

Habitat plasticity in native Pacific red lionfish *Pterois volitans* facilitates successful invasion of the Atlantic

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Supplement. Additional results and data

Table S1. Multiple linear regressions to explain variance in *Pterois volitans* abundance based on the explanatory variables measured. β : regression coefficient (slope measuring change in y per unit of change in x). SE: standard error. 'Relative importance metric' refers to proportion of model variance explained by each variable; the sum of relative importance metrics is equivalent to the total variance explained by the full model. 'Order in model' refers to preferential location for the input of each variable in the model's equation. There are 10 possible positions (A–J), and letters indicate which positions are best for each variable. p-values in bold indicate significant correlations

| Variable | Coefficient estimate (β) | SE | p | Relative importance metric | Order in model |
|------------------------|----------------------------------|--------|------------------|----------------------------|----------------|
| Intercept | 0.999 | 0.265 | <0.001 | | |
| Region | 0.438 | 0.177 | 0.017 | 0.176 | ABCD |
| Habitat | -0.400 | 0.146 | 0.009 | 0.103 | ABCDEFGF |
| Other lionfish | 0.002 | 0.003 | 0.523 | 0.061 | ABCDEFGHJI |
| Other predators | <0.001 | <0.001 | 0.082 | 0.036 | BCDEFGHIJ |
| Visibility | -0.019 | 0.009 | 0.032 | 0.048 | BCDEFGHIJ |
| Distance to freshwater | <0.001 | <0.001 | 0.239 | 0.018 | DEFGHIJ |
| Current | -0.014 | 0.11 | 0.903 | 0.004 | EFGHIJ |
| Cloud cover | 0.003 | 0.002 | 0.211 | 0.016 | CDEFGHIJ |
| Wave action | -0.007 | 0.139 | 0.959 | 0.033 | CDEFGHI |
| Rugosity | -0.082 | 0.06 | 0.181 | 0.035 | BCDEFGHIJ |

Table S2. Non-lionfish predator species recorded during surveys for density estimation of lionfish on Guam and in the Philippines. Species included as predators were coral reef fishes that have at least partially overlapping diets with lionfish. Data on diets were taken from Fish Base (www.fishbase.org), Myers (1999), and Randall (2005)

| Predator Species | | | |
|--------------------------------------|------------------------------------|------------------------------------|----------------------------------|
| Aulostomidae | Holocentridae | Lutjanidae | Priacanthidae |
| <i>Aulostomus chinensis</i> | <i>Neoniphon argenteus</i> | <i>Aphareus furca</i> | <i>Priacanthus blochii</i> |
| | <i>Neoniphon opercularis</i> | <i>Lutjanus argentimaculatus</i> | <i>Priacanthus hamrur</i> |
| Balistidae | <i>Neoniphon sammara</i> | <i>Lutjanus biguttatus</i> | <i>Priacanthus</i> sp. |
| <i>Balistoides viridescens</i> | <i>Neoniphon</i> sp. | <i>Lutjanus bohar</i> | |
| | <i>Sargocentron caudimaculatum</i> | <i>Lutjanus decussatus</i> | Scombridae |
| Bothidae | <i>Sargocentron diadema</i> | <i>Lutjanus fulviflamma</i> | <i>Gymnosarda unicolor</i> |
| <i>Bothus mancus</i> | <i>Sargocentron</i> sp. | <i>Lutjanus fulvus</i> | <i>Scomberomorus commerson</i> |
| | <i>Sargocentron spiniferum</i> | <i>Lutjanus gibbus</i> | |
| Carangidae | | <i>Lutjanus kasmira</i> | Serranidae |
| <i>Caranx ignobilis</i> | Labridae | <i>Lutjanus lutjanus</i> | <i>Aethaloperca rogaa</i> |
| <i>Caranx melampygus</i> | <i>Bodianus axillaris</i> | <i>Lutjanus monostigma</i> | <i>Cephalopholis argus</i> |
| <i>Caranx sexfasciatus</i> | <i>Bodianus diana</i> | <i>Lutjanus semicinctus</i> | <i>Cephalopholis boenak</i> |
| <i>Caranx</i> sp. | <i>Bodianus</i> sp. | <i>Lutjanus</i> sp. | <i>Cephalopholis cyanostigma</i> |
| <i>Elagatis bipinnulatus</i> | <i>Cheilinus chlorurus</i> | | <i>Cephalopholis microprion</i> |
| <i>Gnathanodon speciosus</i> | <i>Cheilinus fasciatus</i> | Mullidae | <i>Cephalopholis sonnerati</i> |
| <i>Selar</i> sp. | <i>Cheilinus trilobatus</i> | <i>Mulloidichthys</i> sp. | <i>Cephalopholis urodeta</i> |
| <i>Selaroides leptolepis</i> | <i>Cheilinus undulatus</i> | <i>Mulloidichthys vanicolensis</i> | <i>Epinephelus fasciatus</i> |
| <i>Trachinotus blochi</i> | <i>Cheilio inermis</i> | <i>Parupeneus barberinoides</i> | <i>Epinephelus fuscoguttatus</i> |
| | <i>Coris aygula</i> | <i>Parupeneus barberinus</i> | <i>Epinephelus hexagonatus</i> |
| Carcharhinidae | <i>Coris gaimard</i> | <i>Parupeneus crassilabris</i> | <i>Epinephelus merra</i> |
| <i>Carcharhinus melanopterus</i> | <i>Epibulus insidiator</i> | <i>Parupeneus rubescens</i> | <i>Epinephelus ongus</i> |
| <i>Nebrius ferrugineus</i> | <i>Epibulus</i> sp. | <i>Parupeneus</i> sp. | <i>Epinephelus polyphekadion</i> |
| <i>Triaenodon obesus</i> | <i>Gomphosus varius</i> | <i>Upeneus tragula</i> | <i>Epinephelus</i> sp. |
| | <i>Halichoeres hortulanus</i> | | <i>Epinephelus piloticeps</i> |
| Cirrhitidae | <i>Halichoeres marginatus</i> | Muraenidae | <i>Plectropomus laevis</i> |
| <i>Paracirrhites arcatus</i> | <i>Halichoeres trimaculatus</i> | <i>Echidna nebulosa</i> | <i>Plectropomus leopardus</i> |
| <i>Paracirrhites forsteri</i> | <i>Hemigymnus fasciatus</i> | <i>Gymnothorax fimbriatus</i> | <i>Variola albimarginata</i> |
| <i>Dactyloptena orientalis</i> | <i>Hemigymnus melapterus</i> | <i>Gymnothorax flavimarginatus</i> | <i>Variola louti</i> |
| | <i>Iniistius pentadactylus</i> | <i>Gymnothorax javanicus</i> | |
| Ephippidae | <i>Macropharyngodon meleagris</i> | <i>Gymnothorax undulatus</i> | Sphyracidae |
| <i>Platax teira</i> | <i>Novaculichthys taeniorus</i> | <i>Gymnothorax</i> sp. | <i>Sphyracna barracuda</i> |
| | <i>Oxycheilinus</i> sp. | <i>Rhinomuraena quaesita</i> | <i>Sphyracna qenie</i> |
| Fistulariidae | <i>Oxycheilinus unifasciatus</i> | <i>Siderea thysoidea</i> | <i>Sphyracna flavicauda</i> |
| <i>Fistularia commersoni</i> | <i>Thalassoma hardwicke</i> | | <i>Sphyracna</i> sp. |
| | <i>Thalassoma lunare</i> | Ophichthidae | |
| Gerreidae | <i>Thalassoma lutescens</i> | <i>Leiuranus semicinctus</i> | Synodontidae |
| <i>Gerres acinaces</i> | <i>Thalassoma</i> sp. | | <i>Saurida</i> sp. |
| | | Pinguipedidae | <i>Synodus</i> sp. |
| Haemulidae | Lethrinidae | <i>Parapercis clathrata</i> | |
| <i>Plectorhinchus chaetodonoides</i> | <i>Gnathodentex aureolineatus</i> | <i>Parapercis</i> sp. | Scorpaenidae |
| <i>Plectorhinchus picus</i> | <i>Lethrinus harak</i> | <i>Parapercis tetracantha</i> | <i>Scorpaenopsis</i> sp. |
| <i>Plectorhinchus polytaenia</i> | <i>Lethrinus olivaceus</i> | | |
| <i>Plectorhinchus unicolor</i> | | | |