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Supplementary Materials

Status of Coral Reef Communities on the Caribbean Coast of Costa Rica: Are We Talking About Corals or Macroalgae Reefs?

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Tables

Table S1. Survey site coordinates and mean depth.

Region	Locality	Site Code	Lat	Long	Mean Depth (m)
Puerto Viejo	Piedras Blancas	pb2	9.64092	-82.6369	6.1
-	Manzanillo	ma1	9.64572	-82.65828	7
Punta Mona	Punta Uva	lp3	9.64697	-82.6837	4.1
		ar4	9.64629	-82.68957	7
		ar14	9.644055	-82.688451	4.5
		se13	9.64212	-82.69675	4.8
	Punta Cocles	lc10	9.64809	-82.72018	6
	Río Cocles	rc9	9.65136	-82.72993	5.3
	Puerto Viejo	pv7	9.66142	-82.7550	7
		sb8	9.66149	-82.74612	7.4
Cahuita	Puerto Vargas	pv15	9.737956	-82.80584	2.6
		bi16	9.737457	-82.807739	2.5
	Punta Cahuita	po19	9.747712	-82.818756	2
	-	le18	9.737457	-82.807739	2.5
	Perezoso	pe17	9.737956	-82.80584	2.5
Moín	Isla Uvita	uv20	9.99103	-83.00998	6.7
-		uv21	9.99138	-83.01193	3.9
Limón		uv22	9.99432	-83.00917	5.6
		uv23	9.99566	-83.01221	8.4
		uv28	9.992923	-83.012862	3.5
	Isla Pájaros	pa24	10.017052	-83.075592	4.1
		pa25	10.017063	-83.075981	4.1
		pa26	10.017225	-83.076276	4.1
	Pájaro Loco	pl27	10.010772	-83.05102	2.1

Table S2. Coral species registered in the survey sites of the Caribbean coast of Costa Rica

Family	Specie
Acroporidae	*Acropora palmata*
Agariciidae	*Agaricia agaricites*
	Agaricia humilis
Faviidae	*Favia fragum*
	Mycetophyllia lamarckiana
	Pseudodiploria clivosa
	Pseudodiploria strigosa
Poritidae	*Porites astreoides*
	Porites porites
Montastraeidae	*Montastraea cavernosa*
Merulinidae	*Orbicella franksi*
Rhizangiidae	*Siderastrea radians*
	Siderastrea siderea
Milleporidae	*Millepora complanata*
Acroporidae	*Acropora palmata*
Agariciidae	*Agaricia agaricites*
Agariciidae	*Agaricia agaricites*

Table S3. Similarity Percentages (SIMPER) analysis showing the benthic taxa that contributed the most to the overall dissimilarity between regions.

Regions	Taxa	Average ± SD contribution	% Cumulative contribution
Moín – Limón	Turf algae	0.081	17
~	*Dictyota* / *Dictyopteris*	0.065	31
Cahuita	*Agaricia agaricites*	0.057	43
Moín – Limón	*Dictyota* / *Dictyopteris*	0.183	31
~	Turf algae	0.129	53
Puerto Viejo – Punta Mona	*Acropora palmata*	0.036	59
Cahuita	*Dictyota* / *Dictyopteris*	0.196	32
~	Turf algae	0.143	55
Puerto Viejo – Punta Mona	*Agaricia agaricites*	0.056	64

Table S4. Density, biomass, and fishery value of fish species registered in the survey sites of the Caribbean coast of Costa Rica. Fishery value was based on [1].

Order	Family	Specie	Mean Density ± SD (ind / 100 m2)	Mean Biomass ± SD (g / 100 m2)	Fishery Value (USD / kg)
Acanthuriformes	Acanthuridae		8.53 ± 30	1381.67 ± 5205.87	
		Acanthurus chirurgus	0.17 ± 0.37	10.27 ± 28.29	0
		Acanthurus coeruleus	7.79 ± 29.38	1354.60 ± 5207.38	0
		Acanthurus tractus	0.58 ± 1.17	16.87 ± 34.34	0
	Chaetodontidae		0.38 ± 0.65	18.00 ± 38.06	
		Chaetodon capistratus	0.04 ± 0.17	0.53 ± 2.07	0
		Chaetodon ocellatus	0.14 ± 0.37	6.67 ± 16.50	0
		Chaetodon striatus	0.20 ± 0.39	10.80 ± 29.64	0
	Pomacanthidae	Holacanthus ciliaris	0.04 ± 0.17	5.47 ± 21.17	0
Acropomatiformes	Pempheridae	Pempheris schomburgkii	0.27 ± 1.03	3.53 ± 13.68	0
Blenniiformes	Blenniidae	Ophioblennius macclurei	0.27 ± 0.61	1.17 ± 6.65	0
	Labrisomidae	Labrisomus sp.	0.09 ± 0.34	1.07 ± 4.13	0
Carangiformes	Carangidae		0.22 ± 0.53	20.40 ± 49.11	
		Caranx bartholomaei	0.06 ± 0.26	7.33 ± 21.06	4.38*
		Caranx ruber	0.13 ± 0.52	12.07 ± 46.73	4.38
		Elagatis bipinnulata	0.02 ± 0.07	1.00 ± 3.87	4.41*
Centrarchiformes	Cirrhitidae	Amblycirrhitus pinos	0.006 ± 0.022	0.07 ± 0.26	0
	Kyphosidae	Kyphosus sectatrix	3.91 ± 11.00	526.67 ± 1411.43	2.20*
Eupercaria incertae sedis	Haemulidae		2.30 ± 3.45	293.87 ± 497.97	
		Anisotremus virginicus	0.64 ± 1.71	93.00 ± 254.83	4.27
		Anisotremus sp.	0.40 ± 1.55	41.33 ± 160.08	4.27
		Haemulon aurolineatum	0.86 ± 2.76	127.60 ± 448.36	4.28
		Haemulon carbonarium	0.13 ± 0.37	10.33 ± 27.38	4.28
		Haemulon macrostomum	0.22 ± 0.59	19.40 ± 69.28	4.28
		Haemulon sciurus	0.04 ± 0.17	2.20 ± 8.52	4.28
	Labridae		38.75 ± 27.60	188.40 ± 143.98	
		Bodianus rufus	0.006 ± 0.022	0.27 ± 1.03	0
		Halichoeres bivittatus	5.42 ± 6.58	38.27 ± 65.67	0
		Halichoeres garnoti	0.01 ± 0.04	2.20 ± 8.52	0
		Halichoeres maculipinna	0.81 ± 1.57	9.33 ± 15.29	0
		Halichoeres pictus	0.04 ± 0.17	0.47 ± 1.80	0
		Halichoeres radiatus	0.11 ± 0.34	3.86 ± 14.17	0
		Thalassoma bifasciatum	32.36 ± 26.18	136.33 ± 89.89	0
	Lutjanidae		1.91 ± 3.83	272.86 ± 903.13	
		Lutjanus apodus	1.29 ± 3.39	267.80 ± 904.64	5.52
		Lutjanus synagris	0.62 ± 2.21	2.00 ± 7.74	5.44
		Ocyurus chrysurus	0.006 ± 0.022	3.06 ± 11.87	5.31
	Scaridae		3.27 ± 5.92	267.80 ± 488.70	
		Cryptotomus roseus	0.006 ± 0.022	0.000 ± 0.000	0
		Nicholsina usta	0.29 ± 0.80	1.47 ± 4.03	0
		Sparisoma rubripinne	0.98 ± 1.47	96.7 ± 204.09	4.14
		Sparisoma viride	2.00 ± 5.47	169.67 ± 407.51	4.14
	Sciaenidae	Sciaenidae sp.	0.01 ± 0.04	0.40 ± 1.54	5.51*
Holocentriformes	Holocentridae		1.83 ± 6.51	88.40 ± 302.65	
		Holocentrus adscensionis	0.077 ± 0.30	7.73 ± 29.95	2.20
		Holocentrus rufus	0.006 ± 0.02	0.07 ± 0.26	2.20
		Sargocentron vexillarium	1.75 ± 6.52	80.60 ± 303.40	0
Mulliformes	Mullidae	Pseudupeneus maculatus	0.04 ± 0.15	1.80 ± 6.98	0
Ovalentaria incertae sedis	Pomacentridae		45.65 ± 27.43	686.13 ± 967.85	
		Abudefduf saxatilis	8.31 ± 16.11	273.87 ± 898.48	0
		Microspathodon chrysurus	3.20 ± 4.73	162.80 ± 320.46	0
		Stegastes adustus	30.17 ± 25.53	223.93 ± 197.44	0
		Stegastes diencaeus	3.38 ± 8.97	23.07 ± 61.01	0
		Stegastes leucostictus	0.42 ± 1.62	0.93 ± 3.61	0

		Stegastes partitus	0.15 ± 0.46	0.67 ± 1.80	0
		Stegastes xanthurus	0.02 ± 0.06	1.07 ± 4.13	0
Perciformes	Scorpaenidae	Pterois volitans	0.22 ± 0.41	8.20 ± 17.76	0
	Serranidae		0.28 ± 0.62	6.73 ± 14.24	
		Cephalopholis cruentata	0.04 ± 0.17	3.00 ± 11.62	6.11
		Diplectrum formosum	0.21 ± 0.56	0.27 ± 0.70	0
		Epinephelus adscensionis	0.006 ± 0.022	1.53 ± 5.98	6.11
		Rypticus saponaceus	0.02 ± 0.07	1.93 ± 7.49	0
Tetraodontiformes	Monacanthidae		0.06 ± 0.17	2.73 ± 9.06	
		Cantherhines pullus	0.05 ± 0.17	2.67 ± 9.04	0
		Stephanolepis hispida	0.006 ± 0.022	0.07 ± 0.26	0
	Tetraodontidae		10.25± 16.79	36.80 ± 63.68	
		Canthigaster jamestyleri	10.18 ± 16.75	36.53 ± 63.52	0
		Canthigaster rostrata	0.07 ± 0.18	7.33 ± 21.06	0

*Species with fishery commercial value no listed on [1]

References

1. Lester, S.E.; Rassweiler, A.; McCoy, S.J.; Dubel, A.K.; Donovan, M.K.; Miller, M.W.; Miller, S.D.; Ruttenberg, B.I.; Samhouri, J.F.; Hay, M.E. Caribbean Reefs of the Anthropocene: Variance in Ecosystem Metrics Indicates Bright Spots on Coral Depauperate Reefs. *Glob. Change Biol.* **2020**, *26*, 4785–4799, doi:10.1111/gcb.15253.