

## **Online supplementary S1:**

Effective fetch at the 13 different sites

<b>Location</b>	<b>Area</b>	<b>Exposer</b>
Gilbert Fraser	Outer	0.40
Leeuwin	Outer	0.16
Chidley Point	Outer	0.35
Freshwater Bay	Outer	3.49
Mills Point	Inner	4.97
Matilda Bay	Inner	2.60
Como	Inner	4.88
Point Resolution	Central	1.15
J.H Abrahams	Central	2.04
Point Walter	Central	2.63
Charles Court	Central	4.06
Heathcote	Central	3.89
Jeff Joseph	Central	3.32

## **Online supplementary S2:**

Factorial ANOVA results of shell-size difference between *habitats*, *water depth* and different *salinity* regions with *wave exposure* as co-variate

### **Shell type: Bat-Gra+**

---

Shell dimension ~ Habitat + Salinity + Depth + Wave exposure

---

	Df	SS	MS	F value	Pr(>F)
Habitat	1	0.3	0.3047	0.378	0.539
Salinity	2	1.4	0.6992	0.868	0.420
Depth	1	0.0	0.0472	0.059	0.809
Wave exposure	1	0.1	0.0597	0.074	0.785
Residuals	559	450.1	0.8052		

---

### **Shell type: Bat-Gra-**

---

Shell dimension ~ Habitat + Salinity + Depth + Wave exposure

---

	Df	SS	MS	F value	Pr(>F)
Habitat	1	1.4	1.386	0.453	0.501
Salinity	2	8.3	4.126	1.347	0.261
Depth	1	0.4	0.412	0.134	0.714
Wave exposure	1	0.5	0.455	0.149	0.700
Residuals	654	2002.7	3.062		

---

### **Shell type: Bat-Small**

---

Shell dimension ~ Habitat + Salinity + Depth + Wave exposure

---

	Df	SS	MS	F value	Pr(>F)
Habitat	1	1.0	1.025	0.444	0.5064
Salinity	1	5.4	5.382	2.331	0.1291
Depth	1	11.1	11.123	4.817	0.0798
Wave exposure	1	0.7	0.713	0.309	0.5794
Residuals	141	325.6	2.309		

---

---

**Shell type: Bat-Hermit**

---

Shell dimension ~ Habitat + Salinity + Depth + Wave exposure

---

	Df	SS	MS	F value	Pr(>F)
Habitat	1	3.4	3.354	1.077	0.2998
Salinity	2	14.6	7.315	2.349	0.0965
Depth	1	3.2	3.194	1.026	0.3116
Wave exposure	1	1.6	1.622	0.521	0.4708
Residuals	484	1507.0	3.114		

---

**Shell type: Bat-Empty**

---

Shell dimension ~ Habitat + Salinity + Depth + Wave exposure

---

	Df	SS	MS	F value	Pr(>F)
Habitat	1	0.4	0.446	0.138	0.711
Salinity	2	4.1	2.033	0.628	0.534
Depth	1	0.5	0.508	0.157	0.692
Wave exposure	1	3.2	3.246	1.003	0.317
Residuals	485	1569.4	3.236		

---

**Shell type: Bed**

---

Shell dimension ~ Habitat + Salinity + Depth + Wave exposure

---

	Df	SS	MS	F value	Pr(>F)
Habitat	1	0.3	0.3047	0.378	0.539
Salinity	2	1.4	0.6992	0.868	0.420
Depth	1	0.0	0.0472	0.059	0.809
Wave exposure	1	0.1	0.0597	0.074	0.785
Residuals	559	450.1	0.8052		

---

**Shell type: Nas**

---

Shell dimension ~ Habitat + Salinity + Depth + Wave exposure

---

	Df	SS	MS	F value	Pr(>F)
--	----	----	----	---------	--------

---

Habitat	1	0.3	0.3047	0.378	0.539
Salinity	2	1.4	0.6992	0.868	0.420
Depth	1	0.0	0.0472	0.059	0.809
Wave exposure	1	0.1	0.0597	0.074	0.785
Residuals	559	450.1	0.8052		

### **Online supplementary S3:**

Mean length (mm), width (mm), shell surface (cm<sup>2</sup>) and shell dimension (mm) of the three gastropods living in the Swan River Estuary. Shell surface calculated after Thomsen et al. (2010). *B. australis* was found to be significantly larger than *B. paiva* and *N. pauperatus* respectively.

<b>Snail species</b>	<b>Length (mm)</b>	<b>Width (mm)</b>	<b>Shell dimension (mm<sup>2</sup>)</b>	<b>P-value (shell dimension)</b>	<b>Shell area (cm<sup>2</sup>)</b>
<i>B. australis</i> (n=50)	29.5 ± 7.76	13.23 ± 2.13	1.63 ± 0.17	Bat - Nas < 0.001	6.36
<i>B. paiva</i> (n=50)	21.8 ± 3.03	11.54 ± 1.93	1.41 ± 0.15	Bed - Bat < 0.001	4.17
<i>N. pauperatus</i> (n=50)	9.8 ± 1.13	5.03 ± 0.76	0.66 ± 0.10	Bed - Nas < 0.001	0.73

## **Online supplementary S4:**

Final model: *Ralfsia* sp. abundance ~ Shell type + Salinity + Wave exposure

	Df	Deviance	AIC	LRT	Pr (> Chi)
<none>		1960.8	12392		
Shell type	6	2012.3	12431	51.503	2.348 <sup>-9</sup>
Salinity	2	2006.3	12433	45.586	1.262 <sup>-10</sup>
Wave exposure	1	967.0	12396	6.222	0.01262

Deviance Residuals:

Min	1Q	Median	3Q	Max
-1.00443	-0.87540	-0.82689	-0.03293	1.93470

Coefficients:

	Estimate	Std. Error	z value	Pr (>  z )
(Intercept)	0.8652	0.1846	4.688	2.76 <sup>-06</sup>
Shell type (Bat-Gra+)	0.6309	0.2133	2.957	0.003102
Shell type (Bat-Gra-)	0.4349	0.1993	2.183	0.029058
Shell type (Bat-Hermit)	0.3702	0.2119	1.746	0.080728
Shell type (Bat-Small)	-1.1482	0.3230	-3.555	0.000378
Shell type (Bed)	-0.7531	0.2263	-3.328	0.000874
Shell type (Nas)	0.2379	0.2050	1.160	0.245999
Salinity (Mid)	0.4472	0.1606	2.784	0.005366
Salinity (West)	1.2275	0.1895	6.476	9.41 <sup>-11</sup>
Wave exposure (Protected)	0.3471	0.1321	2.628	0.008584

## Online supplementary S5:

Final model: *Membranipora* sp. abundance ~ Shell type + Salinity + Wave exposure

	Df	Deviance	AIC	LRT	Pr (> Chi)
<none>		555.15	3809.9		
Shell type	6	596.12	3838.9	40.974	2.93 <sup>-7</sup>
Salinity	2	581.89	3832.7	26.740	1.56 <sup>-6</sup>
Wave exposure	1	568.77	3821.5	13.621	0.0002237

Deviance Residuals:

Min	1Q	Median	3Q	Max
-0.5046	-0.4405	-0.3918	-0.3215	2.1751

Coefficients:

	Estimate	Std. Error	z value	Pr (>  z )
(Intercept)	-0.2539	0.3969	-0.640	0.5224
Shell type (Bat-Gra+)	0.2610	0.4592	0.568	0.5698
Shell type (Bat-Gra-)	0.1302	0.4286	0.304	0.7612
Shell type (Bat-Hermit)	1.1478	0.4543	2.527	0.0115
Shell type (Bat-Small)	-1.3429	0.7151	-1.878	0.0604
Shell type (Bed)	0.7068	0.4823	1.465	0.1428
Shell type (Nas)	-1.7873	0.4553	-3.926	8.65 <sup>-5</sup>
Salinity (Mid)	1.5086	0.3463	4.356	1.32 <sup>-5</sup>
Salinity (West)	0.1771	0.4127	0.429	0.6678
Wave exposure (Protected)	-1.3459	0.2866	-4.696	2.65 <sup>-6</sup>