

## Herbivory in a subtropical seagrass ecosystem: separating the functional role of different grazers

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### Supplement. Additional data

Table S1. Common mesograzers and macrograzers of the study area. SM: small mesograzer; MM: medium mesograzer; LM: large mesograzer; MA: macrograzer; EA: epiphyte herbivore; OM: omnivore; SH: seagrass herbivore

Common name	Scientific name	Size group	Diet	Reference
<b>Invertebrates</b>				
Amphipods	(Numerous species)	SM	EH	Davie (2011)
Banana prawn	<i>Penaeus merguensis</i>	SM, MM	EH, OM, SH	Skilleter et al. (2005)
Barred estuarine shrimp	<i>Palaemon serrifer</i>	SM, MM	EH, OM	Tibbetts & Connolly (1998)
Bay prawn	<i>Metapenaeus bennettiae</i>	SM, MM	EH, OM, SH	Guest et al. (2003)
Brown tiger prawn	<i>Penaeus esculentus</i>	SM, MM	EH, OM, SH	Guest et al. (2003)
Brown grass shrimp	<i>Leander tenuicornis</i>	SM, MM	EH, OM	Olds (2003)
Eastern king prawn	<i>Penaeus plebejus</i>	SM, MM	EH, OM, SH	Guest et al. (2003)
Indistinct top snail	<i>Calthalotia indistincta</i>	SM, MM	EH	Davie (2011)
Richardson's snapping shrimp	<i>Alpheus richardsoni</i>	SM, MM	EH, OM	Tibbetts & Connolly (1998)
Rock pool shrimp	<i>Palaemon serenus</i>	SM, MM	EH, OM	Tibbetts & Connolly (1998)

Shrewd top snail	<i>Monilea callifera</i>	SM, MM	EH	Davie (2011)
Slender seagrass shrimp	<i>Latreutes pygmaeus</i>	SM, MM	EH, OM	Olds (2003)
Splendid top snail	<i>Astele speciosum</i>	SM, MM	EH	Davie (2011)
Zostera shrimp	<i>Phycomenes zostericola</i>	SM, MM	EH, SH	Tibbetts & Connolly (1998)

### **Fish**

Brown sabretooth blenny	<i>Petroscirtes lupus</i>	MM	EH, OM	Guest et al. (2003)
Common silverbidy	<i>Gerres subfasciatus</i>	MM, LM	EH, OM, SH	Tibbetts & Connolly (1998)
Dusky rabbitfish	<i>Siganus fuscescens</i>	MM, LM	EH, SH	Tibbetts & Connolly (1998)
Eastern trumpeter	<i>Pelates sexlineatus</i>	MM, LM	EH, OM, SH	Guest et al. (2003)
Fan-belly leatherjacket	<i>Monacanthus chinensis</i>	MM, LM	EH, OM, SH	Guest et al. (2003)
Oriental leatherjacket	<i>Paramonacanthus otisensis</i>	MM, LM	EH, OM, SH	Tibbetts & Connolly (1998)
Shoulder-spot goby	<i>Acentrogobius caninus</i>	MM, LM	EH, OM	Tibbetts & Connolly (1998)
Yellowfin bream	<i>Acanthopagrus australis</i>	MM, LM	EH, OM, SH	Guest et al. (2003)

### **Turtles**

Green turtle	<i>Chelonia mydas</i>	MA	SH	Brand-Gardner et al. (1999)
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### **Dugongs**

Dugong	<i>Dugong dugon</i>	MA	SH	Lanyon (2003)
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### **Birds**

Black swan	<i>Cygnus artratus</i>	MA	SH	Davie (2011)
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Table S2. Summary of epiphyte biomass post hoc test results (p-values) over the 5 wk study period under different exclusion treatments (see Table 1 in the main article). Centimeter measures show cage mesh sizes. C: cage; P: partial cage (procedural control); I: cage with insecticide; NI: cage with no insecticide; ns: not significant

Week	Uncaged	6 cm (C)	3 cm (P)	3 cm (C)	1 cm (P)	1 cm (I)	1 cm (NI)
<b>Uncaged (control)</b>							
0		ns	ns	ns	ns	ns	ns
1		ns	ns	ns	ns	<0.001	ns
2		ns	ns	ns	ns	<0.001	ns
3		ns	ns	ns	ns	<0.001	ns
4		ns	ns	ns	ns	<0.001	ns
5		ns	ns	ns	ns	<0.001	ns
<b>6 cm (C)</b>							
0	ns		ns	ns	ns	ns	ns
1	ns		ns	ns	ns	<0.001	ns
2	ns		ns	ns	ns	<0.001	ns
3	ns		ns	ns	ns	<0.001	ns
4	ns		ns	ns	ns	<0.001	ns
5	ns		ns	ns	ns	<0.001	ns
<b>3 cm (P)</b>							
0	ns	ns		ns	ns	ns	ns
1	ns	ns		ns	ns	<0.001	ns
2	ns	ns		ns	ns	<0.001	ns
3	ns	ns		ns	ns	<0.001	ns
4	ns	ns		ns	ns	<0.001	ns
5	ns	ns		ns	ns	<0.001	ns
<b>3 cm (C)</b>							
0	ns	ns	ns		ns	ns	ns
1	ns	ns	ns		ns	<0.001	ns
2	ns	ns	ns		ns	<0.001	ns
3	ns	ns	ns		ns	<0.001	ns
4	ns	ns	ns		ns	<0.001	ns
5	ns	ns	ns		ns	<0.001	ns
<b>1 cm (P)</b>							
0	ns	ns	ns	ns		ns	ns
1	ns	ns	ns	ns		<0.001	ns
2	ns	ns	ns	ns		<0.001	ns
3	ns	ns	ns	ns		<0.001	ns
4	ns	ns	ns	ns		<0.001	ns
5	ns	ns	ns	ns		<0.001	ns
<b>1 cm (I)</b>							
0	ns	ns	ns	ns	ns		ns
1	<0.001	<0.001	<0.001	<0.001	<0.001		ns
2	<0.001	<0.001	<0.001	<0.001	<0.001		ns
3	<0.001	<0.001	<0.001	<0.001	<0.001		ns
4	<0.001	<0.001	<0.001	<0.001	<0.001		ns
5	<0.001	<0.001	<0.001	<0.001	<0.001		ns
<b>1 cm (NI)</b>							
0	ns	ns	ns	ns	ns	ns	
1	ns	ns	ns	ns	ns	<0.001	
2	ns	ns	ns	ns	ns	<0.001	
3	ns	ns	ns	ns	ns	<0.001	
4	ns	ns	ns	ns	ns	<0.001	
5	ns	ns	ns	ns	ns	<0.001	

Table S3. Summary of seagrass cover post hoc test results (p-values) over the 5 wk study period under different exclusion treatments (see Table 1 in the main article). Abbreviations as in Table S2

Week	Uncaged	6 cm (C)	3 cm (P)	3 cm (C)	1 cm (P)	1 cm (I)	1 cm (NI)
<b>Uncaged (control)</b>							
0		ns	ns	ns	ns	ns	ns
1		ns	ns	ns	ns	ns	ns
2		ns	ns	ns	ns	ns	ns
3		ns	ns	ns	ns	<0.001	0.007
4		ns	ns	ns	ns	<0.001	0.001
5		ns	ns	ns	ns	<0.001	<0.001
<b>6 cm (C)</b>							
0	ns		ns	ns	ns	ns	ns
1	ns		ns	ns	ns	ns	ns
2	ns		ns	ns	ns	0.038	ns
3	ns		ns	ns	ns	<0.001	0.017
4	ns		ns	ns	ns	<0.001	0.001
5	ns		ns	ns	ns	<0.001	<0.001
<b>3 cm (P)</b>							
0	ns	ns		ns	ns	ns	ns
1	ns	ns		ns	ns	ns	ns
2	ns	ns		ns	ns	ns	ns
3	ns	ns		ns	ns	0.009	ns
4	ns	ns		ns	ns	0.004	ns
5	ns	ns		ns	ns	<0.001	0.004
<b>3 cm (C)</b>							
0	ns	ns	ns		ns	ns	ns
1	ns	ns	ns		ns	ns	ns
2	ns	ns	ns		ns	ns	ns
3	ns	ns	ns		ns	0.007	ns
4	ns	ns	ns		ns	0.005	ns
5	ns	ns	ns		ns	<0.001	0.001
<b>1 cm (P)</b>							
0	ns	ns	ns	ns		ns	ns
1	ns	ns	ns	ns		ns	ns
2	ns	ns	ns	ns		0.042	ns
3	ns	ns	ns	ns		<0.001	0.025
4	ns	ns	ns	ns		<0.001	0.001
5	ns	ns	ns	ns		<0.001	<0.001
<b>1 cm (I)</b>							
0	ns	ns	ns	ns	ns		ns
1	ns	ns	ns	ns	ns		ns
2	ns	0.038	ns	ns	0.042		ns
3	<0.001	<0.001	0.009	0.007	<0.001		ns
4	<0.001	<0.001	0.004	0.005	<0.001		ns
5	<0.001	<0.001	<0.001	<0.001	<0.001		ns
<b>1 cm (NI)</b>							
0	ns	ns	ns	ns	ns	ns	
1	ns	ns	ns	ns	ns	ns	
2	ns	ns	ns	ns	ns	ns	
3	0.007	0.017	ns	ns	0.025	ns	
4	0.001	0.001	ns	ns	0.001	ns	
5	<0.001	<0.001	0.004	0.001	<0.001	ns	

Table S4. Summary of shoot height post hoc test results (p-values) over the 5 wk study period under different exclusion treatments (see Table 1 in the main article). Abbreviations as in Table S2

Week	Uncaged	6 cm (C)	3 cm (P)	3 cm (C)	1 cm (P)	1 cm (I)	1 cm (NI)
<b>Uncaged (control)</b>							
0		ns	ns	ns	ns	ns	0.041
1		ns	ns	ns	ns	ns	0.016
2		ns	ns	ns	ns	0.011	0.003
3		ns	ns	ns	ns	0.002	<0.001
4		ns	ns	ns	ns	<0.001	<0.001
5		ns	ns	ns	ns	<0.001	<0.001
<b>6 cm (C)</b>							
0	ns		ns	ns	ns	ns	ns
1	ns		ns	ns	ns	0.032	0.005
2	ns		ns	ns	ns	0.004	0.001
3	ns		ns	ns	ns	0.001	<0.001
4	ns		ns	ns	ns	<0.001	<0.001
5	ns		ns	ns	ns	<0.001	<0.001
<b>3 cm (P)</b>							
0	ns	ns		ns	ns	ns	ns
1	ns	ns		ns	ns	ns	0.022
2	ns	ns		ns	ns	0.013	0.003
3	ns	ns		ns	ns	0.001	<0.001
4	ns	ns		ns	ns	<0.001	<0.001
5	ns	ns		ns	ns	<0.001	<0.001
<b>3 cm (C)</b>							
0	ns	ns	ns		ns	ns	ns
1	ns	ns	ns		ns	ns	0.030
2	ns	ns	ns		ns	0.030	0.007
3	ns	ns	ns		ns	0.007	0.001
4	ns	ns	ns		ns	<0.001	<0.001
5	ns	ns	ns		ns	<0.001	<0.001
<b>1 cm (P)</b>							
0	ns	ns	ns	ns		ns	ns
1	ns	ns	ns	ns		ns	ns
2	ns	ns	ns	ns		ns	0.030
3	ns	ns	ns	ns		0.016	0.002
4	ns	ns	ns	ns		<0.001	<0.001
5	ns	ns	ns	ns		<0.001	<0.001
<b>1 cm (I)</b>							
0	ns	ns	ns	ns	ns		ns
1	ns	0.032	ns	ns	ns		ns
2	0.011	0.004	0.013	0.030	ns		ns
3	0.002	0.001	0.001	0.007	0.016		ns
4	<0.001	<0.001	<0.001	<0.001	<0.001		ns
5	<0.001	<0.001	<0.001	<0.001	<0.001		ns
<b>1 cm (NI)</b>							
0	0.041	ns	ns	ns	ns	ns	
1	0.016	0.005	0.022	0.030	ns	ns	
2	0.003	0.001	0.003	0.007	0.030	ns	
3	<0.001	<0.001	<0.001	0.001	0.002	ns	
4	<0.001	<0.001	<0.001	<0.001	<0.001	ns	
5	<0.001	<0.001	<0.001	<0.001	<0.001	ns	

Table S5. Summary of shoot density post hoc test results (p-values) over the 5 wk study period under different exclusion treatments (see Table 1 in the main article). Abbreviations as in Table S2

Week	Uncaged	6 cm (C)	3 cm (P)	3 cm (C)	1 cm (P)	1 cm (I)	1 cm (NI)
<b>Uncaged (control)</b>							
0		0.022	ns	ns	ns	ns	ns
1		0.024	ns	ns	ns	ns	0.047
2		0.035	ns	ns	ns	ns	0.025
3		0.019	ns	ns	ns	<0.001	<0.001
4		0.007	0.013	0.027	ns	<0.001	<0.001
5		ns	0.026	0.067	ns	<0.001	<0.001
<b>6 cm (C)</b>							
0	0.022		ns	ns	ns	ns	ns
1	0.024		ns	ns	ns	ns	ns
2	0.035		ns	ns	ns	ns	ns
3	0.019		ns	ns	ns	0.003	0.027
4	0.007		ns	ns	ns	<0.001	0.01
5	ns		ns	ns	ns	<0.001	<0.001
<b>3 cm (P)</b>							
0	ns	ns		ns	ns	ns	ns
1	ns	ns		ns	ns	ns	ns
2	ns	ns		ns	ns	ns	ns
3	ns	ns		ns	ns	<0.001	0.005
4	0.013	ns		ns	ns	<0.001	<0.001
5	0.026	ns		ns	ns	<0.001	<0.001
<b>3 cm (C)</b>							
0	ns	ns	ns		ns	ns	ns
1	ns	ns	ns		ns	ns	ns
2	ns	ns	ns		ns	ns	ns
3	ns	ns	ns		ns	<0.001	<0.001
4	0.027	ns	ns		ns	<0.001	<0.001
5	0.067	ns	ns		ns	<0.001	<0.001
<b>1 cm (P)</b>							
0	ns	ns	ns	ns		ns	ns
1	ns	ns	ns	ns		ns	ns
2	ns	ns	ns	ns		ns	ns
3	ns	ns	ns	ns		<0.001	<0.001
4	ns	ns	ns	ns		<0.001	<0.001
5	ns	ns	ns	ns		<0.001	<0.001
<b>1 cm (I)</b>							
0	ns	ns	ns	ns	ns		ns
1	ns	ns	ns	ns	ns		ns
2	ns	ns	ns	ns	ns		ns
3	<0.001	0.003	<0.001	<0.001	<0.001		ns
4	<0.001	<0.001	<0.001	<0.001	<0.001		ns
5	<0.001	<0.001	<0.001	<0.001	<0.001		ns
<b>1 cm (NI)</b>							
0	ns	ns	ns	ns	ns	ns	
1	0.047	ns	ns	ns	ns	ns	
2	0.025	ns	ns	ns	ns	ns	
3	<0.001	0.027	0.005	<0.001	<0.001	ns	
4	<0.001	0.01	<0.001	<0.001	<0.001	ns	
5	<0.001	<0.001	<0.001	<0.001	<0.001	ns	