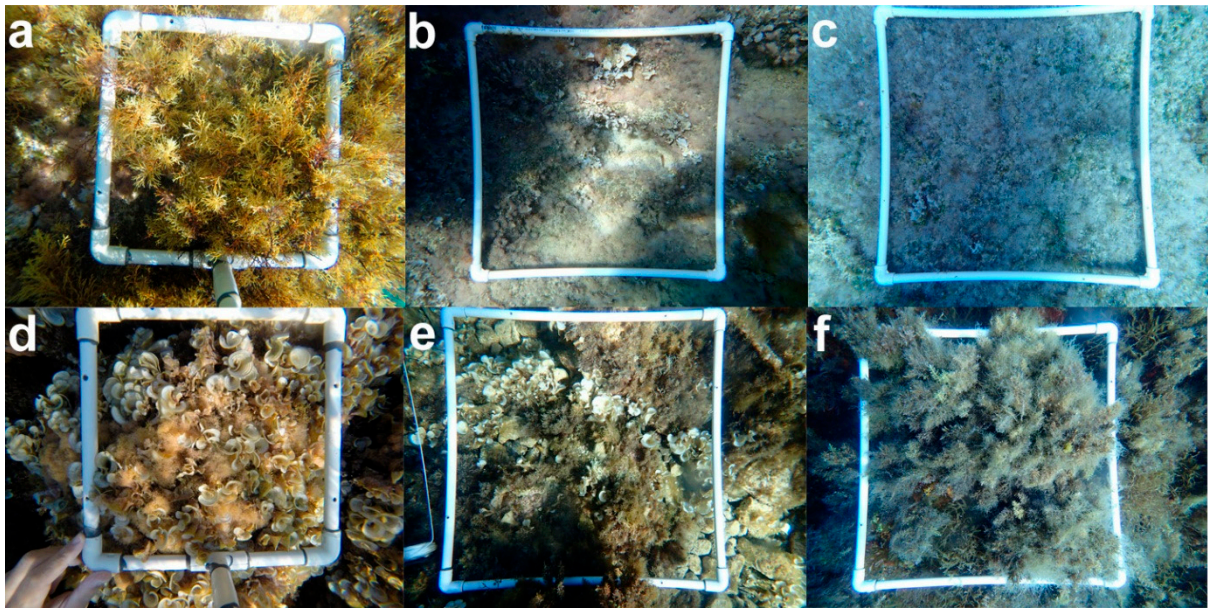
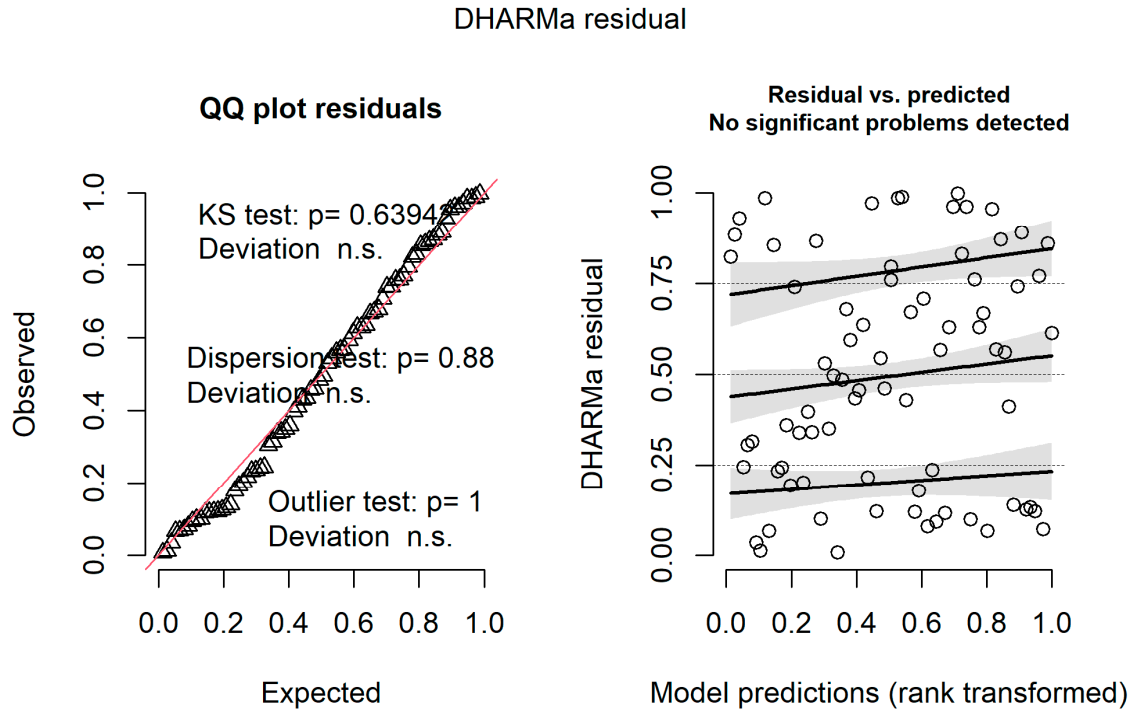


**Table S1.** Generalized mixed models built with a binomial distribution and logit link function. Candidate models are ranked by the Akaike Information Criterion corrected for small samples (AICc).

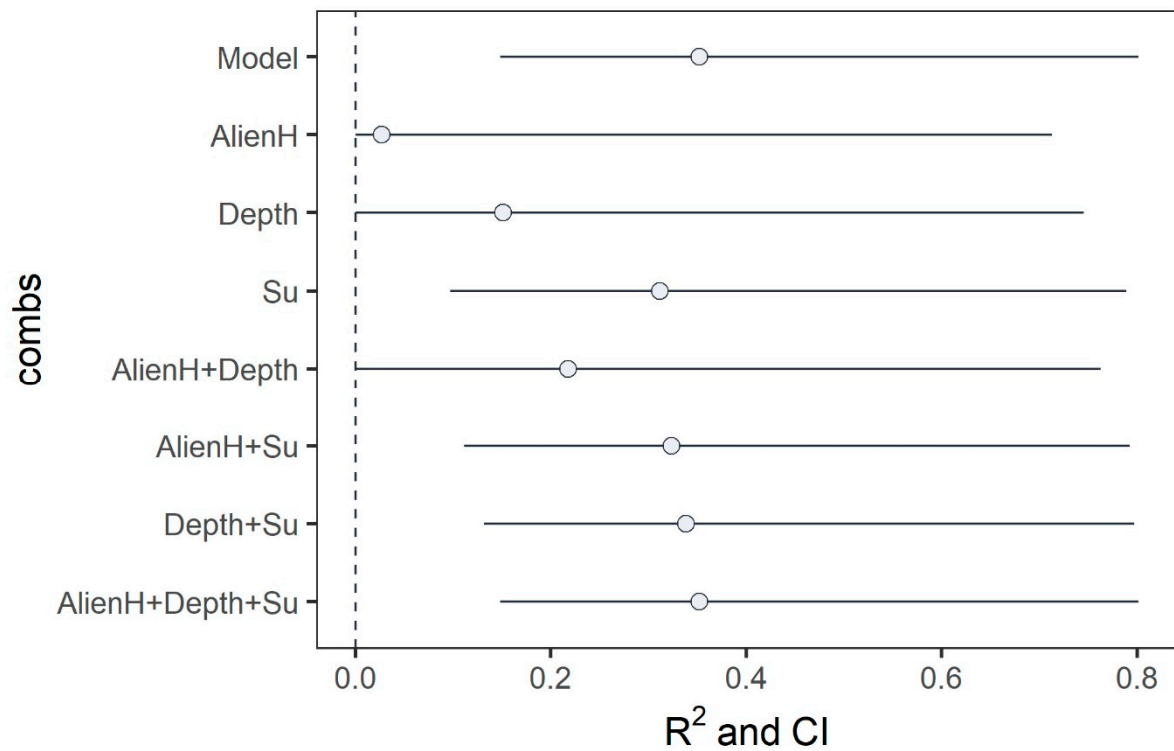
Model ID	Intercept	Alien H	Depth	Native H	Sea urchins	df	Log-Likelihood	AICc	$\Delta$ AICc	Weight
mod4	1.459	-0.4567	-0.246		-0.6893	5	-40.291	91.4	0	0.527
mod1	1.494	-0.4647	-0.2457	-0.01883	-0.6893	6	-40.287	93.8	2.35	0.163
mod13	0.5418		-0.2537		-0.6204	4	-42.868	94.3	2.86	0.126
mod7	0.4362	-0.3826			-0.5117	4	-43.558	95.7	4.24	0.063
mod9	0.3097		-0.2546	0.2222	-0.6328	5	-42.482	95.8	4.38	0.059
mod3	0.4827	-0.3928		-0.02406	-0.5128	5	-43.551	98	6.52	0.02
mod14	-0.3739				-0.3949	3	-46.003	98.3	6.9	0.017
mod11	-0.5602			0.1774	-0.4105	4	-45.652	99.9	8.43	0.008
mod15	-0.2131		-0.1546			3	-47.274	100.9	9.44	0.005
mod0	-0.6822					2	-48.749	101.7	10.22	0.003
mod5	0.03222	-0.152	-0.1473			4	-46.762	102.1	10.65	0.003
mod8	-0.3935	-0.1636				3	-48.106	102.5	11.11	0.002
mod10	-0.3045		-0.1537	0.07316		4	-47.197	103	11.52	0.002
mod12	-0.7776			0.07875		3	-48.654	103.6	12.2	0.001
mod2	0.06353	-0.1584	-0.1471	-0.01667		5	-46.758	104.4	12.94	0.001
mod6	-0.3566	-0.1711		-0.01934		4	-48.101	104.8	13.33	0.001



**Figure S1.** Photo-quadrat samples taken at stations CY2 and S2 and the quadrat scores based on the reef-EBQI index; (a) CY2 at the 0-0.5 m depth zone quadrat scored as 4, (b) CY2 at the 2 m depth zone quadrat scored as 1, (c) CY2 at the 8 m depth zone quadrat scored as 0, (d) S2 at the 0-0.5 m depth zone scored as 2, (e) S2 at the 2 m depth zone scored as 3 and (f) S2 at the 8 m depth zones scored as 4. Note that quadrats in pictures (a) and (d) are 25 x 25 cm and all others are 50 x 50 cm.



**Figure S2.** DHARMA diagnostics on the left Q-Q plot with added tests for corrected distribution (Kolmogorov-Smirnov test), dispersion and outliers. On the right residuals are plotted against the predicted value with quantile regression lines.



**Figure S3.** Forest plot for the best model displaying the estimated semi-partial  $R^2$  and related 95% confidence intervals for different independent variables and combinations.