

Supplementary material

Supp. Material Table 1: Census data presenting the total living individual counts for each sampling time, every replicate core at every sampling depth and for every size fraction.

Core	Size fraction	Depth interval	Total count (Individuals)				
			Normoxia	7 Days	1 Month	2 Months	10 Months
core1	125µm	0-0.5cm	87	31	50	22	25
core1	150µm	0-0.5cm	120	38	82	42	23
core1	315µm	0-0.5cm	9	0	0	0	0
core1	63µm	0-0.5cm	664	296	712	254	144
core1	125µm	0.5-1cm	33	13	21	2	12
core1	150µm	0.5-1cm	52	20	45	21	22
core1	315µm	0.5-1cm	3	0	0	0	0
core1	63µm	0.5-1cm	468	119	254	83	68
core1	125µm	1-1.5cm	37	13	7	13	17
core1	150µm	1-1.5cm	53	25	22	19	8
core1	315µm	1-1.5cm	3	0	1	0	1
core1	63µm	1-1.5cm	274	107	91	60	60
core1	125µm	1.5-2cm	21	12	7	8	14
core1	150µm	1.5-2cm	30	20	18	20	11
core1	315µm	1.5-2cm	3	0	0	0	0
core1	63µm	1.5-2cm	273	122	108	80	42
core1	125µm	2-3cm	48	24	18	46	34
core1	150µm	2-3cm	32	36	18	42	44
core1	315µm	2-3cm	0	0	0	0	0
core1	63µm	2-3cm	348	179	107	128	88
core1	125µm	3-4cm	29	15	7	29	30
core1	150µm	3-4cm	40	27	14	50	19
core1	315µm	3-4cm	0	0	0	0	1
core1	63µm	3-4cm	345	116	132	174	98
core1	125µm	4-5cm	25	27	12	14	17
core1	150µm	4-5cm	23	25	20	24	33
core1	315µm	4-5cm	0	0	0	0	0
core1	63µm	4-5cm	269	157	88	132	75
core2	125µm	0-0.5cm	71	36	54	18	37
core2	150µm	0-0.5cm	122	22	88	26	48
core2	315µm	0-0.5cm	6	0	0	0	1
core2	63µm	0-0.5cm	312	371	558	274	128
core2	125µm	0.5-1cm	24	13	18	16	20
core2	150µm	0.5-1cm	29	12	20	11	19
core2	315µm	0.5-1cm	1	0	0	1	0
core2	63µm	0.5-1cm	201	106	97	99	72
core2	125µm	1-1.5cm	15	5	16	4	46
core2	150µm	1-1.5cm	8	13	19	20	47
core2	315µm	1-1.5cm	0	1	0	1	1
core2	63µm	1-1.5cm	111	57	50	66	53
core2	125µm	1.5-2cm	24	9	19	11	19
core2	150µm	1.5-2cm	13	12	10	22	26
core2	315µm	1.5-2cm	0	0	0	0	0
core2	63µm	1.5-2cm	85	40	47	78	54
core2	125µm	2-3cm	39	19	19	32	50
core2	150µm	2-3cm	20	23	6	42	68
core2	315µm	2-3cm	0	0	0	0	0
core2	63µm	2-3cm	120	98	53	179	128
core2	125µm	3-4cm	23	17	21	20	28
core2	150µm	3-4cm	9	25	8	35	25
core2	315µm	3-4cm	0	0	0	0	3
core2	63µm	3-4cm	59	149	68	147	126
core2	125µm	4-5cm	13	18	18	17	22
core2	150µm	4-5cm	9	35	23	21	47
core2	315µm	4-5cm	0	1	0	0	0
core2	63µm	4-5cm	54	159	79	134	63

Supp. Material Table 2: Detailed results for the models 1, 2, 3 and 4. For each variable and category tested, the estimated coefficient (Estimate) and its associated standard error (Std. Error) are given. The student statistic (t) and its p-value (p) are also given.

Model 1: $\log(1 + \text{Standing Stock}) \sim \text{Sample ID [0-5cm]}$

Variable	Category	Estimate	Std. Error	t	p
Intercept	(Normoxia)	7.2	0.2	32.5	5.19E-07
Sample ID	7 Days	-0.5	0.3	-1.5	0.19
Sample ID	1 Month	-0.3	0.3	-1.0	0.35
Sample ID	2 Months	-0.5	0.3	-1.7	0.16
Sample ID	10 Months	-0.8	0.3	-2.4	0.06

Model 2: $\log(1 + \text{Standing Stock}) \sim \text{Sample ID [0-0.5cm]}$

Variable	Category	Estimate	Std. Error	t	p
Intercept	(Normoxia)	8.3	0.1	61.2	2.21E-08
Sample ID	7 Days	-0.5	0.2	-2.7	0.04
Sample ID	1 Month	0.1	0.2	0.7	0.51
Sample ID	2 Months	-0.7	0.2	-3.9	0.01
Sample ID	10 Months	-1.2	0.2	-6.2	0.002

Model 3: $\log(1 + \text{Standing Stock}) \sim \log(5 + \text{Time}) + \text{Depth Interval} + \log(5 + \text{Time}) * \text{Depth Interval}$

Variable	Category	Estimate	Std. Error	t	p
Intercept	(0-5cm)	7.3	0.3	25.8	1.84E-14
$\log(5+\text{Time})$	(0-5cm)	-0.2	0.1	-2.1	0.049
Depth Interval	0-0.5cm	-0.8	0.4	-2.0	0.06
$\log(5+\text{Time}) * \text{Depth Interval}$	0-0.5cm	-0.1	0.1	-1.0	0.32

Model 4: $\log(1 + \text{Density}) \sim \text{SI} + \log(1+\text{Depth}) + \log(1+\text{Depth})^2 + \text{SI} * \log(1+\text{Depth}) + \log(1+\text{Depth})^2 * \text{SI}$

Variable	Category	Estimate	Std. Error	t	p
Intercept	(Normoxia)	7.6	0.4	16.9	< 2E-16
Sample ID	7 Days	-0.3	0.5	-0.6	0.57
Sample ID	1 Month	0.7	0.5	1.3	0.20
Sample ID	2 Months	-0.8	0.5	-1.6	0.12
Sample ID	10 Months	-1.4	0.5	-2.7	0.01
$\log(1+\text{Depth})$	(Normoxia)	-4.4	1.5	-2.9	0.005
$\log(1+\text{Depth})^2$	(Normoxia)	3.3	1.5	2.1	0.04
Sample ID * $\log(1+\text{Depth})$	7 Days	-1.5	1.2	-1.2	0.22
Sample ID * $\log(1+\text{Depth})$	1 Month	-3.0	1.2	-2.4	0.02
Sample ID * $\log(1+\text{Depth})$	2 Months	-0.5	1.2	-0.4	0.71
Sample ID * $\log(1+\text{Depth})$	10 Months	0.7	1.2	0.5	0.59
$\log(1+\text{Depth}) * \log(1+\text{Depth})^2$	(Normoxia)	-1.0	0.5	-2.0	0.048
Sample ID * $\log(1+\text{Depth})^2$	7 Days	1.1	0.6	1.8	0.08
Sample ID * $\log(1+\text{Depth})^2$	1 Month	1.4	0.6	2.3	0.03
Sample ID * $\log(1+\text{Depth})^2$	2 Months	0.7	0.6	1.1	0.29
Sample ID * $\log(1+\text{Depth})^2$	10 Months	0.1	0.6	0.1	0.90