

Spatial distribution, microhabitat association, dependence to live corals, and habitat partitioning among five grouper species (family Epinephelidae) in an Okinawan coral reef

メタデータ	言語: English 出版者: Springer Nature 公開日: 2025-10-21 キーワード: Spatial distribution; Microhabitat association; Grouper; Live coral; Habitat partitioning; Coral reef 作成者: 名波, 敦 メールアドレス: 所属:
URL	https://fra.repo.nii.ac.jp/records/2015637

Table 1. Average density of six size classes of 11 surgeonfish species at the 62 study sites and results of generalized liner model (GLM) to examine the significant difference in fish density between outer reefs and inner reefs. N.S.: No-significant difference.

*: GLM was not performed due to no fish individuals at inner reefs. **: GLM was not performed due to no fish individuals at outer reefs.

Fish species	Functional group for foraging	Size class	Average density per 500m ² ± standard deviation		z-value	Pr (> z)	Results of GLM
			Exposed reef (n = 28)	Inner reef (n = 34)			
<i>Ctenochaetus striatus</i>	Brusher	≤10 cm	0.79 ± 1.07	0.26 ± 0.64	-2.194	0.0282	Exposed > Inner
		11-15 cm	6.74 ± 7.35	0.60 ± 1.41	-5.668	< 0.0001	Exposed > Inner
		16-20cm	5.27 ± 5.63	0.44 ± 1.22	-5.140	< 0.0001	Exposed > Inner
		21-25cm	0.98 ± 1.47	0.09 ± 0.30	-3.834	0.0001	Exposed > Inner
<i>C. binotatus</i>	Brusher	≤10 cm	0.65 ± 1.49	0.56 ± 2.20	-0.203	0.8400	N.S.
		11-15 cm	1.30 ± 2.45	0.74 ± 2.09	-0.711	0.4770	N.S.
		16-20cm	0.24 ± 0.56	0.31 ± 1.09	0.279	0.7800	N.S.
		21-25cm	0	0.05 ± 0.28	-	-	**
<i>Acanthurus nigrofuscus</i>	Cropper	≤10 cm	9.83 ± 5.66	3.63 ± 4.79	-4.122	< 0.0001	Exposed > Inner
		11-15 cm	6.31 ± 4.59	3.30 ± 4.12	-2.315	0.0206	Exposed > Inner
		16-20cm	1.12 ± 3.32	0.44 ± 1.10	-1.346	0.1780	N.S.
		21-25cm	0.13 ± 0.45	0	-	-	*
<i>A. lineatus</i>	Cropper	16-20cm	0.28 ± 0.72	0	-	-	*
		21-25cm	1.00 ± 2.90	0	-	-	*
<i>A. japonicus</i>	Cropper	≤10 cm	0.02 ± 0.08	0	-	-	*
		11-15 cm	0.19 ± 0.63	0	-	-	*
		16-20cm	0.13 ± 0.59	0	-	-	*
<i>A. dussumieri</i>	Sediment sucker	≤10 cm	0	0.02 ± 0.10	-	-	**
		11-15 cm	0	0.01 ± 0.05	-	-	**
		16-20cm	0.04 ± 0.13	0.07 ± 0.24	0.540	0.5890	N.S.
		21-25cm	0.63 ± 2.11	0.02 ± 0.07	-3.279	0.0010	Exposed > Inner
		26-30cm	0.13 ± 0.39	0	-	-	*
		31-35cm	0.02 ± 0.12	0	-	-	*
<i>A. nigricauda</i>	Sediment sucker	≤10 cm	0	0.15 ± 0.42	-	-	**
		11-15 cm	0.01 ± 0.05	0.10 ± 0.32	1.633	0.1030	N.S.
		16-20cm	0.04 ± 0.15	0.23 ± 0.72	1.890	0.0587	N.S.
		21-25cm	0.20 ± 0.73	0.28 ± 0.72	0.478	0.6330	N.S.
		25-30cm	0	0.02 ± 0.11	-	-	**
<i>Naso unicornis</i>	Browser	≤10 cm	0	0.02 ± 0.11	-	-	**
		11-15 cm	0.01 ± 0.06	0	-	-	*
		16-20cm	0.02 ± 0.08	0	-	-	*
		21-25cm	0.13 ± 0.26	0.01 ± 0.06	-2.501	0.0124	Exposed > Inner
		26-30cm	0.20 ± 0.45	0.01 ± 0.05	-2.668	0.0076	Exposed > Inner
		31-35cm	0.01 ± 0.06	0	-	-	*
<i>N. lituratus</i>	Browser	≤10 cm	0.03 ± 0.09	0.01 ± 0.06	-1.148	0.2510	N.S.
		11-15 cm	0.20 ± 0.35	0.01 ± 0.06	-2.825	0.0047	Exposed > Inner
		16-20cm	0.82 ± 1.16	0.04 ± 0.13	-5.128	< 0.0001	Exposed > Inner
		21-25cm	2.58 ± 3.77	0.08 ± 0.35	-6.482	< 0.0001	Exposed > Inner
		26-30cm	0.21 ± 0.55	0	-	-	*
<i>Zebrafoma scopas</i>	Concealed cropper	≤10 cm	2.54 ± 3.05	0.73 ± 2.30	-2.746	0.0060	Exposed > Inner
		11-15 cm	1.11 ± 1.36	0.10 ± 0.26	-5.106	< 0.0001	Exposed > Inner
		16-20cm	0.10 ± 0.32	0	-	-	*
<i>Z. velifer</i>	Concealed cropper	≤10 cm	0.16 ± 0.26	0.78 ± 0.87	3.675	0.0002	Exposed < Inner
		11-15 cm	0.62 ± 0.81	0.53 ± 0.56	-0.672	0.5020	N.S.
		16-20cm	0.21 ± 0.40	0.15 ± 0.44	-0.526	0.5990	N.S.
		21-25cm	0.02 ± 0.10	0	-	-	*