

## Parrotfish functional morphology and bioerosion on SW Atlantic reefs

Nicole Tiburcio Lellys, Rodrigo Leão de Moura, Roberta Martini Bonaldo, Ronaldo Bastos Francini-Filho, Fernando Zaniolo Gibran\*

\*Corresponding author: fernando.gibran@ufabc.edu.br

Marine Ecology Progress Series 629: 149–163 (2019)

---

### Supplement

Table S1. Contribution of each morphometric and osteological attribute (vector loadings) to the 2 first axes of the Linear Discriminant Analysis ordinations (LDA; see Figs. 4, 5). Fig. 4: 3 parrotfish species (*Scarus trispinosus*, *Scarus zelindae* and *Sparisoma amplum*) and 2 body size categories or phases; Fig. 5: 6 size classes of *Scarus trispinosus*

Attributes	Fig. 4 Parrotfish species (size categories)		Fig. 5 <i>Scarus trispinosus</i> (size classes)	
	LD1	LD2	LD1	LD2
Mouth width	0.093	0.277	0.232	0.171
Mouth height	0.118	-0.260	0.076	-0.109
Head width	0.267	0.366	0.083	0.078
Head height	-0.720	0.690	0.785	-0.775
Head length	-0.261	-0.538	-0.251	-0.427
Premaxilla	2.755	0.161	3.339	0.243
Maxilla	2.238	-0.646	1.984	2.253
Dentary	-2.750	0.858	0.967	-1.685
Articular	-0.915	-2.283	-3.126	3.595
Hyomandibular	-0.228	0.584	-0.902	-1.511
Suspensorium	-2.611	0.282	-2.597	-3.696
Operculum	0.558	1.494	-	-

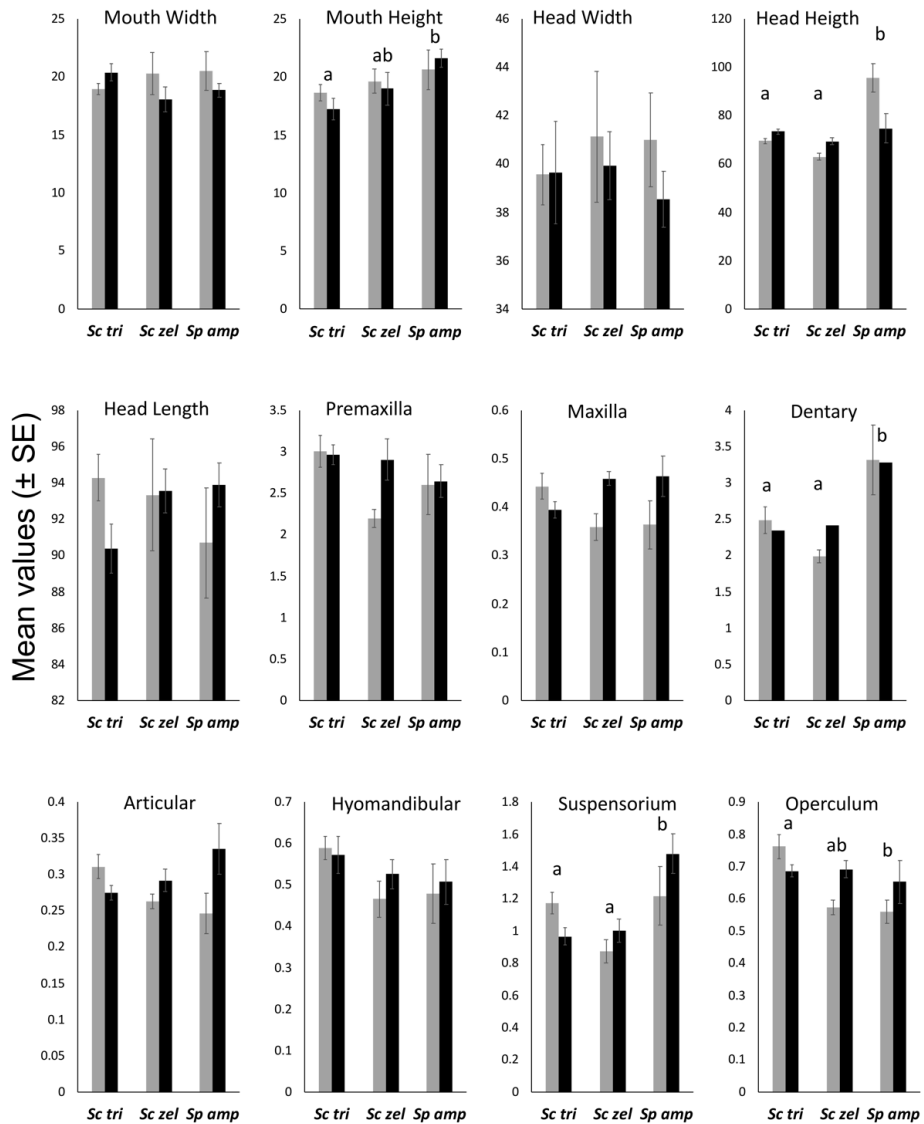


Fig. S1. Means ( $\pm$  SE) of 5 morphometric (mm) and 7 osteological (g) attributes for small (gray bars) and large (black bars) (as defined in text Section 2.2) *Scarus trispinosus* (*Sc tri*), *Scarus zelindae* (*Sc zel*) and *Sparisoma amplum* (*Sp amp*). Species with the same lowercase letters indicate similar groups (Tukey *post hoc*,  $p > 0.05$ )

Table S2. ANCOVA for body size (total length) of 3 parrotfish species (*Scarus trispinosus*, *Scarus zelindae* and *Sparisoma amplum*) on 12 ecomorphological attributes. Bold: significant differences ( $p < 0.05$ )

Source	<i>df</i>	MS	F	p
Mouth width				
Species	2	0.008	2.156	0.124
Size	1	1.716	471.258	<b>&lt;0.001</b>
Species x Size	2	0.009	2.424	0.097
Residuals	62	0.004		
Mouth height				
Species	2	0.001	0.220	0.803
Size	1	0.460	74.222	<b>&lt;0.001</b>
Species x Size	2	0.001	0.161	0.851
Residuals	62	0.006		
Head width				
Species	2	0.003	0.758	0.473
Size	1	1.552	337.281	<b>&lt;0.001</b>
Species x Size	2	0.004	0.812	0.449
Residuals	62	0.005		
Head height				
Species	2	0.056	4.429	<b>0.016</b>
Size	1	1.058	83.834	<b>&lt;0.001</b>
Species x Size	2	0.055	4.391	<b>0.016</b>
Residuals	62	0.013		
Head length				
Species	2	0.000	0.010	0.990
Size	1	1.090	1376.531	<b>&lt;0.001</b>
Species x Size	2	0.000	0.052	0.949
Residuals	62	0.001		
Premaxilla				
Species	2	0.101	12.937	<b>&lt;0.001</b>
Size	1	14.920	1906.007	<b>&lt;0.001</b>
Species x Size	2	0.112	14.297	<b>&lt;0.001</b>
Residuals	62	0.008		
Maxilla				
Species	2	0.027	2.532	0.088
Size	1	13.821	1298.005	<b>&lt;0.001</b>
Species x Size	2	0.029	2.764	0.071
Residuals	62	0.011		
Dentary				
Species	2	0.106	13.094	<b>&lt;0.001</b>
Size	1	14.719	1820.407	<b>&lt;0.001</b>
Species x Size	2	0.096	11.878	<b>&lt;0.001</b>
Residuals	62	0.008		
Articular				

Species	2	0.003	0.353	0.704
Size	1	12.381	1612.311	<b>&lt;0.001</b>
Species x Size	2	0.003	0.423	<b>0.657</b>
Residuals	62	0.008		
Hyomandibular				
Species	2	0.031	3.576	<b>0.034</b>
Size	1	10.714	1242.324	<b>&lt;0.001</b>
Species x Size	2	0.038	4.444	<b>0.016</b>
Residuals	62	0.009		
Suspensorium				
Species	2	0.037	3.063	0.054
Size	1	13.094	1096.315	<b>&lt;0.001</b>
Species x Size	2	0.032	2.669	0.077
Residuals	62	0.012		
Operculum				
Species	2	0.017	2.295	0.109
Size	1	11.495	1560.706	<b>&lt;0.001</b>
Species x Size	2	0.022	2.916	0.062
Residuals	62	0.007		

---