The following supplement accompanies the article

Invasive lionfish *Pterois volitans* reduce the density but not the genetic diversity of a native reef fish

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Table S1. Measured observed heterozygosity, expected heterozygosity, and allelic richness (*A*) for each site and condition by each microsatellite locus.

Locus/Site	AAC33	AAC42	AAC44	AAC47	AAT40	GATA40	Ave
T1 Pre							
H_O	0.5790	0.8597	0.8947	0.8947	0.7368	0.8571	0.7642
H_E	0.86446	0.9367	0.9508	0.9016	0.9016	0.9516	0.8871
A	14	21	27	18	17	28	21.75
T1 Post							
H_O	0.6207	0.9310	0.9138	0.9310	0.8448	0.8793	0.7777
H_E	0.9025	0.9402	0.9432	0.9183	0.8978	0.9561	0.8807
A	14	27	25	21	13	31	21.00
T2 Pre							
H_O	0.4528	0.8039	0.8462	0.8868	0.6792	0.7115	0.7060
H_E	0.8753	0.9435	0.9692	0.9094	0.9060	0.9586	0.8822
A	14	21	28	16	14	28	19.08
T2 Post							
H_O	0.5932	0.8276	0.8644	0.9661	0.8983	0.8276	0.7517
H_E	0.8886	0.9481	0.9476	0.9670	0.8940	0.9565	0.9078
A	15	26	24	20	16	29	22.0910

Table S1. Continued

Locus/ Site	GGA7	GT10	TG10	TG13	TG53	TG8	Ave
T1 Pre							
H_O	0.5439	0.8596	0.6293	0.6491	0.9123	0.7544	0.7642
H_E	0.6474	0.8874	0.9702	0.7278	0.9505	0.9379	0.8871
A	10	17	43	10	33	23	21.75
T1 Post							
H_O	0.4912	0.8621	0.5172	0.7069	0.8621	0.7719	0.7777
H_E	0.5802	0.8921	0.9718	0.6853	0.9409	0.9402	0.8807
A	4	15	44	6	30	22	21.00
T2 Pre							
H_O	0.4528	0.9038	0.4898	0.6981	0.8868	0.6604	0.7060
H_E	0.5793	0.8862	0.9693	0.7123	0.9416	0.9448	0.8822
A	6	14	33	8	27	20	19.08
T2 Post							
H_O	0.4576	0.8621	0.5714	0.5593	0.8305	0.7627	0.7517
H_E	0.6226	0.8862	0.9641	0.7258	0.9260	0.9418	0.9078
A	7	14	38	7	31	23	22.0910

Table S2. Results from the exact *G*-test, testing for significant changes in allelic frequencies pre- to post-lionfish removals within sites by microsatellite locus.

Locus	Site	p-value (SE)
AAC33	T1	0.02046 (0.003)
AAC33	T2	0.19395 (0.00903)
AAC33	Control	0.01702 (0.00260)
AAC42	T1	0.90441 (0.00604)
AAC42	T2	0.63963 (0.01312)
AAC42	Control	0.34779 (0.01326)
AAC44	T1	0.83405 (0.00958)
AAC44	T2	0.05014 (0.00556)
AAC44	Control	0.07666 (0.00637)
AAC47	T1	0.76479 (0.01061)
AAC47	T2	0.56391 (0.01398)
AAC47	Control	0.04309 (0.00483)
AAT40	T1	0.53613 (0.01332)
AAT40	T2	0.01134 (0.00227)
AAT40	Control	0.90006 (0.00494)
GATA40	T1	0.07509 (0.00674)
GATA40	T2	0.15215 (0.00988)
GATA40	Control	0.68259 (0.01372)
GGA7	T1	0.05584 (0.00670)
GGA7	T2	0.07623 (0.00582)
GGA7	Control	0.6733 (0.00661)
GT10	T1	0.80048 (0.00994)
GT10	T2	0.73698 (0.00897)
GT10	Control	0.29589 (0.01281)
TG8	T1	0.73231 (0.01151)
TG8	T2	0.29398 (0.01429)
TG8	Control	0.58493 (0.01534)
TG10	T1	0.12528 (0.01120)
TG10	T2	0.00661 (0.00152)
TG10	Control	0.00000 (0.00000)
TG13	T1	0.39812 (0.01106)
TG13	T2	0.20891 (0.00855)
TG13	Control	0.18194 (0.01017)
TG53	T1	0.09994 (0.00910)
TG53	T2	0.11628 (0.00788)
TG53	Control	0.9601 (0.00371)

Table S3. Average (±SD) density (fish per m^2) for reef fish recruits and adults and lionfish pre- and post-lionfish removal from the control site (C), treatment site 1 (T1) and treatment site 2 (T2). nd = no data.

Species	**C Pre**	**C Post**	**T1 Pre**	**T1 Post**	**T2 Pre**	**T2 Post**
Pterois volitans	0.04 (0.02)	0.03 (0.02)	0.03 (0.02)	0.002 (0.007)	0.02 (0.00)	0.003 (0.005)
Reef Fish Recruits						
Stegastes partitus	1.02 (0.95)	1.16 (0.64)	1.09 (1.07)	2.42 (1.41)	nd	nd
Halichoeres garnoti	2.16 (1.23)	0.57 (0.41)	1.61 (1.89)	1.64 (1.23)	nd	nd
Thalassoma bifasciatum	0.17 (0.24)	0.32 (0.58)	0.53 (0.51)	0.71 (0.67)	nd	nd
Reef Fish Adults						
Stegastes partitus	0.20 (0.10)	0.33 (0.19)	0.10 (0.06)	0.62 (0.41)	nd	nd
Halichoeres garnoti	0.19 (0.22)	0.02 (0.03)	0.04 (0.04)	0.10 (0.15)	nd	nd
Thalassoma bifasciatum	0.02 (0.02)	0.02 (0.03)	0.04 (0.03)	0.07 (0.09)	nd	nd

Table S4. DIC scores for Models (1)-(6) for *Stegastes partitus*, *Halichoeres garnoti* and *Thalassoma bifasciatum* recruits and adults. Boldface values identify the model chosen for each age group.

Species	*Stegastes partitus*		*Halichoeres garnoti*		*Thalassoma bifasciatum*	
Model	Recruits	Adults	Recruits	Adults	Recruits	Adults
1	432.2	398	438.7	362.0	**356.3**	**279.9**
2	431	413.1	437.4	368.9	357.4	279.8
3	433	398.4	434.2	**343.4**	358.7	281.4
4	433.2	422.7	433.3	357.2	368.8	290.1
5	**424**	**391.1**	**429.4**	348.2	357.2	280.6
6	425.6	394.1	432.0	365.4	367.2	287.4

Table S5. T-test results testing the change in observed heterozygosity (H_O), expected heterozygosity (H_E), and allelic richness (A) between pre-lionfish removal and post-lionfish removal periods within sites: treatment 1, treatment 2 and control.

	Site	**df**	**T**	**p-value**
H_O	T1	10	1.0845	0.3036
	T2	10	1.6175	0.1368
	C	10	0.6245	0.5463
H_E	T1	10	0.1591	0.8767
	T2	10	0.6709	0.5125
	C	10	2.472	0.0330
A	T1	10	0.5333	0.6055
	T2	10	1.7075	0.1185
	C	10	3.4259	0.0065

Table S6. T-test results testing the changes in observed heterozygosity (H_O), expected heterozygosity (H_E), and allelic richness (A) from two pre-lionfish invasion sites (2009) from Salas et al. to post-lionfish invasion (2014).

	Site	**df**	**T**	**p-value**
H_O	PI 1 / Post	8	0.2876	0.781
	PI 2 / Post	8	0.1467	0.887
H_E	PI 1 / Post	8	0.8921	0.3984
	PI 2 / Post	8	1.0027	0.3454
A	PI 1 / Post	8	1.3695	0.2081
	PI 2 / Post	8	1.8068	0.1084

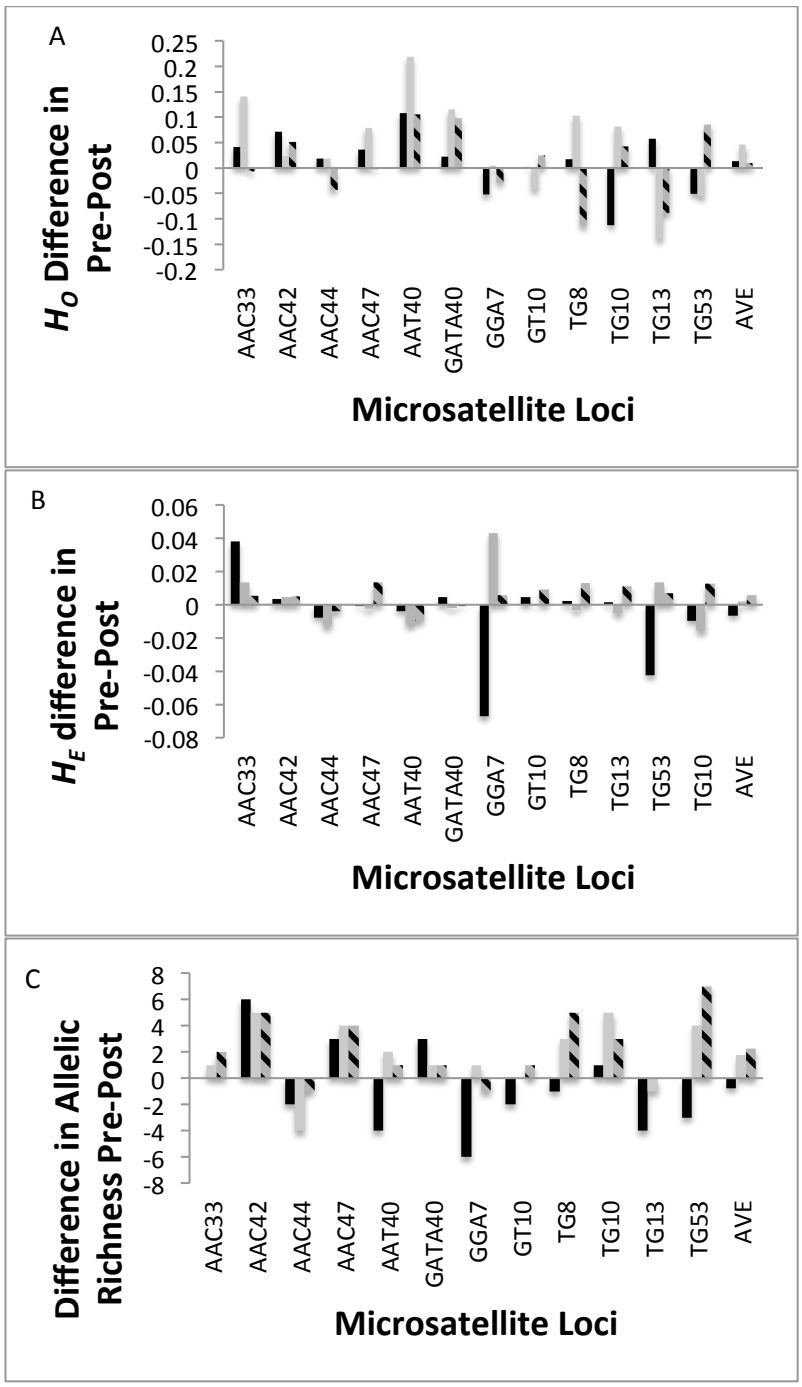

Fig. S1. Differences between pre-treatment and post-treatment diversity indices H_O (A), H_E (B), and A (C) for 12 microsatellite loci and the average across all loci. Treatment 1 = black, Treatment 2 = gray, Control = striped.

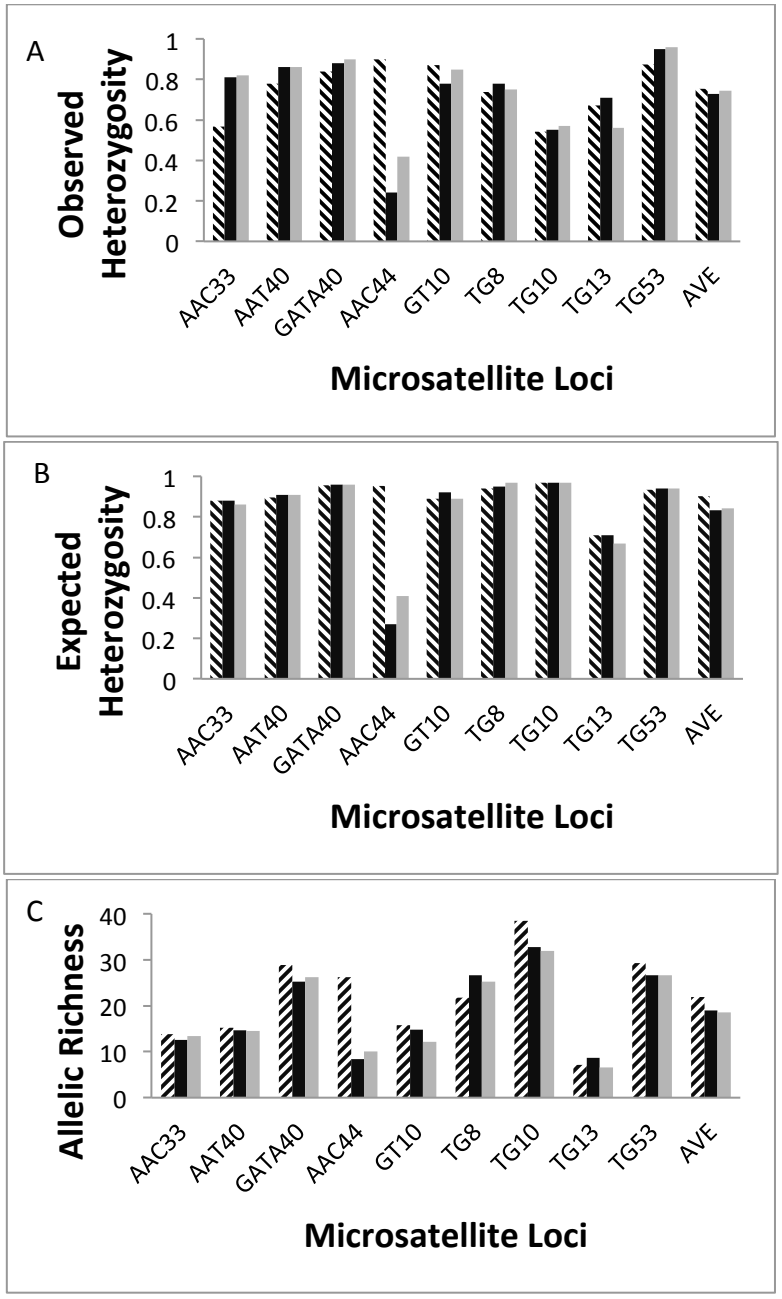

Fig. S2. Comparing diversity indices H_O (A), H_E (B), and A (C) at populations sampled pre- and post-lionfish invasion; of pre-lionfish invasion sites (Coral Key: black and Bocas Island: gray: from Salas et al. 2010) and post-lionfish invasion (averaged Tiger Rock: striped: this study).

LITERATURE CITED

Salas E, Molina-Urena H, Walter RP, Heath DD (2010) Local and regional genetic connectivity in a Caribbean coral reef fish. Mar Biol 157:437−445