)
12		Cyprus (Cape Greco)	MN150194	MN150247	A (b)
13		Cyprus (Cape Greco)	MN150196	MN150249	A (a)
14		Cyprus (Cape Greco)	MN150199	MN150252	A (b)
15		Cyprus (Cape Greco)	MN150201	MN150254	A (a)
16		Cyprus (Cape Greco)	MN150203	MN150256	A (b)
17		Cyprus (Moni)	MN150206	MN150259	A (a)
18		Cyprus (Moni)	MN150208	MN150261	A (a)
19		Cyprus (Mantria)	MN150209	MN150263	A (a)
20		Cyprus (Port, Limassol)	MN150210	MN150264	A (a)
21		Cyprus (Port, Limassol)	MN150211	MN150265	A (a)
22		Cyprus (Moni)	MN150213	MN150267	A (b)
23		Cyprus (Moni)	MN150214	MN150268	A (a)
24		Cyprus (Cape Greco)	MN150204	MN150257	A (a)
25		Cyprus (Cape Greco)	MN150217	MN150271	A (b)
26		Cyprus (Cape Greco)	MN150219	MN150273	A (a)
27		Cyprus (Cape Greco)	MN150221	MN150275	A (a)
28		Cyprus (Cape Greco)	MN150223	MN150277	A (a)
29		Cyprus (Cape Greco)	MN150225	MN150279	A (b)
30		Cyprus (Cape Greco)	MN150227	MN150281	A (a)
31		Cyprus (Cape Greco)	MN150229	MN150283	A (a)
32		Cyprus (Cape Greco)	MN150230	MN150284	A (a)
33		Cyprus (Cape Greco)	MN150185	MN150294	A (a)
34		Cyprus (Cape Greco)	MN150187	MN150241	A (a)
35		Cyprus (Cape Greco)	MN150189	MN150243	A (b)
36		Cyprus (Cape Greco)	MN150191	MN150245	A (a)
37		Cyprus (Cape Greco)	MN150193	MN150246	A (a)
38		Cyprus (Cape Greco)	MN150195	MN150248	A (a)
39		Cyprus (Cape Greco)	MN150197	MN150250	A (b)
40		Cyprus (Cape Greco)	MN150198	MN150251	A (a)
41		Cyprus (Cape Greco)	MN150200	MN150253	A (a)
42		Cyprus (Cape Greco)	MN150202	MN150255	A (a)
43		Cyprus (Cape Greco)	MN150205	MN150258	A (a)
44		Cyprus (Cape Greco)	MN150207	MN150260	A (a)
45		Cyprus (Cape Greco)	---	MN150262	A (b)
46		Cyprus (Cape Greco)	MN150212	MN150266	A (b)
47		Cyprus (Cape Greco)	MN150215	MN150269	A (a)
48		Cyprus (Cape Greco)	MN150216	MN150270	A (a)
49		Cyprus (Cape Greco)	MN150235	MN150291	A (a)
50		Cyprus (Cape Greco)	MN150232	MN150293	A (a)
51		Cyprus (Cape Greco)	MN150234	MN150288	A (a)

52	Cyprus (Cape Greco)	MN150236	MN150286	A (a)
53	Cyprus (Cape Greco)	MN150237	MN150287	A (a)
54	Cyprus (Cape Greco)	MN150233	MN150289	A (a)
55	Cyprus (Cape Greco)	MN150238	MN150292	A (a)
56	Cyprus (Cape Greco)	MN150239	MN150290	A (a)
57	Madagascar	JQ350297	---	A (a)
58	Gulf of Aqaba	MF124020	---	A (a)
59	South Africa	JF494332	---	A (a)
60	Sri Lanka (Indian Ocean)	FJ584027	---	A (a)
61	----	FJ584026	---	A (a)
62	India (Indian Ocean)	EU148592	---	A (a)
63	Gulf of Aqaba	MF124021	---	A (a)
64	South Africa	JF494333	---	A (a)
65	Lebanon	KR861550	---	A (a)
66	South Africa	GU805078	---	A (b)
67	Italy (Sicily)	KJ709588	---	A (a)
68	Italy (Sicily)	KJ709587	---	A (a)
69	Sri Lanka (Indian Ocean)	FJ584031	---	A (a)
70	Indian Ocean	KT358513	---	A (a)
71	Indian Ocean	KT358510	---	A (a)
72	Indian Ocean	KT358511	---	B
73	Indian Ocean	KT358512	---	A (b)
74	Indian Ocean	KT358514	---	A (a)
75	Indonesia (Sumatra)	---	FJ516407	A (a)
76	USA Onslow bay	---	FJ516408	A (a)
77	Indian Ocean/Red Sea/Gulf of Aqaba	---	AJ628896	A (a)
78	Red Sea (Jordan)	---	AJ628897	A (a)
79	Gulf of Aqaba	---	AJ628899	A (a)
80	Red Sea/Gulf of Aqaba	---	AJ628900	A (a)
81	Gulf of Aqaba	---	AJ628901	A (a)
82	Red Sea/Gulf of Aqaba	---	AJ628902	A (a)
83	Gulf of Aqaba	---	AJ628904	A (a)
84	Gulf of Aqaba	---	AJ628905	A (a)
85	Gulf of Aqaba	---	AJ628906	A (a)
86	Indian Ocean/Red Sea/Gulf of Aqaba	---	AJ628907	A (a)
87	Gulf of Aqaba	---	AJ628908	A (a)
88	Gulf of Aqaba	---	AJ628909	A (a)
89	Gulf of Aqaba	---	AJ628910	A (a)
90	Gulf of Aqaba	---	AJ628911	A (a)
91	Gulf of Aqaba	---	AJ628912	A (a)
92	Gulf of Aqaba	---	AJ628913	A (a)
93	Red Sea (Jordan)	---	AJ628914	A (a)
94	Red Sea (Jordan)	---	AJ628915	A (a)
95	Indian Ocean	---	AJ628916	A (a)
96	Red Sea (Jordan)	---	AJ628917	A (a)
97	Gulf of Aqaba	---	AJ628918	A (a)
98	Indian Ocean/Red Sea/Gulf of Aqaba	---	AJ628919	A (a)
99	Indian Ocean	---	AJ628920	A (a)
100	Indian Ocean	---	AJ628921	A (a)
101	Indian Ocean	---	AJ628922	A (a)
102	Gulf of Aqaba	---	AJ628923	A (a)
103	Gulf of Aqaba	---	AJ628925	A (a)
104	Gulf of Aqaba	---	AJ628926	A (a)

105		Gulf of Aqaba	---	AJ628927	A (a)
106		Gulf of Aqaba	---	AJ628928	A (a)
107		Gulf of Aqaba	---	AJ628931	A (a)
108		Red Sea (Jordan)	---	AJ628932	A (a)
109		Red Sea (Jordan)	---	AJ628933	A (a)
110		Indian Ocean	KT358515	---	A (a)
111		Lebanon	---	KY713622	A (a)
112		Lebanon	---	KY713617	A (a)
113		Lebanon	---	KY713618	A (a)
114		Lebanon	---	KY713619	A (a)
115		Lebanon	---	KY713620	A (a)
116		Lebanon	---	KY713621	A (a)
117		Rhodes	---	KY713616	A (a)
118		Cyprus	---	KY713609	A (b)
119		Cyprus	---	KY713610	A (a)
120		Cyprus	---	KY713611	A (a)
121		Cyprus	---	KY713612	A (a)
122		Cyprus	---	KY713613	A (a)
123		Cyprus	---	KY713614	A (a)
124		Cyprus	---	KY713615	A (a)
125		Indian Ocean	KT358509	---	A (a)
126		Indonesia Jakarta Raya	FJ584028	---	A (a)
127	<i>P. russelii</i>	South China Sea	FJ237903	---	Outgroup
128	<i>P. volitans</i>	-----	KM488633	KM488633	Outgroup
129	<i>P. lunulata</i>	Taiwan	KU943338	---	Outgroup

Table S2 Frequency and Accession numbers of CR haplotypes.

Hap No.	Frequency	Code/Acc number
Hap 1	4	AJ628896, AJ628908, AJ628909, FJ516408
Hap 2	58	MN150240, MN150241, MN150242, MN150244, MN150245, MN150246, MN150248, MN150249, MN150251, MN150257, MN150253, MN150258, MN150258, MN150260, MN150261, MN150263, MN150264, MN150265, MN150268, MN150269, MN150270, MN150272, MN150275, MN150276, MN150277, MN150281, MN150282, MN150283, MN150284, MN150285, MN150286, MN150287, MN150288, MN150289, MN150290, MN150291, MN150292, MN150293, MN150294, AJ628897, AJ628899, AJ628904, AJ628923, AJ628925, AJ628931, FJ516407, KY713610, KY713611, KY713612, KY713613, KY713614, KY713615, KY713616, KY713617, KY713618, KY713619, KY713620, KY713621, KY713622
Hap 3	1	AJ628900
Hap 4	1	AJ628901, AJ628907
Hap 5	1	AJ628902
Hap 6	1	AJ628905
Hap 7	1	AJ628906
Hap 8	1	AJ628910
Hap 9	1	AJ628911
Hap 10	1	AJ628912, AJ628918
Hap 11	1	AJ628913
Hap 12	1	AJ628914
Hap 13	1	AJ628915
Hap 14	1	AJ628916
Hap 15	1	AJ628917
Hap 16	1	AJ628919

Hap 17	1	AJ628920
Hap 18	1	AJ628921
Hap 19	1	AJ628922
Hap 20	1	AJ628926
Hap 21	1	AJ628927
Hap 22	1	AJ628928
Hap 23	1	AJ628932
Hap 24	1	AJ628933
Hap 25	5	MN150273, MN150274, MN150254, MN150255, MN150259
Hap 26	13	MN150271, MN150278, MN150279, MN150280, MN150243, MN150247, MN150250, MN150252, MN150256, MN150262, MN150266, MN150267, KY713609
Hap 27	1	KM488633

Table S3. Frequency and Accession numbers of COI haplotypes.

Hap No.	Frequency	Code/Acc number
Hap 1	46	MN150185, MN150186, MN150188, MN150190, MN150191, MN150192, MN150195, MN150196, MN150200, MN150201, MN150204, MN150206, MN150208, MN150209, MN150210, MN150211, MN150214, MN150218, MN150219, MN150220, MN150221, MN150222, MN150223, MN150228, MN150230, MN150231, MN150232, MN150233, MN150234, MN150235, MN150236, MN150237, MN150238, MN150239, MF124020, KR861550, EU148592, FJ584031, FJ584027, KJ709587, KJ709588, JF494333, FJ584026, MF124021, JF494332, JQ350297]
Hap 2	8	MN150227, MN150187, MN150198, MN150202, MN150205, MN150207, MN150215, MN150216
Hap 3	1	MN150193
Hap 4	1	MN150212
Hap 5	1	MN150229
Hap 6	2	KT358512, GU805078
Hap 7	1	KT358515
Hap 8	1	KT358513
Hap 9	1	KT358514
Hap 10	1	KT358510
Hap 11	1	KT358511
Hap 12	10	MN150217, MN150224, MN150225, MN150226, MN150189, MN150194, MN150197, MN150199, MN150203, MN150213
Hap 13	1	FJ237903
Hap 14	1	KU943338
Hap 15	1	KM488633