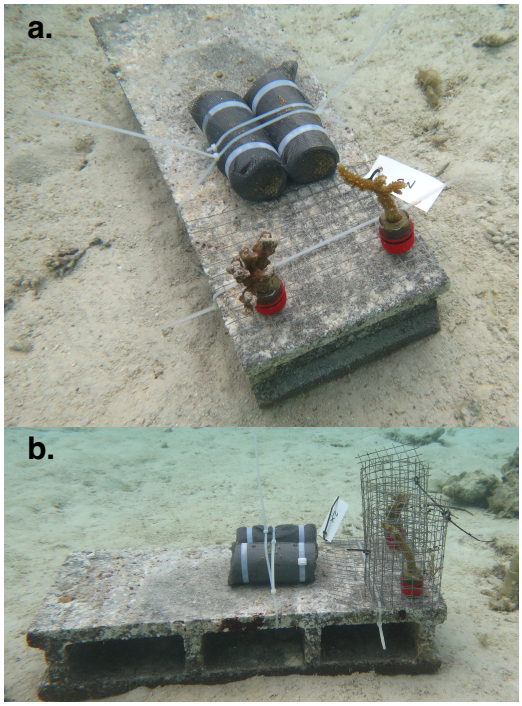

Figure S1: Example of a fertilized plot when corals were a) uncaged and b) caged. Unfertilized replicates were identical except they did not have any fertilizer diffusers attached to the cinderblocks.

Table S1: Results from a generalized linear mixed effects model that does not exclude any outliers examining treatment effects on coral predation

Model term	χ^2	**P-value**
Coral	2.23	0.135
Fertilizer	5.97	0.014
Coral × Fertilizer	3.42	0.064

Table S2: Interaction effects of fertilizer treatment on coral predation from a generalized linear mixed effects model that includes all data. Estimates represent the difference between the estimated marginal means of the two factors in the given pairwise comparison on the log scale.

Fertilizer	**Coral**	**Contrast**	**Estimate**	**SE**	**z ratio**	**P-adj**
Unfertilized	-	*P.rus* – *A. pulchra*	-2.11	0.906	-2.330	0.0793
Fertilized	-	*P.rus* – *A. pulchra*	-0.225	0.472	-0.477	1
-	*A. pulchra*	Fertilized – Unfertilized	0.348	0.724	0.480	1
-	*P. rus*	Fertilized – Unfertilized	2.233	0.735	3.037	0.0096

Table S3: Results from a generalized linear mixed effects model that does not exclude any outliers examining treatment effects on algal overgrowth.

Model term	χ^2	**P-value**
Coral	45.6	$p < 0.0001$
Caging	3.5	0.063
Fertilizer	1.5	0.215
Coral × Caging	0.11	0.731
Coral × Fertilizer	0.98	0.322
Caging × Fertilizer	20.1	$p < 0.0001$
Coral × Caging × Fertilizer	12.6	$p < 0.0001$

Table S4: Interaction effects of caging treatment, fertilizer treatment, and coral species on algal overgrowth of corals after 5 weeks from a generalized linear mixed effects model examining algal overgrowth of corals that includes all data. Estimates represent the difference between the estimated marginal means of the two factors in the given pairwise comparison on the logit scale.

Caging	**Fertilizer**	**Coral**	**Contrast**	**Estimate**	**SE**	**z ratio**	**P-adj**
Caged	Fertilized	-	*P. rus* – *A. pulchra*	0.523	0.422	1.239	1
Uncaged	Fertilized	-	*P. rus* – *A. pulchra*	2.173	0.426	5.097	<0.0001
Caged	Unfertilized	-	*P. rus* – *A. pulchra*	2.451	0.431	5.689	<0.0001
Uncaged	Unfertilized	-	*P. rus* – *A. pulchra*	1.078	0.433	2.492	0.1524
-	Fertilized	*A. pulchra*	Uncaged – Caged	-0.234	0.419	-0.558	1
-	Fertilized	*P. rus*	Uncaged – Caged	1.416	0.424	3.342	0.01
-	Unfertilized	*A. pulchra*	Uncaged – Caged	-0.697	0.421	-1.656	1
-	Unfertilized	*P. rus*	Uncaged – Caged	-2.069	0.425	-4.865	<0.0001
Caged	-	*A. pulchra*	Unfertilized – Fertilized	0.292	0.42	0.694	1
Caged	-	*P. rus*	Unfertilized – Fertilized	2.219	0.428	5.19	<0.0001
Uncaged	-	*A. pulchra*	Unfertilized – Fertilized	-0.171	0.417	-0.411	1
Uncaged	-	*P. rus*	Unfertilized - Fertilized	-1.266	0.425	-2.929	0.0347

Table S5: Interaction effects of fertilizer treatment on coral predation from a generalized linear mixed effects model that removes an influential outlier. Estimates represent the difference between the estimated marginal means of the two factors in the given pairwise comparison on the log scale.

Fertilizer	**Coral**	**Contrast**	**Estimate**	**SE**	**z ratio**	**p-adj**
Unfertilized	-	*P.rus* – *A. pulchra*	1.281	1.286	0.996	1
Fertilized	-	*P.rus* – *A. pulchra*	-0.225	0.472	-0.477	1
-	*A. pulchra*	Fertilized – Unfertilized	3.919	1.168	3.355	0.0032
-	*P. rus*	Fertilized – Unfertilized	2.404	0.730	3.292	0.0040

Table S6: Interaction effects of caging treatment, fertilizer treatment, and coral species on algal overgrowth of corals after 5 weeks from a generalized linear mixed effects model examining algal overgrowth of corals that removes the outlier. Estimates represent the difference between the estimated marginal means of the two factors in the given pairwise comparison on the logit scale.

Caging	Fertilizer	Coral	Contrast	Estimate	SE	z ratio	P-adj
Caged	Fertilized	-	*P. rus* – *A. pulchra*	0.652	0.481	1.355	1
Uncaged	Fertilized	-	*P. rus* – *A. pulchra*	2.438	0.428	5.693	<0.0001
Caged	Unfertilized	-	*P. rus* – *A. pulchra*	2.422	0.424	5.709	<0.0001
Uncaged	Unfertilized	-	*P. rus* – *A. pulchra*	1.249	0.490	2.547	0.1303
-	Fertilized	*A. pulchra*	Uncaged – Caged	-0.288	0.427	-0.674	1
-	Fertilized	*P. rus*	Uncaged – Caged	1.498	0.461	3.250	0.0139
-	Unfertilized	*A. pulchra*	Uncaged – Caged	-0.787	0.444	-1.771	0.9195
-	Unfertilized	*P. rus*	Uncaged – Caged	-1.960	0.411	-4.773	<0.0001
Caged	-	*A. pulchra*	Unfertilized – Fertilized	0.303	0.421	0.719	1
Caged	-	*P. rus*	Unfertilized – Fertilized	2.072	0.441	4.701	<0.0001
Uncaged	-	*A. pulchra*	Unfertilized – Fertilized	-0.196	0.418	-0.470	1
Uncaged	-	*P. rus*	Unfertilized - Fertilized	-1.386	0.418	-3.320	0.0108