

DIGITAL APPENDIX 1

Mean estimated density and biomass of fishes for rocky reefs and sandy areas in the study site

Family	Species	Mean density (org m <sup>-2</sup> )		Mean biomass (t ha <sup>-1</sup> )	
		SA	RF	SA	RF
Acanthuridae	<i>Prionurus laticlavus</i> (H)	-	0.006	-	0.001
Apogonidae	<i>Apogon dovii</i> (C)	-	0.028	-	0.001
	<i>Apogon retrosella</i> (PL)	-	0.016	-	0.0003
Balistidae	<i>Pseudobalistes naufragium</i> (C)	0.012	0.007	0.015	0.027
	<i>Sufflamen verres</i> (C)	0.004	0.059	0.001	0.035
Belonidae	<i>Platybelone argalus pterura</i> (P)	-	0.200	-	0.008
	<i>Tylosurus pacificus</i> (P)	0.014	0.016	0.098	0.007
Blenniidae	<i>Entomacrodus chiostictus</i> (H)	-	0.004	-	0.00004
	<i>Ophioblennius steindachneri</i> (H)	-	0.060	-	0.005
	<i>Plagiotremus azaleus</i> (P)	0.044	0.050	0.000	0.001
Carangidae	<i>Caranx caballus</i> (P)	0.418	0.956	0.291	0.485
	<i>Caranx caninus</i> (P)	0.006	-	0.117	-
	<i>Decapterus macarellus</i> (PL)	0.200	-	0.014	-
	<i>Selene brevoortii</i> (P)	0.008	-	0.002	-
	<i>Trachinotus rhodopus</i> (P)	0.031	-	0.031	-
Chaenopsidae	<i>Acanthemblemaria exilispinus</i> (C)	-	0.004	-	2.60E-05
	<i>Acanthemblemaria hancocki</i> (C)	-	0.019	-	9.30E-05
	<i>Coralliozetus boehlkei</i> (C)	-	0.004	-	2.60E-05
Chaetodontidae	<i>Chaetodon humeralis</i> (C)	0.024	0.017	0.001	0.004
	<i>Johnrandallia nigrirostris</i> (C)	-	0.024	-	0.016
Cirrhitidae	<i>Cirrhitus rivulatus</i> (P)	-	0.018	-	0.015
Clupeidae	<i>Opisthonema medirastre</i> (PL)	4.000	4.000	0.051	0.051
Congridae	<i>Heteroconger klausewitzi</i> (PL)	1.396	-	3.931	-
	<i>Himantura pacifica</i> (P)	0.004	-	1.503	-
	<i>Hypanus dipterurus</i> (C)	0.008	-	1.179	-
Dasyatidae	<i>Hypanus longus</i> (P)	0.016	0.007	4.655	4.147
	<i>Diodon holocanthus</i> (C)	0.064	0.051	0.037	0.032
Diodontidae	<i>Diodon hystrix</i> (C)	0.016	0.014	0.013	0.052
	<i>Elops affinis</i> (P)	0.202	0.160	0.176	0.462
Engraulidae	<i>Anchoa argentivittata</i> (PL)	4.000	-	0.031	-
	<i>Anchoviella balboae</i> (PL)	4.000	2.000	0.032	0.016
Fistulariidae	<i>Fistularia commersonii</i> (P)	-	0.046	-	0.029

Gerreidae	<i>Gerres simillimus</i> (C)	0.312	0.176	0.127	0.044
Gobiidae	<i>Coryphopterus urospilus</i> (C)	-	0.034	-	0.000
	<i>Elacatinus puncticulatus</i> (C)	-	0.080	-	0.001
Gymnuridae	<i>Gymnura marmorata</i> (P)	-	0.004	-	0.097
	<i>Anisotremus taeniatus</i> (C)	-	0.004	-	0.002
Haemulidae	<i>Genyatremus dovii</i> (C)	-	0.012	-	0.004
	<i>Haemulon flaviguttatum</i> (C)	-	0.040	-	0.005
	<i>Haemulon maculicauda</i> (C)	-	0.641	-	0.095
	<i>Haemulon scudderii</i> (P)	-	0.080	-	0.013
	<i>Haemulon sexfasciatum</i> (P)	-	0.614	-	0.031
	<i>Haemulon steindachneri</i> (C)	-	0.178	-	0.036
	<i>Microlepidotus brevipinnis</i> (C)	-	0.060	-	0.010
Holocentridae	<i>Sargocentron suborbitale</i> (C)	-	0.016	-	0.007
Kyphosidae	<i>Kyphosus elegans</i> (H)	-	0.007	-	0.004
	<i>Bodianus diplotaenia</i> (C)	-	0.055	-	0.026
Labridae	<i>Halichoeres chierchiae</i> (C)	2.000	0.117	0.028	0.012
	<i>Halichoeres dispilus</i> (C)	0.080	0.281	0.001	0.009
	<i>Halichoeres nicholsi</i> (C)	-	0.201	-	0.017
	<i>Halichoeres notospilus</i> (C)	-	0.250	-	0.036
	<i>Iniistius pavo</i> (C)	0.004	-	0.004	-
	<i>Thalassoma lucasanum</i> (C)	-	0.188	-	0.009
Labrisomidae	<i>Malacoctenus tetranemus</i> (C)	-	0.095	-	0.003
Lutjanidae	<i>Lutjanus guttatus</i> (P)	0.302	0.094	0.011	0.007
Mugilidae	<i>Mugil cephalus</i> (PL)	0.037	-	0.066	-
Mullidae	<i>Mulloidichthys dentatus</i> (C)	-	0.004	-	0.002
Muraenidae	<i>Echidna nocturna</i> (P)	-	0.005	-	0.001
	<i>Muraena lentiginosa</i> (P)	-	0.009	-	0.003
Myliobatidae	<i>Aetobatus laticeps</i> (C)	0.010	0.004	0.504	2.107
Narcinidae	<i>Narcine entemedor</i> (C)	0.008	-	0.053	-
Nematistiidae	<i>Nematistius pectoralis</i> (P)	0.023	-	0.111	-
Ophichthyidae	<i>Myrichthys tigrinus</i> (P)	0.004	0.004	0.003	0.005
	<i>Ophichthus triserialis</i> (P)	0.004	-	0.024	-
Pomacanthidae	<i>Holacanthus passer</i> (C)	-	0.006	-	0.005
	<i>Pomacanthus zonipectus</i> (C)	-	0.006	-	0.006
Pomacentridae	<i>Abudefduf concolor</i> (H)	-	0.033	-	0.021
	<i>Abudefduf declivifrons</i> (H)	-	0.220	-	0.115
	<i>Abudefduf troschelii</i> (H)	-	0.403	-	0.090
	<i>Chromis alta</i> (PL)	-	0.030	-	0.010
	<i>Chromis atrilobata</i> (PL)	-	0.107	-	0.015

	<i>Microspathodon bairdii</i> (H)	-	0.062	-	0.050
	<i>Microspathodon dorsalis</i> (H)	-	0.039	-	0.033
	<i>Stegastes acapulcoensis</i> (H)	-	0.327	-	0.102
	<i>Stegastes flavilatus</i> (H)	0.004	0.194	0.001	0.040
Pristigasteridae	<i>Pliosteostoma lutipinnis</i> (PL)	6.000	-	0.180	-
Rhinopteridae	<i>Rhinoptera steindachneri</i> (C)	-	0.016	-	0.859
Scaridae	<i>Scarus ghobban</i> (H)	-	0.045	-	0.032
	<i>Scarus perrico</i> (H)	-	0.024	-	0.009
Sciaenidae	<i>Corvula macrops</i> (P)	-	0.200	-	0.033
Scorpaenidae	<i>Scorpaena mystes</i> (P)	-	0.006	-	0.009
Serranidae	<i>Alphestes immaculatus</i> (P)	-	0.024	-	0.003
	<i>Cephalopholis panamensis</i> (P)	-	0.010	-	0.005
	<i>Epinephelus labriformis</i> (P)	0.004	0.039	0.001	0.010
	<i>Mycteroperca xenarcha</i> (P)	-	0.004	-	0.005
	<i>Rypticus bicolor</i> (P)	0.008	0.004	0.005	0.002
	<i>Serranus psittacinus</i> (P)	-	0.035	-	0.007
Synodontidae	<i>Synodus lacertinus</i> (P)	-	0.004	-	0.001
Tetraodontidae	<i>Arothron hispidus</i> (C)	-	0.006	-	0.006
	<i>Arothron meleagris</i> (C)	-	0.007	-	0.008
	<i>Canthigaster punctatissima</i> (C)	-	0.014	-	0.001
	<i>Sphoeroides annulatus</i> (C)	-	0.004	-	0.006
	<i>Sphoeroides lobatus</i> (C)	0.008	0.010	0.005	0.002
Tripterygiidae	<i>Lepidonectes clarkhubbsi</i> (C)	-	0.022	-	0.000
Urotrygonidae	<i>Urolophus halleri</i> (C)	0.004	0.004	0.022	0.014
	<i>Urotrygon chilensis</i> (C)	0.008	-	0.054	-
	<i>Urotrygon rogersi</i> (C)	0.011	-	0.059	-

\* SA represents sandy areas and RF rocky reefs. P correspond to piscivores, C to carnivores, H to herbivores and PL to planktivorous fishes. The dash-line represents areas where we did not register densities or biomass for the species.

DIGITAL APPENDIX 2

Mean estimated density for rocky reef marine invertebrates in the study area

Phylum	Class	Subclass	Order	Family	Species	Mean density (org m <sup>-2</sup> )
		///	///	///	No id	0.205
Annelida	Polychaeta	Errantia	Amphinomida	Amphinomidae	<i>Eurythoe complanata</i>	0.021
		Sedentaria	Sabellida	Sabellidae	<i>Parasabella rugosa</i>	0.060
				Inachoididae	<i>Stenorhynchus debilis</i>	0.292
Arthropoda	Malacostraca	Eumalacostraca	Decapoda	Palinuridae	<i>Palinurus gracilis</i>	0.083
				Calappidae	<i>Calappa convexa</i>	0.020
					<i>Aniculus elegans</i>	0.053
				Diogenidae	<i>Trizopagurus magnificus</i>	0.127
				Mithracidae	<i>Teleophrys cristulipes</i>	0.020
Chordata	Ascidiacea	///	Aplousobranchia	Diazonidae	<i>Rhopalaea birkelandi</i>	1.565
Cnidaria	Anthozoa	Hexacorallia	Actiniaria	///	Not Id 1	0.020
					Not Id 2	0.030
					Not Id 3	0.020
					Not Id 4	0.060

Phylum	Class	Subclass	Order	Family	Species	Mean density (org m <sup>-2</sup> )
					Not Id 5	0.020
				Hormathiidae	<i>Calliactis polypus</i>	0.040
			Scleractinia	///	Not id	0.080
					<i>Leptogorgia alba</i>	1.510
		Octocorallia	Alcyonacea	Gorgoniidae	<i>Leptogorgia rigida</i>	0.047
					<i>Pacifigorgia eximia</i>	0.020
	Hydrozoa	Hydroidolina	Leptothecata	Aglaopheniidae	<i>Macrorhynchia nuttingi</i>	0.360
					<i>Macrorhynchia philippina</i>	0.600
					<i>Pharia pyramidata</i>	0.030
	Asteroidea	///	Valvatida	Ophidiasteridae	<i>Phataria unifascialis</i>	0.020
				Oreasteridae	<i>Nidorellia armata</i>	0.020
		Cidaroida	Cidaroida	Cidaridae	<i>Eucidaris thouarsii</i>	0.767
Echinodermata				Echinometridae	<i>Echinometra vanbrunti</i>	1.100
	Echinoidea		Camarodonta		<i>Toxopneustes roseus</i>	0.097
		Euechinoidea		Toxopneustidae	<i>Tripneustes depressus</i>	0.037
			Diadematoidea	Diadematidae	<i>Diadema mexicanum</i>	3.211

Phylum	Class	Subclass	Order	Family	Species	Mean density (org m <sup>-2</sup> )
					<i>Astropyga pulvinata</i>	0.620
					<i>Centrostephanus coronatus</i>	0.302
			Spatangoida	Brissidae	<i>Brissopsis pacifica</i>	0.040
					<i>Cucumaria flamma</i>	0.020
			Dendrochirotida	Cucumariidae	<i>Pseudocnus californicus</i>	0.154
				Phyllophoridae	<i>Pentamera chierchiaie</i>	0.060
					<i>Holothuria (Halodeima) atra</i>	0.800
	Holothuroidea	///			<i>Holothuria (Mertensiothuria) hilla</i>	0.040
			Holothuriida	Holothuriidae	<i>Holothuria (Semperothuria) imitans</i>	0.115
					<i>Holothuria (Thymiosycia) arenicola</i>	0.020
					<i>Holothuria (Thymiosycia) impatiens</i>	0.080
			Synallactida	Stichopodidae	<i>Isostichopus fuscus</i>	0.054
			Amphilepidida	Ophiotrichidae	<i>Ophiotrix (Ophiotrix) spiculata</i>	0.053
				Ophiodermatidae	<i>Ophioderma panamense</i>	0.250
	Ophiuroidea	Myophiuroidea	Ophiacanthida		<i>Ophiocoma aethiops</i>	1.183
				Ophiocomidae	<i>Ophiocoma alexandri</i>	0.925

Phylum	Class	Subclass	Order	Family	Species	Mean density (org m <sup>-2</sup> )
					<i>Ophiocomella sexradia</i>	0.409
		Heterodonta	///	Chamidae	<i>Chama buddiana</i>	0.022
				Ostreidae	<i>Alectryonella plicatula</i>	0.020
	Bivalvia				<i>Striostrea prismatica</i>	0.052
		Pteriomorpha	Ostreida	Pinnidae	<i>Pinna rugosa</i>	0.114
				Pteriidae	<i>Pinctada mazatlanica</i>	0.091
	Cephalopoda	Coleoidea	Octopoda	Octopodidae	<i>Octopus vulgaris</i>	0.035
				Cypraeidae	<i>Pseudozonaria arabicula</i>	0.020
			Littorinimorpha	Tonnidae	<i>Malea ringens</i>	0.067
				Conidae	<i>Conus dalli</i>	0.030
					<i>Latirus ceratus</i>	0.081
				Fascioliariidae	<i>Opeatostoma pseudodon</i>	0.173
	Gastropoda	Caenogastropoda				
			Neogastropoda	Melongenidae	<i>Melongena patula</i>	0.020
					<i>Hexaplex ambiguus</i>	0.230
				Muricidae	<i>Hexaplex brassica</i>	0.180
					<i>Hexaplex princeps</i>	0.090

Phylum	Class	Subclass	Order	Family	Species	Mean density (org m <sup>-2</sup> )
					<i>Muricopsis zeteki</i>	0.060
					<i>Vasula melones</i>	0.133
				Pisanidae	<i>Gemophos sanguinolentus</i>	0.020
				Turbinellidae	<i>Vasum caestus</i>	0.340
			(Superorden) Sacoglossa	Plakobrachidae	<i>Elysia diomedea</i>	0.033
		Heterobranchia	Nudibranchia	Chromodorididae	<i>Felimare agassizii</i>	0.030
				Flabellinidae	<i>Kynaria cynara</i>	0.020
			Pleurobranchomorpho	Pleurobranchidae	<i>Berthellina ilisima</i>	0.074
Porifera	Desmospongia	///	///	///	Not Id	0.060