

A PRELIMINARY CHECKLIST OF CORAL REEF FISHES OF THE GULF OF THAILAND, SOUTH CHINA SEA

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ABSTRACT.- Twenty-eight reef locations, within 8 major reef sites, in the Gulf of Thailand were surveyed during the period 1991-1998. This provides a total of 241 species in 49 families of reef fishes, of which 27 species are new records for the Gulf of Thailand. Information from these observations and other sources are compiled into the present preliminary checklist, including at least 357 species in 61 families as reliable records and presently known reef fishes from the area. The species richness and taxonomic composition suggest impoverished reef-fish fauna in the Gulf compared with other localities in the western Pacific. Its overall diversity, however, should be considerably high when the fishes associated with other shoreline habitats and demersal elements are taken into account. The processes concerning dispersion and colonization, since the geological history through the present time, are most likely suggestive for the low diversity and distinct faunistic composition of reef associated fishes of the Gulf of Thailand.

KEY WORDS.- Checklist, reef fishes, Gulf of Thailand, South China Sea.

INTRODUCTION

Previous documentation, particularly by Thai researchers, on reef fishes from the Gulf of Thailand related two major fields of interest, namely taxonomic studies (Banasopit, 1968, 1969, 1971; Monkolprasit & Songsirikul, 1988) and ecological or fish-community studies (Menasveta et al., 1986; Monkolprasit, 1987; Wongratana et al., 1990; Sudara et al., 1992; Thongtham & Manthachitra, 1992; Manthachitra, 1994; Thapanand et al., 1996). At least 221 reliable recorded species representing 53 families, excluding 31 taxa, of which 21 were listed by genus and 10 were doubtful records, were gleaned from those results (being extracted from the data in Appendix C in Satapoomin, in press). In reviewing the others taxonomic literatures (Appendix A), 39 species and 2 families were added and brought the number of reef fish species previously known from the Gulf of Thailand to 260 in 55 families.

This study compiles observational records of reef-associated fishes made by the author on 8 visits, encompassing over 25 reef localities, to the Gulf of Thailand during 1991-1998. The data being accumulated from the earlier 5 visits has been reported by Satapoomin, in press. The present report makes complement to the checklist with the most recent surveys.

MATERIALS AND METHODS

Records of reef fish species were derived mainly from sighting during field surveys. In addition, photographing was made on the seventh visit at Ko Tao. As sighting records can only be regarded as valid if the species involved are identified without error, I have neglected many of the very small or cryptic species, such as Gobiidae, Blenniidae, Tripterygiidae, Pseudochromidae and others from the record unless observations were made where species could be certainly identified. The observations were carried out at 28 stations, within 8 major reef sites (Fig. 1), during 1991-1998. At each station, surveys were made by a combination of SCUBA diving, snorkelling, or towing an observer behind a small boat (Table 1). The latter technique can cover a broad area, i.e., whole section of a reef or around an island, but the identification of fish species was limited to the most distinctive or conspicuous ones. The former two techniques were more or less localized, but proved more efficient in the identification of the small and/or site attached species. The surveys were concentrated in areas of coral reef (reef flat-reef slope) with expansion onto the forereef bottom nearby the reefs only when SCUBA diving was applied.

The present checklist is restricted to reef-associated

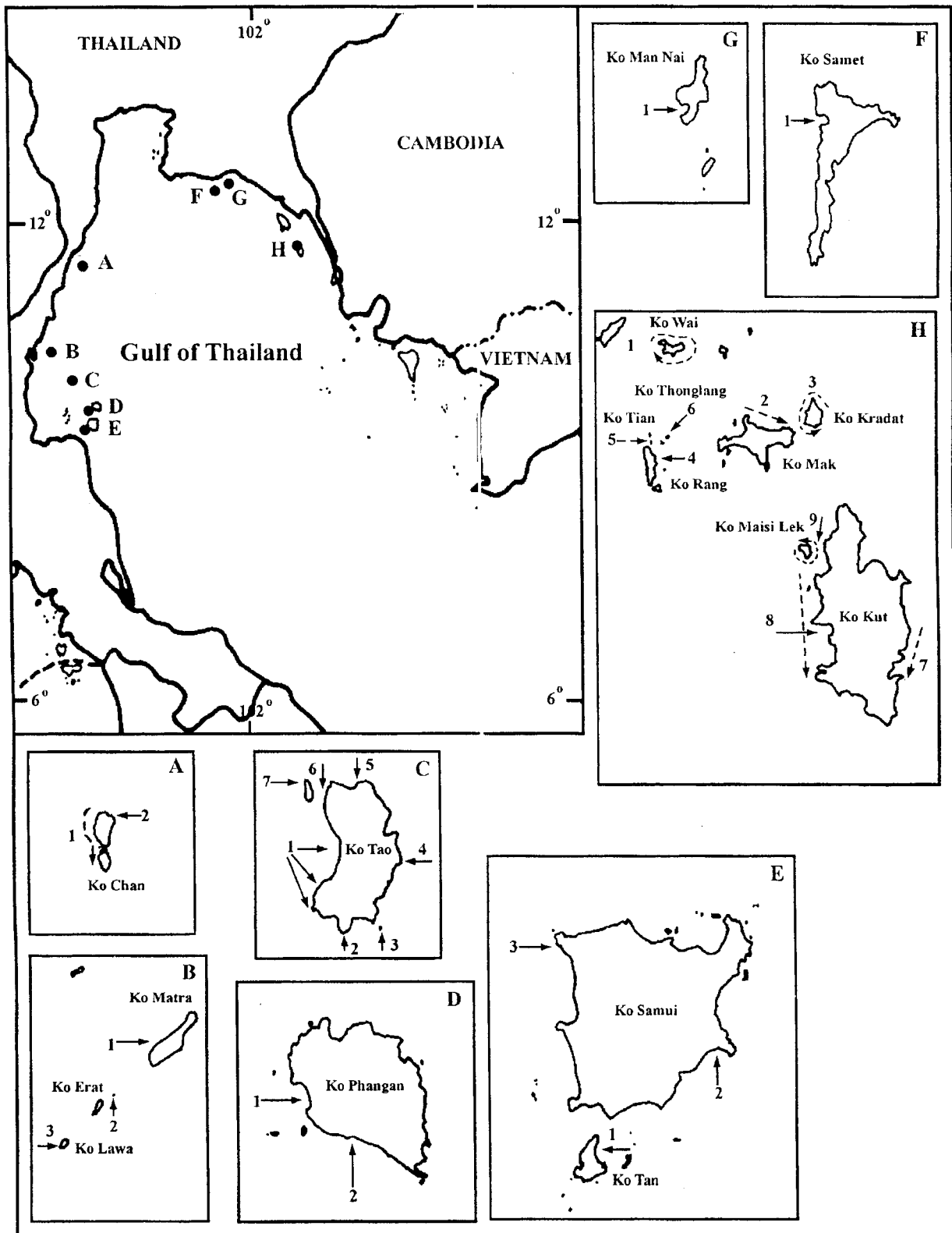


Fig. 1. The location of study sites in the Gulf of Thailand: Ko Chan (A); Ko Matra-Ko Lawa (B); Ko Tao (C); Ko Phangan (D); Ko Samui (E); Ko Samet (F); Ko Man Nai (G); and Ko Wai-Ko Kut (H). At each site (inserted map), stations with solid-line arrows were investigated by scuba diving, and those with dash-line arrows by snorkelling or towing.

Table 1. Summary information of the sampling date, stations, depth and method for each survey. The depth (in meter) refers to maximum depth reached when SCUBA diving was applied; otherwise it indicates maximum extension for the depth of the reef slope.

| Date | Station: locality | Depth | Method |
|--------------------------|--------------------------------------|-------|----------------------|
| 16-18 Feb. 91 | C1: Ko Tao/ W coast | 10 | SCUBA |
| | C2: Ko Tao/ S coast | 12 | SCUBA |
| | C3: Kong Sai Daeng | 15 | SCUBA |
| | C4: Ko Tao/ E coast | 12 | SCUBA |
| | C5: Ko Tao/ N coast | 8 | SCUBA |
| | C6: Ko Nangyuan/ E coast | 12 | SCUBA |
| | C7: Ko Nangyuan/ N coast | 17 | SCUBA |
| 16 May 91 | A1: Ko Chan/ W coast | 7 | Snorkelling |
| | A2: Ko Chan/ NE coast | 10 | SCUBA |
| 17-20 Mar. 92 | H1: Ko Wai (around the island) | 7 | Towing |
| | H2: Ko Mak/ N coast | 5 | Towing |
| | H3: Ko Kradat (around the island) | 7 | Towing & Snorkelling |
| | H4: Ko Rang/ NE coast | 5 | SCUBA |
| | H5: Ko Tian (around the island) | 5 | Snorkelling |
| | H6: Ko Thonglang/ N coast | 10 | SCUBA |
| | H7: Ko Kut (along SE coast) | 8 | Towing |
| | H8: Ko Kut (along W coast) | 12 | Towing & SCUBA |
| | H9: Ko Maisi Lek (around the island) | 8 | Towing & SCUBA |
| 22-24 Dec. 94 | F1: Ko Samet/ NW coast | 5 | SCUBA |
| | G1: Ko Man Nai/ SW coast | 7 | SCUBA |
| 30 May 96 | B1: Ko Matra/ SW coast | 6 | Snorkelling |
| | B2: Hin Luk Erat/ S coast | 8 | Snorkelling |
| | B3: Ko Lawa/ SW coast | 6 | Snorkelling |
| 2 Apr. 97 | E1: Ko Tan/ NE coast | 5 | Snorkelling |
| 7-10 Jun. 97 | C1: Ko Tao/ W coast | 10 | SCUBA |
| | C6: Ko Nangyuan/ E coast | 10 | Snorkelling |
| 23-26 May 98 | E2: Ko Samui/ SE coast | 8 | SCUBA |
| | E3: Ko Samui/ NW coast | 6 | SCUBA |
| | D1: Ko Phangan/ W coast | 7 | SCUBA |
| | D2: Ko Phangan/ S coast | 6 | SCUBA |
| | C1: Ko Tao/ W coast | 10 | SCUBA |
| | C4: Ko Tao/ E coast | 16 | SCUBA |
| C6: Ko Nangyuan/ E coast | 12 | SCUBA | |

fishes which I defined as either those residing strictly in the reef habitats or those encountered occasionally in the habitats (including both midwater and benthic species). Species were identified and checked through the use of various taxonomic literatures and pictorial guide books, such as Masuda et al. (1984), Allen (1991), Myers (1991), Smith & Heemstra (1991), Kuitert (1992; 1998), Randall (1992; 1995; 1997), Randall et al. (1990; 1997a), and Lieske & Myers (1994). In addition, the publication series of the FAO Fisheries Synopsis No. 125, FAO Species Catalogue, and the Indo-Pacific Fishes were also most of use. The family names of fish were based on Nelson (1984) with slight modification.

RESULTS AND DISCUSSION

A total of 241 species in 49 families of reef-associated

fishes are identified (Table 2); 6 of these are listed only by genus (2 of which may represent undescribed species). Sixty additional species are encountered during the three most recent surveys, and of these, 27 species are new records for the Gulf of Thailand. Except at Tao Island group, the surveys conducted at most reef sites are still limited in both effort and time. Thus, the reef fish fauna in the whole reef area are not well represented and expected to be substantially higher than as indicated by the present study. The literature reviews (Appendices A & B) reveal 116 species and 12 families which are not found in this study. These bring the number of fish species presently known from the area to 357 in 61 families. For the present study, I admit to estimate that the total species recorded includes at least 80% of fish species present. Thus, the best estimate of the number of reef-associated fishes of the Gulf of Thailand is about 425 species.

Table 2. Fish species recorded at each reef site in the Gulf of Thailand. The site code (A-H) is referred from Fig. 1. The presence and absence of species are marked by 1 and 0, respectively. An asterisk denotes new record for the Gulf of Thailand. The categories of zoogeographical distribution of fishes are Cosmopolitan (COS), Circumtropical (CIR), Indo-west Pacific (INWP), West Pacific (WP), Indo-Australian (IA), Indo-Malayan (IM), and eastern Indian Ocean (EIND). The other notation (nd) marks that the distribution range is not determined.

| Taxa | Site | | | | | | | | Distribution |
|---|------|---|---|---|---|---|---|---|--------------|
| | A | B | C | D | E | F | G | H | |
| CARCHARHINIDAE | | | | | | | | | |
| <i>Carcharhinus melanopterus</i> (Quoy & Gaimard, 1824) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| STEGOSTOMATIDAE | | | | | | | | | |
| <i>Stegostoma varium</i> (Seba, 1758) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| DASYATIDAE | | | | | | | | | |
| <i>Taeniura lymma</i> (Forsskål, 1775) | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| MYLIOBATIDIDAE | | | | | | | | | |
| <i>Aetobatus narinari</i> (Euphrasen, 1790) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | COS |
| ACANTHURIDAE | | | | | | | | | |
| <i>Naso lituratus</i> (Bloch & Schneider, 1801) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| APOGONIDAE | | | | | | | | | |
| * <i>Apogon cavitensis</i> Jordan & Seale, 1907 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | IA |
| <i>Apogon cookii</i> (Macleay, 1881) | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | INWP |
| <i>Apogon cyanosoma</i> Bleeker, 1853 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| * <i>Apogon endekataenia</i> Bleeker, 1852 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | WP |
| <i>Apogon exostigma</i> (Jordan & Starks, 1906) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Apogon cf. hyalosoma</i> Bleeker, 1852 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | WP |
| <i>Apogon kallopterus</i> Bleeker, 1856 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Apogon nigrofasciatus</i> Lachner, 1953 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Apogon taeniophorus</i> Regan, 1905 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Apogon trimaculatus</i> Cuvier, 1828 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | WP |
| <i>Archamia fucata</i> (Canton, 1850) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| <i>Archamia goni</i> Shen & Shao, 1993 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | WP |
| * <i>Archamia zosterophora</i> (Bleeker, 1856) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Cheilodipterus artus</i> Smith, 1960 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| <i>Cheilodipterus macrodon</i> (Lacepède, 1802) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| <i>Cheilodipterus quinquelineatus</i> Cuvier, 1828 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | INWP |
| ATHERINIDAE | | | | | | | | | |
| <i>Atherinomorous</i> sp. | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | nd |

Table 2. Continued

| Taxa | Site | | | | | | | | Distribution |
|--|------|---|---|---|---|---|---|---|--------------|
| | A | B | C | D | E | F | G | H | |
| BALISTIDAE | | | | | | | | | |
| <i>Balistoides viridescens</i> (Bloch & Schneider, 1801) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| BELONIDAE | | | | | | | | | |
| <i>Tylosurus crocodilus crocodilus</i> (Peron & Lesueur, 1821) | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | CIR |
| BLENNIIDAE | | | | | | | | | |
| <i>Cirripectes cf. filamentosus</i> (Alleyne & Macleay, 1877) | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | INWP |
| * <i>Ecsenius yaeyamaensis</i> (Aoyagi, 1954) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| <i>Istiblennius edentulus</i> (Bloch & Schneider, 1801) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Salarias fasciatus</i> (Bloch, 1786) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| CAESIONIDAE | | | | | | | | | |
| <i>Caesio caerulea</i> Lacepède, 1801 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | INWP |
| <i>Caesio cunning</i> (Bloch, 1791) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | WP-EIND |
| <i>Pterocaesio chrysozona</i> (Cuvier, 1830) | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Pterocaesio tile</i> (Cuvier, 1830) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| CALLIONYMIDAE | | | | | | | | | |
| <i>Callionymus</i> spp. | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | nd |
| CARANGIDAE | | | | | | | | | |
| <i>Alepes vari</i> (Cuvier, 1831) | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | INWP |
| <i>Atule mate</i> (Cuvier, 1833) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Carangoides bajad</i> (Forsskål, 1775) | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | INWP |
| <i>Carangoides ferdau</i> (Forsskål, 1775) | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | INWP |
| <i>Caranx sexfasciatus</i> Quoy & Gaimard, 1824 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Gnathanodon speciosus</i> (Forsskål, 1775) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | INWP |
| <i>Scomberoides commersonianus</i> Lacepède, 1801 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Selaroides leptolepis</i> (Cuvier, 1833) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| <i>Trachinotus bailloni</i> (Lacepède, 1801) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| CHAETODONTIDAE | | | | | | | | | |
| <i>Chaetodon octofasciatus</i> Bloch, 1787 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | WP-EIND |
| <i>Chaetodon wiebeli</i> Kaup, 1863 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | WP |
| <i>Chelmon rostratus</i> (Linnaeus, 1758) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | WP |
| <i>Heniochus acuminatus</i> (Linnaeus, 1758) | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| CHANIDAE | | | | | | | | | |
| <i>Chanos chanos</i> (Forsskål, 1775) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| CLUPEIDAE | | | | | | | | | |
| <i>Spratelloides gracilis</i> (Temminck & Schlegel, 1864) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Herklotsichthys quadrimaculatus</i> (Rüppell, 1873) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| DIODONTIDAE | | | | | | | | | |
| <i>Diodon histrix</i> Linnaeus, 1758 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | CIR |
| <i>Diodon liturosus</i> Shaw, 1804 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | INWP |
| EPHIPPIDAE | | | | | | | | | |
| <i>Platax pinnatus</i> (Linnaeus, 1758) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | WP-EIND |
| GERREIDAE | | | | | | | | | |
| <i>Gerres lucidus</i> Cuvier, 1830 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | WP-EIND |
| <i>Gerres oyena</i> (Forsskål, 1775) | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| GOBIESOCIDAE | | | | | | | | | |
| <i>Diademichthys lineatus</i> (Sauvage, 1883) | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | INWP |
| GOBIIDAE | | | | | | | | | |
| <i>Amblyeleotris fontanesii</i> (Bleeker, 1852) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | WP |
| <i>Amblyeleotris gymnocephalus</i> (Bleeker, 1853) | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | WP |
| * <i>Amblyeleotris periphthalma</i> (Bleeker, 1853) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| * <i>Amblyeleotris steinitzi</i> (Klausewitz, 1974) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| * <i>Amblygobius decussatus</i> (Bleeker, 1855) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |

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Table 2. Continued

| Taxa | Site | | | | | | | | Distribution |
|---|------|---|---|---|---|---|---|---|--------------|
| | A | B | C | D | E | F | G | H | |
| <i>Amblygobius nocturnus</i> (Herre, 1945) | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | WP |
| <i>Amblygobius phalaena</i> (Valenciennes, 1837) | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | WP |
| <i>Cryptocentrus caeruleomaculatus</i> (Herre, 1933) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | INWP |
| <i>Cryptocentrus cinctus</i> (Herre, 1936) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | WP |
| <i>Cryptocentrus cyanotaenia</i> (Bleeker, 1853) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | WP |
| <i>Cryptocentrus fasciatus</i> (Playfair & Günther, 1867) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Cryptocentrus leptocephalus</i> Bleeker, 1876 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | WP |
| <i>Cryptocentrus strigiliceps</i> (Jordan & Seale, 1906) | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | INWP |
| <i>Cryptocentrus</i> sp.1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | WP |
| <i>Ctenogobiops pomastictus</i> Lubbock & Polunin, 1977 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | WP |
| * <i>Eviota pellucida</i> Larson, 1976 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| * <i>Eviota sebreei</i> Jordan & Seale, 1906 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Eviota</i> spp. | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | nd |
| * <i>Exyrias bellissimus</i> (Smith, 1959) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| * <i>Fusigobius cf. neophytus</i> (Günther, 1877) | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | INWP |
| * <i>Gobiodon histrio</i> (Valenciennes, 1837) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | WP |
| * <i>Istigobius decoratus</i> (Herre, 1927) | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | INWP |
| * <i>Istigobius goldmanni</i> (Bleeker, 1852) | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | WP |
| <i>Istigobius ornatus</i> (Rüppell, 1830) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Mahidolia mystacina</i> (Valenciennes, 1837) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | INWP |
| <i>Valenciennesa muralis</i> (Valenciennes, 1837) | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | WP-EIND |
| <i>Valenciennesa puellaris</i> (Tomiyama, 1956) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | INWP |
| <i>Valenciennesa sexguttata</i> (Valenciennes, 1837) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| HAEMULIDAE | | | | | | | | | |
| <i>Diagramma pictum</i> (Thunberg, 1792) | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | INWP |
| <i>Plectorhinchus albovittatus</i> (Rüppell, 1839) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Plectorhinchus chaetodonoides</i> Lacepède, 1800 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | WP-EIND |
| <i>Plectorhinchus gibbosus</i> (Lacepède, 1802) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | INWP |
| <i>Plectorhinchus unicolor</i> (Macleay, 1883) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| HEMIRAMPHIDAE | | | | | | | | | |
| <i>Hemirhamphus far</i> (Forsskål, 1775) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| HOLOCENTRIDAE | | | | | | | | | |
| <i>Myripristis hexagona</i> (Lacepède, 1802) | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | INWP |
| <i>Sargocentron rubrum</i> (Forsskål, 1775) | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| KYPHOSIDAE | | | | | | | | | |
| <i>Kyphosus cinerascens</i> (Forsskål, 1775) | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Kyphosus vaigiensis</i> (Quoy & Gaimard, 1825) | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | INWP |
| LABRIDAE | | | | | | | | | |
| <i>Anampses caeruleopunctatus</i> Rüppell, 1828 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Cheilinus chlorourus</i> (Bloch, 1791) | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | INWP |
| <i>Cheilinus fasciatus</i> (Bloch, 1791) | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | INWP |
| <i>Cheilinus trilobatus</i> Lacepède, 1801 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | INWP |
| <i>Choerodon schoenleinii</i> (Valenciennes, 1839) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | WP |
| * <i>Cirrhilabrus cyanopleura</i> (Bleeker, 1851) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Diproctacanthus xanthurus</i> (Bleeker, 1856) | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | IA |
| <i>Epibulus insidiator</i> (Pallas, 1770) | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Halichoeres argus</i> (Bloch, 1791) | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | WP-EIND |
| * <i>Halichoeres bicolor</i> (Bloch & Schneider, 1801) | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | IM |
| <i>Halichoeres chloropterus</i> (Bloch, 1791) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | IA |
| <i>Halichoeres hortulanus</i> (Lacepède, 1801) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Halichoeres leucurus</i> (Walbaum, 1792) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | IM |
| <i>Halichoeres margaritaceus</i> (Valenciennes, 1839) | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | WP |

Table 2. Continued

| Taxa | Site | | | | | | | | Distribution |
|---|------|---|---|---|---|---|---|---|--------------|
| | A | B | C | D | E | F | G | H | |
| <i>Halichoeres marginatus</i> Rüppell, 1835 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | INWP |
| * <i>Halichoeres melanochir</i> Fowler & Bean, 1928 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Halichoeres melanurus</i> (Bleeker, 1851) | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | WP |
| <i>Halichoeres nebulosus</i> (Valenciennes, 1839) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Halichoeres nigrescens</i> (Bloch & Schneider, 1801) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| <i>Hemigymnus fasciatus</i> (Bloch, 1792) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Hemigymnus melapterus</i> (Bloch, 1791) | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | INWP |
| <i>Labroides dimidiatus</i> (Valenciennes, 1839) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| <i>Oxycheilinus digrammus</i> (Lacepède, 1801) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Stethojulis interrupta</i> (Bleeker, 1851) | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Stethojulis trilineata</i> (Bloch & Schneider, 1801) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | WP-EIND |
| <i>Thalassoma lunare</i> (Linnaeus, 1758) | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | INWP |
| LETHRINIDAE | | | | | | | | | |
| * <i>Lethrinus atkinsoni</i> Seale, 1909 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Lethrinus erythropterus</i> Valenciennes, 1830 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Lethrinus lentjan</i> (Lacepède, 1802) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Lethrinus microdon</i> Valenciennes, 1830 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Lethrinus nebulosus</i> (Forsskål, 1775) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Lethrinus ornatus</i> Valenciennes, 1830 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| LUTJANIDAE | | | | | | | | | |
| <i>Lutjanus argentimaculatus</i> (Forsskål, 1775) | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | INWP |
| <i>Lutjanus carponotatus</i> (Richardson, 1842) | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | WP-EIND |
| <i>Lutjanus decussatus</i> (Cuvier, 1828) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | WP-EIND |
| <i>Lutjanus fulviflamma</i> (Forsskål, 1775) | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Lutjanus johnii</i> (Bloch, 1792) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| <i>Lutjanus lemniscatus</i> (Valenciennes, 1828) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | WP-EIND |
| <i>Lutjanus lutjanus</i> Bloch, 1790 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Lutjanus russelli</i> (Bleeker, 1849) | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | INWP |
| <i>Lutjanus vitta</i> (Quoy & Gaimard, 1824) | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | INWP |
| MICRODESMIDAE | | | | | | | | | |
| <i>Parioglossus philippinus</i> (Herre, 1940) | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | INWP |
| <i>Ptereleotris microlepis</i> (Bleeker, 1856) | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | INWP |
| <i>Ptereleotris monoptera</i> (Bleeker, 1855) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | INWP |
| MONACANTHIDAE | | | | | | | | | |
| * <i>Aluterus scriptus</i> (Osbeck, 1765) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | CIR |
| <i>Anacanthus barbatus</i> Gray, 1831 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| MONODACTYLIDAE | | | | | | | | | |
| <i>Monodactylus argenteus</i> (Linnaeus, 1758) | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| MUGILIDAE | | | | | | | | | |
| * <i>Crenimugil crenilabris</i> (Forsskål, 1775) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Ellochelon vaigiensis</i> (Quoy & Gaimard, 1825) | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Moolgarda seveli</i> (Forsskål, 1775) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| MULLIDAE | | | | | | | | | |
| <i>Parupeneus indicus</i> (Shaw, 1803) | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | INWP |
| <i>Upeneus tragula</i> Richardson, 1846 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| MURAENIDAE | | | | | | | | | |
| <i>Siderea thyrsoidea</i> (Richardson, 1845) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| NEMIPTERIDAE | | | | | | | | | |
| <i>Pentapodus setosus</i> (Valenciennes, 1830) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | IM |
| <i>Scolopsis affinis</i> Peters, 1877 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| <i>Scolopsis bilineatus</i> (Bloch, 1793) | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | WP-EIND |
| <i>Scolopsis ciliatus</i> (Lacepède, 1802) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | WP |

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Table 2. Continued

| Taxa | Site | | | | | | | | Distribution |
|---|------|---|---|---|---|---|---|---|--------------|
| | A | B | C | D | E | F | G | H | |
| <i>Scolopsis lineatus</i> Quoy & Gaimard, 1824 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Scolopsis margaritifer</i> (Cuvier, 1830) | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | WP |
| <i>Scolopsis monogramma</i> (Cuvier, 1830) | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | WP |
| <i>Scolopsis vosmeri</i> (Bloch, 1792) | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | INWP |
| OSTRACIIDAE | | | | | | | | | |
| <i>Ostracion cubicus</i> Linnaeus, 1758 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| PEMPHERIDAE | | | | | | | | | |
| <i>Pempheris oualensis</i> (Cuvier, 1831) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| PINGUIPEDIDAE | | | | | | | | | |
| <i>Parapercis</i> sp. | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | nd |
| POMACANTHIDAE | | | | | | | | | |
| <i>Pomacanthus annularis</i> (Bloch, 1787) | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | IA-EIND |
| <i>Pomacanthus sexstriatus</i> (Cuvier, 1831) | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | WP |
| POMACENTRIDAE | | | | | | | | | |
| <i>Abudefduf bengalensis</i> (Bloch, 1787) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | WP-EIND |
| <i>Abudefduf notatus</i> (Day, 1869) | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Abudefduf sexfasciatus</i> (Lacepède, 1802) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| <i>Abudefduf sordidus</i> (Forsskål, 1775) | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | INWP |
| <i>Abudefduf vaigiensis</i> (Quoy & Gaimard, 1825) | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | INWP |
| <i>Amblyglyphidodon curacao</i> (Bloch, 1787) | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | WP |
| <i>Amblyglyphidodon leucogaster</i> (Bleeker, 1847) | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | INWP |
| <i>Amphiprion perideraion</i> Bleeker, 1855 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | WP |
| <i>Amphiprion polymnus</i> (Linnaeus, 1758) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | IM |
| <i>Cheiloprion labiatus</i> (Day, 1877) | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | IA |
| <i>Chromis atripectoralis</i> Welander & Schultz, 1951 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Chromis cinerascens</i> (Cuvier, 1830) | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | WP-EIND |
| <i>Chrysiptera biocellatus</i> (Quoy & Gaimard, 1825) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Chrysiptera leucopoma</i> (Lesson, 1830) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Chrysiptera unimaculata</i> (Cuvier, 1830) | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | INWP |
| <i>Dascyllus reticulatus</i> (Richardson, 1846) | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | WP |
| <i>Dascyllus trimaculatus</i> (Rüppell, 1828) | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | INWP |
| <i>Dischistodus melanotus</i> (Bleeker, 1853) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Hemiphyphidodon plagiometopon</i> (Bleeker, 1852) | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | IA |
| <i>Neoglyphidodon melas</i> (Cuvier, 1830) | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | INWP |
| <i>Neoglyphidodon nigroris</i> (Cuvier, 1830) | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | WP |
| <i>Neopomacentrus anabatoides</i> (Bleeker, 1847) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | IM |
| <i>Neopomacentrus bankieri</i> (Richardson, 1846) | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | IA |
| <i>Neopomacentrus cyanomos</i> (Bleeker, 1856) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| <i>Neopomacentrus filamentosus</i> (Macleay, 1883) | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | IA |
| <i>Plectroglyphidodon lacrymatus</i> (Quoy & Gaimard, 1825) | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | INWP |
| <i>Pomacentrus alexanderae</i> Evermann & Seale, 1907 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | WP |
| <i>Pomacentrus chrysurus</i> Cuvier, 1830 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | WP-EIND |
| <i>Pomacentrus coelestis</i> Jordan & Starks, 1901 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | WP-EIND |
| <i>Pomacentrus cuneatus</i> Allen, 1991 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | IM |
| * <i>Pomacentrus grammorhynchus</i> Fowler, 1918 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | IA |
| <i>Pomacentrus moluccensis</i> Bleeker, 1853 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | WP |
| <i>Pomacentrus tripunctatus</i> Cuvier, 1830 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | WP-EIND |
| <i>Stegastes fasciolatus</i> (Ogilby, 1889) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Stegastes lividus</i> (Bloch & Schneider, 1801) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Stegastes nigricans</i> (Lacepède, 1803) | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | INWP |
| <i>Stegastes obreptus</i> (Whitley, 1948) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | WP-EIND |

Table 2. Continued

| Taxa | Site | | | | | | | | Distribution |
|---|------|---|---|---|---|---|---|---|--------------|
| | A | B | C | D | E | F | G | H | |
| PSEUDOCROMIDAE | | | | | | | | | |
| <i>Congrogadus subducens</i> (Richardson, 1843) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | WP |
| * <i>Pseudochromis</i> sp.1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | nd |
| SCARIDAE | | | | | | | | | |
| <i>Chlorurus sordidus</i> (Forsskål, 1775) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | INWP |
| * <i>Scarus dimidiatus</i> Bleeker, 1859 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Scarus frenatus</i> Lacepède, 1802 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Scarus ghobban</i> Forsskål, 1775 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | INWP |
| * <i>Scarus hypselopterus</i> (Bleeker, 1853) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Scarus niger</i> Forsskål, 1775 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Scarus prasiognathos</i> Valenciennes, 1839 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | WP-EIND |
| * <i>Scarus quoyi</i> Valenciennes, 1840 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| <i>Scarus rivulatus</i> Valenciennes, 1840 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | WP |
| <i>Scarus rubroviolaceus</i> Bleeker, 1847 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| SERRANIDAE | | | | | | | | | |
| <i>Anyperodon leucogrammicus</i> (Valenciennes, 1828) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Cephalopholis boenak</i> (Bloch, 1790) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| <i>Cephalopholis cyanostigma</i> (Valenciennes, 1828) | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | WP |
| <i>Cephalopholis formosa</i> (Shaw & Nodder, 1812) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | INWP |
| <i>Cephalopholis microprion</i> (Bleeker, 1852) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Diploprion bifasciatus</i> Cuvier, 1828 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | WP-EIND |
| <i>Epinephelus bleekeri</i> (Vaillant, 1877) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | WP-EIND |
| <i>Epinephelus caeruleopunctatus</i> (Bloch, 1790) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Epinephelus coioides</i> (Hamilton, 1822) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Epinephelus erythrurus</i> (Valenciennes, 1828) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | IM-EIND |
| <i>Epinephelus fasciatus</i> (Forsskål, 1775) | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | INWP |
| <i>Epinephelus fuscoguttatus</i> (Forsskål, 1775) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Epinephelus merra</i> Bloch, 1793 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Epinephelus ongus</i> (Bloch, 1790) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Epinephelus quoyanus</i> (Valenciennes, 1830) | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | WP |
| <i>Plectropomus leopardus</i> (Lacepède, 1802) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Plectropomus maculatus</i> (Bloch, 1790) | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | IA |
| SIGANIDAE | | | | | | | | | |
| <i>Siganus canaliculatus</i> (Park, 1797) | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | WP-EIND |
| <i>Siganus corallinus</i> (Valenciennes, 1835) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | WP-EIND |
| <i>Siganus guttatus</i> (Bloch, 1787) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | WP |
| <i>Siganus javus</i> (Linnaeus, 1766) | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | WP-EIND |
| <i>Siganus punctatus</i> (Bloch & Schneider, 1801) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | WP |
| <i>Siganus vermiculatus</i> (Valenciennes, 1835) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | WP-EIND |
| <i>Siganus virgatus</i> (Valenciennes, 1835) | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | WP-EIND |
| SPHYRAENIDAE | | | | | | | | | |
| <i>Sphyræna baracuda</i> (Walbuan, 1792) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Sphyræna obtusata</i> Cuvier, 1829 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | INWP |
| <i>Sphyræna qenie</i> Klunzinger, 1870 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| SYNGNATHIDAE | | | | | | | | | |
| <i>Doryrhamphus janssi</i> (Herald & Randall, 1972) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | WP |
| SYNODONTIDAE | | | | | | | | | |
| <i>Synodus variegatus</i> (Lacepède, 1801) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | INWP |
| TERAPONIDAE | | | | | | | | | |
| <i>Terapon jabua</i> (Forsskål, 1775) | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | INWP |
| <i>Terapon theraps</i> (Cuvier, 1829) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |

Table 2. Continued

| Taxa | Site | | | | | | | | Distribution |
|---|-----------|-----------|------------|-----------|-----------|-----------|-----------|------------|--------------|
| | A | B | C | D | E | F | G | H | |
| TETRAODONTIDAE | | | | | | | | | |
| <i>Arothron immaculatus</i> (Bloch & Schneider, 1801) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| <i>Arothron stellatus</i> (Bloch & Schneider, 1801) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| Total | 74 | 81 | 182 | 85 | 72 | 56 | 74 | 112 | |

The zoogeographical analysis reveals that reef-fish fauna in the Gulf of Thailand consists mostly of species that are widely distributed, viz. cosmopolitan or circumtropical (1.7%), Indo-west Pacific (56.8%), west Pacific (21.2%) and west Pacific-eastern Indian Ocean (14.0%). The rest comprises species that have restricted distribution within either Indo-Australian (3.8%) or Indo-Malayan (2.5%) archipelagoes. Although a minority, some of these seem to be typical of the southern South China Sea as they are not previously known further north; wherein several species which have restricted distribution around China, Taiwan and southern Japan are peculiar to the area, instead. Some examples include certain apogonid (*Apogon cavitensis*), labrids (*Diproctacanthus xanthurus*, *Halichoeres bicolor* (*H. hyrtlilii* (Bleeker) is probably a junior synonym based on the initial phase), *H. chloropterus*, and *H. leucurus*), nemipterid (*Pentapodus setosus*), pomacentrids (*Cheiloprion labiatus*, *Hemiglyphidodon plagiometopon*, *Neopomacentrus anabatoides*, *N. filamentosus*, *Pomacentrus cuneatus*, and *P. grammorhynchus*), and serranids (*Epinephelus erythrurus* and *Plectropomus maculatus*). In view of geminate species of fishes (see Randall, 1998), the Gulf principally derives species pool from the Pacific and thus shows certain degree of its affinity to other localities within the South China Sea or western Pacific, in general. In this regard, the species recorded in the Gulf and their sibling species from the Indian Ocean, at least those found in the Andaman Sea coast of Thailand, are exemplified as follows: *Archamia zosterophora* – *A. ataenia* (see Randall & Satapoomin, 1999); *Halichoeres leucurus* – *H. kallochroma*; *H. melanurus* – *H. vrolikii*; *Amphiprion polymnus* – *A. sebae*; *Dascyllus reticulatus* – *D. carneus*; *Pomacentrus coelestis* – *P. similis* (see Allen, 1991); *Cephalopholis microprion* – *Cephalopholis* sp. (Randall & Satapoomin, MS); and *Siganus punctatus* – *S. stellatus*. Furthermore, there are some species with slight differences in coloration between the two oceans (geographic variants) but still be regarded as conspecific, of which the Gulf fishes show typical Pacific forms. The following species are conformable to that pointed out by Randall (1998): *Naso lituratus*; and *Halichoeres hortulanus*. Also, I add five more species as follows: *Valenciennesa puellaris* (the Gulf fish shows typical western Pacific form with elongate spots above the body stripes whereas the Andaman Sea specimens have a black chin and oblique bars on the sides, typical Indian Ocean form, although

Hoese & Larson (1994) reported differently); *Lutjanus russelli* (see Allen & Talbot, 1985); *Scolopsis bilineatus* (the Pacific form has pronounced yellow stripes on head and also yellow spinous dorsal-fin, whereas pale in the Indian Ocean form); *Pomacentrus chrysurus* (the Indian Ocean form possesses dark bar on caudal peduncle, whereas absent in the Pacific form); and *Stegastes lividus* (see Allen & Emery, 1985).

The ten most speciose families are Pomacentridae (37 species), Gobiidae (28), Labridae (26), Serranidae (17), Apogonidae (16), Scaridae (10), Carangidae (9), Lutjanidae (9), Nemipteridae (8), and Siganidae (7). The Gobiidae should take the greatest representation, as it is for nearly all localities in the Indo-Pacific region, when adequate samplings, particularly by using ichthyocide, have been accomplished on the Gulf reefs.

The above 10 families comprise about 70% (167 species) of the total species. This figure is proportionately higher than the general finding elsewhere for the Indo-Pacific localities, of which the same round figure is accounted for 20 most speciose families (e.g., 68% for the southern Great Barrier Reefs (Russell, 1983); 71% for Mariana Islands (Myers, 1988); 69.9% for Micronesia (Myers, 1991); 67.5% for southern Taiwan (Shao et al., 1992); 69.8% for Ogasawara Islands (Randall et al., 1997b); 68.2% for Maldives (Randall & Anderson, 1993); 74.6% for Chagos Archipelago (Winterbottom & Anderson, 1997)). If this could be explained by biases either in sampling efforts (sighting for the present study versus comprehensive observations and collections elsewhere) or representation for both fish and area (strictly reef-associated fishes in shallow water versus reef or inshore fishes in general, at greater depths), it seems likely that several species of minor families are still not well represented in the present study. Therefore, more species can be expected for the Gulf of Thailand, particularly for the others families with small or strongly cryptic species such as Blenniidae, Muraenidae, Pseudochromidae, Tripterygiidae, Scorpaenidae, and Syngnathidae. As evidence to support the idea, these families and also several other major families, such as Gobiidae, Apogonidae, Serranidae and Lutjanidae, become better represented when the previously recorded species (Appendices A & B) are taken into account. In this regard, the relative contribution to the fauna of 20 most speciose families become as high as 79% (282

species). Likewise, the overall faunal composition, at least at the genus and family level, appears to be unique when compare to that of other reef areas in the Indo-west Pacific. It is likely that the Gulf has a distinct faunistic composition being dominated by a small number of taxa successfully colonized into the Gulf. The following families, of which there are wide-ranging species, notably Indo-Pacific distribution, that being well represented on coral reefs elsewhere, are not yet recorded from the Gulf reefs: Aulostomidae, Fistulariidae, Solenostomidae, Centriscidae, Caracanthidae, Kuhlidae, Malacanthidae, Cirrhitidae and Zanclidae. Among these, only the Fistulariidae and Centriscidae were present on the trawling grounds in the Gulf (Wongratana, 1968; Pokapunt et al., 1983). Furthermore, among several of the speciose families of fishes reported in various western Pacific localities (Table 3), the Gulf of Thailand has a

distinct composition with markedly less representation of species in some characteristic reef-fish families, notably Chaetodontidae, Pomacanthidae, Acanthuridae, Balistidae, Holocentridae, Muraenidae and Scorpaenidae. Regardless the cryptic species that are usually missed by sighting, the less representation of certain families like Acanthuridae, Chaetodontidae, Pomacanthidae and Balistidae, could not be accounted for an inaccessibility of sighting. The situation seems to be similar when compared to the result of extensive visual census surveys made in Singapore water, one of the southern most locality of the South China Sea, wherein several visually obvious reef-fish families are either apparently absent (i.e. Acanthuridae, Aulostomidae, Balistidae, Cirrhitidae, Fistulariidae, Malacanthidae, and Zanclidae) or less represented (i.e. Chaetodontidae, with 4 species, Pomacanthidae, 3

Table 3. Comparison of total fauna and species richness of selected typical reef-fish families found in the Gulf of Thailand with those reported in other localities in the west Pacific Region. The localities (with source of data) include: Gulf of Thailand, (1) and (2) for this study and compiled checklist, respectively; Spratly Is. (3), Chen et al., 1997; Kenting National Park, southern Taiwan (4), Shao et al., 1992; Pescadores Is., western Taiwan (5), Shao et al., 1994; Sesoko Is., Okinawa, Japan (6), Yoshino & Nishijima, 1981; Ogasawara Is. (7), Randall et al., 1997b; Mariana Is. (8), Myers, 1988; Micronesia (9), Myers, 1991; Southern Great Barrier Reef (10), Russell, 1983; Chesterfield Is., Coral Sea (11), Kulbicki et al., 1994; North-western Australia (12), Allen, 1993 and Allen & Russell, 1986; Cocos (Keeling) Is. (13), Allen & Smith-Vaniz, 1994; and Andaman Sea (14), Satapoomin, unpublished data. Mean value is accounted for all localities except the Gulf of Thailand.

| Family | Localities | | | | | | | | | | | | | | Mean |
|----------------|------------|-----|-----|------|-----|-----|-----|-----|------|------|------|------|------|------|------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | |
| Acanthuridae | 1 | 1 | 18 | 29 | 12 | 23 | 29 | 31 | 39 | 25 | 26 | 24 | 25 | 29 | 26 |
| Apogonidae | 16 | 24 | 15 | 60 | 29 | 23 | 23 | 34 | 58 | 33 | 47 | 49 | 30 | 38 | 37 |
| Balistidae | 1 | 1 | 13 | 12 | 5 | 11 | 17 | 17 | 20 | 11 | 19 | 14 | 14 | 13 | 14 |
| Blenniidae | 4 | 11 | 14 | 42 | 16 | 41 | 22 | 37 | 61 | 40 | 22 | 30 | 21 | 35 | 32 |
| Caesionidae | 4 | 4 | 7 | 6 | 4 | 4 | 7 | 4 | 10 | 4 | 6 | 7 | 4 | 13 | 6 |
| Chaetodontidae | 4 | 7 | 21 | 36 | 29 | 28 | 36 | 30 | 40 | 32 | 23 | 30 | 23 | 29 | 30 |
| Gobiidae | 28 | 42 | 32 | 84 | 37 | 36 | 49 | 81 | 159 | 104 | 55 | 129 | 51 | 129 | 79 |
| Holocentridae | 2 | 5 | 10 | 25 | 8 | 13 | 23 | 24 | 29 | 11 | 20 | 21 | 20 | 13 | 18 |
| Labridae | 26 | 28 | 73 | 102 | 69 | 67 | 73 | 67 | 100 | 69 | 73 | 68 | 54 | 65 | 73 |
| Lethrinidae | 6 | 7 | 8 | 15 | 6 | 10 | 11 | 14 | 21 | 9 | 14 | 8 | 10 | 15 | 12 |
| Lutjanidae | 9 | 16 | 11 | 41 | 20 | 10 | 28 | 22 | 29 | 14 | 12 | 17 | 8 | 25 | 20 |
| Monacanthidae | 2 | 5 | 3 | 12 | 9 | 8 | 12 | 9 | 17 | 13 | 15 | 7 | 4 | 5 | 9 |
| Mullidae | 2 | 2 | 8 | 14 | 10 | 13 | 15 | 13 | 15 | 7 | 14 | 9 | 8 | 10 | 11 |
| Muraenidae | 1 | 4 | 9 | 28 | 7 | 5 | 22 | 43 | 54 | 23 | 21 | 26 | 24 | 21 | 24 |
| Pomacanthidae | 2 | 3 | 10 | 11 | 6 | 15 | 20 | 15 | 27 | 15 | 12 | 16 | 7 | 13 | 14 |
| Pomacentridae | 37 | 45 | 51 | 81 | 28 | 67 | 36 | 46 | 90 | 69 | 54 | 74 | 38 | 57 | 58 |
| Scaridae | 10 | 10 | 15 | 27 | 10 | 22 | 16 | 20 | 33 | 22 | 21 | 19 | 20 | 19 | 20 |
| Scorpaenidae | - | 4 | 10 | 30 | 14 | 13 | 17 | 25 | 31 | 21 | 26 | 20 | 16 | 17 | 20 |
| Serranidae | 17 | 30 | 18 | 68 | 38 | 31 | 66 | 50 | 86 | 34 | 32 | 40 | 30 | 46 | 45 |
| Siganidae | 7 | 8 | 3 | 8 | 3 | 7 | 5 | 6 | 15 | 8 | 2 | 7 | 4 | 11 | 7 |
| Syngnathidae | 1 | 8 | 3 | 14 | 3 | 6 | 8 | 17 | 37 | 12 | 16 | 13 | 6 | 12 | 12 |
| Tetraodontidae | 2 | 3 | 7 | 16 | 12 | 11 | 15 | 16 | 18 | 11 | 10 | 8 | 6 | 7 | 11 |
| Total fauna | | | | | | | | | | | | | | | |
| -Species | 241 | 357 | 421 | 1130 | 648 | 602 | 801 | 871 | 1407 | 859 | 866 | 833 | 533 | 810 | 815 |
| -Families | 49 | 61 | 49 | 128 | 118 | 81 | 97 | 104 | 120 | 109 | 134 | 83 | 71 | 85 | 98 |

species, and Scaridae, 2 species) (Table 1 in Lim & Chou, 1991; Table 1 in Low & Chou, 1992).

Also conspicuous when compared to the Andaman Sea, Satapoomin (in press) listed 88 genera (included one subgenus) in 32 families to be apparently absent from the Gulf reefs. Among these, only 5 genera, namely *Ecsenius*, *Exyrias*, *Fusigobius*, *Trachinotus* and *Cirrhilabrus* are recently found during the last three surveys of this study. Despite the incomplete state of the present sampling, it is remarkable that a number of typical reef-fish genera in several families, which are visually obvious and well represented elsewhere, are not yet recorded in the Gulf of Thailand: *Dendrochirus* and *Pterois* (in Scorpaenidae); *Pseudanthias* and *Variola* (Serranidae); *Rhabdamia* (Apogonidae); *Malacanthus* (Malacanthidae); *Macolor* (Lutjanidae); *Parapriacanthus* (Pemppheridae); *Forcipiger* and *Hemitaenichthys* (Chaetodontidae); *Apolemichthys* and *Centropyge* (Pomacentridae); *Lepidozygus* (Pomacentridae); *Bodianus*, *Coris*, *Gomphosus*, *Hologymnosus*, *Labrichthys*, *Labropsis*, *Leptojulid*, *Macropharyngodon*, *Novaculichthys*, *Paracheilinus*, *Pseudocheilinus* and *Pseudodax* (Labridae); *Bolbometopon*, *Calotomus*, *Cetoscarus* and *Hipposcarus* (Scaridae); *Acanthurus*, *Ctenochaetus* and *Zebrasoma* (Acanthuridae); *Meiacanthus* and *Plagiotremus* (Blenniidae); *Nemateleotris* (Microdesmidae); *Balistapus*, *Melichthys*, *Odonus*, *Pseudobalistes*, *Rhinecanthus* and *Sufflamen* (Balistidae); *Cantherhines* and *Oxymonacanthus* (Monacanthidae); and *Canthigaster* (Tetraodontidae).

Geographically, the Gulf of Thailand could be regarded as part of the Indo-Malayan region, wherein the highest diversity of fishes and others marine fauna are contained. Comparing the species richness of reef fishes presently known in the Gulf (ca. 350) with other localities either within Indo-Malayan or its periphery in the west-Pacific Province (mostly well over 800 and up to ca. 2,700: Table 3; Fig. 3 in Randall, 1998), the Gulf contains impoverished reef-fish fauna. Satapoomin (in press) suggested 3 factors, in combination, as the explanation: 1) environmental conditions responsible for the availability of suitable habitats, 2) circulation pattern which the dispersion and colonization of species are subjected to, and 3) geological history of the area under the effects of changes in the world climate and sea levels.

The Gulf coastal environments are characterized by low salinity, high turbidity, and mud bottoms, resulting in poor reef development. Sudara et al. (1991) classified 3 major types of reef development in the Gulf as coral community, coral community developing into fringing reef, and early formation of fringing reef. These imply that the reefs are simply formed, of which they are either in early stage of or limited development. Likewise, the paucity of habitat availability and complexity in the Gulf seems to be a significant cause of the impoverished fauna. Among the fishes being absent from the Gulf, a large

proportion seem to be those species preferring more oceanic conditions. Examples are any species of the following genera: *Aulostomus*, *Cirrhichthys*, *Oxycirrhites*, *Paracirrhites*, *Pseudanthias*, *Variola*, *Malacanthus*, *Parapriacanthus*, *Forcipiger*, *Hemitaenichthys*, *Apolemichthys*, *Centropyge*, *Lepidozygus*, *Hologymnosus*, *Labropsis*, *Paracheilinus*, *Pseudocheilinus*, *Pseudodax*, *Bolbometopon*, *Calotomus*, *Cetoscarus*, *Hipposcarus*, *Zebrasoma*, *Zanclus*, *Melichthys*, *Odonus*, *Rhinecanthus*, *Sufflamen* and *Cantherhines*.

In the Gulf of Thailand, water circulation is alternated seasonally (Wyrcki, 1961; Takano, 1995). During southwest monsoon (May-September), a clockwise gyre is generated and surface water flows easterly out of the Gulf with an inflow from the south along the east coast of Malay peninsula. The supply of Pacific water mass (entering between Mindanao and New Guinea) is chiefly through the Java Sea from the south. During northeast monsoon (October-January), an anti-clockwise gyre dominates the overall pattern of water movement in the Gulf with an in flow from the east bringing the South China Sea surface water mass into the Gulf. During this season, the South China Sea water masses are derived mainly from the North Equatorial Current with the transport of water chiefly through the Luzon Strait, and smaller part through the Philippines and the Sulu Sea. The average transports of this monsoon current are relatively greater compared to that in the southwest monsoon (Wyrcki, 1961). In this regard, it is probable that the present-day colonization of species in the Gulf should potentially by dispersal from the east, where the major populations and geologically older structures exist, i.e., Philippines and other localities (numerous islands, reef islands, and banks) in the South China Sea, the nearest islands upcurrent (see also McManus, 1992). The seasonally varying flow patterns in the Gulf may result in periodical preclusion of dispersal of larvae to colonize into the Gulf. Furthermore, water circulation in the Gulf of Thailand always to be weak, as it is, rather than the main stream, derivative of general circulation generated in the South China Sea. Thus, its influence on transport of planktonic larvae may not be great compared with the region wherein the main current is in path. This seems to be another explanation for the relatively low diversity of fish in the Gulf as compared with the northern half of the South China Sea (e.g. northwestern Philippines and southern Taiwan) wherein several major oceanic currents, notably the North Equatorial Current and/or Kuroshio Current, are significant in bringing larval of tropical fishes to the region.

The most recent geological event, which is believed to have a profound effect to speciation of reef organisms, is the Pliocene-Pleistocene Glaciations (last Ice Age), which caused pronounced regressions and alternating transgressions of seawater. During the last low, about 18,000 years ago, sea level was about 150 meters lower than today. Especially for the Indo-Malayan region, land

replaced much of the seas and bays in the region and created an almost complete barrier between the Indian-Pacific oceans (Potts, 1983; Myers, 1991). The southern part of the South China Sea (included the whole of the Gulf of Thailand) and associated coastlines of SE Asia (known as Sunda Shelf) were dried out and appeared as a land mass. Extinction or elimination of many shallow-dwelling species from the area could have occurred. Concerning the present-day distribution patterns, either allopatry of species pairs between the Indian and Pacific oceans or the disjunct distribution of many widely distributed species, with disjunction gaps appear within some of the seas and coastlines in the region, are likely to be exemplification to the effect of glacial sea-level lowering (Springer & Williams, 1990; 1994; Woodland, 1983). Springer and Williams (1994) further pointed out, for most cases, the disjunction gap appears to comprise the Gulf of Thailand and southern half of the South China Sea. This may, in part, be an explanation of the low species richness found at present. With post glacial rises in sea levels, the conditions should promote expansion by dispersion of the nearby founder populations. However, the concomitant changes in pattern of currents, discharge of freshwater from rivers, and also erosion and sedimentation during the course of rising of sea water might have established environmental or ecological conditions (i.e., low salinity, high turbidity, and nutrient enrichment) unsuitable for colonization, especially for corals, reef fishes and other reef dwellers. Furthermore, it may have acted as a partial barrier for the stenohaline or oceanic species. This presumably indicates that coral reef communities in the Gulf are geologically very young with limited development and thus reflect the paucity of associated fish fauna.

As should be aware, the Gulf possesses either a variety of shoreline habitats, notably estuaries and mangrove forests, or an extensive soft-bottom basin. These habitats, rather than coral reefs, may have greatly influenced on the present-day ichthyofauna of the Gulf. Example from the extensive trawl-surveys in the Gulf (Wongratana, 1968; Pokapunt et al., 1983; Poreeyanond et al., 1984) yielded a number of 374 fish species distributing in 86 families. Of this total, only 77 species (21.7%) among 33 families are recognized to represent in the overall species-list of reef fish. About 12% of total fauna (652 species in 102 families) are shared between habitats. The major taxonomic groups that typically found on the trawling grounds while being absent or scarcely represented on the reef habitats include families in Lamniformes, Rajiformes, Torpediniformes, Clupeiformes and Pleuronectiformes and several others like Platycephalidae, Synodontidae, Carangidae, Nemipteridae (especially the genus *Nemipterus*), Sciaenidae, Leiognathidae, Gerreidae and Callionymidae. Most of these families also usually occur in estuarine and mangrove areas. Furthermore, there still be several families or genera in certain large families that are not represented in the trawl-survey results, but they are either typical or very characteristic of estuarine

or mangrove habitats. Examples may include Ambassidae, Anguillidae, Apocheilidae, Atherinidae, Bagridae, Belonidae, Eleotrididae, Elopidae, Harpadontidae, Hemiramphidae, Kurtidae, Megalopidae, Phallostethidae, Oryziidae, Toxotidae and various following genera of families: *Leptosynanceia*, *Pseudosynanceia*, *Trachicephalus* and *Vespacula* (in Scorpaenidae); *Omobranchus* (Blenniidae); *Acentrogobius*, *Amoya*, *Apocryptodon*, *Aulopareia*, *Boleophthalmus*, *Brachygobius*, *Calamiana*, *Cristatogobius*, *Drombus*, *Glossogobius*, *Gobiopsis*, *Gobiopterus*, *Hemigobius*, *Lophogobius*, *Mangarinus*, *Mugilogobius*, *Oxuderces*, *Pandaka*, *Parapocryptes*, *Periophthalmodon*, *Periophthalmus*, *Pseudapocryptes*, *Pseudogobius*, *Redigobius*, *Scartelaos* and *Stigmatogobius* (Gobiidae) (see also Murdy, 1989; Sirimontaporn, 1993; Japar et al., 1994; Satapoomin & Poovachiranon, 1997). Therefore, it seems likely that the richness of ichthyofauna in the Gulf of Thailand is compensated principally by nonreef-dwelling elements. The overall diversity of inshore fishes should be substantially high of which the number of about 900 species (in at least 114 families) is estimated at best.

Without accurate taxonomic work, the faunal list could not meet its virtual completeness. The overall list of species presented herein is only provisional as, although not all, a number of identifications need confirmation by specimen examination. One of primary purposes of this list is to draw attention of specialists to these extensive observations from the previously unsampled area of the Gulf reefs. The materials either those had previously been collected and presently deposited in various well established collections, such as Kasetsart University Museum of Fisheries (KUMF), Chulalongkorn University Museum of Zoology (CUB), and Natural History Museum, Department of Fisheries, or that will be made available from any extensive sampling program in the future, are useful for species verification. It is my hope that there will be a kind of more detailed annotated checklist and analysis of coral reef ichthyofauna of the Gulf of Thailand following the accomplishment of the extensive investigation.

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LITERATURE CITED

- Allen, G.R., 1991. *Damselfishes of the World*. Aquarium Systems, Mentor, Ohio. 271 pp.
- Allen, G.R., 1993. Part 7. Fishes of Ashmor Reef and Cartier Island. In: P.E. Berry (ed.), *Marine Faunal Surveys of Ashmor Reef and Cartier Island, North-western Australia*. *Rec. West. Aust. Mus. Suppl.*, **44**: 67-91.
- Allen, G.R. & A.R. Emery, 1985. A review of the pomacentrid fishes of the genus *Stegastes* from the Indo-Pacific, with descriptions of two new species. *Indo-Pacific Fishes*, **3**: 1-31.
- Allen, G.R. & B.C. Russell, 1986. Part VII. Fishes. In: P.E. Berry (ed.), *Fauna Surveys of the Rowley Shoals, Scott Reef, and Seringapatam Reef, North-western Australia*. *Rec. West. Aust. Suppl.*, **25**: 79-103.
- Allen, G.R. & W.F. Smith-Vaniz, 1994. Fishes of the Cocos (Keeling) Islands. *Atoll Res. Bull.*, no. **412**: 1-21.
- Allen, G.R. & F.H. Talbot, 1985. Review of the snappers of the genus *Lutjanus* (Pisces: Lutjanidae) from the Indo-Pacific, with description of a new species. *Indo-Pacific Fishes*, **11**: 1-87.
- Banasopit, T., 1968. *Handbook of the snappers (Lutjanidae) of the Thai waters*. Marine Fisheries Laboratory, Division of Research and Investigations, Department of Fisheries, Bangkok, Thailand. Contribution no. **12**, 56 pp. (in Thai)
- Banasopit, T., 1969. *Handbook of the groupers (Serranidae) of the Thai waters*. Marine Fisheries Laboratory, Division of Research and Investigations, Department of Fisheries, Bangkok, Thailand. Contribution no. **14**, 77 pp. (in Thai)
- Banasopit, T., 1971. *The butterflyfishes (Family Chaetodontidae) of Thailand*. Technical Paper. Marine Fisheries Laboratory, Division of Research and Investigations, Department of Fisheries, Bangkok, Thailand. 75 pp. (in Thai)
- Burgess, W.E., 1978. *Butterflyfishes of the World*. T.F.H. Publication Inc. Ltd. 832 pp.
- Carpenter, K.E., 1987. Revision of the Indo-Pacific fish family Caesionidae (Lutjanidae), with descriptions of five new species. *Indo-Pacific Fishes*, **15**: 1-56.
- Chen, J.P., R.Q. Jan & K.T. Shao, 1997. Checklist of reef fishes from Taiping Island (Itu Aba Island), Spratly Islands, South China Sea. *Pac. Sci.*, **51**(2): 143-166.
- Dawson, C.E., 1981. Review of the Indo-Pacific pipefish genus *Doryrhamphus* Kaup (Pisces: Syngnathidae), with descriptions of a new species and a new subspecies. *Ichthyol. Bull.*, **44**: 1-27.
- Dawson, C.E., 1985. *Indo-Pacific Pipefishes (Red Sea to the Americas)*. Gulf Coast Research Laboratory, Ocean Springs, Mississippi. 230 pp.
- Fraser, T.H. & E.A. Lachner, 1985. A revision of the cardinalfish subgenus *Pristiapogon* and *Zoramia* (genus *Apogon*) of the Indo-Pacific region (Teleostei: Apogonidae). *Smiths. Contrib. Zool.*, no. **412**: iii + 47 pp.
- Gon, O., 1993. Revision of the cardinalfishes genus *Cheilodipterus* (Perciformes: Apogonidae), with descriptions of five new species. *Indo-Pacific Fishes*, **22**: 1-59.
- Gon, O., 1995. Revision of the cardinalfish subgenus *Lepidamia* (Perciformes, Apogonidae, *Apogon*). *Israel J. Zool.*, **41**: 1-22.
- Hansen, P.E.H., 1986. Revision of the tripterygiid fish genus *Helcogramma*, including descriptions of four new species. *Bull. Mar. Sci.*, **38**(2): 313-354.
- Hoese, D.F. & H.K. Larson, 1994. Revision of the Indo-Pacific gobiid fish genus *Valenciennesa*, with descriptions of seven new species. *Indo-Pacific Fishes*, **23**: 1-71.
- Japar, S.B., A. Sasekumar, V.V. Chong & J.K.Y. Low, 1994. Mangrove fish resources in ASEAN region. In: Sudara S., C.R. Wilkinson & L.M. Chou (eds.), *Proceedings, Third ASEAN-Australia Symposium on Living Coastal Resources*, vol. **1**: Status Reviews. Chulalongkorn University, Bangkok, Thailand. Pp. 179-200.
- Klassen, G.J., 1995. Phylogeny and biogeography of the Ostraciinae (Tetraodontiformes: Ostraciidae). *Bull. Mar. Sci.*, **57**(2): 393-441.
- Kuiter, R.H., 1992. *Tropical Reef-Fishes of the Western Pacific, Indonesia and adjacent Waters*. Penerbit PT Gramedia Pustaka Utama, Jakarta. 314 pp.
- Kuiter, R.H., 1998. *Photo Guide to Fishes of the Maldives*. Atoll Editions, Australia. 257 pp.
- Kulbicki, M., J.E. Randall & J. Rivaton, 1994. Checklist of the fishes of Chesterfield Islands (Coral Sea). *Micronesica*, **27**(1/2): 1-43.
- Lachner, E.A. & S.J. Karnella, 1980. Fishes of the Indo-Pacific genus *Eviota*, with descriptions of eight new species (Teleostei: Gobiidae). *Smiths. Contrib. Zool.*, no. **315**: iii + 127 pp.
- Lachner, E.A. & J.F. McKinney, 1978. A revision of the Indo-Pacific fish genus *Gobiopsis*, with descriptions of four new species. *Smiths. Contrib. Zool.*, no. **262**: iii + 52 pp.
- Lieske, E. & R. Myers, 1994. *Coral Reef Fishes, Indo-Pacific and Caribbean*. Harper Collins Publishers. 400 pp.
- Lim, G.S.Y. & L.M. Chou, 1991. Studies of reef fish communities in Singapore. In: Alcalá, A.C. (chief ed.), *Proceedings of the Regional Symposium on Living Resources in Coastal Areas*, 30 January-1 February, 1989, Manila, Philippines. Marine Science Institute, University of the Philippines. Pp. 117-127.
- Low, J.K.Y. & L.M. Chou, 1992. Distribution of coral reef fish in Singapore. In: Chou, L.M. & C.R. Wilkinson (eds.), *Third ASEAN Science and Technology Week Conference Proceedings, Vol. 6, Marine Science: Living Coastal Resources*, 21-23 September 1992, Singapore. Department of Zoology, National University of Singapore and National Science and Technology Board, Singapore. Pp. 139-144.
- Low, J.K.Y., J.E. Randall & L.M. Chou, 1995. New localities for the wedge-spot damselfish, *Pomacentrus cuneatus* Allen, 1991 (Teleostei: Pomacentridae) in Southeast Asia. *Raffles Bull. Zool.*, **43**(1): 45-50.
- Manthachitra, V., 1994. *Status of coral resources along the east coast of Thailand* (Unpublished final report). Department of Aquatic Science, Faculty of Science, Burapha University. 138 pp. (in Thai)
- Masuda, H., K. Amaoka, C. Araga, T. Uyeno & C. Yoshino (eds.), 1984. *The Fishes of the Japanese Archipelago*. Tokai University Press, Tokyo. Vol. **1**: xxii + 437 pp.; Vol. **2**: 370 pls.
- McManus, J.W., 1992. The Spratly Islands: a Marine Park alternative. *Naga, ICLARM Q.*, **15**(3): 4-8.
- Menasveta, P., T. Wongratana, N. Chaitanawisuti & S. Rungsupa, 1986. Species composition and standing crop of coral reef fishes in the Sichang Islands, Gulf of Thailand. *Galaxea*, **5**: 115-121.
- Monkolprasit, S., 1987. *Fish population on coral reef areas of Khang Khao Island (Chonburi Province)*. Report submitted to the National Research Council of Thailand

- (unpublished). 11 pp. (in Thai)
- Monkolprasit, S. & T. Songsirikul, 1988. Systematic studies of fishes from Ko Samet and adjacent areas, Gulf of Thailand, with some new record species. *Thai Fisheries Gazette*, **41**(1): 45-53.
- Mooi, R.D., 1995. Revision, phylogeny, and discussion of biology and biogeography of the fish genus *Plesiops* (Perciformes: Plesiopidae). *Royal Ontario Museum, Life Sciences Contributions*, no. **159**: 1-107.
- Murdy, E.O., 1989. A taxonomic revision and cladistic analysis of the oxudercine gobies (Gobiidae: Oxudercinae). *Rec. Aust. Mus. Suppl.*, **11**: 1-93.
- Myers, R.F., 1988. An annotated checklist of the fishes of the Mariana Islands. *Micronesica*, **21**: 115-180.
- Myers, R.F., 1991. *Micronesian Reef Fishes: A Practical Guide to the Identification of the Inshore Marine Fishes of Tropical Central and Western Pacific*. 2nd. edition. Coral Graphics, Guam. 298 pp.
- Nelson, J.S., 1984. *Fishes of the World*. 2nd. edition. Wiley-Interscience Publication, New York. 523 pp.
- Pokapunt, V., W. Uttayamakul & J. Tantivala, 1983. *Study on trash fish compositions in the Middle-Gulf of Thailand at the depth of more than 40 meters (1980-81)*. Exploratory Fishing Division, Department of Fisheries, Bangkok, Thailand. Technical Paper no. **12**, 29 pp. (in Thai)
- Poreeyanond, T., V. Pokapunt & T. Vasuttapituk, 1984. *Marine resources caught by trawling in the upper Gulf of Thailand 1981*. Exploratory Fishing Division, Department of Fisheries, Bangkok, Thailand. Technical Paper no. **15**, 44 pp. (in Thai)
- Potts, D.C., 1983. Evolutionary disequilibrium among Indo-Pacific corals. *Bull. Mar. Sci.*, **33**(3): 619-632.
- Randall, J.E., 1992. *Diver's Guide to Fishes of Maldives*. Immel Publishing Limited, London. 193 pp.
- Randall, J.E., 1995. *Coastal Fishes of Oman*. Crawford House Publishing Pty. Ltd., Australia. 439 pp.
- Randall, J.E., 1997. Life color of 13 Indo-Pacific gobies of the genus *Eviota*. *I.O.P. Diving News*, **8**(7): 4-7.
- Randall, J.E., 1998. Zoogeography of shore fishes of the Indo-Pacific region. *Zool. Stud.*, **37**(4): 227-268.
- Randall, J.E., G.R. Allen & R.C. Steene, 1990. *Fishes of the Great Barrier Reef and Coral Sea*. Crawford House Press, Australia. 507 pp.
- Randall, J.E., G.R. Allen & R.C. Steene, 1997a. *Fishes of the Great Barrier Reef and Coral Sea (Revised and Expanded Edition)*. Crawford House Publishing Pty. Ltd., Australia. 557 pp.
- Randall, J.E. & R.C. Anderson, 1993. Annotated checklist of the epipelagic and shore fishes of the Maldivian Islands. *Ichthyol. Bull.*, **59**: 1-47.
- Randall, J.E. & D.W. Greenfield, 1996. Revision of the Indo-Pacific holocentrid fishes of the genus *Myripristis*, with descriptions of three new species. *Indo-Pacific Fishes*, **25**: 1-61.
- Randall, J.E. & P.C. Heemstra, 1991. Revision of Indo-Pacific groupers (Perciformes: Serranidae: Epinephelinae), with descriptions of five new species. *Indo-Pacific Fishes*, **20**: 1-332.
- Randall, J.E. & D.F. Hoese, 1985. Revision of the Indo-Pacific dartfish, genus *Ptereleotris* (Perciformes: Gobiodei). *Indo-Pacific Fishes*, **7**: 1-36.
- Randall, J.E. & D.F. Hoese, 1986. Revision of the groupers of the Indo-Pacific genus *Plectropomus* (Perciformes: Serranidae). *Indo-Pacific Fishes*, **13**: 1-31.
- Randall, J.E., H. Ida, K. Kato, R.L. Pyle & J.L. Earle, 1997b. Annotated checklist of the inshore fishes of the Ogasawara Islands. *National Science Museum Monographs* no. **11**. 74 pp. + 19 pls.
- Randall, J.E. & J.C. Kay, 1974. *Stethojulis axillaris*, a junior synonym of the Hawaiian labrid fish *Stethojulis balteata*, with a key to the species of the genus. *Pac. Sci.*, **28**(2): 101-107.
- Randall, J.E. & E.A. Lachner, 1986. The status of the Indo-west Pacific cardinalfishes *Apogon aroubiensis* and *A. nigrofasciatus*. *Proc. Biol. Soc. Wash.*, **99**(1): 110-120.
- Randall, J.E. & U. Satapoomin, 1999. *Archamia ataenia*, a new species of cardinalfish (Perciformes: Apogonidae) from the Andaman Sea and Mentawai Islands. *Phuket mar. Biol. Cent. Res. Bull.*, **62**: 1-8.
- Rennis, D.S. & D. F. Hoese, 1985. A review of the genus *Parioglossus*, with descriptions of six new species. *Rec. Aust. Mus.*, **36**(4): 169-201.
- Russell, B.C., 1983. Annotated checklist of the coral reef fishes in the Capricorn-Bunker Group, Great Barrier Reef, Australia. *Great Barrier Reef Marine Park Authority. Special Publication Series 1*. 184 pp.
- Satapoomin, U., in press. Comparative study of fish fauna in Thai waters: the Gulf of Thailand versus the Andaman Sea. In: *Proceedings of the international Symposium on Ecology of Coral Reef Communities in the Gulf of Thailand, 24-26 October 1997*. *Thai Journal of Aquatic Science*.
- Satapoomin, U. & S. Poovachiranon, 1997. Fishes fauna of mangroves and seagrass beds in the west coast of Thailand, the Andaman Sea. *Phuket Marine Biological Center. Technical Paper* no. **2/1997**. 63 pp.
- Shao, K.T., J.P. Chen, L.T. Ho, C.P. Lin, P.H. Kao, P.L. Lin & L.S. Chen, 1994. Checklist and distributional pattern of fishes of the Pescadores Islands. In: *Proceedings, Fourth Indo-Pacific Fish Conference*, 28 November-4 December, 1993, Bangkok, Thailand. Faculty of Fisheries, Kasetsart University. Pp. 267-280.
- Shao, K.T., J.P. Chen & S.C. Shen, 1992. *Marine Fishes of the Ken-Ting National Park*. Ken-Ting National Park Headquarters Construction and Planning Administration, Ministry of Interior, Taiwan, R.O.C. 427 pp. (in Chinese)
- Sirimontaporn, P., 1993. Goby fishes of Songkhla Lake and adjacent areas. In: *Proceedings, The Seminar on Fisheries 1993*. Department of Fisheries. Pp. 38-62.
- Smith, M.M. & P.C. Heemstra (eds.), 1991. *Smith's Sea Fishes*. 1st. edition. Southern Book Publishers, Johannesburg. 1048 pp., 144 pls.
- Springer, V.G., 1972. Synopsis of the tribe Omobranchini, with descriptions of tree new genera and two new species (Pisces: Blenniidae). *Smiths. Contrib. Zool.*, no. **130**: iii + 31 pp.
- Springer, V.G. & J.T. Williams, 1990. Widely distributed Pacific Plate endemics and lowered sea-level. *Bull. Mar. Sci.*, **47**(3): 631-640.
- Springer, V.G. & J.T. Williams, 1994. The Indo-West Pacific blennioid fish genus *Istiblennius* reappraised: a revision of *Istiblennius*, *Blenniella*, and *Paralticus*, new genus. *Smiths. Contrib. Zool.*, no. **565**: iii + 193 pp.
- Sudara, S., T. Thamrongnawasawat & C. Sookchanuluk, 1991. Artificial classification of coral communities in the Gulf of Thailand. In: Alcalá, A.C. (chief ed.), *Proceedings of the Regional Symposium on Living Resources in Coastal Areas*, 30 January-1 February, 1989, Manila, Philippines. Marine Science Institute, University of the Philippines. Pp. 21-25.

Satapoomin: Preliminary checklist of coral reef fishes

- Sudara, S., T. Yeemin, S. Satumanatpan, S. Nateekanjanalarp & S. Amornsakchai, 1992. *Annual Report (July 1990-June 1991). ASEAN-Australia Marine Science Project: Living Coastal Resources, Phase II*. Department of Marine Science, Chulalongkorn University. 103 pp. (unpublished)
- Takano, K., 1995. Numerical simulation of the circulation in the Gulf of Thailand and the South China Sea. In: *Proceedings, International Seminar on Marine Fisheries Environment*, 9-10 March, 1995. Rayong, Thailand (EMDEC & JICA). Pp. 19-24.
- Thapanand, T., S. Chunhabundit & A. Sapon, 1996. Species composition fishes caught by entangling net around Khang Khao Island, Gulf of Thailand. *Thai Fisheries Gazette*, **49**(1): 37-44.
- Thongtham, N & V. Manthachitra, 1992. Structure of coral reef fish communities along the east coast of Thailand. *Thai Fisheries Gazette*, **45**(2): 705-714. (in Thai)
- Williams, J.T., 1988. Revision and phylogenetic relationships of the blennioid fish genus *Cirripectes*. *Indo-Pacific Fishes*, **17**: 1-78.
- Winterbottom, R., 1985. Revision and vicariance biogeography of the subfamily Congrogadinae (Pisces: Perciformes: Pseudochromidae). *Indo-Pacific Fishes*, **9**: 1-34.
- Winterbottom, R. & R.C. Anderson, 1997. A revised checklist of the epipelagic and shore fishes of the Chagos Archipelago, central Indian Ocean. *Ichthyol. Bull.*, **66**: 1-28.
- Winterbottom, R. & M. Burrige, 1993. Revision of the species of *Priolepis* possessing a reduced transverse pattern of cheek papillae and no predorsal scales (Teleostei: Gobiidae). *Can. J. Zool.*, **71**: 494-514.
- Wongratana, T., 1968. *A checklist of fishes caught during the trawl surveys in the Gulf of Thailand and off the east coast of the Malay Peninsula*. Marine Fisheries Laboratory, Bangkok, Thailand. Contribution no. **13**. 96 pp.
- Wongratana, T., N. Chaitanawisuti & P. Menasveta, 1990. The predatory fishes around Khang Khao Island and the adjacent area. *Galaxea*, **8**: 311-319.
- Woodland, D.J., 1983. Zoogeography of the Siganidae (Pisces): An interpretation of distribution and richness patterns. *Bull. Mar. Sci.*, **33**(3): 713-717.
- Woodland, D.J., 1990. Revision of the fish family Siganidae, with descriptions of two new species and comments on distribution and biology. *Indo-Pacific Fishes*, **19**: 1-136.
- Wyrtki, K., 1961. Physical oceanography of the Southeast Asian waters. Scientific results of marine investigations of the South China Sea and the Gulf of Thailand 1959-1961. *NAGA Report*, vol. **2**. 195 pp.
- Yoshino, T. & S. Nishijima, 1981. A list of fishes around Sesoko Island, Okinawa. *Sesoko Mar. Sci. Lab. Tech. Rep.*, **8**: 19-87.

Appendix A. Fish species recorded from the Gulf of Thailand in the recent published taxonomic literatures (references are listed accordingly to the family name) with note on its record by Thai researchers: 1 = Banasopit, 1968, 1969, and 1971; 2 = Menasveta et al., 1986; 3 = Monkolprasit, 1987; 4 = Monkolprasit & Songsirikul, 1988; 5 = Wongratana, et al., 1990; 6 = Sudara et al., 1992; 7 = Thongtham & Manthachitra, 1992; 8 = Manthachitra, 1994; 9 = Thapanand, et al., 1996; and 10 = this study. The following species are selected for reef-associated fishes except those for Lutjanidae and Serranidae of which the recorded species are inclusively listed. The categories of zoogeographical distribution are the same as those presented in Table 2.

| Taxa | Note | Distribution |
|--|------------|--------------|
| APOGONIDAE (Fraser & Lachner, 1985; Gon, 1993; 1995) | | |
| <i>Apogon exostigma</i> (Jordan & Starks, 1906) | 10 | WP |
| <i>Apogon kalosoma</i> Bleeker, 1852 | 2 | WP-EIND |
| <i>Apogon leptacanthus</i> Bleeker, 1856 | - | INWP |
| <i>Cheilodipterus artus</i> Smith, 1960 | 5; 8; 10 | INWP |
| <i>Cheilodipterus macrodon</i> (Lacepède, 1802) | 4-8; 10 | INWP |
| BLENNIIDAE (Springer, 1972; Springer & Williams, 1994; Williams, 1988) | | |
| <i>Blenniella bilitonensis</i> (Bleeker, 1858) | - | WP |
| <i>Cirripectes filamentosus</i> (Alleyne & Macleay, 1877) | 10 | INWP |
| <i>Enchelyurus kraussi</i> (Klunzinger, 1871) | - | INWP |
| <i>Haptogenys quadripora</i> Springer, 1972 | - | ?WP-EIND |
| <i>Istiblennius dussumieri</i> Valenciennes, 1836 | - | INWP |
| <i>Istiblennius edentulus</i> (Bloch & Schneider, 1801) | 10 | INWP |
| <i>Laiphognathus multimaculatus</i> Smith, 1955 | 2 | INWP |
| <i>Omox biporos</i> Springer, 1972 | - | WP |
| <i>Parenchelyurus hepburni</i> (Snyder, 1908) | - | WP |
| CAESIONIDAE (Carpenter, 1987) | | |
| <i>Caesio caerulea</i> Lacepède, 1801 | 8; 10 | INWP |
| <i>Caesio cuning</i> (Bloch, 1791) | 3; 5-8; 10 | WP-EIND |
| <i>Pterocaesio chrysozona</i> (Cuvier, 1830) | 10 | INWP |

Appendix A. Continued

| Taxa | Note | Distribution |
|--|----------------|--------------|
| CHAETODONTIDAE (Burgess, 1978) | | |
| <i>Chaetodon baronessa</i> (Cuvier, 1831) | - | WP |
| <i>Chaetodon octofasciatus</i> Bloch, 1787 | 2-10 | WP-EIND |
| <i>Chaetodon wiebeli</i> Kaup, 1863 | 1; 6-8; 10 | WP |
| <i>Chelmon rostratus</i> (Linnaeus, 1758) | 1-8; 10 | WP |
| <i>Coradion chrysozonus</i> (Cuvier, 1831) | 1; 3 | WP |
| <i>Heniochus acuminatus</i> (Linnaeus, 1758) | 4; 10 | INWP |
| <i>Parachaetodon ocellatus</i> (Cuvier, 1831) | 1; 3 | WP-EIND |
| GOBIIDAE (Lachner & McKinney, 1987; Lachner & Karnella, 1980; Winterbottom & Burridge, 1993; Hoese & Larson, 1994) | | |
| <i>Eviota queenslandica</i> Whitley, 1932 | - | WP |
| <i>Eviota prasina</i> (Klunzinger, 1871) | - | INWP |
| <i>Gobiopsis aporia</i> Lachner & McKinney, 1978 | - | WP-EIND |
| <i>Gobiopsis quinquecincta</i> (Smith, 1931) | - | WP-EIND |
| <i>Gobiopsis woodsi</i> Lachner & McKinney, 1978 | - | WP-EIND |
| <i>Priolepis nuchifasciatus</i> (Günther, 1873) | - | WP |
| <i>Valenciennea limicola</i> Hoese & Larson, 1994 | - | WP |
| <i>Valenciennea muralis</i> (Valenciennes, 1837) | 10 | WP-EIND |
| <i>Valenciennea sexguttata</i> (Valenciennes, 1837) | 10 | WP-EIND |
| <i>Valenciennea wardii</i> (Playfair & Günther, 1867) | - | INWP |
| HOLOCENTRIDAE (Randall & Greenfield, 1996) | | |
| <i>Myripristis hexagona</i> (Lacepède, 1802) | 10 | INWP |
| LUTJANIDAE (Allen & Talbot, 1985) | | |
| <i>Lutjanus argentimaculatus</i> (Forsskål, 1775) | 1; 6; 10 | INWP |
| <i>Lutjanus carponotatus</i> (Richardson, 1842) | 1; 3; 6; 8; 10 | WP-EIND |
| <i>Lutjanus decussatus</i> (Cuvier, 1828) | 1; 6; 8; 10 | WP-EIND |
| <i>Lutjanus erythropterus</i> Bloch, 1790 | - | WP-EIND |
| <i>Lutjanus johnii</i> (Bloch, 1792) | 1; 6; 10 | INWP |
| <i>Lutjanus lutjanus</i> Bloch, 1790 | 1; 10 | INWP |
| <i>Lutjanus malabaricus</i> (Bloch & Schneider, 1801) | - | INWP |
| <i>Lutjanus quinquelineatus</i> Bloch, 1790 | 1; 2 | WP-EIND |
| <i>Lutjanus russelli</i> (Bleeker, 1849) | 1; 3; 5-8; 10 | INWP |
| <i>Lutjanus sebae</i> (Cuvier, 1828) | 1; 8 | INWP |
| <i>Lutjanus vitta</i> (Quoy & Gaimard, 1824) | 1; 2; 5-10 | INWP |
| MICRODESMIDAE (Randall & Hoese, 1985; Rennis & Hoese, 1985) | | |
| <i>Parioglossus formosus</i> (Smith, 1931) | - | WP |
| <i>Parioglossus philippinus</i> (Herre, 1940) | 10 | INWP |
| <i>Ptereleotris microlepis</i> (Bleeker, 1856) | 10 | INWP |
| PLESIOPIDAE (Mooi, 1995) | | |
| <i>Plesiops coeruleolineatus</i> Rüppell, 1835 | - | INWP |
| POMACENTRIDAE (Allen, 1991) | | |
| <i>Abudefduf bengalensis</i> (Bloch, 1787) | 2; 3; 5-8; 10 | WP-EIND |
| <i>Amblyglyphidodon curacoa</i> (Bloch, 1787) | 2; 3; 6-10 | WP |
| <i>Amphiprion perideraion</i> Bleeker, 1855 | 2; 4; 6-8; 10 | WP |
| <i>Amphiprion polymnus</i> (Linnaeus, 1758) | 4; 10 | WP |
| <i>Dascyllus reticulatus</i> (Richardson, 1846) | 4; 6; 7; 10 | WP |
| PSEUDOCROMIDAE (Winterbottom, 1985) | | |
| <i>Congrogadus subducens</i> (Richardson, 1843) | 10 | WP |
| SERRANIDAE (Randall & Hoese, 1986; Randall & Heemstra, 1991) | | |
| <i>Aethaloperca roga</i> (Forsskål, 1775) | - | INWP |
| <i>Anyperodon leucogrammicus</i> (Valenciennes, 1828) | 4; 10 | INWP |
| <i>Cephalopholis boenak</i> (Bloch, 1790) | 1; 2; 4-10 | INWP |

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Appendix A. Continued

| Taxa | Note | Distribution |
|---|----------------|--------------|
| <i>Cephalopholis cyanostigma</i> (Valenciennes, 1828) | 1; 3; 6; 10 | WP |
| <i>Cephalopholis formosa</i> (Shaw & Nodder, 1812) | 1-3; 5-10 | INWP |
| <i>Cephalopholis microprion</i> (Bleeker, 1852) | 10 | WP |
| <i>Cromileptes altivelis</i> (Valenciennes, 1828) | 1 | WP |
| <i>Epinephelus areolatus</i> (Forsskål, 1775) | 1; 9 | INWP |
| <i>Epinephelus bleekeri</i> (Vaillant, 1877) | 1; 10 | WP-EIND |
| <i>Epinephelus coioides</i> (Hamilton, 1822) | 1; 10 | INWP |
| <i>Epinephelus corallicola</i> (Valenciennes, 1828) | 1 | WP |
| <i>Epinephelus erythrurus</i> (Valenciennes, 1828) | 1; 10 | IM-EIND |
| <i>Epinephelus fasciatus</i> (Forsskål, 1775) | 1; 6; 8; 10 | INWP |
| <i>Epinephelus heniochus</i> Fowler, 1904 | - | WP |
| <i>Epinephelus lanceolatus</i> (Bloch, 1790) | 1; 4 | INWP |
| <i>Epinephelus ongus</i> (Bloch, 1790) | 1; 10 | INWP |
| <i>Epinephelus quoyanus</i> (Valenciennes, 1830) | 1; 3; 4; 6; 10 | WP |
| <i>Epinephelus sexfasciatus</i> (Valenciennes, 1828) | 1 | IM |
| <i>Plectropomus maculatus</i> (Bloch, 1790) | 1; 3; 6-8; 10 | WP |
| SIGANIDAE (Woodland, 1990) | | |
| <i>Siganus canaliculatus</i> (Park, 1797) | 3; 8-10 | WP-EIND |
| <i>Siganus corallinus</i> (Valenciennes, 1835) | 6; 10 | INWP |
| <i>Siganus guttatus</i> (Bloch, 1787) | 3-8; 10 | WP |
| <i>Siganus javus</i> (Linnaeus, 1766) | 6-8; 10 | WP-EIND |
| <i>Siganus punctatus</i> (Bloch & Schneider, 1801) | 10 | WP |
| <i>Siganus virgatus</i> (Valenciennes, 1835) | 6; 9; 10 | WP-EIND |
| SYNGNATHIDAE (Dawson, 1981; 1985) | | |
| <i>Choeroichthys brachysoma</i> (Bleeker, 1855) | 2 | INWP |
| <i>Corythoichthys amplexus</i> Dawson & Randall, 1975 | - | INWP |
| <i>Cosmocampus investigatoris</i> (Hora, 1925) | - | INWP |
| <i>Doryrhamphus excisus excisus</i> Kaup, 1856 | - | INWP |
| <i>Doryrhamphus janssi</i> (Herald & Randall, 1972) | 2; 10 | WP |
| <i>Halicampus grayi</i> Kaup, 1856 | - | INWP |
| <i>Phoxocampus belcheri</i> (Kaup, 1856) | - | INWP |
| TRIPTERYGIIDAE (Hansen, 1986) | | |
| <i>Helcogramma obtusirostre</i> Klunzinger, 1871 | - | INWP |

Appendix B. Selected species list of reef fishes had previously been reported from the Gulf of Thailand by Thai researchers but are not found in this study. The references, including either published or unpublished reports, used for this extraction are as follows: 1 = Banasopit, 1968, 1969, and 1971; 2 = Menasveta et al., 1986; 3 = Monkolprasit, 1987; 4 = Monkolprasit & Songsirikul, 1988; 5 = Wongratana et al., 1990; 6 = Sudara et al., 1992; 7 = Thongtham & Manthachitra, 1992; 8 = Manthachitra, 1994; and 9 = Thapanand et al., 1996. The categories of zoogeographical distribution are the same as those presented in Table 2.

Key to symbols:

- 1 = presence
- 0 = absence
- (1) = record by the corresponding author with changes or corrections
- ? = doubtful
- (Syn.) = synonym
- (Misiden.) = misidentification
- (Err.) = erroneous
- @ = note at the end of appendix
- nd = not determined

| Taxa | References | | | | | | | | | Distribution |
|--|------------|-----|-----|---|---|-----|---|---|---|--------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| APOGONIDAE | | | | | | | | | | |
| <i>Apogon aureus</i> (Lacepède, 1802) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | INWP |
| ^{®1} <i>Apogon fasciatus</i> (Shaw, 1790) | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | INWP |
| (Syn.) <i>A. quadrifasciatus</i> Cuvier | | | (1) | | | (1) | | | | |
| (?Err.) <i>A. quadrilineatus</i> | | | | | | (1) | | | | |
| ^{®2} <i>Apogon kalosoma</i> Bleeker, 1852 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| (Misiden.) <i>A. multitaeniatus</i> | | (1) | | | | | | | | |
| <i>Apogon novemfasciatus</i> Cuvier, 1828 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Apogon semilineatus</i> Schlegel, 1846 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | WP |
| <i>Apogon septemstriatus</i> Günther, 1880 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | WP |
| <i>Apogon</i> spp. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | nd |
| ATHERINIDAE | | | | | | | | | | |
| <i>Hypoatherina temminckii</i> (Bleeker, 1855) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| BATRACHOIDIDAE | | | | | | | | | | |
| <i>Allenbatrachus grunniens</i> (Linnaeus, 1758) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| = <i>Batrachthys grunniens</i> | | (1) | | | | | | | | |
| BELONIDAE | | | | | | | | | | |
| <i>Ablennes hians</i> (Valenciennes, 1846) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | CIR |
| <i>Strongyrura incisa</i> (Valenciennes, 1846) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | INWP |
| <i>Tylosurus acus melanotus</i> (Bleeker, 1850) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | CIR |
| <i>Tylosurus</i> sp. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | nd |
| BLENNIIDAE | | | | | | | | | | |
| <i>Laiphognathus multimaculatus</i> Smith, 1955 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| (Err.) <i>L. multilineatus</i> | | (1) | | | | | | | | |
| BYTHITIDAE | | | | | | | | | | |
| <i>Dinematichthys iluocoeteoides</i> Bleeker, 1855 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP |
| CAESIONIDAE | | | | | | | | | | |
| <i>Caesio lunaris</i> Cuvier, 1830 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | INWP |
| CALLIONYMIDAE | | | | | | | | | | |
| <i>Callionymus filamentosus</i> Valenciennes, 1837 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| (Syn.) <i>Callionymus brunneus</i> Fowler | | | | | | | | | | |
| (Err.) <i>C. bronneus</i> | | (1) | | | | | | | | |
| <i>Callionymus enneactis</i> Bleeker, 1879 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP |
| = <i>Paradipolgrammus enneactis</i> | | (1) | | | | | | | | |
| <i>Callionymus</i> spp. | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | nd |
| CARANGIDAE | | | | | | | | | | |
| <i>Alectis indicus</i> (Rüppell, 1830) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| <i>Alepes djedaba</i> (Forsskål, 1775) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| <i>Carangoides armatus</i> (Rüppell, 1830) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| CENTROPOMIDAE | | | | | | | | | | |
| <i>Lates calcarifer</i> (Bloch, 1790) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | WP-EIND |
| <i>Psamoperca waigiensis</i> (Cuvier, 1828) | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | WP-EIND |
| CHAETODONTIDAE | | | | | | | | | | |
| <i>Chaetodon</i> sp. | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | nd |
| <i>Coradion chrysozonus</i> (Cuvier, 1831) | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Parachaetodon ocellatus</i> (Cuvier, 1831) | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| CLUPEIDAE | | | | | | | | | | |
| <i>Amblygaster sirm</i> (Walbuam, 1792) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| DIODONTIDAE | | | | | | | | | | |
| <i>Diodon holocanthus</i> Linnaeus, 1758 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | CIR |
| ECHENEIDAE | | | | | | | | | | |
| <i>Echenius naucrates</i> Linnaeus, 1758 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | COS |

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Appendix B. Continued

| Taxa | References | | | | | | | | | Distribution |
|---|------------|-----|-----|-----|---|---|---|---|-----|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| EPHIPPIDAE | | | | | | | | | | |
| <i>Platax teira</i> (Forsskål, 1775) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| GERREIDAE | | | | | | | | | | |
| <i>Gerres abbreviatus</i> Bleeker, 1850 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | WP-EIND |
| <i>Gerres oblongus</i> Cuvier, 1830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Gerres</i> sp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | nd |
| GOBIESOCIDAE | | | | | | | | | | |
| <i>Lepadichthys</i> sp. | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | nd |
| GOBIIDAE | | | | | | | | | | |
| <i>Bathygobius fuscus</i> (Rüppell, 1830) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| (Syn.) <i>B. mearnsi</i> (Evermann & Seale) | | (1) | | | | | | | | |
| <i>Cryptocentrus pavoninoides</i> (Bleeker, 1849) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | WP-EIND |
| <i>Gobiodon citrinus</i> (Rüppell, 1838) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| (Syn.) <i>G. erythrospilus</i> Bleeker | | | | (1) | | | | | | |
| <i>Gobiodon micropus</i> Günther, 1861 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | WP |
| <i>Gobiodon quinquestrigatus</i> (Valenciennes, 1837) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| ? <i>Rhinogobius baliuroides</i> (Bleeker, 1849) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | nd |
| ^{@3} (?Misiden.) <i>Pterogobius</i> sp. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | (Japan-Korea) |
| <i>Priolepis semidoliatus</i> (Valenciennes, 1837) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| HEMIRHAMPHIDAE | | | | | | | | | | |
| <i>Hyporhamphus dussumieri</i> (Valenciennes, 1846) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| HOLOCENTRIDAE | | | | | | | | | | |
| <i>Myripristis botche</i> Valenciennes, 1829 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| (Syn.) <i>M. melanostictus</i> Bleeker | | | (1) | | | | | | | |
| (?Err.) <i>M. melanostigma</i> | | | (1) | | | | | | | |
| <i>Myripristis murdjan</i> (Forsskål, 1775) | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | INWP |
| <i>Myripristis violacea</i> Bleeker, 1851 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | INWP |
| LABRIDAE | | | | | | | | | | |
| <i>Choerodon anchorago</i> (Bloch, 1791) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | WP-EIND |
| <i>Choerodon</i> sp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | nd |
| ^{@4} <i>Stethojulis bandanensis</i> (Bleeker, 1851) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | WP |
| (Misiden.) <i>S. axillaris</i> | | | (1) | | | | | | | (Hawaii) |
| <i>Stethojulis</i> sp. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | nd |
| LETHRINIDAE | | | | | | | | | | |
| <i>Gymnocranius grandoculis</i> (Valenciennes, 18300) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| (Syn.) <i>G. robinsoni</i> (Gilchrist & Thompson) | | | | | | | | | (1) | |
| <i>Lethrinus</i> sp. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | nd |
| LUTJANIDAE | | | | | | | | | | |
| ^{@5} <i>Lutjanus bohar</i> (Forsskål, 1775) | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | INWP |
| (Misiden.) <i>L. janthinuropterus</i> | (1) | | | | | | | | | |
| <i>Lutjanus kasmira</i> (Forsskål, 1775) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | INWP |
| ^{@6} <i>Lutjanus quinquelineatus</i> Bloch, 1790 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| (Misiden.) <i>L. caeruleolineatus</i> | | | (1) | | | | | | | |
| (Misiden.) <i>L. kasmira</i> | (1) | | | | | | | | | |
| <i>Lutjanus sebae</i> (Cuvier, 1828) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | INWP |
| ^{@7} <i>Lutjanus timorensis</i> (Quoy & Gaimard, 1824) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP |
| (Misiden.) <i>L. malabaricus</i> | (1) | | | | | | | | | |
| MICRODESMIDAE | | | | | | | | | | |
| <i>Parioglossus</i> sp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | nd |
| <i>Ptereleotris</i> sp. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | nd |
| MONACANTHIDAE | | | | | | | | | | |
| <i>Aluterus monoceros</i> (Linnaeus, 1758) | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | CIR |

Appendix B. Continued

| Taxa | References | | | | | | | | | Distribution |
|---|------------|---|-----|-----|-----|-----|-----|-----|-----|--------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| <i>Monacanthus chinensis</i> Osbeck, 1765 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | WP |
| <i>Paramonacanthus choirocephalus</i> (Bleeker, 1852) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | IA |
| (Syn.) <i>Monacanthus nemurus</i> Bleeker | | | | (1) | | | | | | |
| MUGILIDAE | | | | | | | | | | |
| <i>Chelon</i> spp. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | nd |
| = <i>Liza</i> spp. | | | | | | | (1) | (1) | | |
| <i>Moolgarda pedaraki</i> (Valenciennes, 1836) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| (Syn.) <i>Valamugil buchanani</i> (Bleeker) | | | | | | | | | (1) | |
| <i>Oedalechilus labiosus</i> (Valenciennes, 1836) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| MURAENIDAE | | | | | | | | | | |
| <i>Gymnothorax boschii</i> (Bleeker, 1853) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| = <i>Lycodontis boschi</i> | | | | | (1) | | | | | |
| (Err.) <i>Lycodontis leoschi</i> | | | | (1) | | | | | | |
| <i>Gymnothorax undulatus</i> (Lacepède, 1803) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| = <i>Lycodontis undulatus</i> | | | | (1) | (1) | | | | | |
| <i>Gymnothorax</i> sp. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | nd |
| <i>Siderea delicatula</i> (Kaup, 1856) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| = <i>Echidna delicatula</i> | | | | (1) | | | | | | |
| NEMIPTERIDAE | | | | | | | | | | |
| <i>Nemipterus hexodon</i> (Quoy & Gaimard, 1824) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | WP |
| <i>Scolopsis taeniopterus</i> (Kuhl & van Hasselt, 1830) | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | WP |
| OSTRACIIDAE | | | | | | | | | | |
| <i>Lactoria cornuta</i> (Linnaeus, 1758) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ^{®8} <i>Ostracion nasus</i> Bloch, 1785 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| = <i>Rhynchostracion nasus</i> | | | | | (1) | | | | | |
| PINGUIPEDIDAE | | | | | | | | | | |
| ? <i>Parapercis cf. kamoharai</i> Schultz, 1968 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | (Japan) |
| <i>Parapercis xanthozona</i> (Bleeker, 1849) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| (Err.) <i>P. xanthozoma</i> | | | | (1) | | | | | | |
| <i>Parapercis</i> sp. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | nd |
| PEMPHERIDAE | | | | | | | | | | |
| <i>Pempheris adusta</i> Bleeker, 1877 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| <i>Pempheris moluca</i> Cuvier, 1831 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| POMACANTHIDAE | | | | | | | | | | |
| <i>Pygoplites diacanthus</i> (Boddaert, 1772) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | INWP |
| POMACENTRIDAE | | | | | | | | | | |
| <i>Abudefduf septemfasciatus</i> (Cuvier, 1830) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| (?Misiden.) <i>Chromis fumeus</i> (Tanaka, 1917) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | (WP) |
| <i>Chromis viridis</i> (Cuvier, 1830) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | INWP |
| = <i>C. caeruleus</i> (invalid) | | | | | | (1) | | | | |
| <i>Chromis</i> sp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | nd |
| ^{®9} (?Misiden.) <i>Chrysiptera hemicyanea</i> (Weber, 1931) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | (IA) |
| <i>Neopomacentrus azyron</i> (Bleeker, 1877) | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | INWP |
| ? <i>Neopomacentrus nemurus</i> (Bleeker, 1857) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | (IA) |
| <i>Neopomacentrus taeniurus</i> (Bleeker, 1856) | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | INWP |
| = <i>Pomacentrus taeniurus</i> | | | (1) | (1) | | | | | | |
| <i>Plectroglyphidodon leucozonus</i> (Bleeker, 1859) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| = <i>Abudefduf leucozonus</i> | | | (1) | | | | | | | |
| ^{®10} (?Misiden.) <i>Pomacentrus albimaculus</i> Allen, 1975 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | (New Guinea) |
| (Err.) <i>P. albimaculatus</i> | | | | | | (1) | | | | |
| <i>Pomacentrus amboinensis</i> Bleeker, 1868 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | WP |
| <i>Pomacentrus littoralis</i> Cuvier, 1830 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | IM |

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Appendix B. Continued

| Taxa | References | | | | | | | | | Distribution |
|--|------------|---|---|-----|-----|---|---|---|---|---------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| <i>Pomacentrus philippinus</i> Evermann & Seale, 1907 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| <i>Pomacentrus</i> sp. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | nd |
| PSEODOCHROMIDAE | | | | | | | | | | |
| <i>Pseudochromis xanthochir</i> Bleeker, 1855 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| SCARIDAE | | | | | | | | | | |
| <i>Scarus</i> spp. | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | nd |
| = <i>Callyodon</i> sp. | | | | (1) | | | | | | |
| SCOMBRIDAE | | | | | | | | | | |
| <i>Scomberomorus commerson</i> (Lacepède, 1800) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| SCORPAENIDAE | | | | | | | | | | |
| <i>Scorpaena picta</i> (Cuvier, 1829) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| = <i>Parascorpaena picta</i> | | | | (1) | | | | | | |
| <i>Scorpaenopsis cirrhosa</i> (Thunberg, 1793) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| <i>Scorpaenopsis diabolus</i> (Cuvier, 1829) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| <i>Scorpaenopsis venosa</i> (Cuvier, 1829) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| (Syn.) <i>Scorpaenopsis novaeguineae</i> (Cuvier) | | | | (1) | | | | | | |
| SERRANIDAE | | | | | | | | | | |
| <i>Cephalopholis argus</i> Bloch & Schneider, 1801 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | INWP |
| <i>Cephalopholis miniata</i> (Forsskål, 1775) | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Cromileptes altivelis</i> (Valenciennes, 1828) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP |
| <i>Epinephelus areolatus</i> (Forsskål, 1775) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | INWP |
| ^{®11} (?Misiden.) <i>E. bruneus</i> Bloch, 1793 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | (Japan-Philippines) |
| (Syn.) <i>E. moara</i> (Temminck & Schlegel) | | | | | (1) | | | | | |
| <i>Epinephelus corallicola</i> (Valenciennes, 1828) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP |
| ^{®12} <i>Epinephelus epistictus</i> (Temminck & Schlegel, 1824) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| (Misiden.) <i>E. morrhua</i> | (1) | | | | | | | | | |
| <i>Epinephelus lanceolatus</i> (Bloch, 1790) | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| = <i>Promicrops lanceolatus</i> | (1) | | | (1) | | | | | | |
| <i>Epinephelus latifasciatus</i> (Temminck & Schlegel, 1824) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| (Syn.) <i>E. grammicus</i> (Day) | | | | | (1) | | | | | |
| <i>Epinephelus malabaricus</i> (Bloch & Schneider, 1801) | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | INWP |
| <i>Epinephelus sexfasciatus</i> (Valenciennes, 1828) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | IM |
| <i>Epinephelus tauvina</i> (Forsskål, 1775) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | INWP |
| <i>Epinephelus</i> sp. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | nd |
| SIGANIDAE | | | | | | | | | | |
| <i>Siganus lineatus</i> (Valenciennes, 1835) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | WP-EIND |
| SILLAGINIDAE | | | | | | | | | | |
| <i>Sillago aeolus</i> Jordan & Evermann, 1902 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| (Misiden.) <i>S. maculatum</i> | | | | | (1) | | | | | (E. Australia) |
| SOLEIDAE | | | | | | | | | | |
| <i>Pardachirus pavoninus</i> (Lacepède, 1802) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WP-EIND |
| SPHYRAENIDAE | | | | | | | | | | |
| <i>Sphyraena forsteri</i> Cuvier, 1829 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | INWP |
| <i>Sphyraena</i> sp. | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | nd |
| SYNGNATHIDAE | | | | | | | | | | |
| <i>Choeroichthys brachysoma</i> (Bleeker, 1855) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INWP |
| <i>Trachyrhamphus bicoarctatus</i> (Bleeker, 1857) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | INWP |
| = <i>Yozia bicoarctata</i> | | | | (1) | | | | | | INWP |
| TETRAODONTIDAE | | | | | | | | | | |
| <i>Arothron</i> sp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | nd |
| <i>Chelonodon patoca</i> (Hamilton, 1822) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | WP-EIND |

Appendix B. Continued

| Taxa | References | | | | | | | | | Distribution |
|---|------------|---|---|---|---|---|---|---|---|--------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| TRICHIURIDAE | | | | | | | | | | |
| <i>Trichiurus lepturus</i> Linnaeus, 1758 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | COS |
| TRIPTERYGIIDAE | | | | | | | | | | |
| (?Misiden.) <i>Tripterygion bapturnum</i> Jordan & Snyder, 1902 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (Japan) |
| <i>Tripterygion fasciatum</i> Weber, 1913 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | nd |
| <i>Tripterygion</i> sp. | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | nd |

Notes on appendix:

- (1): *Apogon quadrilineatus* may be erroneous (mis-spelling) for the species *A. quadrifasciatus* Cuvier which Randall and Lachner (1986) regarded it as a junior synonym of *A. fasciatus* (Shaw).
- (2): Gon (1995) showed that *Apogon multitaeniatus* is restricted to the Red Sea and Gulf of Aden, while the close related species in eastern Indian Ocean-western Pacific is *A. kalosoma*.
- (3): Several known species of the genus *Pterogobius* have restricted distribution to Japan-Korea. Sudara et al. (1992) may misidentify the fish during sighting (also mis-spelled as *Pterygobius* sp.). I presumed that it might be fish of the genus *Amblygobius* as considering morphological similarity between the two genera.
- (4): Randall and Kay (1974) placed *Stethojulis axillaris* (Quoy & Gaimard) in the synonymy of *S. balteatus* (Quoy & Gaimard), the Hawaii endemic, basing on the initial phase (female) form. The drawing illustration in Monkolprasit and Songsirikul (1988: p. 52, fig. 2) showed 2 small black spots midlaterally at rear of caudal peduncle, which is also accounted as a diagnosis for the female of the Indo-west Pacific *S. interrupta* (Bleeker).
- (5): The illustration of *Lutjanus janthinuropterus* in Banasopit (1968; p. 27) was checked and found to be misidentification. *L. janthinuropterus* (Bleeker) is a synonym of *L. lemniscatus* (Valenciennes).
- (6): The member of the species complex of the blue-striped yellow snappers includes *Lutjanus bengalensis* (Bloch), *L. caeruleolineatus* (Ruppell), *L. kasmira* (Forsskal), *L. notatus* (Cuvier), and *L. quinquelineatus* (Bloch). As *L. caeruleolineatus* has restricted distribution surrounding the Arabian Peninsula, western Indian Ocean (Allen & Talbot, 1985), Menasveta et al. (1986) might misidentify *L. quinquelineatus* which has a wider distribution (WP-EIND) and also shares similar coloration with *L. caeruleolineatus* with the presence of black spot on upper side below spinous-soft dorsal junction. The illustration of *L. kasmira* in Banasopit (1968; p. 31) was checked and also found to be *L. quinquelineatus*.
- (7): The illustration of *Lutjanus malabaricus* in Banasopit (1986; p. 41) was checked and found to be the juvenile form of *L. timorensis* (Quoy & Gaimard).
- (8): Klassen (1995) currently placed the genus *Rhyncostracion* Fraser-Brunner as a junior synonym of the genus *Ostracion* (Linnaeus).
- (9): The record of this species in the Gulf of Thailand is uncertain. Its similarity in color pattern regarding the proportion of blue and yellow on body and fins to that of *Pomacentrus coelestis*, the common species found in the Gulf of Thailand (Table 2), may cause confusion when sighting. Surprisingly, Sudara et al. (1992) reported *Chrysiptera hemicyanea* as a common one without the record of *P. coelestis*.
- (10): The record of this species is doubtful. This species is one among member of the similar species with non-descript dusky coloration (see Allen, 1991), which causing difficulty in separation especially when sighting. As also for the case reported from Singapore (Low et al., 1995), I presume that the record of this fish is misidentification for *P. cuneatus*, one of the most common pomacentrids found in the Gulf of Thailand.
- (11): The record of this species in the Gulf of Thailand is doubtful. Wongrata et al. (1990) might follow Banasopit, 1969 who misidentified and illustrated *E. erythrurus* as *E. moara*. If it is such the case, the fish is *E. erythrurus* (Valenciennes).
- (12): The illustration of *Epinephelus morrhua* in Banasopit (1969; p. 53) was checked and found to be misidentification.