

APPENDIX J. Results of GLMMs for each host–parasite combination **in the across-islands data set**. Z = standardized regression coefficient or z-score for the effect of each parameter on parasite abundance. For the parameter fishing status (fished versus unfished), positive z-scores indicate higher parasite abundance on fished islands, and negative z-scores indicate higher parasite abundance on unfished islands. P-values were corrected for multiple comparisons by the FDR method (Benjamini and Hochberg 1995). Asterisks (*) indicate parameters that were run in separate models because a single model including both parameters would not converge due to limited degrees of freedom.

Host species	Parasite group	Parasite taxon	Parasite abundance analysis							
			parameter	estimate	SE	n	Z	raw p	corrected p for chl-a	
<i>Cephalopholis urodeta</i>	Crustacea	Grandiunguid sp.	productivity	-3.0107	7.3876	162	-0.41	0.68	0.82	
			fishing status	1.9962	0.5026			3.97		7.1e-5
			TL	0.0025	0.0050			0.51		0.61
			depth	-0.0503	0.0115			-4.40		1.1e-5
		<i>Hatschekia</i> sp.	productivity	-3.5e+1	1.32e+1	162	-2.64	0.0082	0.0392	
			fishing status	2.1400	8.33e-1			2.57		0.0101
			TL	4.31e-2	1.01e-2			4.27		1.9e-5
			depth	-6.97e-4	1.24e-2			-0.06		0.96
	Monogenea	<i>Neobenedenia</i> sp.	productivity	25.6014	20.0850	162	1.27	0.20	0.39	
			fishing status	1.1467	1.2447			0.92		0.36
			TL	0.0211	0.0091			2.31		0.0210
			depth	-0.0084	0.0216			-0.39		0.70
Trematoda	fin metacercariae	productivity	2.6926	18.8440	162	0.14	0.89	0.92		
		fishing status	-2.6176	1.2503			-2.09		0.0360	
		TL	0.0122	0.0059			2.07		0.0390	
		depth	0.0304	0.0232			1.31		0.19	
	gill metacercariae	productivity	40.1125	9.1500	162	4.38	1.2e-5	1.08e-4		
		fishing status	-0.5566	0.6232			-0.89		0.37	
		TL	0.0446	0.0067			6.70		2.1e-11	
		depth	-0.0084	0.0154			-0.57		0.57	
visceral metacercariae	productivity	52.4264	8.3860	162	6.25	4.1e-10	6.15e-9			
	fishing status	-1.1408	0.5778			-1.97		0.0480		
	TL	0.0114	0.0093			1.22		0.22		
	depth	-0.0112	0.0177			-0.63		0.53		

Host species	Parasite group	Parasite taxon	Parasite abundance analysis							
			parameter	estimate	SE	n	Z	raw p	corrected p for chl-a	
<i>Cephalopholis urodeta</i> (cont'd)	Trematoda (cont'd)	<i>Stephanostomum</i> sp.	productivity	-7.0966	9.8699	162	-0.72	0.47	0.68	
			fishing status	0.1414	0.6487		0.22	0.83		
			TL	0.0089	0.0034		2.60	0.0094		
			depth	-0.0196	0.0110		-1.78	0.0750		
	Nematoda	larval nematodes	productivity	15.8936	17.1130	162	0.93	0.35	0.56	
			fishing status	-0.1375	1.2442		-0.11	0.91		
			TL	-0.0189	0.0180		-1.05	0.29		
			depth	0.0152	0.0352		0.43	0.66		
Nematoda	dead nematodes	productivity	17.1495	10.2920	162	1.67	0.0957	0.27		
		fishing status	1.8074	0.6078		2.97	0.0029			
		TL	0.0023	0.0102		0.22	0.82			
		depth	-0.0185	0.0138		-1.34	0.18			
<i>Ctenochaetus marginatus</i>	Crustacea	Grandiunguid sp. 1	productivity	1.4473	4.7628	162	0.30	0.76	0.83	
			fishing status	-1.3381	0.2915		-4.59	4.4e-6		
			TL	-0.0002	0.0057		-0.03	0.97		
			depth	-0.0025	0.0082		-0.30	0.76		
		Crustacea	Grandiunguid sp. 2	productivity	19.0359	13.2470	141	1.44	0.15	0.36
				fishing status	3.2674	0.9488		3.44	5.7e-4	
				TL	0.0095	0.0045		2.10	0.0362	
				depth	-0.0699	0.0311		-2.25	0.0246	
	Crustacea	Lepeophtheirinae sp.	productivity	-7.1797	22.0400	141	-0.33	0.74	0.83	
			fishing status	5.1123	1.4014		3.65	2.6e-4		
			TL	0.0160	0.0047		3.37	7.4e-4		
			depth	-0.0124	0.0181		-0.69	0.49		
Crustacea	Gnathiid sp.	productivity	-27.4203	18.2500	141	-1.50	0.13	0.33		
		fishing status	1.7294	0.9843		1.76	0.0789			
		TL	0.0244	0.0082		2.96	0.0031			
		depth	-0.0275	0.0193		-1.42	0.16			
Crustacea	Gnathiid sp.	productivity	-10.9322	12.0300	141	-0.91	0.36	0.56		
		fishing status	-15.3236	672.98		-0.02	0.98			
		TL	-0.0214	0.0132		-1.62	0.11			
		depth	0.0307	0.0241		1.27	0.20			

Host species	Parasite group	Parasite taxon	Parasite abundance analysis						
			parameter	estimate	SE	n	Z	raw p	corrected p for chl-a
<i>Ctenochaetus marginatus</i> (cont'd)	Monogenea	<i>Ancyrocephalid</i> sp.	productivity	1.3647	3.4482	141	0.40	0.69	0.82
			fishing status	0.7015	0.2647		2.65	0.0080	
			TL	0.0072	0.0033		2.20	0.0280	
			depth	0.0123	0.0078		1.58	0.11	
	Trematoda	fin metacercariae	productivity	44.4744	26.2620	141	1.69	0.0900	0.27
			fishing status	0.1199	1.9211		0.06	0.95	
			TL	0.0010	0.0100		0.10	0.92	
			depth	-0.0880	0.0723		-1.22	0.22	
		gill metacercariae	productivity	-8.4794	4.5277	141	-1.87	0.0610	0.21
			fishing status	-1.7222	0.4089		-4.21	2.5e-5	
			TL	0.0062	0.0046		1.36	0.17	
			depth	0.0196	0.0101		1.95	0.0510	
	Fellostomatid sp.	productivity	31.3838	10.5530	256	2.97	0.0029	0.0163	
		fishing status	-0.1400	0.7348		-0.19	0.85		
TL		-0.0050	0.0094	-0.54		0.59			
Cestoda	Tetraphyllidean sp.	productivity	14.6603	4.7660	141	3.08	0.0021	0.0135	
		fishing status	-1.0021	0.4253		-2.36	0.0185		
		TL	0.0264	0.0048		5.48	4.3e-8		
Nematoda	larval nematodes	productivity	-18.7137	10.2380	177	-1.83	0.0680	0.22	
		fishing status	0.2649	0.8831		0.30	0.76		
		TL	0.0552	0.0106		5.19	2.1e-7		
	<i>Spirocamallanus</i> sp.	productivity	-24.1707	15.8300	256	-1.53	0.13	0.33	
		fishing status	2.1277	1.1226		1.90	0.0581		
		TL	0.0162	0.0053		3.05	0.0023		
Acanthocephala	Acanthocephalan sp.	productivity	-68.1189	51.9100	256	-1.31	0.19	0.39	
		fishing status	1.9256	3.0898		0.62	0.53		
		TL	0.0283	0.0214		1.32	0.19		
		depth	-0.0123	0.0533		-0.23	0.82		

Host species	Parasite group	Parasite taxon	Parasite abundance analysis						
			parameter	estimate	SE	n	Z	raw p	corrected p for chl-a
<i>Acanthurus nigricans</i>	Crustacea	Lepeophtheirinae sp.	productivity	-51.2548	49.7020	137	-1.03	0.30	0.52
			fishing status	1.2391	2.6404		0.47	0.64	
			TL	-0.0072	0.0223		-0.32	0.75	
			depth	0.0264	0.0479		0.55	0.48	
	Trematoda	fin metacercariae	productivity	22.4556	2.4249	137	9.26	2e-16	4.50e-15
			fishing status	0.2286	0.1613		1.42	0.15	
			TL	0.0116	0.0037		3.16	0.0016	
		gill metacercariae	productivity	-3.9428	4.3335	137	-0.91	0.36	0.56
			fishing status	-0.8267	0.3536		-2.34	0.0190	
	<i>Stephanostomum</i> sp.	TL	0.0108	0.0070	137	1.54	0.12	0.75	
depth		-0.0191	0.0110	-1.74		0.0820			
Microscaphiid sp.	productivity	39.8896	4.3179	232	9.24	2e-16	4.50e-15		
	fishing status	0.3640	0.2413		1.51	0.13			
	TL	0.0272	0.0038		7.14	9.6e-13			
Cestoda	Tetraphyllidean sp.	depth	0.0020	0.0096	137	0.21	0.83	0.0818	
		productivity	25.8714	11.1270		2.33	0.0200		
		fishing status	0.1680	0.7033		0.24	0.81		
		TL	0.0119	0.0066		1.80	0.0720		
Nematoda	Cucullanid sp.	depth	-0.0451	0.0213	232	-2.12	0.0340	0.38	
		productivity	-33.2615	24.3030		-1.37	0.17		
		fishing status	2.4039	1.4518		1.66	0.0980		
		TL	0.0070	0.0057		1.23	0.22		
<i>Paracirrhites arcatus</i>	Trematoda	fin metacercariae	depth	0.0190	0.0243	129	0.78	0.43	0.41
			productivity	25.7865	21.2060		1.22	0.22	
			fishing status	0.3468	1.1312		0.31	0.76	
			TL	0.0147	0.0119		1.23	0.22	
			depth	0.0042	0.0390		0.11	0.92	

Host species	Parasite group	Parasite taxon	Parasite abundance analysis						
			parameter	estimate	SE	n	Z	raw p	corrected p for chl-a
<i>Paracirrhites arcatus</i> (cont'd)	Trematoda	gill metacercariae	productivity	-10.7277	13.7230	129	-0.78	0.43	0.65
			fishing status	0.8482	0.6331		1.34	0.18	
			TL	0.0538	0.0205		2.63	0.0086	
			depth	-0.0126	0.0285		-0.44	0.66	
		<i>Stephanostomum</i> sp.	productivity	-2.6082	21.1030	129	-0.12	0.90	0.92
			fishing status	2.3714	1.0434		2.27	0.0230	
	Bucephalid sp.	TL	0.0400	0.0256	129	1.56	0.12	0.81	
		depth	0.0196	0.0371		0.53	0.60		
		productivity	22.4264	44.8390		0.50	0.62		
	Cestoda	Tetraphyllidean sp.	fishing status	-2.5131	3.1857	129	-0.79	0.43	0.21
TL			0.0094	0.0231	0.40		0.69		
depth			0.0489	0.0414	1.18		0.24		
Nematoda	larval nematode	productivity	58.9900	31.3230	129	1.88	0.0597	0.21	
		fishing status	0.3342	1.0596		0.32	0.75		
		TL	0.0489	0.0137		3.56	3.7e-4		
Trematoda	fin metacercariae	depth	-0.0123	0.0150	129	-0.83	0.41	0.90	
		productivity	-2.4760	12.5710		-0.20	0.84		
		fishing status	-1.7877	0.6280		-2.85	0.0044		
Trematoda	<i>Stephanostomum</i> sp.	TL	0.0122	0.0170	143	0.72	0.47	0.82	
		depth	0.0091	0.0266		0.34	0.73		
		productivity	11.4055	26.9850		0.42	0.67		
Trematoda	gill metacercariae	fishing status	-0.5343	1.8010	143	-0.30	0.77	0.82	
		TL	0.0063	0.0156		0.40	0.69		
		depth	-0.0005	0.0162		-0.03	0.97		
Trematoda	<i>Stephanostomum</i> sp.	productivity	-32.5571	8.0403	143	-4.05	5.1e-5	3.83e-4	
		fishing status	1.9523	0.5033		3.88	0.0001		
		TL	0.0406	0.0220		1.85	0.0645		
Cestoda	Tetraphyllidean sp.	depth	-0.0275	0.0104	143	-2.65	0.0080	0.83	
		productivity	644.18	1926.80		0.33	0.74		
		fishing status	-62.3600	189.08		-0.33	0.74		
Cestoda	Tetraphyllidean sp.	TL	-2.81	8.4300	143	-0.33	0.74	0.83	
		depth*	134.4890	7.95e+4		0.00	1.00		
		productivity							

Host species	Parasite group	Parasite taxon	Parasite abundance analysis						
			parameter	estimate	SE	n	Z	raw p	corrected p for chl-a
<i>Chromis margaritifer</i>	Crustacea	Grandiunguid sp. 1	productivity	-32.7052	12.4600	124	-2.62	0.0087	0.0392
			fishing status	1.1132	0.6875		1.62	0.1054	
			TL	-0.0216	0.0410		-0.53	0.60	
	Crustacea	Grandiunguid sp. 2	depth	-0.1380	0.0282	124	-4.90	9.6e-7	0.52
			productivity	-72.8657	69.5840		-1.05	0.30	
			fishing status	5.5226	5.3118		1.04	0.30	
Trematoda	gill metacercariae	TL	0.0369	0.1291	124	0.29	0.77	0.39	
		depth	-0.2685	0.1872		-1.43	0.15		
		productivity	-20.2139	15.1720		-1.33	0.18		
Trematoda	<i>Stephanostomum</i> sp.	fishing status	1.8919	0.9588	124	1.97	0.0480	2.93e-6	
		TL	0.0418	0.0415		1.01	0.31		
		depth	-0.0841	0.0344		-2.44	0.0150		
<i>Pseudanthias bartlettorum</i>	Crustacea	Grandiunguid sp. 1	productivity	-157.811	30.6360	124	-5.15	2.6e-7	2.93e-6
			fishing status	10.0326	1.8714		5.36	8.3e-8	
			TL	-0.0150	0.0250		-0.60	0.55	
	Crustacea	Grandiunguid sp. 2	depth	-0.0417	0.0375	109	-1.11	0.27	1.00
			productivity	5.35e+2	3.58e+6		0.00	1.00	
			fishing status	1.90e+1	1.61e+6		0.00	1.00	
Trematoda	Microscaphiid sp.	TL	4.69e-2	3.77e-2	109	1.24	0.21	0.81	
		depth	1.8800	1.35e+4		0.00	1.00		
		productivity	-3.38e+1	5.04e+1		-0.67	0.50		
Trematoda	Microscaphiid sp.	fishing status	2.18e+1	8.60e+4	109	0.00	1.00	0.81	
		TL	3.50e-2	3.65e-2		0.96	0.34		
		depth	5.60e-2	4.83e-2		1.16	0.25		
Trematoda	Microscaphiid sp.	productivity	115.2750	238.8400	109	0.48	0.63	0.81	
		fishing status	0.7146	7.9436		0.09	0.93		
		TL	0.0180	0.0423		0.43	0.67		
Trematoda	Microscaphiid sp.	depth	0.1055	0.0780	109	1.35	0.18	0.81	