

Table S1. Additonal literature used in Table 1.

Region	References
Red Sea	[56-61]
Maldives	[62-64]
Great Barrier Reef	[22-26]
New Caledonia	[65-68]
Japan	[69]
Micronesia	[70-72]
Austral Is., Polynesia	[73-75]
Northeast Pacific	[76-80]
Honduras/Belize	[81]
Jamaica	[82-83]

Table S2. Summary of mesophotic and shallow reef scleractinian corals of the northern GBR region. Mesophotic record type: S: specimen-based our study (includes those reported [31,32]); I: imaged-based present study; Q: unpublished specimen from QMC; CF: cf. identification and not included in totals or analyses; L: literature report [22-28,84]. Relative abundance in mesophotic given by rate of detection (R: 1-2 occasions overall, M: numerous occasions, C: commonly detected). Global latitude maxima from [38], depth maxima prior to our study [22-28,38,84,85] and shaded habitats [39]. * not reported for region prior to our expeditions, ¹ previously reported depth maxima, ² previously reported [32] but identification reassessed; ³ also known as *P. eydouxi*. NA: data not available.

Species	Mesophotic Record	Rel. Abund.	Max. Depth (m)		Shaded Habitat	Max. Latitude
			GBR/CS	Global		
<i>Acanthastrea brevis</i>				20		29.26°
<i>Acanthastrea echinata</i>	S	M	40	40	+	36.54°
<i>Acanthastrea hemprichii</i>				20		36.04°
<i>Acanthastrea pachysepta</i>				30	+	30.85°
<i>Acanthastrea rotundoflora</i>				30		37.06°
<i>Acanthastrea subechinata</i>				35		19.99°
<i>Acropora abrolhosensis</i>	S	R	38	30		30.35°
<i>Acropora abrotanoides</i>				15		34.00°
<i>Acropora aculeus</i>	S	C	60	28	+	31.67°
<i>Acropora acuminata</i>				25		35.12°
<i>Acropora anthocercis</i>				25		37.84°
<i>Acropora aspera</i>				15		38.19°
<i>Acropora austera</i>	S	R	40	30		34.58°
<i>Acropora cardenae</i>	L		55 ¹	110		30.73°
<i>Acropora carduus</i>	S	R	40	50		30.58°
<i>Acropora caroliniana</i>	S	M	40	40		32.94°
<i>Acropora cerealis</i>	S	R	40	40	+	32.85°
<i>Acropora chesterfieldensis</i>	S	M	40	27		33.04°

<i>Acropora clathrata</i>	S	M	40	30		34.75°
<i>Acropora cytherea</i>	S	R	38	67		34.05°
<i>Acropora dendrum</i>				20		38.36°
<i>Acropora digitifera</i>				12		33.42°
<i>Acropora divaricata</i>				11		39.05°
<i>Acropora donei</i>	S	M	45	38		35.02°
<i>Acropora echinata</i>	S	M	60	40		29.43°
<i>Acropora elegans</i>	S,L	R	55 ¹	60		20.2°
<i>Acropora elseyi</i>	S	R	34	35		31.30°
<i>Acropora florida</i>	S	R	40	37	+	39.11°
<i>Acropora gemmifera</i>				18		34.91°
<i>Acropora glauca</i>				20		38.03°
<i>Acropora globiceps</i>				8		29.23°
<i>Acropora grandis</i>				25		32.85°
<i>Acropora granulosa</i>	S	C	50	49	+	31.76°
<i>Acropora horrida</i>	S	R	35	28		34.35°
<i>Acropora humilis</i>				11		35.36°
<i>Acropora hyacinthus</i>				14		38.84°
<i>Acropora intermedia</i>				23		35.53°
<i>Acropora kimbeensis</i>	S	M	40	30		26.47°
<i>Acropora kirstyae</i>				25		29.94°
<i>Acropora latistella</i>	S	M	40	36		38.68°
<i>Acropora listeri</i>				15		38.59°
<i>Acropora lokani</i>	CF	R	40	25		19.93°
<i>Acropora longicyathus</i>				9		33.00°
<i>Acropora loripes</i>	S	M	40	26		38.59°
<i>Acropora lovelli</i>	S	R	30	15		18.57°
<i>Acropora lutkeni</i>				26		32.9°
<i>Acropora microclados</i>	S	R	33	36		34.80°
<i>Acropora microphthalma</i>				13		34.55°
<i>Acropora millepora</i>				12		33.77°
<i>Acropora monticulosa</i>				14		34.16°
<i>Acropora multiacuta</i>				15		26.24°
<i>Acropora muricata</i>				26		34.55°
<i>Acropora nana</i>				15		34.55°
<i>Acropora nasuta</i>				30	+	33.85°
<i>Acropora palmerae</i>				5		35.53°
<i>Acropora paniculata</i>	S	M	42	36		30.87°
<i>Acropora papillare</i>				5		29.33°
<i>Acropora pichoni*</i>	S	R	40	70		27.97°
<i>Acropora polystoma</i>				5		31.07°
<i>Acropora pulchra</i>				12		32.87°
<i>Acropora robusta</i>				8		33.72°
<i>Acropora samoensis</i>				15		38.53°
<i>Acropora sarmentosa</i>				16		34.84°
<i>Acropora secale</i>	S	M	30	36		34.95°
<i>Acropora selago</i>	S	R	40	25		31.12°
<i>Acropora solitaryensis</i>	S	R	40	35		38.74°
<i>Acropora spathulata</i>				10		NA
<i>Acropora speciosa</i>	S	C	60	65		25.83°
<i>Acropora spicifera</i>				10		33.99°
<i>Acropora striata</i>				34		37.92°
<i>Acropora subglabra</i>	S	M	33	33		30.14°
<i>Acropora subulata</i>				30		38.70°

<i>Acropora tenella</i> *	S,L	M	110 ¹	110		29.68°
<i>Acropora tenuis</i>				20		35.53°
<i>Acropora torihalimeda</i>	L		63	63		24.72°
<i>Acropora tortuosa</i>	S	R	35	49		32.80°
<i>Acropora valenciennesi</i>	S	R	45	26		35.12°
<i>Acropora valida</i>	S	M	40	45		37.45°
<i>Acropora vaughani</i>	S	M	40	25		30.79°
<i>Acropora verweyi</i>				29		39.36°
<i>Acropora willisae</i>	S	R	40	25		38.01°
<i>Acropora yongei</i>				21		33.90°
<i>Alveopora allingi</i>	S	R	40	60		34.98°
<i>Alveopora catalai</i>	S	R	40	30		28.9°
<i>Alveopora fenestrata</i>	S	R	46	30		34.48°
<i>Alveopora marionensis</i>				30		33.62°
<i>Alveopora spongiosa</i>				20		37.84°
<i>Alveopora tizardi</i>	S	M	60	50		34.44°
<i>Alveopora verrilliana</i>				70		30.69°
<i>Anacropora forbesi</i>				25		29.77°
<i>Anacropora matthai</i>				20		26.65°
<i>Anacropora puertogalerae</i>				20		29.83°
<i>Anacropora reticulata</i>				15		26.02°
<i>Astrea annuligera</i>	I	R	40 ²	30		32.68°
<i>Astrea curta</i>	S	R	40	45	+	37.73°
<i>Astreopora cucullata</i>	S	M	40	15		35.20°
<i>Astreopora expansa</i>				15		38.32°
<i>Astreopora gracilis</i>				15		37.32°
<i>Astreopora incrustans</i>				40		38.14°
<i>Astreopora listeri</i>				30		33.21°
<i>Astreopora macrostoma</i>				15		37.98°
<i>Astreopora moretonensis</i>				15		33.07°
<i>Astreopora myriophthalma</i>	S	C	40	50		39.41°
<i>Astreopora ocellata</i>	I	R	40	30		35.40°
<i>Astreopora randalli</i>				15		30.17°
<i>Astreopora scabra</i>				15		28.28°
<i>Australogyra zelli</i>				15		25.40°
<i>Bernardopora stutchburyi</i>	S	M	60	30		37.63°
<i>Blastomussa merleti</i>				50		34.03°
<i>Blastomussa vivida</i>	S	R	37	NA		NA
<i>Blastomussa wellsi</i>	S	R	40	40	+	36.58°
<i>Cantharellus jebbi</i>				25		28.54°
<i>Cantharellus noumeae</i>				30		30.86°
<i>Catalaphyllia jardinei</i>				40		36.72°
<i>Caulastraea curvata</i>				20		28.83°
<i>Caulastraea echinulata</i>				18		29.15°
<i>Caulastraea furcata</i>				30		28.95°
<i>Caulastraea tumida</i>				40		36.89°
<i>Coelastrea aspera</i>				15		37.75°
<i>Coelastrea palauensis</i>	S	M	41	30	+	35.00°
<i>Coeloseria mayeri</i>				5		32.35°
<i>Coscinaraea columna</i>	S	R	40	30	+	38.68°
<i>Coscinaraea crassa</i>				30		36.50°
<i>Coscinaraea exesa</i>				20		33.80°
<i>Craterastrea levis</i> *	S	M	100	70		NA
<i>Ctenactis albitentaculata</i>	S	M	40	25		29.87°

<i>Ctenactis crassa</i>	S	M	40	67		30.86°
<i>Ctenactis echinata</i>	S	R	40	20	+	37.15°
<i>Cycloseris costulata</i>	S	M	40	60		34.01°
<i>Cycloseris cyclolites</i>	S,L	M	55 ¹	55		37.43°
<i>Cycloseris distorta</i>	Q,L		55 ¹	55		34.01°
<i>Cycloseris explanulata</i>				35	+	30.56°
<i>Cycloseris fragilis</i>	L		41 ¹	41		37.06°
<i>Cycloseris mokai</i>				27		NA
<i>Cycloseris sinensis</i>	L		48 ¹	48		34.01°
<i>Cycloseris somervillei</i>				35		26.79°
<i>Cycloseris tenuis</i>				27		31.07°
<i>Cycloseris vaughani</i> ²				36		37.19°
<i>Cycloseris wellsii</i>	I,L	R	58 ¹	58	+	37.56°
<i>Cynarina lacrymalis</i>	S	R	40	70	+	36.88°
<i>Cyphastrea agassizi</i>				20		30.96°
<i>Cyphastrea chalcidicum</i>	S	M	41	50	+	36.94°
<i>Cyphastrea decadia</i>				40		29.25°
<i>Cyphastrea japonica</i>	S	M	40	20	+	37.23°
<i>Cyphastrea microphthalma</i>	S	M	40	50	+	38.25°
<i>Cyphastrea ocellina</i>				20		30.64°
<i>Cyphastrea serailia</i>	S	M	60	45	+	38.9°
<i>Danafungia horrida</i>	S	M	112	25	+	32.61°
<i>Danafungia scruposa</i>				27		32.53°
<i>Diploastrea heliopora</i>	S	M	41	30		30.81°
<i>Dipsastraea amicornum</i>				20		37.84°
<i>Dipsastraea danai</i>				20		37.53°
<i>Dipsastraea faviaformis</i>	S	R	40	12		29.47°
<i>Dipsastraea favus</i>	S	M	36	30	+	36.72°
<i>Dipsastraea helianthoides</i>				20		37.17°
<i>Dipsastraea laddi</i>				10		28.13°
<i>Dipsastraea laxa</i>				25		36.89°
<i>Dipsastraea lizardensis</i>				20		37.03°
<i>Dipsastraea maritima</i>				30		35.31°
<i>Dipsastraea matthaii</i>	S	C	41	40	+	34.66°
<i>Dipsastraea maxima</i>	CF		40	20		37.36°
<i>Dipsastraea pallida</i>	S	M	40	50	+	38.90°
<i>Dipsastraea rosaria</i>				20		31.71°
<i>Dipsastraea rotumana</i>				30	+	37.28°
<i>Dipsastraea speciosa</i>	S	M	40	40	+	38.68°
<i>Dipsastraea truncata</i>				20		31.14°
<i>Dipsastraea veroni</i>				25		37.36°
<i>Dipsastraea vietnamensis</i>				20		36.83°
<i>Duncanopsammia axifuga</i>	L		57	57		34.59°
<i>Echinomorpha nishihirai</i> ²				40		36.77°
<i>Echinophyllia aspera</i>	S,L	C	90 ¹	90	+	38.47°
<i>Echinophyllia echinata</i>	S	C	40	40		37.07°
<i>Echinophyllia echinoporoides</i>		R		30		32.32°
<i>Echinophyllia orpheensis</i>	I	R	40	40	+	34.00°
<i>Echinophyllia patula</i>	S	R	40	40		35.77°
<i>Echinophyllia tarae</i>				NA		NA
<i>Echinopora gemmacea</i>		M	40	40	+	34.19°
<i>Echinopora hirsutissima</i>				40		33.76°
<i>Echinopora horrida</i>				25	+	32.68°
<i>Echinopora lamellosa</i>	S	M	40	50	+	37.19°

<i>Echinopora mammiformis</i>				15	+	33.68°
<i>Echinopora pacificus</i>				15		29.21°
<i>Euphyllia ancora</i>	S	R	40	30		37.39°
<i>Euphyllia cristata</i>				35		33.31°
<i>Euphyllia divisa</i>				35		31.20°
<i>Euphyllia glabrescens</i>	S	M	40	20		33.52°
<i>Favites abdita</i>	S	M	40	20	+	37.62°
<i>Favites melicerum</i>				NA		NA
<i>Favites chinensis</i>				20	+	37.75°
<i>Favites colemani</i>				20		29.12°
<i>Favites complanata</i>				5	+	38.90°
<i>Favites flexuosa</i>	S	M	40	20		37.53°
<i>Favites halicora</i>	S,L	M	55 ¹	55	+	35.00°
<i>Favites magnistellata</i>				30		37.18°
<i>Favites pentagona</i>	S	C	40	40	+	37.37°
<i>Favites rotundata</i>	I	M	40 ²	20	+	37.36°
<i>Favites valenciennesi</i>	S	M	40	40	+	36.97°
<i>Fungia fungites</i>	S	M	40	50	+	37.16°
<i>Galaxea acrhelia</i>				15		25.22°
<i>Galaxea astreata</i>	S,L	C	55 ¹	55	+	37.12°
<i>Galaxea fascicularis</i>	S	R	40	20	+	36.60°
<i>Galaxea horrescens</i>	S	R	40	40	+	32.45°
<i>Galaxea longisepta</i>	S	R	43	20		29.70°
<i>Gardineroseris planulata</i>				20		35.85°
<i>Goniastrea edwardsi</i>	S	R	40	30	+	37.22°
<i>Goniastrea favulus</i>				15		37.67°
<i>Goniastrea pectinata</i>	S	C	40	40	+	37.56°
<i>Goniastrea retiformis</i>				20	+	37.59°
<i>Goniastrea stelligera</i>		M	40	20	+	34.90°
<i>Goniopora columna</i>				15	+	37.14°
<i>Goniopora djiboutiensis</i>	S,L	M	60	58		37.14°
<i>Goniopora eclipsensis</i>				20		28.47°
<i>Goniopora fruticosa</i>				25	+	32.89°
<i>Goniopora lobata</i>				30		38.9°
<i>Goniopora pedunculata</i>				30		32.73°
<i>Goniopora norfolkensis</i>				30		32.55°
<i>Goniopora palmensis</i>				20		24.87°
<i>Goniopora pandoraensis</i>				20		30.40°
<i>Goniopora pendulus</i>				20		36.8°
<i>Goniopora somaliensis</i>				60	+	37.48°
<i>Goniopora stokesi</i>				30		37.35°
<i>Goniopora tenuidens</i>				40	+	33.32°
<i>Halomitra pileus</i>	S	M	40	25		29.98°
<i>Heliofungia actiniformis</i>				25		33.22°
<i>Heliofungia fralinae</i>				27		19.42°
<i>Herpolitha limax</i>	S	M	40	30	+	33.46°
<i>Homophyllia australis</i>	S	R	40	40		40.62°
<i>Homophyllia bowerbanki</i>	S	R	40	20		36.32°
<i>Hydnophora exesa</i>	S,L	M	55 ¹	55	+	39.11°
<i>Hydnophora microconos</i>	S	M	40	35		35.5°
<i>Hydnophora pilosa</i>	S	R	40	30		33.43°
<i>Hydnophora rigida</i>	S	M	40	40		34.55°
<i>Isopora brueggemanni</i>				35		32.48°
<i>Isopora crateriformis</i>				15		24.52°

<i>Isopora cuneata</i>				15		38.88°
<i>Isopora palifera</i>	S	R	40	26		34.55°
<i>Leptastrea bewickensis</i>				20		37.35°
<i>Leptastrea bottae</i>				30	+	32.68°
<i>Leptastrea inaequalis</i>	I	R	40	20		32.68°
<i>Leptastrea pruinosa</i>				40	+	37.36°
<i>Leptastrea purpurea</i>	S	C	40	40	+	37.38°
<i>Leptastrea transversa</i>		C	40	50	+	33.23°
<i>Leptoria phrygia</i>				30		34.82°
<i>Leptoseris explanata</i>	S	M	55	20		33.95°
<i>Leptoseris fragilis</i>	S	M	95	40		NA
<i>Leptoseris glabra</i>	S	M	60	60		NA
<i>Leptoseris foliosa</i>				30		32.98°
<i>Leptoseris gardineri</i>				70		29.29°
<i>Leptoseris hawaiiensis</i>	S,L	C	125	102	+	35.72°
<i>Leptoseris mycetoseroides</i>	S	M	60	80	+	36.94°
<i>Leptoseris papyracea</i>	L		55 ¹	89		29.31°
<i>Leptoseris scabra</i>	S,L	R	99 ¹	99	+	36.70°
<i>Leptoseris solida</i>				70		37.61°
<i>Leptoseris striata</i>	L		102 ¹	102		NA
<i>Leptoseris yabei</i>	S	M	40	74	+	37.01°
<i>Lithophyllon concinna</i>	S	R	45	50	+	31.09°
<i>Lithophyllon repanda</i>	S	M	40	40		33.06°
<i>Lithophyllon scabra</i>	S	M	40	24	+	27.81°
<i>Lithophyllon spinifer*</i>	CF	R	60	40		25.85°
<i>Lithophyllon undulatum</i>	S	M	60	20		36.61°
<i>Lobactis scutaria</i>				40		37.32°
<i>Lobophyllia agaricia</i>				40		36.79°
<i>Lobophyllia corymbosa</i>	S	M	40	40	+	36.65°
<i>Lobophyllia dentata</i>				10		20.32°
<i>Lobophyllia diminuta</i>				10		30.12°
<i>Lobophyllia hataii</i>				40	+	36.64°
<i>Lobophyllia hemprichii</i>	S	R	40	40	+	36.1°
<i>Lobophyllia radians</i>	I	R	40	40		36.62°
<i>Lobophyllia recta</i>	I	M	40	40		36.74°
<i>Lobophyllia robusta</i>	S	R	40	40		36.27°
<i>Lobophyllia valenciennesii</i>				40		36.97°
<i>Lobophyllia vitiensis</i>		M	40	20	+	35.17°
<i>Madracis kirbyi</i>	I		66 ¹	66	+	32.46°
<i>Merulina ampliata</i>	S	C	40	50		36.87°
<i>Merulina scabricula</i>				40		37.38°
<i>Merulina triangularis</i>				20		34.68°
<i>Micromussa amakusensis</i>				30		36.62°
<i>Micromussa lordhowensis</i>	S	R	40	30		36.61°
<i>Micromussa regularis</i>				20		29.12°
<i>Montipora aequituberculata</i>	S	M	60	15	NA	38.9°
<i>Montipora angulata</i>				20	NA	38.16°
<i>Montipora australiensis</i>				30	NA	30.37°
<i>Montipora caliculata</i>	S	M	40	20	NA	34.21°
<i>Montipora capricornis</i>				20	NA	34.30°
<i>Montipora cebuensis</i>				20	NA	26.06°
<i>Montipora confusa</i>	S	M	40	30	NA	24.69°
<i>Montipora corbettensis</i>	S	M	80	20	NA	25.28°
<i>Montipora crassituberculata</i>	S	M	40	20	NA	34.01°

<i>Montipora danae</i>	S	M	40	50	NA	38.85°
<i>Montipora digitata</i>				5	NA	32.71°
<i>Montipora efflorescens</i>				20	NA	40.12°
<i>Montipora floweri</i>				35	NA	34.01°
<i>Montipora foliosa</i>	S,L	M	47 ¹	47	NA	34.34°
<i>Montipora foveolata</i>				25	NA	33.81°
<i>Montipora grisea</i>	S	M	40	20	NA	30.09°
<i>Montipora hispida</i>	S	M	40	20	NA	39.25°
<i>Montipora hodgsoni</i>				20	NA	19.70°
<i>Montipora hoffmeisteri</i>	S	M	40	40	NA	39.31°
<i>Montipora incrassata</i>	S	M	60	30	NA	38.57°
<i>Montipora informis</i>				10	NA	38.85°
<i>Montipora millepora</i>	S,L	C	70 ¹	70	NA	38.91°
<i>Montipora mollis</i>				40	NA	39.01°
<i>Montipora monasteriata</i>	S	M	40	40	NA	38.51°
<i>Montipora nodosa</i>				30	NA	33.81°
<i>Montipora palawanensis</i>				40	NA	19.90°
<i>Montipora peltiformis</i>				30	NA	33.89°
<i>Montipora spongodes</i>				20	NA	38.08°
<i>Montipora spumosa</i>	S	R	40	30	NA	37.98°
<i>Montipora stellata</i>				20	NA	31.3°
<i>Montipora tuberculosa</i>	S	M	40	40	NA	34.4°
<i>Montipora turgescens</i>				30	NA	38.57°
<i>Montipora turtlensis</i>				20	NA	34.23°
<i>Montipora undata</i>	S	M	40	30	NA	38.63°
<i>Montipora venosa</i>				30	NA	35.17°
<i>Montipora verrucosa</i>	S	M	40	45	NA	34.21°
<i>Montipora verruculosa</i>				20	NA	20.06°
<i>Moseleya latistellata</i>				10		30.47°
<i>Mycedium elephantotus</i>	S,L	C	60	70	+	37.66°
<i>Mycedium mancaoi</i>				NA		26.19°
<i>Mycedium robokaki</i>	S	R	35	NA		19.58°
<i>Oulastrea crispata</i>				10		36.89°
<i>Oulophyllia bennettiae</i>				30		32.45°
<i>Oulophyllia crispa</i>	Q	R	75	75		36.84°
<i>Oulophyllia levis</i>				30		30.25°
<i>Oxypora crassispinosa</i>				30		31.71°
<i>Oxypora glabra</i>	S	C	100	40		34.2°
<i>Oxypora lacera</i>	S	C	63	30	+	37.66°
<i>Pachyseris gemmae</i>				25		19.88°
<i>Pachyseris rugosa</i>	Q	R	75	20	+	31.01°
<i>Pachyseris speciosa</i>	S,L	C	93	88	+	36.65°
<i>Palauastrea ramosa</i>				30		34.48°
<i>Paragoniastrea australensis</i>	I	R	40	40	+	38.12°
<i>Paragoniastrea russelli</i>	S	M	40	25	+	37.32°
<i>Pavona bipartita</i>	S	R	40	20		30.53°
<i>Pavona cactus</i>				20		37.17°
<i>Pavona clavus</i>				40		34.38°
<i>Pavona decussata</i>				15	+	37.27°
<i>Pavona duerdeni</i>				15		36.51°
<i>Pavona explanulata</i>				20	+	36.94°
<i>Pavona maldivensis</i>				30	+	36.20°
<i>Pavona minuta</i>	S,L	M	55 ¹	55	+	28.40°
<i>Pavona varians</i>	S	M	40	20	+	36.76°

<i>Pavona venosa</i>				2	+	32.18°
<i>Pectinia alcorni</i>				25	+	34.3°
<i>Pectinia lactuca</i>				15		37.95°
<i>Pectinia maxima</i>				25		19.42°
<i>Pectinia paeonia</i>	S	R	40	25	+	36.88°
<i>Physogyra lichtensteini</i>				15	+	35.38°
<i>Platygyra acuta</i>				20		31.47°
<i>Platygyra contorta</i>				20		37.42°
<i>Platygyra daedalea</i>	S	R	40	20	+	38.68°
<i>Platygyra lamellina</i>	Q	M	75	30		34.07°
<i>Platygyra pini</i>	S	C	40	30	+	37.9°
<i>Platygyra ryukyuensis</i>				30		31.68°
<i>Platygyra sinensis</i>				30		37.25°
<i>Platygyra verweyi</i>				20		36.39°
<i>Platygyra yaeyamaensis</i>				20		29.46°
<i>Plerogyra sinuosa</i>	S	R	40	40	+	33.37°
<i>Plesiastrea versipora</i>	S,L	M	60	40	+	40.55°
<i>Pleuractis granulosa</i>	S	M	40	60		32.55°
<i>Pleuractis moluccensis</i>	S	R	40	30	+	32.86°
<i>Pleuractis paumotensis</i>	S,L	R	40	30	+	32.73°
<i>Pleuractis gravis</i>				NA		NA
<i>Pocillopora acuta</i>	S	R	60	NA		NA
<i>Pocillopora ankei</i>				10		20.31°
<i>Pocillopora brevicornis</i>				NA		NA
<i>Pocillopora damicornis</i>	S,L	C	60	55	+	35.95°
<i>Pocillopora grandis</i> ³	S	M	40	20		36.53°
<i>Pocillopora kelleheri</i>				40		29.46°
<i>Pocillopora meandrina</i>				27		29.73°
<i>Pocillopora molokensis</i>	L		55	55		32.86°
<i>Pocillopora verrucosa</i>	S	R	40	20		36.29°
<i>Pocillopora woodjonesi</i>	I	R	40 ²	26		29.48°
<i>Podabacia crustacea</i>	S,L	C	65	50	+	34.04°
<i>Podabacia motuporensis</i>	S	M	40	20		29.28°
<i>Polyphyllia talpina</i>	S	R	40	30		33.73°
<i>Porites annae</i>				30		32.40°
<i>Porites australiensis</i>				50	+	34.29°
<i>Porites cylindrica</i>	S	R	40	30		36.76°
<i>Porites deformis</i>				30		26.28°
<i>Porites densa</i>				20		29.65°
<i>Porites evermanni</i>				30		33.94°
<i>Porites heronensis</i>				20		36.44°
<i>Porites horizontalata</i>				20		29.73°
<i>Porites lichen</i>				40	+	36.76°
<i>Porites lobata</i>	S	M	40	40		37.11°
<i>Porites lutea</i>				50		38.83°
<i>Porites mayeri</i>				20		32.92°
<i>Porites monticulosa</i>				20		30.62°
<i>Porites murrayensis</i>				5		33.84°
<i>Porites myrmidonensis</i>				55		24.76°
<i>Porites nigrescens</i>	S	R	40	10		32.04°
<i>Porites rus</i>	S	C	60	20		30.57°
<i>Porites solida</i>				9		34.39°
<i>Porites stephensoni</i>				5		31.09°
<i>Porites vaughani</i>	S	M	65	40		29.97°

<i>Psammocora albopicta</i>				28		NA
<i>Psammocora contigua</i>				35		38.25°
<i>Psammocora digitata</i>				20	+	33.78°
<i>Psammocora haimiana</i>				50	+	34.52°
<i>Psammocora nierstraszi</i>				NA	+	NA
<i>Psammocora obtusangula</i>				NA		NA
<i>Psammocora profundacella</i>	I	R	40 ²	30	+	37.04°
<i>Pseudosiderastrea tayamai</i>	S	R	40	20	+	31.98°
<i>Sandalolitha boucheti</i>				NA		NA
<i>Sandalolitha dentata</i>	S	R	40	25		30.32°
<i>Sandalolitha robusta</i>	S	R	40	21	+	33.44°
<i>Scapophyllia cylindrica</i>				25		34.94°
<i>Seriatopora caliendrum</i>				40		32.92°
<i>Seriatopora hystrix</i>	S,L	C	60	55	+	32.45°
<i>Stylaraea punctata</i>				NA		30.83°
<i>Stylocoeniella armata</i>				50	+	36.98°
<i>Stylocoeniella guentheri</i>	S	R	60	43	+	37.14°
<i>Stylophora pistillata</i>	S,L	C	40	65	+	37.6°
<i>Stylophora subseriata</i>				30		32.21°
<i>Trachyphyllia geoffroyi</i>	L		65 ¹	65		36.72°
<i>Turbinaria bifrons</i>				25		32.56°
<i>Turbinaria conspicua</i>				20		30.54°
<i>Turbinaria frondens</i>				20		40.47°
<i>Turbinaria heronensis</i>				15		33.14°
<i>Turbinaria irregularis</i>				40		36.76°
<i>Turbinaria mesenterina</i>				20	+	37.51°
<i>Turbinaria patula</i>				20		33.77°
<i>Turbinaria peltata</i>	L	M	88 ¹	20		39.11°
<i>Turbinaria radicalis</i>				25		33.91°
<i>Turbinaria reniformis</i>	S	M	40	60	+	37.43°
<i>Turbinaria stellulata</i>	Q		43	15	+	36.68°
<i>Zoopilus echinatus*</i>	S,I	R	40	NA		NA
Totals			195		141	427

Species	GBR	Coral Sea	Depth Range (m)	Specimen Numbers
<i>Acropora pichoni</i> Wallace, 1999 ¹	+	-	40	G67397
<i>Acropora kimbeensis</i> Wallace, 1999 ¹	+	+	40	G67402-3,G65620
<i>Acropora tenella</i> (Brook, 1892) ¹	+	+	40-60	G65120,G65123,G65375-6,G65496,G65498, G69853,G69874,G69892,G69909-10,G69932
<i>Craterastrea levis</i> Head, 1983 ^{1,2}	-	+	60-100	G68251, CA
<i>Zoopilus echinatus</i> Dana, 1846 ^{2,3}	+	-	40	G74078
<i>Lithophyllon</i> cf. <i>spinifer</i> (Claereboudt & Hoeksema, 1987)	+	-	60	G65638

Table S3. New species recorded for the region from our expeditions, with identifications confirmed by specialist taxonomists. ¹ reported by our group [31,32]; ² represents new genus record; ³ reported by [35] from an image taken during our expeditions. CA refers to the California Academy of Sciences Collection.

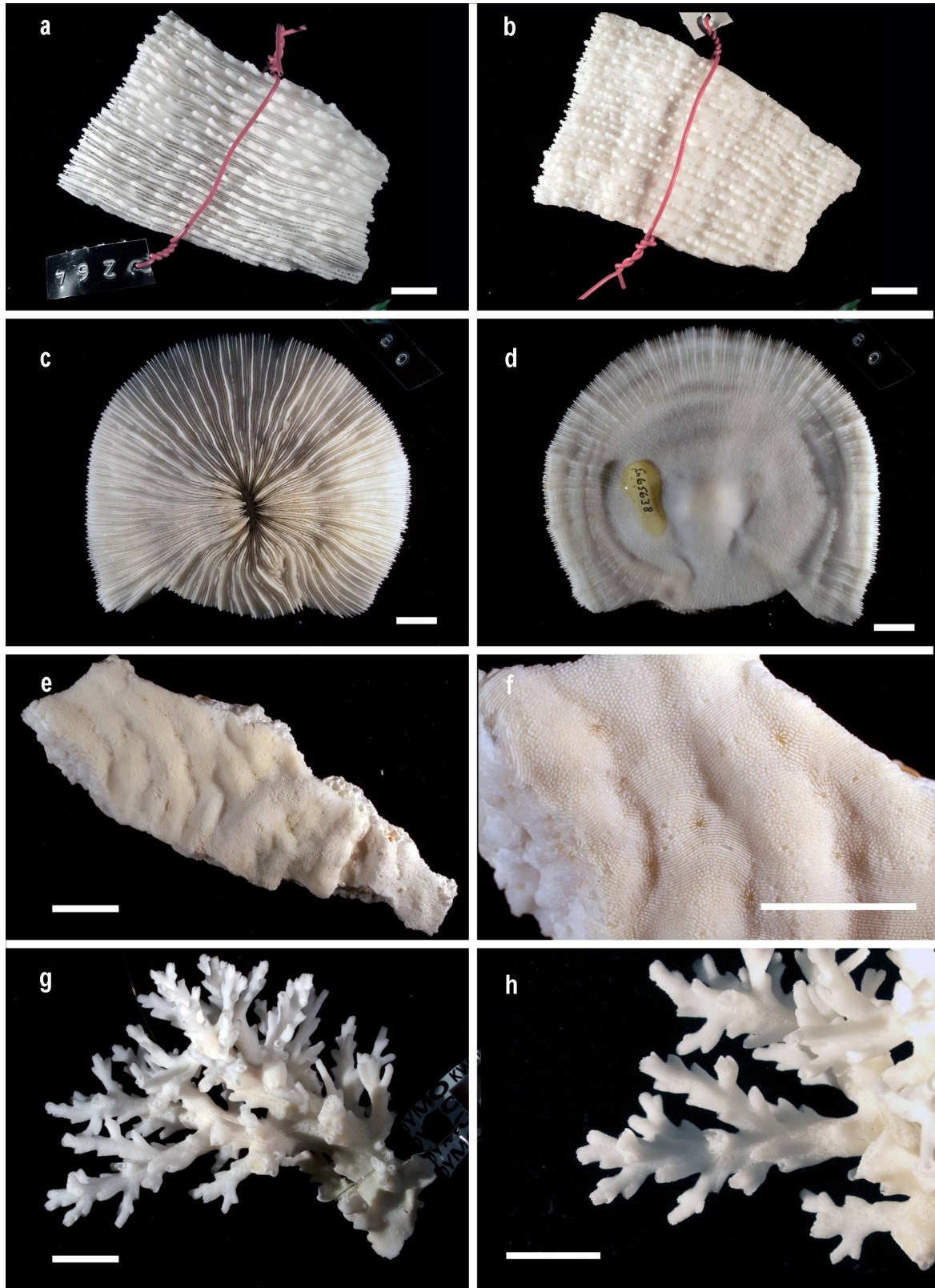


Figure S1. New records for the region: *Zoopilus echinatus* (a) upper surface and (b) lower, *Lithophyllon cf. spinifer* G65638 (c) upper surface and (d) lower, *Craterastrea levis* G68251 (e) whole specimen and (f) corallite detail, *Acropora kimbeensis* G67402 (g) whole specimen and (h) corallite detail. Specimens of *Acropora pichoni* and *A. tenella* shown in [31]. Scale bars: 1 cm.

Maximum Depth (m)

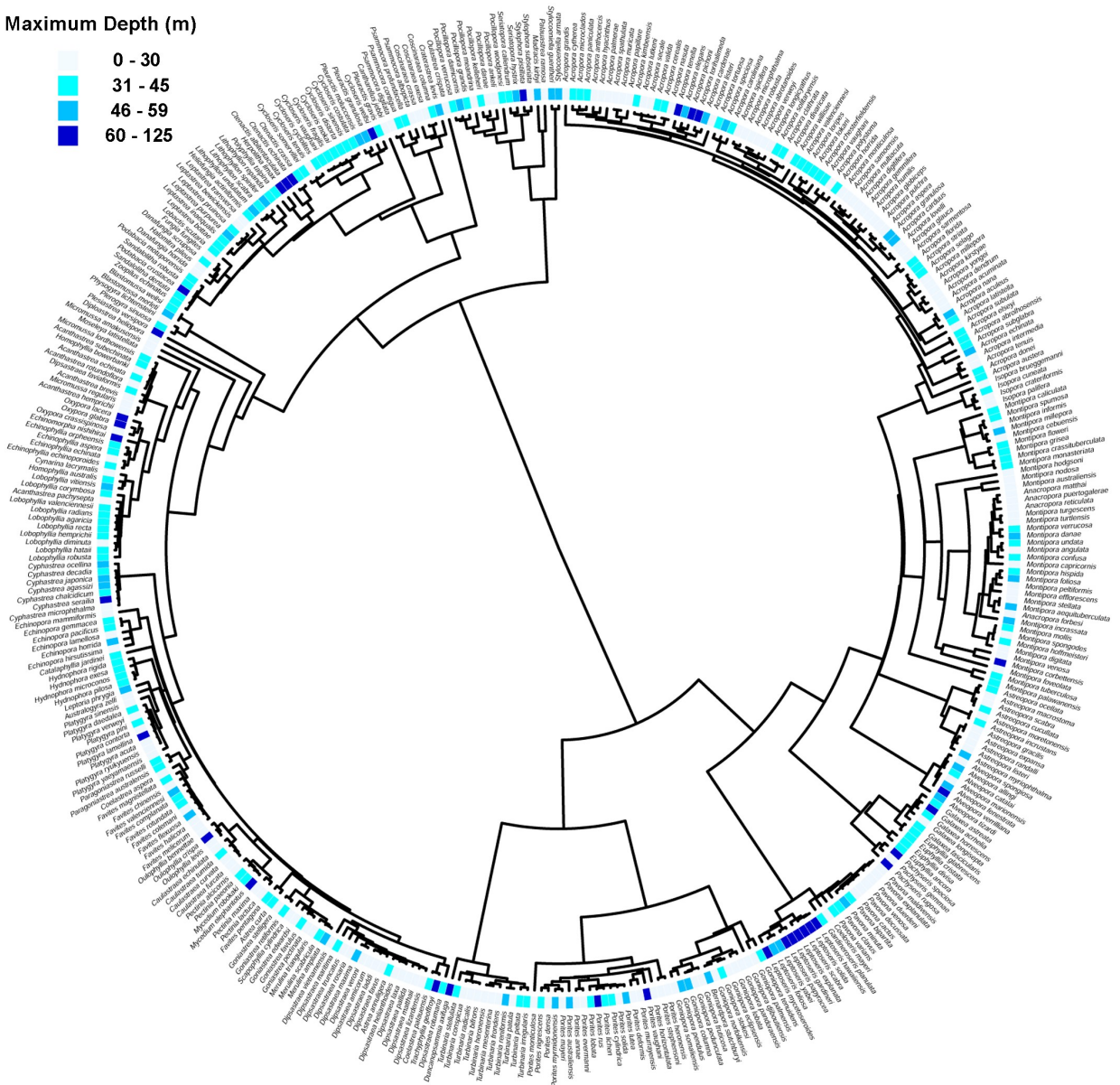
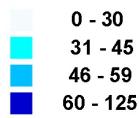


Figure S2. Phylogenetic analysis of maximum depth of occurrence for scleractinian reef corals of the northern GBR region according to [35] with current nomenclature [33]. The median tree of [34] is used with additional depth data from [22-28,38,83,84].

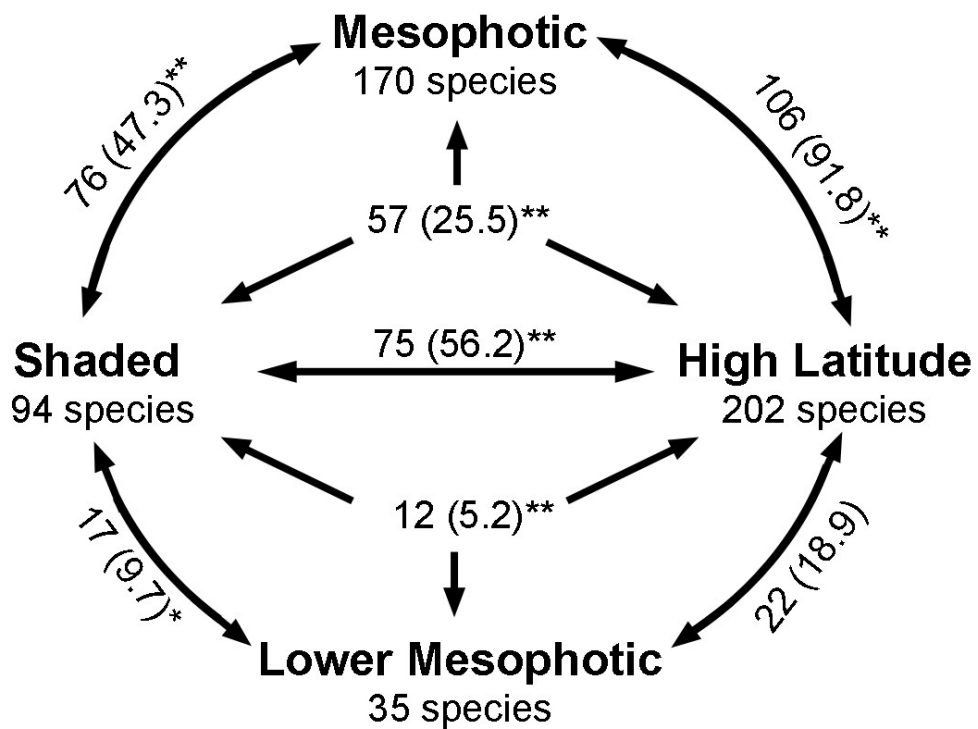


Figure S3. Summary of chi-squared analyses for scleractinian corals reported for the northern GBR region [35] that occurred at mesophotic (30-150 m) and lower mesophotic (60-150 m) depths in the region (table S1), and for higher ($> 34^\circ$) latitudes [38] and shaded microhabitats [39]. Expected values in brackets, ** denotes $p < 0.01$, * denote $p < 0.05$.

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