

## Part 2

# Hermatypic corals of Ashmore Reef and Cartier Island

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### Abstract

Ashmore Reef has the highest species diversity of any area off the coast of Western Australia. Two-hundred and fifty-five species of 56 genera are recorded. Five species, *Pavona* sp., *Psammocora* sp., *Porites eridani*, *Platygyra ryukyuensis* and *Mycedium robokaki* were found in Australia for the first time. Many other species known from eastern Australia are new records for Western Australia.

### Background and discussion

Since no previous coral collections had been made from Ashmore Reef, as many habitats as possible were sampled in the time available. Most collections were made by SCUBA diving supplemented by snorkelling and reef walking; the collecting effort was similar to that at Scott Reef and the Rowley Shoals so that fairly valid comparisons of the coral faunas can be made.

Ashmore Reef with 255 species of 56 genera has a considerably richer coral fauna than Scott and Seringapatam Reefs (219 species of 56 genera) or the Rowley Shoals (188 species of 52 genera) (Veron 1986). Altogether 236 species have been recorded from these atolls (Veron 1986a, Veron and Marsh 1988), considerably fewer than the number of species recorded from Ashmore and Cartier Reefs. Five species, *Psammocora* sp., *Porites eridani*, *Platygyra ryukyuensis* and *Mycedium robokaki* are known from various localities to the north of Australia but were found in Australia for the first time at Ashmore Reef.

Many other species known from eastern Australia were found for the first time in north-western Australia at Ashmore Reef (Veron and Marsh 1988).

Records are from Veron and Marsh (1988) with some nomenclatural changes after Hoeksema (1989).

### References

- Hoeksema, B.W. (1989). Taxonomy, phylogeny and biogeography of mushroom corals (Scleractinia: Fungiidae). *Zoologische Verhandelingen* No. 254: 295 pp.
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## List of reef-building corals

## Key to symbols

Numbers = sampling stations (see Part 1, Figure 2 and 3 and Table 1)

V = visual record

+ = present

C = Cartier I. stations

	Ashmore Reef/ Cartier I.	Scott/ Seringapa- tam Reefs	Rowley Shoals
<b>ASTROCOENIIDAE</b>			
<i>Stylocoeniella armata</i> Ehrenberg, 1834	-	+	+
<i>S. guentheri</i> Bassett-Smith, 1890	1	+	+
<b>POCILLOPORIDAE</b>			
<i>Pocillopora verrucosa</i> Ellis and Solander, 1786	11	+	+
<i>P. meandrina</i> Dana, 1846	V	-	-
<i>P. eydouxi</i> Edwards and Haime, 1860	13	+	+
<i>P. damicornis</i> Linnaeus, 1758	3	+	+
<i>P. woodjonesi</i> Vaughan, 1918	C1	+	-
<i>Seriatopora hystrix</i> Dana, 1846	5	+	+
<i>S. caliendrum</i> Ehrenberg, 1834	V	-	-
<i>Stylophora pistillata</i> Esper, 1797	2	+	+
<b>ACROPORIDAE</b>			
<i>Acropora palifera</i> (Lamarck, 1816)	3	+	+
<i>A. brueggemanni</i> (Brook, 1893)	15	+	+
<i>A. humilis</i> (Dana, 1846)	2	+	+
<i>A. gemmifera</i> (Brook, 1892)	4,5,C2	+	+
<i>A. monticulosa</i> (Brüggemann, 1879)	V	+	+
<i>A. samoensis</i> (Brook, 1891)	2,6	+	+
<i>A. digitifera</i> (Dana, 1846)	3,7	+	+
<i>A. robusta</i> (Dana, 1846)	V	+	+
<i>A. danai</i> (Edwards and Haime, 1860)	4,7	+	+
<i>A. nobilis</i> (Dana, 1846)	2	+	+
<i>A. formosa</i> (Dana, 1846)	11	+	+
<i>A. microphthalma</i> (Verrill, 1869)	2,6,10	+	+
<i>A. horrida</i> (Dana, 1846)	2,3	+	+
<i>A. vaughani</i> Wells, 1954	-	+	+
<i>A. aculeus</i> (Dana, 1846)	-	-	+
<i>A. glauca</i> (Brook, 1893)	4,5,13	-	+
<i>A. austera</i> (Dana, 1846)	V	+	+
<i>A. abrolhosensis</i> Veron, 1985	2	+	+
<i>A. pulchra</i> (Brook, 1891)	3	+	+
<i>A. elseyi</i> (Brook, 1892)	6,11	+	-
<i>A. aspera</i> (Dana, 1846)	3	-	-
<i>A. paniculata</i> Verrill, 1902	11	-	-
<i>A. hyacinthus</i> (Dana, 1846)	6,7,13	+	+

	Ashmore Reef/ Cartier I.	Scott/ Seringapa- tam Reefs	Rowley Shoals
<i>A. latistella</i> (Brook, 1892)	3,6	+	+
<i>A. subulata</i> (Dana, 1846)	2,6,7,10,13	+	+
<i>A. nana</i> (Studer, 1878)	3	+	+
<i>A. cerealis</i> (Dana, 1846)	V	+	+
<i>A. nasuta</i> (Dana, 1846)	V	+	+
<i>A. valida</i> (Dana, 1846)	V	+	+
<i>A. clathrata</i> (Brook, 1891)	7	+	+
<i>A. solitaryensis</i> Veron and Wallace, 1984	7	-	+
<i>A. subglabra</i> (Brook, 1891)	2	+	+
<i>A. loripes</i> (Brook, 1892)	2	-	-
<i>A. stoddarti</i> Pillai and Scheer, 1976	-	+	+
<i>A. granulosa</i> (Edwards and Haime, 1860)	+	+	+
<i>A. acuminata</i> (Verrill, 1864)	7	-	-
<i>A. caroliniana</i> Nemenzo, 1976	+	-	+
<i>A. verweyi</i> Veron and Wallace, 1984	V	-	-
<i>A. exquiseta</i> Nemenzo, 1971	18	+	+
<i>A. millepora</i> (Ehrenberg, 1834)	3	+	+
<i>A. tenuis</i> (Dana, 1846)	V	+	+
<i>A. donei</i> Veron and Wallace, 1984	C1	+	+
<i>A. cytherea</i> (Dana, 1846)	4	+	+
<i>A. microclados</i> (Ehrenberg, 1834)	-	-	+
<i>A. grandis</i> (Brook, 1892)	V	+	+
<i>A. selago</i> (Studer, 1878)	4,6	+	+
<i>A. valenciennesi</i> (Edwards and Haime, 1860)	3	+	-
<i>A. yongei</i> Veron and Wallace, 1984	V	+	+
<i>A. anthocercis</i> (Brook, 1893)	V	+	-
<i>A. divaricata</i> (Dana, 1846)	7,11	+	-
<i>A. longicyathus</i> (Edwards and Haime, 1860)	2	+	+
<i>A. florida</i> (Dana, 1846)	6	+	+
<i>Astreopora myriophthalma</i> (Lamarck, 1816)	V	+	+
<i>A. gracilis</i> Bernard, 1896	V	+	-
<i>A. explanata</i> Veron, 1985	V	+	+
<i>A. ocellata</i> Bernard, 1896	2	-	-
<i>Montipora monasteriata</i> (Forskål, 1775)	2	+	+
<i>M. hoffmeisteri</i> Wells, 1954	2,4,5,6,10,13	+	+
<i>M. floweri</i> Wells, 1954	4,7	+	+
<i>M. mollis</i> Bernard, 1897	2,6,13	+	+
<i>M. millepora</i> Crossland, 1952	4,5,6,13	-	+
<i>M. turtlensis</i> Veron and Wallace, 1984	-	-	+
<i>M. angulata</i> (Lamarck, 1816)	-	+	-
<i>M. hispida</i> (Dana, 1846)	6,11	+	-
<i>M. incrassata</i> (Dana, 1846)	-	+	-
<i>M. peltiformis</i> Bernard, 1897	3	-	+
<i>M. turgescens</i> Bernard, 1897	-	+	+
<i>M. spumosa</i> (Lamarck, 1816)	V	+	+
<i>M. undata</i> Bernard, 1897	4,7,11	+	+
<i>M. danae</i> (Edwards and Haime, 1851)	V	+	+
<i>M. venosa</i> (Ehrenberg, 1834)	13	+	-

## Reef-building corals

	Ashmore Reef/ Cartier I.	Scott/ Seringapa- tam Reefs	Rowley Shoals
<i>M. verrucosa</i> (Lamarck, 1816)	4,5	+	+
<i>M. foveolata</i> (Dana, 1846)	V	+	+
<i>M. efflorescens</i> Bernard, 1897	11	+	+
<i>M. grisea</i> Bernard, 1897	2,4,6,7	+	+
<i>M. informis</i> Bernard, 1897	11	+	+
<i>M. foliosa</i> (Pallas, 1766)	6,7	+	+
<i>M. aequituberculata</i> Bernard, 1897	2	+	+
<i>M. tuberculosa</i> (Lamarck, 1816)	-	+	-
<i>M. caliculata</i> (Dana, 1846)	4,10	-	-
<i>M. spongodes</i> Bernard, 1897	3	-	-
<i>M. digitata</i> (Dana, 1846)	13,C2	+	-
<i>M. nodosa</i> (Dana, 1846)	-	+	-
<i>Anacropora puertogalerae</i> Nemenzo, 1964	-	+	-
AGARICIIDAE			
<i>Pavona cactus</i> (Forsk., 1775)	7	+	+
<i>P. decussata</i> (Dana, 1846)	2,18	+	+
<i>P. explanulata</i> (Lamarck, 1816)	V	+	+
<i>P. clavus</i> (Dana, 1846)	2,C1	+	+
<i>P. minuta</i> Wells, 1954	V	+	+
<i>P. varians</i> Verrill, 1864	2,4,5,13	+	+
<i>P. venosa</i> (Ehrenberg, 1834)	6,11	+	+
<i>P. maldivensis</i> (Gardiner, 1905)	7	+	+
<i>P. sp.</i>	2,4,6,7	-	-
<i>Leptoseris explanata</i> Yabe and Sugiyama, 1941	11	+	+
<i>L. foliosa</i> Dineson, 1980	7	+	-
<i>L. hawaiiensis</i> Vaughan, 1907	7	+	+
<i>L. incrustans</i> (Quelch, 1886)	5	+	-
<i>L. mycetoseroides</i> Wells, 1954	2,7,13	+	+
<i>L. yabei</i> (Pillai and Scheer, 1976)	11	+	+
<i>L. papyracea</i> (Dana, 1846)	-	+	-
<i>L. scabra</i> Vaughan, 1907	7,11	+	+
<i>Gardineroseris planulata</i> (Dana, 1846)	2	+	+
<i>Coeloseris mayeri</i> Vaughan, 1918	3,13	+	+
<i>Pachyseris rugosa</i> (Lamarck, 1801)	V	+	+
<i>P. speciosa</i> (Dana, 1846)	V	+	+
SIDERASTREIDAE			
<i>Coscinaraea exesa</i> (Dana, 1846)	-	-	+
<i>C. columna</i> (Dana, 1846)	11	+	-
<i>Psammodora superficialis</i> Gardiner, 1898	6,13	+	+
<i>P. contigua</i> (Esper, 1797)	1,C2	+	+
<i>P. digitata</i> Edwards and Haime, 1851	2	+	+
<i>P. haimeana</i> Edwards and Haime, 1851	-	+	+
<i>P. explanulata</i> van der Horst, 1922	7,11,13	-	-
<i>P. nierstraszi</i> van der Horst, 1921	4,7,11,17	-	-
<i>P. profundacella</i> Gardiner, 1898	10,13	+	-
<i>P. sp.</i>	10	-	-

	Ashmore Reef/ Cartier I.	Scott/ Seringapa- tam Reefs	Rowley Shoals
<b>FUNGIIDAE</b>			
<i>Cycloseris cyclolites</i> (Lamarck, 1801)	4,C1	-	-
<i>C. costulata</i> (Ortmann, 1889)	17	+	+
<i>C. vaughani</i> (Boschma, 1923)	13,C1	-	-
<i>C. sinensis</i> Edwards and Haime, 1851	11,17	-	-
<i>C. marginata</i> (Boschma, 1923)	13	-	-
<i>Fungia fungites</i> (Linnaeus, 1758)	2,4	+	+
<i>F. scruposa</i> Klunzinger, 1879	2,4,6	+	-
<i>F. horrida</i> Dana, 1846	2	+	+
<i>F. valida</i> Verrill, 1864	2	-	-
<i>F. klunzingeri</i> Doderlein, 1901	V	-	+
<i>F. repanda</i> Dana, 1846	2,11,13,15	+	+
<i>F. concinna</i> Verrill, 1864	2	+	-
<i>F. granulosa</i> Klunzinger, 1879	2	+	-
<i>F. scutaria</i> Lamarck, 1801	5	+	+
<i>F. paumotensis</i> Stutchbury, 1833	11	+	+
<i>Ctenactis echinata</i> (Pallas, 1766)	V	-	-
<i>C. simplex</i> (Gardiner, 1905)	V	+	+
<i>Heliofungia actiniformis</i> (Quoy and Gaimard, 1833)	2	+	-
<i>Herpolitha limax</i> (Houttuyn, 1772)	2	+	+
<i>H. weberi</i> (van der Horst, 1921)	2	-	+
<i>Polyphyllia talpina</i> (Lamarck, 1801)	10	+	+
<i>Sandalolitha robusta</i> (Quelch, 1886)	V	+	+
<i>Lithophyllon undulatum</i> Rehberg, 1892	V	+	-
<i>Podabacia crustacea</i> (Pallas, 1766)	7	+	+
<b>PORITIDAE</b>			
<i>Porites solida</i> (Forskål, 1775)	-	+	+
<i>P. lobata</i> Dana, 1846	4	+	+
<i>P. murrayensis</i> Vaughan, 1918	-	+	+
<i>P. sp. cf. australiensis</i> Vaughan, 1918	2	-	-
<i>P. stephensoni</i> Crossland, 1952	2,3,17	-	-
<i>P. lutea</i> Edwards and Haime, 1860	2,17	+	+
<i>P. cylindrica</i> Dana, 1846	2,3	+	+
<i>P. nigrescens</i> Dana, 1848	2	+	+
<i>P. lichen</i> Dana, 1846	4,11	+	+
<i>P. vaughani</i> Crossland, 1952	2,3,4,5,6,7, 13	+	+
<i>P. rus</i> (Forskål, 1775)	2,4	+	+
<i>P. eridani</i> Umbgrove, 1940	2,3,7,10,13	-	-
<i>P. sp.</i>	12	+	-
<i>Goniopora djiboutiensis</i> Vaughan, 1907	-	+	+
<i>G. somaliensis</i> Vaughan, 1907	2,4,13	-	-
<i>G. stokesi</i> Edwards and Haime, 1851	V	-	-
<i>G. pandoraensis</i> Veron and Pichon, 1982	4	-	-
<i>G. columna</i> Dana, 1846	2	+	-

## Reef-building corals

	Ashmore Reef/ Cartier I.	Scott/ Seringapa- tam Reefs	Rowley Shoals
<i>G. tenuidens</i> Quelch, 1886	2,6	+	+
<i>G. palmensis</i> Veron and Pichon, 1982	-	-	+
<i>G. stutchburyi</i> Wells, 1955	13,C1	-	+
<i>G. minor</i> Crossland, 1952	2	+	+
<i>G. lobata</i> Edwards and Haime, 1860	V	+	-
<i>G. pendulus</i> Veron, 1985	V	-	-
<i>G. sp.</i>	13	-	-
<i>G. sp.2</i>	+	-	-
<i>Alveopora allingi</i> Hoffmeister, 1925	-	+	+
<i>A. fenestrata</i> (Lamarck, 1816)	V	-	+
<i>A. catalai</i> Wells, 1968	2	+	-
<i>A. spongiosa</i> Dana, 1846	2,10,13	+	+
<i>A. verrilliana</i> Dana, 1872	5,10,13	+	-
<i>A. tizardi</i> Bassett-Smith, 1890	-	-	+
FAVIIDAE			
<i>Caulastrea furcata</i> Dana, 1846	2,C1	+	-
<i>Favia stelligera</i> (Dana, 1846)	15	+	+
<i>F. helianthoides</i> Wells, 1954	V	+	-
<i>F. laxa</i> (Klunzinger, 1879)	2	+	+
<i>F. favus</i> (Forskål, 1775)	2	+	+
<i>F. pallida</i> (Dana, 1846)	10	+	+
<i>F. matthai</i> Vaughan, 1918	2,4	+	+
<i>F. rotumana</i> (Gardiner, 1899)	V	+	+
<i>F. maxima</i> Veron, Pichon and Wijsman-Best, 1977	V	+	+
<i>F. lizardensis</i> Veron, Pichon and Wijsman-Best, 1977	V	+	+
<i>F. speciosa</i> (Dana, 1846)	V	+	+
<i>F. veroni</i> Moll and Borel Best, 1984	V	-	-
<i>F. rotundata</i> (Veron, Pichon and Wijsman-Best, 1977)	C1	+	-
<i>Favites halicora</i> (Ehrenberg, 1834)	V	+	+
<i>F. flexuosa</i> (Dana, 1846)	7	-	-
<i>F. chinensis</i> (Verrill, 1866)	7	-	-
<i>F. pentagona</i> (Esper, 1794)	4,5,10	+	+
<i>F. russelli</i> (Wells, 1954)	2,5,7,10	+	+
<i>F. complanata</i> (Ehrenberg, 1834)	2,6	+	-
<i>F. abdita</i> (Ellis and Solander, 1786)	V	+	-
<i>Goniastrea retiformis</i> (Lamarck, 1816)	C2	+	+
<i>G. edwardsi</i> Chevalier, 1971	V	+	+
<i>G. pectinata</i> (Ehrenberg, 1834)	10,13	+	+
<i>G. aspera</i> Verrill, 1865	2,3	+	-
<i>G. favulus</i> (Dana, 1846)	V	+	-
<i>G. palauensis</i> (Yabe, Sugiyama and Eguchi, 1936)	V	+	-
<i>Platygyra daedalea</i> (Ellis and Solander, 1786)	4	+	+
<i>P. lamellina</i> (Ehrenberg, 1834)	V	+	-

	Ashmore Reef/ Cartier I.	Scott/ Seringapa- tam Reefs	Rowley Shoals
<i>P. sinensis</i> (Edward and Haime, 1849)	4,5,7	+	+
<i>P. pini</i> Chevalier, 1975	2,4,6,10	+	+
<i>P. verweyi</i> Wijsman-Best, 1976	3,4	+	+
<i>P. ryukyuensis</i> Yabe and Sugiyama 1935	2,3,4,6,11	+	-
<i>Leptoria phrygia</i> (Ellis and Solander, 1786)	2	+	+
<i>Oulophyllia crispera</i> (Lamarck, 1816)	V	+	+
<i>O. bennettiae</i> (Veron, Pichon and Wijsman-Best 1977)	V	+	+
<i>Montastrea curta</i> (Dana, 1846)	15	+	+
<i>M. magnistellata</i> Chevalier, 1971	V	+	+
<i>M. annuligera</i> (Edwards & Haime, 1849)	4,5,13	-	-
<i>M. valenciennesi</i> (Edwards and Haime, 1848)	4,5	+	+
<i>Plesiastrea versipora</i> (Lamarck, 1816)	2	+	+
<i>Diploastrea heliopora</i> (Lamarck, 1816)	V	+	+
<i>Leptastrea inaequalis</i> Klunzinger, 1879	V	+	+
<i>L. purpurea</i> (Dana, 1846)	5,7	+	+
<i>L. transversa</i> Klunzinger, 1879	6,13	+	+
<i>L. pruinosa</i> Crossland, 1952	4,5,7	+	+
<i>L. bottae</i> (Edwards and Haime, 1849)	+	-	-
<i>Cyphastrea serailia</i> (Forskål, 1775)	2,4	+	+
<i>C. chalcidicum</i> (Forskål, 1775)	7	+	+
<i>C. microphthalma</i> (Lamarck, 1816)	4,6,7,	+	+
<i>C. sp.</i>	-	+	-
<i>Echinopora lamellosa</i> (Esper, 1795)	4,7,C1	+	+
<i>E. horrida</i> Dana, 1846	2	+	+
<i>E. hirsutissima</i> Edwards and Haime, 1849	15,C1	+	-
<i>E. gemmacea</i> (Lamarck, 1816)	C1	-	-
<i>E. mammiformis</i> (Nemenzo, 1959)	-	+	-
<i>E. sp.</i>	2	-	-
OCULINIDAE			
<i>Galaxea astreata</i> (Lamarck, 1816)	V	+	+
<i>G. fascicularis</i> (Linnaeus, 1767)	V	+	+
<i>Acrhelia horrescens</i> (Dana, 1846)	2	+	+
MERULINIDAE			
<i>Hydnophora exesa</i> (Pallas, 1766)	2	+	+
<i>H. microconos</i> (Lamarck, 1816)	3	-	-
<i>H. rigida</i> (Dana, 1846)	2,11	+	+
<i>H. pilosa</i> Veron, 1985	V	+	-
<i>Merulina ampliata</i> (Ellis and Solander, 1786)	2	+	+
<i>M. scabricula</i> Dana, 1846	2	+	+
<i>Scapophyllia cylindrica</i> (Edwards and Haime, 1848)	V	+	+
MUSSIDAE			
<i>Australomussa rowleyensis</i> Veron, 1985	7	+	+
<i>Acanthastrea echinata</i> (Dana, 1846)	13	+	+

## Reef-building corals

	Ashmore Reef/ Cartier I.	Scott/ Seringapa- tam Reefs	Rowley Shoals
<i>A. bowerbanki</i> Edwards and Haime, 1851	4	-	-
<i>Lobophyllia hemprichii</i> (Ehrenberg, 1834)	2,10,13	+	+
<i>L. corymbosa</i> (Forskål, 1775)	V	-	-
<i>L. hataii</i> Yabe, Sugiyama and Eguchi, 1936	V	+	+
<i>Symphyllia recta</i> (Dana, 1846)	V	+	+
<i>S. radians</i> Edwards and Haime, 1849	V	-	-
<i>S. agaricia</i> Edwards and Haime, 1849	V	+	+
<i>S. valenciennesii</i> Edwards and Haime, 1849	V	+	+
PECTINIIDAE			
<i>Echinophyllia aspera</i> (Ellis and Solander, 1786)	V	+	-
<i>E. echinata</i> (Saville-Kent, 1871)	2	-	-
<i>E. orpheensis</i> Veron and Pichon, 1980	2	+	+
<i>Oxypora lacera</i> (Verrill, 1864)	2,7	+	+
<i>O. glabra</i> Nemenzo, 1959	V	+	+
<i>Mycedium elephantotus</i> (Pallas, 1766)	V	+	+
<i>M. robokaki</i> Moll and Borel Best, 1984	2,7,13	-	-
<i>Pectinia lactuca</i> (Pallas, 1766)	V	+	+
<i>P. alcicornis</i> (Saville-Kent, 1871)	2,11	+	-
<i>P. teres</i> Nemenzo, 1981	V	+	+
<i>P. paeonia</i> (Dana, 1846)	V	+	-
CARYOPHYLLIIDAE			
<i>Catalaphyllia jardinei</i> (Saville-Kent, 1893)	2	-	-
<i>Euphyllia glabrescens</i> (Chamisso and Eysenhardt, 1821)	V	+	+
<i>E. cristata</i> Chevalier 1971	-	-	+
<i>E. ancora</i> Veron and Pichon, 1980	2	+	+
<i>Plerogyra sinuosa</i> (Dana, 1846)	V	+	+
<i>Physogyra lichtensteini</i> (Edwards and Haime, 1851)	V	+	+
DENDROPHYLLIIDAE			
<i>Turbinaria mesenterina</i> (Lamarck, 1816)	V	-	+
<i>T. stellulata</i> (Lamarck, 1816)	2	+	+
<i>T. peltata</i> (Esper, 1794)	4	+	-
<i>T. frondens</i> (Dana, 1846)	V	+	+
<i>T. reniformis</i> Bernard, 1896	4	+	-