

## Seasonality in dinitrogen fixation and primary productivity by coral reef framework substrates from the northern Red Sea

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**Table S1.** Fully crossed two-factor general linear models with N<sub>2</sub> fixation, net photosynthesis ( $P_{\text{net}}$ ), respiration ( $R$ ), gross photosynthesis ( $P_{\text{gross}}$ ), and the ratio of  $P_{\text{gross}}:R$  as a function of substrate and season.

Parameter	Factor	df, df <sub>residual</sub>	$F$	p
N <sub>2</sub> fixation	Season	6, 83	5.78	<0.001
	Substrate	3, 83	60.09	<0.001
	Season * Substrate	2, 77	299.37	<0.001
$P_{\text{gross}}$	Season	3, 79	12.68	<0.001
	Substrate	2, 79	63.64	<0.001
	Season * Substrate	5, 74	3.96	<0.001
$R$	Season	3, 89	18.00	<0.001
	Substrate	2, 89	156.27	<0.001
	Season * Substrate	6, 83	15.34	<0.001
$P_{\text{net}}$	Season	3, 80	6.65	<0.001
	Substrate	2, 80	210.64	<0.001
	Season * Substrate	5, 75	7.59	<0.001
$P_{\text{gross}}:R$	Season	3, 80	8.44	<0.001
	Substrate	2, 80	409.47	<0.001
	Season * Substrate	5, 75	6.52	<0.001

**Table S2.** Fully crossed three-factor general linear models with N<sub>2</sub> fixation as a function of substrate, season, and time of day (day vs. night).

	df, df <sub>residual</sub>	$F$	p
Season	2, 122	106.12	<0.001
Substrate	2, 122	224.02	<0.001
Time of day	1, 122	6.86	<0.01
Season*Substrate	4, 114	6.22	<0.001
Season*Time of day	2, 114	9.28	<0.001
Substrate*Time of day	2, 114	10.39	<0.001
Season*Substrate*Time of day	4, 110	3.70	<0.01