

## Checklist and new records of Christmas Island fishes: the influence of isolation, biogeography and habitat availability on species abundance and community composition.

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**Abstract.** Christmas Island (Indian Ocean) is an oceanic high island that is situated 300 km southwest of Java, Indonesia. From 2010 to 2014, the fish community of Christmas Island was surveyed using underwater visual surveys for shallow water (0–60 m) fishes, and line fishing (bottom fishing and trolling) for deepwater (60–300 m) and pelagic fishes. Forty-seven new records (from 22 families) were identified, thereby increasing the total number of fishes described from Christmas Island to 681 (from 91 families). Notable new records include the first records for the families Alopeiidae, Anomalopidae, Muraenesocidae, Tetrarogidae and Trichonotidae, and the first reports of Pacific Ocean species *Plectranthias yamakawai*, and *Polylepion russelli* in the Indian Ocean. The ten most species-rich families accounted for 58% of the community and included: Labridae (13%), Pomacentridae (8%), Epinephelidae (6%), Acanthuridae (5%), Chaetodontidae (5%), Muraenidae (5%), Gobiidae (5%), Blenniidae (4%), Apogonidae (4%) and Scorpaenidae (3%). The majority (89%) of species inhabit shallow coral reefs, with deep reefs (60–300 m) and pelagic waters only accounting for 7% and 2% of fish community. Approximately 76% of the fishes are widespread Indo-Pacific species, 12% are Pacific Ocean species, 5% are circumtropical, 4% are Indian Ocean species and approximately 1% are endemic. Abundance surveys revealed that endemic species, and species at the edge of their geographic range, do not conform to terrestrial-based predictions of low abundance. The structure and composition of the Christmas Island fish community is influenced by three main factors. Firstly, the isolation of the island means that fishes with poor dispersal abilities (e.g., syngnathids) are underrepresented. Secondly, the biogeographic position of the island results in a unique mixing of Indian and Pacific Ocean species. Thirdly, the lack of lagoonal habitats means that fishes that use these habitats (e.g., ophichthids, lethrinids, epinephelids) are underrepresented or have low abundance.

**Key words.** colonisation, coral reef fish, dispersal, endemic, Indian Ocean

### INTRODUCTION

Christmas Island (10°30'S, 105°40'E) is an oceanic island located approximately 300 km south of Java, Indonesia. Over millions of years, the island's fauna and flora has evolved in isolation resulting in hundreds of endemic species (James, 2007). For more than 100 years, scientists have documented the globally unique terrestrial biodiversity and outstanding

natural values of Christmas Island (James, 2007; Beeton et al., 2010). More recently, research in the surrounding waters is beginning to reveal the uniqueness of the marine biodiversity around the island (Brewer et al., 2009; Hobbs, 2014). Much of this marine biodiversity is concentrated in the narrow fringe (20–100 m wide) of coral reef that clings to the precipitous sides of the Island (Allen et al., 2007; Gilligan et al., 2008; Brewer et al., 2009). For example, the shallow waters contain only 34 km<sup>2</sup> of reef habitat and this supports over 600 species of fish (Allen et al., 2007; Allen, 2008; Hobbs et al., 2010a). Furthermore, Christmas Island ranks seventh in the world for the number of endemic reef fishes per area of reef habitat (Allen, 2008).

Most of the taxonomic groups in the marine environment at Christmas Island have received little or no research (Hobbs et al., 2014a); however, reef fishes have been relatively well studied and provide a model group to test hypotheses about the formation and structure of marine communities on isolated islands. For example, does the fish community at Christmas Island have a unique composition that is determined by dispersal and colonisation abilities? Not only is Christmas Island isolated, but it is also situated on a biogeographic border between the Indian Ocean and Pacific

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Ocean bioregions. This border is analogous to Wallace's Line and Christmas Island represents the western edge of the range for some Pacific Ocean species and the eastern range edge for some Indian Ocean species (Hobbs et al., 2012). In some instances, Indian and Pacific Ocean sister species can co-occur (Hobbs & Salmond, 2008; Hobbs & Allen, 2014). This provides a unique opportunity to test whether species at their range edge have low abundance (Brown, 1984) and whether the presence of a sister species influences abundance.

The majority of the 622 fish species (from 80 families) that have been recorded to date at Christmas Island inhabit the shallow (0–60 m) coral reefs (Allen et al., 2007; Hobbs et al., 2010a). This includes four endemic species (*Eviota natalis*, *Pseudochromis viridis*, *Praealticus natalis*, *Aseraggodes crypticus*), two near endemic species (*Centropyge jocularis* also occurs at Cocos (Keeling) Islands, and *Stegastes insularis* also occurs at Cocos (Keeling) and Marcus Island), and one endemic colour morph or subspecies (*Centropyge flavissima*, which also occurs at Cocos (Keeling) Islands) (Allen et al., 2007). The study and collection of Christmas Island fishes began with Andrews CW in 1897 and was built upon with three small-scale studies over the following 60 years that resulted in a total list of 127 species (reviewed in Allen, 2000). The majority of fishes recorded from Christmas Island came through dedicated expeditions by Gerald Allen and Roger Steene in 1978, 1986, 1987 and 2006, which raised the number of species to 592 (Allen et al., 2007). Subsequent descriptions of unidentified specimens collected on these trips, and reports by other researchers have added a further 12 species to the list (see Table 1). Lastly, Hobbs et al (2010a) added 30 species based on fieldtrips between 2004 and 2008. The total number of fishes recorded at Christmas Island stands at 634. Despite this history of expeditions, most of the marine habitat at Christmas Island remains unsurveyed.

The purpose of this study was to conduct an island-wide survey of the fish fauna of Christmas Island to identify new records, characterise the community composition and determine patterns in abundance. More specifically, this study aimed to determine: 1, if (and how) the composition of the reef fish community at Christmas Island differs from elsewhere; and 2, whether patterns of abundance are related to the size and position of a species' geographic range and the presence of a sister species.

## MATERIAL AND METHODS

Christmas Island is a single high island with no lagoons or sheltered embayments. The coastline around the island is comprised of a limestone cliff shoreline, with a shallow coral reef extending 20–100 m seaward towards the reef dropoff, which usually begins at 15 m depth (Gilligan et al., 2008). The reef then declines steeply to depths greater than 4000 km. The island is exposed to south-easterly trade winds and southerly swell for most the year. Consequently, the southern coast is very exposed, the east and west coasts have moderate exposure, and the north coast is somewhat sheltered. Flying-fish Cove is situated on the north coast

and has Christmas Island's most sheltered waters and widest reef flat (about 150 m).

The fish fauna of Christmas Island was surveyed during a series of 14 trips from 2010 to 2014. The outer reef habitats on all four sides (North, South, East and West) were surveyed by snorkelling in the shallow waters (0–5 m) and SCUBA diving in deeper waters (5–70 m). Due to the prevailing wind and swell, more surveys were conducted on the northern and western half of the Island. Pelagic and deepwater (60–300 m) fishes were captured using line-fishing methods (trolling and bottom fishing) in collaboration with local anglers. In addition, local divers and anglers provided photographs of easily recognisable fish. Information about these fishes was communicated to us by the diver or angler who took the photograph. In some cases, photographs and/or specimens were sent to the relevant taxonomic experts for independent verification of our identification. The majority of the 575 species recorded previously by Allen (2000) have been lodged with the Western Australian Museum. The majority of new records reported in this current study could not be lodged because of their rarity, desire by anglers to retain the fish and/or the fish could only be photographed. In all cases, species were only recorded on the checklist where visual identification was certain. The checklist also includes species that have recently been reported in publications by other researchers.

The abundance of reef fishes was determined through underwater observations based on the number of individuals seen per 60-minute dive (approximately survey area = 5000 m<sup>2</sup>), with the average abundance for each species calculated from more than 40 dives around the Island. For analyses, fishes were grouped into six abundance categories: 1 = common/abundant (average of more than 5 per dive); 2 = moderately common (average of 2–5 per dive); 3 = uncommon (average of 0.5–2 per dive); 4 = occasionally seen (about 1 individual seen every 2–5 dives); 5 = seldom seen (about 1 individual seen every 5–10 dives); 6 = rare (takes more than 10 dives to see 1 individual). Pelagic, deepwater (>60 m depth) and highly cryptic species were not included in the analysis because their abundance could not be estimated accurately using underwater visual censuses.

Fish were classified following the taxonomy of Eschmeyer (2014) with two exceptions. Following recent molecular studies, the parrotfishes are placed within the family Labridae as scarine labrids (Westneat & Alfaro, 2005; Choat et al., 2012) and we follow Smith & Craig (2007) and Craig et al. (2011) in raising the subfamily Epinephelinae to the family Epinephelidae. The geographic distribution and habitat use of fishes were characterised following recognised sources (Allen et al., 2007; Eschmeyer, 2014; Froese & Pauly, 2014). Habitat use of fishes was broadly classed into five categories: 1, shallow water – species that obtain their greatest abundance on shallow water (<60 m) reefs and adjacent sand habitats; 2, deepwater – species that obtain their greatest abundance on reefs deeper than 60 m; 3, pelagic; 4, intertidal; and 5, freshwater and brackish. To determine if isolation affects the composition of fish communities, the Christmas Island

community was compared to that of its nearest neighbours, Indonesia (Allen & Adrim, 2003) and the Cocos (Keeling) Islands (Allen & Smith-Vaniz, 1994; Hobbs et al., 2014b).

## RESULTS

**New records.** Extensive surveys and sampling in Christmas Island waters from 2010 to 2014 identified 47 new records (from 22 families). This increases the total number of recorded species to 681 (from 91 families) (Table 1). The new records came predominately from shallow (25 species) and deepwater (20 species) reefs, with two pelagic species also recorded. Notable new records include two sharks (*Sphyrna mokarran* and *Alopias pelagicus*) and the first records for the families Alopiidae, Anomalopidae, Muraenesocidae, Tetrarogidae and Trichonotidae. The number of lethrinids recorded at Christmas Island has increased considerably from four to nine species. *Plectropomus laevis* is the first record for its genus at Christmas Island. Notable range extensions include *Plectranthias yamakawai*, which is restricted to the western Pacific Ocean around southern Japan, and *Polylepion russelli*, which is restricted to isolated islands in the northern Pacific Ocean (e.g., Japan and the Hawaiian Islands). The eastward range extension of the Indian Ocean butterflyfish *Chaetodon triangulum* now means it is co-occurring with its Pacific Ocean sister species *C. baronessa* at Christmas Island.

**Abundance.** Abundances were estimated for 518 of the 681 recorded species; with 40% of surveyed species being classed as common or moderately common (Table 1). Families that had more than 50% of species classed as common or moderately common include: Tripterygiidae (100%) Pomacentridae (69%), Holocentridae (67%), Balistidae (64%), Blenniidae (63%), Caesionidae (57%) and Cirrhitidae (57%). Species at the edge of their geographic range did not have lower abundances compared to widely distributed species where Christmas Island lies in the middle of their range ( $\chi^2 = 20.16$ , d.f. = 15,  $P = 0.17$ ; Fig. 1). This was evident by the proportion of Indian Ocean (42%) and Pacific Ocean species (44%) that were common and moderately common in abundance compared to that for widespread Indo-Pacific species (39%) and circumtropical species (13%). Surveys of co-occurring Indian and Pacific Ocean species revealed that sister species has similar abundances ( $Z_{(12)} = 1.45$ ,  $P = 0.15$ ). Of the endemic and near endemic species that were surveyed, all were common or moderately common ( $n = 5$ ).

**Community composition.** Of the 681 fishes that have now been recorded from Christmas Island, the majority (89%) of species are found on the shallow coral reef habitat (0–60 m). Deep reefs (60–300 m) and pelagic waters only account for 7% and 2% of the fishes recorded at Christmas Island. Approximately 76% of the fishes at Christmas Island are widespread Indo-Pacific species. Twelve percent of the fish community is comprised of Pacific Ocean species that are at the western edge of their range, while 4% of species are Indian Ocean species at the eastern edge of their range. Approximately 5% of the fishes recorded at Christmas Island

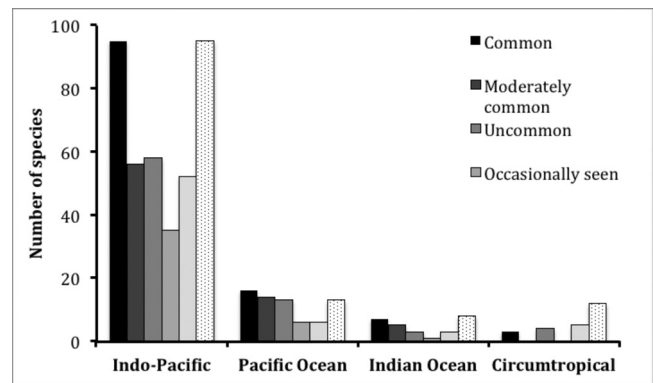


Fig. 1. The number of species in each abundance category for each group of geographic distributions present at Christmas Island. The abundance categories are the average number of fish seen per 60 minute, which is equivalent to an approximate survey area of 5000 m<sup>2</sup>. 1 = common/abundant (average of more than 5 per dive); 2 = moderately common (average of 2–5 per dive); 3 = uncommon (average of 0.5–2 per dive); 4 = occasionally seen (average of 0.2–0.5 per dive); 5 = seldom seen (average of 0.1–0.2 per dive); 6 = rare (average <0.1 per dive).

have a circumtropical distribution, while between 0.6% and 1.6% (depending on the definition of an endemic) of fishes are geographically restricted to the island or region. The fish communities at Christmas Island and the Cocos (Keeling) Islands contain a similar proportion of species from different geographic distributions ( $\chi^2 = 10.12$ , d.f. = 5,  $P = 0.72$ ).

The ten most species rich families account for 58% of the fish community at Christmas Island and include (in descending order): Labridae (13%), Pomacentridae (8%), Epinephelidae (6%), Acanthuridae (5%), Chaetodontidae (5%), Muraenidae (5%), Gobiidae (5%), Blenniidae (4%), Apogonidae (4%) and Scorpaenidae (3%). Eight families are the same as the top ten families in the Indonesian fish community, with the difference being the presence of Acanthuridae and Scorpaenidae, and the absence of Syngnathids (23<sup>rd</sup>) and Lutjanidae (11<sup>th</sup>) from the Christmas Island top ten. The only difference between the top ten families at Christmas Island and the Cocos (Keeling) Islands is that the 10<sup>th</sup> ranked family is Scorpaenidae at Christmas Island and it is the Holocentridae at the Cocos (Keeling) Islands. Despite the broad similarities in the fish communities at Christmas Island and the Cocos (Keeling) Islands, the two locations only share 48% of species.

## DISCUSSION

The 47 new records span 22 families and most originate from shallow and deep water reefs. The total number of fish species that have now been recorded from Christmas Island stands at 681. Most species inhabit the thin veneer of shallow water coral reef that surrounds the island. While most fishes in the Christmas Island community have broad Indo-Pacific distributions, there is a notable concentration of endemic species given the limited availability of habitat (34 km<sup>2</sup>; Allen, 2008). There are a number of Pacific and Indian Ocean species that are on the edge of their geographic ranges; however, in contrast to terrestrial research (Brown, 1984),

they do not have lower abundance at their range edge. A total of 91 families are represented in the Christmas Island fish community and the top ten species rich families are similar to the top ten in the fish communities at its nearest neighbours: Indonesia and the Cocos (Keeling) Islands.

**New records.** New records of significance at Christmas Island include *Plectranthias yamakawai* and *Polylepidion russelli*, which is the first time either of these small range Pacific Ocean species have been recorded in the Indian Ocean. Their presence, along with existing species at Christmas Island that have similar disjunct distributions (e.g., *Stegastes insularis* and *Centropyge flavissima*), may be indicative of relict populations of once widespread species affected by the historical processes in the Indonesian archipelago responsible for the evolution of Indian Ocean–Pacific Ocean geminate sister species (Randall, 1998). The new records of Indian Ocean species at Christmas Island (e.g., *Chaetodon triangulum*) and their co-occurrence with Pacific Ocean sister species increases the likelihood of hybridisation (Hobbs et al., 2009; Hobbs & Allen, 2014).

In terms of species of fisheries importance, the most notable new records identified in this study are those in the genera *Etelis*, *Lethrinus* and *Plectropomus*. These genera contain popular target species and, although only one individual was observed, this is the first time that any member of the genus *Plectropomus* has been recorded at Christmas Island. Over the last five years, sampling through line fishing of the deep reefs around Christmas Island has increased the number of recorded *Lethrinus* species from zero to six and the number of *Etelis* species from one to four. With the exception of *Plectropomus laevis*, the new records of target species come from the deep reefs (60–300 m). The near vertical slope of these deepwater reefs limits the amount of suitable habitat and hence stock size. In addition, the life history characteristics of these species make them vulnerable to overfishing (Newman & Dunk, 2003; Andrews et al., 2011; Williams et al., 2012).

**Abundance.** Although ecological theory developed from terrestrial systems predicts that species at the edge of their geographic range should have low abundances (Brown, 1984), we found no evidence of this at Christmas Island. Species at the edge of their range had similar abundances to species in the middle of their range. It is not clear why this is the case, but it may be related to the low likelihood of populations being able to persist at isolated locations on the range edge if they have low abundance. Co-occurring Indian and Pacific Ocean sister species had similar abundances. This is interesting because many of these sister species have been observed cohabiting (Marie et al., 2007; Hobbs & Salmond, 2008) and using the same dietary and habitat resources (Montanari et al., 2012, 2014), indicating that there is lack of competitive dominance. Co-existence of species that use the same resources and have the same competitive ability is possible if the recruitment of each species fluctuates through space and time and recruits have an equal chance of becoming established (lottery hypothesis: Chesson & Warner, 1981).

Ecological theory from terrestrial systems also predicts that endemics have low abundance due to the positive relationship between geographic range size and abundance (Gaston, 1994). This pattern has been so consistently observed across different terrestrial systems that it is labelled one of the few laws in ecology (Lawton, 1999). However, the endemic fishes surveyed at Christmas Island did not have low abundance, but rather were among the most common fishes observed. A similar pattern occurs for those endemics that are also found at the Cocos (Keeling) Islands (Hobbs et al., 2010b, 2012). That endemic reef fishes do not have low abundance has been reported from numerous locations and may be because endemics cannot persist at low abundance given the high recruitment variability that is characteristic of reef fishes (Hobbs et al., 2011). Patterns in the abundance of endemic reef fishes and species at their range edge do not conform to terrestrial research findings, suggesting that abundance may be determined differently in marine and terrestrial ecosystems.

**Community composition.** Christmas Island and the Cocos (Keeling) Islands represent two isolated locations situated between 10 and 13°S in the tropical north-east Indian Ocean that support 681 and 602 fish species, respectively. Despite the broad similarities in their location, overall species richness, proportion of species from different biogeographic regions, and composition of top ten families, the two locations only have 48% of species in common. The difference in the fish communities between the two locations probably reflects differences in isolation and habitat availability. Indonesia is the closest landmass and it is approximately 300 km from Christmas Island and 1000 km from the Cocos (Keeling) Islands. Given the importance of dispersal for colonising isolated locations, the greater isolation of the Cocos (Keeling) Islands probably explains the low representation of poor dispersers in the community: Syngnathidae, Pseudochromidae, Nemipteridae, Opistognathidae and Gobiidae (Hobbs et al., 2012).

Christmas Island and the Cocos (Keeling) Islands have a similar amount and type of outer reef habitat; however, the Cocos (Keeling) Islands also has a large lagoon with extensive areas of sheltered patch reefs, seagrass meadows and sand banks (Williams, 1994; Hobbs & McDonald, 2010). Differences in fish species composition between the two locations probably reflect the lack of lagoonal habitats at Christmas Island. The families that differed the most in species composition between the two locations were: Ophichthidae (83% of species were different), Epinephelidae (76%), Gobiidae (71%), Lethrinidae (67%) and Apogonidae (66%). Members of the Ophichthidae burrow in sheltered sandy areas and the lack of this habitat on Christmas Island would affect the composition of this family. Similarly, numerous species of gobies use sand and rubble habitats (e.g., sand burrowing gobies) while many apogonids prefer sheltered patch reefs (Gardiner & Jones, 2005). Several epinephelids and lethrinids use sheltered lagoonal environments, particularly during their juvenile life stage. Consequently, the mean densities of epinephelids and lethrinids are many times greater in the Cocos (Keeling)

lagoon than at Christmas Island (Hender et al., 2001; Gilligan et al., 2008). Communities on oceanic islands are established through long distance dispersal; however, successful colonisation also depends on the availability of suitable habitat. Isolation is likely to be a major determinant of the composition of the fish community at the Cocos (Keeling) Islands, while at Christmas Island the lack of lagoonal habitats is likely to exert a significant influence on community composition.

In addition to colonisation, communities on oceanic islands are also comprised of endemic species that have evolved in situ. Christmas Island emerged during the late Miocene approximately 700 km south from its present location (Beeton et al., 2010). This long history of isolation has facilitated the evolution of a plethora of endemic terrestrial species that has culminated in a globally unique terrestrial ecosystem. The exact number of endemic reef fishes at Christmas Island is unclear because some species are also found in one other location (e.g., *Centropyge jocularis*), others are isolated relict populations that may become endemics, while others have only recently been described and may occur elsewhere (e.g., Bythitidae: Møller & Schwarzhans, 2008; Schwarzhans & Møller, 2011; Schwarzhans & Nielsen, 2011). The total number of endemic reef fishes is not that high at Christmas Island; however, the island's small amount of reef habitat means that the number of endemics per area of reef is among the highest in the world (Allen et al., 2008). Management strategies to conserve the unique biodiversity of Christmas Island should be extended into the marine environment and are achievable given the high number of species (including endemics) that are concentrated into the small area of reef that fringes the Island (Hobbs, 2014). In contrast to Christmas Island, the much younger age of the Cocos (Keeling) Islands appears to have limited the evolution of endemics (Allen & Smith-Vaniz, 1994; Hobbs et al., 2012).

Although the terrestrial environment is renowned for the high number of endemic species, the freshwater fish community is depauperate and there are no endemic species. There are no rivers or creeks on Christmas Island and the above-ground freshwater habitat that is available is extremely small and can not support a diverse fish community or the evolution of endemic fishes. Of the five species known to occupy this habitat, three are introduced and the other two are widely distributed Indo-Pacific species that have a marine larval stage capable of colonising oceanic islands. Of more interest are the fishes inhabiting the anchialine caves (Humphreys, 2014; Tan et al., 2014), particularly those in the family Bythitidae that appear to be endemic (Møller Schwarzhans, 2008; Schwarzhans & Møller, 2011; Schwarzhans & Nielsen, 2011).

This study has increased the number of fishes recorded from Christmas Island to 681. The structure and composition of the fish community is influenced by biogeography (mixing of Indian and Pacific Ocean species), isolation (underrepresentation of poor dispersers) and habitat availability (lack of lagoonal species). Although the total number of fish species is low relative to other locations in the tropical Indian Ocean (Hobbs et al., 2012), it is high when taking

into account the number of species per area of habitat. The concentration of species into a small area of habitat means that small-scale impacts, either positive (e.g., marine parks) or negative (e.g., oil spill, overfishing), can have a disproportionately large effect on Christmas Island's marine biodiversity.

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Table 1. Checklist and new records of fishes from Christmas Island. CKI = Cocos (Keeling) Islands, the asterisk (\*) denotes that the species also occurs at Cocos (Keeling) Islands; NR = new record; GD = geographical distribution with each of the numbers indicating the following distributional data: 1 = widespread Indo-Pacific or Indo-west Pacific; 2 = West Pacific species that reach their western distributional limit at Christmas Island or the Cocos (Keeling) Islands; 3 = Indian Ocean species; 4 = circumtropical or cosmopolitan; 5 = uncertain extralimital distribution; 6 = endemic; AB = abundance: 1 = common/abundant (average of more than 5 per dive); 2 = moderately common (average of 2–5 per dive); 3 = uncommon (average of 0.5–2 per dive); 4 = occasionally seen (average of 0.2–0.5 per dive); 5 = seldom seen (average of 0.1–0.2 per dive); 6 = rare (average <0.1 per dive). Per dive is a 60 minute dive that covers an approximate survey area of 5000 m<sup>2</sup>. Sources are as follow: 1 = Allen et al., 2007; 2 = Hobbs et al., 2010a; 3 = Schwarzhans & Nielsen, 2011; 4 = Møller & Schwarzhans, 2008, 5 = Schwarzhans & Møller, 2011; 6 = Allen & Steene, 1988; 7 = Randall, 1998; 8 = Allen & Erdmann, 2012; 9 = Randall & Heemstra, 1991; 10 = Allen & Smith-Vaniz, 1994; 11 = Hobbs et al., 2007; 12 = Springer & Williams, 1994; 13 = communicated by Tan HH (see Tan, 2014 and Tan et al., 2014) and species identified by the authors' observations (O) and photographs (P).

Family	Genus/Species/Authority	CKI	NR	GD	AB	Source
Rhincodontidae	<i>Rhincodon typus</i> Smith, 1828	*		4	5	1
Carcharhinidae	<i>Carcharhinus albimarginatus</i> (Rüppell, 1837)			1	6	1
Carcharhinidae	<i>Carcharhinus amblyrhynchos</i> (Bleeker, 1856)	*		1	4	1
Carcharhinidae	<i>Carcharhinus falciformis</i> (Müller & Henle, 1839)	*		4	1	2
Carcharhinidae	<i>Carcharhinus longimanus</i> (Poey, 1861)			4	6	1
Carcharhinidae	<i>Galeocerdo cuvier</i> (Péron & Lesueur, 1822)	*		4	6	1
Carcharhinidae	<i>Triaenodon obesus</i> (Rüppell, 1837)	*		1	3	1
Sphyrnidae	<i>Sphyrna lewini</i> (Griffith & Smith, 1834)	*		4	6	1
Sphyrnidae	<i>Sphyrna mokarran</i> (Rüppell, 1837)		NR	4	6	O
Alopiidae	<i>Alopias pelagicus</i> Nakamura, 1935	*	NR	4	6	P
Dasyatidae	<i>Taeniura meyeri</i> (Müller & Henle, 1841)			1	6	2
Myliobatidae	<i>Aetobatus narinari</i> (Euphrasen, 1790)			4	6	1
Myliobatidae	<i>Manta birostris</i> (Walbaum, 1792)	*		4	5	1
Anguillidae	<i>Anguilla bicolor</i> McClelland, 1844			1		13
Moringuinae	<i>Moringua bicolor</i> Kaup 1856			1		1
Moringuinae	<i>Moringua javanica</i> (Kaup, 1856)	*		1		1
Moringuinae	<i>Moringua macrochir</i> Bleeker, 1855			1		1
Chlopsidae	<i>Kaupichthys atronasmus</i> Schultz, 1953			1		1
Chlopsidae	<i>Kaupichthys diodontus</i> Schultz, 1943			1		1
Muraenidae	<i>Anarchias seychellensis</i> Smith, 1962	*		1		1
Muraenidae	<i>Channomuraena vittata</i> (Richardson, 1845)			4		1
Muraenidae	<i>Uropterygius concolor</i> Rüppell, 1838	*		1		1
Muraenidae	<i>Uropterygius fuscoguttatus</i> Schultz, 1953			1		1
Muraenidae	<i>Uropterygius macrocephalus</i> (Bleeker, 1864)			1		1
Muraenidae	<i>Uropterygius marmoratus</i> (Lacepède, 1803)	*		1		1
Muraenidae	<i>Uropterygius micropterus</i> (Bleeker, 1852)			1		1
Muraenidae	<i>Uropterygius supraforatus</i> (Regan, 1909)			1		1
Muraenidae	<i>Uropterygius xanthopterus</i> Bleeker, 1859	*		1		1
Muraenidae	<i>Echidna nebulosa</i> (Ahl, 1789)	*		1		1
Muraenidae	<i>Echidna polyzona</i> (Richardson, 1845)	*		1		1
Muraenidae	<i>Echidna unicolor</i> Schultz, 1953			1		1
Muraenidae	<i>Enchelycore bayeri</i> (Schultz, 1953)	*		1		1
Muraenidae	<i>Enchelycore pardalis</i> (Temminck & Schlegel, 1846)	*		1	6	1
Muraenidae	<i>Enchelycore schismatorhynchus</i> (Bleeker, 1853)			1		1
Muraenidae	<i>Enchelynassa canina</i> (Quoy & Gaimard, 1824)	*		1		1
Muraenidae	<i>Gymnomuraena zebra</i> (Shaw & Nodder, 1797)			1		1
Muraenidae	<i>Gymnothorax breedeni</i> McCosker & Randall, 1977			1	1	1
Muraenidae	<i>Gymnothorax buroensis</i> (Bleeker, 1857)	*		1	5	1
Muraenidae	<i>Gymnothorax chilospilus</i> Bleeker, 1865			1		1
Muraenidae	<i>Gymnothorax enigmaticus</i> McCosker & Randall, 1982	*		1		1
Muraenidae	<i>Gymnothorax flavimarginatus</i> (Rüppell, 1830)	*		1	4	1
Muraenidae	<i>Gymnothorax fuscomaculatus</i> (Schultz, 1953)			1		1
Muraenidae	<i>Gymnothorax javanicus</i> (Bleeker, 1859)	*		1	1	1
Muraenidae	<i>Gymnothorax margaritophorus</i> Bleeker, 1865	*		1		1
Muraenidae	<i>Gymnothorax melatremus</i> Schultz, 1953	*		1		1



Family	Genus/Species/Authority	CKI	NR	GD	AB	Source
Muraenidae	<i>Gymnothorax meleagris</i> (Shaw & Nodder, 1795)			1	6	1
Muraenidae	<i>Gymnothorax monostigma</i> (Regan, 1909)	*		1		1
Muraenidae	<i>Gymnothorax pictus</i> (Ahl, 1789)	*		1	1	1
Muraenidae	<i>Gymnothorax pindae</i> Smith, 1962			1	5	1
Muraenidae	<i>Gymnothorax rueppelliae</i> (McClelland, 1844)	*		1	2	1
Muraenidae	<i>Gymnothorax zonipectis</i> Seale, 1906	*		1	5	1
Muraenidae	<i>Gymnothorax thrysoideus</i> (Richardson, 1845)	*		1	2	1
Muraenidae	<i>Rhinomuraena quaesita</i> Garman, 1888	*		1	6	1
Ophichthidae	<i>Scolecenchelys latacaudata</i> (Ogilby, 1897)	*		1		1
Ophichthidae	<i>Apterichtus klazingai</i> (Weber, 1913)			1		1
Ophichthidae	<i>Brachysomophis crocodilinus</i> (Bennett, 1833)			1		1
Ophichthidae	<i>Callechelys marmorata</i> (Bleeker, 1853)			1		1
Ophichthidae	<i>Leiuranus semicinctus</i> (Lay & Bennett, 1839)	*		1		1
Ophichthidae	<i>Myrichthys maculosus</i> (Cuvier, 1816)			1		1
Ophichthidae	<i>Phyllophichthus xenodontus</i> Gosline, 1951			1		1
Congridae	<i>Conger cinereus</i> Rüppell, 1830	*		1		1
Congridae	<i>Heteroconger hassi</i> (Klausewitz & Eibl-Eibesfeldt, 1959)	*		1	5	1
Muraenesocidae	<i>Congresox talabonoides</i> (Bleeker, 1852)	*	NR	1		13
Chanidae	<i>Chanos chanos</i> (Forsskål, 1775)	*		1	6	2
Synodontidae	<i>Synodus dermatogenys</i> Fowler, 1912			1	2	1
Synodontidae	<i>Synodus jaculum</i> Russell & Cressey, 1979			1	5	1
Synodontidae	<i>Synodus variegatus</i> (Lacepède, 1803)	*		1	2	1
Synodontidae	<i>Saurida gracilis</i> (Quoy & Gaimard, 1824)	*		1		1
Synodontidae	<i>Saurida undosquamis</i> (Richardson, 1848)			1		1
Ophidiidae	<i>Brotula multibarbata</i> Temminck & Schlegel, 1847	*		1		1
Bythitidae	<i>Microbrotula andersoni</i> Schwarzhans & Nielsen, 2011			6		1,3
Bythitidae	<i>Brosomphyciops pautzkei</i> Schultz, 1960	*		1		1
Bythitidae	<i>Diancistrus</i> sp.	*	NR			13
Bythitidae	<i>Dinematichthys trilobatus</i> Møller & Schwarzhans, 2008	*		6		1,4
Bythitidae	<i>Ogilbia</i> sp.	*		6		1
Bythitidae	<i>Paradiancistrus christmasensis</i> Schwarzhans & Møller, 2011			6		1,5
Antennariidae	<i>Antennarius analis</i> (Schultz, 1957)			1		1
Antennariidae	<i>Antennarius coccineus</i> (Lesson, 1830)	*		1		1
Antennariidae	<i>Antennarius nummifer</i> (Cuvier, 1817)			1		1
Gobiesocidae	<i>Discotrema crinophilum</i> Briggs, 1976			2	2	1
Atherinidae	<i>Atherion elymus</i> Jordan & Starks, 1901			2	5	1
Atherinidae	<i>Hypoatherina barnesi</i> Schultz, 1953			1		1
Poeciliidae	<i>Poecilia reticulata</i> Peters, 1859			5		6
Poeciliidae	<i>Xiphophorus</i> sp.			5		6
Belonidae	<i>Platybelone argalus</i> (Lesueur, 1821)	*		4		1
Belonidae	<i>Tylosurus crocodilus</i> (Péron & Lesueur, 1821)	*		4	5	1
Exocoetidae	<i>Hirundichthys oxycephalus</i> (Bleeker, 1852)			1		1
Exocoetidae	<i>Cypselurus poecilopterus</i> (Valenciennes, 1847)			1		1
Anomalopidae	<i>Photoblepharon palpebratum</i> (Boddaert, 1781)		NR	2	2	13
Berycidae	<i>Beryx decadactylus</i> Cuvier, 1829			4		O,P
Holocentridae	<i>Sargocentron caudimaculatum</i> (Rüppell, 1838)	*		1	1	1
Holocentridae	<i>Sargocentron diadema</i> (Lacépède, 1802)	*		1	3	1
Holocentridae	<i>Sargocentron iota</i> Randall, 1998			1		7
Holocentridae	<i>Sargocentron ittodai</i> (Jordan & Fowler, 1902)			1		8
Holocentridae	<i>Sargocentron lepros</i> (Allen & Cross, 1983)	*		1	6	1
Holocentridae	<i>Sargocentron microstoma</i> (Günther, 1859)	*		1	1	1
Holocentridae	<i>Sargocentron praslin</i> (Lacépède, 1802)			1	3	1
Holocentridae	<i>Sargocentron punctatissimum</i> (Cuvier, 1829)	*		1	1	1
Holocentridae	<i>Sargocentron spiniferum</i> (Forsskål, 1775)	*		1	6	2
Holocentridae	<i>Sargocentron tiere</i> (Cuvier, 1829)	*		1	1	1
Holocentridae	<i>Sargocentron tiereoides</i> (Bleeker, 1853)			1	4	1
Holocentridae	<i>Myripristis berndti</i> Jordan & Evermann, 1905	*		1	1	1
Holocentridae	<i>Myripristis kuntee</i> Valenciennes, 1831	*		1	1	1
Holocentridae	<i>Myripristis murdjan</i> (Forsskål, 1775)	*		1	1	1

Family	Genus/Species/Authority	CKI	NR	GD	AB	Source
Holocentridae	<i>Myripristis pralinia</i> Cuvier, 1829	*		1	1	1
Holocentridae	<i>Myripristis vittata</i> Valenciennes, 1831	*		1	1	1
Holocentridae	<i>Plectrypops lima</i> (Valenciennes, 1831)	*		1	1	1
Aulostomidae	<i>Aulostomus chinensis</i> (Linnaeus, 1766)	*		1	3	1
Fistulariidae	<i>Fistularia commersonii</i> Rüppell, 1838	*		1	3	1
Solenostomidae	<i>Solenostomus cyanopterus</i> Bleeker, 1855			1	6	1
Solenostomidae	<i>Solenostomus paradoxus</i> (Pallas, 1770)		NR	1	6	P
Syngnathidae	<i>Choeroichthys brachysoma</i> (Bleeker, 1855)			1	6	1
Syngnathidae	<i>Choeroichthys sculptus</i> (Günther, 1870)	*		1	6	1
Syngnathidae	<i>Corythoichthys schultzi</i> Herald, 1953			1	6	1
Syngnathidae	<i>Cosmocampus banneri</i> (Herald & Randall, 1972)	*		1	6	1
Syngnathidae	<i>Dunckerocampus baldwini</i> Herald & Randall, 1972			1		1
Syngnathidae	<i>Doryrhamphus melanopleura</i> (Bleeker, 1858)	*		1	6	1
Syngnathidae	<i>Micrognathus pygmaeus</i> Fritzsche, 1981	*		2		1
Scorpaenidae	<i>Scorpaenodes albaiensis</i> (Evermann & Seale, 1907)	*		1		1
Scorpaenidae	<i>Scorpaenodes corallinus</i> Smith, 1957			1		1
Scorpaenidae	<i>Scorpaenodes guamensis</i> Quoy & Gaimard, 1824	*		1		1
Scorpaenidae	<i>Scorpaenodes hirsutus</i> (Smith, 1957)	*		1	5	1
Scorpaenidae	<i>Scorpaenodes parvipinnis</i> (Garrett, 1864)	*		1	6	1
Scorpaenidae	<i>Scorpaenodes varipinnis</i> Smith, 1957			1	5	1
Scorpaenidae	<i>Scorpaenopsis diabolus</i> (Cuvier, 1829)	*		1	4	1
Scorpaenidae	<i>Scorpaenopsis oxycephala</i> (Bleeker, 1849)			1	1	1
Scorpaenidae	<i>Scorpaenopsis possi</i> Randall & Eschmeyer, 2001			1		1
Scorpaenidae	<i>Sebastapistes cyanostigma</i> (Bleeker, 1856)	*		1	1	1
Scorpaenidae	<i>Sebastapistes mauritiana</i> (Cuvier, 1829)			1		1
Scorpaenidae	<i>Sebastapistes strongia</i> (Cuvier, 1829)	*		1		1
Scorpaenidae	<i>Sebastapistes tinkhami</i> (Fowler, 1946)			1		1
Scorpaenidae	<i>Taenianotus triacanthus</i> Lacépède, 1802	*		1	6	1
Scorpaenidae	<i>Pontinus macrocephalus</i> (Sauvage, 1882)		NR	2		O,P
Scorpaenidae	<i>Caracanthus maculatus</i> (Gray, 1831)	*		1		1
Scorpaenidae	<i>Caracanthus unipinna</i> (Gray, 1831)	*		1		1
Scorpaenidae	<i>Dendrochirus biocellatus</i> (Fowler, 1938)			1	6	1
Scorpaenidae	<i>Dendrochirus zebra</i> (Cuvier, 1829)			1	6	1
Scorpaenidae	<i>Pterois antennata</i> (Bloch, 1787)	*		1	6	1
Scorpaenidae	<i>Pterois radiata</i> Cuvier, 1829	*		1	6	1
Scorpaenidae	<i>Pterois volitans</i> (Linnaeus, 1758)	*		2	3	1
Tetrarogidae	<i>Ablabys taenianotus</i> (Cuvier, 1829)		NR	1	6	P
Synanceiidae	<i>Synanceia verrucosa</i> Bloch & Schneider, 1801	*		1	6	1
Aploactinidae	<i>Cocotropus larvatus</i> Poss & Allen, 1987			2		1
Platycephalidae	<i>Sunagocia arenicola</i> (Schultz, 1966)			1	6	1
Platycephalidae	<i>Sunagocia otaitensis</i> (Cuvier, 1829)	*		1	6	1
Epinephelidae	<i>Aethaloperca rogae</i> (Forsskål, 1775)	*		1	4	1
Epinephelidae	<i>Anyperodon leucogrammicus</i> (Valenciennes, 1828)	*		1	4	1
Epinephelidae	<i>Cephalopholis argus</i> Bloch & Schneider, 1801	*		1	1	1
Epinephelidae	<i>Cephalopholis aurantia</i> (Valenciennes, 1828)			1		1
Epinephelidae	<i>Cephalopholis igarashiensis</i> Katayama, 1957			2		1
Epinephelidae	<i>Cephalopholis leopardus</i> (Lacépède, 1801)	*		1	2	1
Epinephelidae	<i>Cephalopholis miniata</i> (Forsskal, 1755)	*		1	2	1
Epinephelidae	<i>Cephalopholis nigripinnis</i> (Valenciennes, 1828)			3	1	1
Epinephelidae	<i>Cephalopholis polleni</i> (Bleeker, 1868)	*		1	3	1
Epinephelidae	<i>Cephalopholis sexmaculata</i> (Rüppell, 1830)			1	2	1
Epinephelidae	<i>Cephalopholis sonnerati</i> (Valenciennes, 1828)	*	NR	1	6	O,P
Epinephelidae	<i>Cephalopholis spiloparaea</i> (Valenciennes, 1828)	*		1	1	1
Epinephelidae	<i>Cephalopholis urodeta</i> (Forster, 1801)	*		2	1	9
Epinephelidae	<i>Epinephelus corallicola</i> (Kuhl & Hasselt, 1828)			2	4	1
Epinephelidae	<i>Epinephelus fasciatus</i> (Forsskål, 1775)			1	5	1
Epinephelidae	<i>Epinephelus fuscoguttatus</i> (Forsskål, 1775)	*		1	6	2
Epinephelidae	<i>Epinephelus hexagonatus</i> (Bloch & Schneider, 1801)	*		1	5	1
Epinephelidae	<i>Epinephelus lanceolatus</i> (Bloch, 1790)	*		1	6	1

Family	Genus/Species/Authority	CKI	NR	GD	AB	Source
Epinephelidae	<i>Epinephelus merra</i> Bloch, 1793	*		1	6	1
Epinephelidae	<i>Epinephelus morrhua</i> (Valenciennes, 1833)	*		1		1
Epinephelidae	<i>Epinephelus retouti</i> Bleeker, 1868	*		1		1
Epinephelidae	<i>Epinephelus spilotoceps</i> Schultz, 1953	*		1	2	1
Epinephelidae	<i>Epinephelus tauvina</i> (Forsskål, 1775)	*		1	5	1
Epinephelidae	<i>Epinephelus tukula</i> Morgans, 1959			1	6	1
Epinephelidae	<i>Gracila albomarginata</i> (Fowler & Bean, 1930)	*		1	1	1
Epinephelidae	<i>Hyporthodus octofasciatus</i> Griffin, 1926			1	6	2
Epinephelidae	<i>Plectropomus laevis</i> (Lacépède, 1801)	*	NR	1	6	P
Epinephelidae	<i>Saloptia powelli</i> Smith, 1964	*		2		1
Epinephelidae	<i>Variola albimarginata</i> Baissac, 1953	*		1	4	2
Epinephelidae	<i>Variola louti</i> (Forsskål, 1775)	*		1	3	1
Epinephelidae	<i>Liopropoma mitratum</i> Lubbock & Randall, 1978			1		1
Epinephelidae	<i>Liopropoma susumi</i> (Jordan & Seale, 1906)			1		1
Epinephelidae	<i>Liopropoma tonstrinum</i> Randall & Taylor, 1988			1		1
Epinephelidae	<i>Belonoperca chabanaudi</i> Fowler & Bean, 1930			1	5	1
Epinephelidae	<i>Grammistes sexlineatus</i> (Thunberg, 1792)	*		1	4	1
Epinephelidae	<i>Grammistops ocellatus</i> Schultz, 1953			1		1
Epinephelidae	<i>Pogonoperca punctata</i> (Valenciennes, 1830)	*		1	6	1
Epinephelidae	<i>Pseudogramma polyacanthus</i> (Bleeker, 1856)	*		1		1
Epinephelidae	<i>Suttonia lineata</i> Gosline, 1960	*		1		1
Serranidae	<i>Luzonichthys earlei</i> Randall, 1981			1	3	1
Serranidae	<i>Luzonichthys</i> sp.	*		1		10
Serranidae	<i>Luzonichthys whitleyi</i> (Smith, 1955)			1	1	1
Serranidae	<i>Plectranthias fourmanoiri</i> Randall, 1980			1	5	1
Serranidae	<i>Plectranthias inermis</i> Randall, 1980			1		1
Serranidae	<i>Plectranthias nanus</i> Randall, 1980	*		2	5	1
Serranidae	<i>Plectranthias yamakawai</i> Yoshino, 1972		NR	2		P
Serranidae	<i>Pseudanthias dispar</i> (Herre, 1955)			2	1	1
Serranidae	<i>Pseudanthias evansi</i> (Smith, 1954)	*		3	1	1
Serranidae	<i>Pseudanthias flavoguttatus</i> (Katayama & Masuda, 1980)			1	1	1
Serranidae	<i>Pseudanthias pleurotaenia</i> (Bleeker, 1857)			2	6	2
Serranidae	<i>Pseudanthias smithvanizi</i> (Randall & Lubbock, 1981)	*		1	1	1
Serranidae	<i>Pseudanthias squamipinnis</i> (Peters, 1855)			1	4	1
Serranidae	<i>Pseudanthias tuka</i> (Herre & Montalban, 1927)		NR	1	6	O,P
Pseudochromidae	<i>Pseudochromis viridis</i> Gill & Allen, 1996			6		1
Pseudochromidae	<i>Pseudochromis tapeinosoma</i> Bleeker, 1853			1		1
Pseudochromidae	<i>Lubbockichthys multisquamatus</i> (Allen, 1987)	*		1	3	1
Pseudochromidae	<i>Pseudoplesiops immaculatus</i> Gill & Edwards, 2002			1		1
Plesiopidae	<i>Calloplesiops altivelis</i> (Steindachner, 1903)			1	3	1
Plesiopidae	<i>Plesiops coeruleolineatus</i> Rüppell, 1835	*		1		1
Plesiopidae	<i>Plesiops corallicola</i> Bleeker, 1853	*		1		1
Plesiopidae	<i>Steeneichthys nativitatus</i> Allen, 1987			3		1
Terapontidae	<i>Terapon theraps</i> Cuvier, 1829			1	6	6
Kuhliidae	<i>Kuhlia mugil</i> (Bloch & Schneider, 1801)	*		1	1	1
Priacanthidae	<i>Heteropriacanthus cruentatus</i> (Lacépède, 1801)	*		4	3	1
Priacanthidae	<i>Priacanthus sagittarius</i> Starnes, 1988		NR	1		O,P
Apogonidae	<i>Apogon crassiceps</i> Garman, 1903	*		1		1
Apogonidae	<i>Apogon doryssa</i> (Jordan & Seale, 1906)			1		1
Apogonidae	<i>Apogon semiornatus</i> Peters, 1876			1		1
Apogonidae	<i>Apogon talboti</i> (Smith, 1961)			1		1
Apogonidae	<i>Apogonichthys ocellatus</i> (Weber, 1913)	*		1	5	1
Apogonidae	<i>Cercamia eremia</i> (Allen, 1987)	*		1	5	1
Apogonidae	<i>Cheilodipterus artus</i> Smith, 1961			1	3	1
Apogonidae	<i>Cheilodipterus macrodon</i> (Lacépède, 1802)	*		1	2	1
Apogonidae	<i>Cheilodipterus quinquelineatus</i> Cuvier, 1828	*		1	3	1
Apogonidae	<i>Fowleria aurita</i> (Valenciennes, 1831)	*		1		6
Apogonidae	<i>Fowleria marmorata</i> (Alleyne & Macleay, 1877)			1		1
Apogonidae	<i>Fowleria vaiulae</i> (Jordan & Seale, 1906)			1	5	1

Family	Genus/Species/Authority	CKI	NR	GD	AB	Source
Apogonidae	<i>Nectamia savayensis</i> (Günther, 1872)			1	1	1
Apogonidae	<i>Ostorhinchus angustatus</i> (Smith & Radcliffe, 1911)	*		1		1
Apogonidae	<i>Ostorhinchus apogonoides</i> (Bleeker, 1856)			1	2	1
Apogonidae	<i>Ostorhinchus aureus</i> (Lacépède, 1802)			1	3	1
Apogonidae	<i>Ostorhinchus nigrofasciatus</i> (Lachner, 1953)			1	4	1
Apogonidae	<i>Ostorhinchus novemfasciatus</i> (Cuvier, 1828)	*		1		6
Apogonidae	<i>Ostorhinchus taeniophorus</i> (Regan, 1908)	*		1	2	1
Apogonidae	<i>Pristiapogon exostigma</i> (Jordan & Starks, 1906)	*		1	5	1
Apogonidae	<i>Pristiapogon fraenatus</i> (Valenciennes, 1832)			1	2	1
Apogonidae	<i>Pristiapogon kallopterus</i> (Bleeker, 1856)	*		1	1	1
Apogonidae	<i>Pristiapogon taeniopterus</i> (Bennett, 1836)	*		1		1
Apogonidae	<i>Zapogon evermanni</i> (Jordan & Snyder, 1904)	*		1		1
Apogonidae	<i>Pseudamiops gracilicauda</i> (Lachner, 1953)	*		1		1
Malacanthidae	<i>Malacanthus brevirostris</i> Guichenot, 1848	*		1	5	1
Malacanthidae	<i>Malacanthus latovittatus</i> (Lacépède, 1801)	*		1	5	1
Echeneidae	<i>Echeneis naucrates</i> Linnaeus, 1758			4	6	1
Echeneidae	<i>Remora remora</i> (Linnaeus, 1758)			4	6	1
Carangidae	<i>Alectis ciliaris</i> (Bloch, 1787)		NR	4	6	O,P
Carangidae	<i>Alectis indica</i> (Rüppell, 1830)			1	6	1
Carangidae	<i>Carangoides ferdau</i> (Forsskål, 1775)	*		1	6	1
Carangidae	<i>Carangoides orthogrammus</i> (Jordan & Gilbert, 1882)	*		1	6	1
Carangidae	<i>Caranx ignobilis</i> (Forsskål, 1775)	*		1	3	1
Carangidae	<i>Caranx lugubris</i> Poey, 1860	*		4	3	1
Carangidae	<i>Caranx melampygus</i> Cuvier, 1833	*		1	3	1
Carangidae	<i>Caranx sexfasciatus</i> Quoy & Gaimard, 1825	*		1	3	1
Carangidae	<i>Decapterus macarellus</i> (Cuvier, 1833)	*		4	1	1
Carangidae	<i>Elagatis bipinnulata</i> (Quoy & Gaimard, 1825)	*		4	3	1
Carangidae	<i>Gnathanodon speciosus</i> (Forsskål, 1775)			1	6	1
Carangidae	<i>Scomberoides lysan</i> (Forsskål, 1775)	*		1	6	1
Carangidae	<i>Seriola dumerili</i> (Risso, 1810)	*	NR	4	5	O,P
Carangidae	<i>Trachinotus baillonii</i> (Lacépède, 1801)	*		1		1
Coryphaenidae	<i>Coryphaena hippurus</i> Linnaeus, 1758	*		4	6	1
Bramidae	<i>Brama australis</i> Valenciennes, 1840			2		2
Bramidae	<i>Brama brama</i> (Bonnaterre, 1788)	*	NR	4		O,P
Lutjanidae	<i>Aphareus furca</i> (Lacépède, 1801)	*		1	1	1
Lutjanidae	<i>Aphareus rutilans</i> Cuvier, 1830	*	NR	1		O,P
Lutjanidae	<i>Aprion virescens</i> Valenciennes, 1830	*		1	5	1
Lutjanidae	<i>Etelis carbunculus</i> Cuvier, 1828	*	NR	1		O,P
Lutjanidae	<i>Etelis coruscans</i> Valenciennes, 1862	*		1		1
Lutjanidae	<i>Etelis marshi</i> (Jenkins, 1903)	*	NR	1		O,P
Lutjanidae	<i>Etelis radiosus</i> Anderson, 1981			1		1
Lutjanidae	<i>Lutjanus bohar</i> (Forsskål, 1775)	*		1	1	1
Lutjanidae	<i>Lutjanus fulviflamma</i> (Forsskål, 1775)			1	5	1
Lutjanidae	<i>Lutjanus fulvus</i> (Bloch & Schneider, 1801)	*		1	5	1
Lutjanidae	<i>Lutjanus gibbus</i> (Forsskål, 1775)	*		1	4	1
Lutjanidae	<i>Lutjanus kasmira</i> (Forsskål, 1775)	*		1	4	1
Lutjanidae	<i>Lutjanus monostigma</i> (Cuvier, 1828)	*		1	6	1
Lutjanidae	<i>Lutjanus rivulatus</i> (Cuvier, 1828)	*		1	6	1
Lutjanidae	<i>Macolor macularis</i> Fowler, 1931			2	1	1
Lutjanidae	<i>Macolor niger</i> (Forsskål, 1775)	*		1	1	1
Lutjanidae	<i>Paracaesio sordida</i> Abe & Shinohara, 1962			1	1	1
Lutjanidae	<i>Pristipomoides auricilla</i> (Jordan, Evermann & Tanaka, 1927)	*		1		1
Lutjanidae	<i>Pristipomoides filamentosus</i> (Valenciennes, 1830)	*	NR	1		O,P
Lutjanidae	<i>Pristipomoides zonatus</i> (Valenciennes, 1830)	*		1		1
Lutjanidae	<i>Randallichthys filamentosus</i> (Fourmanoir, 1970)		NR	2		O,P
Caesionidae	<i>Caesio caeruleaurea</i> Lacépède, 1801			1	4	1
Caesionidae	<i>Caesio lunaris</i> Cuvier, 1830	*		1	2	1
Caesionidae	<i>Caesio teres</i> Seale, 1906	*		1	1	1
Caesionidae	<i>Caesio xanthonotus</i> Bleeker, 1853	*		3	6	1

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Caesionidae	<i>Pterocaesio lativittata</i> Carpenter, 1987	*		1	2	1
Caesionidae	<i>Pterocaesio marri</i> Schultz, 1953			1	4	1
Caesionidae	<i>Pterocaesio tile</i> (Cuvier, 1830)	*		1	1	1
Haemulidae	<i>Plectorhinchus gibbosus</i> (Lacépède, 1802)			1	6	1
Haemulidae	<i>Plectorhinchus vittatus</i> (Linnaeus, 1758)			1	6	1
Lethrinidae	<i>Gnathodentex aureolineatus</i> (Lacépède, 1802)	*		1	2	1
Lethrinidae	<i>Gymnocranius griseus</i> (Temminck & Schlegel, 1843)		NR	1	6	O,P
Lethrinidae	<i>Lethrinus amboinensis</i> Bleeker, 1854		NR	2	6	O,P
Lethrinidae	<i>Lethrinus conchyliaius</i> Smith, 1959		NR	3	6	O,P
Lethrinidae	<i>Lethrinus erythropterus</i> Valenciennes, 1830	*		1	6	2
Lethrinidae	<i>Lethrinus olivaceus</i> Valenciennes, 1830		NR	1	6	O,P
Lethrinidae	<i>Lethrinus rubrioperculatus</i> Sato, 1978	*	NR	1	6	O,P
Lethrinidae	<i>Lethrinus xanthochilus</i> Klunzinger, 1870	*		1	6	2
Lethrinidae	<i>Monotaxis grandoculis</i> (Forsskål, 1775)	*		1	1	1
Nemipteridae	<i>Scolopsis bilineata</i> (Bloch, 1793)			1	5	1
Mullidae	<i>Mulloidichthys flavolineatus</i> (Lacépède, 1801)	*		1	3	1
Mullidae	<i>Mulloidichthys vanicolensis</i> (Valenciennes, 1831)	*		1	1	1
Mullidae	<i>Parupeneus cyclostomus</i> (Lacépède, 1801)	*		1	3	1
Mullidae	<i>Parupeneus macronemus</i> (Lacépède, 1801)	*		1	4	1
Mullidae	<i>Parupeneus multifasciatus</i> (Quoy & Gaimard, 1825)	*		2	1	1
Mullidae	<i>Parupeneus pleurostigma</i> (Bennett, 1831)	*		1	3	1
Mullidae	<i>Parupeneus trifasciatus</i> (Lacépède, 1801)			3	1	1
Pempheridae	<i>Pempheris oualensis</i> Cuvier, 1831	*		1	1	1
Kyphosidae	<i>Kyphosus cinerascens</i> (Forsskål, 1775)	*		1	1	1
Kyphosidae	<i>Kyphosus vaigiensis</i> (Quoy & Gaimard, 1825)	*		1	1	1
Chaetodontidae	<i>Chaetodon adiergastos</i> Seale, 1910			1	6	11
Chaetodontidae	<i>Chaetodon auriga</i> Forsskål, 1775	*		1	2	1
Chaetodontidae	<i>Chaetodon baronessa</i> Cuvier, 1831			2	5	1
Chaetodontidae	<i>Chaetodon bennetti</i> Cuvier, 1831	*		1	6	2
Chaetodontidae	<i>Chaetodon citrinellus</i> Cuvier, 1831	*		1	2	1
Chaetodontidae	<i>Chaetodon collare</i> Bloch, 1787			1	6	11
Chaetodontidae	<i>Chaetodon decussatus</i> Cuvier, 1831	*		1	6	11
Chaetodontidae	<i>Chaetodon ephippium</i> Cuvier, 1831	*		1	6	1
Chaetodontidae	<i>Chaetodon guttatissimus</i> Bennett, 1833	*		3	1	1
Chaetodontidae	<i>Chaetodon kleinii</i> Bloch, 1790	*		1	2	1
Chaetodontidae	<i>Chaetodon lineolatus</i> Cuvier, 1831	*		1	5	1
Chaetodontidae	<i>Chaetodon lunula</i> (Lacépède, 1802)	*		1	1	1
Chaetodontidae	<i>Chaetodon lunulatus</i> Quoy & Gaimard, 1825			2	6	2
Chaetodontidae	<i>Chaetodon madagaskariensis</i> Ahl, 1923	*		3	6	1
Chaetodontidae	<i>Chaetodon melannotus</i> Bloch & Schneider, 1801	*		1	6	1
Chaetodontidae	<i>Chaetodon meyeri</i> Bloch & Schneider, 1801	*		1	2	1
Chaetodontidae	<i>Chaetodon mitratus</i> Günther, 1860	*		3	3	1
Chaetodontidae	<i>Chaetodon ornatissimus</i> Cuvier, 1831	*		1	1	1
Chaetodontidae	<i>Chaetodon punctatofasciatus</i> Cuvier, 1831	*		2	3	1
Chaetodontidae	<i>Chaetodon rafflesii</i> Bennett, 1830	*		1	6	11
Chaetodontidae	<i>Chaetodon semeion</i> Bleeker, 1855	*		1	6	1
Chaetodontidae	<i>Chaetodon speculum</i> Cuvier, 1831			1	6	1
Chaetodontidae	<i>Chaetodon triangulum</i> Cuvier, 1831		NR	3	6	O,P
Chaetodontidae	<i>Chaetodon trifascialis</i> Quoy & Gaimard, 1825	*		1	1	1
Chaetodontidae	<i>Chaetodon trifasciatus</i> Park, 1797	*		3	5	1
Chaetodontidae	<i>Chaetodon ulietensis</i> Cuvier, 1831	*	NR	1	6	O,P
Chaetodontidae	<i>Chaetodon unimaculatus</i> Bloch, 1787	*		1	2	1
Chaetodontidae	<i>Chaetodon vagabundus</i> Linnaeus, 1758	*		1	6	1
Chaetodontidae	<i>Forcipiger flavissimus</i> Jordan & McGregor, 1898	*		1	1	1
Chaetodontidae	<i>Forcipiger longirostris</i> (Broussonet, 1782)	*		1	1	1
Chaetodontidae	<i>Hemitaurichthys polylepis</i> (Bleeker, 1857)	*		2	1	1
Chaetodontidae	<i>Heniochus acuminatus</i> (Linnaeus, 1758)			1	6	2
Chaetodontidae	<i>Heniochus chrysostomus</i> Cuvier, 1831	*		1	3	1
Chaetodontidae	<i>Heniochus monoceros</i> Cuvier, 1831	*		1	6	1

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Chaetodontidae	<i>Heniochus singularius</i> Smith & Radcliffe, 1911			1	3	1
Chaetodontidae	<i>Heniochus varius</i> (Cuvier, 1829)			2	3	1
Pomacanthidae	<i>Apolemichthys trimaculatus</i> (Cuvier, 1831)	*		1	5	1
Pomacanthidae	<i>Centropyge bicolor</i> (Bloch, 1787)	*		1	3	1
Pomacanthidae	<i>Centropyge bispinosa</i> (Günther, 1860)	*		1	3	1
Pomacanthidae	<i>Centropyge eibli</i> Klausewitz, 1963	*		1	3	1
Pomacanthidae	<i>Centropyge fisheri</i> (Snyder, 1904)	*		1	4	1
Pomacanthidae	<i>Centropyge flavissima</i> (Cuvier, 1831)	*		6	1	1
Pomacanthidae	<i>Centropyge jocularis</i> Smith-Vaniz & Randall, 1974	*		6	1	1
Pomacanthidae	<i>Centropyge tibicen</i> (Cuvier, 1831)	*		2	3	1
Pomacanthidae	<i>Centropyge vrolikii</i> (Bellker, 1853)	*		2	4	1
Pomacanthidae	<i>Centropyge colini</i> Smith-Vaniz & Randall, 1974	*		1	6	2
Pomacanthidae	<i>Genicanthus bellus</i> Randall, 1975	*		2	6	11
Pomacanthidae	<i>Genicanthus melanospilos</i> (Bleeker, 1857)			2	6	2
Pomacanthidae	<i>Paracentropyge multifasciatus</i> (Smith & Radcliffe, 1911)	*		1	6	2
Pomacanthidae	<i>Pomacanthus imperator</i> (Bloch, 1787)	*		1	3	1
Pomacanthidae	<i>Pomacanthus semicircularis</i> (Cuvier, 1831)			1	4	1
Pomacanthidae	<i>Pygoplites diacanthus</i> (Boddaert, 1772)	*		1	2	1
Cirrhitidae	<i>Amblycirrhitus bimacula</i> (Jenkins, 1903)	*		1	4	1
Cirrhitidae	<i>Cirrhitichthys oxycephalus</i> (Bleeker, 1855)	*		1	2	1
Cirrhitidae	<i>Cirrhitus pinnulatus</i> (Bloch & Schneider, 1801)	*		1	4	1
Cirrhitidae	<i>Oxycirrhites typus</i> Bleeker, 1857	*		1	4	1
Cirrhitidae	<i>Paracirrhites arcatus</i> (Cuvier, 1829)	*		1	1	1
Cirrhitidae	<i>Paracirrhites forsteri</i> (Schneider, 1801)	*		1	1	1
Cirrhitidae	<i>Paracirrhites hemistictus</i> (Günther, 1874)	*		2	2	1
Mugilidae	<i>Crenimugil crenilabis</i> (Forsskål, 1775)	*		1	6	2
Cichlidae	<i>Oreochromis</i> sp.					6
Pomacentridae	<i>Abudefduf notatus</i> (Day, 1870)	*		1	1	1
Pomacentridae	<i>Abudefduf septemfasciatus</i> (Cuvier, 1830)	*		1	1	1
Pomacentridae	<i>Abudefduf sexfasciatus</i> (Lacépède, 1801)			1	1	1
Pomacentridae	<i>Abudefduf sordidus</i> (Forsskål, 1775)	*		1	1	1
Pomacentridae	<i>Abudefduf vaigiensis</i> (Quoy & Gaimard, 1825)	*		1	1	1
Pomacentridae	<i>Amblyglyphidodon aureus</i> (Cuvier, 1830)	*		2	1	1
Pomacentridae	<i>Amblyglyphidodon leucogaster</i> (Bleeker, 1847)		NR	1	6	O,P
Pomacentridae	<i>Amphiprion clarkii</i> (Bennett, 1830)	*		1	2	1
Pomacentridae	<i>Amphiprion perideraion</i> Bleeker, 1855	*		2	2	1
Pomacentridae	<i>Amphiprion sandaracinos</i> Allen, 1972			2	5	1
Pomacentridae	<i>Cheiloprion labiatus</i> (Day, 1877)		NR	1	6	O,P
Pomacentridae	<i>Chromis alpha</i> Randall, 1988	*		1	3	1
Pomacentridae	<i>Chromis amboinensis</i> (Bleeker, 1873)	*		2	1	1
Pomacentridae	<i>Chromis analis</i> (Cuvier, 1830)		NR	2	6	O
Pomacentridae	<i>Chromis atripectoralis</i> Welander & Schultz, 1951			1	1	1
Pomacentridae	<i>Chromis atripes</i> Fowler & Bean, 1928	*		2	1	1
Pomacentridae	<i>Chromis caudalis</i> Randall, 1988	*		2	1	1
Pomacentridae	<i>Chromis delta</i> Randall, 1988	*		1	1	1
Pomacentridae	<i>Chromis fieldi</i> Randall & DiBattista, 2013	*		3	6	1
Pomacentridae	<i>Chromis elerae</i> Fowler & Bean, 1928	*		1	4	1
Pomacentridae	<i>Chromis lepidolepis</i> Bleeker, 1877	*		1	2	1
Pomacentridae	<i>Chromis lineata</i> Fowler & Bean, 1928			2	6	1
Pomacentridae	<i>Chromis margaritifer</i> Fowler, 1946	*		2	1	1
Pomacentridae	<i>Chromis nigrura</i> Smith, 1960	*		3	1	1
Pomacentridae	<i>Chromis opercularis</i> (Günther, 1867)	*		3	2	1
Pomacentridae	<i>Chromis ternatensis</i> (Bleeker, 1856)	*		1	1	1
Pomacentridae	<i>Chromis weberi</i> Fowler & Bean, 1928			1	2	1
Pomacentridae	<i>Chromis xanthochira</i> (Bleeker, 1851)			2	3	1
Pomacentridae	<i>Chromis xanthura</i> (Bleeker, 1854)	*		2	2	1
Pomacentridae	<i>Chrysiptera brownriggii</i> (Bennett, 1828)			1	1	1
Pomacentridae	<i>Chrysiptera glauca</i> (Cuvier, 1830)	*		1	1	1
Pomacentridae	<i>Chrysiptera unimaculata</i> (Cuvier, 1830)			1	1	1

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Pomacentridae	<i>Dascyllus reticulatus</i> (Richardson, 1846)	*		2	1	1
Pomacentridae	<i>Dascyllus trimaculatus</i> (Rüppell, 1829)	*		1	1	1
Pomacentridae	<i>Lepidozygus tapeinosoma</i> (Bleeker, 1856)			1	1	1
Pomacentridae	<i>Plectroglyphidodon dickii</i> (Liénard, 1839)	*		1	1	1
Pomacentridae	<i>Plectroglyphidodon imparipennis</i> (Sauvage, 1875)	*		1	1	1
Pomacentridae	<i>Plectroglyphidodon johnstonianus</i> Fowler & Ball, 1924	*		1	1	1
Pomacentridae	<i>Plectroglyphidodon lacrymatus</i> (Quoy & Gaimard, 1825)	*		1	1	1
Pomacentridae	<i>Plectroglyphidodon leucozonus</i> (Bleeker, 1859)	*		1	1	1
Pomacentridae	<i>Plectroglyphidodon phoenixensis</i> (Schultz, 1943)	*		1	6	1
Pomacentridae	<i>Pomacentrus alleni</i> Burgess, 1981			3	2	2
Pomacentridae	<i>Pomacentrus auriventris</i> Allen, 1991			2	2	1
Pomacentridae	<i>Pomacentrus bankanensis</i> Bleeker, 1853			2	4	1
Pomacentridae	<i>Pomacentrus chrysurus</i> Cuvier, 1830			2	3	1
Pomacentridae	<i>Pomacentrus coelestis</i> Jordan & Starks, 1901			1	2	1
Pomacentridae	<i>Pomacentrus moluccensis</i> Bleeker, 1853			2	6	2
Pomacentridae	<i>Pomacentrus vaiuli</i> Jordan & Seale, 1906		NR	2	6	O
Pomacentridae	<i>Stegastes albifasciatus</i> (Schlegel & Müller, 1839)	*		1	1	1
Pomacentridae	<i>Stegastes fasciolatus</i> (Ogilby, 1889)	*		1	5	1
Pomacentridae	<i>Stegastes insularis</i> Allen & Emery, 1985	*		6	1	1
Pomacentridae	<i>Stegastes nigricans</i> (Lacépède, 1802)	*		1	5	1
Labridae	<i>Anampses caeruleopunctatus</i> Rüppell, 1829	*		1	3	1
Labridae	<i>Anampses melanurus</i> Bleeker, 1857		NR	2	4	O,P
Labridae	<i>Anampses meleagrides</i> Valenciennes, 1840	*		1	3	1
Labridae	<i>Anampses twistii</i> Bleeker, 1856	*		1	2	1
Labridae	<i>Bodianus anthioides</i> (Bennett, 1832)	*		1	5	1
Labridae	<i>Bodianus axillaris</i> (Bennett, 1832)	*		1	2	1
Labridae	<i>Bodianus bilunulatus</i> (Lacépède, 1801)			1	6	2
Labridae	<i>Bodianus dictynna</i> Gomon, 2006		NR	2	3	O,P
Labridae	<i>Bodianus mesothorax</i> (Bloch & Schneider, 1801)			2	1	1
Labridae	<i>Bodianus opercularis</i> (Guichenot, 1847)			3	4	1
Labridae	<i>Cheilinus oxycephalus</i> Bleeker, 1853			1	4	1
Labridae	<i>Cheilinus trilobatus</i> Lacépède, 1801	*		1	5	1
Labridae	<i>Cheilinus undulatus</i> Rüppell, 1835	*		1	6	1
Labridae	<i>Cheilio inermis</i> (Forsskål, 1775)	*		1	5	1
Labridae	<i>Cirrhilabrus cyanopleura</i> (Bleeker, 1851)			1	3	1
Labridae	<i>Cirrhilabrus exquisitus</i> Smith, 1957	*		1	4	1
Labridae	<i>Coris aygula</i> Lacépède, 1801	*		1	6	1
Labridae	<i>Coris dorsomacula</i> Fowler, 1908	*		2	3	1
Labridae	<i>Coris gaimard</i> (Quoy & Gaimard, 1824)	*		2	2	1
Labridae	<i>Epibulus insidiator</i> (Pallas, 1770)	*		1	3	1
Labridae	<i>Gomphosus varius</i> Lacépède, 1801	*		1	1	1
Labridae	<i>Halichoeres chrysus</i> Randall, 1981			2	2	1
Labridae	<i>Halichoeres claudia</i> Randall & Rocha, 2009	*		2	1	1
Labridae	<i>Halichoeres hortulanus</i> (Lacépède, 1801)	*		1	1	1
Labridae	<i>Halichoeres leucoxanthus</i> Randall & Smith, 1982			3	6	1
Labridae	<i>Halichoeres margaritaceus</i> (Valenciennes, 1839)			1	2	1
Labridae	<i>Halichoeres marginatus</i> Rüppell, 1835	*		1	2	1
Labridae	<i>Halichoeres melasmapomus</i> Randall, 1981	*		1	1	1
Labridae	<i>Halichoeres nebulosus</i> (Valenciennes, 1839)			1		6
Labridae	<i>Halichoeres scapularis</i> (Bennett, 1832)	*		1	2	1
Labridae	<i>Halichoeres trimaculatus</i> (Cuvier, 1834)	*		2	2	1
Labridae	<i>Hemigymnus fasciatus</i> (Bloch, 1792)	*		1	1	1
Labridae	<i>Hemigymnus melapterus</i> (Bloch, 1791)	*		1	2	1
Labridae	<i>Hologymnosus annulatus</i> (Lacépède, 1801)	*		1	5	1
Labridae	<i>Hologymnosus doliatus</i> (Lacépède, 1801)	*		1	2	1
Labridae	<i>Iniistius aneitensis</i> (Günther, 1862)	*		1	6	1
Labridae	<i>Iniistius pavo</i> (Valenciennes, 1840)	*		1	6	1
Labridae	<i>Iniistius griffithsi</i> Randall, 2007			3	6	1
Labridae	<i>Labrichthys unilineatus</i> (Guichenot, 1847)	*		1	2	1

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Labridae	<i>Labroides bicolor</i> Fowler & Bean, 1928	*		1	4	1
Labridae	<i>Labroides dimidiatus</i> (Valenciennes, 1839)	*		1	2	1
Labridae	<i>Labroides pectoralis</i> Randall & Springer, 1975	*		2	1	1
Labridae	<i>Labropsis xanthonota</i> Randall, 1981	*		1	3	1
Labridae	<i>Macropharyngodon negrosensis</i> Herre, 1932			2	2	1
Labridae	<i>Macropharyngodon ornatus</i> Randall, 1978			1	2	1
Labridae	<i>Novaculichthys taeniourus</i> (Lacépède, 1801)	*		1	2	1
Labridae	<i>Oxycheilinus unifasciatus</i> (Streets, 1877)	*		2		1
Labridae	<i>Polylepion russelli</i> (Gomon & Randall, 1975)		NR	2		P
Labridae	<i>Pseudocheilinus hexataenia</i> (Bleeker, 1857)	*		1	1	1
Labridae	<i>Pseudocheilinus octotaenia</i> Jenkins, 1901	*		1	1	1
Labridae	<i>Pseudocoris aurantiofasciatus</i> Fourmanoir, 1971	*		2	4	1
Labridae	<i>Pseudocoris heteroptera</i> (Bleeker, 1857)			1		6
Labridae	<i>Pseudocoris yamashiroi</i> (Schmidt, 1930)			1	4	1
Labridae	<i>Pseudodax moluccanus</i> (Valenciennes, 1840)	*		1	2	1
Labridae	<i>Stethojulis bandanensis</i> (Bleeker, 1851)	*		1	1	1
Labridae	<i>Stethojulis strigiventer</i> (Bennett, 1832)	*		1	5	1
Labridae	<i>Thalassoma amblycephalum</i> (Bleeker, 1856)	*		1	1	1
Labridae	<i>Thalassoma hardwicke</i> (Bennett, 1829)	*		1	2	1
Labridae	<i>Thalassoma janseni</i> (Bleeker, 1856)	*		1	2	1
Labridae	<i>Thalassoma lunare</i> (Linnaeus, 1758)	*		1	3	1
Labridae	<i>Thalassoma lutescens</i> (Lay & Bennett, 1839)	*		1	1	1
Labridae	<i>Thalassoma purpureum</i> (Forsskål, 1775)	*		1	2	1
Labridae	<i>Thalassoma quinquevittatum</i> (Lay & Bennett, 1839)	*		1	2	1
Labridae	<i>Thalassoma trilobatum</i> (Lacépède, 1801)	*		1	5	1
Labridae	<i>Wetmorella albofasciata</i> Schultz & Marshall, 1954			1		1
Labridae	<i>Bolbometopon muricatum</i> (Valenciennes, 1840)	*		1	6	1
Labridae	<i>Cetoscarus bicolor</i> (Rüppell, 1829)	*	NR	1	6	O,P
Labridae	<i>Chlorurus sordidus</i> (Forsskål, 1775)	*		1	5	1
Labridae	<i>Chlorurus capistratoides</i> (Bleeker, 1847)	*		2	6	2
Labridae	<i>Chlorurus enneacanthus</i> (Lacépède, 1802)	*		5	6	2
Labridae	<i>Chlorurus microrhinos</i> (Bleeker, 1854)			2	3	1
Labridae	<i>Chlorurus strongylocephalus</i> (Bleeker, 1855)	*		3	5	2
Labridae	<i>Scarus chameleon</i> Choat & Randall, 1986			2	5	1
Labridae	<i>Scarus festivus</i> Valenciennes, 1840	*		1	4	1
Labridae	<i>Scarus forsteni</i> (Bleeker, 1861)	*		2	3	1
Labridae	<i>Scarus frenatus</i> Lacépède, 1802	*		1	3	1
Labridae	<i>Scarus ghobban</i> Forsskål, 1775	*		1	5	1
Labridae	<i>Scarus niger</i> Forsskål, 1775	*		1	1	1
Labridae	<i>Scarus oviceps</i> Valenciennes, 1840	*		1	1	1
Labridae	<i>Scarus prasiognathos</i> Valenciennes, 1840	*		1	3	1
Labridae	<i>Scarus psittacus</i> Forsskål, 1775	*		1	3	1
Labridae	<i>Scarus rubroviolaceus</i> Bleeker, 1847	*		1	2	1
Labridae	<i>Scarus schlegeli</i> (Bleeker, 1861)	*		2	3	1
Labridae	<i>Scarus spinus</i> (Kner, 1868)	*		2	3	1
Labridae	<i>Scarus tricolor</i> Bleeker, 1847	*		1	5	2
Labridae	<i>Scarus viridifucatus</i> (Smith, 1956)	*	NR	1	6	O
Labridae	<i>Scarus xanthopleura</i> Bleeker, 1853	*		2	4	1
Labridae	<i>Calotomus carolinus</i> (Valenciennes, 1840)	*		1	5	1
Trichonotidae	<i>Trichonotus elegans</i> Shimada & Yoshino, 1984		NR	1	6	O,P
Creediidae	<i>Chalixodytes tauensis</i> Schultz, 1943	*		2		1
Pinguipedidae	<i>Parapercis clathrata</i> Ogilby, 1910	*		1	1	1
Pinguipedidae	<i>Parapercis schauinslandii</i> (Steindachner, 1900)	*		1	3	1
Tripterygiidae	<i>Ceratobregma helenae</i> Holleman, 1987			2	2	1
Tripterygiidae	<i>Enneapterygius elegans</i> (Peters, 1876)	*		1	2	1
Tripterygiidae	<i>Enneapterygius philippinus</i> (Peters, 1868)			1	2	1
Tripterygiidae	<i>Enneapterygius tutuilae</i> Jordan & Seale, 1906	*		1	1	1
Tripterygiidae	<i>Helcogramma chica</i> Rosenblatt, 1960			1	2	1
Tripterygiidae	<i>Ucla xenogrammus</i> Holleman, 1993			2	2	1



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Blenniidae	<i>Aspidontus taeniatus</i> Quoy & Gaimard, 1834	*		1	4	1
Blenniidae	<i>Parenchelyurus hepburni</i> (Snyder, 1908)			1		1
Blenniidae	<i>Plagiotremus rhinorhynchus</i> (Bleeker, 1852)	*		1	2	1
Blenniidae	<i>Plagiotremus tapeinosoma</i> (Bleeker, 1857)	*		1	3	1
Blenniidae	<i>Alticus saliens</i> (Lacépède, 1800)			1		1
Blenniidae	<i>Andamia reyi</i> (Sauvage, 1880)			1	5	1
Blenniidae	<i>Blenniella cyanostigma</i> (Bleeker, 1849)			3		12
Blenniidae	<i>Blenniella periophthalmus</i> (Valenciennes, 1836)	*		1	1	1
Blenniidae	<i>Cirripectes castaneus</i> (Valenciennes, 1836)	*		1	3	1
Blenniidae	<i>Cirripectes gilberti</i> Williams, 1988	*		3		1
Blenniidae	<i>Cirripectes polyzona</i> (Bleeker, 1868)	*		1	3	1
Blenniidae	<i>Cirripectes stigmaticus</i> Strasburg & Schultz, 1953			1	4	1
Blenniidae	<i>Cirrisalarias bunares</i> Springer, 1976			1		1
Blenniidae	<i>Ecsenius bicolor</i> (Day, 1888)	*		1	1	1
Blenniidae	<i>Ecsenius midas</i> Starck, 1969	*		1	2	1
Blenniidae	<i>Ecsenius oculatus</i> Springer, 1988			3	2	1
Blenniidae	<i>Entomacrodus caudofasciatus</i> (Regan, 1909)	*		1	1	1
Blenniidae	<i>Entomacrodus epalzeocheilos</i> (Bleeker, 1859)	*		1	1	1
Blenniidae	<i>Entomacrodus vermiculatus</i> (Valenciennes, 1836)			3	1	1
Blenniidae	<i>Exallias brevis</i> (Kner, 1868)	*		1	3	1
Blenniidae	<i>Istiblennius bellus</i> (Günther, 1861)			1	1	1
Blenniidae	<i>Istiblennius edentulus</i> (Forster & Schneider, 1801)	*		1	1	1
Blenniidae	<i>Istiblennius lineatus</i> (Valenciennes, 1836)	*		1	1	1
Blenniidae	<i>Mimoblennius atrocinctus</i> (Regan, 1909)			1	5	1
Blenniidae	<i>Nannosalarias nativitatis</i> (Regan, 1909)			1	1	1
Blenniidae	<i>Praealticus natalis</i> (Regan, 1909)			6	1	1
Blenniidae	<i>Rhabdoblennius snowi</i> (Fowler, 1928)			2	1	1
Eleotridae	<i>Calumia godeffroyi</i> (Günther, 1877)			1		6
Eleotridae	<i>Eleotris fusca</i> (Forster, 1801)			1		1
Gobiidae	<i>Gnatholepis cauerensis</i> (Bleeker, 1853)	*		1	1	1
Gobiidae	<i>Amblyeleotris fasciata</i> (Herre, 1953)			1	4	1
Gobiidae	<i>Bathygobius coalitus</i> (Bennett, 1832)			1	1	1
Gobiidae	<i>Bathygobius cocosensis</i> (Bleeker, 1854)	*		1	1	1
Gobiidae	<i>Bathygobius cyclopterus</i> (Valenciennes, 1837)	*		1		1
Gobiidae	<i>Callogobius sclateri</i> (Steindachner, 1880)	*		1		1
Gobiidae	<i>Ctenogobiops feroculus</i> Lubbock & Polunin, 1977			1	6	1
Gobiidae	<i>Eviota albolineata</i> Jewett & Lachner, 1983			1	3	1
Gobiidae	<i>Eviota latifasciata</i> Jewett & Lachner, 1983	*		2	2	1
Gobiidae	<i>Eviota natalis</i> Allen, 2007			6	2	1
Gobiidae	<i>Eviota prasina</i> (Klunzinger, 1871)	*		1		1
Gobiidae	<i>Eviota</i> sp. 1	*		5		10
Gobiidae	<i>Eviota</i> sp. 2	*		5		10
Gobiidae	<i>Eviota</i> sp. 3	*		5		10
Gobiidae	<i>Fusigobius duospilus</i> Hoese & Reader, 1985	*		1	1	1
Gobiidae	<i>Gobiodon citrinus</i> (Rüppell, 1838)			1	6	1
Gobiidae	<i>Gobiodon okinawae</i> Sawada, Arai & Abe, 1972	*		2	6	10
Gobiidae	<i>Gobiodon</i> sp.			1	3	O,P
Gobiidae	<i>Istigobius decoratus</i> (Herre, 1927)			1	3	1
Gobiidae	<i>Kelloggella cardinalis</i> Jordan & Seale, 1906			2		1
Gobiidae	<i>Paragobiodon lacunicolos</i> (Kendall & Goldsborough, 1911)		NR	1	6	13
Gobiidae	<i>Pleurosicya mossambica</i> Smith 1959			1		1
Gobiidae	<i>Priolepis cincta</i> (Regan, 1908)	*		1		1
Gobiidae	<i>Priolepis semidoliata</i> (Valenciennes, 1837)	*		1		1
Gobiidae	<i>Trimma emeryi</i> Winterbottom, 1985	*		1		1
Gobiidae	<i>Trimma fasciatum</i> Suzuki, Sakaue & Senou 2012		NR	2		13
Gobiidae	<i>Trimma halonevum</i> Winterbottom, 2000			1		1
Gobiidae	<i>Trimma macrophthalma</i> (Tomiya, 1936)	*		1		1
Gobiidae	<i>Trimma sheppardi</i> Winterbottom, 1984			1		6
Gobiidae	<i>Trimma</i> sp.	*		3		1

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Gobiidae	<i>Valenciennea helsdingenii</i> (Bleeker, 1858)	*		1	4	1
Gobiidae	<i>Valenciennea sexguttata</i> (Valenciennes, 1837)	*		1	5	1
Gobiidae	<i>Valenciennea strigata</i> (Broussonet, 1782)	*		1	3	1
Microdesmidae	<i>Gunnellichthys monostigma</i> Smith, 1958	*		1		1
Microdesmidae	<i>Nemateleotris decora</i> Randall & Allen, 1973	*		1	4	1
Microdesmidae	<i>Nemateleotris magnifica</i> Fowler, 1938	*		1	5	1
Microdesmidae	<i>Ptereleotris evides</i> (Jordan & Hubbs, 1925)	*		1	3	1
Microdesmidae	<i>Ptereleotris heteroptera</i> (Bleeker, 1855)	*		1	5	1
Microdesmidae	<i>Ptereleotris microlepis</i> (Bleeker, 1856)	*		1	5	1
Microdesmidae	<i>Ptereleotris zebra</i> (Fowler, 1938)	*		1	5	1
Ephippidae	<i>Platax orbicularis</i> (Forsskål, 1775)	*		1	3	1
Ephippidae	<i>Platax teira</i> (Forsskål, 1775)	*		1	5	1
Siganidae	<i>Siganus corallinus</i> (Valenciennes, 1835)			1	6	2
Zanclidae	<i>Zanclus cornutus</i> (Linnaeus, 1758)	*		1	1	1
Acanthuridae	<i>Acanthurus bariene</i> Lesson, 1831			1	2	1
Acanthuridae	<i>Acanthurus blochii</i> Valenciennes, 1835	*		1	3	1
Acanthuridae	<i>Acanthurus dussumieri</i> Valenciennes, 1835			1	5	1
Acanthuridae	<i>Acanthurus guttatus</i> Forster, 1801	*		1	4	1
Acanthuridae	<i>Acanthurus leucocheilus</i> Herre, 1927			1	5	1
Acanthuridae	<i>Acanthurus leucosternon</i> Bennett, 1833	*		3	2	1
Acanthuridae	<i>Acanthurus lineatus</i> (Linnaeus, 1758)	*		1	1	1
Acanthuridae	<i>Acanthurus maculiceps</i> (Ahl, 1923)	*		1		1
Acanthuridae	<i>Acanthurus mata</i> (Cuvier, 1829)	*		1	3	1
Acanthuridae	<i>Acanthurus nigricans</i> (Linnaeus, 1758)	*		2	1	1
Acanthuridae	<i>Acanthurus nigricauda</i> Duncker & Mohr, 1929	*		1	3	1
Acanthuridae	<i>Acanthurus nigrofuscus</i> (Forsskål, 1775)	*		1	3	1
Acanthuridae	<i>Acanthurus nigroris</i> Valenciennes, 1835		NR	1	6	O
Acanthuridae	<i>Acanthurus olivaceus</i> Bloch & Schneider, 1801	*		2	3	1
Acanthuridae	<i>Acanthurus pyroferus</i> Kittlitz, 1834	*		1	3	1
Acanthuridae	<i>Acanthurus tennentii</i> Günther, 1861			3	5	2
Acanthuridae	<i>Acanthurus thompsoni</i> (Fowler, 1923)	*		1	1	1
Acanthuridae	<i>Acanthurus triostegus</i> (Linnaeus, 1758)	*		1	1	1
Acanthuridae	<i>Acanthurus tristis</i> Randall, 1993			3	3	2
Acanthuridae	<i>Acanthurus xanthopterus</i> Valenciennes, 1835	*		1	3	1
Acanthuridae	<i>Ctenochaetus striatus</i> (Quoy & Gaimard, 1825)	*		1	1	1
Acanthuridae	<i>Ctenochaetus truncatus</i> Randall & Clements, 2001			3	1	1
Acanthuridae	<i>Naso annulatus</i> (Quoy & Gaimard, 1825)	*	NR	1	6	O
Acanthuridae	<i>Naso brachycentron</i> (Valenciennes, 1835)		NR	1	6	O,P
Acanthuridae	<i>Naso brevirostris</i> (Cuvier, 1829)	*		1	4	1
Acanthuridae	<i>Naso caesius</i> Randall & Bell, 1992			2	2	2
Acanthuridae	<i>Naso elegans</i> (Rüppell, 1829)			3	2	1
Acanthuridae	<i>Naso hexacanthus</i> (Bleeker, 1855)	*		1	2	1
Acanthuridae	<i>Naso lituratus</i> (Bloch & Schneider, 1801)	*		2	1	1
Acanthuridae	<i>Naso minor</i> (Smith, 1966)		NR	1	6	O,P
Acanthuridae	<i>Naso tonganus</i> (Valenciennes, 1835)			1	5	1
Acanthuridae	<i>Naso unicornis</i> (Forsskål, 1775)	*		1	3	1
Acanthuridae	<i>Naso vlamingii</i> (Valenciennes, 1835)	*		1	3	1
Acanthuridae	<i>Paracanthurus hepatus</i> (Linnaeus, 1766)	*		1	6	1
Acanthuridae	<i>Zebrasoma desjardini</i> (Bennett, 1836)	*		3	6	1
Acanthuridae	<i>Zebrasoma scopas</i> (Cuvier, 1829)	*		1	1	1
Acanthuridae	<i>Zebrasoma veliferum</i> (Bloch, 1795)			2	5	1
Sphyaenidae	<i>Sphyaena barracuda</i> (Edwards, 1771)	*		4	3	1
Sphyaenidae	<i>Sphyaena flavicauda</i> Rüppell, 1838	*		1	5	6
Gempylidae	<i>Neoepinnula orientalis</i> (Gilchrist & von Bonde, 1924)		NR	1		P
Gempylidae	<i>Promethichthys prometheus</i> (Cuvier, 1832)			4		1
Gempylidae	<i>Ruvettus pretiosus</i> Cocco, 1829	*	NR	4		P
Scombridae	<i>Acanthocybium solandri</i> (Cuvier, 1832)	*		4		1
Scombridae	<i>Euthynnus affinis</i> (Cantor, 1850)			1		1
Scombridae	<i>Gymnosarda unicolor</i> (Rüppell, 1836)	*		1	4	1

Family	Genus/Species/Authority	CKI	NR	GD	AB	Source
Scombridae	<i>Katsuwonus pelamis</i> (Linnaeus, 1758)	*		4		1
Scombridae	<i>Thunnus albacares</i> (Bonnaterre, 1788)	*		4		1
Istiophoridae	<i>Istiompax indica</i> (Cuvier, 1832)	*	NR	1		P
Istiophoridae	<i>Istiophorus platypterus</i> (Shaw & Nodder, 1792)			4		1
Istiophoridae	<i>Makaira mazara</i> (Jordan & Snyder, 1901)			1		1
Istiophoridae	<i>Kajikia audax</i> (Philippi, 1887)			1		1
Bothidae	<i>Bothus mancus</i> (Broussonet, 1782)	*		1		1
Bothidae	<i>Bothus pantherinus</i> (Rüppell, 1830)	*		1		1
Samaridae	<i>Samariscus triocellatus</i> Woods, 1966			1		1
Soleidae	<i>Aseraggodes crypticus</i> Randall & Allen, 2007			6		1
Balistidae	<i>Balistapus undulatus</i> (Park, 1797)	*		1	2	1
Balistidae	<i>Balistoides conspicillum</i> (Bloch & Schneider, 1801)			1	6	1
Balistidae	<i>Balistoides viridescens</i> (Bloch & Schneider, 1801)	*		1	3	1
Balistidae	<i>Melichthys indicus</i> Randall & Klausewitz, 1973	*		3	3	1
Balistidae	<i>Melichthys niger</i> (Bloch, 1786)	*		4	1	1
Balistidae	<i>Melichthys vidua</i> (Richardson, 1845)	*		1	2	1
Balistidae	<i>Odonus niger</i> (Rüppell, 1837)	*		1	2	1
Balistidae	<i>Pseudobalistes flavimarginatus</i> (Rüppell, 1829)	*	NR	1		O
Balistidae	<i>Rhinecanthus rectangulus</i> (Bloch & Schneider, 1801)	*		1	2	1
Balistidae	<i>Sufflamen bursa</i> (Bloch & Schneider, 1801)	*		1		1
Balistidae	<i>Sufflamen chrysopterum</i> (Bloch & Schneider, 1801)	*		1	2	1
Balistidae	<i>Xanthichthys auromarginatus</i> (Bennett, 1832)	*		1	1	1
Balistidae	<i>Xanthichthys caeruleolineatus</i> Randall, Matsuura & Zama, 1978	*		1	6	1
Monacanthidae	<i>Aluterus scriptus</i> (Osbeck, 1765)	*		4	5	1
Monacanthidae	<i>Amanses scopas</i> (Cuvier, 1829)			1	3	1
Monacanthidae	<i>Cantherhines dumerilii</i> (Hollard, 1854)	*		1	1	1
Monacanthidae	<i>Cantherhines pardalis</i> (Rüppell, 1837)	*		1	1	1
Monacanthidae	<i>Oxymonacanthus longirostris</i> (Bloch & Schneider, 1801)			1	6	1
Monacanthidae	<i>Paraluteres prionurus</i> (Bleeker, 1851)			1	6	1
Monacanthidae	<i>Pervagor aspricaudus</i> (Hollard, 1854)	*		1	5	1
Ostraciidae	<i>Ostracion cubicus</i> Linnaeus, 1758	*		1	4	1
Ostraciidae	<i>Ostracion meleagris</i> Shaw, 1796			1	6	1
Ostraciidae	<i>Ostracion solorensis</i> Bleeker, 1853			2	6	1
Tetraodontidae	<i>Arothron hispidus</i> (Linnaeus, 1758)	*		1	6	1
Tetraodontidae	<i>Arothron meleagris</i> (Lacépède, 1798)			1	3	1
Tetraodontidae	<i>Arothron nigropunctatus</i> (Bloch & Schneider, 1801)	*		1	2	1
Tetraodontidae	<i>Arothron stellatus</i> (Bloch & Schneider, 1801)			1	6	1
Tetraodontidae	<i>Canthigaster amboinensis</i> (Bleeker, 1864)	*		1	5	1
Tetraodontidae	<i>Canthigaster bennetti</i> (Bleeker, 1854)	*		1	5	1
Tetraodontidae	<i>Canthigaster epilampra</i> (Jenkins, 1903)			1	6	1
Tetraodontidae	<i>Canthigaster janthinoptera</i> (Bleeker, 1855)	*		1	5	1
Tetraodontidae	<i>Canthigaster leoparda</i> Lubbock & Allen, 1979			2	6	1
Tetraodontidae	<i>Canthigaster valentini</i> (Bleeker, 1853)	*		1	6	1
Diodontidae	<i>Diodon hystrix</i> Linnaeus, 1758	*		4	6	1
Diodontidae	<i>Diodon liturosus</i> Shaw, 1804			1	6	1
Molidae	<i>Mola mola</i> (Linnaeus, 1758)	*		4	6	2