

Appendix 1

Supplementary information for experiment 1 and 2

Figure A1. Photos of a) natural and b) mimic *Avicennia* detritus, and c) natural and d) mimic *Spartina* detritus for experiment 2. Natural and mimic *Avicennia* detritus were 4–6 cm long and natural and mimic *Spartina* detritus were 9 cm long.

a) Natural *Avicennia*



b) Mimic *Avicennia*



c) Natural *Spartina*



d) Mimic *Spartina*



Figure A2. Abundance (mean \pm SE) of the most common invertebrate taxa ($n \geq 10$ individuals overall, i.e. across all sampled sites) for each detritus treatment (*Avicennia*, *Spartina*, control) across geographic region (south, central, north) for experiment 1 along a 5° latitudinal gradient ($n = 216$ litterbags total). Taxonomic classification of included taxa is listed in Table A2, and corresponding means and standard errors are listed in Table A3. Results of analysis of deviance for these taxa are included in Table A5.

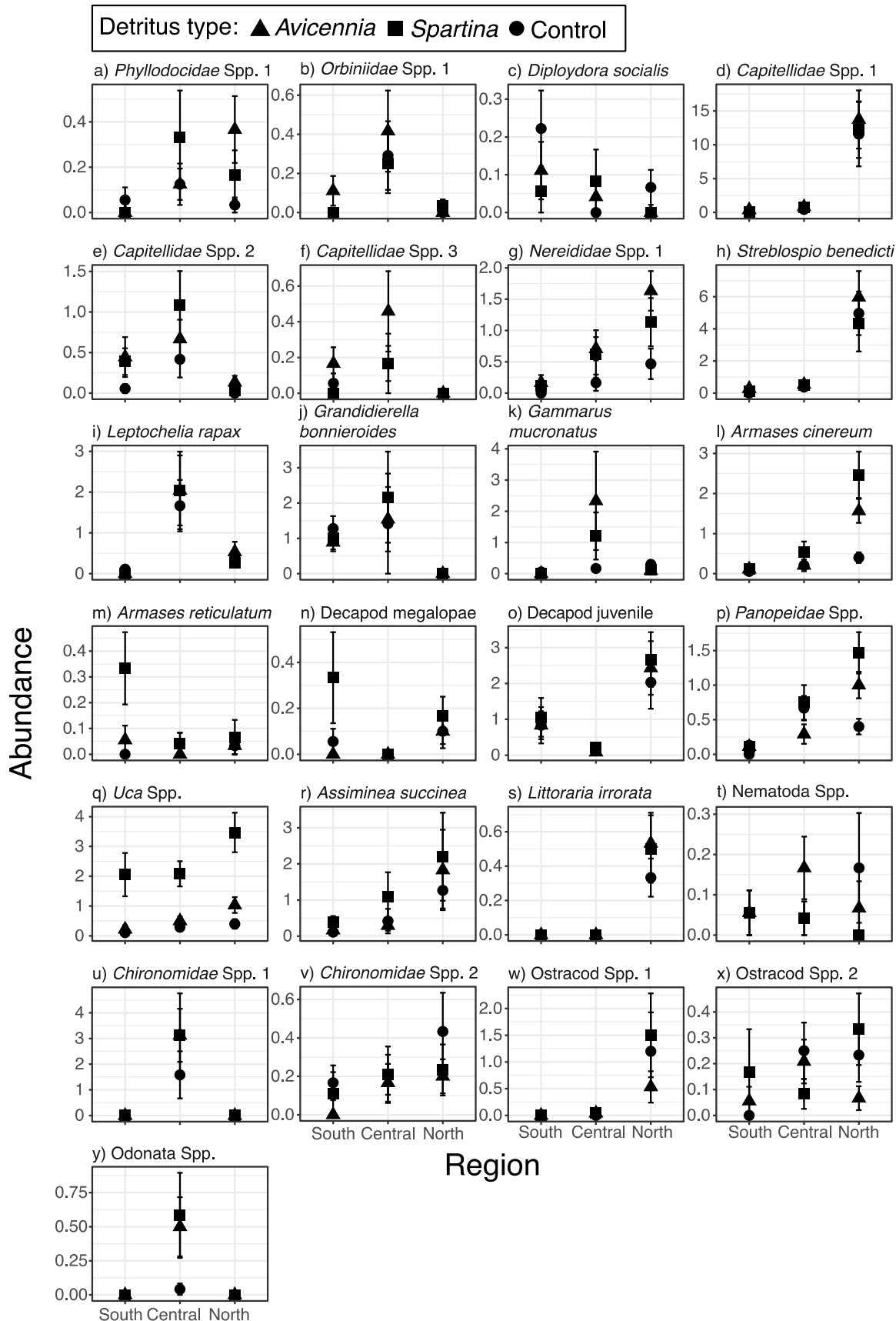


Figure A3. Abundance (mean \pm SE) of each taxonomic group in each detritus treatment (*Avicennia*, *Spartina*, control) across geographic region (south, central, north) for experiment 1 (mean \pm SE) along a 5° latitudinal gradient (n = 216 litterbags total). All individuals were included in taxonomic groupings. Taxonomic classification of included taxonomic groups is listed in Table A2, and corresponding means and standard errors are listed in Table A4. Results of analysis of deviance for these taxonomic groups are included in Table A6.

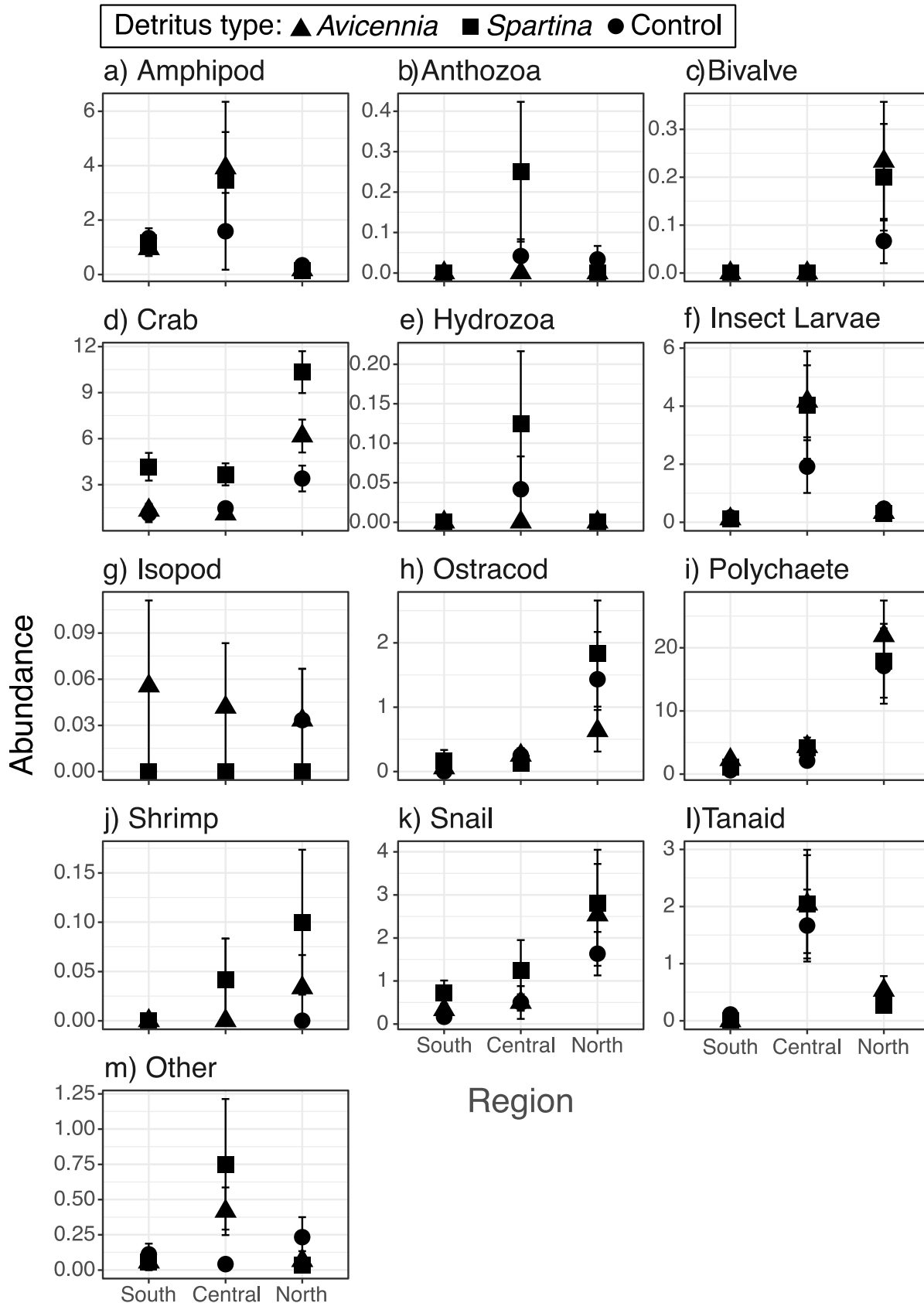


Figure A4. Abundance (mean \pm SE) of the most common invertebrate taxa ($n \geq 10$ individuals overall, i.e. across all blocks) for each detritus treatment (*Avicennia*, *Avicennia* mimic, *Spartina*, *Spartina* mimic, control) across habitat type (mangrove, salt marsh) for experiment 2 at a single mixed salt marsh-mangrove site ($n = 100$ litterbags total). Taxonomic classification of included taxa is listed in Table A7, and corresponding means and standard errors are listed in Table A8. Results of analysis of deviance for these taxa are included in Table A10.

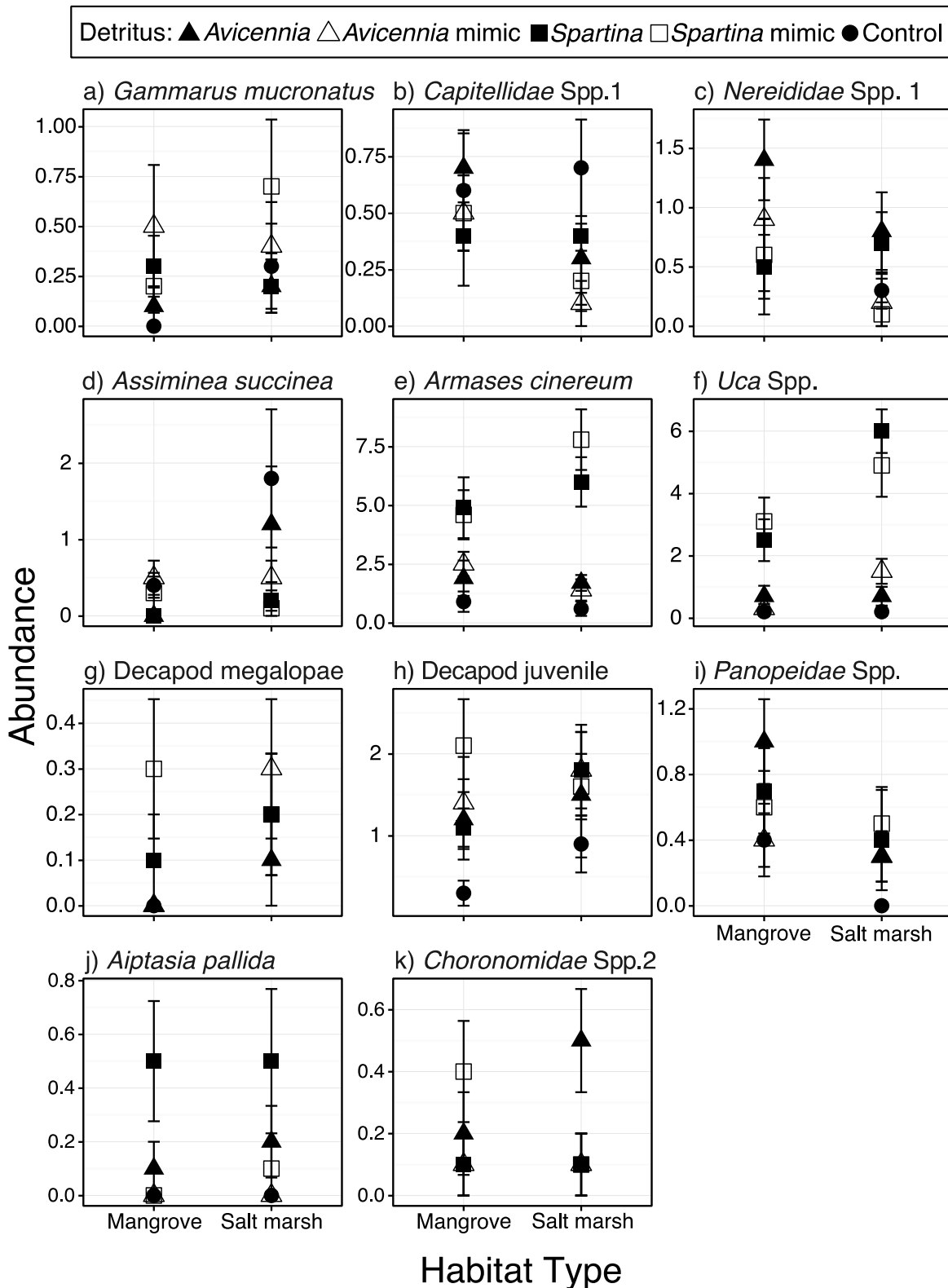


Figure A5. Abundance (mean \pm SE) of each taxonomic group for each detritus treatment (*Avicennia*, *Avicennia* mimic, *Spartina*, *Spartina* mimic, control) across habitat type (mangrove, salt marsh) for experiment 2 at a single mixed salt marsh-mangrove site (n = 100 litterbags total). All individuals were included in taxonomic groupings. Taxonomic classification of included taxa is listed in Table A7, and corresponding means and standard errors are listed in Table A9. Results of analysis of deviance for these taxonomic groups are included in Table A11.

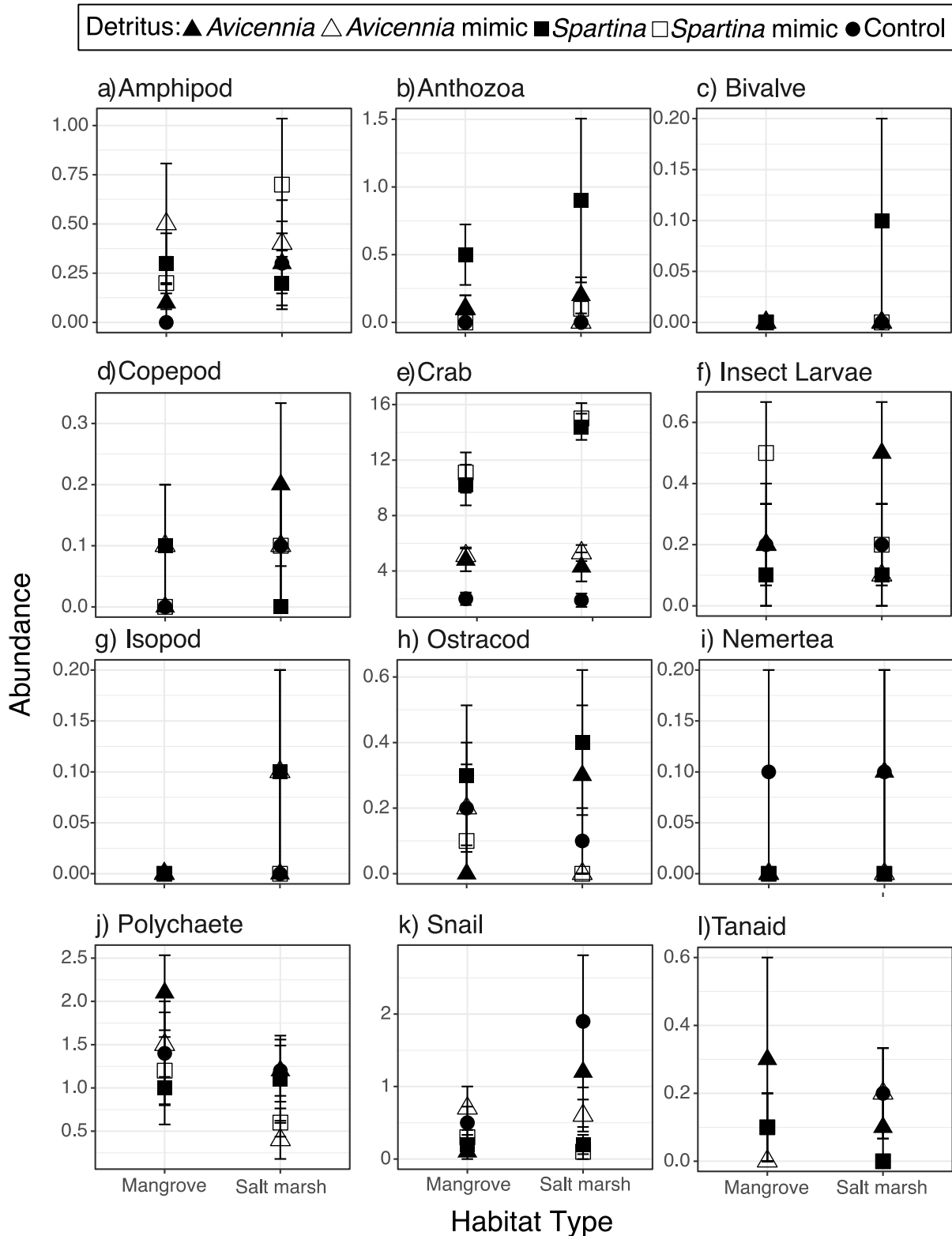


Table A1. Site locations, geographic coordinates, and dominant habitat type for each study site in experiment 1.

Site description	Geographic coordinates	Region	Dominant habitat type
Priests Landing, Skidaway Island, GA	31°96'51.2''N, 81°01'38.7''W	north	salt marsh
St Catherine's Island, GA	31°66'50.7''N, 81°16'28.7''W	north	salt marsh
Jekyll Island, GA	31°09'20.4''N, 81°41'88.1''W	north	salt marsh
Little Talbot Island State Park, Jacksonville, FL	30°45'01.5''N, 81°41'67.5''W	north	salt marsh
Guana Tolomato Matanzas National Estuarine Research Reserve, Ponte Vedra Beach, FL	29°98'69.2''N, 81°32'65.7''W	north	salt marsh
Guana Tolomato Matanzas National Estuarine Research Reserve, Crescent Beach, FL	29°72'77.6''N, 81°24'20.0''W	central	mixed marsh/mangrove
North Peninsula State Park, Flagler Beach, FL	29°41'90.5''N, 81°10'41.3''W	central	mixed marsh/mangrove
Spruce Creek, New Smyrna Beach, FL	29°08'38.5''N, 80°95'84.8''W	central	mixed marsh/mangrove
Cape Canaveral, FL	28°90'11.2''N, 80°84'22.8''W	central	mixed marsh/mangrove
Sebastian Inlet State Park, Melbourne Beach, FL	27°85'74.5''N, 80°45'78.3''W	south	mangrove
Avalon State Park, Fort Pierce, FL	27°54'61.8''N, 80°33'12.8''W	south	mangrove
St. Lucie Inlet Preserve State Park, Stuart, FL	27°14'39.9''N, 80°15'33.3''W	south	mangrove
John D. MacArthur Beach State Park, North Palm Beach, FL	26°81'81.7''N, 80°04'09.4''W	south	mangrove

Table A2. Taxa list and classification for experiment 1, with taxa identified to the lowest possible taxonomic level. Bolded species represent the most common invertebrate taxa ($n \geq 10$ individuals overall, i.e. across all sampled sites). Taxa and taxa group names correspond with Fig. A2 and Fig. A3.

Group ID	Taxa ID	Phylum	Class	Order	Family	Genus	Species
Amphipod	<i>Gammarus mucronatus</i>	Arthropoda	Malacostraca	Amphipoda	<i>Gammaridae</i>	<i>Gammarus</i>	<i>mucronatus</i>
	<i>Gammaridae</i> spp.	Arthropoda	Malacostraca	Amphipoda	<i>Gammaridae</i>		spp.
	<i>Grandidierella bonnieroides</i>	Arthropoda	Malacostraca	Amphipoda	<i>Aoridae</i>	<i>Grandidierella</i>	<i>bonnieroides</i>
	<i>Jassa marmorata</i>	Arthropoda	Malacostraca	Amphipoda	<i>Ischyroceridae</i>	<i>Jassa</i>	<i>marmorata</i>
	<i>Lysianassidae</i> spp. 1	Arthropoda	Malacostraca	Amphipoda	<i>Lysianassidae</i>		spp. 1
	<i>Lysianassidae</i> spp. 2	Arthropoda	Malacostraca	Amphipoda	<i>Lysianassidae</i>		spp. 2
	<i>Paracaprella tenuis</i>	Arthropoda	Malacostraca	Amphipoda	<i>Caprellidae</i>	<i>Paracaprella</i>	<i>tenuis</i>
<i>Amphipoda</i> spp. 1	Arthropoda	Malacostraca	Amphipoda			spp. 1	
Anthozoa	Anthozoa spp. 1	Cnidaria	Anthozoa				spp. 1
	Anthozoa spp. 2	Cnidaria	Anthozoa				spp. 2
	Anthozoa spp. 3	Cnidaria	Anthozoa				spp. 3
Bivalve	<i>Geukensia demissa</i>	Mollusca	Bivalvia	Mytilida	<i>Mytilidae</i>	<i>Geukensia</i>	<i>demissa</i>
	<i>Gemma gemma</i>	Mollusca	Bivalvia	Venerida	<i>Veneridae</i>	<i>Gemma</i>	<i>gemma</i>
Crab	<i>Aratus pisonii</i>	Arthropoda	Malacostraca	Decapoda	<i>Sesarmidae</i>	<i>Aratus</i>	<i>pisonii</i>
	<i>Armases cinereum</i>	Arthropoda	Malacostraca	Decapoda	<i>Sesarmidae</i>	<i>Armases</i>	<i>cinereum</i>
	<i>Armases reticulatum</i>	Arthropoda	Malacostraca	Decapoda	<i>Sesarmidae</i>	<i>Armases</i>	<i>reticulatum</i>
	Decapoda Megalopae spp.	Arthropoda	Malacostraca	Decapoda			Megalopae
	Decapoda Juvenile spp.	Arthropoda	Malacostraca	Decapoda			Juvenile
	<i>Panopeidae</i> spp.	Arthropoda	Malacostraca	Decapoda	<i>Panopeidae</i>		spp.
	<i>Uca</i> spp.	Arthropoda	Malacostraca	Decapoda	<i>Ocypodidae</i>	<i>Uca</i>	spp.
Decapoda spp.	Arthropoda	Malacostraca	Decapoda			spp.	
Hydrozoa	Hydrozoa spp. 1	Cnidaria	Hydrozoa				spp. 1
	Hydrozoa spp. 2	Cnidaria	Hydrozoa				spp. 2
Insect Larvae	<i>Chironomidae</i> spp. 1	Arthropoda	Insecta	Diptera	<i>Chironomidae</i>		spp. 1
	<i>Chironomidae</i> spp. 2	Arthropoda	Insecta	Diptera	<i>Chironomidae</i>		spp. 2
	Diptera spp. 1	Arthropoda	Insecta	Diptera			spp. 1
	Diptera spp. 2	Arthropoda	Insecta	Diptera			spp. 2
	<i>Gerridae</i> spp.	Arthropoda	Insecta	Hemiptera	<i>Gerridae</i>		spp.
	Odonata spp.	Arthropoda	Insecta	Odonata			spp.
	Insecta spp. 1	Arthropoda	Insecta				spp. 1
Isopod	<i>Chiridotea</i> spp. 1	Arthropoda	Malacostraca	Isopoda	<i>Chaetiliidae</i>	<i>Chiridotea</i>	spp. 1
	<i>Erichsonella attenuata</i>	Arthropoda	Malacostraca	Isopoda	<i>Idoteidae</i>	<i>Erichsonella</i>	<i>attenuata</i>
	<i>Sphaeromatidae</i> spp.	Arthropoda	Malacostraca	Isopoda	<i>Sphaeromatidae</i>		spp.
Ostracod	Ostracoda spp. 1	Arthropoda	Ostracoda				spp. 1
	Ostracoda spp. 2	Arthropoda	Ostracoda				spp. 2
	Ostracoda spp. 3	Arthropoda	Ostracoda				spp. 3

Group	Taxa ID	Phylum	Class	Order	Family	Genus	Species
Polychaete	Capitellidae spp. 1	Annelida	Polychaeta	Capitellida	Capitellidae		spp. 1
	Capitellidae spp. 2	Annelida	Polychaeta	Capitellida	Capitellidae		spp. 2
	Capitellidae spp. 3	Annelida	Polychaeta	Capitellida	Capitellidae		spp. 3
	Dipolydora socialis	Annelida	Polychaeta	Spionida	Spionidae	Dipolydora	socialis
	<i>Dipolydora</i> spp. 1	Annelida	Polychaeta	Spionida	Spionidae	<i>Dipolydora</i>	spp. 1
	<i>Hesionidae</i> spp. 1	Annelida	Polychaeta	Phyllodocida	<i>Hesionidae</i>		spp. 1
	<i>Marphysa sanguinea</i>	Annelida	Polychaeta	Eunicida	<i>Eunicidae</i>	<i>Marphysa</i>	<i>sanguinea</i>
	Nereididae spp. 1	Annelida	Polychaeta	Phyllodocida	Nereididae		spp. 1
	<i>Nereididae</i> spp. 2	Annelida	Polychaeta	Phyllodocida	<i>Nereididae</i>		spp. 2
	<i>Nereididae</i> spp. 3	Annelida	Polychaeta	Phyllodocida	<i>Nereididae</i>		spp. 3
	Orbiniidae spp. 1	Annelida	Polychaeta	Orbiniida	Orbiniidae		spp. 1
	Phyllodocidae spp. 1	Annelida	Polychaeta	Phyllodocida	Phyllodocidae		spp. 1
	<i>Phyllodocidae</i> spp. 2	Annelida	Polychaeta	Phyllodocida	<i>Phyllodocidae</i>		spp. 2
	<i>Scolelepis</i> spp. 1	Annelida	Polychaeta	Spionida	<i>Spionidae</i>	<i>Scolelepis</i>	spp. 1
	Streblospio benedicti	Annelida	Polychaeta	Spionida	Spionidae	Streblospio	benedicti
	<i>Spionidae</i> spp. 1	Annelida	Polychaeta	Spionida	<i>Spionidae</i>		spp. 1
	<i>Polychaeta</i> spp. 1	Annelida	Polychaeta				spp. 1
	<i>Polychaeta</i> spp. 2	Annelida	Polychaeta				spp. 2
	<i>Polychaeta</i> spp. 3	Annelida	Polychaeta				spp. 3
<i>Polychaeta</i> spp. 4	Annelida	Polychaeta				spp. 4	
<i>Polychaeta</i> spp. 5	Annelida	Polychaeta				spp. 5	
<i>Polychaeta</i> spp. 6	Annelida	Polychaeta				spp. 6	
Shrimp	<i>Alpheus heterochaelis</i>	Arthropoda	Malacostraca	Decapoda	<i>Alpheidae</i>	<i>Alpheus</i>	<i>heterochaelis</i>
	<i>Palaemon</i> spp.	Arthropoda	Malacostraca	Decapoda	<i>Palaemonidae</i>	<i>Palaemon</i>	spp.
Snail	Assiminea succinea	Mollusca	Gastropoda	Littorinimorpha	Assimineidae	Assiminea	succinea
	<i>Bittium varium</i>	Mollusca	Gastropoda	Caenogastropoda	<i>Cerithiidae</i>	<i>Bittium</i>	<i>varium</i>
	<i>Cerithidea</i> spp.	Mollusca	Gastropoda	Caenogastropoda	<i>Potamididae</i>	<i>Cerithidea</i>	spp.
	Littoraria irrorata	Mollusca	Gastropoda	Littorinimorpha	Littorinidae	Littoraria	irrorata
	<i>Melampus coffea</i>	Mollusca	Gastropoda	Ellobiida	<i>Ellobiidae</i>	<i>Melampus</i>	<i>coffea</i>
<i>Tritia obsoleta</i>	Mollusca	Gastropoda	Neogastropoda	<i>Nassariidae</i>	<i>Tritia</i>	<i>obsoleta</i>	
Tanaid	Leptocheilia rapax	Arthropoda	Malacostraca	Tanaidacea	Leptocheiliidae	Leptocheilia	rapax
Other	<i>Erythraeidae</i> spp. 1	Arthropoda	Arachnida	Trombidiformes	<i>Erythraeidae</i>		spp. 1
	Nematoda spp.	Nematoda					spp.
	<i>Pycnogonida</i> spp. 1	Arthropoda	Pycnogonida				spp. 1
	<i>Pycnogonida</i> spp. 2	Arthropoda	Pycnogonida				spp. 2
	<i>Turbellaria</i> spp.	Platyhelminthes	Turbellaria				Spp.

Table A3. Abundance (mean \pm SE) of the most common invertebrate taxa ($n \geq 10$ individuals overall, i.e. across all sampled sites) for each detritus treatment (*Avicennia*, *Spartina*, control) across geographic region (south, central, north) for experiment 1 along a 5° latitudinal gradient ($n = 216$ litterbags total). These values are also plotted in Fig. A2.

Taxa ID	South						Central						North					
	Control		<i>Avicennia</i>		<i>Spartina</i>		Control		<i>Avicennia</i>		<i>Spartina</i>		Control		<i>Avicennia</i>		<i>Spartina</i>	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Grandidierella bonnieroides</i>	1.28	0.35	0.89	0.25	1.00	0.31	1.42	1.42	1.54	0.91	2.17	1.29	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gammarus mucronatus</i>	0.06	0.01	0.00	0.00	0.00	0.00	0.17	0.10	2.33	1.58	1.21	0.75	0.30	0.12	0.10	0.06	0.13	0.08
<i>Capitellidae</i> spp. 1	0.00	0.00	0.39	0.16	0.06	0.06	0.46	0.19	0.83	0.35	0.71	0.32	11.57	4.75	13.73	4.30	12.23	4.19
<i>Capitellidae</i> spp. 2	0.06	0.06	0.44	0.25	0.39	0.16	0.42	0.24	0.67	0.24	1.08	0.42	0.00	0.00	0.13	0.08	0.03	0.03
<i>Capitellidae</i> spp. 3	0.06	0.06	0.17	0.09	0.00	0.00	0.17	0.10	0.46	0.23	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dipolydora socialis</i>	0.22	0.10	0.11	0.08	0.06	0.06	0.00	0.00	0.04	0.04	0.08	0.08	0.07	0.05	0.00	0.00	0.00	0.00
<i>Nereididae</i> spp. 1	0.00	0.00	0.17	0.12	0.11	0.08	0.17	0.13	0.71	0.19	0.63	0.38	0.47	0.24	1.63	0.32	1.13	0.39
<i>Orbiniidae</i> spp. 1	0.00	0.00	0.11	0.08	0.00	0.00	0.29	0.15	0.42	0.21	0.25	0.15	0.00	0.00	0.00	0.00	0.03	0.03
<i>Phyllodocidae</i> spp. 1	0.06	0.06	0.00	0.00	0.00	0.00	0.13	0.09	0.13	0.07	0.33	0.21	0.03	0.03	0.37	0.15	0.17	0.11
<i>Streblospio benedicti</i>	0.00	0.00	0.28	0.14	0.11	0.11	0.38	0.19	0.54	0.20	0.50	0.28	4.97	1.36	5.97	1.63	4.33	1.74
<i>Armases cinereum</i>	0.06	0.06	0.11	0.08	0.11	0.08	0.21	0.15	0.21	0.08	0.54	0.26	0.40	0.13	1.57	0.30	2.47	0.58
<i>Armases reticulatum</i>	0.00	0.00	0.06	0.06	0.33	0.14	0.04	0.04	0.00	0.00	0.04	0.04	0.03	0.03	0.03	0.03	0.07	0.07
Decapoda Megalopae spp.	0.06	0.06	0.00	0.00	0.33	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.06	0.10	0.07	0.17	0.08
Decapoda Juvenile spp.	0.83	0.51	0.83	0.39	1.06	0.54	0.21	0.13	0.08	0.06	0.21	0.74	2.03	0.74	2.43	0.75	2.67	0.76
<i>Panopeidae</i> spp.	0.00	0.00	0.11	0.08	0.11	0.08	0.67	0.18	0.29	0.14	0.75	0.25	0.40	0.11	1.00	0.19	1.47	0.30
<i>Uca</i> spp.	0.11	0.08	0.22	0.13	2.06	0.73	0.29	0.14	0.50	0.15	2.08	0.42	0.40	0.02	1.03	0.26	3.47	0.66
<i>Chironomidae</i> spp. 1	0.00	0.00	0.00	0.00	0.00	0.00	1.58	0.92	3.13	1.03	3.13	1.63	0.00	0.00	0.00	0.00	0.00	0.00
<i>Chironomidae</i> spp. 2	0.17	0.09	0.00	0.00	0.11	0.11	0.21	0.10	0.17	0.10	0.21	0.15	0.43	0.20	0.20	0.09	0.23	0.13
Odonata spp.	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.50	0.22	0.58	0.31	0.00	0.00	0.00	0.00	0.00	0.00
Ostracoda spp. 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.04	0.04	1.20	0.73	0.53	0.29	1.50	0.78
Ostracoda spp. 2	0.00	0.00	0.06	0.06	0.17	0.17	0.25	0.11	0.21	0.08	0.08	0.06	0.23	0.10	0.07	0.05	0.33	0.14
<i>Assminea succinea</i>	0.11	0.08	0.17	0.09	0.39	0.16	0.42	0.34	0.29	0.14	1.08	0.69	1.27	0.50	1.83	1.11	2.20	1.22
<i>Littoraria irrorata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.11	0.53	0.18	0.50	0.20
<i>Leptochelia rapax</i>	0.11	0.08	0.00	0.00	0.00	0.00	1.67	0.63	2.04	0.95	2.04	0.86	0.43	0.14	0.53	0.25	0.27	0.10
Nematoda spp. 1	0.06	0.06	0.06	0.06	0.06	0.06	0.04	0.04	0.17	0.08	0.04	0.04	0.17	0.14	0.07	0.07	0.00	0.00

Table 4. Abundance (mean \pm SE) of each taxonomic group in each detritus treatment (*Avicennia*, *Spartina*, control) across geographic region (south, central, north) for experiment 1 (mean \pm SE) along a 5° latitudinal gradient (n = 216 litterbags total). All individuals were included in taxonomic groupings. These values are also plotted in Fig. A3.

Group ID	South						Central						North					
	Control		<i>Avicennia</i>		<i>Spartina</i>		Control		<i>Avicennia</i>		<i>Spartina</i>		Control		<i>Avicennia</i>		<i>Spartina</i>	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Amphipod	1.33	0.36	0.94	0.27	1.17	0.33	1.58	1.41	3.92	2.43	3.46	1.78	0.33	0.12	0.17	0.08	0.13	0.08
Anthozoa	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.25	0.17	0.03	0.03	0.00	0.00	0.00	0.00
Bivalve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.05	0.23	0.12	0.20	0.11
Crabs	1.11	0.55	1.33	0.42	4.17	0.90	1.46	0.39	1.08	0.28	3.67	0.72	3.40	0.84	6.17	1.07	10.33	1.37
Hydrozoa	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.13	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Insect Larvae	0.17	0.09	0.11	0.11	0.11	0.11	1.92	0.91	4.17	1.24	4.04	1.85	0.47	0.21	0.33	0.14	0.30	0.15
Isopod	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.03	0.03	0.03	0.03	0.00	0.00
Ostracod	0.00	0.00	0.06	0.06	0.17	0.17	0.25	0.11	0.25	0.11	0.13	0.07	1.43	0.73	0.63	0.32	1.83	0.83
Polychaete	0.61	0.20	2.28	0.60	1.11	0.32	2.13	0.55	4.33	0.95	4.13	1.65	17.10	5.95	21.90	5.57	17.93	5.85
Shrimp	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.04	0.04	0.00	0.00	0.03	0.03	0.10	0.07
Snail	0.17	0.09	0.33	0.14	0.72	0.29	0.50	0.38	0.50	0.19	1.25	0.70	1.63	0.50	2.53	1.18	2.80	1.25
Tanaid	0.11	0.08	0.00	0.00	0.00	0.00	1.66	0.63	2.04	0.95	2.04	0.86	0.43	0.14	0.53	0.25	0.27	0.10
Other	0.11	0.08	0.06	0.06	0.06	0.06	0.04	0.04	0.42	0.17	0.75	0.46	0.23	0.14	0.07	0.07	0.03	0.03

Table A5. Analysis of deviance table for common epifaunal invertebrate taxa ($n \geq 10$ individuals overall, i.e. across all sampled sites) generalized linear mixed model (GLMM) fixed effects based on type II Wald χ^2 -tests for experiment 1. For each taxa, we fit a GLMM with the interactive effect of region (south, central, north) and detritus treatment (*Avicennia*, *Spartina*, control), with site as a random effect. All models were initially run with external detritus dry weigh biomass included as a covariate. In cases where this covariate was not significant, the model was re-run with the covariate excluded, and are represented by dashes in the table. Bold values represent significance at a Bonferroni adjusted p-value of $\alpha = 0.0028$. We fit all taxa models with Poisson distributions, except for *Capitellidae* spp. 1, *Assiminea succinea*, and *Streblospio benedicti*, which necessitated negative binomial distributions to account for data overdispersion. Most taxa did not have enough data points for models to properly converge with the interactive effect included, so we ran models with the additive effects of region and detritus type for these species. Seven of the most common invertebrate species (*Capitellidae* spp. 3, *Grandidierella bonnieroides*, *Littoraria irrorata*, Odonata spp., *Chironomidae* spp. 1, Ostracod spp. 1, Decapod megalopae) did not have enough data points for additive models to properly converge, so we excluded these groups. Data used in these analyses is summarized in Fig. A2 and Table A3.

Fixed effects	a) Phyllocidae spp. 1			b) Orbiniidae spp. 1			c) Capitellidae spp. 1			d) Capitellidae spp. 2			e) <i>Nereididae</i> spp. 1		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Region	2.97	2	0.23	5.1	2	0.08	20.23	2	<0.0001	23.04	2	<0.0001	12.18	2	0.0023
Detritus	4.21	2	0.12	1.88	2	0.39	4.87	2	0.087	10.88	2	0.0043	25.8	2	<0.0001
Region×Detritus	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Block	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
External detritus	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fixed effects	f) <i>Streblospio benedicti</i>			g) <i>Leptochelia rapax</i>			h) <i>Gammarus mucronatus</i>			i) <i>Armases cinereum</i>			j) <i>Armases reticulatum</i>		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Region	34.01	2	<0.0001	7.16	2	0.028	5.81	2	0.055	18.4	2	0.0001	3.2	2	0.2
Detritus	2.85	2	0.24	0.82	2	0.66	36.92	2	<0.0001	36.65	2	<0.0001	6.26	2	0.044
Region×Detritus	--	--	--	--	--	--	--	--	--	4.28	4	0.37	--	--	--
Block	--	--	--	--	--	--	20.87	1	<0.0001	--	--	--	--	--	--
External detritus	--	--	--	--	--	--	37.64	1	<0.0001	--	--	--	--	--	--
Fixed effects	k) Decapod juvenile			l) Panopeidae spp.			m) <i>Uca</i> spp.			n) <i>Assimineia succinea</i>			o) Chironomidae spp. 2		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Region	5.079	2	0.79	5.07	2	0.079	2.88	2	0.24	2.52	2	0.28	2.65	2	0.27
Detritus	1.4	2	0.5	2.83	2	0.24	141.7	2	<0.0001	5.2	2	0.074	4	2	0.14
Region×Detritus	1.63	4	0.8	1.8	4	0.77	4.52	4	0.34	6.62	4	0.9	--	--	--
Block	--	--	--	--	--	--	9.35	1	0.0022	--	--	--	--	--	--
External detritus	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fixed effects	p) Ostracod spp. 2			q) Nematode spp.			r) <i>Dipolydora socialis</i>								
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value						
Region	2.51	2	0.29	0.18	2	0.91	4.62	2	0.099						
Detritus	2.11	2	0.35	2.75	2	0.25	1.44	2	0.49						
Region×Detritus	--	--	--	--	--	--	--	--	--						
Block	--	--	--	--	--	--	--	--	--						
External detritus	--	--	--	--	--	--	--	--	--						

Table A6. Analysis of deviance table for epifaunal invertebrate taxonomic group generalized linear mixed model (GLMM) fixed effects based on type II Wald χ^2 -tests for experiment 1. All individuals were included in taxonomic groupings. For each taxonomic group, we fit a GLMM with the interactive effect of region (south, central, north) and detritus treatment (*Avicennia*, *Spartina*, control), with site as a random effect. All models were initially run with external detritus dry weigh biomass included as a covariate. In cases where this covariate was not significant, the model was re-run with the covariate excluded, and are represented by dashes in the table. Bold values represent significance at a Bonferroni adjusted p-value of $\alpha = 0.0042$. We fit all with taxonomic group models with Poisson distributions, except for polychaetes, amphipods, insect larvae, tanaids, ostracods, snails and total individuals, which necessitated negative binomial distributions to account for data overdispersion. Three taxonomic groups (ostracod, tanaid, and isopod) did not have enough data points for models to properly converge with the interactive effect included, so we ran models with the additive effects of region and detritus type for these groups. Four taxonomic groups (bivalve, anthozoa, shrimp and hydrozoa) did not have enough data points for additive models to properly converge, so we excluded these groups. Data used in these analyses is summarized in Fig. A3 and Table A4.

Fixed effects	a) Total individuals			b) Taxonomic richness			c) Amphipod			d) Crab		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Region	50.05	2	< 0.0001	20.23	2	< 0.0001	3.24	2	0.2	6.32	2	0.042
Detritus	23.72	2	< 0.0001	27.58	2	< 0.0001	7.47	2	0.024	170.44	2	< 0.0001
Region×Detritus	2.38	4	0.67	3.68	4	0.45	29.44	4	0.00041	16.02	4	0.0030
Block	--	--	--	--	--	--	--	--	--	--	--	--
External detritus	--	--	--	--	--	--	--	--	--	--	--	--

Fixed effects	e) Insect Larvae			f) Isopod			g) Ostracod			h) Polychaete		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Region	11.68	2	0.0029	0.15	2	0.93	10.55	2	0.0051	15.62	2	0.0004
Detritus	11.92	2	0.0026	0.91	2	0.63	3.05	2	0.22	11.89	2	0.0026
Region×Detritus	8.25	4	0.083	--	--	--	--	--	--	2.42	4	0.66
Block	--	--	--	--	--	--	--	--	--	--	--	--
External detritus	15.4	1	< 0.0001	--	--	--	--	--	--	--	--	--

Fixed effects	i) Snail			j) Tanaid			k) Other		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Region	2.91	2	0.23	7.16	2	0.028	1.97	2	0.37
Detritus	5.37	2	0.068	0.82	2	0.66	2.61	2	0.27
Region×Detritus	1.91	4	0.75	--	--	--	11.98	4	0.018
Block	--	--	--	--	--	--	9.45	1	0.0021
External detritus	--	--	--	--	--	--	--	--	--

Table A7. Taxa list and classification for experiment 2, with taxa identified to the lowest possible taxonomic level. Bolded species represent the most common invertebrate taxa ($n \geq 10$ individuals overall, i.e. across all blocks). Taxa and taxa group names correspond with Fig. A4 and Fig. A5

Group ID	Taxa ID	Phylum	Class	Order	Family	Genus	Species
Amphipod	Amphipoda spp. 1	Arthropoda	Malacostraca	Amphipoda			spp. 1
	<i>Gammarus mucronatus</i>	Arthropoda	Malacostraca	Amphipoda	Gammaridae	Gammarus	<i>mucronatus</i>
Anthozoa	<i>Aiptasia pallida</i>	Cnidaria	Anthozoa	Actiniaria	Aiptasiidae	Exaiptasia	<i>pallida</i>
	<i>Actiniaria</i> spp. 1	Cnidaria	Anthozoa	Actiniaria			spp. 1
Bivalve	<i>Geukensia demissa</i>	Mollusca	Bivalvia	Mytilida	<i>Mytilidae</i>	<i>Geukensia</i>	<i>demissa</i>
Copepod	<i>Hexanauplia</i> spp. 1	Arthropoda	Hexanauplia				spp. 1
	<i>Hexanauplia</i> spp. 2	Arthropoda	Hexanauplia				spp. 2
	<i>Hexanauplia</i> spp. 3	Arthropoda	Hexanauplia				spp. 3
Crabs	<i>Armases cinereum</i>	Arthropoda	Malacostraca	Decapoda	<i>Sesarmidae</i>	<i>Armases</i>	<i>cinereum</i>
	<i>Armases reticulatum</i>	Arthropoda	Malacostraca	Decapoda	<i>Sesarmidae</i>	<i>Armases</i>	<i>reticulatum</i>
	<i>Uca</i> spp.	Arthropoda	Malacostraca	Decapoda	<i>Ocypodidae</i>	<i>Uca</i>	spp.
	<i>Paguridae</i> spp.	Arthropoda	Malacostraca	Decapoda	<i>Paguridae</i>		spp.
	Decapod Megalopae spp.	Arthropoda	Malacostraca	Decapoda			Megalopae
	Decapod Juvenile spp.	Arthropoda	Malacostraca	Decapoda			Juvenile
	Decapod spp.	Arthropoda	Malacostraca	Decapoda			spp.
<i>Panopeidae</i> spp.	Arthropoda	Malacostraca	Decapoda	<i>Panopeidae</i>		spp.	
Ostracod	Ostracoda spp. 1	Arthropoda	Ostracoda				spp. 1
	Ostracoda spp. 2	Arthropoda	Ostracoda				spp. 2
Insect larvae	Diptera spp. 1	Arthropoda	Insecta	Diptera			spp. 1
	Diptera spp. 2	Arthropoda	Insecta	Diptera			spp. 2
	Hymenoptera spp.	Arthropoda	Insecta	Hymenoptera			spp. 1
	<i>Chironomidae</i> spp. 2	Arthropoda	Insecta	Diptera	<i>Chironomidae</i>		spp. 2
Isopod	<i>Edotia triloba</i>	Arthropoda	Malacostraca	Isopoda	<i>Idoteidae</i>	<i>Edotia</i>	<i>triloba</i>
Nemertea	Nemertea spp. 1	Nemertea					spp. 1
	Nemertea spp. 2	Nemertea					spp. 2
Polychaete	<i>Capitellidae</i> spp. 1	Annelida	Polychaeta	Capitellida	<i>Capitellidae</i>		spp. 1
	<i>Capitellidae</i> spp. 2	Annelida	Polychaeta	Capitellida	<i>Capitellidae</i>		spp. 2
	<i>Marphysa sanguinea</i>	Annelida	Polychaeta	Eunicida	<i>Eunicidae</i>	<i>Marphysa</i>	<i>sanguinea</i>
	<i>Nereididae</i> spp. 1	Annelida	Polychaeta	Phyllodocida	<i>Nereididae</i>		spp. 1
	<i>Phyllodocidae</i> spp. 1	Annelida	Polychaeta	Phyllodocida	<i>Phyllodocidae</i>		spp. 1
	<i>Phyllodocidae</i> spp. 2	Annelida	Polychaeta	Phyllodocida	<i>Phyllodocidae</i>		spp. 2
	<i>Streblospio benedicti</i>	Annelida	Polychaeta	Spionida	<i>Spionidae</i>	<i>Streblospio</i>	<i>benedicti</i>
Snail	<i>Melampus coffea</i>	Mollusca	Gastropoda	Ellobiida	<i>Ellobiidae</i>	<i>Melampus</i>	<i>coffea</i>
	<i>Littoraria irrorata</i>	Mollusca	Gastropoda	Littorinimorpha	<i>Littorinidae</i>	<i>Littoraria</i>	<i>irrorata</i>
	<i>Assiminea succinea</i>	Mollusca	Gastropoda	Littorinimorpha	<i>Assimineidae</i>	<i>Assiminea</i>	<i>succinea</i>
Tanaid	<i>Leptocheilia rapax</i>	Arthropoda	Malacostraca	Tanaidacea	<i>Leptocheiliidae</i>	<i>Leptocheilia</i>	<i>rapax</i>

Table A8. Abundance (mean \pm SE) of the most common invertebrate taxa ($n \geq 10$ individuals overall, i.e. across all blocks) for each detritus treatment (*Avicennia*, *Avicennia* mimic, *Spartina*, *Spartina* mimic, control) across habitat type (mangrove, salt marsh) for experiment 2 at a single mixed salt marsh-mangrove site ($n = 100$ litterbags total). These values are also plotted in Fig. A4.

Taxa ID	Mangrove										Salt marsh									
	Control		<i>Avicennia</i>		<i>Avicennia</i> mimic		<i>Spartina</i>		<i>Spartina</i> Mimic		Control		<i>Avicennia</i>		<i>Avicennia</i> mimic		<i>Spartina</i>		<i>Spartina</i> Mimic	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Gammarus mucronatus</i>	0.00	0.00	0.10	0.10	0.50	0.31	0.30	0.15	0.20	0.13	0.30	0.21	0.20	0.13	0.40	0.22	0.20	0.13	0.70	0.33
<i>Capitellidae</i> spp. 1	0.60	0.27	0.70	0.15	0.50	0.17	0.40	0.22	0.50	0.17	0.70	0.21	0.30	0.15	0.10	0.10	0.40	0.31	0.20	0.13
<i>Nereididae</i> spp. 1	0.50	0.27	1.40	0.34	0.90	0.35	0.50	0.40	0.60	0.31	0.30	0.15	0.80	0.33	0.20	0.20	0.70	0.26	0.10	0.10
<i>Aiptasia pallida</i>	0.00	0.00	0.00	0.00	0.50	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.13	0.00	0.00	0.50	0.27	0.10	0.10
<i>Armases cinereum</i>	0.90	0.43	1.90	0.75	2.50	0.52	4.90	1.29	4.60	1.04	0.60	0.31	1.70	0.33	1.40	0.45	6.00	1.05	7.80	1.29
<i>Uca</i> spp.	0.20	0.13	0.70	0.33	0.30	0.15	2.50	0.67	3.10	0.77	0.20	0.13	0.70	0.30	1.50	0.40	6.00	0.70	4.90	1.00
Decapod Megalopae spp.	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.30	0.15	0.20	0.13	0.10	0.10	0.30	0.15	0.20	0.13	0.20	0.13
Decapod Juvenile spp.	0.30	0.15	1.20	0.49	1.40	0.56	1.10	0.23	2.10	0.57	0.90	0.35	1.50	0.76	1.80	0.55	1.80	0.47	1.60	0.40
<i>Panopeidae</i> spp.	0.40	0.22	1.00	0.26	0.40	0.02	0.70	0.26	0.60	0.22	0.00	0.00	0.30	0.15	0.30	0.15	0.40	0.31	0.50	0.22
<i>Chironomidae</i> spp. 2	0.10	0.10	0.20	0.13	0.10	0.10	0.10	0.10	0.40	0.16	0.10	0.10	0.50	0.17	0.10	0.10	0.10	0.10	0.10	0.10
<i>Assiminea succinea</i>	0.40	0.16	0.00	0.00	0.50	0.22	0.00	0.00	0.30	0.21	1.80	0.90	1.20	0.76	0.50	0.22	0.20	0.13	0.10	0.10

Table A9. Abundance (mean \pm SE) of each taxonomic group for each detritus treatment (*Avicennia*, *Avicennia* mimic, *Spartina*, *Spartina* mimic, control) across habitat type (mangrove, salt marsh) for experiment 2 at a single mixed salt marsh-mangrove site (n = 100 litterbags total). All individuals were included in taxonomic groupings. These values are also plotted in Fig. A5.

Group ID	Mangrove										Saltmarsh									
	Control		<i>Avicennia</i>		<i>Avicennia</i> mimic		<i>Spartina</i>		<i>Spartina</i> Mimic		Control		<i>Avicennia</i>		<i>Avicennia</i> mimic		<i>Spartina</i>		<i>Spartina</i> Mimic	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Amphipod	0.00	0.00	0.10	0.10	0.50	0.31	0.30	0.15	0.20	0.13	0.30	0.21	0.30	0.15	0.40	0.22	0.20	0.13	0.70	0.33
Anthozoa	0.00	0.00	0.10	0.10	0.10	0.10	0.50	0.22	0.00	0.00	0.00	0.00	0.20	0.13	0.00	0.00	0.90	0.60	0.10	0.10
Bivalve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.00	0.00
Copepod	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.00	0.00	0.10	0.10	0.20	0.13	0.10	0.10	0.00	0.00	0.10	0.10
Crabs	2.00	0.45	4.80	0.81	5.10	0.60	10.20	1.47	11.10	1.45	1.90	0.48	4.30	1.04	5.30	0.58	14.40	0.95	15.00	1.11
Insect																				
Larvae	0.20	0.13	0.20	0.13	0.20	0.20	0.10	0.10	0.50	0.17	0.20	0.13	0.50	0.17	0.10	0.10	0.10	0.10	0.20	0.13
Isopod	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.00	0.00
Nemertea	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
Ostracod	0.20	0.13	0.00	0.00	0.20	0.20	0.30	0.21	0.10	0.10	0.10	0.10	0.30	0.21	0.00	0.00	0.40	0.22	0.00	0.00
Polychaete	1.40	0.60	2.10	0.43	1.50	0.37	1.00	0.42	1.20	0.39	1.20	0.29	1.20	0.36	0.40	0.22	1.10	0.50	0.60	0.16
Snail	0.50	0.22	0.10	0.10	0.70	0.30	0.20	0.13	0.30	0.21	1.90	0.91	1.20	0.76	0.60	0.22	0.20	0.13	0.10	0.10
Tanaid	0.10	0.10	0.30	0.30	0.00	0.00	0.10	0.10	0.10	0.10	0.20	0.13	0.10	0.10	0.20	0.13	0.00	0.00	0.00	0.00

Table 10. Analysis of deviance table for the most common epifaunal invertebrate taxa ($n \geq 10$ individuals overall, i.e. across all blocks) generalized linear model (GLM) fixed effects based on type II Wald χ^2 -tests for experiment 2. For each species, we fit a GLM with the interactive effect of detritus treatment (*Avicennia*, *Avicennia* mimic, *Spartina*, *Spartina* mimic, control) and habitat type (salt marsh, mangrove), using Poisson distributions for all models. All models were initially run with external detritus dry weigh biomass included as a covariate. In cases where this covariate was not significant, the model was re-run with the covariate excluded, and are represented by dashes in the table. Bold values represent significance at a Bonferroni adjusted p-value of $\alpha = 0.0045$. Data used in these analyses is summarized in Fig. A4 and Table A8.

Fixed effects	a) Capitellidae spp. 1			b) Nereididae spp. 1			c) <i>Gammarus mucronatus</i>			d) <i>Assiminea succinea</i>		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Habitat	2.29	1	0.13	5.48	1	0.019	1.71	1	0.19	14.21	1	0.0002
Detritus	3.38	4	0.5	10.72	4	0.03	6.42	4	0.17	25.3	4	<0.0001
Habitat×Detritus	3.67	4	0.45	5.79	4	0.22	6.05	4	0.2	15.88	4	0.0032
Block	--	--	--	--	--	--	--	--	--	70.52	9	<0.0001
External detritus	--	--	--	--	--	--	--	--	--	--	--	--

Fixed effects	e) <i>Armases cinereum</i>			f) <i>Uca</i> spp.			g) Decapod megalopae			h) Decapod juvenile		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Habitat	2.26	1	0.13	21.4	1	<0.0001	2.66	1	0.1	1.65	1	0.2
Detritus	150.49	4	<0.0001	160.48	4	<0.0001	3.22	4	0.52	14.84	4	0.005
Habitat×Detritus	11.07	4	0.026	6.27	4	0.21	6.2	4	0.18	4.71	4	0.32
Block	31.323	9	<0.0001	--	--	--	--	--	--	30.14	9	0.00042
External detritus	--	--	--	--	--	--	--	--	--	--	--	--

Fixed effects	i) Panopeidae spp.			j) <i>Aiptasia pallida</i>			k) Chironomidae spp. 1		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Habitat	5.68	1	0.017	0.29	1	0.59	0	1	1
Detritus	6.36	4	0.17	23.81	4	0.0001	5.54	4	0.24
Habitat×Detritus	4.9	4	0.3	1.44	4	0.84	3.26	4	0.52
Block	--	--	--	--	--	--	--	--	--
External detritus	--	--	--	--	--	--	--	--	--

Table A11. Analysis of deviance table for epifaunal invertebrate taxonomic group generalized linear model (GLM) fixed effects based on type II Wald χ^2 -tests for experiment 2. All individuals were included in taxonomic groupings. For each taxonomic group, we fit a GLM with the interactive effect of detritus treatment (*Avicennia*, *Avicennia* mimic, *Spartina*, *Spartina* mimic, control) and habitat type (salt marsh, mangrove). We fit all with taxonomic group models with Poisson distributions. Two taxonomic groups (bivalves and isopods) did not have enough data points for models to properly converge, so we excluded these groups. All models were initially run with external detritus dry weigh biomass included as a covariate. In cases where this covariate was not significant, the model was re-run with the covariate excluded, and are represented by dashes in the table. Bold values represent significance at a Bonferroni adjusted p-value of $\alpha = 0.0042$. Data used in these analyses is summarized in Fig. A5 and Table A9.

Fixed effects	a) Total individuals			b) Taxonomic richness			c) Amphipod			d) Anthozoa		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Habitat	7.89	1	0.005	0.0021	1	0.96	2.16	1	0.25	1.33	1	0.25
Detritus	164.026	4	<0.0001	7.43	4	0.11	5.37	4	0.25	29.76	4	<0.0001
Habitat×Detritus	6.41	4	0.17	1.44	4	0.84	6.3	4	0.18	2.94	4	0.57
Block	--	--	--	--	--	--	--	--	--	25.54	9	0.0024
External detritus	--	--	--	--	--	--	--	--	--	--	--	--

Fixed effects	e) Copepod			f) Crab			g) Insect Larvae			h) Nemertea		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Habitat	0.83	1	0.25	8.02	1	0.0046	0.044	1	0.83	0.34	1	0.56
Detritus	0.83	4	0.93	278.2	4	<0.0001	4.74	4	0.32	5.84	4	0.21
Habitat×Detritus	5.6	4	0.23	5.38	4	0.25	2.95	4	0.56	1.047	4	0.9
Block	--	--	--	--	--	--	--	--	--	--	--	--
External detritus	7.71	1	0.0055	--	--	--	--	--	--	--	--	--

Fixed effects	i) Ostracod			j) Polychaete			k) Snail			l) Tanaid		
	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value	χ^2	df	p value
Habitat	0	1	1	6.29	1	0.012	8.56	1	0.0034	0.091	1	0.76
Detritus	5.98	4	0.2	6.26	4	0.18	23.79	4	<0.0001	3.11	4	0.54
Habitat×Detritus	8.8	4	0.066	5.22	4	0.27	12.25	4	0.016	6.84	4	0.14
Block	--	--	--	--	--	--	77.15	9	<0.0001	--	--	--
External detritus	--	--	--	--	--	--	--	--	--	--	--	--