

New records of fishes for the Rowley Shoals and Scott/Seringapatam Reefs, off north-western Australia

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The Rowley Shoals and Scott/Seringapatam Reefs are located off the north-western coastline of Western Australia. Staff of the Western Australian Museum have made several collecting trips to these areas (Berry 1986). Fish lists from these surveys have been published in Allen and Russell (1986) and Allen (1993) – these report a total of 688 species for the two areas.

In September/October, 1993, members of the Australian Institute of Marine Science (AIMS) visited this region to conduct visual surveys of its reef fishes as part of their investigations on the coral associated fauna of northern Australia. The senior author was invited to participate in this study because of the Western Australian Museum's expertise in the region. Over a period of 20 days, visual surveys were made at 9–10 sites on each of the three atolls of the Rowley Shoals, 30 sites on South Scott Reef, 20 on North Scott Reef, and 11 on Seringapatam Reef (a full report of this study is in preparation). Two survey teams took part, each consisting of two SCUBA-equipped divers and a standby diver/boatperson. Each dive was usually 45 minutes long, and involved swimming along a transect that crossed from the shallowest to the deepest parts of the dive (the maximum depth worked was 20 m). Sites both inside and outside the lagoons and on the outer slopes were surveyed. In addition, several deeper water collections were made with handlines, droplines, and rod and reel.

A total of 445 species were recorded, of which 99 are new records for the Scott/Seringapatam reefs, 39 are new for the Rowley Shoals, and 23 are new records common to both areas. Of this total of 161 new records, 81 have not been recorded from

either location before, and three species are new records for Australia. The purpose of this paper is to report these new additions.

The list presented below follows the format utilised by Allen (1993) in his summary of the fish fauna of the two areas. Numerous species with questionable identities were also recorded during the study; however, only those positively identified have been included. As anticipated by Allen (1993), these additional surveys suggest a more uniform distribution of species among these reefs than the earlier study.

ACKNOWLEDGEMENTS

We would like to thank Suzanne Williams and the crew of the RV Lady Basten for their assistance. We are also grateful for comments made by G.R. Allen on an early draft of the fish list.

REFERENCES

- Allen, G.R. (1993). Part 7. Fishes of Ashmore Reef and Cartier Island. In P.F. Berry, (ed.), Marine faunal surveys of Ashmore Reef and Cartier Island, north-western Australia. *Records of the Western Australian Museum Supplement* 44: 67–91.
- Allen, G.R. and Russell, B.C. (1986). Part 7. Fishes. In P.F. Berry, (ed.). Faunal surveys of the Rowley Shoals, Scott Reef and Seringapatam Reef, north-western Australia. *Records of the Western Australian Museum Supplement* 25: 75–103.
- Berry, P.F. (ed.) (1986). Faunal surveys of the Rowley Shoals, Scott Reef and Seringapatam Reef. *Records of the Western Australian Museum Supplement* 25: 1–106.

List of New Fish Records

Key to symbols:

- c = collected and retained (at WAM)
 r = collected but not retained
 x = visual record
 * = new record for Australia

	Scott/ Seringapatam	Rowley Shoals
CARCHARHINIDAE		
<i>Carcharhinus albimarginatus</i> (Rüppell, 1837)	r	x
MOBULIDAE		
<i>Manta birostris</i> (Walbaum, 1792)	x	

	Scott/ Seringapatam	Rowley Shoals
MURAENIDAE		
<i>Gymnothorax javanicus</i> (Bleeker, 1865)		x
HOLOCENTRIDAE		
<i>Myripristis chryseres</i> Jordan and Evermann, 1905	c	
<i>M. murdjan</i> (Forsskål, 1775)	x	
FISTULARIIDAE		
<i>Fistularia commersoni</i> Rüppell, 1835		x
SYNGNATHIDAE		
<i>Corythoichthys intestinalis</i> (Ramsay, 1881)	x	
SCORPAENIDAE		
<i>Pterois volitans</i> (Linnaeus, 1758)	x	
SERRANIDAE		
<i>Belonoperca chabanaudi</i> Fowler and Bean, 1930		x
<i>Cephalopholis sexmaculata</i> (Rüppell, 1830)	x	x
<i>Epinephelus fuscoguttatus</i> (Forsskål, 1775)	x	x
<i>E. hexagonatus</i> (Bloch and Schneider, 1801)	x	
<i>E. lanceolatus</i> (Bloch, 1790)	x	
* <i>E. miliaris</i> (Valenciennes, 1830)	c	
<i>E. spilotoceps</i> Schultz, 1953		x
<i>Pseudanthias dispar</i> (Herre, 1955)	x	
<i>P. huchtii</i> (Bleeker, 1857)	x	
<i>P. squamipinnis</i> (Peters, 1855)	x	
<i>Variola albimarginatus</i> Baissac, 1953	r	
<i>V. louti</i> (Forsskål, 1775)	x	x
PSEUDOCROMIDAE		
<i>Congrogadus subducens</i> (Richardson, 1843)	x	
APOGONIDAE		
<i>Apogon fragilis</i> Smith, 1961	x	
<i>A. novemfasciatus</i> Cuvier, 1828	x	
* <i>A. seali</i> Fowler, 1918	x	
<i>Rhabdamia gracilis</i> (Bleeker, 1856)	x	
MALACANTHIDAE		
<i>Malacanthus brevisrostris</i> Guichenot, 1848		x
<i>M. latovittatus</i> (Lacepède, 1798)	x	
ECHENEIDIDAE		
<i>Echeneis naucrates</i> Linnaeus, 1758		x
<i>Remora brachyptera</i> (Lowe, 1839)		c
<i>R. osteochir</i> (Cuvier, 1829)	c	
CARANGIDAE		
<i>Carangoides fulvoguttatus</i> (Forsskål, 1775)	x	
<i>C. orthogrammus</i> (Jordan and Gilbert, 1882)	x	x
<i>C. plagiotaenia</i> Bleeker, 1857	x	x
<i>Caranx lugubris</i> Poey, 1860	r	
<i>C. sexfasciatus</i> Quoy and Gaimard, 1825		x
<i>Elagatis bipinnulatus</i> (Quoy and Gaimard, 1825)	r	
<i>Scomberoides lysan</i> (Forsskål, 1775)		x
<i>Trachinotus blochii</i> (Lacepède, 1801)		x
CAESIONIDAE		
<i>Caesio cunning</i> (Bloch, 1791)	x	
<i>C. lunaris</i> Cuvier, 1830	x	
<i>Pterocaesio trilineata</i> Carpenter, 1987	x	
LUTJANIDAE		
<i>Aphareus rutilans</i> Cuvier, 1830	x	
<i>Aprion virescens</i> Valenciennes, 1830	x	

	Scott/ Seringapatam	Rowley Shoals
<i>Lutjanus fulvus</i> (Bloch and Schneider, 1801)	x	
<i>Macolor macularis</i> Fowler, 1931	x	
<i>M. niger</i> (Forsskål, 1775)	r	
<i>Symphorus nematophorus</i> (Bleeker, 1860)	x	
HAEMULIDAE		
<i>Plectorhinchus goldmanni</i> Bleeker, 1853	x	
<i>P. diagrammus</i> Linnaeus, 1758	x	
LETHRINIDAE		
<i>Gymnocranius microdon</i> (Bleeker, 1851)	x	
<i>Lethrinus erythracanthus</i> Valenciennes, 1830	r	x
<i>L. erythropterus</i> Valenciennes, 1830	r	x
<i>L. microdon</i> Valenciennes, 1830	r	
<i>L. obsoletus</i> (Forsskål, 1775)		x
<i>L. rubrioperculatus</i> Sato, 1978		r
<i>L. xanthochilus</i> Klunzinger, 1870	r	r
MULLIDAE		
<i>Parupeneus barberinoides</i> (Bleeker, 1852)	x	
<i>P. cyclostomus</i> (Lacepède, 1802)	x	
<i>P. pleurostigma</i> (Bennett, 1830)	x	
KYPHOSIDAE		
<i>Kyphosus bigibbus</i> (Lacepède, 1801)	x	
<i>K. cinerascens</i> (Forsskål, 1775)	x	x
<i>K. vaigiensis</i> (Quoy and Gaimard, 1824)	x	x
EPHIPPIDAE		
<i>P. pinnatus</i> (Linnaeus, 1758)	x	x
<i>Platax teira</i> (Forsskål, 1775)	x	
CHAETODONTIDAE		
<i>Chaetodon lineolatus</i> Cuvier, 1831	x	
<i>C. meyeri</i> Bloch and Schneider, 1801		x
<i>C. ocellicaudus</i> Cuvier, 1831	x	
<i>C. octofasciatus</i> Bloch, 1787	x	
<i>C. unimaculatus</i> Bloch, 1787	x	
<i>C. vagabundus</i> Linnaeus, 1758		x
<i>Forcipiger longirostris</i> (Broussonet, 1782)	x	
<i>Heniochus singularius</i> Smith and Radcliffe, 1911	x	
POMACANTHIDAE		
<i>Centropyge eibli</i> Klausewitz, 1963	x	
<i>Pomacanthus imperator</i> (Bloch, 1787)		x
POMACENTRIDAE		
<i>Amblyglyphidodon curacao</i> (Bloch, 1787)	x	
<i>Amphiprion perideraion</i> Bleeker, 1855	x	
<i>A. sandaracinos</i> Allen, 1972	x	
<i>Chromis amboinensis</i> (Bleeker, 1873)	x	
<i>C. lepidolepis</i> Bleeker, 1877	x	
<i>C. lineata</i> Fowler and Bean, 1928	x	
<i>C. retrofasciata</i> Weber, 1913	x	
<i>C. viridis</i> (Cuvier, 1830)	x	
<i>Chrysiptera talboti</i> (Allen, 1975)	x	
<i>Pomacentrus coelestis</i> Jordan and Starks, 1901	x	
<i>P. nigromanus</i> Weber, 1913		x
<i>P. nigromarginatus</i> Allen, 1973	x	
<i>Premnas biaculeatus</i> (Bloch, 1790)	x	
<i>Stegastes fasciolatus</i> (Ogilby, 1889)	x	
CIRRHITIDAE		
<i>Cirrhitus pinnulatus</i> (Schneider, 1801)	x	

	Scott/ Serangapatam	Rowley Shoals
SPHYRAENIDAE		
<i>Sphyraena flavicauda</i> Rüppell, 1838		x
LABRIDAE		
<i>Anampses geographicus</i> Valenciennes, 1840	x	x
<i>A. meleagrides</i> Valenciennes, 1840	x	
<i>A. twistii</i> Bleeker, 1856	x	x
<i>Bodianus diana</i> (Lacepède, 1801)		x
<i>B. mesothorax</i> (Bloch and Schneider, 1801)	x	
<i>Cheilinus bimaculatus</i> Valenciennes, 1840	x	
<i>C. oxycephalus</i> Bleeker, 1853	x	x
<i>C. unifasciatus</i> Streets, 1877	x	
<i>Cheilio inermis</i> (Forsskål, 1775)	x	x
<i>Cirrhilabrus exquisitus</i> Smith, 1957	x	
<i>Cymolutes praetextatus</i> (Quoy and Gaimard, 1834)	x	
<i>Halichoeres hartzfeldi</i> Bleeker, 1852		x
<i>H. scapularis</i> (Bennett, 1831)	x	
<i>Hemigymnus fasciatus</i> (Bloch, 1792)		x
<i>Hologymnosus doliatus</i> (Lacepède, 1801)	x	
<i>Labroides bicolor</i> Fowler and Bean, 1928	x	
<i>Labropsis manabei</i> Schmidt, 1930		x
<i>Macropharyngodon meleagris</i> (Valenciennes, 1839)		x
<i>M. negrosensis</i> Herre, 1932	x	
<i>Novaculichthys taeniourus</i> (Lacepède, 1801)		x
<i>Pseudocheilinus octotaenia</i> Jenkins, 1900	x	
<i>Thalassoma janseni</i> (Bleeker, 1856)	x	
<i>T. lunare</i> (Linnaeus, 1758)		x
<i>T. purpureum</i> (Forsskål, 1775)	x	
SCARIDAE		
<i>Bolbometopon muricatum</i> (Valenciennes, 1840)	x	
<i>Leptoscarus vaigiensis</i> (Quoy and Gaimard, 1824)	x	
* <i>Scarus atropectoralis</i> Schultz, 1958	x	x
<i>S. bleekeri</i> (de Beaufort, 1940)		x
<i>S. dimidiatus</i> Bleeker, 1859		x
<i>S. forsteri</i> (Bleeker, 1861)		x
<i>S. ghobban</i> Forsskål, 1775	x	
<i>S. globiceps</i> Valenciennes, 1840	x	
<i>S. niger</i> Forsskål, 1775		x
<i>S. oviceps</i> Valenciennes, 1840	x	
<i>S. prasiognathus</i> Valenciennes, 1840	x	
<i>S. schlegeli</i> (Bleeker, 1861)	x	x
<i>S. spinus</i> (Kner, 1868)	x	
PINGUIPEDIDAE		
<i>Parapercis clathrata</i> Ogilby, 1911	x	
GOBIIDAE		
<i>Amblyeleotris steinitzi</i> (Klausewitz, 1974)	x	
<i>Amblygobius phalaena</i> (Valenciennes, 1837)	x	
<i>Istigobius rigilius</i> (Herre, 1953)	x	
<i>Signigobius biocellatus</i> Hoese and Allen, 1977	x	
<i>Valenciennaea longipinnis</i> (Lay and Bennett, 1839)	x	
<i>V. sexguttata</i> (Valenciennes, 1837)	x	
<i>V. strigata</i> (Broussonet, 1782)		x
MICRODESMIDAE		
<i>Ptereleotris zebra</i> Fowler, 1938	x	
ACANTHURIDAE		
<i>Acanthurus nigrocauda</i> Duncker and Mohr, 1929	x	
<i>Ctenochaetus strigosus</i> (Bennett, 1828)		x
<i>Naso brachycentron</i> (Valenciennes, 1835)	x	
<i>N. tuberosus</i> Lacepède, 1802	x	

	Scott/ Seringapatam	Rowley Shoals
ZANCLIDAE		
<i>Zanclus cornutus</i> (Linnaeus, 1758)	x	
SIGANIDAE		
<i>Siganus argenteus</i> (Quoy and Gaimard, 1825)	x	x
<i>S. corallinus</i> (Valenciennes, 1835)	x	x
<i>S. punctatissimus</i> Fowler and Bean, 1929		x
<i>Siganus punctatus</i> (Forster, 1801)	x	x
SCOMBRIDAE		
<i>Euthynnus affinis</i> (Cantor, 1849)	x	
<i>Grammatorcynus bilineatus</i> (Rüppell, 1836)		x
ISTIOPHORIDAE		
<i>Istiophorus platypterus</i> (Shaw and Nodder, 1792)	r	
BOTHIDAE		
<i>Bothus pantherinus</i> (Rüppell, 1828)		x
BALISTIDAE		
<i>Odonus niger</i> Rüppell, 1836	x	
<i>Pseudobalistes flavimarginatus</i> Rüppell, 1829		x
MONACANTHIDAE		
<i>Acreichthys radiatus</i> (Popta, 1901)		x
<i>Aluterus scriptus</i> (Osbeck, 1765)	x	x
<i>Amanses scopas</i> Cuvier, 1829		x
<i>Cantherhines dumerilii</i> (Hollard, 1854)		x
<i>C. pardalis</i> (Rüppell, 1837)		x
<i>Oxymonacanthus longirostris</i> (Bloch and Schneider, 1801)		x
<i>Paraluteres prionurus</i> (Bleeker, 1851)	x	x
TETRAODONTIDAE		
<i>Arothron stellatus</i> (Bloch and Schneider, 1801)	x	
<i>Canthigaster bennetti</i> (Bleeker, 1854)	x	
DIODONTIDAE		
<i>Diodon liturosus</i> Shaw, 1804	122 x	

Guide to Authors

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High quality illustrations are required to size (16.8 cm x 25.2 cm) or no larger than 32 cm x 40 cm with sans serif lettering suitable for reduction to size. Photographs must be good quality black and white prints, not exceeding 16.8 cm x 25.2 cm. Scale must be indicated on illustrations. All maps, line drawings, photographs and graphs, should be numbered in sequence and referred to as Figure/s in the text and captions. Each must have a brief, fully explanatory caption. On acceptance an IBM compatible disk containing all corrections should be sent with amended manuscript. The disk should be marked with program (e.g. WordPerfect, Wordstar, etc).

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