TABLE S1 | Diet of three mesopredatory fishes (Lionfish, *Cephalopholis cruentata*, and *Lutjanus apodus*) expressed as percentage values (%) of the Frequency of Occurrence (FO). Numerical (%N). Gravimetric (%P). and Percent of Prey-Specific Index of Relative Importance (%PSIRI).

	Lionfish				*Cephalopholis cruentata*				*Lutjanus apodus*			
PREY SPECIES	**%P**	**%N**	**%F**	**%PSIRI**	**%P**	**%N**	**%F**	**PSIRI**	**%P**	**%N**	**%F**	**%PSIRI**
CRUSTACEA												
AMPHIPODA												
GAMARIDAE												
Gammarus sp.									5.74	72.15	13.64	76.94
STOMATOPODA												
GONODACTYLIDAE												
Gonodactylus sp.					1.78	5.41	5.88	5.24				
Gonodactylus curacaoensis					6.22	10.81	11.76	20.83				
Gonodactylus oestedii					0.89	2.70	2.94	1.38				
ISOPODA									0.31	0.46	2.27	0.10
PSEUDOSQUILLIDAE												
Pseudosquilla ciliata	0.07	0.8	1.32	0.13	4.00	2.70	2.94	1.87				
DECAPODA												
PENAEIDAE	0.34	1.6	2.63	0.55					0.62	0.91	2.27	0.21
Methapenaeopsis sp.	0.07	0.8	1.32	0.13								
Metapenaeopsis smithi	0.27	0.8	1.32	0.16	0.56	2.70	2.94	1.33				
SOLENOCERIDAE												
Solenocera sp.	0.55	1.6	2.63	0.57								
Pleoticus sp.					0.11	2.70	2.94	1.26				
Pleoticus robustus	5.67	18.4	13.16	29.68	0.67	5.41	2.94	2.59	26.51	4.57	13.64	6.90
RHYNCHOCINETIDAE												
Rhynchocinetes sp.					0.33	2.70	2.94	1.29				
Rhynchocinetes rigens					1.44	2.70	2.94	1.47				
PALAEMONIDAE									1.25	0.91	2.27	0.26
Palaemonetes pugio					1.00	8.11	8.82	11.33				
Periclimenes sp.	1.00	17.6	13.16	27.86	1.11	8.11	5.88	7.62	7.55	3.65	13.64	4.46
Periclimenes pedersoni	0.89	12.8	9.21	14.23								
Periclimenes rathbunae	0.27	2.4	3.95	1.17	1.33	5.41	2.94	2.69	7.49	0.91	2.27	0.74
CARIDEA	3.07	3.2	3.95	1.88								
ALPHEIDAE												
Alpheus sp.									3.12	0.46	2.27	0.32
Alpheus paracrinitus	0.27	4	3.95	1.92								
PORCELLANIDAE												
Petrolisthes sp.									1.25	0.46	2.27	0.18
Petrolisthes gelathinus					0.44	2.70	2.94	1.31	6.24	0.91	2.27	0.65
MAJIDAE									1.25	0.46	2.27	0.18
Mitrax sp.	0.20	1.6	2.63	0.53	0.22	2.70	2.94	1.28	8.11	4.11	6.82	2.81
Mitrax forceps					1.56	2.70	2.94	1.48	7.49	0.91	4.55	0.90
PORTUNIDAE	0.20	2.4	1.32	0.40					10.61	1.83	9.09	2.12
Callinectes sp.									1.25	2.74	6.82	1.55
Cronius sp.	0.07	0.8	1.32	0.13								
Cronius tumudulos	0.61	1.6	1.32	0.33					3.12	0.46	2.27	0.32
Cronius ruber					0.22	2.70	2.94	1.28				

TABLE S1 | (Continued)

	Lionfish				*Cephalopholis cruentata*				*Lutjanus apodus*			
PREY SPECIES	**%P**	**%N**	**%F**	**%PSIRI**	**%P**	**%N**	**%F**	**PSIRI**	**%P**	**%N**	**%F**	**%PSIRI**
XANTHIDAE												
Panopeus sp.	0.34	0.8	1.32	0.17					1.25	2.28	2.27	0.50
PERCNIDAE												
Percnon gibbesi									1.87	0.46	2.27	0.23
DIOGENIDAE												
Cancellus sp.					0.20	2.70	2.94	1.27				
ACTINOPTERYGII												
CARANGIFORMES												
CARANGIDAE												
Caranx ruber					19.89	2.70	2.94	4.35				
ACANTHURIFORMES												
HAEMULIDAE												
Haemulon flavolineatum	1.78	0.8	1.32	0.34								
Haemulon sciurus	0.27	0.8	1.32	0.16								
ACANTHURIDAE												
Acanthurus sp.	2.25	0.8	1.32	0.40								
GOBIFORMES												
APOGONIDAE												
Apogon sp.	0.27	0.8	1.32	0.16								
Apogon maculatus	1.91	1.6	2.63	0.73								
GOBIIDAE	0.14	0.8	1.32	0.14					0.62	0.46	2.27	
Priolepis hipoliti	0.34	0.8	1.32	0.17								
Coryphopterus sp.	0.14	0.8	1.32	0.14	0.11	2.70	2.94	1.26				
Gnatholepis thompsoni	1.50	0.8	1.32	0.31								
BLENIFORMES												
POMACENTRIDAE												
Azurina cyanea					15.78	2.70	2.94	3.70				
Abudefduf saxatilis	0.48	1.6	1.32	0.31								
Stegastes partitus	12.36	1.6	2.63	1.98								
Stegastes sp.	1.30	0.8	1.32	0.28								
CHAENOPSIDAE												
Acanthemblemaria spinosa									1.25	0.46		
BERYCIFORMES												
HOLOCENTRIDAE												
Holocentrus rufus	7.85	0.8	1.32	1.07								
LABRIFORMES												
LABRIDAE	1.09	3.20	2.64	0.63					3.12	0.46	2.27	0.32
Bodianus parrae	36.87	1.6	2.63	4.92	27.12	5.41	5.88	9.20				
Halichoeres bivittatus	4.51	0.8	1.32	0.67								
Halichoeres garnoti	9.35	2.4	3.95	2.26								
Thalassoma bifasciatum					6.33	2.70	2.94	2.23				
Sparisoma sp.					5.45	8.11	8.82	12.02				
Sparisoma atomarium	3.69	8	5.26	5.49								
TETRAODONTIFORMES												
MONACANTHIDAE												
Cantherhines pullus					3.22	2.70	2.94	1.74				

TABLE S2 | Functional prey composition (%PSIRI) of mesopredatory reef fishes and lionfish ontogenetic size classes based on grouped prey categories. Values represent percentage prey-specific index of relative importance (%PSIRI) calculated from stomach content analyses. Prey items were grouped according to ecological role and habitat association. Lf-Small = small lionfish; Lf-Juveniles = juvenile lionfish; Lf-Adults = adult lionfish.

Functional group	Lionfish	*Cephalopholis cruentata*	*Lutjanus apodus*	*Scorpaena plumieri*	Lf-Small	Lf-Juveniles	Lf-Adults
Cleaner shrimps	43.3	10.3	5.2	16.7	69.2	52.7	2.3
Benthic shrimps	30.8	3.9	7.1	0	11.5	21.3	54.6
Amphipods/crustaceans	0	0	76.9	0	0	0	0
Crabs	1.6	3.4	7.4	33.3	6.1	2.1	1.6
Stomatopods	0.1	28.8	0	16.7	0.9	0	0
Other benthic decapods	3.8	4.2	1.1	0	2.6	3.7	0
Herbivorous reef fish	5.9	12.3	0.3	0	4.2	2.2	20.4
Territorial damselfish	2.6	0	0	0	4.3	0	4.3
Cryptobenthic fish	0.8	1.3	0.3	0	0	8.8	0.8
Mobile reef carnivorous fish	9.1	13.4	0	16.7	1.3	9.4	15.4
Pelagic/water-column fish	1.1	8.1	0	16.7	0	0	0

TABLE S3 | Prey identified in the stomach contents of *Scorpaena plumieri*.

Prey species	Weight (g)	Number	Frequency of appearance
MOLLUSCA			
OCTOPODA			
OCTOPODIDAE			
Octopus sp.	0.4	1	1
STOMATOPODA			
GONODACTYLIDAE			
Neogonodactylus curacaoensis	0.7	1	1
DECAPODA			
PALAEMONIDAE			
Periclimenes sp.	0.8	1	1
MAJIDAE			
Mithraculus sp.	0.4	1	1
PORTUNIDAE			
Cronius ruber	4.8	1	1
ACTINOPTERYGII			
ACANTHURIFORMES			
HAEMULIDAE			
Haemulon flavolineatum	0.3	1	1

TABLE S4 | Diet for the size categories: small (1–15 cm), juveniles (15.1–22 cm), adults (22.1–34 cm) on lionfish. Expressed as percentage values of Frequency of occurrence (Fa). Numerical (%N) and Gravimetric methods (%P). Percent of Prey-Specific Index of Relative Importance (%PSIRI).

Prey species/categories	Small				Juvenils				Adults			
	%G	%N	%F	%PSIRI	%G	%N	%F	%PSIRI	%G	%N	%F	%PSRI
CRUSTACEA												
STOMATOPODA												
PSEUDOSQUILLIDAE												
Pseudosquilla ciliata	0.84	2.22	4.35	0.88								
DECAPODA												
PENAEIDAE	0.84	2.22	4.35	0.88					0.37	2.38	3.85	0.77
Methapenaeopsis sp.					0.36	2.5	3.57	0.95				
Metapenaeopsis smithi									0.37	2.38	3.85	0.77
SOLENOCERIDAE												
Solenocera					2.92	5	7.14	3.96				
Pleoticus robustus	5.85	8.89	8.70	6.98	6.20	12.5	10.71	14.37	5.38	33.33	19.23	52.32
PALAEMONIDAE												
Periclimenes sp.	5.52	22.22	21.74	41.00	2.55	27.5	14.29	40.56	0.09	2.38	3.85	0.75
Periclimenes pedersoni	6.69	24.44	13.04	27.31	1.46	10	10.71	11.14	0.09	2.38	3.85	0.75
Periclimenes rathbunae	0.84	2.22	4.35	0.88	0.73	2.5	3.57	0.99	0.09	2.38	3.85	0.75
CARIDEA	33.44	2.22	4.35	3.62	1.46	5	3.57	1.98	0.09	2.38	3.85	0.75
ALPHEIDAE												
Alpheus paracrinitus	1.67	6.67	4.35	2.57	0.73	5	7.14	3.74				
MAJIDAE												
Mitrax sp.	2.51	4.44	8.70	3.45								
PORTUNIDAE	2.51	6.67	4.35	2.64								
Cronius sp.					0.36	2.5	3.57	0.95				
Cronius tumudulos									0.83	4.76	3.85	1.55
XANTHIDAE												
Panopeus sp.					1.82	2.5	3.57	1.10				
ACTINOPTERYGII												
ACANTHURIFORMES												
HAEMULIDAE												
Haemulon flavolineatum									2.41	2.38	3.85	0.94
Haemulon sciurus					1.46	2.5	3.57	1.07				
ACANTHURIDAE												
Acanthurus sp.					12.04	2.5	3.57	2.15				
GOBIFORMES												
APOGONIDAE												
Apogon sp.									0.37	2.38	3.85	0.77
Apogon maculatus					2.19	2.5	3.57	1.14	2.04	2.38	3.85	0.91
GOBIIDAE					4.01	7.5	7.14	5.91				
Priolepis hipoliti					1.82	2.5	3.57	1.10				
Coryphopterus sp.									0.19	2.38	3.85	0.76
Gnatholepis thompsoni					8.03	2.5	3.57	1.74				
BLENIFORMES												
POMACENTRIDAE												
Abudefduf saxatilis	5.85	4.44	4.35	2.11								
Stegastes partitus									16.77	4.76	7.69	4.32
Stegastes sp.	15.89	2.22	4.35	2.14								
BERYCIFORMES												
HOLOCENTRIDAE												
Holocentrus rufus									10.66	2.38	3.85	1.60

TABLE S4 | (Continued)

Prey species/categories	Small				Juvenils				Adults			
	%G	%N	%F	%PSIRI	%G	%N	%F	%PSIRI	%G	%N	%F	%PSRI
LABRIFORMES												
LABRIDAE	13.38	8.89	8.70	4.36								
Bodianus parrae					27.74	2.5	3.57	3.76	43.00	2.38	3.85	4.22
Halichoeres bivittatus					24.09	2.5	3.57	3.39				
Halichoeres garnoti									12.70	7.14	11.54	7.70
Sparisoma atomarium	4.18	2.22	4.35	1.16					4.54	21.43	11.54	20.38

TABLE S5 | Posterior estimates of proportional isotopic source contributions for each mesopredator species obtained from exploratory Bayesian stable isotope mixing models. Values are expressed as percentages and represent posterior means, standard deviations (SD), medians (50%), and 95% credible intervals for grouped trophic pathways.

Predator species	Source group	Mean (%)	SD (%)	2.5%	25%	50%	75%	97.5%
Lionfish	Crustaceans	31.1	5.1	21.1	27.7	31.1	34.5	41.4
Lionfish	Herbivorous reef fishes	13.2	5.3	3.4	9.4	13.0	16.7	24.2
Lionfish	Small reef fishes	30.6	5.0	20.7	27.2	30.7	34.1	40.0
Lionfish	Phytoplankton-derived production	6.4	2.2	2.4	4.9	6.3	7.9	10.9
Lionfish	Macroalgae/seagrass-associated production	18.7	2.5	13.3	17.0	18.8	20.4	23.5
L. apodus	Crustaceans	47.9	11.0	23.6	40.9	48.9	55.5	67.1
L. apodus	Herbivorous reef fishes	5.8	4.2	0.8	2.7	4.8	7.8	16.6
L. apodus	Small reef fishes	37.4	8.7	20.6	31.5	37.3	43.0	55.0
L. apodus	Phytoplankton-derived production	2.4	1.5	0.5	1.3	2.1	3.1	6.0
L. apodus	Macroalgae/seagrass-associated production	6.6	3.8	1.1	3.7	6.0	8.8	15.1
S. plumieri	Crustaceans	38.2	12.8	12.2	29.5	38.8	47.2	62.5
S. plumieri	Herbivorous reef fishes	13.2	8.4	2.1	6.8	11.6	17.9	34.0
S. plumieri	Small reef fishes	28.6	10.0	8.4	22.0	28.8	35.2	48.2
S. plumieri	Phytoplankton-derived production	8.0	4.0	1.8	5.0	7.5	10.5	17.2
S. plumieri	Macroalgae/seagrass-associated production	11.9	5.3	2.9	8.1	11.6	15.3	23.0
C. cruentata	Crustaceans	28.3	6.1	16.6	24.3	28.3	32.3	40.2
C. cruentata	Herbivorous reef fishes	13.5	5.5	3.7	9.6	13.1	17.1	25.2
C. cruentata	Small reef fishes	40.7	5.2	30.4	37.2	40.8	44.2	50.9
C. cruentata	Phytoplankton-derived production	9.9	3.0	4.1	7.9	9.9	12.0	15.7
C. cruentata	Macroalgae/seagrass-associated production	7.5	2.8	2.4	5.5	7.4	9.4	13.4

Neotropical Ichthyology

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