

Tissue loss rather than colony size determines the demographic fate of the branching coral *Acropora cervicornis*

Alex E. Mercado-Molina*, Claudia Patricia Ruiz-Diaz, Alberto M. Sabat

*Corresponding author: amolinapr@gmail.com

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Table S1: Results of the Odds ratio analyses testing for the likelihood that a colony of *Acropora cervicornis* with less than 20% of partial mortality will show higher probability to growth and survive than colonies exceeding 20%. Odds ratio values higher than 1 indicates that having low partial mortality ($\leq 20\%$) increases the odds of increasing in size and survive.

	CLP			PAL		
A. Growth	Odd Value	Chi-square	P value	Odd Value	Chi-square	P value
2011-2012	96.96	71.90	<0.001	99.40	60.23	<0.001
2012-2013	189.00	47.35	<0.001	215.33	38.58	<0.001
B. Survival	Odd Value	Chi-square	P value	Odd Value	Chi-square	P value
2011-2012	28.66	16.33	<0.001	6.50	5.77	0.016
2012-2013	25.33	14.26	<0.001	20.00	10.42	0.001

Table S2: Statistics describing size-specific relative growth rates of *Acropora cervicornis* with different levels of partial mortality. Different letters (a, b) indicate significant difference in the median relative growth (Mann-Whitney-U test) when comparing colonies with different conditions within size classes, i.e. small \leq 20% vs. small $>$ 20% ($P < 0.001$). SE = Standard Error. 25% and 75% represent the first and third quantile respectively. Because no differences in relative growth rates were found between colonies with 0% partial mortality and colonies with $0\% < x < 20\%$ the two groups were pooled for the analysis. Temporal data were pooled within sites due to the low number of colonies with $> 20\%$ of tissue loss that survived to end of the study.

Size class-Condition	CLP					PAL				
	Mean	SE	Median	25%	75%	Mean	SE	Median	25%	75%
Small- \leq 20%	0.863	0.127	0.669 ^A	0.23	1.473	1.736	0.231	1.361 ^A	0.566	3.203
Small- $>$ 20%	-0.798	0.0715	-1 ^B	-1	-0.702	-0.0475	0.488	-1 ^B	-1	-0.41
Medium- \leq 20%	0.548	0.0901	0.523 ^A	0.318	0.78	0.577	0.131	0.624 ^A	0.0937	1.195
Medium- $>$ 20%	-0.649	0.0619	-0.753 ^B	-1	-0.317	-0.552	0.0715	-0.484 ^B	-0.842	-0.254
Large- \leq 20%	0.299	0.105	0.388 ^A	-0.0896	0.651	0.326	0.165	0.23 ^A	0.151	0.713
Large- $>$ 20%	-0.586	0.0866	-0.681 ^B	-0.933	-0.305	-0.601	0.0782	-0.653 ^B	-1	-0.207

Table S3: Results of the logistic regression analysis exploring the relationship between the probability of survival and the percent of partial mortality for the coral *Acropora cervicornis*. All data refers to the combination of colonies with $20\% \leq$ and colonies with $> 20\%$ of partial mortality.

CLP				
Year/Condition	Regression coefficient	SE	Z value	P
2011-2012				
All data	-0.075	0.020	-3.72	0.0002
$\leq 20\%$		Not tested because only one colony died		
$> 20\%$	-0.034	0.030	-1.11	0.2643
2012-2013				
All data	-0.054	0.013	-4.120	<0.0002
$\leq 20\%$		Not tested because only one colony died		
$> 20\%$	-0.037	0.016	-2.36	0.0183
PAL				
	Regression coefficient	SE	Z value	P
2011-2012				
All data	-0.032	0.018	-1.74	0.082
$\leq 20\%$	4.30	999.5	.004	0.997
$> 20\%$	0.010	0.039	0.262	0.793
2012-2013				
All data	-0.066	0.017	-3.722	0.0002
$\leq 20\%$		Not tested because no colony died		
$> 20\%$	-0.046	0.02	-2.302	0.021

Tale S4: Results of the Log-linear analyses performed to determine whether the relative growth of the coral *Acropora cervicornis* depends more on colony size or colony condition. C = condition, S = size, F = fate. * = p < 0.05, ** = p < 0.0001

Model	df	CLP		PAL	
		2011-2012 G ²	2012-2013 G ²	2011-2012 G ²	2012-2013 G ²
1. CS, F	5	78.66	56.02	58.40	46.45
2. CS, FS	3	73.52	55.93	52.91	46.12
Effect of size	2	5.14	0.09	5.49	0.33
1. CS, F	5	78.66	56.02	58.40	46.45
3. CS, FC	4	1.20	3.54	7.45	0.70
Effect of condition	1	77.46*	52.48**	50.95**	45.75**
3. CS, FC	4	1.20	3.54	7.45	0.70
4. CS, FC, FS	2	0.67	2.40	4.14	0.08
Effect of size (given the effect of condition)	2	0.53	1.14	3.31	0.62
2. CS, FS	3	73.52	55.02	52.91	46.12
4. CS, FC, FS	2	0.67	2.40	4.14	0.08
Effect of condition (given the effect of size)	1	72.85*	52.62**	48.77**	46.04**
4. CS, FC, FS	2	0.67	2.40	4.14	0.08
5. CSF	0	0	0	0	0
	2	0.67	2.40	4.14	0.08

Table S5: Results of the Log-linear analyses performed to determine whether the survival of the coral *Acropora cervicornis* depends more on colony size or colony condition. C= condition, S = size, F = fate. * = p < 0.05, ** = p < 0.001

Model	CLP			PAL	
	df	2011-2012	2012-2013	2011-2012	2012-2013
		G ²	G ²	G ²	G ²
1. CS, F	5	8.50	27.10	13.12	19.75
2. CS, FS	3	8.31	22.38	12.69	16.34
Effect of size	2	0.19	4.72	0.43	3.41
1. CS, F	5	8.50	27.10	13.12	19.75
3. CS, FC	4	2.26	10.15	2.49	6.75
Effect of condition	1	6.24*	16.95**	10.63**	13.00**
3. CS, FC	4	2.26	10.15	2.49	6.75
4. CS, FC, FS	2	1.84	4.64	0.96	1.81
Effect of size (given the effect of condition)	2	0.42	5.51	1.53	4.94
2. CS, FS	3	8.31	22.38	12.69	16.34
4. CS, FC, FS	2	1.84	4.64	0.96	1.81
Effect of condition (given the effect of size)	1	6.47*	17.74**	11.73**	14.53**
4. CS, FC, FS	2	1.84	4.64	0.96	1.81
5. CSF	0	0	0	0	0
	2	1.84	4.64	0.96	1.81