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FISHES OF THE MONTEBELLO ISLANDS

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Summary

A total of 456 species in 75 families are reported from the Montebello Islands. The overall fish fauna is typical of reef areas of the mid-continental shelf of north-western Australia. It is relatively impoverished compared to more oceanic offshore areas such as Rowley Shoals and Scott Reef, but in common with these localities, the fish community has strong affinities to the tropical Indo-Pacific fauna.

Introduction

Australia possesses one of the world's largest marine fish faunas with an estimated total of 3,800 species. Its great wealth of species is considerably enhanced by a favourable geographic position, spanning 35 degrees of latitude and therefore including very distinctive tropical and temperate elements, not too mention a host of species that are endemic to transitional latitudes. The Great Barrier Reef province of Queensland is particularly rich, accounting for nearly 50 percent of the species total. Although coral reefs are far less extensive along Australia's western coast, there nevertheless exists a substantial fish fauna associated with this habitat.

The Montebellos survey helps to fill an important gap in our knowledge of the State's tropical marine fish fauna. In spite of previous collecting activity at the Abrolhos Islands, Ningaloo Reef, Dampier Archipelago, and the Kimberley coast, there remains a genuine need for detailed faunal information from areas on the mid-continental shelf. Although a few token collections were obtained in the past, the present expedition is the first concentrated effort to thoroughly document the fishes of the Montebello Islands.

Methods

Visual censusing was the primary method employed during this survey. The name of every fish that was encountered during snorkelling and SCUBA dives were recorded on waterproof paper. The author draws on nearly 30 years of experience with Indo-Pacific fishes; therefore, all but a few species were recognisable. The small number of doubtful species were excluded from the final list. In order to sample the cryptic fauna 20 collections were made at different sites in a variety of habitat conditions. Specimens were obtained mainly with the use of rotenone powder (a chemical ichthyocide), but a few were also procured with dipnets, by hand during reef walks, and by angling. Several records are based on underwater photographs taken by Clay Bryce.

Results and Discussion

The fish fauna of the Montebello Islands consists primarily of species associated with coral reefs (Tables 9 and 10). The 10 most speciose groups (Gobiidae, Labridae, Pomacentridae, Blenniidae, Apogonidae, Serranidae, Chaetodontidae, Carangidae, Lutjanidae, and Acanthuridae) account for 54 percent of the total fauna. These families are typically abundant throughout the tropical Indo-Pacific region.

The Montebello's fauna is similar, but slightly richer in species than the more inshore Dampier Archipelago. Both of these locations are influenced by relatively heavy siltation and consequent reduced underwater visibility. The large tidal magnitude and resultant currents are largely responsible for this phenomena. The following species totals have been recorded for other north-western localities: Ningaloo Reef – 500; Rowley Shoals – 550, Kimberley coast – 330. In terms of faunal richness the Montebellos are intermediate to the runoff and tidal affected reefs of Kimberleys and the pristine offshore reefs, such as Rowley Shoals. Ningaloo has a richer fish fauna than coastal and midshelf reefs to north. Its higher species total is explained by the arid climate and

Table 9 Ten most speciose families of fish at the Montebello Islands.

Family	Number of species
Gobiidae	43
Labridae	39
Pomacentridae	37
Blenniidae	28
Apogonidae	22
Serranidae	19
Chaetodontidae	17
Carangidae	16
Lutjanidae	14
Acanthuridae	11

resultant low runoff from the adjacent land, a smaller tidal fluctuation, and proximity to the edge of the continental shelf, resulting in more oceanic conditions.

Management and Conservation

The Montebellos region does not appear to represent a haven for any potential threatened or endangered fish species. Most of the species, with the exception of a few north-west regional endemics, have relatively wide distributions in the Indo-west Pacific region. Nearly all species have either pelagic eggs or larvae and are therefore recruited as juveniles from areas outside the Montebello Islands. Despite a lack of any special species worthy of protection, the Montebellos Islands, like all other areas, has a unique combination of species or communities that is well worth preserving. The overall abundance of fishes in the Montebellos is high in comparison with other areas along the Western Australian coast. In particular, the Montebellos have an abundance of coral trout (*Plectropomus* spp.), large sweetlips (*Plectorhinchus unicolor* and *P. gibbosus*), and tuskfish (*Choerodon* spp.). In addition there are unusual and spectacular aggregations of stingrays (*Dasyatis* and *Himantura*), emperors (*Lethrinus*), and monocle bream (*Scolopsis bilineatus*).

The abundance of fishes at the Montebellos is probably a direct reflection of its isolation and resultant low fishing pressure. Relatively few boats are equipped for the long run from the mainland. In my opinion, the unique overall community of fishes and its abundant nature are well worth conserving and to this end it would be desirable to establish this area as a marine conservation reserve.

REFERENCES

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Table 10 List of fishes collected at the Montebello Islands.

The following list includes all fishes thus far recorded from the Montebello Islands or seas immediately adjacent to this group. The majority of these were recorded during the 1993 expedition and a 5-day trip by the author in 1983, but the list also includes specimens from various other sources now lodged in the Western Australian Museum collection. The syngnathid pipefishes *Doryrhamphus pessuliferus* (as *D. multiannulatus)* and *Phoxocampus belcheri*, were previously reported as new records for Australia by Allen (1996).
The general arrangement of taxa follows Eschmeyer (1998). Genera and species are listed alphabetically within families and genera respectively. Most of the species are illustrated and briefly described in Allen (1997).
The initial A (abundant), C (common), O (occasional), and R (rare) refer to general abundance of the species that were collected or observed during the 1993 survey. Abundant species were represented by hundreds of individuals on most dives provided that suitable habitat existed. Common species were also seen on most dives in relatively substantial numbers. Occasional species were seen spasmodically, not necessarily on every dive and in relatively low numbers. Rare species are those in which fewer than five individuals (in most cases only one or two) were observed or collected during all combined dives.
Numbers appearing after the species author names refer to station numbers during the 1993 survey (details provided elsewhere in this report). An M indicates that specimens from the Montebello Islands are deposited in the fish collection at Western Australian Museum. Species that are accompanied by an M, but without station numbers were collected by other sources prior to the 1993 expedition.

Species	Station Number****
MOBULIDAE	
Manta birostris (Donndorff, 1798)	35 [R]
ORECTOLOBIDAE	
Eucrossorhinus dasypogon (Bleeker, 1867)	17 [R]
HEMISCYLLIDAE	
Hemiscyllium trispeculare Richardson, 1843	20,25 [O]
STEGOSTOMATIDAE	
Stegostoma fasciatum (Hermann, 1783)	19 [R]
CARCHARHINIDAE	
Carcharhinus melanopterus (Quoy and Gaimard, 1824)	25 [O]
Loxodon macrorhinus Müller and Henle, 1839	M
Rhizoprionodon acutus (Rüppell, 1837)	M
Triaenodon obesus (Rüppell, 1837)	30 [R]

Table 10 (cont.)

Species	Station Number****
RHINOBATIDAE	
Rhinobatos sp.	37 [R]
Rhynchobatus djiddensis (Forsskål, 1775)	M
DASYATIDIDAE	
Dasyatis kuhlii (Müller and Henle, 1841)	13 [O]
Himantura granulata (Macleay, 1883)	13 [O]
Himantura uarnak (Forsskål, 1777)	13 [O]
Pastinachus sephen (Forsskål, 1775)	13 [O]
Taeniura lymma (Forsskål, 1775)	7 [O]
MURAENIDAE	
Echidna nebulosa (Thunberg, 1789)	M 25 [R]
Gymnothorax eurostus (Abbott, 1861)	M 34 [R]
Gymnothorax flavimarginatus (Rüppell, 1830)	M
Gymnothorax javanicus (Bleeker, 1859)	7,17,35 [O]
Gymnothorax undulatus (Lacepède, 1803)	M 37 [R]
Gymnothorax sp.	M 14b
Siderea picta (Ahl, 1789)	29 [O]
Siderea thrysoideus (Richardson, 1845)	M 27,29,32a,33,37 [O]
OPHICHTHIDAE	
Callechelys catostoma ?(Bloch and Schneider, 1801)	M 28
Myrichthys colubrinus (Boddaert, 1781)	36b
Ophichthus melanochir Bleeker, 1864	M 13
Ophichthus sp.	M 29
CONGRIDAE	
Conger cinereus Rüppell, 1830	M 28,29,32b [O]
CLUPEIDAE	
Spratelloides delicatulus (Bennett, 1831)	M 7,19,29,36b [A]
PLOTOSIDAE	
Paraplotosus albilabris (Valenciennes, 1840)	M 36b [O]
Paraplotosus butleri Allen, 1998	M 27,29,30 [O]
Plotosus lineatus (Thunberg, 1791)	M 6,19,32b [C]
SYNODONTIDAE	
Synodus variegatus (Lacepède, 1803)	M 7,19,20,29,30,31,35 [O]
Saurida gracilis (Quoy and Gaimard, 1824)	M 37 [O]
Saurida undosquamis (Richardson, 1848)	M
BYTHITIDAE	
Brosmophyciops sp.	M
Ogilbia sp.	M 17 [R]
BATRACHOIDIDAE	
Halophryne diemensis (Lesueur, 1824)	M 33 [R]
GOBIESOCIDAE	
Diademichthys lineatus (Sauvage, 1883)	M 7,19,30,35 [O]
Lepadichthys frenatus Waite, 1904	M 24,30 [O]
ATHERINIDAE	
Atherinomorus endrachtensis (Quoy and Gaimard, 1824)	M 13,37 [A]
Atherinomorus ogilbyi (Whitley, 1930)	M 29 [C]
Craterocephalus capreoli Rendahl, 1922	M 13,37 [A]
BELONIDAE	
Tylosurus gavialoides (Castelnau, 1873)	32 b [O]
Tylosurus crocodilis (Lesueur, 1821)	M
HEMIRHAMPHIDAE	
Euleptorhamphus viridis (van Hasselt, 1823)	4a [O]
Hemiramphus far (Forsskål, 1775)	4a [O]
HOLOCENTRIDAE	
Myripristis berndti Jordan and Evermann, 1905	M 34,35 [O]
Myripristis hexagona (Lacepède, 1802)	M 17 [C]

Table 10 (cont.)

Species	Station Number****
Myripristis kuntee Cuvier, 1831	35 [O]
Myripristis violacea Bleeker, 1851	M 17,31,34 [O]
Sargocentron rubrum (Forsskål, 1775)	M 7,19,30,31,35,36b [C]
Sargocentron punctatissimum (Cuvier, 1829)	M 26 [O]
PEGASIDAE	
Eurypegasus draconis (Linnaeus, 1766)	M
Pegasus volitans Linnaeus, 1758	M 32a [R]
AULOSTOMIDAE	
Aulostomus chinensis (Linnaeus, 1766)	35 [R]
FISTULARIIDAE	
Fistularia commersonii Rüppell, 1838	29,32b,36b [O]
SYNGNATHIDAE	
Campichthys tricarinatus Dawson, 1977	M
Choeroichthys brachysoma (Bleeker, 1855)	M 17,24 [R]
Doryrhamphus janssi (Herald and Randall, 1972)	M
Doryrhamphus pessuliferus (Fowler, 1938)	
[photo] new record Australia	[R]
Festucalex scalaris (Günther, 1870)	M 28,36 [R]
Halicampus brocki (Herald, 1953)	M
Halicampus nitidus (Günther, 1873)	M 17 [R]
Phoxocampus belcheri? (Kaup, 1856)	M 29
new record for Australia	[R]
SCORPAENIDAE	
Dendrochirus zebra (Cuvier, 1829)	33 [O]
Parascorpaena picta (Kuhl and Van Hasselt, 1829)	M 25 [O]
Pterois volitans (Linnaeus, 1758)	24,30,32a,35 [O]
Scorpaenodes guamensis (Quoy and Gaimard, 1824)	M 26,29 [O]
Scorpaenopsis diabolus (Cuvier, 1829)	M 26 [R]
PLATYCEPHALIDAE	
Cymbacephalus beauforti Knapp, 1973	
Cymbacephalus nematophthalamus (Günther, 1860)	M 37 [O]
Platycephalus endrachtensis Quoy and Gaimard, 1825	M 13,37 [O]
CENTROPOMIDAE	
Hypopterus macropterus (Günther, 1859)	M 28 [R]
Psammoperca waigiensis (Cuvier, 1828)	7,24,30,31,35,36b [C]
SERRANIDAE	
Cephalopholis argus Bloch and Schneider, 1801	M
Cephalopholis boenak (Bloch, 1790)	M 24,35 [O]
Cephalopholis cyanostigma (Kuhl and van Hasselt, 1828)	7,17,19,30,31,34,25 [O]
Cephalopholis miniata (Forsskål, 1775)	30 [R]
Cromileptes altivelis (Valenciennes, 1828)	17,19,29,33 [O]
Epinephelus areolatus (Forsskål, 1775)	M
Epinephelus bilobatus Randall and Allen, 1987	M 19,23,24,29,30,31,33,35 [C]
Epinephelus coioides (Hamilton, 1822)	M 7, 13, 19,23,31 [O]
Epinephelus fasciatus (Forsskål, 1775)	M 19,23,27,28,30,31,35 [C]
Epinephelus fuscoguttatus (Forsskål, 1775)	7,17,19,24,29,31,35 [O]
Epinephelus lanceolatus (Bloch, 1790)	7 [R]
Epinephelus multinotatus (Peters, 1876)	M 30,35 [O]
Epinephelus polyphekadion (Bleeker, 1849)	29 [R]
Epinephelus quoyanus (Valenciennes, 1830)	M 20,28,29,37 [O]
Epinephelus rivulatus (Valenciennes, 1830)	M 7,20,23,28,29,32b,33,36b,37 [C]
Epinephelus sexfasciatus (Valenciennes, 1828)	M
Diploprion bifasciatum Cuvier, 1828	M 24,30,31 [O]
Plectropomus leopardus (Lacepède, 1802)	M 19,24,27,30,31,33,35 [C]
Plectropomus maculatus (Bloch, 1790)	M 7,19,23,24,27,30,31,33,35 [C]
Rainfordia opercularis McCulloch, 1923	M 30 [R]
PSEUDOCHROMIDAE	
Assiculus punctatus (Richardson, 1846)	M 33 [R]

Table 10 (cont.)

Species	Station Number****
Blennodesmus scapularis Günther, 1872	M 17,20,29,37 [O]
Congrogadus spinifer (Borodin, 1933)	M
Congrogadus subducens (Richardson, 1843)	28 [R]
Labracinus lineatus (Castelnau, 1875)	M 19,31 [O]
Pseudochromis fuscus Müller and Troschel, 1849	M 17,19,24,28,30,31,33,35,36b,37[C]
Pseudochromis marshallensis Schultz, 1953	M
Pseudochromis wilsoni (Whitley, 1929)	M 7,17,35 [O]
NOTOGRAPTIDAE	
Notograptus guttatus Günther, 1867	M 20,37 [O]
OPISTOGNATHIDAE	
Opistognathus darwiniensis Macleay, 1878	M 7,13,29,32a,37 [O]
Opistognathus latitabundus (Whitley, 1937) [photo]	
THERAPONIDAE	
Amniataba caudovittatus (Richardson, 1845)	M 13 [O]
Pelates octolineatus (Jenyns, 1840)	M 13 [O]
PRIACANTHIDAE	
Priacanthus hamrur (Forsskål, 1775)	M
Priacanthus macracanthus Cuvier, 1829	M
APOGONIDAE	
Apogon aureus (Lacepède, 1802)	7,19,23,24,30,35 [O]
Apogon cookii Macleay, 1881	M 20,23,25,26,28,29,36b,37 [C]
Apogon crassiceps Garman, 1903	M 24,26,29,30, 17 [O]
Apogon doederleini Jordan and Snyder, 1901	M 17,23,28,30,35,36b [C]
Apogon exostigma (Jordan and Starks, 1906)	M 17 [O]
Apogon fraenatus Valenciennes, 1832	M 24,30 [O]
Apogon moluccensis Valenciennes, 1832	23,32a [O]
Apogon pallidofasciatus Allen, 1987	36b [R]
Apogon rueppellii Günther, 1859	M 7,32b,37 [C]
Apogon taeniophorus Regan, 1908	M 26 [O]
Apogon timorensis Bleeker, 1854	M 29 [R]
Apogon trimaculatus Cuvier, 1828	M 17,30 [R]
Apogon wassinki Bleeker, 1861	M ,17,19,23,24,28,29,30,35 [C]
Archamia fucata (Cantor, 1850)	M 19 [O]
Cheilodipterus artus Smith, 1961	M 17, 19,28,29,30,35,36b [O]
Cheilodipterus macrodon (Lacepède, 1802)	M 30 [R]
Cheilodipterus quinquelineatus Cuvier, 1828	M 7, 17, 19,24,35 [C]
Foa brachygramma (Jenkins, 1903)	M 33,37 [O]
Fowleria variegata (Valenciennes, 1832)	M 17,37 [O]
Pseudamia gelatinosa Smith, 1955	M 13, 17,35 [R]
Pterapogon mirifica (Mees, 1966)	M 28,37 [O]
Rhabdamia gracilis (Bleeker, 1856)	23 [O]
SILLAGINIDAE	
Sillago schomburgkii Peters, 1865	M 13 [C]
ECHENEIDIDAE	
Echeneis naucrates Linnaeus, 1758	M
CARANGIDAE	
Alepes sp. (undescribed)	M
Carangoides fulvoguttatus (Forsskål, 1775)	M 31 [O]
Carangoides gymnostethus (Cuvier, 1833)	M
Carangoides malabaricus (Bloch and Schneider, 1801)	M
Caranx ignobilis (Forsskål, 1775)	7, 19 [O]
Decapterus macrosoma Bleeker, 1851	M
Elagatis bipinnulatus (Quoy and Gaimard, 1824)	M
Gnathanodon speciosus (Forsskål, 1775)	M 19,28,30 [O]
Scomberoides commersonnianus Lacepède, 1801	30 [O]
Scomberoides tol (Cuvier, 1832)	32b [R]
Scomberoides lysan (Forsskål, 1775)	M
Selar boops (Cuvier, 1833)	M 17,28 [O]
Selar crumenophthalmus (Bloch, 1793)	M

Table 10 (cont.)

Species	Station Number****
Selar malam Bleeker, 1851	M
Selaroides leptolepis (Cuvier, 1833)	M
Seriolina nigrofasciata (Rüppell, 1829)	M
LUTJANIDAE	
Lutjanus argentimaculatus (Forsskål, 1775)	M 7 [O]
Lutjanus bohar (Forsskål, 1775) 31 [R]	
Lutjanus carponotatus (Richardson, 1842)	M 7,17, 19,23,24,27,29,30,31,33,34,35,36b [C]
Lutjanus erythropterus Bloch, 1790	M
Lutjanus fulviflamma (Forsskål, 1775)	M 7,13, 17, 19,29,36b,37 [C]
Lutjanus lemniscatus (Valenciennes, 1828)	M 7,19,23,24,26,27,29,31,34,35[C]
Lutjanus lutjanus Bloch, 1790	30,35 [O]
Lutjanus malabaricus (Bloch and Schneider, 1801)	M
Lutjanus monostigma (Cuvier, 1828)	M 7 [R]
Lutjanus quinquelineatus (Bloch, 1790)	19,24,27,28,30,31,35 [C]
Lutjanus russelli (Bleeker, 1849)	M 19 [R]
Lutjanus sebae (Cuvier, 1828)	M
Lutjanus vitta (Quoy and Gaimard, 1824)	M 31,32a [O]
Symphorus nematophorus (Bleeker, 1860)	M 7, 19,23,24,30,31,33,35 [C]
CAESIONIDAE	
Caesio caerulaurea Lacepède, 1801	19,24,27,30,31,35 [C]
Caesio cuning (Bloch, 1790)	7,19,24,27,30,31,35 [C]
Pterocaesio digramma (Bleeker, 1865)	17,19,27,35 [C]
GERREIDAE	
Gerres macrosoma? Bleeker, 1854	M 28,32b,37 [C]
HAEMULIDAE	
Diagramma labiosum Macleay, 1883	7,30,31,33 [C]
Plectorhinchus chaetodontoides Lacepède, 1800	7,30,35 [O]
Plectorhinchus flavomaculatus (Ehrenberg, 1830)	23 [R]
Plectorhinchus gibbosus (Lacepède, 1802)	7 [O]
Plectorhinchus polytaenia (Bleeker, 1852)	M 30,35 [O]
Plectorhinchus unicolor (Macleay, 1883)	7,19,32b,35,36b [C]
Pomadasys kaakan (Cuvier, 1830)	M
SPARIDAE	
Argyrops spinifer (Forsskål, 1775)	M
LETHRINIDAE	
Gymnocranius elongatus Senta, 1973	M
Gymnocranius grandoculis (Valenciennes, 1830)	M
Gymnocranius griseus (Schlegel, 1844)	M 28,31,35 [O]
Lethrinus atkinsoni Seale, 1909	M 7,17,19,26,27,29,31,32b,35 [C]
Lethrinus laticaudis Alleyne and Macleay, 1877	M 31,35,37 [C]
Lethrinus lentjan (Lacepède, 1802)	19,31 [O]
Lethrinus nebulosus (Forsskål, 1775)	M 7,17,19,26,27,29,31,32b,35 [C]
Lethrinus olivaceus Valenciennes, 1830	30 [R]
Lethrinus rubrioperculatus Sato, 1978	M
Lethrinus variegatus Valenciennes, 1830	M 33 [C]
NEMIPTERIDAE	
Nemipterus furcosus (Valenciennes, 1830)	M 32a [O]
Nemipterus peronii (Valenciennes, 1830)	M
Pentapodus emeryii (Richardson, 1843)	19,23,30,31,35 [C]
Pentapodus porosus (Valenciennes, 1830)	33 [O]
Scaevius milii (Bory de Saint-Vincent, 1823)	M 7,32a,33,37 [C]
Scolopsis bilineatus (Bloch, 1793)	7,19,24,28,31,35 [C]
Scolopsis monogramma (Cuvier, 1830)	M 7,19,23,24,30,31,35 [C]
Scolopsis trilineatus Kner, 1868	29 [R]
MULLIDAE	
Parupeneus barberinoides (Lacepède, 1801)	7,17,19,23,27,30,35,36b [C]
Parupeneus bifasciatus (Lacepède, 1801)	M
Parupeneus chrysopleuron (Schlegel, 1843)	19,35 [O]
Parupeneus cyclostomus (Lacepède, 1801)	27,31 [O]

Table 10 (cont.)

Species	Station Number****
Parupeneus heptacanthus (Lacepède, 1801)	M 35 [R]
Parupeneus indicus (Shaw, 1803)	M 7,17,19,23,28,29,30,35 [C]
Parupeneus multifasciatus (Quoy and Gaimard, 1825)	27,35 [O]
Parupeneus spilurus (Bleeker, 1854)	7,23,29,30,35 [O]
PEMPHERIDIDAE	
Pempheris analis Waite, 1910	7,19,35 [C]
Pempheris schwenkii Bleeker, 1855	19,28 [O]
Pempheris sp.	M 29,34 [C]
GLAUCOSOMATIDAE	
Glaucosoma magnificum (Ogilby, 1915)	35 [R]
KYPHOSIDAE	
Kyphosus gibsoni Ogilby, 1912	M 7,19,36b [C]
Kyphosus vaigiensis (Quoy and Gaimard, 1825)	29 [O]
CHAETODONTIDAE	
Chaetodon adiergastos Seale, 1905	7,17 [R]
Chaetodon aureofasciatus Macleay, 1878	7,17,19,24,27,30,31,35 [C]
Chaetodon auriga Forsskål, 1775	M 7,17,19,24,27,30,31,35 [O]
Chaetodon citrinellus Cuvier, 1831	27 [R]
Chaetodon ephippium Cuvier, 1831	7,17 [R]
Chaetodon lineolatus Cuvier, 1831	7,17,24,31,35 [O]
Chaetodon lunula (Lacepède, 1803)	M 7,17,19,26 [O]
Chaetodon lunulatus Quoy and Gaimard, 1824	7,19,30,31,34,35 [C]
Chaetodon plebeius Cuvier, 1831	7,17,19,24,27,30,31,35 [C]
Chaetodon trifascialis Quoy and Gaimard, 1824	17 [R]
Chaetodon ulietensis Cuvier, 1831	7,19,31 [O]
Chelmon marginalis Richardson, 1842	7,17,19,23,28,30,31,35,36b [C]
Coradion chrysozonus (Cuvier, 1831)	30,31 [O]
Forcipiger flavissimus Jordan and McGregor, 1898	35 [R]
Heniochus acuminatus (Linnaeus, 1758)	M 7,17,19,23,28,30,31,35,36b [C]
Heniochus singularius Smith and Radcliff, 1911	7,19,27,31,33,35 [C]
Parachaetodon ocellatus (Cuvier, 1831)	32a,33 [R]
POMACANTHIDAE	
Centropyge tibicen (Cuvier, 1831)	19,24,35 [O]
Chaetodontoplus duboulayi (Günther, 1867)	23,30,35 [O]
Chaetodontoplus personifer (McCulloch, 1914)	24,30,31,35 [O]
Pomacanthus semicirculatus (Cuvier, 1831)	M 7,24,26,28,31,34,35 [O]
Pomacanthus sexstriatus (Cuvier, 1831)	7,19,23,28,30,31,35,36b [C]
MUGILIDAE	
Liza vaigiensis (Quoy and Gaimard, 1824)	M
Mugilid sp. (very small juveniles)	M 13,29 [O]
POMACENTRIDAE	
Abudefduf bengalensis (Bloch, 1787)	M 7,17,19,24,27,28,29,30,31,32b,33,35,36b,37 [A]
Abudefduf septemfasciatus (Cuvier, 1830)	M
Abudefduf sexfasciatus (Lacepède, 1802)	M 7,17,19,24,27,28,29,30,31,35,36b,37 [A]
Abudefduf sordidus (Forsskål, 1775)	M 7,28,29,36b [C]
Abudefduf vaigiensis (Quoy and Gaimard, 1825)	M 7,25,26,28,37 [C]
Amblyglyphidodon curacao (Bloch, 1787)	7,19,24,30,31,35 [C]
Amphiprion clarkii (Bennett, 1830)	33 [O]
Amphiprion perideraion Bleeker, 1855	30,31,35 [O]
Amphiprion rubrocinctus Richardson, 1842	7,17,19,29,36b [O]
Chromis atripectoralis Welander and Schultz, 1951	7,17,19,29,35 [C]
Chromis cinerascens (Cuvier, 1830)	24,30,31,35 [C]
Chromis fumea (Tanaka, 1917)	M 23,24,32a [A]
Chromis margaritifer Fowler, 1946	27 [R]
Dascyllus aruanus (Linnaeus, 1758)	7,19,28,29 [O]
Dascyllus reticulatus (Richardson, 1846)	7,19,24,27,28,29,30,31,33,35 [C]
Dascyllus trimaculatus (Rüppell, 1828)	7,19,24,28,29,30,31,33,35 [C]
Dischistodus prosopotaenia (Bleeker, 1852)	17,19 [C]
Hemiglyphidodon plagiometopon (Bleeker, 1852)	M 17,19 [O]

Table 10 (cont.)

Species	Station Number****
Neoglyphidodon melas (Cuvier, 1830)	7,19,24,30,31,35 [O]
Neoglyphidodon nigroris (Cuvier, 1830)	19,30,31,35 [C]
Neopomacentrus azysron (Bleeker, 1877)	M 17,19,24,30,31,34,35,36b [A]
Neopomacentrus cyanomos (Bleeker, 1856)	7,17,19,23,24,29,30,31,33,34,35,36b [C]
Neopomacentrus filamentosus (Macleay, 1883)	19 [R]
Plectroglyphidodon lacrymatus (Quoy and Gaimard, 1824)	17,19,30 [O]
Plectroglyphidodon leucozonus (Bleeker, 1859)	M 20,26 [O]
Pomacentrus coelestis Jordan and Starks, 1901	M 7,17,19,20,23,25,26,27,28,29,30,33 [A]
Pomacentrus littoralis Cuvier, 1830 [photo]	17 [O]
Pomacentrus milleri Taylor, 1964	M 7,17,19,20,24,25,27,28,29,30,31,33,35,36b [A]
Pomacentrus moluccensis Bleeker, 1853	7,17,19,29,30,31,35 [C]
Pomacentrus nagasakiensis Tanaka, 1917	19,23,24,30,31,33,35 [C]
Pomacentrus nigromanus Weber, 1913	19,30,31 [O]
Pomacentrus vaiuli Jordan and Seale, 1906	19 [O]
Pristotis obtusirostris (Günther, 1862)	28 [R]
Stegastes fasciolatus (Ogilby, 1889)	M
Stegastes lividus (Bloch and Schneider, 1801)	17 [O]
Stegastes nigricans (Lacepède, 1802)	17 [O]
Stegastes obreptus (Whitley, 1948)	M 7,19,20,23,24,27,28,29,30,31,33,34,35,36 [O]
LABRIDAE	
Anampses caeruleopunctatus Rüppell, 1829	M 26 [R]
Anampses lennardi Scott, 1959	M 23,30,35 [R]
Anampses meleagrides Valenciennes, 1840	27,31 [R]
Bodianus axillaris (Bennett, 1831)	M 19,30,31,35 [O]
Bodianus perditio (Quoy and Gaimard, 1834)	M
Cheilinus chlorurus (Bloch, 1791)	M 7,17,19,24,28,30,31,34,35,36b,37 [C]
Cheilio inermis (Forsskål, 1775)	20,29,36b [O]
Choerodon cauteroma Gomon and Allen, 1987	7,19,23,30,31,35 [O]
Choerodon cephalotes (Castelnau, 1875)	M 24,30 [R]
Choerodon cyanodus (Richardson, 1843)	M 7,19,24,27,28,29,30,31,33,34,35,36b,37 [C]
Choerodon schoenleinii (Valenciennes, 1839)	M 7,17,19,24,27,30,31,32a,33,34,35 [C]
Choerodon sugillatum Gomon, 1987	35 [R]
Cirrhilabrus temmincki Bleeker, 1853	23,32a,35 [O]
Coris aygula Lacepède, 1801	24,31,35 [O]
Coris caudimacula (Quoy and Gaimard, 1834)	23,27 [O]
Coris pictoides Randall and Kuiter, 1982	23,30,32a,35 [O]
Cymolutes praetextatus (Quoy and Gaimard, 1834)	28 [O]
Epibulus insidiator (Pallas, 1770)	7,19,30,31,35 [O]
Gomphosus varius Lacepède, 1801	30,35 [O]
Halichoeres marginatus Rüppell, 1835	M 7,19,26,31 [O]
Halichoeres melanochir Fowler and Bean, 1928	M 7,17,23,30,31,35 [C]
Halichoeres nebulosus (Valenciennes, 1839)	M 7,20,23,25,26,33,35,36b,37 [C]
Halichoeres trimaculatus (Quoy and Gaimard, 1834)	29 [R]
Hemigymnus fasciatus (Bloch, 1792)	24,30,31,35 [O]
Hemigymnus melapterus (Bloch, 1791)	7,19,27,30,31,35 [O]
Hologymnosus annulatus (Lacepède, 1801)	M 31,35 [R]
Labrichthys unilineatus (Guichenot, 1847)	19 [R]
Labroides dimidiatus (Valenciennes, 1839)	M 7,17,19,23,24,27,29,30,31,33,34,35,36b [O]
Leptojulis cyanopleura (Bleeker, 1853)	23 [R]
Macropharyngodon ornatus Randall, 1978	23,27,30,35 [O]
Pteragogus amboinensis (Bleeker, 1856)	M 23,36b [O]
Stethojulis bandanensis (Bleeker, 1851)	M 7,20,27,36b [C]
Stethojulis interrupta (Bleeker, 1851)	7,19,29 [O]
Stethojulis strigiventer (Bennett, 1832)	M 36b [O]
Thalassoma amblycephalum (Bleeker, 1856)	27 [R]
Thalassoma lunare (Linnaeus, 1758)	M 17,19,26,27,29,30,31,35 [C]
Thalassoma lutescens (Lay and Bennett, 1839)	17,19,23,26,27,30,31 [O]
Xyrichtys jacksonensis? (Ramsay, 1881)	M
Xyrichtys sp. [photo] 36a	[R]
SCARIDAE	
Bolbometopon muricatum (Valenciennes, 1840)	1 [R]
Chlorurus microrhinos (Bleeker, 1854)	19 [R]

Table 10 (cont.)

Species	Station Number****
Chlorurus sordidus (Forsskål, 1775)	7,19,31,35 [C]
Hipposcarus longiceps (Valenciennes, 1840)	7,19 [O]
Scarus chameleon Choat and Randall, 1986	35 [O]
Scarus ghobban Forsskål, 1775	7,19,23,24,29,30,31,37 [C]
Scarus prasiognathus Valenciennes, 1839	26,35 [O]
Scarus rivulatus Valenciennes, 1840	7,19,30,31,35 [O]
Scarus rubroviolaceus Bleeker, 1847	26 [R]
Scarus schlegeli (Bleeker, 1861)	7,19,23,24,30,31,35 [C]
PINGUIPEDIDAE	
Parapercis clathrata Ogilby, 1911	27 [R]
Parapercis snyderi Jordan and Starks, 1905	M 32a [O]
TRIPTERYGIIDAE	
Enneapterygius tusitilae Jordan and Seale, 1906	M 29,32,35,36b [O]
Helcogramma striata Hansen, 1986	M 23,24,35 [C]
Norfolkia brachylepis (Schultz, 1960)	M 30,35 [O]
BLENNIIDAE	
Aspidontus taeniatus Quoy and Gaimard, 1834	19,30 [R]
Atrosalarius fuscus holomelas (Günther, 1872)	19,36b [O]
Blenniella chrysospilos (Bleeker, 1857)	M 7,20,26,29 [C]
Cirripectes castaneus (Valenciennes, 1836)	M 26 [R]
Cirripectes filamentosus (Alleyne and Macleay, 1877)	M 7,19,20,25,29,35,36b [C]
Crossosalarias macrospilus Smith-Vaniz and Springer, 1971 [photo]	
Ecsenius bicolor (Day, 1888)	M 26,27,30,34,35 [O]
Ecsenius lineatus Klausewitz, 1962	M 23,24 [R]
Ecsenius oculatus Springer, 1988	M 26 [R]
Ecsenius yaeyamensis (Aoyagi, 1954)	M 7,19,27,29,30,31,34,35 [C]
Entomacrodus decussatus (Bleeker, 1858)	M 26 [O]
Entomacrodus striatus (Quoy and Gaimard, 1836)	M 26,29 [C]
Entomacrodus thalassinus (Jordan and Seale, 1906)	M
Istiblennius edentulus (Forster, 1801)	M 26 [R]
Istiblennius lineatus (Valenciennes, 1836)	M
Istiblennius meleagris (Valenciennes, 1836)	M 36b [O]
Laiphognathus multimaculatus Smith, 1955	M 24 [R]
Meiacanthus grammistes (Valenciennes, 1836)	M 7,19,24,29,35 [O]
Mimoblennius atrocinctus (Regan, 1909)	M
Omobranchus germaini (Sauvage, 1883)	M 29,36b,37 [O]
Omobranchus rotundiceps (Macleay, 1881)	M
Petroscirtes breviceps Valenciennes, 1836	M 33 [O]
Petroscirtes mitratus Rüppell, 1830	M 7,13,29,37 [O]
Plagiotremus rhinorhynchos (Bleeker, 1852)	23,35 [O]
Plagiotremus tapeinosoma (Bleeker, 1857)	M 24,33 [O]
Rhabdoblennius ellipes? (Jordan and Starks, 1906)	[O]
Salarias fasciatus (Bloch, 1786)	M 7,19,20,37 [O]
Stanulus talboti Springer, 1968	M 26, [O]
CALLIONYMIDAE	
Callionymus enneactis Bleeker, 1879	M 29 [O]
Callionymus margaretae australis Fricke, 1983	M [in Fricke, 1983]
Callionymus moretonensis? Johnson, 1971	M 29 [R]
Diplogrammicus xenicus (Jordan and Thompson, 1914)	M 29 [C]
Synchiropus picturatus occidentalis Fricke, 1983	17 [R]
Synchiropus rameus (McCulloch, 1926)	[in Fricke, 1983]
GOBIIDAE	
Amblyeleotris gymnocephalus (Bleeker, 1853)	33 [R]
Amblyeleotris periophthalma (Bleeker, 1853)	33 [R]
Amblygobius bynoensis (Richardson, 1844)	M 13 [R]
Amblygobius nocturnus (Herre, 1945)	17 [O]
Amblygobius phalaena (Valenciennes, 1837)	M 7,13,19,33 [C]
Asterropteryx semipunctatus Rüppell, 1828	M 13 [A]
Barbuligobius boehlkei Lachner and Mckinney, 1974	M 24 [R]

Table 10 (cont.)

Species	Station Number****
Bathygobius cocosensis (Bleeker, 1854)	M 20,29,36b [C]
Bathygobius fuscus (Rüppell, 1830)	M 13,29,37 [C]
Bathygobius laddi (Fowler, 1931)	M 20,28,29 [O]
Bryaninops amplus (Larson, 1985)	M 23 [R]
Callogobius sclateri (Steindachner, 1880)	[NTM]
Cryptocentrus cinctus (Herre, 1936) [photo]	33 [O]
Cryptocentrus fasciatus (Playfair and Günther, 1867)	33, [NTM] [R]
Cryptocentrus leptocephalus Bleeker, 1876	7 [R]
Cryptocentrus strigilliceps (Jordan and Seale, 1906)	7,19,33 [O]
Ctenogobiops pomastictus Lubbock and Polunin, 1977	33 [O]
Eviota prasina? (Klunzinger, 1871)	M 20,29 [C]
Eviota zebrina Lachner and Karnella, 1978	M 24,32,35 [C]
Favonigobius sp.	M 29[R]
Fusigobius neophytus (Günther, 1877)	M 17 [C]
Fusigobius sp.	M 17,30 [O]
Gnatholepis scapulostigma Herre, 1953	M 19,24,29 [O]
Gobiid (undescribed genus and species)	M 32 [O]
Gobiodon axillaris De Vis, 1884	M 29 [O]
Gobiodon quinquestrigatus (Valenciennes, 1837)	M 29 [O]
Gobiopsis angustifrons Lachner and McKinney, 1978	M
Istigobius goldmanni (Bleeker, 1852)	M 29,35 [C]
Istigobius nigroocellatus (Günther, 1873)	M 7,24,29,32,35 [C]
Istigobius ornatus (Rüppell, 1830)	M 37 [R]
Macrodontigobius wilburi Herre, 1936	M 17 [O]
Oplopomops sp.	M 28 [R]
Pandaka lidwilli (McCulloch, 1917)	M 13 [O]
Paragobiodon echinocephalus (Rüppell, 1830)	M 33 [O]
Paragobiodon melanosoma (Bleeker, 1852)	M 33 [O]
Paragobiodon lacunicolus (Kendall and Goldsborough, 1911)	M
Paragobiodon xanthosoma (Bleeker, 1852)	M 33 [O]
Pleurosicya mossambica Smith, 1959	M 33 [O]
Pleurosicya plicata Larson, 1990	M 29 [R]
Priolepis nuchifasciatus (Günther, 1874)	M 24,29,30 [O]
Trimma okinawae (Aoyagi, 1949)	M 30,35 [O]
Valenciennea longipinnis (Lay and Bennett, 1839)	M 28,32b,33 [O]
Valenciennea muralis (Valenciennes, 1837)	M 33 [R]
Vanderhorstia ornatissima Smith, 1959	19 [C]
MICRODESMIDAE	
Gunnelichthys monostigma Smith, 1958	17 [photo] [O]
Ptereleotris hanae (Jordan and Snyder, 1901)	33 [R]
EPHIPPIDIDAE	
Platax batavianus Cuvier, 1831	M 7,19,23,32a [O]
Platax pinnatus (Linnaeus, 1758)	24,31 [O]
Platax teira (Forsskål, 1775)	23,31,35 [O]
SIGANIDAE	
Siganus fuscescens (Houttuyn, 1782)	M 29 [O]
Siganus doliatus Cuvier, 1830	M 7,19,24,26,35 [A]
Siganus lineatus (Valenciennes, 1835)	7,19,29 [C]
Siganus punctatus (Forster, 1801)	7,31 [O]
Siganus trispilos Woodland and Allen, 1977	M 7,19,30,31,35 [O]
ZANCLIDAE	
Zanclus cornutus (Linnaeus, 1758)	M 7,30,31,35 [O]
ACANTHURIDAE	
Acanthurus dussumieri Valenciennes, 1835	23,29,36b [C]
Acanthurus grammoptilus Richardson, 1843	7,17,19,23,24,27,28,29,30,31,33,35 [A]
Acanthurus nigricans (Linnaeus, 1758)	M 27 [R]
Acanthurus nigrofuscus (Forsskål, 1775)	26,31,35 [O]
Acanthurus olivaceus Forster, 1801	27 [R]
Acanthurus triostegus (Linnaeus, 1758)	M 4b,20,27,29 [O]
Ctenochaetus strigosus (Bennett, 1828)	M 19,27,31,35 [C]

Table 10 (cont.)

Species	Station Number****
Naso brevirostris (Valenciennes, 1835)	7 [O]
Naso unicornis (Forsskål, 1775)	7,19,31,35 [O]
Zebrasoma scopas (Cuvier, 1829)	19,31,35 [O]
Zebrasoma veliferum (Bloch, 1797)	17 [R]
SPHYRAENIDAE	
Sphyraena barracuda (Walbaum, 1792)	M
Sphyraena flavicauda Rüppell, 1838	M 7,19,23,25 [C]
Sphyraena jello Cuvier, 1829	30,31 [O]
SCOMBRIDAE	
Euthynnus affinis (Cantor, 1849)	30 [O]
Scomberomorus commerson (Lacepède, 1800)	31 [O]
Scomberomorus queenslandicus Munro, 1943	32 [O]
PSETTODIDAE	
Psettodes erumei (Bloch and Schneider, 1801)	M
SOLEIDAE	
Aesopia heterorhinos (Bleeker, 1856)	M 29 [R]
Aseraggodes melanostictus (Peters, 1876)	M 22,28 [R]
CYNOGLOSIDAE	
Cynoglossus maculipinnis Rendahl, 1921	M 22,28 [R]
Paraplagusia bilineata (Bloch, 1787)	M
BALISTIDAE	
Abalistes stellatus (Lacepède, 1798)	28,30 [R]
Pseudobalistes fuscus (Bloch and Schneider, 1801)	23 [R]
Rhinecanthus aculeatus (Linnaeus, 1758)	29,32b [O]
Sufflamen chrysopterus (Bloch and Schneider, 1801)	27 [O]
Sufflamen fraenatus Latreille, 1804	23 [O]
MONACANTHIDAE	
Aluterus monoceros (Linnaeus, 1758)	M
Cantherines pardalis (Rüppell, 1837)	M 25,26,35 [O]
Chaetodermis pencilligera (Cuvier, 1817)	M 37 [R]
Monacanthus chinensis (Osbeck, 1765)	19 [R]
Oxymonacanthus longirostris (Bloch and Schneider, 1801)	7,19 [O]
Paramonacanthus choirocephalus (Bleeker, 1852)	M 28 [R]
Paramonacanthus peroni (Hollard, 1854)	M 30,35 [R]
Pervagor janthinosoma (Bleeker, 1854)	35 [R]
OSTRACIIDAE	
Lactoria cornuta (Linnaeus, 1758)	36b [O]
Ostracion cubicus Linnaeus, 1758	6,19,28,31,35 [R]
Ostracion meleagris Shaw, 1796	27 [R]
TETRAODONTIDAE	
Arothron hispidus (Linnaeus, 1758)	25,28,29 [R]
Arothron manillensis (de Proce, 1822)	33 [R]
Arothron mappa (Lesson, 1830)	33 [R]
Arothron stellatus (Bloch and Schneider, 1801)	30 [R]
Canthigaster coronata (Vaillant and Sauvage, 1875)	23,32a,35 [O]
DIODONTIDAE	
Diodon hystrix Linnaeus, 1758	31 [R]