

Table S1. Position and depth of sampling stations for *C. nodosa* and *C. prolifera* in the Mar Menor.

Station	Site	Species	Position (UTM, 30S)		Depth (m)
			x	y	
1	Lo Pagán	<i>C. nodosa</i>	693776	4186340	0.8
2	Encañizadas	<i>C. nodosa</i>	697196	4183880	1.2
3	La Manga	<i>C. nodosa</i>	699707	4172585	0.9
4	Perdiguera Island	<i>C. nodosa</i>	693976	4174698	1
5	Albujón Wadi	<i>C. nodosa</i>	688782	4176517	0.7
6	El Beal Wadi	<i>C. nodosa</i>	692957	4171054	0.8
7	Playa Honda	<i>C. nodosa</i>	698440	4168098	0.9
8	Encañizadas	<i>C. prolifera</i>	696432	4184203	2,7
9	La Hita Beach	<i>C. prolifera</i>	693204	4182230	2.9
10	Albujón Wadi	<i>C. prolifera</i>	689212	4176654	2,7
11	Carrasquilla Wadi	<i>C. prolifera</i>	696918	4169591	3.2

Table S2. Summary for the GLM fitted to Vmax data in relation to N source, species and site. Tukey tests were applied to the fitted GLM to compare Vmax values between different factor levels. The asterisk (*) indicates that the p value was significant.

Vmax GLM model summary				
	Estimate	Std. Error	t value	p value
Nsource	0.035	0.006	5.622	<0.001 ***
Species	0.005	0.002	3.049	0.005 **
Site	0.008	0.002	3.446	0.002 **
Nsource X Species	0.472	0.118	4.001	<0.001 ***
Nsource X Site	0.112	0.037	3.034	0.005 **
Species X Site	0.003	0.004	0.784	0.440
Nsource X Species X Site	0.797	0.351	2.275	0.031 *

Multiple Comparisons of Means: Tukey Contrasts

	Estimate	Std. Error	z value	p value
NitxCauxALBHN VS AmmxCauxALBHN	0.035	0.006	5.622	<0.001 ***
AmmxCymxALBHN VS AmmxCauxALBHN	0.005	0.002	3.049	0.026 *
NitxCymxALBHN VS AmmxCauxALBHN	0.512	0.118	4.347	<0.001 ***
AmmxCauxENCLN VS AmmxCauxALBHN	0.008	0.002	3.446	0.002 **

NitxCauxENCLN VS AmmxCauxALBHN	0.155	0.036	4.281	<0.001	***
AmmxCymxENCLN VS AmmxCauxALBHN	0.016	0.003	5.022	<0.001	***
NitxCymxALBLN VS AmmxCauxALBHN	1.432	0.328	4.365	<0.001	***
AmmxCymxALBHN VS NitxCauxALBHN	-0.031	0.006	-4.773	<0.001	***
NitxCymxALBHN VS NitxCauxALBHN	0.476	0.118	4.041	<0.001	***
AmmxCauxENCLN VS NitxCauxALBHN	-0.027	0.007	-4.102	<0.001	***
NitxCauxENCLN VS NitxCauxALBHN	0.120	0.037	3.258	0.013	*
AmmxCymxENCLN VS NitxCauxALBHN	-0.019	0.007	-2.768	0.059	.
NitxCymxENCLN VS NitxCauxALBHN	1.397	0.328	4.257	<0.001	***
NitxcymxALBHN VS AmmxCymxALBHN	0.507	0.118	4.307	<0.001	***
AmmxCauxENCLN VS AmmxCymxALBHN	0.003	0.003	1.251	0.860	
NitxCauxENCLN VS AmmxCymxALBHN	0.150	0.036	4.149	<0.001	***
AmmxCymxENCLN VS AmmxCymxALBHN	0.011	0.003	3.278	0.012	*
NitxCymxENCLN VS AmmxCymxALBHN	1.427	0.328	4.351	<0.001	***
AmmxCauxENCLN VS NitxCymxALBHN	-0.504	0.118	-4.278	<0.001	***
NitxCauxENCLN VS NitxCymxALBHN	-0.357	0.123	-2.895	0.041	*
AmmxCymxENCLN VS NitxCymxENCLN	-0.496	0.118	-4.210	<0.001	***
NitxCymxENCLN VS NitxCymxALBHN	0.920	0.349	2.640	0.083	.
NitxCauxENCLN VS AmmxCauxENCLN	0.147	0.036	4.052	<0.001	***
AmmxCymxENCLN VS AmmxCauxENCLN	0.008	0.004	2.054	0.322	
NitxCymxENCLN VS AmmxCauxENCLN	1.424	0.328	4.341	<0.001	***
AmmxCymxENCLN VS NitxCauxENCLN	-0.139	0.036	-3.827	0.002	**
NitxCymxENCLN VS NitxCauxENCLN	1.277	0.330	3.869	0.002	**
NitxCymxENCLN VS AmmxCymxENCLN	1.416	0.328	4.316	<0.001	***

Table S3. Summary for the GLM fitted to Km data in relation to N Source, species and site. Tukey tests were applied to the fitted GLM to compare Km values between different factor levels. The asterisk (*) indicates that the p value was significant.

Km GLM model summary					
	Estimate	Std. Error	t value	p value	
Nsource	0.029	0.006	4.528	<0.001	***
Species	0.004	0.001	2.516	0.018	*
Site	0.004	0.002	2.230	0.034	*
Nsource X Species	0.006	0.014	0.462	0.647	
Nsource X Site	-0.013	0.009	-1.423	0.166	
Species X Site	-0.002	0.003	-0.731	0.471	
Nsource X Species X Site	0.036	0.025	1.482	0.150	

Table S4. Summary for the GLM fitted to α data in relation to N Source, species and site. Tukey tests were applied to the fitted GLM to compare α values between different factor levels. The asterisk (*) indicates that the p value was significant.

α GLM model summary				
	Estimate	Std. Error	t value	p value
Nsource	-0.125	0.100	-1.25	0.221
Species	-0.052	0.107	-0.49	0.630
Site	0.272	0.132	2.06	0.049 *
Nsource X Species	11.138	0.983	11.33	<0.001 ***
Nsource X Site	5.175	0.548	9.45	<0.001 ***
Species X Site	0.916	0.206	4.45	<0.001 ***
Nsource X Species X Site	1.633	1.967	0.83	0.414

<i>Multiple Comparisons of Means: Tukey Contrasts</i>				
<i>Nsource X Species</i>				
	Estimate	Std. Error	t value	p value
NitxCau VS AmmxCau	0.025	0.005	5.309	<0.001 ***
AmmxCym VS AmmxCau	0.004	0.001	3.193	0.005 **
NitxCym VS AmmxCau	0.048	0.010	4.622	<0.001 ***
AmmxCym VS NitxCau	-0.021	0.005	-4.423	<0.001 ***
NitxCym VS NitXCau	0.024	0.011	2.073	0.130
NitxCym VS AmmxCym	0.045	0.010	4.250	<0.001 ***
<i>Nsource X Site</i>				
	Estimate	Std. Error	t value	p value
NitxALBHN VS AmmxALBHN	0.031	0.007	4.258	<0.001 ***
AmmxENCLN VS AmmxALBHN	0.004	0.002	2.302	0.078 .
NitxENCLN VS AmmxALBHN	0.030	0.009	3.466	0.002 **
AmmxENCLN VS NitxALBHN	-0.028	0.007	-3.721	<0.001 ***
NitxENCLN VS NitxALBHN	-0.001	0.011	-0.110	0.999
NitxENCLN VS AmmxENCLN	0.026	0.009	3.025	0.01029 *
<i>Species X Site</i>				
	Estimate	Std. Error	t value	p value
CymxALBHN VS CauxALBHN	0.004	0.003	1.300	0.550
CauxENCLN VS CauxALBHN	0.004	0.004	1.173	0.632
CymxENCLN VS CauxALBHN	0.006	0.004	1.662	0.332
CAauxENCLN VS Cym ALBHN	0.000	0.005	-0.073	1.000
CymxENCLN VS CymxALBHN	0.002	0.005	0.405	0.976
CymxENCLN VS CauENCLN	0.002	0.005	0.468	0.964

Table S5. Summary for the GLM fitted to Vamb data in relation to N Source, species and site. Tukey tests were applied to the fitted GLM to compare Vamb values between different factor levels. The asterisk (*) indicates that the p value was significant.

Vamb GLM model summary				
	Estimate	Std. Error	t value	p value
Nsource	0.35	0.08	4.32	<0.001 ***
Species	-0.08	0.10	-0.78	0.439
Site	-1.03	0.13	-7.67	<0.001 ***
Nsource X Species	-2.29	0.18	-12.92	<0.001 ***
Nsource X Site	-1.31	0.20	-6.66	<0.001 ***
Species X Site	-0.20	0.20	-0.98	0.330
Nsource X Species X Site	1.32	0.38	3.44	<0.001 ***

Multiple Comparisons of Means: Tukey Contrasts

	Estimate	Std. Error	z value	p value
NitxCauxALBHN VS AmmxCauxALBHN	0.351	0.081	4.319	<0.001 ***
AmmxCymxALBHN VS AmmxCauxALBHN	-0.077	0.099	-0.775	0.993
NitxCymxALBHN VS AmmxCauxALBHN	-2.013	0.156	-12.893	<0.001 ***
AmmxCauxENCLN VS AmmxCauxALBHN	-1.026	0.134	-7.667	<0.001 ***
NitxCauxENCLN VS AmmxCauxALBHN	-1.989	0.155	-12.862	<0.001 ***
AmmxCymxENCLN VS AmmxCauxALBHN	-1.299	0.148	-8.748	<0.001 ***
NitxCymxALBLN VS AmmxCauxALBHN	-3.229	0.266	-12.116	<0.001 ***
AmmxCymxALBHN VS NitxCauxALBHN	-0.428	0.084	-5.120	<0.001 ***
NitxCymxALBHN VS NitxCauxALBHN	-2.364	0.147	-16.110	<0.001 ***
AmmxCauxENCLN VS NitxCauxALBHN	-1.377	0.123	-11.219	<0.001 ***
NitxCauxENCLN VS NitxCauxALBHN	-2.340	0.145	-16.122	<0.001 ***
AmmxCymxENCLN VS NitxCauxALBHN	-1.650	0.139	-11.907	<0.001 ***
NitxCymxENCLN VS NitxCauxALBHN	-3.580	0.261	-13.711	<0.001 ***
NitxcymxALBHN VS AmmxCymxALBHN	-1.936	0.157	-12.306	<0.001 ***
AmmxCauxENCLN VS AmmxCymxALBHN	-0.949	0.135	-7.019	<0.001 ***
NitxCauxENCLN VS AmmxCymxALBHN	-1.912	0.156	-12.269	<0.001 ***
AmmxCymxENCLN VS AmmxCymxALBHN	-1.222	0.150	-8.161	<0.001 ***
NitxCymxENCLN VS AmmxCymxALBHN	-3.152	0.267	-11.797	<0.001 ***
AmmxCauxENCLN VS NitxCymxALBHN	0.987	0.181	5.448	<0.001 ***
NitxCauxENCLN VS NitxCymxALBHN	0.025	0.197	0.125	1.000
AmmxCymxENCLN VS NitxCymxENCLN	0.715	0.192	3.716	0.00 **
NitxCymxENCLN VS NitxCymxALBHN	-1.216	0.293	-4.146	<0.001 ***
NitxCauxENCLN VS AmmxCauxENCLN	-0.963	0.180	-5.351	<0.001 ***
AmmxCymxENCLN VS AmmxCauxENCLN	-0.273	0.175	-1.562	0.743
NitxCymxENCLN VS AmmxCauxENCLN	-2.203	0.282	-7.814	<0.001 ***
AmmxCymxENCLN VS NitxCauxENCLN	0.690	0.191	3.611	0.006 **

NitxCymxENCLN VS NitxCauxENCLN	-1.240	0.292	-4.242	<0.001	***
NitxCymxENCLN VS AmmxCymxENCLN	-1.930	0.289	-6.675	<0.001	***

Table S6. Biomass of *C. nodosa* and *C. prolifera* aboveground and belowground tissues determined at different sites in the Mar Menor lagoon. Values are means (n = 3) with SEs.

Station	Locality	Species	Biomass (gDWm ⁻²)		
			Aboveground	Belowground	Total
1	Lo Pagán	<i>C. nodosa</i>	299.26 ± 6.89	654.78 ± 21.45	954.05 ± 46.12
2	Encañizadas	<i>C. nodosa</i>	269.38 ± 6.07	406.81 ± 64.17	676.18 ± 40.48
3	La Manga	<i>C. nodosa</i>	213.15 ± 18.16	838.87 ± 22.74	1052.02 ± 75.89
4	Perdiguera Island	<i>C. nodosa</i>	201.68 ± 15.95	873.51 ± 30.58	1075.19 ± 54.25
5	Albujón Wadi	<i>C. nodosa</i>	327.48 ± 10.3	689.76 ± 32.59	1017.24 ± 51.45
6	El Beal Wadi	<i>C. nodosa</i>	312.16 ± 14.88	292.8 ± 15.1	604.96 ± 59.96
7	Playa Honda	<i>C. nodosa</i>	348.07 ± 19.91	904.03 ± 21.88	1252.1 ± 83.58
8	Encañizadas	<i>C. prolifera</i>	-	-	197.42 ± 17.28
9	La Hita Beach	<i>C. prolifera</i>	-	-	183.17 ± 12.42
10	Albujón Wadi	<i>C. prolifera</i>	-	-	508.75 ± 34.54
11	Carrasquilla Wadi	<i>C. prolifera</i>	-	-	276.06 ± 8.7

Table S7. Nitrogen content % and C/Nratio of *C. nodosa* and *C. prolifera* aboveground and belowground tissues determined at different sites in the Mar Menor lagoon. Values are means (n = 3) with SEs.

Station	Locality	Species	Nitrogen content (% DW)		C/N ratio	
			Aboveground	Belowground	Aboveground	Belowground
1	Lo Pagán	<i>C. nodosa</i>	3.76 ± 0.34	2.16 ± 0.06	12.56 ± 0.66	20.81 ± 0.5
2	Encañizadas	<i>C. nodosa</i>	3.03 ± 0.13	0.98 ± 0.07	14.61 ± 0.06	42.8 ± 2.85
3	La Manga	<i>C. nodosa</i>	3.09 ± 0.18	2.18 ± 0.05	14.96 ± 0.6	19.43 ± 0.25
4	Perdiguera Island	<i>C. nodosa</i>	3.07 ± 0.16	2.73 ± 0.08	15.14 ± 0.16	15.75 ± 0.37
5	Albujón Wadi	<i>C. nodosa</i>	3.96 ± 0.05	2.2 ± 0.03	14.14 ± 0.13	27.91 ± 0.64
6	El Beal Wadi	<i>C. nodosa</i>	3.89 ± 0.11	1.71 ± 0.05	12.22 ± 0.05	23.69 ± 0.53
7	Playa Honda	<i>C. nodosa</i>	3.88 ± 0.07	1.93 ± 0.05	12.99 ± 0.1	22.29 ± 0.18
8	Encañizadas	<i>C. prolifera</i>	3 ± 0.06	-	13.55 ± 0.05	-
9	La Hita Beach	<i>C. prolifera</i>	3.71 ± 0.07	-	13.71 ± 0.05	-
10	Albujón Wadi	<i>C. prolifera</i>	3.93 ± 0.1	-	13.18 ± 0.15	-
11	Carrasquilla Wadi	<i>C. prolifera</i>	4.48 ± 0.15	-	11.14 ± 0.05	-

Table S8. Meadow Nitrogen Stock (gNm⁻²) of *C. nodosa* and *C. prolifera* aboveground and belowground tissues determined at different sites in the Mar Menor lagoon. Values are means (n = 3) with SEs.

Station	Locality	Species	Meadow Nitrogen Stock (gNm ⁻²)		
			Aboveground	Belowground	Total
1	Lo Pagán	<i>C. nodosa</i>	11.26 ± 0.26	13.78 ± 0.92	25.04 ± 1.18
2	Encañizadas	<i>C. nodosa</i>	8.16 ± 0.18	4.01 ± 1.27	12.17 ± 1.45
3	La Manga	<i>C. nodosa</i>	6.58 ± 0.56	19.8 ± 1.11	26.38 ± 1.67
4	Perdiguera Island	<i>C. nodosa</i>	6.2 ± 0.49	23.09 ± 1.61	29.29 ± 2.1
5	Albujón Wadi	<i>C. nodosa</i>	12.97 ± 0.41	16.07 ± 0.76	29.05 ± 1.17
6	El Beal Wadi	<i>C. nodosa</i>	12.13 ± 0.58	6.68 ± 0.68	18.81 ± 1.25
7	Playa Honda	<i>C. nodosa</i>	13.51 ± 0.77	16.02 ± 0.76	29.52 ± 1.53
8	Encañizadas	<i>C. prolifera</i>	-	-	5.93 ± 0.52
9	La Hita Beach	<i>C. prolifera</i>	-	-	6.79 ± 0.46
10	Albujón Wadi	<i>C. prolifera</i>	-	-	20 ± 1.36
11	Carrasquilla Wadi	<i>C. prolifera</i>	-	-	12.37 ± 0.39