Table S2. Model output for oxygen consumption analysis. The OM was a LME model that incorporated Core Identity as a random effect (L. ratio = 30.099, df_1, $p_{corr} < 0.001$) and allowed the residual spread to vary as an interactive function of Treatment × Month (L. ratio = 58.330, df_5, $p < 0.001$):

$$Oxygen_{ij} = Intercept + Time_{ij} + Month_{ij} + Time_{ij} \times Month_{ij} + a_i + \varepsilon_i$$
$$a_i \sim N(0, \sigma^2_{Core})$$
$$\varepsilon_{ij} \sim N(0, \sigma^2_{kl})$$

where a_i is a random intercept and the index i refers to cores (i = 1,..., 18), j to the observations within each core (j = 1,...,5), k to the treatment (k = 1,..., 2) and l to the Month (l = 1,..., 2). Model output for oxygen analysis: Random effect (a), variance function (b), correlation coefficients of observations made within each variance grouping (intra-class correlation) (c) and fixed effects (d). FP = faecal pellet. *Note the intercept (baseline) is the control treatment in May.

(a)	**Model term**	**σ**
	Core ID	1.743

(b)	**Variance term**	**Variance estimates**
	Ctrl×May	8.060
	FP×May	7.963
	Diatom×May	15.461
	Ctrl×October	3.586
	FP×October	2.573
	Diatom×October	1.803

(c)	**Model term**	**Intra-class correlation**
	Ctrl×May	0.274
	FP×May	0.276
	Diatom×May	0.164
	Ctrl×October	0.459
	FP×October	0.541
	Diatom×October	0.628

(d)	**Model term**	**Value ± SE**	**df**	**t**	**p**
	Intercept*	80.549 ± 0.648	211	124.306	<0.001
	Time	-1.983 ± 0.138	211	-14.401	<0.001
	October	-12.226 ± 0.809	34	-15.122	<0.001
	Time×October	0.389 ± 0.155	211	2.506	0.013