

**Spatiotemporal variations of live coral cover in the
northern Mesoamerican Reef System,
Yucatan Peninsula, Mexico**

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Supplementary material

Table S1. – Mean coral cover ($\pm 1SD$) of the species recorded in the Cancún National Park.

	2006	2007	2009	2010	2011	2012
<i>Acropora cervicornis</i>	0.23 (± 0.52)	0.15 (± 0.46)	0.35 (± 0.91)	0.14 (± 0.52)	0.23 (± 0.66)	0.04 (± 0.18)
<i>Acropora palmata</i>	4.10 (± 7.52)	2.26 (± 4.23)	2.20 (± 4.24)	2.72 (± 6.46)	1.91 (± 3.19)	2.91 (± 6.18)
<i>Acropora prolifera</i>	0.06 (± 0.29)			0.09 (± 0.35)	0.05 (± 0.18)	0.15 (± 0.50)
<i>Agaricia agaricites</i>	0.29 (± 0.62)	0.02 (± 0.06)	0.54 (± 1.41)	0.20 (± 0.32)	0.32 (± 0.48)	0.17 (± 0.45)
<i>Agaricia fragilis</i>	0.03 (± 0.17)					
<i>Agaricia tenuifolia</i>		0.75 (± 3.27)	0.10 (± 0.42)	0.09 (± 0.34)	0.21 (± 0.73)	0.28 (± 1.03)
<i>Colpophyllia natans</i>		0.06 (± 0.30)	0.10 (± 0.35)	0.35 (± 1.32)	0.16 (± 0.80)	0.62 (± 1.82)
<i>Dichocoenia stokesii</i>				0.02 (± 0.09)		
<i>Diploria labyrinthiformis</i>				0.04 (± 0.19)		
<i>Favia fragum</i>			0.01 (± 0.03)			
<i>Isophyllastrea rigida</i>				0.01 (± 0.05)	0.03 (± 0.09)	
<i>Meandrina meandrites</i>						0.01 (± 0.04)
<i>Montastrea cavernosa</i>	0.06 (± 0.13)	0.29 (± 0.69)	0.05 (± 0.12)	0.19 (± 0.58)	0.05 (± 0.21)	0.08 (± 0.21)
<i>Orbicella annularis</i>	0.41 (± 0.93)	0.62 (± 1.43)	0.63 (± 1.41)	0.56 (± 0.97)	0.67 (± 1.45)	0.87 (± 1.66)
<i>Orbicella faveolata</i>	0.12 (± 0.35)		0.17 (± 0.48)	0.39 (± 1.22)		
<i>Porites astreoides</i>	2.33 (± 2.26)	2.33 (± 2.62)	1.70 (± 2.46)	1.82 (± 1.92)	2.93 (± 4.09)	2.16 (± 2.57)
<i>Porites porites</i>	0.84 (± 1.91)	0.91 (± 1.71)	0.71 (± 0.68)	0.39 (± 0.46)	0.76 (± 1.11)	0.50 (± 0.99)
<i>Pseudodiploria clivosa</i>	0.02 (± 0.08)	0.13 (± 0.34)			0.05 (± 0.21)	
<i>Pseudodiploria strigosa</i>	0.09 (± 0.32)	0.26 (± 0.65)	0.01 (± 0.07)	0.22 (± 0.67)	0.27 (± 0.79)	0.48 (± 1.69)
<i>Siderastrea radians</i>	0.04 (± 0.10)	0.24 (± 0.40)	0.03 (± 0.08)	0.01 (± 0.04)	0.03 (± 0.09)	
<i>Siderastrea siderea</i>	0.23 (± 0.47)	0.71 (± 1.91)	0.46 (± 0.95)	0.38 (± 0.66)	0.56 (± 0.77)	0.25 (± 0.79)
<i>Stephanocoenia intersepta</i>		0.01 (± 0.07)	0.01 (± 0.06)	0.01 (± 0.04)		0.03 (± 0.11)

Table S2. – Mean coral cover ($\pm 1SD$) of the species recorded in the Cozumel National Park.

	2006	2007	2008	2009	2010	2011	2012
<i>Acropora cervicornis</i>		0.01 (± 0.10)	0.01 (± 0.10)			0.01 (± 0.10)	0.01 (± 0.10)
<i>Agaricia agaricites</i>	5.16 (± 3.19)	4.91 (± 3.22)	3.72 (± 2.61)	3.06 (± 2.36)	3.82 (± 2.97)	4.97 (± 2.92)	6.82 (± 4.25)
<i>Agaricia fragilis</i>					0.01 (± 0.10)		0.46 (± 0.85)
<i>Agaricia grahamae</i>							0.02 (± 0.14)
<i>Agaricia humilis</i>	0.10 (± 0.39)		0.02 (± 0.14)	0.01 (± 0.10)	0.08 (± 0.37)	0.19 (± 0.53)	0.05 (± 0.24)
<i>Agaricia lamarcki</i>	0.09 (± 0.36)	0.03 (± 0.17)	0.03 (± 0.22)	0.01 (± 0.10)	0.12 (± 0.47)	0.09 (± 0.30)	0.24 (± 0.58)
<i>Agaricia tenuifolia</i>	0.32 (± 0.68)	0.30 (± 0.69)	0.35 (± 0.70)	0.53 (± 0.93)	0.29 (± 0.69)	1.08 (± 2.20)	1.90 (± 3.41)
<i>Colpophyllia natans</i>	0.17 (± 0.54)	0.02 (± 0.20)	0.13 (± 0.48)	0.01 (± 0.10)	0.06 (± 0.21)	0.08 (± 0.35)	0.15 (± 0.49)
<i>Dichocoenia stokesii</i>	0.05 (± 0.24)	0.07 (± 0.23)	0.01 (± 0.10)			0.17 (± 0.42)	0.15 (± 0.32)
<i>Diploria labyrinthiformis</i>	0.15 (± 0.38)	0.17 (± 0.46)	0.08 (± 0.32)	0.08 (± 0.29)	0.12 (± 0.29)	0.17 (± 0.50)	0.22 (± 0.50)
<i>Eusmilia fastigiata</i>	0.36 (± 0.57)	0.46 (± 0.76)	0.17 (± 0.39)	0.17 (± 0.39)	0.24 (± 0.43)	0.81 (± 0.90)	1.18 (± 1.18)
<i>Favia fragum</i>			0.01 (± 0.10)	0.03 (± 0.22)			0.17 (± 0.39)
<i>Isophyllastrea rigida</i>	0.08 (± 0.29)	0.16 (± 0.39)	0.05 (± 0.24)	0.08 (± 0.29)	0.13 (± 0.36)	0.02 (± 0.14)	0.02 (± 0.14)
<i>Isophyllia sinuosa</i>		0.01 (± 0.10)					
<i>Leptoseris cucullata</i>	0.01 (± 0.10)	0.01 (± 0.10)	0.01 (± 0.10)	0.01 (± 0.10)			0.01 (± 0.10)
<i>Madracis decactis</i>	0.23 (± 0.53)	0.08 (± 0.25)	0.12 (± 0.29)	0.06 (± 0.21)	0.07 (± 0.27)	0.24 (± 0.45)	0.43 (± 0.63)
<i>Madracis mirabilis</i>			0.01 (± 0.10)				
<i>Manicina areolata</i>			0.02 (± 0.20)			0.09 (± 0.30)	
<i>Meandrina meandrites</i>	0.28 (± 0.52)	0.56 (± 0.84)	0.37 (± 0.81)	0.17 (± 0.42)	0.31 (± 0.69)	0.59 (± 0.88)	0.78 (± 0.99)
<i>Montastrea cavernosa</i>	1.32 (± 1.30)	1.72 (± 1.64)	0.69 (± 0.79)	0.98 (± 1.04)	1.45 (± 1.44)	1.62 (± 1.59)	1.79 (± 1.34)
<i>Mussa angulosa</i>						0.01 (± 0.10)	0.16 (± 0.57)
<i>Mycetophyllia lamarckiana</i>	0.07 (± 0.27)	0.1 (± 0.31)	0.02 (± 0.20)	0.01 (± 0.10)	0.01 (± 0.10)	0.13 (± 0.39)	0.22 (± 0.40)
<i>Orbicella annularis</i>	1.02 (± 1.85)	1.3 (± 2.30)	0.27 (± 0.84)	0.14 (± 0.59)	0.23 (± 0.64)	1.62 (± 2.64)	1.72 (± 2.56)
<i>Orbicella faveolata</i>	0.64 (± 1.24)	0.79 (± 2.02)	0.86 (± 1.19)	0.61 (± 1.03)	1.28 (± 2.41)	0.41 (± 0.86)	1.49 (± 2.22)
<i>Orbicella franksi</i>	0.02 (± 0.14)	0.09 (± 0.09)	0.02 (± 0.14)				
<i>Porites astreoides</i>	1.94 (± 1.56)	1.60 (± 1.26)	1.31 (± 1.38)	1.06 (± 1.11)	1.11 (± 1.36)	1.76 (± 1.94)	3.55 (± 2.14)
<i>Porites colonensis</i>				0.01 (± 0.10)			
<i>Porites porites</i>	0.57 (± 0.93)	0.51 (± 0.92)	0.59 (± 0.91)	0.76 (± 1.30)	1.24 (± 1.99)	2.82 (± 3.28)	4.38 (± 4.89)
<i>Pseudodiploria clivosa</i>	0.02 (± 0.14)	0.01 (± 0.10)				0.03 (± 0.17)	0.07 (± 0.27)
<i>Pseudodiploria strigosa</i>	0.06 (± 0.26)	0.14 (± 0.42)	0.12 (± 0.29)	0.14 (± 0.44)	0.09 (± 0.30)	0.28 (± 0.67)	0.37 (± 0.75)
<i>Scolymia cubensis</i>				0.02 (± 0.10)			
<i>Scolymia lacera</i>							0.01 (± 0.10)
<i>Siderastrea radians</i>	0.10 (± 0.31)	0.01 (± 0.10)	0.02 (± 0.14)	0.05 (± 0.19)		0.25 (± 0.55)	0.36 (± 0.59)
<i>Siderastrea siderea</i>	1.76 (± 1.42)	2.20 (± 1.58)	1.62 (± 1.20)	1.08 (± 1.07)	1.27 (± 1.14)	2.56 (± 1.99)	4.00 (± 2.14)
<i>Solenastrea bourmoni</i>						0.02 (± 0.14)	
<i>Stephanocoenia intersepta</i>	0.13 (± 0.30)	0.17 (± 0.44)	0.05 (± 0.24)	0.09 (± 0.30)	0.02 (± 0.14)	0.34 (± 0.60)	0.47 (± 0.67)

Table S3. – Ecological indexes of coral assemblages in Cancún National Park and Cozumel National Park as a function of locality and year. Codes: S is the average species richness; H' is Shannon diversity; J' is Pielou evenness; λ is Simpson dominance; LCC is live coral cover.

		S (per transect)	H' (loge)	J'	λ	LCC (%)
Cancún	Manchones	4.22 (± 1.31)	0.99 (± 0.34)	0.69 (± 0.18)	0.48 (± 0.18)	7.17 (± 5.76)
	Cuevones	4.80 (± 1.54)	1.11 (± 0.35)	0.74 (± 0.16)	0.43 (± 0.16)	8.33 (± 3.98)
	Chitales	4.43 (± 1.30)	1.06 (± 0.30)	0.74 (± 0.16)	0.44 (± 0.15)	7.42 (± 5.27)
	1 barrier	4.21 (± 1.70)	1.05 (± 0.36)	0.76 (± 0.15)	0.44 (± 0.16)	4.65 (± 2.52)
	3 barrier	5.63 (± 2.11)	1.22 (± 0.50)	0.71 (± 0.20)	0.40 (± 0.21)	14.81 (± 6.54)
Cozumel	Paraíso	6.90 (± 2.59)	1.68 (± 0.37)	0.91 (± 0.06)	0.23 (± 0.09)	14.17 (± 7.09)
	Chankanaab	6.55 (± 2.96)	1.57 (± 0.38)	0.88 (± 0.06)	0.26 (± 0.09)	16.47 (± 9.43)
	Yucab	5.64 (± 3.07)	1.47 (± 0.46)	0.92 (± 0.06)	0.28 (± 0.12)	11.11 (± 8.81)
	Cedral	7.96 (± 3.22)	1.73 (± 0.39)	0.86 (± 0.07)	0.24 (± 0.10)	19.21 (± 10.60)
	Dalia	7.92 (± 3.75)	1.67 (± 0.44)	0.85 (± 0.09)	0.26 (± 0.12)	20.26 (± 11.38)
	Colombia	8.29 (± 2.64)	1.77 (± 0.28)	0.86 (± 0.06)	0.22 (± 0.06)	26.13 (± 12.74)
Cancún	2006	5.13 (± 1.36)	1.07 (± 0.29)	0.67 (± 0.15)	0.46 (± 0.14)	9.03 (± 6.07)
	2007	4.30 (± 1.26)	1.10 (± 0.34)	0.78 (± 0.17)	0.41 (± 0.16)	9.05 (± 5.90)
	2009	4.28 (± 1.77)	1.07 (± 0.37)	0.78 (± 0.16)	0.43 (± 0.16)	7.22 (± 5.63)
	2010	5.00 (± 2.21)	1.13 (± 0.47)	0.72 (± 0.18)	0.43 (± 0.15)	8.08 (± 6.28)
	2011	4.96 (± 1.49)	1.19 (± 0.36)	0.76 (± 0.15)	0.40 (± 0.15)	8.93 (± 5.86)
	2012	4.22 (± 1.68)	0.94 (± 0.41)	0.67 (± 0.19)	0.51 (± 0.20)	8.55 (± 4.57)
Cozumel	2006	7.07 (± 2.69)	1.64 (± 0.37)	0.87 (± 0.08)	0.25 (± 0.10)	17.38 (± 7.34)
	2007	7.06 (± 2.09)	1.67 (± 0.30)	0.87 (± 0.06)	0.24 (± 0.08)	15.37 (± 7.05)
	2008	5.72 (± 1.76)	1.50 (± 0.29)	0.89 (± 0.08)	0.27 (± 0.08)	9.61 (± 5.19)
	2009	5.35 (± 1.85)	1.45 (± 0.34)	0.90 (± 0.08)	0.28 (± 0.10)	8.56 (± 5.12)
	2010	5.81 (± 2.05)	1.47 (± 0.38)	0.87 (± 0.09)	0.29 (± 0.13)	15.88 (± 7.05)
	2011	8.44 (± 3.70)	1.78 (± 0.44)	0.88 (± 0.06)	0.22 (± 0.10)	29.28 (± 11.38)
	2012	11.04 (± 3.43)	2.04 (± 0.34)	0.87 (± 0.05)	0.17 (± 0.06)	29.14 (± 12.73)