Small no-take areas benefit hard corals more than regulation through fishing permits

Luka Seamus Wright* (0000-0002-1273-6256)
Danjugan Island Marine Reserve and Sanctuaries, Philippine Reef and Rainforest Conservation
Foundation Inc., Bulata, Cauayan, Negros Occidental, Philippines.

*Present address: Oceans Institute, University of Western Australia, Crawley, WA 6009, Australia.
 Email: luka.wright@research.uwa.edu.au

Table S1. Univariate model results obtained from type II sums of squares and pairwise tests for data collected in 2016. In all cases the categorical explanatory variable was reef zone, n = 32, df = 3 and residual df = 28. Depending on the test type (omnibus or pairwise) and the model type (simple linear model or gamma generalised linear model), the F statistic, X^2 statistic or t ratio is reported.

Response variable	Linear model	Test	F / X^2 / t	p	
Total hard coral cover	Simple	Omnibus	14.18	< 0.001	***
		Manta vs. Moray	0.63	0.54	
		Manta vs. Tabon	4.41	< 0.001	***
		Manta vs. Bamboo	4.14	< 0.001	***
		Moray vs. Tabon	5.04	< 0.001	***
		Moray vs. Bamboo	4.76	< 0.001	***
		Tabon vs. Bamboo	0.27	0.79	
Live hard coral cover	Simple	Omnibus	11.1	< 0.001	***
		Manta vs. Moray	1.18	0.25	
		Manta vs. Tabon	3.99	< 0.001	***
		Manta vs. Bamboo	5.04	< 0.001	***
		Moray vs. Tabon	2.81	0.009	**
		Moray vs. Bamboo	3.86	< 0.001	***
		Tabon vs. Bamboo	1.04	0.31	
Macroalgal cover	Generalised	Omnibus	27.17	< 0.001	***
		Manta vs. Moray	1.82	0.08	
		Manta vs. Tabon	2.08	0.05	*
		Manta vs. Bamboo	2.66	0.01	*
		Moray vs. Tabon	3.91	< 0.001	***
		Moray vs. Bamboo	0.84	0.41	
		Tabon vs. Bamboo	4.74	< 0.001	***
Diseased or bleached coral	Simple	Omnibus	9.3	< 0.001	***
		Manta vs. Moray	3.37	0.002	**
		Manta vs. Tabon	0.68	0.5	
		Manta vs. Bamboo	3.36	0.002	**
		Moray vs. Tabon	4.05	< 0.001	***
		Moray vs. Bamboo	0.02	0.99	
		Tabon vs. Bamboo	4.04	< 0.001	***
Dead coral	Simple	Omnibus	8.02	< 0.001	***
		Manta vs. Moray	2.12	0.04	*
		Manta vs. Tabon	0.09	0.93	
		Manta vs. Bamboo	4.23	< 0.001	***
		Moray vs. Tabon	2.03	0.05	
		Moray vs. Bamboo	2.11	0.04	*
		Tabon vs. Bamboo	4.14	< 0.001	***
Morphological richness	Simple	Omnibus	5.3	0.005	**
		Manta vs. Moray	1.45	0.16	
		Manta vs. Tabon	3.94	< 0.001	***
		Manta vs. Bamboo	1.66	0.11	
		Moray vs. Tabon	2.49	0.02	*
		Moray vs. Bamboo	0.21	0.84	
		Tabon vs. Bamboo	2.28	0.03	*
Simpson's evenness index	Simple	Omnibus	22.05	< 0.001	***
		Manta vs. Moray	0.07	0.94	

		Manta vs. Tabon	5.83	< 0.001	***
		Manta vs. Bamboo	5.59	< 0.001	***
		Moray vs. Tabon	5.91	< 0.001	***
		Moray vs. Bamboo	5.67	< 0.001	***
		Tabon vs. Bamboo	0.24	0.81	
Corymbose coral	Simple	Omnibus	16.6	< 0.001	***
		Manta vs. Moray	4.14	< 0.001	***
		Manta vs. Tabon	2.68	0.01	*
		Manta vs. Bamboo	0.82	0.42	
		Moray vs. Tabon	6.82	< 0.001	***
		Moray vs. Bamboo	4.96	< 0.001	***
		Tabon vs. Bamboo	1.86	0.07	
Submassive coral	Simple	Omnibus	8.86	< 0.001	***
		Manta vs. Moray	2.38	0.02	*
		Manta vs. Tabon	2.38	0.02	*
		Manta vs. Bamboo	1.63	0.11	
		Moray vs. Tabon	4.75	< 0.001	***
		Moray vs. Bamboo	0.75	0.46	
		Tabon vs. Bamboo	4	< 0.001	***

Table S2. Variables contributing to the discrepancy in benthic composition between coral reefs. Only the two most important variables that significantly contribute to between-site differences are shown. The presented variables for each contrast account for around 60% (54.47–64.91%) of the variance between sites. There was no clear distinction between Manta Reef and Moray Reef, so this contrast is not listed here.

Explanatory variable	Contribution (%)	Prevalence	Δ cover (%)	*p*
Manta vs. Tabon				
Scleractinian coral	35.59	Manta	34.45	**
Macroalgae	26.36	Tabon	22.87	*
Manta vs. Bamboo				
Rubble	31.91	Bamboo	41.16	***
Scleractinian coral	26.4	Manta	32.32	*
Moray vs. Tabon				
Scleractinian coral	35.98	Moray	39.33	***
Macroalgae	28.93	Tabon	34.45	***
Moray vs. Bamboo				
Scleractinian coral	33.27	Moray	37.2	**
Rubble	30.78	Bamboo	34.45	***
Tabon vs. Bamboo				
Rubble	27.9	Bamboo	35.06	***
Macroalgae	26.57	Tabon	34.45	***

Table S3. Variables contributing to the discrepancy in morphological composition between coral reefs. A maximum of two most important variables that significantly contribute to between-site differences are shown. There was no clear distinction between Manta Reef and any of the other sites, so these contrasts are not listed here. Note: prevalence (%) is square root transformed.

Explanatory variable	Contribution (%)	Prevalence	Δ prevalence (%)	*p*
Moray vs. Tabon				
Corymbose	29.55	Moray	5.19	***
Submassive	27.53	Tabon	4.68	***
Moray vs. Bamboo				
Solitary	17.13	Bamboo	1.6	*
Tabon vs. Bamboo				
Submassive	22.04	Tabon	3.86	*
Solitary	17.82	Bamboo	3.17	***