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Marine algae of the South China Sea bordered by Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam

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Abstract. Although the South China Sea (SCS) is one of the most productive marine ecoregions in the world, there is no report of marine algae covering this wide area. We here provide the first checklist of marine algae from the SCS, bordered by Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam. A total of 1,442 species including subspecies and varieties in 96 families were compiled in this checklist; 119 species in 12 families for Cyanophyta, 305 species in 22 families for Chlorophyta, 258 species in 14 families for Ochrophyta and 730 species in 48 families for Rhodophyta. Marine algal flora, compared using the Sorensen's Similarity Index, is very similar between Malaysia, Singapore and Thailand. This preliminary checklist will provide a baseline for future taxonomic and biogeographical studies of marine algae in the region. Further international collaboration among phycologists will improve our knowledge of marine algae in the SCS.

INTRODUCTION

The South China Sea (SCS) encompasses a tropical region stretching from Singapore in the southwest to the Strait of Taiwan in the northeast, across 22° of latitude bounded by the coastlines of Malaysia, Thailand, Cambodia, Vietnam, China, the Philippines, Brunei and Indonesia. On the west, the SCS is separated by a shallow sill from the Gulf of Thailand. The sea surface area is about 3.6 million km², with an average depth of over 1,200 m and a maximum depth of 5,000 m. The SCS contains 7.04% of the world's coral reefs and 0.93% of the world's seamounts, with 0.31% of the sea surface being protected (Heileman, 2008). The SCS is a highly productive (150–300 g C.m⁻² yr⁻¹) region based on global primary productivity estimates. It has a diverse range of habitats including mangroves, seagrass meadows,

coral reefs and soft bottom communities, representing the world's most diverse shallow marine ecosystem (Morton & Blackmore, 2001). The 50 m depth contour largely follows the coast, with the widest shelves occurring along the eastern edge of the large marine ecosystem. Rivers like the Pearl River in Guangdong, China, Red River in northern Vietnam, and Mekong River in southern Vietnam, drain into the SCS, which also harbours islands like Hainan in the northwest, Pahlawan in the southeast as well as numerous small islands, atolls and reefs, including the Spratleys (Morton & Blackmore, 2001). The SCS is influenced by the Southwest Monsoon in the summer and the Northeast Monsoon in the winter. The monsoonal winds and resulting currents greatly influence the distribution of coastal and marine species. The countries at the rim of the SCS are amongst the most densely populated in the world, where coastal and maritime communities depend greatly on marine resources for their livelihoods. The SCS forms part of a megadiversity region in Southeast Asia that extends into the Coral Triangle, where seaweed farming contributes significantly to the enhancement of livelihoods of the coastal and maritime populations. The Coral Triangle produces more than 70% of the global carrageenan (Phang et al., 2010).

The marine algae in this paper refer to the marine macroalgae, commonly called the seaweeds. They are simplistically categorised into green seaweeds (Chlorophyta), brown seaweeds (Ochrophyta) and red seaweeds (Rhodophyta). The filamentous marine blue-green algae (Cyanophyta) are included in the list of marine algal flora of the SCS region, but the marine microalgae and phytoplankton are beyond the scope of this paper and are excluded from the list.

A number of reports and checklists of the marine algal flora of the SCS region have been published, although flora of most of the Southeast Asian countries are still lacking. In recent

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Table 1. References used for compilation of Marine Algae of the South China Sea

Country	References
Indonesia	Liao et al. (2004)
Malaysia	Jelveh Sohrabipour et al. (2013b) Nurridan (2012) Phang et al. (2010a, 2013) Poong et al. (2013a, b) Tan et al. (2013) Zakaria et al. (2006)
Philippines	Ganzon-Fortes (2012) Updated Checklist (Dive dbase) (ET Ganzon-Fortes, 2014, unpublished)
Singapore	Pham et al. (2011) Low & Chou (2013)
Thailand	Coppejans et al. (2010) Prathep et al. (2011)
Vietnam	Pham (1967) Le & Nguyen (2006) Nguyen et al. (2013)

years, major revisions of the marine algal flora have taken place, with new species being described at an increased pace. The present SCS checklist is a first attempt at compiling the available lists of marine algae from the countries bordering the South China Sea. This checklist includes taxa from the Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam. The marine algae from China is not included as the abundant literature will need specialist attention and it is hoped that this preliminary checklist will pave the way for revision, amendments and additions by the phycologists of the South China Sea region. There is insufficient information from Cambodia and Brunei.

MATERIAL AND METHODS

The checklist of marine algae from the South China Sea region only includes taxa reported from Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam, but not those from Cambodia and China. We were unable to find published records of marine algae of Cambodia, while the literature from China could not be processed efficiently for this present paper.

Although a checklist of marine algae of Malaysia found within the South China Sea had been published (Phang et al., 2010), the list of taxa from the other countries were extracted from the most recent checklists available with additions from recent publications where available (Table 1). The nomenclature was checked against the Catalogue of the Marine Benthic Algae of the Indian Ocean (Silva et al., 1996). The list may still require revision and updating of taxa names, but we shall leave it to the next group of authors to do so.

STATUS OF MARINE ALGAL TAXONOMY IN THE SOUTH CHINA SEA REGION

Indonesia. The earliest records of Indonesian marine algae were derived from the collections during the Siboga Expedition (1889–1900) and published by Dr. Anna Weber van Bosse (1913, 1921, 1923, 1926, 1928). Recent years have seen an increase in interest in marine algae by both foreign and local scientists with publications in English making information more accessible to the global community of phycologists (Moosa et al., 1980; Hatta & Prud ‘homme van Reine, 1991; Verheij & Prud ‘homme van Reine, 1993; Atmadja et al., 1996; Istini et al., 1998; Gerung, 2004, 2006, Gerung et al. 2013, Liao et al. 2004; Andriana et al., 2008). Verheij & Prud’ home van Reine (1993) published an extensive report on the marine algae from the Spermonde Archipelago. A total of 199 taxa with 80 taxa of Chlorophyta, 36 taxa of Ochrophyta and 83 taxa of non-coralline and 35 taxa of coralline Rhodophyta were reported. Seventy-two new records for Indonesia and two new species, *Caulerpa buginense* Verheij & Prud’homme van Reine and *Udotea flabellum* (Ellis & Solander) Howe f. *longifolia* Verheij & Prud’homme van Reine were described. The “Pengenalan Jenis-Jenis Rumpaut Laut Indonesia” (Introduction to the types of Indonesian Seaweeds) was published by Atmadja et al. (1996), in the Indonesian language. It was meant as a guide to the identification and use of Indonesian seaweeds through simple annotations, photographs and natural products derived. A total of 44 Chlorophyta, 20 Ochrophyta and 35 Rhodophyta taxa are described. The earliest records of marine algae from the Anambas Islands, which are found in the South China Sea area of Indonesia, were by Taylor (1977) resulting from the 1965 Expedition of Stanford University in the western Pacific Ocean. In 2002, the Expedition Anambas was jointly organised by the Raffles Museum of Biodiversity Research of the National University of Singapore and the

Indonesian Institute of Sciences involving scientists from China, Indonesia, Malaysia, the Philippines, Singapore, Chinese–Taipei, Thailand and Vietnam (Liao et al., 2004). Liao et al. (2004) collected specimens from 11–20 March 2002 from eight islands and four bays, and published the checklist of marine algae from the Anambas and Natuna Islands, representing new records except for the confirmation of *Hypnea cuneiformis*. A total of 29 taxa of Chlorophyta, 22 taxa of Ochrophyta and 23 taxa of Rhodophyta, are included in this checklist. Gerung (2006) reported on the marine algae of the Ambon Islands. More recently Andrianna et al. (2008) reported a total of 23 taxa belonging to five genera collected from Bali and Lombok. *Caulerpa geminata*, *Caulerpa uvifera* and *Sargassum ilicifolium* var. *conduplicatum* were new records for Indonesia.

Malaysia. In addition to the early publications of Weber van Bosse, were contributions of Weber van Bosse & Foslie on Corallinaceae (1904) and Gepp & Gepp on the Codiaceae (1911) on the marine algae from Malaya (later becoming Malaysia with Sabah and Sarawak). Zaneveld (1959), Chuang (1961) and Burkill (1966) reported on the economically important marine algae. Since the late 1980s, marine algal taxonomy in Malaysia has seen a tremendous growth due to the research at the Algae Research Laboratory, University of Malaya by Phang and her collaborators (Phang, 1984, 1998, 2006; Phang et al., 2007, 2008a–c; 2010 a, b; 2013; Masuda et al., 1997a, b, 1999, 2000 a–d, 2001, 2002, 2003; Kawaguchi et al. 2002; Terada et al., 2000; Tani et al., 2003; Yamagishi et al., 2013; Ni-Ni-Win et al., 2012; Lim et al., 2007, 2013; Tan et al., 2014; Poong et al., 2013, 2014; Jelveh et al., 2013a, b). Contributions were also made by Nurridan (2004; 2007; 2012), Wong et al., 2010 a, b, 2012 and Japar Sidek et al., 2012). Ten new species were described since the 1990s, being *Sargassum stolonifolium* Phang et Yoshida, 1997 (Phang & Yoshida, 1997); *Lomentaria gracillima* Masuda et Kogame (Kawaguchi et al., 2002), *Chondria deciduas* Tani & Masuda (Tani et al., 2003), *Dasya longifila* Masuda & Uwai and *D. malaccensis* Masuda & Uwai (Masuda et al., 2003), *Padina sulcata* Ni-Ni-Win, Draisma & Kawai, 2012 (Ni-Ni-Win et al., 2012), *Mesospora elongata* Poong, Lim & Phang 2013 (Poong et al., 2013), *Pterocladia phangiae* Jelveh, Lim & Maggs, 2013 and *Pterocladia megasporangia* Jelveh, Lim & Phang, 2013 (Jelveh et al., 2013) and *Kappaphycus malesianus* Tan, Lim & Phang, 2014 (Tan et al., 2014). In 2013, Phang et al. described 10 species of *Halimeda* from the Sulu-Sulawesi region and Layang-Layang Islands. Of these, seven species namely, *H. cylindraceae*, *H. heteromorpha*, *H. cuneata*, *H. macrophysa*, *H. taenicola*, *H. distorta* and *H. velasquezii* are new records for Malaysia. Jelveh et al. (2013) reported 34 species belonging to seven genera of Gelidiales in Southeast Asia, including Malaysia. Johor, the southern-most state of Peninsular Malaysia is closest to Singapore, and the species reported here will be compared with that of Singapore.

Philippines. The earliest contributions to the algal flora of the Philippines came from Velasquez (Velasquez, 1955, 1957, 1962; Velasquez et al., 1972). Later publications came from Cordero Jr., 1972–1987, Liao & Soto, 1980, Ang Jr.

& Trono Jr., 1987, Silva et al., 1987, Trono Jr., 1992, Kraft et al., 1999, Trono Jr., 2004, and Ganzon-Fortes, 2012. Ganzon-Fortes (2012) reported that the earliest publication on Philippine algae was the “Flora de Filipinas” by an Augustinian monk, Fr. Blanco. In 1980 Trono Jr. and Ganzon-Fortes published a beautifully illustrated seaweed flora of Calatagan, Batangas, comprising brief descriptions of 50 taxa. In 1987, Silva, Menez and Moe published the Catalogue of the Benthic Marine Algae of the Philippines. Notable Filipino phycologists include G.T. Velasquez respected as the “Father of Philippine Phycology”, and G. C. Trono Jr., who published the seaweeds of Bolinao, Pangasinan (Saraya & Trono Jr, 1979, 1982; Trono & Ohno, 1992) and the “Field Guide and Atlas of the Seaweed Resources of the Philippines” (Trono Jr., 1997) documenting 222 described species accompanied by distribution and utilisation data. Hurtado et al. (1992) published a photographic account of the seaweeds of Panay Island. The 2012 checklist of Ganzon-Fortes gives an updated list of marine benthic algae of the Philippines up to 1999, including new species described, new records and revised names, totalling 949 taxa with 61 taxa of Cyanophyta, 212 taxa of Chlorophyta, 154 taxa of Ochrophyta and 522 taxa of Rhodophyta.

Singapore. The early collections of marine algae from Singapore and Malaya are deposited in the Natural History Museum, London, with some duplicates in the Herbarium of the Singapore Botanic Gardens. A preliminary checklist was compiled but many of the specimens were beyond morphological examination and have to be recollected for further studies and confirmation. In 1983, Teo and Wee published the first guide to the seaweeds of Singapore. A total of 585 taxa in 10 divisions were reported by Wee (1994), while a total of 40 new records comprising 10 species of Chlorophyta, four species of Ochrophyta and 26 species of Rhodophyta, were reported by Lee et al. (2009) from a collection of marine algae from artificial structures and intertidal flats in Singapore. An updated checklist (Pham et al., 2011) of Singapore algae included data from early documents (Wee, 1978, 1994). It reported a total of 1,054 species, varieties and forms of algae, both freshwater and marine. Some 150 taxa of marine algae are illustrated by Sin & Wang (2015). In this paper, the list of marine algae reported for Singapore is compiled from Pham et al. (2011) and Low & Chou (2013).

Thailand. The most significant contributor to marine algal flora of Thailand is undoubtedly Khanjanapaj Lewmanomont. Starting from the first checklist of marine benthic algae of Thailand (Velasquez & Lewmanomont, 1975), Lewmanomont and her students went on to publish the diversity of marine algae in Thailand (Chirapart et al., 2003; Pongparadon et al., 2008; Lewmanomont, 2008; Chirapart, 2008; Prathep et al., 2011, Chirapart et al., 2013; Ponparadon & Prathep, 2013; Wichachucherd & Prathep, 2013; Darakrai & Prathep, 2013). Lewmanomont & Ogawa (1995) published a photographic guide to the common seaweeds and seagrasses of Thailand, comprising 2 taxa of Cyanophyta, 41 taxa of Chlorophyta, 26 taxa of Ochrophyta and 49 taxa of Rhodophyta. In 2006 Prathep & Tantiprapas reported on the change in diversity

Table 2. Some marine algal herbaria in Southeast Asia

	Country	Herbaria
1	Brunei	N/A
2	Cambodia	N/A
3	Indonesia	Seaweed Collection, Sam Ratulangi University
4	Malaysia	University of Malaya Seaweeds & Seagrasses Herbarium Seaweed Herbarium, National University of Malaysia Seaweed collection, University of Terengganu Malaysia Seaweed collection, University Sabah Malaysia
5	Philippines	GT Velasquez Phycological Herbarium, Marine Science Institute, University of the Philippines, Diliman Seaweed Collection, University of San Carlos, Cebu
6	Singapore	Herbarium, Singapore Botanic Gardens Lee Kong Chian Natural History Museum
7	Thailand	Seaweed Herbarium, Kasetsart University Seaweed Collection, Prince of Songkla University Reference Collection of the Phuket Marine Biological Centre
8	Vietnam	Seaweed Herbarium, Nha Trang Oceanographic Institute, Vietnam Academy of Sciences and Technology (VAST) Seaweed Herbarium, Nha Trang Institute of Technology Research and Application, Vietnam Academy of Sciences and Technology (VAST) Seaweed Collection, Algae Biotechnology Centre, Institute of Tropical Biology, Vietnam Academy of Sciences and Technology (VAST)

and community structure of macroalgae after the 2004 tsunami at Talibong Island, Trang Province. A total of one species of Cyanophyta, five species each of Chlorophyta and Ochrophyta and seven species of Rhodophyta, were recorded, with 11 of these species having been strongly influenced by the tsunami. Ogawa et al. (2006) reported the presence of *Porphyra crispata*, *P. vietnamensis*, and for the first time, *P. suborbiculata* from Hua Hin, Thailand facing the Gulf of Thailand. Species diversity at Sirinart National Park, Phuket (Prathep, 2005; Thongroy et al., 2007) has been reported. Sampling at five islets at the National Park of Koh Taen, Haad Kanom-Mu Koh Tale Tai, Nakhon Si Thammarat Province (Prathep et al., 2007) revealed a diversity of 2 species of Cyanophyta, 23 species of Chlorophyta, 19 species of Ochrophyta and 16 species of Rhodophyta. Eight species, *Parvocaulis clavalus*, *P. parvulus*, *Monostroma* sp., *Asparagopsis* sp., *Ceratiodyctyon spongiosum*, *Dasya* sp., *Chnoospora* sp. and *Leveillea jungermannioides*, were new records for Thailand. Eleven species of *Ulva* were described by Pongparadon et al. (2008) with the highest diversity reported for Phuket. Fifteen species of *Caulerpa*, as well as *Caulerpella ambigua* were described by Lewmanomont (2008). *Caulerpella* is characterised by presence of compound whorled structures called zoidangia arising from the basal portion of a fertile branch. *Caulerpella* was collected from Chon Buri Province, northern part of the Gulf of Thailand. Chirapart (2008) reviewed the *Gracilaria* of Thailand, and compared the vegetative features of eight species of *Gracilaria*, two species of *Gracilariopsis* and eight species of *Hydropuntia*. A photographic guide to the seaweeds of Mu Ko Tha Lae Tai, southeast Thailand was published by Coppejans et al. (2010). A new species *Rhipidosiphon lewmanomontiae* Coppejans, Leliaert, Verbruggen, Prathep

& De Clerck, belonging to the Bryopsidales was recently described from the Gulf of Thailand (Coppejans et al., 2011). Pongparadon & Prathep (2013) reported eight species of *Halimeda* collected from the Andaman Sea and Gulf of Thailand. *H. macroloba* is the only species found in the Gulf of Thailand. The number of *Padina* species was reported to be 10, with new records *Padina usoehtunii* Ni-Ni-Win et H. Kawai from Andaman Sea and *P. okinawaensis* Ni-Ni-Win, S. Arai et H. Kawai from Gulf of Thailand and Andaman Sea (Wichachucherd & Prathep, 2013). Eight species of *Dictyota* and six species of *Canistrocarpus* were described (Darakrai & Prathep, 2013), with six species found in the Gulf of Thailand.

Vietnam. The earliest checklist of marine algae of Vietnam was by Dawson (1954) who reported the marine algae of Nha Trang Bay. A total of 204 species comprising 16 Cyanophyta, 48 Chlorophyta, 22 Ochrophyta and 118 Rhodophyta, were reported. Publications since then include, Pham (1967; 1969); Nguyen, 1997; Nguyen et al., 1993; Huynh & Nguyen, 1998; Nguyen & Pham, 2002; Le, 2000, 2004; Nguyen et al., 2000; Abbott et al., 2002; Nguyen & Pham, 2003; Tsutsui et al., 2005; Le Nhu Hau & Nguyen, 2006; Le & Lin, 2006; Dang et al., 2007). In 2013, Nguyen et al. published an updated and revised checklist of the marine macroalgae of Vietnam. The Vietnamese flora was also compared with that of Malaysia, Philippines, Taiwan and Thailand. A total of 827 species comprising 88 Cyanophyta, 180 Chlorophyta, 147 Ochrophyta and 412 Rhodophyta were compiled from various published sources. The flora of Vietnam was most similar to the Philippines (Sorensen Similarity Index, $C_s = 0.319$) followed by Malaysia ($C_s = 0.200$), Thailand ($C_s = 0.184$) and Taiwan ($C_s = 0.201$). This checklist was used

for compiling the combined checklist of the South China Sea in this paper.

South China Sea. The early collections and enumerations of marine algae of this region were conducted through expeditions like the Preussische Expedition nach Ost-Asien from 1860 to 1862 that contributed to the early records of marine algae in the Southeast Asian region. The algae were enumerated by Georg von Martens in 1866. During 1899 and 1900, another collection was made in the Indonesian region during the Siboga Expedition. The records were published as monographs including those on *Halimeda* (Barton, 1901), the Codiaceae (Gepp & Gepp, 1911), the Corallinaceae (Weber van Bosse & Foslie, 1904) and in the 'Liste des Algues du Siboga Part 1 and 2 (Weber van Bosse, 1913; 1921). It took a few more decades before phycology became important enough to be included in the curriculum of undergraduate academic programmes and algal research laboratories were established. Table 2 lists some of the herbaria established in Southeast Asia as small teaching and research seaweed herbarium, with some ending up serving as national collections, like the algae collection at the Herbarium of the Singapore Botanic Gardens, which contains Burkill's Algae Collection, and the Seaweed Herbarium, Marine Science Institute, Univ. Philippines, Diliman.

DIVERSITY OF MARINE ALGAE IN THE SOUTH CHINA SEA BORDERED BY SOUTHEAST ASIAN COUNTRIES

The world's described and accepted species of algae number around 12,272 taxa, of which nine species were reported to be threatened (Chapman, 2009). In the Algaebase, 130,870 species and infraspecific names are reported (Algaebase.org, 2014). Silva et al. (1996) reported 3289 taxa in the Indian Ocean, with 1323 type localities. This paper is the first attempt at documenting the marine algal flora of the South China Sea. Using publications that provided checklists, new species, new records, floras of specific regions within countries, a checklist was compiled for the Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam, countries belonging to Southeast Asia (Table 3). The taxa list for Indonesia was taken only from the Anambas and Natuna Islands (Liao et al., 2004), while for Malaysia, Philippines and Thailand, the lists were derived from taxa reported for the South China Sea. The list of taxa from Singapore (Pham et al., 2011) and Vietnam (Nguyen et al., 2013) are recently revised checklists. There is no published information from Brunei and Cambodia. This is a preliminary checklist that may require taxonomic revision and updating at a later date. A total of 1442 taxa in 96 families; with 119 taxa belonging to 12 families of the Cyanophyta; 305 taxa in 22 families of Chlorophyta; 258 taxa in 14 families in the Ochrophyta and 730 taxa in 48 families in the Rhodophyta are included in the SCS checklist. The total number of taxa is not entirely indicative of the species richness of any country, as the efforts in collecting and enumeration of the marine algae varied widely. However it allows for some discussion on similarities in flora. The distribution of families and taxa in the different algal divisions is shown in Table 4. In general, the recent efforts

at compiling the checklist of Vietnam from all published records, has given Vietnam the highest number of taxa (805) followed by the Philippines (631), and Malaysia (355). More rhodophytes have been collected and identified, followed by the chlorophytes. The new generation of phycologists are now trained in molecular taxonomy and systematics, and we now see an increase in taxonomic revisions as well as the description of new species. In Malaysia, since the description of *Sargassum stolonifolium* Phang et Yoshida in 1997, four more new species were described for Malaysia, namely *Mesospora elongata* Poong, Lim & Phang, 2013; *Pterocladia phangiae* Jelveh Sohrabipour, Lim & Maggs 2013; *Pterocladia megasporangia* Jelveh Sohrabipour, Lim & Phang, 2013; *Kappaphycus malesianus* Tan, Lim & Phang, 2013. *Kappaphycus malesianus* is a carrageenophyte commonly found in seaweed farms all over Malaysia, the Philippines, Indonesia and Vietnam. It is appropriate to have named it after the Malesian region. A new species *Rhipidosiphon lewmanomontiae* Coppejans, Leliaert, Verbruggen, Prathep & De Clerck was named in honour of Khanjanapaj Lewmanomont, the pioneer in phycology in Thailand (Coppejans et al., 2011). The doctoral research of Ni-Ni-Win on *Padina* had also contributed significantly to the elucidation of the species of *Padina* in the region (Ni-Ni-Win et al., 2013). She described 10 new species of *Padina*, of which *P. okinawaensis* Ni-Ni-Win, S. Arai & H. Kawai is also found in Indonesia and Thailand; *P. usoehunii* Ni-Ni-Win & H. Kawai is found in Thailand and Myanmar; *P. sulcata* Ni-Ni-Win, S.G.A. Draisma & H. Kawai in Malaysia and Indonesia; *P. calcarea* Ni-Ni-Win, S.G.A. Draisma, W.F. Prud'homme van Reine & H. Kawai in Indonesia and Palau (Ni-Ni-Win et al., 2011; 2012).

As a simple comparison of the marine algal flora, the Sorenson's Similarity Index was calculated (Table 5). From the preliminary checklist, the marine algal flora is observed to be most similar between Thailand and Malaysia (Sorenson's Similarity Index= 0.4471) and between Singapore and Malaysia (Sorenson's Similarity Index= 0.4061).

In addition, the similarity between the marine algae of Johor and Singapore was assessed. A total of 83 taxa (2 taxa belonging to Cyanophyta; 29 Chlorophyta; 27 Rhodophyta; 25 Phaeophyta) were reported for Johor compared to 300 for Singapore (Table 3), with 51 taxa in common, giving a Sorenson's Similarity Index of 0.2663.

REGIONAL INITIATIVES IN SEAWEED TAXONOMY

The Southeast Asian Seaweed Taxonomy Consortium (SEASTax) was established after the First Taxonomy of Seaweeds Workshop, organised by the University of Malaya in Kuala Lumpur in 2007. The 2nd SEASTax workshop was held in 2010 also at the University of Malaya. The objective of the workshop was to bring the experts in selected groups of marine algae to work together with and mentor young phycologists of the Southeast Asian region. Participants bring their specimens from their own countries and work on them during the workshop. A field trip was organised

Table 3. Checklist of the Marine Algae of the South China Sea
(* Marine algae reported for Johor, Peninsular Malaysia)

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Division Cyanophyta						
	Class Cyanophyceae						
	Order Chroococcales						
	Family Spirulinaceae						
1	<i>Spirulina gomontiana</i> (Setchell) Geitler				+		
2	<i>Spirulina major</i> Kützing ex Gomont					+	+
3	<i>Spirulina subsalsa</i> Oersted ex Gomont						+
4	<i>Spirulina subtilissima</i> Kützing ex Gomont						+
5	<i>Spirulina tenerrima</i> Kützing ex Gomont						+
	Order Oscillatoriales						
	Family Microcoleaceae						
6	<i>Dasygloea lamyi</i> (Gomont ex Gomont) Senna & Komárek					+	
	Family Oscillatoriaceae						
7	<i>Blennothrix cantharidosma</i> (Montagne) Anagnostidis & Komárek			+			+
8	<i>Blennothrix comoides</i> (Gomont) Anagnostidis & Komárek			+			
9	<i>Blennothrix glutinosa</i> (Gomont ex Gomont) Anagnostidis & Komárek			+			
10	<i>Blennothrix lyngbyacea</i> (Kützing ex Gomont) Anagnostidis & Komárek	+	+	+		+	+
11	<i>Lyngbya aestuarii</i> Liebman ex Gomont			+			+
12	<i>Lyngbya confervoides</i> C. Agardh ex Gomont		+	+		+	+
13	<i>Lyngbya majuscula</i> Harvey ex Gomont		+	+	+	+	+
14	<i>Lyngbya martensiana</i> Meneghini ex Gomont						+
15	<i>Lyngbya martensiana</i> Meneghini ex Gomont f. <i>tenuivaginata</i> Gomont ex Forti						+
16	<i>Lyngbya meneghiniana</i> Gomont		+				+
17	<i>Lyngbya noronhae</i> Dickie ex Forti				+		
18	<i>Lyngbya penicillata</i> (Gomont) Hoffmann		+				+
19	<i>Lyngbya semiplena</i> J. Agardh ex Gomont		+	+		+	+
20	<i>Lyngbya sordida</i> Gomont		+	+			+
21	<i>Oscillatoria bonnemaisonii</i> P.L. Crouan & H.M. Crouan ex Gomont			+			+
22	<i>Oscillatoria curviceps</i> C. Agardh ex Gomont			+			
23	<i>Oscillatoria indica</i> P.C. Silva						+
24	<i>Oscillatoria limosa</i> C. Agardh ex Gomont						+
25	<i>Oscillatoria margaritifera</i> Kützing ex Gomont			+		+	+
26	<i>Oscillatoria miniata</i> (Zanardini) Hauck ex Gomont						+
27	<i>Oscillatoria princeps</i> Vaucher ex Gomont						+
28	<i>Oscillatoria sancta</i> (Kützing) ex Gomont			+			
29	<i>Oscillatoria subbrevis</i> Schmidle		+	+			
30	<i>Oscillatoria tenuis</i> C. Agardh ex Gomont						+
31	<i>Oscillatoria tenuis</i> C. Agardh ex Gomont var. <i>natans</i> (Kützing) Gomont					+	
32	<i>Oscillatoria yonedae</i> I. Umezaki		+				
	Family Phormidiaceae						
33	<i>Coleofasciculus chthonoplastes</i> (Thuret ex Gomont) M. Siegesmund, J.R. Johansen & T. Friedl					+	+
34	<i>Leibleinia agardhii</i> (Gomont) Anagnostidis & Komárek						+
35	<i>Leibleinia epiphytica</i> (Hieronymus) Compère					+	+
36	<i>Leibleinia sordida</i> (Zanardini ex Gomont) Umezaki & Lewmanomont					+	
37	<i>Phormidesmis molle</i> (Gomont) Turicchia, Ventura, Komárková & Komárek						+
38	<i>Phormidium ambiguum</i> Gomont			+		+	
39	<i>Phormidium breve</i> (Kützing ex Gomont) Anagnostidis & Komárek					+	
40	<i>Phormidium chalybeum</i> (Mertens ex Gomont) Anagnostidis & Komárek					+	
41	<i>Phormidium corallinae</i> (Gomont ex Gomont) Anagnostidis & Komárek					+	+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Phormidiaceae (continued)						
42	<i>Phormidium corium</i> Gomont ex Gomot						+
43	<i>Phormidium endolithicum</i> Ercegovic					+	
44	<i>Phormidium feldmannii</i> Frémy						+
45	<i>Phormidium holdenii</i> (Forti) Branco, Sant'Anna, Azevedo & Sormus					+	
46	<i>Phormidium inundatum</i> Kützing ex Gomont					+	
47	<i>Phormidium laetevirens</i> (P.L. Crouan & H.M. Crouan ex Gomont) Anagnostidis & Komárek		+				
48	<i>Phormidium laysanense</i> Lemmermann			+			
49	<i>Phormidium limosum</i> (Dillwyn) P.C. Silva				+		
50	<i>Phormidium nigroviride</i> (Thwaites ex Gomont) Anagnostidis & Komárek		+	+		+	+
51	<i>Phormidium nigrum</i> (Vaucher ex Gomont) Anagnostidis & Komárek						+
52	<i>Phormidium simplicissimum</i> (Gomont) Anagnostidis & Komárek						+
53	<i>Phormidium tinctorium</i> Kützing ex Gomont			+			
54	<i>Phormidium valderiae</i> (Delp) Geitler			+			
55	<i>Planktothrix isothrix</i> (Skuja) Komárek & Komárková						+
56	<i>Planktothrix rubescens</i> (De Candolle ex Gomont) Anagnostidis & Komárek		+				
57	<i>Porphyrosiphon luteus</i> (Gomont ex Gomont) Anagnostidis & Komárek			+	+	+	+
58	<i>Sirocoleum kurzii</i> (Zeller) Gomont			+			
59	<i>Symploca hydroides</i> Kützing ex Gomont		+	+		+	+
60	<i>Symploca laeteviridis</i> Gomont			+			
61	<i>Symplocastrum coccineum</i> (Gomont) Anagnostidis		+				
62	<i>Trichodesmium hildebrandtii</i> Gomont					+	
	Family Schizotrichaceae						
63	<i>Schizothrix arenaria</i> (Berkeley) Gomont				+		
64	<i>Schizothrix calcicola</i> (C. Agardh) Gomont		+		+		
65	<i>Schizothrix mexicana</i> Gomont			+	+		
66	<i>Schizothrix theleporoides</i> Gomont					+	
67	<i>Trichocoleus acutissimus</i> (N.L. Gardner) Anagnostidis			+			
68	<i>Trichocoleus tenerrimus</i> (Gomont) Anagnostidis			+		+	+
	Order Nostocales						
	Family Microchaetaceae						
69	<i>Microchaete tapahiensis</i> Setchell						+
70	<i>Microchaete vitiensis</i> Askenasy ex Bornet & Flahault					+	+
	Family Nostocaceae						
71	<i>Anabaena licheniformis</i> Bory de Saint-Vincent				+		
72	<i>Anabaena pseudoscillatoria</i> Bory de Saint-Vincent			+			
73	<i>Dolichospermum macrosporum</i> (Klebhan) Wacklin, L.Hoffmann & Komárek				+		
74	<i>Hydrocoryne enteromorphoides</i> (Grunow ex Bornet & Flahault) Umezaki & M.Watanabe			+			+
75	<i>Hydrocoryne soluta</i> (Bornet & Grunow) Umezaki					+	+
76	<i>Nodularia spumigena</i> Mertens ex Bornet & Flahault var. <i>litorea</i> Bornet & Flahault					+	
77	<i>Nostoc commune</i> Vaucher ex Bornet & Flahault				+		+
78	<i>Nostoc paludosum</i> Kützing ex Bornet & Flahault				+		
79	<i>Richelia intracellularis</i> J. Schmidt						+
80	<i>Trichormus variabilis</i> (Kützing ex Bornet & Flahault) Komárek & Anagnostidis		+				
	Family Nostochopsidaceae						
81	<i>Mastigocoleus testarum</i> Lagerheim ex Bornet & Flahault					+	+
	Family Rivulariaceae						
82	<i>Calothrix aeruginea</i> Thuret ex Bornet & Flahault			+			+
83	<i>Calothrix aeruginosa</i> Woronichin						+
84	<i>Calothrix confervicola</i> C. Agardh ex Bornet & Flahault			+			+
85	<i>Calothrix contarenii</i> Bornet & Flahault		+	+			+
86	<i>Calothrix epiphytica</i> West & G.S. West			+			

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Rivulariaceae (continued)						
87	<i>Calothrix nidulans</i> Setchell & N.L. Gardner						+
88	<i>Calothrix parietina</i> Thuret ex Bornet & Flahault			+			+
89	<i>Calothrix pulvinata</i> C. Agardh ex Bornet & Flahault						+
90	<i>Calothrix robusta</i> Setchell & N.L. Gardner			+			
91	<i>Calothrix scopulorum</i> C. Agardh ex Bornet & Flahault			+		+	+
92	<i>Calothrix viguieri</i> Frémy			+			
93	<i>Dichothrix gypsophila</i> Bornet & Flahault			+			
94	<i>Dichothrix penicillata</i> Zanardini ex Bornet & Flahault					+	
95	<i>Gardnerula corymbosa</i> (Harvey) De Toni fil.			+			
96	<i>Gloeotrichia intermedia</i> (Lemmermann) Geitler						+
97	<i>Rivularia atra</i> Roth ex Bornet & Flahault		+				
98	<i>Rivularia atra</i> Roth ex Bornet & Flahault f. <i>hemisphaerica</i> (Bornet & Flahault) Kossinskaja						+
99	<i>Rivularia atra</i> Roth ex Bornet & Flahault var. <i>confluens</i> Bornet						+
100	<i>Rivularia australis</i> Harvey ex Bornet & Flahault						+
101	<i>Rivularia bullata</i> Berkeley ex Bornet & Flahault			+			
102	<i>Rivularia nitida</i> C. Agardh ex Bornet & Flahault			+			
	Family Scytonemataceae						
103	<i>Kyrtuthrix maculans</i> (Gomont) Umezaki			+		+	
104	<i>Scytonema hofman-bangii</i> C. Agardh ex P.C. Silva			+	+		
105	<i>Scytonema ocellatum</i> Lyngbye ex Bornet & Flahault						+
106	<i>Scytonematopsis crustacea</i> (Thuret ex Bornet & Flahault) Koválik & Komárek		+	+		+	+
107	<i>Scytonematopsis pilosa</i> (Harvey ex Bornet & Flahault) Umezaki & Watanabe			+		+	+
	Family Symphyonemataceae						
108	<i>Brachytrichia lloydii</i> (P.L. Crouan & H.M. Crouan) P.C. Silva						+
109	<i>Brachytrichia quoyi</i> Bornet & Flahault		+	+	+	+	+
	Order Pseudanabaenales						
	Family Pseudanabaenaceae						
110	<i>Heteroleibleinia infix</i> a (Frémy) Anagnostidis & Komárek			+			+
111	<i>Heteroleibleinia epiphytica</i> Komárek					+	
112	<i>Heteroleibleinia kuetzingii</i> (Schmidle) Compère					+	
113	<i>Heteroleibleinia mesotricha</i> (Skuja) Anagnostidis & Komárek			+			
114	<i>Leptolyngbya crosbyana</i> (Tilden) Anagnostidis & Komárek		+	+			
115	<i>Leptolyngbya glacialis</i> (West & G.S. West) Anagnostidis & Komárek		+				+
116	<i>Leptolyngbya rivulariarum</i> (Gomont) Anagnostidis & Komárek						+
117	<i>Planktolingbya limnetica</i> (Lemmermann) J. Komarkova-Legnerova & G. Cronberg						+
118	<i>Pseudanabaena limnetica</i> (Lemmermann) Komárek						+
119	<i>Pseudanabaena persicina</i> (Reinke ex Gomont) Anagnostidis			+			
	Division Chlorophyta						
	Class Ulvophyceae						
	Order Ulotrichales						
	Family Gomontiaceae						
120	<i>Gomontia arrhiza</i> Hariot						+
121	<i>Monostroma nitidum</i> Wittrock			+		+	+
	Family Ulotrichaceae						
122	<i>Ulothrix flacca</i> (Dillwyn) Thuret						+
123	<i>Ulothrix subflaccida</i> Wille						+
	Order Phaeophilales						
	Family Phaeophilaceae						
124	<i>Phaeophila dendroides</i> (P.L. Crouan & H.M. Crouan) Batters			+			

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Order Ulvales						
	Family Ulvellaceae						
125	<i>Ulvella lens</i> P. Crouan & H.M. Crouan						+
126	<i>Ulvella viridis</i> (Reinke) R. Nielsen, C.J.O' Kelly & B. Wysor						+
	Family Ulvaceae						
127	<i>Gayralia oxysperma</i> (Kützing) K.L.Vinogradova ex Scagel, R.F., Gabrielson, P.W., Garbary, D.J., Golden, L., Hawkes, M.W., Lindstrom, S.C., Oliveira, J.C. & Widdowson, T.B.			+			+
128	<i>Ulva chaetomorphoides</i> (Børgesen) Hayden, Blomster, Maggs, P.C. Silva, M.J. Stanhope & J.R. Waaland			+			+
129	<i>Ulva clathrata</i> (Roth) C. Agardh		+	+	+	+	+
130	<i>Ulva compressa</i> Forsskål		+	+		+	+
131	<i>Ulva conglobata</i> Kjellman						+
132	<i>Ulva flexuosa</i> Wulfen		+	+		+	
133	<i>Ulva flexuosa</i> subsp. <i>pilifera</i> (Kützing) M.J.Wynne			+			+
134	<i>Ulva flexuosa</i> subsp. <i>paradoxa</i> (C. Agardh) Wynne			+		+	
135	<i>Ulva intestinalis</i> Linnaeus		+	+		+	+
136	<i>Ulva kyllinii</i> (Bliding) Hayden, Blomster, Maggs, P.C. Silva, M.J. Stanhope & J.R.Waaland			+			+
137	<i>Ulva lactuca</i> Linnaeus	+	+	+		+	+
138	<i>Ulva lingulata</i> A.P. de Candolle			+			
139	<i>Ulva papenfussii</i> Pham-Hoàng Hô						+
140	<i>Ulva pertusa</i> Kjellman			+		+	
141	<i>Ulva prolifera</i> O.F. Müller		+	+		+	+
142	<i>Ulva ralfsii</i> (Harvey) Le Jolis						+
143	<i>Ulva reticulata</i> Forsskål	+	+	+		+	+
144	<i>Ulva rigida</i> C. Agardh		+			+	
145	<i>Ulva spinulosa</i> Okamura & Segawa						+
146	<i>Ulva torta</i> (Mertens) Trevisan						+
	Order Cladophorales						
	Family Anadyomenaceae						
147	<i>Anadyomene brownii</i> (J. Gray) J. Agardh			+			
148	<i>Anadyomene esepitata</i> Gilbert			+			
149	<i>Anadyomene plicata</i> C. Agardh		+	+			+
150	<i>Anadyomene stellata</i> (Wulfen) C. Agardh		+	+	+		
151	<i>Anadyomene wrightii</i> Harvey ex J.E.Gray			+	+		+
152	<i>Microdictyon japonicum</i> Setchell			+		+	+
153	<i>Microdictyon nigrescens</i> (Yamada) Setchell						+
154	<i>Microdictyon okamurae</i> Setchell			+			+
155	<i>Microdictyon tenuius</i> J. Gray				+		
156	<i>Microdictyon vanbosseae</i> Setchell						+
	Family Boodleaceae						
157	<i>Boodlea coacta</i> (Dickie) G. Murray & De Toni		+	+			+
158	<i>Boodlea composita</i> (Harvey) Brand		+	+	+	+	+
159	<i>Boodlea montagnei</i> (Harvey ex J. Gray) Eregod				+		
160	<i>Boodlea struveoides</i> Howe		+	+			+
161	<i>Cladophoropsis adhaerens</i> Gilbert						+
162	<i>Cladophoropsis membranacea</i> (Hofman Bang ex C.Agardh) Børgesen		+	+	+		+
163	<i>Cladophoropsis dichotoma</i> (Zanardini) Papenfuss			+			
164	<i>Cladophoropsis fasciculata</i> (Kjellman) Wille						+
165	<i>Cladophoropsis gracillima</i> E.Y. Dawson			+			
166	<i>Cladophoropsis neocaledonica</i> (Grunow ex G.Murray & Boodle) Papenfuss			+			
167	<i>Cladophoropsis sundanensis</i> Reinbold		+		+		
168	<i>Cladophoropsis vaucheriaeformis</i> (Areschoug) Papenfuss				+	+	+
169	<i>Cladophoropsis zollingeri</i> (Kützing) Reinbold			+			
170	<i>Phyllodictyon anastomosans</i> (Harvey) Kraft & M.J. Wynne	+	+	+	+	+	+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Cladophoraceae						
171	<i>Chaetomorpha aerea</i> (Dillwyn) Kützing		+	+	+	+	+
172	<i>Chaetomorpha antennina</i> (Bory de Saint-Vincent) Kützing		+	+	+	+	+
173	<i>Chaetomorpha brachygona</i> Harvey			+			
174	<i>Chaetomorpha basiretrorsa</i> Setchell					+	
175	<i>Chaetomorpha capillaris</i> (Kützing) Børgesen					+	+
176	<i>Chaetomorpha crassa</i> (C. Agardh) Kützing		+	+		+	+
177	<i>Chaetomorpha gracilis</i> Kützing			+	+		+
178	<i>Chaetomorpha indica</i> (Kützing) Kützing				+		+
179	<i>Chaetomorpha javanica</i> Kützing						+
180	<i>Chaetomorpha ligustica</i> (Kützing) Kützing			+	+		
181	<i>Chaetomorpha linum</i> (Müller) Kützing		+	+	+	+	+
182	<i>Chaetomorpha minima</i> Collins & Hervey		+				
183	<i>Chaetomorpha pachynema</i> (Montagne) Kützing						+
184	<i>Chaetomorpha spiralis</i> Okamura		+	+	+		+
185	<i>Cladophora adhaerens</i> Harvey						+
186	<i>Cladophora albida</i> (Nees) Kützing			+			+
187	<i>Cladophora aokii</i> Yamada			+			
188	<i>Cladophora catenata</i> (Linnaeus) Kützing		+	+		+	+
189	<i>Cladophora coelothrix</i> Kützing		+			+	+
190	<i>Cladophora conferta</i> P.L. Crouan & H.M. Crouan			+			
191	<i>Cladophora crispula</i> Vickers				+		+
192	<i>Cladophora cymopoliae</i> Børgesen			+			
193	<i>Cladophora densa</i> Harvey						+
194	<i>Cladophora fasciculata</i> Kützing						+
195	<i>Cladophora fastigiata</i> Harvey						+
196	<i>Cladophora flagelliformis</i> (Suhr) Kützing					+	
197	<i>Cladophora flexuosa</i> (O. F. Müller) Kützing						+
198	<i>Cladophora forsskali</i> (Kützing) Bornet ex De Toni		+				
201	<i>Cladophora fuliginosa</i> Kützing		+				+
202	<i>Cladophora glomerata</i> (Linnaeus) Kützing						+
203	<i>Cladophora herpestica</i> (Montagne) Kützing		+		+	+	+
204	<i>Cladophora inserta</i> Dickie			+			
205	<i>Cladophora japonica</i> Yamada			+			
206	<i>Cladophora laetevirens</i> (Dillwyn) Kützing						+
207	<i>Cladophora liebetruhii</i> Grunow			+			
208	<i>Cladophora papenfussii</i> Pham-Hoàng Hô						+
209	<i>Cladophora patentiramea</i> (Montagne) Kützing				+	+	+
210	<i>Cladophora pellucida</i> (Hudson) Kützing			+			+
211	<i>Cladophora perpusilla</i> Skottsberg & Levring						+
212	<i>Cladophora prolifera</i> (Roth) Kützing		+	+		+	+
213	<i>Cladophora quisumbingii</i> Manza			+			
214	<i>Cladophora rugulosa</i> G. Martens						+
215	<i>Cladophora rupestris</i> (Linnaeus) Kützing			+			
216	<i>Cladophora ryukyuensis</i> Sakai & Yoshida						+
217	<i>Cladophora sakaii</i> I.A. Abbott			+			+
218	<i>Cladophora sericea</i> (Hudson) Kützing			+	+		+
219	<i>Cladophora socialis</i> Kützing						+
220	<i>Cladophora stimpsonii</i> Harvey		+				+
221	<i>Cladophora uncinella</i> Harvey						+
222	<i>Cladophora vagabunda</i> (Linnaeus) Hoek		+	+	+	+	+
223	<i>Cladophora viridifusca</i> (Montagne) Montagne				+		+
224	<i>Cladophora wrightiana</i> Harvey			+			
225	<i>Rhizoclonium africanum</i> Kützing			+	+		
226	<i>Rhizoclonium crassipellitum</i> West & G.S.West var. <i>robustum</i> G.S.West			+			

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
227	<i>Rhizoclonium grande</i> Børgesen			+	+		+
228	<i>Rhizoclonium hookeri</i> Kützing		+				
229	<i>Rhizoclonium riparium</i> (Roth) Harvey					+	+
230	<i>Rhizoclonium riparium</i> (Roth) Harvey var. <i>implexum</i> (Dillwyn) Rosenvinge						+
231	<i>Rhizoclonium tortuosum</i> (Dillwyn) Kützing				+		+
Family Pithophoraceae							
232	<i>Dictyosphaeria cavernosa</i> (Forsskål) Børgesen	+	+	+		+	+
233	<i>Dictyosphaeria cavernosa</i> (Forsskål) Børgesen var. <i>bullata</i> Børgesen			+			
234	<i>Dictyosphaeria intermedia</i> Weber-van Bosse			+			
235	<i>Dictyosphaeria ocellata</i> (M.A.Howe) Olsen-Stojkovich			+			
236	<i>Dictyosphaeria spinifera</i> C.K. Tseng & C.F. Chang						+
237	<i>Dictyosphaeria versluisii</i> Weber-van Bosse		+	+		+	+
Family Siphonocladaceae							
238	<i>Boergesenia forbesii</i> (Harvey) J. Feldmann		+	+	+	+	+
239	<i>Chamaedoris orientalis</i> Okamura & Higashi			+			
240	<i>Struvea ramosa</i> Dickie		+				
Family Valoniaceae							
241	<i>Valonia aegagropila</i> C. Agardh		+*	+		+	+
242	<i>Valonia confervoides</i> Harvey ex J. Agardh			+			
243	<i>Valonia fastigiata</i> Harvey ex J. Agardh			+			+
244	<i>Valonia macrophysa</i> Kützing			+			+
245	<i>Valonia utricularis</i> (Roth) C. Agardh		+	+		+	+
246	<i>Valonia ventricosa</i> J. Agardh	+	+	+		+	+
247	<i>Valoniopsis pachynema</i> (G. Martens) Børgesen		+	+			+
Order Bryopsidales							
Family Bryopsidaceae							
248	<i>Bryopsis corymbosa</i> J. Agardh		+		+		
249	<i>Bryopsis hypnoides</i> J. V. Lamouroux		+		+	+	+
250	<i>Bryopsis indica</i> A. Gepp & E. S. Gepp		+	+	+		+
251	<i>Bryopsis pennata</i> J. V. Lamouroux		+*	+	+	+	+
252	<i>Bryopsis pennata</i> Lamouroux var. <i>secunda</i> (Harvey) Collins & Hervey				+		+
253	<i>Bryopsis pennata</i> Lamouroux var. <i>leprieurii</i> (Kützing) Collins & Hervey				+		
254	<i>Bryopsis plumosa</i> (Hudson) C. Agardh		+*	+	+		+
255	<i>Bryopsis pseudoplumosa</i> V.J. Chapman						+
256	<i>Pedobesia ryukyuensis</i> (Yamada & T. Tanaka) Kobara & Chihara			+			
257	<i>Pseudobryopsis hainanensis</i> C.K. Tseng						+
258	<i>Trichosolen mucronatus</i> (Børgesen) W.R. Taylor						+
259	<i>Trichosolen parvus</i> (E.Y. Dawson) W.R. Taylor						+
260	<i>Trichosolen solomonensis</i> (Womersley & Bailey) John					+	
Family Caulerpaceae							
261	<i>Caulerpa ashmeadii</i> Harvey						+
262	<i>Caulerpa brachypus</i> Harvey			+			+
263	<i>Caulerpa brachypus</i> f. <i>parvifolia</i> (Harvey) A. B. Cribb			+			
264	<i>Caulerpa corynephora</i> Montagne					+	+
265	<i>Caulerpa cupressoides</i> (Vahl) C. Agardh			+	+	+	+
266	<i>Caulerpa cupressoides</i> (Vahl) C. Agardh var. <i>ericifolia</i> (Turner) Weber-van Bosse			+			
267	<i>Caulerpa cupressoides</i> (Vahl) C. Agardh var. <i>lycopodium</i> Weber-van Bosse			+	+		+
268	<i>Caulerpa cupressoides</i> (Vahl) C. Agardh var. <i>mamillosa</i> (Montagne) Weber-van Bosse						+
269	<i>Caulerpa cupressoides</i> (Vahl) C. Agardh var. <i>urvilleana</i> (Montagne) L.M. Hodgson, Pham Huu Tri, K. Lewmanomont & K. J. McDermid						+
270	<i>Caulerpa fastigiata</i> Montagne			+		+	+
271	<i>Caulerpa fastigiata</i> f. <i>minor</i> Weber-van Bosse					+	
272	<i>Caulerpa fergusonii</i> G. Murray			+			

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Caulerpaceae (continued)						
273	<i>Caulerpa filicoides</i> Yamada			+			
274	<i>Caulerpa filiformis</i> (Suhr) Hering					+	
275	<i>Caulerpa freycinetii</i> C. Agardh						+
276	<i>Caulerpa lentillifera</i> J. Agardh	+	+	+	+	+	+
277	<i>Caulerpa lentillifera</i> var. <i>compacta</i> Trono & Ang			+			
278	<i>Caulerpa lessonii</i> Bory de Saint-Vincent			+			
279	<i>Caulerpa manorensis</i> Nizamuddin					+	
280	<i>Caulerpa mexicana</i> Sonder ex Kützing	+	+		+	+	+
281	<i>Caulerpa mexicana</i> Sonder ex Kützing f. <i>vietnamica</i> Pham-Hoàng Hồ						+
282	<i>Caulerpa Mexicana</i> Sonder ex Kützing var. <i>pluriseriata</i> W.R.Taylor			+			
283	<i>Caulerpa microphysa</i> (Weber-van Bosse) Feldmann		+			+	+
284	<i>Caulerpa nummularia</i> Harvey ex J. Agardh		+				+
285	<i>Caulerpa peltata</i> J. V. Lamouroux		+	+		+	+
286	<i>Caulerpa peltata</i> J. V. Lamouroux var. <i>macrodisca</i> (Decaisne) Weber-van Bosse				+	+	+
287	<i>Caulerpa peltata</i> J. V. Lamouroux var. <i>nummularia</i> (Harvey ex J. Agardh) Weber-van Bosse			+			
288	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh	+	+	+	+	+	+
289	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh f. <i>vietnamensis</i> A.D. Zinova & N. H. Dinh						+
290	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh var. <i>racemosa</i> (Forsskål) J. Agardh					+	
291	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh var. <i>racemosa</i> f. <i>remota</i> (Svedelius) Coppenjans					+	
292	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh var. <i>uvifera</i> (C. Agardh) J. Agardh					+	
293	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh var. <i>clavifera</i> (Turner) Weber-van Bosse	+	+		+		
294	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh var. <i>laetevirens</i> (Montagne) Weber-van Bosse			+			
295	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh var. <i>lamourouxii</i> (Turner) Weber-van Bosse						+
296	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh var. <i>macrophysa</i> (Sonder ex Kützing) W.R. Taylor	+	+	+	+	+	+
297	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh var. <i>occidentalis</i> (J. Agardh) Børgesen			+	+		+
298	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh var. <i>peltata</i> (J.V. Lamouroux) Eubank		+				+
299	<i>Caulerpa racemosa</i> (Forsskål) J. Agardh var. <i>turbinata</i> (J. Agardh) Eubank				+		
300	<i>Caulerpa scalpelliformis</i> (Brown ex Turner) C. Agardh		+		+	+	+
301	<i>Caulerpa serrulata</i> (Forsskål) J. Agardh	+	+	+	+	+	+
302	<i>Caulerpa serrulata</i> (Forsskål) J. Agardh f. <i>lata</i> (Weber-van Bosse) C.K. Tseng		+	+			+
303	<i>Caulerpa serrulata</i> (Forsskål) J. Agardh f. <i>spiralis</i> (Weber-van Bosse) Gilbert			+			
304	<i>Caulerpa serrulata</i> (Forsskål) J. Agardh var. <i>boryana</i> (J. Agardh) Gilbert		+	+			+
305	<i>Caulerpa serrulata</i> (Forsskål) J. Agardh var. <i>boryana</i> f. <i>longifolia</i> Gilbert			+			
306	<i>Caulerpa serrulata</i> (Forsskål) J. Agardh var. <i>boryana</i> f. <i>occidentalis</i> (Weber-van Bosse) Yamada & Tanaka		+				
307	<i>Caulerpa serrulata</i> (Forsskål) J. Agardh var. <i>pectinata</i> (Weber-van Bosse) Taylor					+	
308	<i>Caulerpa sertularioides</i> (Gmelin) Howe	+	+	+	+	+	+
309	<i>Caulerpa sertularioides</i> (Gmelin) Howe f. <i>brevipes</i> (J. Agardh) Svedelius			+			
310	<i>Caulerpa sertularioides</i> (Gmelin) Howe f. <i>farlowii</i> (Weber-van Bosse) Børgesen			+		+	
311	<i>Caulerpa sertularioides</i> (Gmelin) Howe f. <i>longipes</i> (J. Agardh) Collin						+
312	<i>Caulerpa sertularioides</i> (Gmelin) Howe f. <i>longiseta</i> (Bory de Saint-Vincent) Svedelius			+			
313	<i>Caulerpa subserrata</i> Okamura			+			
314	<i>Caulerpa taxifolia</i> (Vahl) C. Agardh		+	+	+	+	+
315	<i>Caulerpa urvilleana</i> f. <i>tristicha</i> (J. Agardh) Weber-van Bosse					+	
316	<i>Caulerpa verticillata</i> J. Agardh		+	+	+	+	+
317	<i>Caulerpa verticillata</i> J. Agardh f. <i>charoides</i> Weber van-Bosse						+
318	<i>Caulerpa vesiculifera</i> (Harvey) Harvey			+			
319	<i>Caulerpa webbiana</i> Montagne			+			+
320	<i>Caulerpa webbiana</i> Montagne f. <i>tomentella</i> (Harvey ex J. Agardh) Weber-van Bosse						+
321	<i>Caulerpella ambigua</i> (Okamura) Prud'homme van Reine & Lokhorst			+		+	+
	Family Codiaceae						
322	<i>Codium adhaerens</i> C. Agardh						+
323	<i>Codium arabicum</i> Kützing			+	+	+	+
324	<i>Codium bartlettii</i> Tseng & Gilbert			+			

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Codiaceae (continued)						
325	<i>Codium contractum</i> Kjellman			+			
326	<i>Codium cylindricum</i> Holmes			+			+
327	<i>Codium duthieae</i> P. Silva						+
328	<i>Codium edule</i> P. Silva			+			
329	<i>Codium effusum</i> (Rafinesque) Delle Chiaje				+		
330	<i>Codium formosanum</i> Yamada						+
331	<i>Codium fragile</i> (Suringar) Hariot			+			
332	<i>Codium geppiorum</i> Schmidt	+	+	+	+	+	+
333	<i>Codium intricatum</i> Okamura			+			
334	<i>Codium isthmocladum</i> Vickers						+
335	<i>Codium muelleri</i> Kützing			+			
336	<i>Codium papillatum</i> Tseng & Gilbert			+			
337	<i>Codium repens</i> P. L. Crouan & H. M. Crouan						+
338	<i>Codium tenue</i> (Kützing) Kützing			+			+
339	<i>Codium tomentosum</i> Stackhouse		+	+	+		+
	Family Derbesiaceae						
340	<i>Derbesia attenuata</i> Dawson			+			+
341	<i>Derbesia fastigiata</i> W.R.Taylor				+	+	
342	<i>Derbesia marina</i> (Lyngbye) Solier			+			+
343	<i>Derbesia prolifica</i> W. R. Taylor		+				
344	<i>Derbesia tenuissima</i> (Moris & De Notaris) P. Crouan & H. Crouan			+			
345	<i>Halicystis pyriformis</i> Levring					+	+
	Family Dichotomosiphonaceae						
346	<i>Avrainvillea amadelpa</i> (Montagne) A.Gepp & E. S. Gepp				+	+	+
347	<i>Avrainvillea erecta</i> (Berkeley) A. Gepp & E. S. Gepp		+	+	+	+	+
348	<i>Avrainvillea lacerata</i> Harvey ex J.Agardh			+	+	+	+
349	<i>Avrainvillea lacerata</i> Harvey ex J.Agardh var. <i>robustior</i> A. Gepp & E. Gepp						
350	<i>Avrainvillea longicaulis</i> (Kützing) G. Murray & Boodle		+	+			
351	<i>Avrainvillea obscura</i> (C. Agardh) J. Agardh		+	+	+	+	+
	Family Halimedaceae						
352	<i>Halimeda bikinensis</i> W.R.Taylor			+			
353	<i>Halimeda copiosa</i> Goreau & Graham	+		+			
354	<i>Halimeda cuneata</i> Hering			+			+
355	<i>Halimeda cuneata</i> Hering f. <i>digitata</i> E. S. Barton						+
356	<i>Halimeda cylindracea</i> Decaisne	+		+			+
357	<i>Halimeda discoidea</i> Decaisne	+	+	+	+		+
358	<i>Halimeda discoidea</i> Decaisne f. <i>intermedia</i> Gilbert				+		
359	<i>Halimeda fragilis</i> W.R. Taylor			+	+		
360	<i>Halimeda gigas</i> W.R. Taylor			+			
361	<i>Halimeda gracilis</i> Harvey ex J.Agardh	+		+	+		+
362	<i>Halimeda incrassata</i> (Ellis) Lamouroux	+		+	+		+
363	<i>Halimeda macroloba</i> Decaisne	+	+	+	+	+	+
364	<i>Halimeda macrophysa</i> Askenasy	+					
365	<i>Halimeda melanesica</i> Valet	+					
366	<i>Halimeda micronesica</i> Yamada						+
367	<i>Halimeda opuntia</i> (Linnaeus) Lamouroux	+	+	+	+	+	+
368	<i>Halimeda opuntia</i> (Linnaeus) Lamouroux var. <i>minor</i> Vickers		+		+		
369	<i>Halimeda papyracea</i> Zanardini				+		
370	<i>Halimeda renschii</i> Hauck			+			
371	<i>Halimeda simulans</i> Howe	+	+				
372	<i>Halimeda taenicola</i> W.R. Taylor						+
373	<i>Halimeda tuna</i> (Ellis & Solander) Lamouroux	+	+	+	+		+
374	<i>Halimeda velasquezii</i> W.R.Taylor			+			+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Halimedaceae (continued)						
375	<i>Halimeda velasquezii</i> W.R.Taylor var. <i>robusta</i> P.A.Cordero			+			
376	<i>Halimeda xishaensis</i> C.K.Tseng & M.L. Dong						+
	Family Ostreobiaceae						
377	<i>Ostreobium quekettii</i> Bornet & Flahault						+
	Family Udoteaceae						
378	<i>Boodleopsis carolinensis</i> Trono				+		
379	<i>Boodleopsis pusilla</i> (F.S. Collins) W.R. Taylor, A.B. Joly & Bernatowicz			+			
380	<i>Boodleopsis verticillata</i> E.Y. Dawson			+			
381	<i>Chlorodesmis caespitosa</i> J. Agardh			+		+	
382	<i>Chlorodesmis fastigiata</i> (C. Agardh) Ducker	+		+		+	
383	<i>Chlorodesmis hildebrandtii</i> A. Gepp & E.S. Gepp		+	+	+		+
384	<i>Geppella prolifera</i> C.K. Tseng & M.L. Dong						+
385	<i>Penicillus sibogae</i> A. Gepp & E. Gepp					+	
386	<i>Pseudochlorodesmis furcellata</i> (Zanardini) Børgesen						+
387	<i>Rhipidosiphon javensis</i> Montagne		+	+		+	+
388	<i>Rhipidosiphon lewmanomontiae</i> Coppejans, Leliaert, Verbruggen, Prathep & De Clerck					+	
389	<i>Rhipiliopsis echinocaulos</i> (A.B. Cribb) Farghaly						+
390	<i>Tydemannia expeditionis</i> Weber-van Bosse	+	+	+			+
391	<i>Udotea argentea</i> Zanardini		+	+	+		+
392	<i>Udotea argentea</i> Zanardini var. <i>spumosa</i> Zanardini			+			
393	<i>Udotea cyathiformis</i> Decaisne		+				
394	<i>Udotea flabellum</i> (Ellis & Solander) Howe		+		+	+	+
395	<i>Udotea geppiorum</i> Yamada			+			
396	<i>Udotea glaucescens</i> Harvey ex. J. Agardh				+	+	
397	<i>Udotea indica</i> A. Gepp & E.S. Gepp			+			
398	<i>Udotea orientalis</i> A. Gepp & E.S. Gepp			+			+
399	<i>Udotea papillosa</i> A. Gepp & E. S.Gepp					+	
400	<i>Udotea velutina</i> C. K. Tseng & M. L. Dong						+
	Order Dasycladales						
	Family Dasycladaceae						
401	<i>Bornetella nitida</i> Sonder			+			+
402	<i>Bornetella oligospora</i> Solms-Laubach			+	+		+
403	<i>Bornetella ovalis</i> Yamada			+			
404	<i>Bornetella sphaerica</i> (Zanardini) Solms-Laubach			+	+		+
405	<i>Chlorocladus australasicus</i> Sonder	+					
406	<i>Cymopolia vanbosseae</i> Solms-Laubach			+			
407	<i>Dasycladus vermicularis</i> (Scopoli) Krasser						
408	<i>Neomeris annulata</i> Dickie		+	+			+
409	<i>Neomeris bilimbata</i> Koster	+					+
410	<i>Neomeris vanbosseae</i> Howe	+	+	+		+	+
	Family Polyphysaceae						
411	<i>Acetabularia caliculus</i> J. V. Lamouroux			+			+
412	<i>Acetabularia calyculus</i> J. V. Lamouroux			+			
413	<i>Acetabularia crenulata</i> J. V. Lamouroux		+	+			
414	<i>Acetabularia dentata</i> Solms-Laubach			+	+		
415	<i>Acetabularia major</i> G. Martens		+	+		+	+
416	<i>Acetabularia minutissima</i> Okamura			+			
417	<i>Acetabularia pusilla</i> (Howe) Collins		+				
418	<i>Acetabularia roxasii</i> G.C.Trono, A.C.Santiago & E.Ganzon-Fortes			+			
419	<i>Acetabularia ryukyuensis</i> Okamura & Yamada	+		+			
420	<i>Halicoryne wrightii</i> Harvey	+		+			

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Polyphysaceae (continued)						
421	<i>Parvocaulis clavatus</i> (Yamada) Berger, Fettweiss, Gleissberg, Liddle, Richter, Sawitzky & Zuccarello			+		+	+
422	<i>Parvocaulis exiguus</i> (Solms-Laubach) Berger, Fettweiss, Gleissberg, Liddle, Richter, Sawitzky & Zuccarello		+	+	+	+	
423	<i>Parvocaulis parvula</i> (Solms-Laubach) Schnetter & Bula Meyer		+				
424	<i>Parvocaulis parvulus</i> (Solms-Laubach) Berger, Fettweiss, Gleissberg, Liddle, Richter, Sawitzky & Zuccarello		+	+		+	+
425	<i>Parvocaulis pusillus</i> (M. Howe) S. Berger, U. Fettweiss, S. Gleissberg, L.B. Liddle, U. Richter, H. Sawitzky, H. & G.C. Zuccarello						+
	Xanthophyceae						
	Order Vaucheriales						
	Family Vaucheriaceae						
426	<i>Vaucheria piloboloides</i> Thuret						+
	Division Rhodophyta						
	Class Stylonematophyceae						
	Order Stylonematales						
	Family Stylonemataceae						
427	<i>Stylonema alsidii</i> (Zanardini) Drew					+	
	Class Compsopogonophyceae						
	Order Compsopogonales						
	Family Compsopogonaceae						
428	<i>Compsopogon caeruleus</i> (Balbis ex C. Agardh) Montagne					+	+
	Order Erythropeltidales						
	Family Erythrotrichiaceae						
429	<i>Erythrotrichia carnea</i> (Dillwyn) Agardh					+	
430	<i>Erythrocladia irregularis</i> Rosenvinge						+
431	<i>Erythrocladia pinnata</i> W.R. Taylor						
432	<i>Erythrotrichia bangioides</i> Levring			+			
433	<i>Erythrotrichia biseriata</i> Tanaka			+			
434	<i>Erythrotrichia carnea</i> (Dillwyn) J. Agardh				+		+
435	<i>Erythrotrichia parietalis</i> Tanaka			+		+	+
436	<i>Erythrotrichia parietalis</i> Tanaka var. <i>majuscula</i> Tanaka & Pham H.H.						+
437	<i>Sahlingia subintegra</i> (Rosenvinge) Kormmann				+	+	+
	Order Bangiales						
	Family Bangiaceae						
438	<i>Bangia fuscopurpurea</i> (Dillwyn) Lyngbye					+	+
439	<i>Bangia tanakai</i> Pham H.H.						+
440	<i>Bangia yamadae</i> Tanaka			+			
441	<i>Porphyra atropurpurea</i> (Olivi) De Toni			+			
442	<i>Porphyra crispata</i> Kjellman			+		+	
443	<i>Porphyra marcosii</i> P.A. Cordero			+			
444	<i>Porphyra suborbiculata</i> Kjellman			+		+	+
445	<i>Porphyra tanaka</i> Pham H.H.			+			+
446	<i>Porphyra variegata</i> (Kjellman) Kjellman			+			
447	<i>Pyropia vietnamensis</i> (Tanaka & Pham H.H.) Sutherland & Monotilla					+	+
	Order Porphyridiales						
	Family Porphyridiaceae						
448	<i>Bangiopsis dumontioides</i> (P. Crouan & H. Crouan) V. Krishnamurthy						+
449	<i>Chroodactylon ornatum</i> (C. Agardh) Basson			+			+
450	<i>Stylonema alsidii</i> (Zanardini) Drew			+			+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Class Florideophyceae						
	Subclass Nemaliophycidae						
	Order Acrochaetiales						
	Family Acrochaetiaceae						
451	<i>Acrochaetium barbadense</i> (Vickers) Børgesen						+
452	<i>Acrochaetium catenatum</i> Howe						+
453	<i>Acrochaetium chaetomorphae</i> (Tanaka & Pham H.H.) Heerebout						+
454	<i>Acrochaetium colaconemoides</i> Pham H.H.						+
455	<i>Acrochaetium erectum</i> Børgesen						+
456	<i>Acrochaetium gracile</i> Børgesen			+			
457	<i>Acrochaetium gracile</i> Børgesen var. <i>vietnamense</i> Pham H.H.						+
458	<i>Acrochaetium hancockii</i> (E.Y.Dawson) Papenfuss			+			
459	<i>Acrochaetium hypneae</i> (Børgesen) Børgesen				+		
460	<i>Acrochaetium liagorae</i> Børgesen			+			+
461	<i>Acrochaetium microscopicum</i> (Nageli ex Kützing) Nageli						+
462	<i>Acrochaetium nitidulum</i> I.A. Abbott			+			
463	<i>Acrochaetium papenfussii</i> I.A. Abbott			+			
464	<i>Acrochaetium phuquocensis</i> Pham H.H.						+
465	<i>Acrochaetium polysporum</i> M. Howe						+
466	<i>Acrochaetium pseudoerectum</i> Pham H.H.						+
467	<i>Acrochaetium pulchellum</i> Børgesen						+
468	<i>Acrochaetium robustum</i> Børgesen			+			+
469	<i>Acrochaetium sanctaemariae</i> (Darbishire) G. Hamel						+
470	<i>Acrochaetium sancti-thomae</i> Børgesen						+
471	<i>Acrochaetium seriatum</i> Børgesen			+			
472	<i>Acrochaetium sinicola</i> (Dawson) Papenfuss			+		+	
473	<i>Acrochaetium subseriatum</i> Børgesen						+
474	<i>Acrochaetium virgatulum</i> (Harvey) Batters						+
475	<i>Acrochaetium yamadae</i> (Garbary) Y. Lee et I. K. Lee						+
	Order Colaconematales						
	Family Colaconemataceae						
476	<i>Colaconema gracile</i> (Børgesen) Atewerberhan et Prud'homme						+
477	<i>Colaconema hallandicum</i> (Kyllin) Afonso-Carillo, Sanson, Sangil & Diaz-Villa						+
478	<i>Colaconema hypneae</i> (Børgesen) Santos & Moura			+		+	+
479	<i>Colaconema thuretii</i> (Bornet) P.W. Gabrielson						+
	Order Palmariales						
	Family Palmariaceae						
480	<i>Palmaria palmata</i> (Linnaeus) Weber & Mohr			+			
	Order Nemaliales						
	Family Galaxauraceae						
481	<i>Actinotrichia fragilis</i> (Forsskål) Børgesen	+	+	+	+	+	+
482	<i>Dichotomaria marginata</i> (J. Ellis & Solander) Lamarck	+					+
483	<i>Dichotomaria obtusata</i> (J. Ellis & Solander) Lamarck						+
484	<i>Dichotomaria papillata</i> (Kjellman) Kurihara et Masuda						+
485	<i>Galaxaura apiculata</i> Kjellman			+			
486	<i>Galaxaura arborea</i> Kjellman			+			
487	<i>Galaxaura contigua</i> Kjellman			+			
488	<i>Galaxaura divaricata</i> (Linnaeus) Huisman & R. A. Townsend				+		+
489	<i>Galaxaura falcata</i> Kjellman			+			
490	<i>Galaxaura fasciculata</i> Kjellman		+	+			
491	<i>Galaxaura fastigiata</i> Decaisne						+
492	<i>Galaxaura filamentosa</i> R.C.Y. Chou			+		+	+
493	<i>Galaxaura kjellmanii</i> Weber van-Bosse			+			

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Galaxauraceae (Continued)						
494	<i>Galaxaura marginata</i> (Ellis & Solander) J. V. Lamouroux			+			
495	<i>Galaxaura oblongata</i> (Ellis & Solander) Lamouroux		+				
496	<i>Galaxaura obtusata</i> (J. Ellis & Solander) J. V. Lamouroux			+			
497	<i>Galaxaura rugosa</i> (J. Ellis & Solander) J.V.Lamouroux			+	+		+
498	<i>Galaxaura striata</i> Kjellman			+			
499	<i>Galaxaura subfruticulosa</i> R. Chou			+			
500	<i>Galaxaura subverticillata</i> Kjellman			+			
501	<i>Scinaia boergesenii</i> C. K. Tseng		+				+
502	<i>Tricleocarpa cylindrica</i> (Ellis & Solander) Huisman & Borowitzka	+	+		+	+	+
503	<i>Tricleocarpa fragilis</i> (Linnaeus) Huisman & Townsend		+	+	+		+
	Family Liagoraceae						
504	<i>Akalaphycus sechelliae</i> (Yamada) Huisman, I.A. Abbott & A.R. Sherwood						+
505	<i>Dermonema frapperi</i> (Montagne & Millardet) Børgesen			+			
506	<i>Dermonema pulvinatum</i> (Grunow) Fan						+
507	<i>Dermonema virens</i> (J. Agardh) Pedroche & vila Ortiz						+
508	<i>Dermonema zinovae</i> Nguyen H. Dinh						+
509	<i>Ganonema farinosum</i> (Lamouroux) Fan & Wang	+					+
510	<i>Ganonema pinnatum</i> (Harvey) Huisman						+
511	<i>Ganonema samaense</i> (C. K. Tseng) Huisman						+
512	<i>Helminthocladia australis</i> Harvey			+			+
513	<i>Izziella orientalis</i> (J. Agardh) Huisman & Schils						+
514	<i>Liagora boergesenii</i> Yamada			+			
515	<i>Liagora ceranoides</i> Lamouroux		+	+		+	+
516	<i>Liagora farinosa</i> J. V. Lamouroux			+			
517	<i>Liagora filiformis</i> K.C. Fan & W.H. Li						+
518	<i>Liagora hawaiiiana</i> Butters						+
519	<i>Liagora japonica</i> Yamada			+			+
520	<i>Liagora orientalis</i> J.Agardh			+			
521	<i>Liagora robusta</i> Yamada			+			
522	<i>Liagora segawae</i> Yamada			+			
523	<i>Liagora valida</i> Harvey			+			
524	<i>Neoizziella divaricata</i> (Tseng) Lin, Yang & Huisman	+		+		+	+
525	<i>Titanophycus validus</i> (Harvey) Huisman, G.W. Saunders & A.R. Sherwood						+
526	<i>Trichogloea requienii</i> (Montagne) Kützing			+			
527	<i>Yamadaella caenomyce</i> (Decaisne) Abbott			+			+
	Subclass Corallinophycidae						
	Order Sporolithales						
	Family Sporolithaceae						
528	<i>Sporolithon schmidtii</i> (Foslie) Gordon, Masaki & Akioka						
	Order Corallinales						
	Family Corallinaceae						
529	<i>Amphiroa anastomosans</i> Weber-van Bosse		+	+			
530	<i>Amphiroa anceps</i> (Lamarck) Decaisne		+	+	+	+	+
531	<i>Amphiroa annulata</i> Me. Lemoine			+			
532	<i>Amphiroa beauvoisii</i> Lamouroux		+			+	+
533	<i>Amphiroa dimorpha</i> M. Lemoine			+			
534	<i>Amphiroa echigoensis</i> Yendo						+
535	<i>Amphiroa ephedraea</i> (Lamarck) Decaisne			+			
536	<i>Amphiroa foliacea</i> J. V. Lamouroux		+	+	+	+	+
537	<i>Amphiroa foliacea</i> J.V.Lamouroux f. <i>erecta</i> Weber-van Bosse				+		
538	<i>Amphiroa fragilissima</i> (Linnaeus) Lamouroux		+	+	+	+	+
539	<i>Amphiroa fragilissima</i> (Linnaeus) Lamouroux f. <i>cyathifera</i> (J.V. Lamouroux) Weber-van Bosse		+	+		+	+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Corallinaceae (Continued)						
540	<i>Amphiroa hancockii</i> W.R.Taylor			+			
541	<i>Amphiroa rigida</i> Lamouroux		+		+	+	
542	<i>Amphiroa subcylindrica</i> E.Y.Dawson			+			
543	<i>Amphiroa tribulus</i> (Ellis & Solander) Lamouroux		+		+		
544	<i>Amphiroa valonioides</i> Yendo						+
545	<i>Cheilosporum acutilobum</i> (Decaisne) Piccone		+				
546	<i>Cheilosporum cultratum</i> (Harvey) Areschoug			+			
547	<i>Cheilosporum jungermannioides</i> Ruprecht ex Areschoug		+	+			
548	<i>Cheilosporum sagittatum</i> (J.V.Lamouroux) Areschoug			+			
549	<i>Cheilosporum spectabile</i> Harvey						+
550	<i>Corallina frondescens</i> Postels & Ruprecht			+			
551	<i>Corallina officinalis</i> Linnaeus						+
552	<i>Corallina pilulifera</i> Postels & Ruprecht						+
553	<i>Fosliella dispar</i> Foslie		+				
554	<i>Fosliella farinosa</i> (J.V.Lamouroux) M.A.Howe			+			
555	<i>Hydrolithon farinosum</i> (Lamouroux) Penrose & Chamberlain					+	+
556	<i>Hydrolithon reinboldii</i> (Weber van Bosse) Foslie						+
557	<i>Hydrolithon samoense</i> (Foslie) Keats & Y.M.Chamberlain						+
558	<i>Jania acutiloba</i> (Decaisne) J.H. Kim, Guiry & H.G. Choi						+
559	<i>Jania adhaerens</i> Lamouroux		+	+	+	+	+
560	<i>Jania capillacea</i> Harvey		+	+	+	+	+
561	<i>Jania cultrata</i> (Harvey) J.H.Kim, Guiry & H.G.Choi						+
562	<i>Jania longiarthra</i> Dawson					+	+
563	<i>Jania micarthrodia</i> Lamouroux						+
564	<i>Jania pacifica</i> Areschoug			+			
565	<i>Jania pumila</i> Lamouroux			+			+
566	<i>Jania rubens</i> (Linnaeus) Lamouroux		+	+			+
567	<i>Jania spectabile</i> (Harvey ex Grunow) J.H. Kim, Guiry & H.G. Choi						+
568	<i>Jania squamata</i> (Linnaeus) J.H. Kim, Guiry & H.G. Choi						+
569	<i>Jania tenella</i> (Kützing) Grunow			+		+	
570	<i>Jania tenella</i> (Kützing) Grunow var. <i>zaca</i> E.Y. Dawson			+			
571	<i>Jania ungulata</i> (Yendo) Yendo		+	+		+	+
572	<i>Jania ungulata</i> (Yendo) Yendo f. <i>brevior</i> (Yendo) Yendo			+			
573	<i>Jania verrucosa</i> J.V. Lamouroux				+		
574	<i>Lithophyllum okamurae</i> Foslie						+
575	<i>Lithophyllum pallescens</i> (Foslie) Foslie			+			
576	<i>Lithophyllum pustulatum</i> (J.V. Lamouroux) Foslie						+
577	<i>Lithophyllum pygmacum</i> (Heydrich) Heydrich						+
578	<i>Lithoporella indica</i> (Foslie) Adey						
579	<i>Lithothamnion erubescens</i> f. <i>subflabellatum</i> Foslie						+
580	<i>Mastophora pacifica</i> (Heydrich) Foslie						+
581	<i>Mastophora rosea</i> (C. Agardh) Setchell			+			+
582	<i>Melobesia membranacea</i> (Esper) Lamouroux		+		+	+	
583	<i>Mesophyllum erubescens</i> (Foslie) Me. Lemoine			+			+
584	<i>Mesophyllum simulans</i> (Foslie) M. Lemoine						+
585	<i>Metagoniolithon stelliferum</i> (Lamarck) Ducker						+
586	<i>Neogoniolithon megalocystum</i> (Weber-van Bosse & Foslie) Setchell & L.R. Mason						
587	<i>Neogoniolithon oblimans</i> (Heydrich) P.C.Silva						+
588	<i>Neogoniolithon trichotomum</i> (Heydrich) Setchell & L.R. Mason						+
589	<i>Pneophyllum confervicola</i> (Kützing) Y.M. Chamberlain						+
590	<i>Spongites fruticulosa</i> Kützing					+	
591	<i>Titanoderma pustulatum</i> (Lamouroux) Nägeli					+	
592	<i>Titanophora incrustans</i> (J.Agardh) Børgesen			+			
593	<i>Titanophora weberae</i> Børgesen			+			

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Hapalidiaceae						
594	<i>Mesophyllum erubescens</i> (Foslie) M. Lemoine				+		
	Order Ahnfeltiales						
	Family Ahnfeltiaceae						
595	<i>Ahnfeltia concinna</i> J. Agardh			+			
596	<i>Ahnfeltia furcellata</i> Okamura			+			
597	<i>Ahnfeltia plicata</i> (Hudson) Fries						+
	Family Rhodogorgonaceae						
598	<i>Rhodogorgon ramosissima</i> Norris & Bucher					+	+
	Subclass Rhodymeniophycidae						
	Order Gigartinales						
	Family Acrotylaceae						
599	<i>Antrocentrum nigrescens</i> (Harvey) Kraft & Min-Thein						+
	Family Areschougiaceae						
600	<i>Rhabdonia Schmidii</i> Reinbold					+	
	Family Caulacanthaceae						
601	<i>Catenella impudica</i> (Montagne) J. Agardh				+	+	+
602	<i>Catenella nipae</i> Zanardini		+		+	+	+
603	<i>Catenella subumbellata</i> C.K. Tseng						+
604	<i>Caulacanthus ustulatus</i> (Turner) Kützing		+		+		
605	<i>Montemaria horridula</i> (Montagne) A.B. Joly & Alveal						+
	Family Dicranemataceae						
606	<i>Dicranema revolutum</i> (C. Agardh) J. Agardh			+			
	Family Dumontiaceae						
607	<i>Gibsmithia hawaiiensis</i> Doty						+
608	<i>Rhodopeltis borealis</i> Yamada			+			
609	<i>Rhodopeltis gracilis</i> Yamada & Tanaka			+			
	Family Endocladaceae						
610	<i>Gloiopeltis furcata</i> (Postels & Ruprecht) J. Agardh						+
611	<i>Gloiopeltis tenax</i> (Turner) Decaisne		+	+			+
	Family Gigartinaceae						
612	<i>Chondracanthus acicularis</i> (Roth) Fredericq						+
613	<i>Chondracanthus intermedius</i> (Suringar) Hommersand		+				+
614	<i>Chondracanthus tenellus</i> (Harvey) Hommersand						+
	Family Hypneaceae						
615	<i>Hypnea alopecuroides</i> Kützing						+
616	<i>Hypnea boergesenii</i> Tanaka						+
617	<i>Hypnea caespitosa</i> P.J.L. Geraldino & S.M. Boo				+		
618	<i>Hypnea cenomyce</i> J. Agardh					+	+
619	<i>Hypnea cervicornis</i> J. Agardh		+	+			
620	<i>Hypnea charoides</i> J.V. Lamouroux			+		+	+
621	<i>Hypnea charoides</i> J.V. Lamouroux var. <i>indica</i> Weber van Bosse						+
622	<i>Hypnea cornuta</i> (Kützing) J. Agardh			+		+	+
623	<i>Hypnea cornuta</i> (Kützing) J. Agardh var. <i>stellulifera</i> J. Agardh			+			
624	<i>Hypnea divaricata</i> (C. Agardh) Greville					+	
625	<i>Hypnea esperi</i> Bory de Saint-Vincent		+		+	+	+
626	<i>Hypnea flagelliformis</i> Greville ex J. Agardh						+
627	<i>Hypnea hamulosa</i> (Esper) J. V. Lamouroux					+	+
628	<i>Hypnea japonica</i> Tanaka						+
629	<i>Hypnea musciformis</i> (Wulfen) J. V. Lamouroux			+	+	+	

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Hypneaceae (Continued)						
630	<i>Hypnea musciformis</i> (Wulfen) J. V. Lamouroux var. <i>esperii</i> J. Agardh			+			
631	<i>Hypnea musciformis</i> (Wulfen) J. V. Lamouroux var. <i>hippurioides</i> (Kützinger) Weber-van Bosse			+			
632	<i>Hypnea nidulans</i> Setchell			+			+
633	<i>Hypnea pannosa</i> J. Agardh	+	+	+	+	+	+
634	<i>Hypnea saidana</i> Holmes			+			
635	<i>Hypnea spinella</i> (C. Agardh) Kützinger		+		+	+	+
636	<i>Hypnea stellulifera</i> (J. Agardh) Yamagishi & Masuda		+			+	
637	<i>Hypnea valentiae</i> (Turner) Montagne			+			+
	Family Kallymeniaceae						
638	<i>Callophyllis adhaerens</i> Yamada			+			
639	<i>Callophyllis heanophylla</i> Setchell		+				
640	<i>Callophyllis okamurai</i> P.C. Silva			+			
641	<i>Kallymenia callophyloides</i> Okamura & Segawa			+			
642	<i>Kallymenia sessilis</i> Okamura			+			
	Family Phylloporaceae						
643	<i>Ahnfeltia furcellata</i> Okamura			+			
644	<i>Ahnfeltiopsis concinna</i> (J. Agardh) P.C. Silva & De Cew			+			
645	<i>Ahnfeltiopsis chnoosporoides</i> (Tanaka & Pham H.H.) Masuda						+
646	<i>Ahnfeltiopsis densa</i> (J. Agardh) P.C. Silva & De Cew						+
647	<i>Ahnfeltiopsis divaricata</i> (Holmes) Masuda			+			+
648	<i>Ahnfeltiopsis flabelliformis</i> (Harvey) Masuda						+
649	<i>Ahnfeltiopsis pygmaea</i> (J. Agardh) P.C. Silva & De Cew		+				+
650	<i>Ahnfeltiopsis quinhonensis</i> (Pham H.H.) Masuda						+
651	<i>Ahnfeltiopsis serenei</i> (E.Y. Dawson) Masuda						+
652	<i>Gymnogongrus divaricatus</i> Holmes			+			
653	<i>Gymnogongrus flabelliformis</i> Harvey			+			
654	<i>Gymnogongrus griffithsiae</i> (Turner) Martius						+
655	<i>Gymnogongrus johnstonii</i> (Setchell & N. L. Gardner) E.Y. Dawson						+
	Family Rhizophyllidaceae						
656	<i>Portieria hornemannii</i> (Lyngbye) P. Silva	+	+	+	+		+
657	<i>Portieria japonica</i> (Harvey) P.C. Silva			+			+
	Family Solieriaceae						
658	<i>Betaphycus gelatinus</i> (Esper) Doty ex P.C. Silva			+			+
659	<i>Eucheuma arnoldii</i> Weber-van Bosse			+	+		+
660	<i>Eucheuma crassum</i> Zanardini			+	+		
661	<i>Eucheuma crustiforme</i> Weber-van Bosse			+			
662	<i>Eucheuma denticulatum</i> (N.L. Burman) F.S. Collins & Harvey			+	+		
663	<i>Eucheuma edule</i> (Kützinger) Weber-van Bosse			+	+		+
664	<i>Eucheuma horridum</i> J. Agardh				+		
665	<i>Eucheuma serra</i> (J. Agardh) J. Agardh			+			
666	<i>Kappaphycus alvarezii</i> (Doty) Doty ex P.C. Silva			+			+
667	<i>Kappaphycus cottonii</i> (Weber-van Bosse) Doty ex P. Silva		+	+	+		
668	<i>Kappaphycus inermis</i> (F. Schmitz) Doty ex Nguyen H. Dinh & Huynh			+			+
669	<i>Kappaphycus striatum</i> (F. Schmitz) Doty ex P.C. Silva	+		+			
670	<i>Kappaphycus striatus</i> (F. Schmitz) Doty ex P.C. Silva				+		+
671	<i>Meristotheca papulosa</i> (Montagne) J. Agardh						+
672	<i>Solieria anastomosa</i> P. Gabrielson & Kraft		+				
673	<i>Solieria dura</i> (Zanardini) F. Schmitz			+			
674	<i>Solieria robusta</i> (Greville) Kylin		+		+	+	+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Order Halymeniales						
	Family Halymeniaceae						
675	<i>Carpopeltis affinis</i> (Harvey) Okamura			+			
676	<i>Carpopeltis angusta</i> (Okamura) Okamura			+			
677	<i>Carpopeltis articulata</i> (Okamura) Okamura			+			
678	<i>Carpopeltis crispata</i> Okamura			+			
679	<i>Carpopeltis divaricata</i> Okamura			+			
680	<i>Carpopeltis formosana</i> Okamura			+			
681	<i>Carpopeltis maillardii</i> (Montagne & Millardet) Chiang						+
682	<i>Carpopeltis prolifera</i> (Hariot) Kawaguchi & Masuda			+			
683	<i>Cryptonemia crenulata</i> (J. Agardh) J. Agardh		+	+			
684	<i>Cryptonemia luxurians</i> (C. Agardh) J. Agardh			+			
685	<i>Cryptonemia schmitziana</i> (Okamura) Okamura			+			
686	<i>Cryptonemia umbraticola</i> Dawson					+	
687	<i>Cryptonemia undulata</i> Sonder						+
688	<i>Grateloupia asiatica</i> Kawaguchi & H.W. Wang						+
689	<i>Grateloupia dichotoma</i> J. Agardh						+
690	<i>Grateloupia divaricata</i> Okamura			+			+
691	<i>Grateloupia doryphora</i> (Montagne) M.A. Howe			+			
692	<i>Grateloupia filicina</i> (Lamouroux) C. Agardh		+	+	+		+
693	<i>Grateloupia filicina</i> (Lamouroux) C. Agardh f. <i>porracea</i> (Kützing) M.A. Howe						+
694	<i>Grateloupia filicina</i> (Lamouroux) C. Agardh f. <i>prolongata</i> J. Agardh						+
695	<i>Grateloupia lithophila</i> Børgesen						+
696	<i>Grateloupia livida</i> (Harvey) Yamada		+				+
697	<i>Grateloupia phuquocensis</i> Tanaka & Pham H.H.						+
698	<i>Grateloupia porracea</i> Kützing						+
699	<i>Grateloupia prolongata</i> J. Agardh						+
700	<i>Grateloupia ramosissima</i> Okamura			+			+
701	<i>Halymenia acuminata</i> (Holmes) J. Agardh			+			
702	<i>Halymenia dilatata</i> Zanardini		+*	+	+		+
703	<i>Halymenia durvillei</i> Bory de Saint-Vincent		+*	+	+		
704	<i>Halymenia floresii</i> (Clemente & Rubio) C. Agardh		+	+	+		
705	<i>Halymenia floresii</i> (Clemente & Rubio) C. Agardh subsp. <i>harveyana</i> (J. Agardh) Womersley & Lewis						+
706	<i>Halymenia floresii</i> (Clemente & Rubio) C. Agardh var. <i>ulvoidea</i> Codomier						+
707	<i>Halymenia formosa</i> Harvey ex Kützing		+	+	+		
708	<i>Halymenia harveyana</i> J. Agardh			+			
709	<i>Halymenia maculata</i> J. Agardh		+	+	+		+
710	<i>Halymenia microcarpa</i> (Montagne) P.C. Silva			+	+		
711	<i>Polyopes ligulatus</i> (Harvey ex Kützing) De Toni						+
712	<i>Prionitis cornea</i> (Okamura) E.Y. Dawson			+			
713	<i>Prionitis vietnamensis</i> Pham H.H.						+
714	<i>Yonagunia formosana</i> (Okamura) Kawaguchi & Masuda						+
	Family Peyssonneliaceae						
715	<i>Peyssonnelia boergeseni</i> Weber-van Bosse					+	
716	<i>Peyssonnelia calcea</i> Heydrich			+			+
717	<i>Peyssonnelia caulifera</i> Okamura						+
718	<i>Peyssonnelia conchicola</i> Piccone & Grunow					+	+
719	<i>Peyssonnelia distenta</i> (Harvey) Yamada	+		+			
720	<i>Peyssonnelia inamoena</i> Pilger		+				+
721	<i>Peyssonnelia luzonensis</i> Cordero			+			
722	<i>Peyssonnelia rubra</i> (Greville) J. Agardh		+			+	+
723	<i>Peyssonnelia rubra</i> (Greville) J. Agardh f. <i>orientalis</i> Weber-van Bosse			+			+
724	<i>Peyssonnelia squamaria</i> (S.G. Gmelin) Decaisne			+			
725	<i>Sonderopelta capensis</i> (Montagne) Krayesky					+	+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Order Bonnemaisoniales						
	Family Bonnemaisoniaceae						
726	<i>Asparagopsis taxiformis</i> (Delile) Trevisan de Saint-Léon		+	+	+	+	+
727	<i>Falkenbergia hillebrandii</i> (Bornet) Falkenberg			+			+
	Order Gelidiales						
	Family Gelidiaceae						
728	<i>Gelidiophycus divaricatus</i> (Martens) Boo, Park & Boo					+	
729	<i>Gelidium amansii</i> (Lamouroux) Lamouroux				+	+	
730	<i>Gelidium corneum</i> (Hudson) Lamouroux						+
731	<i>Gelidium crinale</i> (Hare ex Turner) Gailon					+	+
732	<i>Gelidium crinale</i> (Hare ex Turner) Gailon var. <i>perpusillum</i> Piccone & Grunow			+			+
733	<i>Gelidium divaricatum</i> G. Martens			+	+		+
734	<i>Gelidium fasciculatum</i> G. Hamel						+
735	<i>Gelidium isabellae</i> W.R. Taylor			+			
736	<i>Gelidium kintaroi</i> Yamada			+			
737	<i>Gelidium pulchellum</i> (Turner) Kützing						+
738	<i>Gelidium pusillum</i> (Stackhouse) Le Jolis		+	+	+	+	+
739	<i>Gelidium pusillum</i> (Stackhouse) Le Jolis var. <i>minisculum</i> Weber-van Bosse						+
740	<i>Gelidium pusillum</i> (Stackhouse) Le Jolis var. <i>pacificum</i> W.R. Taylor		+	+			
741	<i>Gelidium samoense</i> Reinbold						+
742	<i>Gelidium spathulatum</i> (Kützing) Bornet						+
743	<i>Gelidium vietnamense</i> Pham H.H.						+
744	<i>Pterocladia caloglossoides</i> (Howe) Dawson		+				
745	<i>Pterocladia densa</i> Okamura			+			
746	<i>Pterocladia heteroplatus</i> (Børgesen) Umamaheswara & Kaliaperumal						+
747	<i>Pterocladia nana</i> Okamura		+	+			
748	<i>Pterocladia parva</i> E.Y. Dawson						+
749	<i>Pterocladia caerulea</i> (Kützing) Santelices & Hommersand			+		+	+
750	<i>Pterocladia caloglossoides</i> (Howe) Santelices					+	+
751	<i>Pterocladia capillacea</i> (Gmelin) Santelices & Hommersand			+	+	+	+
752	<i>Pterocladia tenuis</i> (Okamura) Shimada, Horiguchi & Masuda						+
753	<i>Pterocladia sanctarum</i> (Feldmann & Hamel) Santelices					+	
	Family Gelidiellaceae						
754	<i>Gelidiella adnata</i> E.Y. Dawson			+			
755	<i>Gelidiella acerosa</i> (Forsskål) Feldmann & Hamel		+	+	+	+	+
756	<i>Gelidiella fanii</i> Lin					+	
757	<i>Gelidiella lubrica</i> (Kützing) Feldmann & Hamel					+	+
758	<i>Gelidiella myrioclada</i> (Børgesen) Feldmann & G.Hamel						+
759	<i>Parviphycus adnatus</i> (E.Y. Dawson) Santelices						+
760	<i>Parviphycus pannosus</i> (Feldmann) Furnari		+			+	+
	Order Gracilariales						
	Family Gracilariaceae						
761	<i>Congracilaria babae</i> Yamamoto					+	
762	<i>Coralloopsis urvillei</i> (Montagne) J. Agardh var. <i>cereus</i> J. Agardh				+		
763	<i>Gracilaria arcuata</i> Zanardini			+			+
764	<i>Gracilaria arcuata</i> Zanardini var. <i>snackeyi</i> Weber-van Bosse			+			
765	<i>Gracilaria articulata</i> Chang & Xia		+		+		+
766	<i>Gracilaria blodgettii</i> Harvey		+	+	+		+
767	<i>Gracilaria bursa-pastoris</i> (S.G. Gmelin) P.C. Silva			+	+		+
768	<i>Gracilaria canaliculata</i> Sonder		+	+	+	+	+
769	<i>Gracilaria chondracantha</i> (Kützing) A.J.K. Millar						+
770	<i>Gracilaria cliffonii</i> Withell, Millar & Kraft					+	
771	<i>Gracilaria confervoides</i> (Linnaeus) Greville f. <i>ecorticata</i> Valerie						+
772	<i>Gracilaria coronopifolia</i> J. Agardh		+	+	+		+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Gracilariaceae (Continued)						
773	<i>Gracilaria corticata</i> (J. Agardh) J. Agardh				+		
774	<i>Gracilaria crassa</i> Harvey ex J. Agardh		+				
775	<i>Gracilaria cuneifolia</i> (Okamura) I.K. Lee & Kurogi						+
776	<i>Gracilaria damaecornis</i> J. Agardh		+				
777	<i>Gracilaria debilis</i> (Forsskål) Børgesen				+		
778	<i>Gracilaria disticha</i> (J. Agardh) J. Agardh				+		
779	<i>Gracilaria dura</i> (C. Agardh) J. Agardh		+				
780	<i>Gracilaria firma</i> Chang & Xia		+			+	+
781	<i>Gracilaria foliifera</i> (Forsskål) Børgesen						+
782	<i>Gracilaria foliifera</i> ((Forsskål) Børgesen f. <i>aeruginosa</i> Børgesen			+			
783	<i>Gracilaria gigas</i> Harvey			+			+
784	<i>Gracilaria gracilis</i> (Stackhouse) M. Steentoft, L.M. Irvine & W.F. Farnham				+		
785	<i>Gracilaria hainanensis</i> C.F. Chang & B.M. Xia						+
786	<i>Gracilaria incurvata</i> Okamura			+			
787	<i>Gracilaria longirostris</i> Zhang & Wang					+	+
788	<i>Gracilaria mammillaris</i> (Montagne) M.A. Howe						+
789	<i>Gracilaria manilaensis</i> Yamamoto & Trono		+	+	+		
790	<i>Gracilaria minor</i> (Sonder) Durairatnam			+			
791	<i>Gracilaria minuta</i> Lewmanomont				+	+	
792	<i>Gracilaria papenfusii</i> I.A. Abbott			+			
793	<i>Gracilaria punctata</i> (Okamura) Yamada						+
794	<i>Gracilaria rhodymenioides</i> Millar		+		+	+	
795	<i>Gracilaria rubra</i> Chang & Xia					+	+
796	<i>Gracilaria salicornia</i> (C. Agardh) Dawson	+	+	+	+	+	+
797	<i>Gracilaria spinulosa</i> (Okamura) C.F. Chang & B.M. Xia			+			+
798	<i>Gracilaria srilankia</i> (Chang & Xia) Withell, A.J.K. Millar & Kraft				+		
799	<i>Gracilaria stellata</i> I.A. Abbott, J. Zhang & B.M. Xia						+
800	<i>Gracilaria sullivanii</i> Yamamoto & Trono			+			
801	<i>Gracilaria tenuispitata</i> Chang & Xia				+	+	+
802	<i>Gracilaria tenuispitata</i> Chang & Xia var. <i>liui</i> Zhang & Xia						+
803	<i>Gracilaria textorii</i> (Suringar) De Toni						+
804	<i>Gracilaria urvillei</i> (Montagne) Abbott, Zhang & Xia		+		+		
805	<i>Gracilaria vanbosseae</i> (I.A. Abbott) I.A. Abbott				+		
806	<i>Gracilaria vermiculophylla</i> (Ohmi) Papenfuss						+
807	<i>Gracilaria verrucosa</i> (Hudson) Papenfuss		+				
808	<i>Gracilaria vieillardii</i> P.C. Silva			+	+		+
809	<i>Gracilaria yamamotoi</i> J. Zhang & B.M. Xia						+
810	<i>Gracilariopsis bailinae</i> Zhang & Xia		+	+			+
811	<i>Gracilariopsis longissima</i> (S.G. Gmelin) M. Steentoft, I.M. Irvine & W.F. Farnham						+
812	<i>Gracilariopsis chorda</i> (Holmes) Ohmi						+
813	<i>Gracilariopsis irregularis</i> (Abbott) Muangmai, Chirapart & Lewmanomont		+		+	+	+
814	<i>Gracilariopsis nganii</i> Pham H.H.						+
815	<i>Gracilariopsis nhatrangensis</i> Le N.H. & S.-M.Lin						+
816	<i>Gracilariopsis phanthietensis</i> Pham H.H.						+
817	<i>Gracilariopsis rhodotricha</i> E.Y. Dawson						+
818	<i>Hydropuntia changii</i> (Xia & Abbott) Wynne					+	+
819	<i>Hydropuntia divergens</i> (B.M. Xia & I.A. Abbott) M.J. Wynne						+
820	<i>Hydropuntia edulis</i> (Gmelin) Gurgel & Fredericq	+	+	+	+	+	+
821	<i>Hydropuntia euchematooides</i> (Harvey) Gurgel & Fredericq			+	+	+	+
822	<i>Hydropuntia fisheri</i> (B.M. Xia & I.A. Abbott) M.J. Wynne		+			+	+
823	<i>Hydropuntia percurrens</i> (Abbott) Wynne					+	
824	<i>Hydropuntia ramulosa</i> (Chang & Xia) Wynne					+	+
825	<i>Hydropuntia urvillei</i> Montagne				+		

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Order Hildenbrandiales						
	Family Hildenbrandiaceae						
826	<i>Hildenbrandia rubra</i> (Sommerfelt) Meneghini						+
	Order Rhodymeniales						
	Family Champiaceae						
827	<i>Champia bifida</i> Okamura			+			
828	<i>Champia caespitosa</i> E.Y. Dawson			+			
829	<i>Champia compressa</i> Harvey		+	+		+	
830	<i>Champia japonica</i> Okamura			+			
831	<i>Champia parvula</i> (C. Agardh) Harvey		+	+	+	+	+
832	<i>Champia salicornioides</i> Harvey						+
833	<i>Champia vieillardii</i> Kützing		+				+
834	<i>Coelothrix irregularis</i> (Harvey) Børgesen				+		
	Family Lomentariaceae						
835	<i>Ceratodictyon intricatum</i> (C. Agardh) R.E. Norris						+
836	<i>Ceratodictyon repens</i> (Kützing) R.E. Norris						+
837	<i>Ceratodictyon scoparium</i> (Montagne & Millard) R.E. Norris						+
838	<i>Ceratodictyon spongiosum</i> Zanardini		+	+	+	+	+
839	<i>Ceratodictyon variable</i> (J. Agardh) R.E. Norris						+
840	<i>Gelidiopsis hachijoensis</i> Yamada & Segawa		+				
841	<i>Gelidiopsis intricata</i> (C. Agardh) Vickers		+	+	+	+	
842	<i>Gelidiopsis repens</i> (Kützing) Weber-van Bosse		+	+		+	
843	<i>Gelidiopsis variabilis</i> (J. Agardh) Schmitz	+		+		+	
844	<i>Lomentaria articulata</i> (Hudson) Lyngbye			+			
845	<i>Lomentaria baileyana</i> (Harvey) Farlow			+			
846	<i>Lomentaria hakodatensis</i> Yendo			+		+	+
847	<i>Lomentaria monochlamydea</i> (J. Agardh) Kylin		+				
848	<i>Lomentaria pinnata</i> Segawa			+			
	Family Rhodymeniaceae						
849	<i>Botryocladia leptopoda</i> (J. Agardh) Kylin				+		+
850	<i>Botryocladia skottsbergii</i> (Børgesen) Levring			+	+		+
851	<i>Chamaebotrys boergesenii</i> (Weber-van Bosse) Huisman		+				
852	<i>Chrysiomenia procumbens</i> Weber-van Bosse				+		
853	<i>Erythrocolon podagricum</i> J. Agardh			+			
854	<i>Halichrysis micans</i> (Hauptfleisch) P. Huve & H. Huve						+
855	<i>Halichrysis irregularis</i> (Kützing) Millar					+	
856	<i>Rhodymenia californica</i> Kylin			+			
857	<i>Rhodymenia coacta</i> Okamura & Segawa			+			+
858	<i>Rhodymenia decumbens</i> W.R. Taylor			+			
859	<i>Rhodymenia intricata</i> (Okamura) Okamura						+
860	<i>Rhodymenia liniformis</i> Okamura						+
861	<i>Wurdemannia miniata</i> (Sprengel) Feldmann & Hamel	+					+
	Family Hymenocladaceae						
862	<i>Asteromenia peltata</i> (Taylor) Huisman & Millar					+	
	Order Ceramiales						
	Family Callithamniaceae						
863	<i>Crouania attenuata</i> (C. Agardh) J. Agardh			+		+	+
	Family Ceramiaceae						
864	<i>Acrothamnion butlerae</i> (Collins) Kylin					+	
865	<i>Antithamnion antillanum</i> Børgesen					+	
866	<i>Antithamnion erucacladellum</i> R.E. Norris						+
867	<i>Antithamnionella basispora</i> (Tokida & Inaba) Cormaci & G. Furnari						+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Ceramiaceae (Continued)						
868	<i>Antithamnionella breviramosa</i> (Dawson) Wollaston					+	
869	<i>Antithamnionella elegans</i> (Berthold) J. Price & D. John		+			+	
870	<i>Antithamnionella graeffei</i> (Grunow) Athanasiadis		+				+
871	<i>Antithamnionella spirographidis</i> (Schiffner) E.M. Wollaston						+
872	<i>Centroceras clavulatum</i> (C.Agardh) Montagne		+	+	+	+	+
873	<i>Centroceras gasparrinii</i> (Meneghini) Kützing					+	+
874	<i>Centroceras hyalacanthum</i> Kützing					+	
875	<i>Centroceras minutum</i> Yamada		+*	+			
876	<i>Ceramium aduncum</i> Nakamura					+	+
877	<i>Ceramium affine</i> Setchell & Gardner		+				
878	<i>Ceramium californicum</i> J. Agardh		+				
879	<i>Ceramium cimbricum</i> H.E. Petersen		+	+		+	+
880	<i>Ceramium cingulatum</i> Weber-van Bosse						+
881	<i>Ceramium clarionense</i> Setchell & N.L. Gardner						+
882	<i>Ceramium codii</i> (H.Richards) Mazoyer						+
883	<i>Ceramium corniculatum</i> Montagne		+				
884	<i>Ceramium deslongchampsii</i> Chauvin ex Duby						+
885	<i>Ceramium diaphanum</i> (Lightfoot) Roth		+			+	+
886	<i>Ceramium dumosertum</i> Norris & Abbott					+	
887	<i>Ceramium fimbriatum</i> Setchell & Gardner		+				
888	<i>Ceramium gardneri</i> Kylin		+				
889	<i>Ceramium gracillimum</i> (Kützing) Zanardini		+	+			
890	<i>Ceramium gracillimum</i> (Kützing) Zanardini var. <i>byssoides</i> Mazoyer						+
891	<i>Ceramium luetzelburgii</i> O.C.Schmidt			+			
892	<i>Ceramium macilentum</i> J. Agardh						+
893	<i>Ceramium maryae</i> Weber-van Bosse			+			+
894	<i>Ceramium mazatlanense</i> E.Y. Dawson			+			
895	<i>Ceramium nakamurae</i> Dawson					+	
896	<i>Ceramium procumbens</i> Setchell & N.L. Gardner						+
897	<i>Ceramium ptenerrimum</i> (G.Martens) Okamura						+
898	<i>Ceramium serpens</i> Setchell & Gardner					+	
899	<i>Ceramium tenerrimum</i> (G. Martens) Okamura						+
900	<i>Ceramium vagans</i> Silva			+		+	+
901	<i>Ceramium vietnamense</i> Pham H.H.						+
902	<i>Ceramium zcae</i> Setchell & N.L. Gardner			+			+
903	<i>Corallophila bella</i> (Setchell & Gardner) R.E. Norris						+
904	<i>Corallophila howei</i> (Weber-van Bosse) R.E. Norris						+
905	<i>Corallophila huysmansii</i> (Weber-van Bosse) R.E. Norris				+		+
906	<i>Corallophila kleiwegii</i> Weber-van Bosse			+		+	+
907	<i>Diplothamnion jolyi</i> Hoek						+
908	<i>Gayliella fimbriata</i> (Setchell & N.L. Gardner) T.O. Cho & S.M. Boo						+
909	<i>Gayliella flaccida</i> (Harvey ex Kützing) T.O. Cho & L.J. McIvor		+	+	+	+	+
910	<i>Gayliella taylorii</i> (E.Y. Dawson) T.O. Cho & S.M. Boo						+
911	<i>Gordoniella yonakuniensis</i> (Yamada & T. Tanaka) Itono			+			
912	<i>Gymnothamnion elegans</i> (Schousboe ex C.Agardh) J. Agardh			+			+
913	<i>Haloplegma duperreyi</i> Montagne						+
914	<i>Herpochondria elegans</i> (Okamura) Itono			+			
915	<i>Microcladia glandulosa</i> (Solander ex Turner) Greville			+			
916	<i>Neomonospora pedicellata</i> (Smith) Feldmann-Mazoyer & Meslin var. <i>tenuis</i> Feldmann-Mazoyer						+
917	<i>Pleonosporium borreri</i> (Smith) Nageli						+
918	<i>Pleonosporium globuliferum</i> Levring			+			
919	<i>Ptilothamnion cladophorae</i> (Yamada & Tanaka)			+			
920	<i>Ptilothamnion codicolum</i> (Dawson) Abbott		+				
921	<i>Reinboldiella warburgii</i> (Heydrich) Yoshida & Mikami						+
921	<i>Spongoclonium caribaeum</i> (Børgesen) M.J. Wynne						+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Dasyaceae						
923	<i>Dasya adhaerens</i> Yamada			+			
924	<i>Dasya anastomosans</i> (Weber-van Bosse) M.J. Wynne						+
925	<i>Dasya baillouiviana</i> (S.G. Gmelin) Montagne						+
926	<i>Dasya crouaniana</i> J. Agardh						+
927	<i>Dasya iyengarii</i> Børgesen		+				
928	<i>Dasya kristeniae</i> Abbott					+	
929	<i>Dasya longifila</i> Masuda & Uwai		+				
930	<i>Dasya mollis</i> Harvey			+			
931	<i>Dasya ocellata</i> (Grateloup) Harvey			+			
932	<i>Dasya pilosa</i> (Weber-van Bosse) Millar	+	+				
933	<i>Dasya punicea</i> (Zanardini) Meneghini ex Zanardini			+			
934	<i>Dasya scoparia</i> Harvey						+
935	<i>Dasya sessilis</i> Yamada			+			
936	<i>Dictyurus occidentalis</i> J. Agardh						+
937	<i>Heterosiphonia crispella</i> (C. Agardh) Wynne		+	+	+	+	
	Family Delesseriaceae						
938	<i>Acrosorium polyneurum</i> Okamura						+
939	<i>Branchioglossum prostratum</i> Schneider						+
940	<i>Caloglossa adhaerens</i> R.J. King & Puttock				+		
941	<i>Caloglossa angustalata</i> J.A. West				+		
942	<i>Caloglossa beccarii</i> (Zanardini) De Toni				+		+
943	<i>Caloglossa bengalensis</i> (G.Martens) R.J. King & Puttock				+		+
944	<i>Caloglossa continua</i> (Okamura) R.J. King & Puttock						+
945	<i>Caloglossa leprieurii</i> (Montagne) G. Martens				+		+
946	<i>Caloglossa ogasawaraensis</i> Okamura				+		+
947	<i>Caloglossa saigonensis</i> Tanaka & Pham H.H.				+		+
948	<i>Caloglossa stipitata</i> E.Post				+		+
949	<i>Caloglossa vieillardii</i> (Kützinger) Setchell				+	+	
950	<i>Claudea batanensis</i> Tanaka			+			+
951	<i>Cottoniella filamentosa</i> (M.A.Howe) Børgesen						+
952	<i>Delesseria adnata</i> Zanardini		+				
953	<i>Delesseria beccarii</i> Zanardini		+				
954	<i>Hypoglossum attenuatum</i> N.L. Gardner			+			+
955	<i>Hypoglossum barbatum</i> Okamura						+
956	<i>Hypoglossum caloglossoides</i> Wynne & Kraft		+			+	
957	<i>Hypoglossum rhizophorum</i> Ballantine & Wynne		+				
958	<i>Hypoglossum simulans</i> Wynne, I. Price & Ballantine		+			+	
959	<i>Martensia australis</i> Harvey		+				
960	<i>Martensia elegans</i> Hering				+		
961	<i>Martensia flabelliformis</i> Harvey ex J.Agardh						+
962	<i>Martensia fragilis</i> Harvey		+				+
963	<i>Nitophyllum adhaerens</i> Wynne						+
964	<i>Taenioma perpusillum</i> (J. Agardh) J. Agardh		+	+		+	+
965	<i>Vancoorstia spectabilis</i> Harvey						
966	<i>Zellera tawallina</i> Martens		+	+			
	Family Rhodomelaceae						
967	<i>Acanthophora aokii</i> Okamura			+			
968	<i>Acanthophora muscoides</i> (Linnaeus) Bory de Saint-Vincent		+	+	+	+	+
969	<i>Acanthophora spicifera</i> (Vahl) Børgesen	+	+	+	+	+	+
970	<i>Acrocystis nana</i> Zanardini		+		+		+
971	<i>Alsidium pusillum</i> E.Y. Dawson			+			
972	<i>Amansia rhodantha</i> (Harvey) J. Agardh		+				+
973	<i>Bostrychia binderi</i> Harvey			+			

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Rhodomelaceae (Continued)						
974	<i>Bostrychia calliptera</i> (Montagne) Montagne				+		
975	<i>Bostrychia kelanensis</i> Grunow			+	+		
976	<i>Bostrychia moritziana</i> (Sonder ex Kützing) J. Agardh				+		
977	<i>Bostrychia radicans</i> (Montagne) Montagne			+	+		+
978	<i>Bostrychia simpliciuscula</i> Harvey ex J. Agardh			+	+		
979	<i>Bostrychia tenella</i> (Lamouroux) J. Agardh			+	+	+	+
980	<i>Bryocladia cervicornis</i> (Kützing) Schmitz					+	+
981	<i>Chondria armata</i> (Kützing) Okamura		+				+
982	<i>Chondria baileyana</i> (Montagne) Harvey						+
983	<i>Chondria crassicaulis</i> Harvey			+			
984	<i>Chondria dangeardii</i> Dawson						+
985	<i>Chondria dasyphylla</i> (Woodward) C. Agardh			+			
986	<i>Chondria decidua</i> Tani & Masuda		+				
987	<i>Chondria econstricta</i> Tani & Masuda		+				
988	<i>Chondria polyrhiza</i> Collins & Hervey					+	
989	<i>Chondria repens</i> Børgesen			+			+
990	<i>Chondria riparia</i> (J. Agardh) De Toni				+		
991	<i>Chondria ryukyuensis</i> Yamada						+
992	<i>Chondria seticulosa</i> (Forsskål) C. Agardh			+			
993	<i>Chondria sibogae</i> Weber-van Bosse			+			
994	<i>Chondria simpliciuscula</i> Weber-van Bosse				+		+
995	<i>Chondrophyucus articulatus</i> (C.K. Tseng) K.W. Nam						+
996	<i>Chondrophyucus cartilagineus</i> (Yamada) Garbary & J.T. Harper		+	+	+	+	+
997	<i>Chondrophyucus thuyoides</i> (Kützing) G. Furnari	+					
998	<i>Chondrophyucus undulatus</i> (Yamada) Garbary & J.T. Harper						+
999	<i>Chondrophyucus verticillatus</i> (J. Zhang & B.M. Xia) K.W. Nam						+
1000	<i>Digenea simplex</i> (Wulfen) C. Agardh			+			
1001	<i>Enantiocladia okamurae</i> Yamada			+			
1002	<i>Exophyllum wentii</i> Weber van Bosse						+
1003	<i>Herposiphonia caespitosa</i> C.K. Tseng						+
1004	<i>Herposiphonia crassa</i> Hollenberg			+			+
1005	<i>Herposiphonia delicatula</i> Hollenberg						+
1006	<i>Herposiphonia dendroidea</i> Hollenberg			+			
1007	<i>Herposiphonia insidiosa</i> (Greville ex J. Agardh) Falkenberg						+
1008	<i>Herposiphonia nuda</i> Hollenberg			+			
1009	<i>Herposiphonia pacifica</i> Hollenberg		+			+	
1010	<i>Herposiphonia parca</i> Setchell			+	+		+
1011	<i>Herposiphonia plumula</i> (J. Agardh) Falkenberg			+			
1012	<i>Herposiphonia secunda</i> (C. Agardh) Ambronn		+	+		+	+
1013	<i>Herposiphonia secunda</i> (C. Agardh) Ambronn f. <i>tenella</i> (C. Agardh) M.J. Wynne				+		
1014	<i>Herposiphonia secunda</i> (C. Agardh) Ambronn f. <i>secunda</i> (C. Agardh) Falkenberg			+			
1015	<i>Herposiphonia subdisticha</i> Okamura			+			
1016	<i>Herposiphonia tenella</i> (C. Agardh) Ambronn					+	
1017	<i>Herposiphonia trichia</i> Hollenberg			+			
1018	<i>Herposiphonia vietnamica</i> Pham H.H.		+				+
1019	<i>Laurencia articulata</i> C. K. Tseng		+				
1020	<i>Laurencia botryoides</i> (C. Agardh) Gaillon		+		+		
1021	<i>Laurencia brachyclados</i> Pilger						+
1022	<i>Laurencia brongiartii</i> J. Agardh			+			
1023	<i>Laurencia caduciramulosa</i> Masuda & Kawaguchi	+	+				+
1024	<i>Laurencia calliclada</i> Masuda		+				+
1025	<i>Laurencia carolinensis</i> Saito			+			
1026	<i>Laurencia composita</i> Yamada					+	
1027	<i>Laurencia concreta</i> Cribb		+				

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Rhodomelaceae (Continued)						
1028	<i>Laurencia corallopsis</i> (Montagne) M.A. Howe			+			
1029	<i>Laurencia corymbosa</i> J. Agardh		+				+
1030	<i>Laurencia decumbens</i> Kützing		+				+
1031	<i>Laurencia dendroidea</i> J. Agardh					+	
1032	<i>Laurencia fasciculata</i> C.F. Zhang & B.M. Xia						+
1033	<i>Laurencia filiformis</i> (C.Agardh) Montagne						+
1034	<i>Laurencia flexilis</i> Setchell		+	+			+
1035	<i>Laurencia forsteri</i> (Mertens ex Turner) Greville			+			
1036	<i>Laurencia galtsoffii</i> M.Howe						+
1037	<i>Laurencia glandulifera</i> (Kützing) Kützing			+			
1038	<i>Laurencia heteroclada</i> Harvey						+
1039	<i>Laurencia intermedia</i> Yamada			+			
1040	<i>Laurencia intricata</i> Lamouroux		+			+	+
1041	<i>Laurencia japonica</i> Yamada			+			
1042	<i>Laurencia lageniformis</i> Masuda		+				+
1043	<i>Laurencia majuscula</i> (Harvey) Lucas		+	+			+
1044	<i>Laurencia mariannensis</i> Yamada			+			+
1045	<i>Laurencia microcladia</i> Kützing				+		+
1046	<i>Laurencia nangii</i> Masuda		+				
1047	<i>Laurencia nidifica</i> J. Agardh			+		+	+
1048	<i>Laurencia nipponica</i> Yamada			+			
1049	<i>Laurencia obtusa</i> (Hudson) Lamouroux		+	+		+	+
1050	<i>Laurencia obtusa</i> (Hudson) Lamouroux var. <i>densa</i> Yamada						+
1051	<i>Laurencia obtusa</i> (Hudson) Lamouroux var. <i>glandulifera</i> (Kützing) Rabenhorst	+					
1052	<i>Laurencia obtusa</i> (Hudson) Lamouroux var. <i>divaricata</i> Yamada					+	
1053	<i>Laurencia okamurae</i> Yamada			+			
1054	<i>Laurencia palisada</i> Yamada			+			
1055	<i>Laurencia pannosa</i> Zanardini		+				
1056	<i>Laurencia parvipapillata</i> Tseng		+	+			
1057	<i>Laurencia patentiramea</i> (Montagne) Kützing		+	+			
1058	<i>Laurencia perforata</i> (Bory de Saint-Vincent) Montagne		+				
1059	<i>Laurencia pinnata</i> Yamada			+			+
1060	<i>Laurencia silvae</i> J. Zhang & B.M. Xia						+
1061	<i>Laurencia similis</i> Nam & Saito		+	+			+
1062	<i>Laurencia singaporensis</i> Zanardini ex De Toni & Levi				+		
1063	<i>Laurencia surculigera</i> C.K. Tseng	+					
1064	<i>Laurencia tenera</i> C.K. Tseng						+
1065	<i>Laurencia tranoi</i> Ganzon-Fortes						
1066	<i>Laurencia tropica</i> Yamada						+
1067	<i>Laurencia undulata</i> Yamada			+			
1068	<i>Leveillea jungermanniodes</i> (Herling & G. Martens) Harvey	+	+	+	+	+	+
1069	<i>Lophocladia</i> cf. <i>minima</i> Itono					+	
1070	<i>Lophosiphonia obscura</i> (C.Agardh) Falkenberg						+
1071	<i>Lophosiphonia prostrata</i> (Harvey) Falkenberg						+
1072	<i>Lophosiphonia reptabunda</i> (Suhr) Kylin						+
1073	<i>Melanamansia glomerata</i> (C.Agardh) R.E. Norris			+			+
1074	<i>Murrayella pericladus</i> (C. Agardh) F. Schmitz				+		
1075	<i>Murrayellopsis dawsonii</i> Post		+				
1076	<i>Neosiphonia apiculata</i> (Hollenberg) Masuda & Kogame		+				
1077	<i>Neosiphonia ferulacea</i> (Suhr ex J.Agardh) S.M. Guimaraes & M.T. Fujii				+		+
1078	<i>Neosiphonia flaccidissima</i> (Hollenberg) M.S. Kim & I.K. Lee		+				
1079	<i>Neosiphonia harlandii</i> (Harvey) M.S. Kim & I.K. Lee						+
1080	<i>Neosiphonia howei</i> (Hollenberg) Skelton & G.R. South				+		
1081	<i>Neosiphonia poko</i> (Hollenberg) Abbott						+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Rhodomelaceae (Continued)						
1082	<i>Neosiphonia savatieri</i> (Hariot) M.S. Kim & I.K. Lee		+				
1083	<i>Neosiphonia sparsa</i> (Setchell) Abbott, new comb						+
1084	<i>Neosiphonia sphaerocarpa</i> (Børgesen) M.S. Kim & I.K. Lee						+
1085	<i>Neosiphonia subtilissima</i> (Montagne) M.S. Kim & I.K. Lee						+
1086	<i>Neosiphonia tongatensis</i> (Harvey ex Kützing) M.S. Kim & I.K. Lee						+
1087	<i>Neosiphonia upolensis</i> (Grunow) M.S. Kim & S.M. Boo						+
1088	<i>Neurymenia fraxinifolia</i> (Mertens ex Turner) J. Agardh			+			+
1089	<i>Odonthalia corymbifera</i> (S.G. Gmelin) Greville						+
1090	<i>Palisada concreta</i> (Cribb) K.W. Nam						+
1091	<i>Palisada intermedia</i> (Yamada) K.W. Nam						+
1092	<i>Palisada papillosa</i> (C. Agardh) K.W. Nam		+	+		+	
1093	<i>Palisada parvipapillata</i> (C.K. Tseng) K.W. Nam					+	+
1094	<i>Palisada perforata</i> (Bory) K.W. Nam				+		+
1095	<i>Palisada thuyoides</i> (Kützing) Cassano, Senties, Gil-Rodriguez & M.T. Fujii						+
1096	<i>Palisada yamadana</i> (M.Howe) K.W. Nam						+
1097	<i>Polysiphonia apiculata</i> Hollenberg			+			
1098	<i>Polysiphonia coacta</i> Tseng		+				+
1099	<i>Polysiphonia decussata</i> Hollenberg		+				
1100	<i>Polysiphonia ferulacea</i> Suhr ex. J. Agardh			+			
1101	<i>Polysiphonia flabellulata</i> Harvey			+			
1102	<i>Polysiphonia forfex</i> Harvey			+			
1103	<i>Polysiphonia fragilis</i> Suringar			+			+
1104	<i>Polysiphonia fucoides</i> (Hudson) Greville		+				
1105	<i>Polysiphonia hawaiiensis</i> Hollenberg			+			
1106	<i>Polysiphonia herpa</i> Hollenberg						+
1107	<i>Polysiphonia howei</i> Hollenberg			+			
1108	<i>Polysiphonia infestans</i> Harvey						+
1109	<i>Polysiphonia kampsaxii</i> Børgesen						+
1110	<i>Polysiphonia mollis</i> J.D. Hooker & Harvey			+			
1111	<i>Polysiphonia nhatrangense</i> Pham H.H.						+
1112	<i>Polysiphonia platycarpa</i> Børgesen				+		
1113	<i>Polysiphonia poko</i> Hollenberg			+			
1114	<i>Polysiphonia savatieri</i> Hariot			+			
1115	<i>Polysiphonia scopulorum</i> Harvey		+			+	+
1116	<i>Polysiphonia scopulorum</i> Harvey var. <i>villum</i> (J. Agardh) Hollenberg						+
1117	<i>Polysiphonia siamensis</i> Martens					+	
1118	<i>Polysiphonia sertularioides</i> (Grateloup) J. Agardh						+
1119	<i>Polysiphonia setacea</i> Hollenberg			+			
1120	<i>Polysiphonia sparsa</i> (Setchell) Hollenberg			+			
1121	<i>Polysiphonia sphaerocarpa</i> Børgesen			+			
1122	<i>Polysiphonia subtilissima</i> Montagne		+	+		+	+
1123	<i>Polysiphonia tapinocarpa</i> Suringar						+
1124	<i>Polysiphonia tepida</i> Hollenberg			+			
1125	<i>Polysiphonia upolensis</i> Grunow			+			
1126	<i>Polysiphonia violacea</i> Greville		+				
1127	<i>Rodriguezella hongngai</i> Pham H.H.						+
1128	<i>Symphyocladia marchantioides</i> (Harvey) Falkenberg						+
1129	<i>Tayloriella dictyurus</i> (J. Agardh) Kylin						+
1130	<i>Tolypiocladia calodictyon</i> (Harvey ex Kützing) P.C. Silva		+	+			+
1131	<i>Tolypiocladia condensata</i> (Weber -van Bosse) P.C. Silva			+			
1132	<i>Tolypiocladia glomerulata</i> (C. Agardh) Schmitz	+	+	+		+	+
1133	<i>Vidalia obtusiloba</i> (Mertens ex C. Agardh) J. Agardh			+			
1134	<i>Womersleyella setacea</i> (Hollenberg) Norris					+	

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Spyridiaceae						
1135	<i>Spyridia filamentosa</i> (Wulfen) Harvey	+	+		+	+	+
1136	<i>Spyridia hypnoides</i> (Bory) Papenfuss						+
1137	<i>Spyridia velasquezii</i> Trono			+			
	Family Wrangeliaceae						
1138	<i>Anotrichium barbatum</i> (C. Agardh) Nageli						+
1139	<i>Anotrichium tenue</i> (C. Agardh) Nageli		+	+		+	+
1140	<i>Anotrichium tenue</i> (C. Agardh) Nageli var. <i>thyrsigerum</i> (Thwaites ex Harvey) H.S. Kim & I.K. Lee						+
1141	<i>Griffithsia schousboei</i> Montagne		+		+		
1142	<i>Griffithsia heteromorpha</i> Kützing					+	+
1143	<i>Griffithsia japonica</i> Okamura						+
1144	<i>Griffithsia metcalfei</i> C.K. Tseng					+	+
1145	<i>Griffithsia ovalis</i> Harvey			+			
1146	<i>Lejolisia pacifica</i> Itono					+	
1147	<i>Wrangelia argus</i> (Montagne) Montagne		+	+		+	+
1148	<i>Wrangelia bicuspidata</i> Børgesen		+	+			
1149	<i>Wrangelia dumontii</i> (Dawson) Abbott						+
1150	<i>Wrangelia penicillata</i> (C. Agardh) C. Agardh			+			
1151	<i>Wrangelia plumosa</i> Harvey		+				
1152	<i>Wrangelia tanegana</i> Harvey						+
	Order Sebdeniales						
	Family Sebdeniaceae						
1153	<i>Sebdenia amoena</i> (Bory) E. Soler-Onís				+		
	Order Nemastomatales						
	Family Schizymeniaceae						
1154	<i>Titanophora weberae</i> Børgesen						+
	Order Plocamiales						
	Family Plocamiaceae						
1155	<i>Plocamium cirrhosum</i> (Turner) M.J. Wynne			+			
1156	<i>Plocamium serrulatum</i> Okamura var. <i>pectinatum</i> Cordero			+			
1157	<i>Plocamium telfairiae</i> (W.J. Hooker & Harvey) Harvey ex Kützing			+			
	Division Ochrophyta						
	Class Phaeophyceae						
	Order Ectocarpales						
	Family Acinetosporaceae						
1158	<i>Feldmannia columellaris</i> (Børgesen) Islam		+	+			
1159	<i>Feldmannia enhali</i> Hamel		+				+
1160	<i>Feldmannia filifera</i> (Børgesen) Pham H.H.						+
1161	<i>Feldmannia indica</i> (Sonder) Womersley & Bailey		+	+	+	+	+
1162	<i>Feldmannia irregularis</i> (Kützing) G. Hamel		+	+			+
1163	<i>Feldmannia mitchelliae</i> (Harvey) Kim					+	
1164	<i>Feldmannia simplex</i> (Crouan & Crouan) Hamel		+				
1165	<i>Feldmannia zeylanica</i> (Børgesen) P.C. Silva						+
	Family Ectocarpaceae						
1166	<i>Ectocarpus siliculosus</i> (Dillwyn) Lyngbye var. <i>dasyacarpus</i> (Kuckuck) Gallardo						+
1167	<i>Ectocarpus simpliciusculus</i> C. Agardh					+	
1168	<i>Ectocarpus vungtauensis</i> Pham H.H.						+
1169	<i>Kuetzingiella elachistaeformis</i> (Heydrich) Balakrishnan & Kinkar						+
1170	<i>Pylaiella littoralis</i> (Linnaeus) Kjellman						+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Scytosiphonaceae						
1171	<i>Chnoospora implexa</i> J. Agardh			+	+		+
1172	<i>Chnoospora minima</i> (Hering) Papenfuss			+		+	+
1173	<i>Colpomenia bullosa</i> (D.A. Saunders) Yamada						+
1174	<i>Colpomenia sinuosa</i> (Mertens ex Roth) Derbes & Solier		+	+	+	+	+
1175	<i>Hydroclathrus clathratus</i> (C. Agardh) Howe	+	+*	+	+	+	+
1176	<i>Rosenvingea fastigiata</i> (Zanardini) Børgesen		+				+
1177	<i>Rosenvingea fastigiata</i> (Zanardini) Børgesen f. <i>major</i> (Reinbold) Egerod				+	+	
1178	<i>Rosenvingea intricata</i> (J. Agardh) Børgesen		+			+	+
1179	<i>Rosenvingea nhatrangensis</i> E.Y. Dawson					+	+
1180	<i>Rosenvingea orientalis</i> (J. Agardh) Børgesen		+	+	+	+	+
	Order Ralfsiales						
	Family Neoralfsiaceae						
1181	<i>Neoralfsia expansa</i> (J. Agardh) Lim & Kawai ex Cormaci & Furnari		+*		+	+	+
	Family Ralfsiaceae						
1182	<i>Mesospora schmidtii</i> Weber-van Bosse		+*				+
1183	<i>Petroderma vietnamensis</i> Pham H.H.						+
1184	<i>Ralfsia expansa</i> (J. Agardh) J. Agardh		+*				
1185	<i>Ralfsia fungiformis</i> (Gunnerus) Setchell et N.L. Gardner			+			+
1186	<i>Ralfsia verrucosa</i> (Areschoug) Areschoug						+
	Order Sphacelariales						
	Family Sphacelariaceae						
1187	<i>Sphacelaria caespitula</i> Lyngbye		+		+		
1188	<i>Sphacelaria carolinensis</i> Trono						+
1189	<i>Sphacelaria ceylanica</i> Sauvageau						+
1190	<i>Sphacelaria indica</i> Reinke				+		
1191	<i>Sphacelaria novae-hollandiae</i> Sonder		+			+	+
1192	<i>Sphacelaria rigidula</i> Kützing			+		+	+
1193	<i>Sphacelaria solitaria</i> (Pringsheim) Kylin						+
1194	<i>Sphacelaria tribuloides</i> Meneghini			+	+	+	+
	Order Dictyotales						
	Family Dictyotaceae						
1195	<i>Canistrocarpus cervicornis</i> (Kützing) De Paula & De Clerck	+	+	+	+	+	+
1196	<i>Canistrocarpus crispatus</i> (J.V. Lamouroux) De Paula & De Clerck						+
1197	<i>Dictyopteris camiguinensis</i> Tanaka			+			
1198	<i>Dictyopteris delicatula</i> Lamouroux		+		+	+	+
1199	<i>Dictyopteris divaricata</i> (Okamura) Okamura			+			
1200	<i>Dictyopteris jamaicensis</i> W.R. Taylor		+	+			
1201	<i>Dictyopteris plagiogramma</i> (Montagne) Vickers						+
1202	<i>Dictyopteris polypodioides</i> (Candolle) Lamouroux			+		+	+
1203	<i>Dictyopteris repens</i> (Okamura) Børgesen		+	+	+		
1204	<i>Dictyopteris undulata</i> Holmes			+			
1205	<i>Dictyopteris woodwardia</i> (R. Brown ex Turner)		+		+		+
1206	<i>Dictyosphaeria cavernosa</i> (Forsskål) Børgesen				+		
1207	<i>Dictyosphaeria intermedia</i> Weber-van Bosse				+		
1208	<i>Dictyota adnata</i> Zanardini				+		+
1209	<i>Dictyota bartayresiana</i> Lamouroux		+	+	+	+	+
1210	<i>Dictyota beccariana</i> Zanardini		+				
1211	<i>Dictyota cervicornis</i> Kützing f. <i>spiralis</i> Taylor		+*				
1212	<i>Dictyota ceylanica</i> Kützing		+			+	
1213	<i>Dictyota ceylanica</i> Kützing var. <i>anastomosans</i> Yamada						+
1214	<i>Dictyota ceylanica</i> Kützing var. <i>rotundata</i> Weber-van Bosse						+
1215	<i>Dictyota ciliolata</i> Sonder ex Kützing		+	+	+	+	+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Dictyotaceae (Continued)						
1216	<i>Dictyota crispata</i> Lamouroux	+	+		+		
1217	<i>Dictyota dentata</i> Lamouroux	+	+	+			
1218	<i>Dictyota dichotoma</i> (Hudson) Lamouroux		+*	+	+	+	+
1219	<i>Dictyota dichotoma</i> (Hudson) Lamouroux var <i>intricata</i> (C. Agardh) Greville		+		+		
1220	<i>Dictyota friabilis</i> Setchell		+	+		+	+
1221	<i>Dictyota hauckiana</i> Nizamuddin		+*		+		
1222	<i>Dictyota implexa</i> (Desfontaines) J.V. Lamouroux						+
1223	<i>Dictyota jamaicensis</i> Taylor		+*				
1224	<i>Dictyota lata</i> J.V. Lamouroux				+		
1225	<i>Dictyota linearis</i> (C.Agardh) Greville	+		+			
1226	<i>Dictyota major</i> W.R.Taylor			+			
1227	<i>Dictyota maxima</i> Zanardini		+				
1228	<i>Dictyota mertensii</i> (Martius) Kützing		+*	+			+
1229	<i>Dictyota pinnatifida</i> Kützing						+
1230	<i>Dictyota polyclada</i> Sonder ex Kützing						+
1231	<i>Dictyota spinulosa</i> J.D. Hooker & Arnott						+
1232	<i>Dictyota submaritima</i> Tanaka & Pham H.H.		+				
1233	<i>Dictyopsis propagulifera</i> Troll				+		
1234	<i>Distromium decumbens</i> (Okamura) Levring						+
1235	<i>Lobophora asiatica</i> Sun, Tanaka & Kawai					+	
1236	<i>Lobophora australis</i> Sun, Gurgel & Kawai					+	
1237	<i>Lobophora crassa</i> Sun, Lim & Kawai					+	
1238	<i>Lobophora nigrescens</i> J. Agardh		+			+	
1239	<i>Lobophora pachyventera</i> Sun, Lim, Tanaka & Kawai					+	
1240	<i>Lobophora variegata</i> (Lamouroux) Wolmsley ex Oliveira	+	+*	+	+	+	+
1241	<i>Padina antillarum</i> (Kützing) Piccone		+		+	+	+
1242	<i>Padina arborescens</i> Holmes			+			
1243	<i>Padina australis</i> Hauck	+	+*	+	+	+	+
1244	<i>Padina australis</i> Hauck var. <i>cuneata</i> Tanaka & K. Nozawa						+
1245	<i>Padina boergesenii</i> Allender & Kraft	+	+				
1246	<i>Padina boryana</i> Thivy	+	+*	+	+	+	+
1247	<i>Padina caulescens</i> Thivy		+				
1248	<i>Padina crassa</i> Yamada	+		+			
1249	<i>Padina distromatica</i> Hauck			+	+	+	
1250	<i>Padina fraseri</i> (Greville) Greville			+			
1251	<i>Padina gymnospora</i> (Kützing) Sonder		+		+	+	+
1252	<i>Padina japonica</i> Yamada	+	+	+		+	
1253	<i>Padina minor</i> Yamada	+	+*	+		+	+
1254	<i>Padina okinawaensis</i> Ni-Ni Win, S. Arai & H. Kawai	+				+	
1255	<i>Padina pavonica</i> (Linnaeus) Thivy			+	+	+	
1256	<i>Padina sanctae-crucis</i> Børgesen	+		+		+	
1257	<i>Padina sulcata</i> Ni-Ni-Win, S.G.A. Draisma & H. Kawai	+	+				
1258	<i>Padina tetrastromatica</i> Hauck	+	+*	+		+	
1259	<i>Spatoglossum asperum</i> J. Agardh			+			
1260	<i>Spatoglossum stipitatum</i> (Tanaka & K.Nozawa) Bittner et al.						+
1261	<i>Spatoglossum vietnamense</i> Pham		+				+
1262	<i>Stypodium flabelliforme</i> Weber van-Bosse	+		+			
1263	<i>Stypodium lobatum</i> (C.Agardh) Kützing			+			
1264	<i>Stypodium zonale</i> (J.V. Lamouroux) Papenfuss				+		+
1265	<i>Zonaria diesingiana</i> J. Agardh			+			
	Order Scytosiphonales						
	Family Chnoosporaceae						
1266	<i>Hydrolithon farinosum</i> (J.V. Lamouroux) D. Penrose & Y.M. Chamberlain				+		
1267	<i>Petalonia fascia</i> (O.F.Muller) Kuntze						+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Chnoosporaceae (Continued)						
1268	<i>Rosenvingea fastigiata</i> (Zanardini) Børgesen		+				+
1269	<i>Rosenvingea fastigiata</i> (Zanardini) Børgesen <i>f. major</i> (Reinbold) Egerod				+		
1270	<i>Rosenvingea intricata</i> (J. Agardh) Børgesen		+				+
1271	<i>Rosenvingea nhatrangensis</i> E.Y. Dawson						+
1272	<i>Rosenvingea orientalis</i> (J. Agardh) Børgesen		+	+	+		+
1273	<i>Scytosiphon lomentaria</i> (Lyngbye) Link						+
	Order Chordariales						
	Family Chordariaceae						
1274	<i>Acrothrix pacifica</i> Okamura & Yamada						+
1275	<i>Chilionema ocellatum</i> (Kützing) Kornmann						+
1276	<i>Leathesia difformis</i> (Linnaeus) Areschoug			+			
	Family Myrionemataceae						
1277	<i>Myrionema strangulans</i> Greville						+
	Family Spermatochnaceae						
1278	<i>Nemacystus decipiens</i> (Suringar) Kuckuck						+
	Order Fucales						
	Family Cystoseiraceae						
1279	<i>Cystoseira trinodis</i> (Forsskål) C. Agardh		+*				
	Family Sargassaceae						
1280	<i>Hormophysa cuneiformis</i> (Gmelin) Silva	+	+*	+	+	+	+
1281	<i>Sargassum abbotiae</i> G.C. Trono			+			
1282	<i>Sargassum acutifolium</i> Greville		+				
1283	<i>Sargassum aemulum</i> Sonder			+			
1284	<i>Sargassum aemulum</i> Sonder var. <i>carpophylloides</i> Grunow						+
1285	<i>Sargassum aemulum</i> Sonder var. <i>jouanii</i> Grunow						+
1286	<i>Sargassum agardhianum</i> Farlow			+			
1287	<i>Sargassum angii</i> (Trono) Liao			+			
1288	<i>Sargassum angustifolium</i> C. Agardh		+		+		+
1289	<i>Sargassum aquifolium</i> (Turner) C. Agardh	+	+	+	+	+	+
1290	<i>Sargassum armatum</i> J. Agardh						+
1291	<i>Sargassum asperifolium</i> Hering & G. Martens ex J. Agardh				+		
1292	<i>Sargassum assimile</i> Harvey				+		+
1293	<i>Sargassum bacularia</i> (Mertens) C. Agardh		+	+	+	+	+
1294	<i>Sargassum balingasayense</i> Trono		+	+			
1295	<i>Sargassum bangmeiana</i> Nguyen H. Dinh & Huynh Q.N.						+
1296	<i>Sargassum baoreni</i> Nguyen H. Dinh & Huynh Q.N.						+
1297	<i>Sargassum bataanense</i> Trono			+			
1298	<i>Sargassum belangeri</i> Bory de Saint-Vincent				+		
1299	<i>Sargassum bicorne</i> J. Agardh						+
1300	<i>Sargassum binderi</i> Sonder ex J. Agardh		+			+	
1301	<i>Sargassum biserrula</i> J. Agardh var. <i>singapoorensis</i> Grunow				+		
1302	<i>Sargassum brevifolium</i> Greville var. <i>pergracilis</i> Greville				+		+
1303	<i>Sargassum bulbiferum</i> Yoshida						+
1304	<i>Sargassum buuii</i> Nguyen H. Dinh & Huynh Q.N.						+
1305	<i>Sargassum capilare</i> Kützing						+
1306	<i>Sargassum carpophyllum</i> J. Agardh						+
1307	<i>Sargassum carpophyllum</i> J. Agardh var. <i>honomense</i> Nguyen H. Dinh & Huynh Q.N.						+
1308	<i>Sargassum carpophyllum</i> J. Agardh var. <i>nhatrangense</i> (Pham H.H.) Ajisaka						+
1309	<i>Sargassum cervicorne</i> Greville		+		+		
1310	<i>Sargassum cinctum</i> J. Agardh			+			
1311	<i>Sargassum cinctum</i> J. Agardh var. <i>gracilentum</i> Grunow			+			

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Sargassaceae (Continued)						
1312	<i>Sargassum cinctum</i> J. Agardh var. <i>mixtum</i> Grunow			+			
1313	<i>Sargassum cinereum</i> J. Agardh		+*		+		+
1314	<i>Sargassum confusum</i> C. Agardh			+			+
1315	<i>Sargassum congkinhii</i> Pham H.H.						+
1316	<i>Sargassum cornutifructum</i> Nguyen H. Dinh et Huynh Q.N.						+
1317	<i>Sargassum cotoense</i> Nguyen H. Dai						+
1318	<i>Sargassum crassifolium</i> J. Agardh	+	+	+		+	
1319	<i>Sargassum cristaeifolium</i> C. Agardh		+	+		+	
1320	<i>Sargassum currimaoense</i> G.C.Trono			+			
1321	<i>Sargassum cymosum</i> C. Agardh						+
1322	<i>Sargassum denticarpum</i> Ajisaka						+
1323	<i>Sargassum distichum</i> Sonder						+
1324	<i>Sargassum dotyi</i> Trono						
1325	<i>Sargassum duplicatum</i> (J. Agardh) J. Agardh		+				+
1326	<i>Sargassum duplicatum</i> Bory						+
1327	<i>Sargassum emarginatum</i> C.K. Tseng & Lu B.R.						+
1328	<i>Sargassum erumpens</i> Tseng & Lu		+*				
1329	<i>Sargassum feldmanii</i> Pham H.H.						+
1330	<i>Sargassum filifolium</i> C. Agardh				+		
1331	<i>Sargassum filipendula</i> C. Agardh		+				
1332	<i>Sargassum flavicans</i> (Mertens) C. Agardh						+
1333	<i>Sargassum fluitans</i> (Børgesen) Børgesen		+				
1334	<i>Sargassum fulvellum</i> (Turner) C. Agardh			+			
1335	<i>Sargassum gaudichaudii</i> Montagne			+	+		
1336	<i>Sargassum glaucescens</i> J. Agardh var. <i>ivanii</i> (Montagne) Grunow				+		
1337	<i>Sargassum glaucescens</i> J. Agardh				+		+
1338	<i>Sargassum gigantifolium</i> Yamada			+			
1339	<i>Sargassum gracile</i> J. Agardh				+		
1340	<i>Sargassum gracillimum</i> Reinbold			+			+
1341	<i>Sargassum graminifolium</i> C. Agardh						+
1342	<i>Sargassum granuliferum</i> C. Agardh		+	+	+		
1343	<i>Sargassum granuliferum</i> C. Agardh var. <i>dubiosum</i> Grunow				+		
1344	<i>Sargassum grevillei</i> J. Agardh		+		+		
1345	<i>Sargassum hemiphylum</i> (Turner) C. Agardh			+			+
1346	<i>Sargassum hemiphylum</i> (Turner) C. Agardh var. <i>chinense</i> J. Agardh						+
1347	<i>Sargassum henslowianum</i> C. Agardh						+
1348	<i>Sargassum henslowianum</i> C. Agardh var. <i>bellonae</i> Grunow						+
1349	<i>Sargassum herklotsii</i> Setchell						+
1350	<i>Sargassum heterocystum</i> (Kützinger) Montagne		+				
1351	<i>Sargassum hieuii</i> Nguyen H. Dinh & Huynh Q.N.						+
1352	<i>Sargassum hornschurchii</i> C. Agardh		+				
1353	<i>Sargassum ilicifoloides</i> C.K. Tseng & Lu B.R.						+
1354	<i>Sargassum ilicifolium</i> (Turner) C. Agardh		+	+	+		+
1355	<i>Sargassum ilicifolium</i> (Turner) C. Agardh var. <i>pseudospinulosum</i> Grunow			+	+		
1356	<i>Sargassum ilicifolium</i> (Turner) C. Agardh var. <i>conduplicatum</i> Grunow		+	+			
1357	<i>Sargassum incanum</i> Grunow						+
1358	<i>Sargassum kuetzingii</i> Setchell						+
1359	<i>Sargassum kushimotoense</i> Yendo			+			
1360	<i>Sargassum latifolium</i> (Turner) C. Agardh				+		
1361	<i>Sargassum latifolium</i> (Turner) C. Agardh var. <i>seychellense</i> Grunow				+		
1362	<i>Sargassum laxifolium</i> Tseng & Lu		+				
1363	<i>Sargassum longifructum</i> C.K. Tseng & Lu B.R.						+
1364	<i>Sargassum mcclurei</i> f. <i>duplicatum</i> A.D. Zinova & Nguyen H. Dinh						+
1365	<i>Sargassum mcclurei</i> Setchell						+

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Sargassaceae (Continued)						
1366	<i>Sargassum microcystum</i> J. Agardh		+	+	+		+
1367	<i>Sargassum microphyllum</i> C. Agardh				+		
1368	<i>Sargassum miyabei</i> Yendo			+			+
1379	<i>Sargassum myriocystum</i> J. Agardh		+				
1370	<i>Sargassum namoense</i> Nguyen H.Dai						+
1371	<i>Sargassum natans</i> (Linnaeus) Gaillon			+			+
1372	<i>Sargassum nigrifolium</i> Yendo			+			
1373	<i>Sargassum obtusifolium</i> J.Agardh var. <i>reichelii</i> Grunow				+		
1374	<i>Sargassum odontocarpum</i> Sonder				+		
1375	<i>Sargassum ohnoi</i> G.C.Trono			+			
1376	<i>Sargassum oligocystum</i> Montagne		+	+	+	+	+
1377	<i>Sargassum oligocystum</i> Montagne var. <i>berardinum</i> Grunow			+			
1378	<i>Sargassum oocyste</i> J. Agardh var. <i>chierchii</i> Grunow				+		
1379	<i>Sargassum paniculatum</i> J. Agardh		+	+	+		+
1380	<i>Sargassum parvifolium</i> (Turner) C. Agardh				+		+
1381	<i>Sargassum parvivesiculosum</i> C.K.Tseng & Lu B.R.						+
1382	<i>Sargassum patens</i> C. Agardh var. <i>schizophyllum</i> (Kützing) Yendo			+			
1383	<i>Sargassum phamhoangii</i> Nguyen H. Dai						+
1384	<i>Sargassum philippinense</i> Grunow			+			
1385	<i>Sargassum phyllocystum</i> C.K. Tseng & Lu B.R.						+
1386	<i>Sargassum piluliferum</i> (Turner) C. Agardh			+			+
1387	<i>Sargassum piluliferum</i> (Turner) C. Agardh var. <i>serratifolium</i> (Turner) C.Agardh						+
1388	<i>Sargassum plagiophyllum</i> C. Agardh				+		
1389	<i>Sargassum plagiophyllum</i> C. Agardh var. <i>hebetatum</i> Grunow				+		
1390	<i>Sargassum plagiophyllum</i> C. Agardh var. <i>singapoorensis</i> Grunow				+		
1391	<i>Sargassum polyceratium</i> Montagne			+			
1392	<i>Sargassum polycystum</i> C. Agardh	+	+	+	+	+	+
1393	<i>Sargassum polycystum</i> C. Agardh var. <i>onustum</i> J.Agardh						+
1394	<i>Sargassum polyporum</i> Montagne						+
1395	<i>Sargassum pseudocystocarpum</i> Grunow				+		
1396	<i>Sargassum pulchellum</i> Grunow				+		
1397	<i>Sargassum quinhonense</i> Nguyen H. Dai						+
1398	<i>Sargassum sagamiamum</i> Yendo			+			
1399	<i>Sargassum segii</i> Yoshida						+
1400	<i>Sargassum serratifolium</i> (C. Agardh) C. Agardh			+			
1401	<i>Sargassum serratum</i> Nguyen H. Dai						+
1402	<i>Sargassum siliculosoides</i> Tseng & Lu		+				
1403	<i>Sargassum siliquosum</i> J. Agardh		+	+	+		+
1404	<i>Sargassum siliquosum</i> J. Agardh var. <i>basilanicum</i> Grunow			+			
1405	<i>Sargassum spathulaefolium</i> J.Agardh		+		+		
1406	<i>Sargassum squarrosus</i> Greville				+		
1407	<i>Sargassum subspathulatum</i> (Grunow) Grunow				+		
1408	<i>Sargassum subtilissimum</i> C.K. Tseng & Lu B.R.						+
1409	<i>Sargassum sullivanii</i> G.C.Trono						
1410	<i>Sargassum swartzii</i> C. Agardh				+	+	+
1411	<i>Sargassum tenerimum</i> J. Agardh		+		+		+
1412	<i>Sargassum torvum</i> J. Agardh		+		+		
1413	<i>Sargassum tsengii</i> Nguyen H. Dinh & Huynh Q.N.						+
1414	<i>Sargassum turbinarioides</i> Grunow			+			+
1415	<i>Sargassum vachellianum</i> Greville						+
1416	<i>Sargassum velasquezii</i> G.C.Trono			+			
1417	<i>Sargassum vietnamense</i> A.D.Zinova & Nguyen H.Dinh						+
1418	<i>Sargassum virgatum</i> C. Agardh				+		+
1419	<i>Sargassum vulgare</i> C. Agardh			+	+		

	Taxa	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
	Family Sargassaceae (Continued)						
1420	<i>Sargassum vulgare</i> C. Agardh var. <i>indicum</i> C. Agardh			+			
1421	<i>Sargassum wightii</i> Greville		+				
1422	<i>Sargassum yendoii</i> Okamura & Yamada			+			
1423	<i>Sargassum yoshidae</i> G.C.Trono						
1424	<i>Turbinaria condensata</i> Sonder			+	+		
1425	<i>Turbinaria conoides</i> (J. Agardh) Kützing	+	+	+	+	+	+
1426	<i>Turbinaria conoides</i> (J. Agardh) Kützing f. <i>retroflexa</i> W.R.Taylor			+	+		
1427	<i>Turbinaria conoides</i> (J. Agardh) Kützing f. <i>laticuspidata</i> W.R. Taylor	+		+	+		
1428	<i>Turbinaria deccurrens</i> Bory de Saint-Vincent		+	+	+	+	+
1429	<i>Turbinaria filamentosa</i> Yamada			+			
1430	<i>Turbinaria gracilis</i> Sonder						+
1431	<i>Turbinaria luzonensis</i> W.R. Taylor	+					
1432	<i>Turbinaria murrayana</i> E.S. Barton				+		
1433	<i>Turbinaria ornata</i> (Turner) J. Agardh	+	+	+	+	+	+
1434	<i>Turbinaria ornata</i> (Turner) J. Agardh var. <i>serrata</i> Jaasund				+		
1435	<i>Turbinaria ornata</i> f. <i>ecoronata</i> W.R. Taylor					+	
1436	<i>Turbinaria ornata</i> (Turner) J. Agardh f. <i>evesiculosa</i> (Barton)W.R. Taylor					+	
1437	<i>Turbinaria ornata</i> (Turner) J. Agardh var. <i>prolifera</i> Pham H.H.						+
1438	<i>Turbinaria parvifolia</i> C.K. Tseng & Lu B.R.						+
1439	<i>Turbinaria trialata</i> (J. Agardh) Kützing				+		
1440	<i>Turbinaria trialata</i> (J.Agardh) Kützing var. <i>capensis</i> Kützing						
1441	<i>Turbinaria tricostata</i> Barton		+				
1442	<i>Turbinaria turbinata</i> (Linnaeus) Kuntze			+			
	Order Scytothamnales						
	Family Scytothamnaceae						
1443	<i>Asteronema breviarticulatum</i> (J. Agardh) Ouriques & Bouzon		+				+

Table 4. Summary of number of families and taxa belonging to the different divisions of marine algae of the South China Sea

Country	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Region	Anambas & Natuna	SCS region	SCS region	Whole of Singapore	SCS region	Whole of Vietnam
Number of Families estimated	26	57	68	52	65	78
Total taxa estimated	79	355	631	300	316	805
Cyanophyta:						
Number of Families	1	8	8	7	12	10
Total number of taxa	1	22	49	14	36	65
Chlorophyta:						
Number of Families	10	16	18	14	17	21
Total number of taxa	31	87	175	77	86	182
Rhodophyta:						
Number of Families	12	24	34	24	30	36
Total number of taxa	22	156	304	119	142	409
Ochrophyta:						
Number of Families	3	9	8	7	6	11
Total number of taxa	25	90	103	90	52	149

Table 5. Sorenson's Similarity Index for the Marine Flora of the South China Sea

		Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Indonesia	Cyanophyta		0.0870	0.0400	0.0000	0.0541	0.0303
	Chlorophyta		0.3390	0.2136	0.2778	0.2735	0.2066
	Rhodophyta		0.1348	0.0736	0.1277	0.1341	0.0696
	Ochrophyta		0.2957	0.3125	0.2087	0.4156	0.1264
	All species		0.2304	0.1549	0.1900	0.2228	0.1109
Malaysia	Cyanophyta	0.0870		0.3099	0.1111	0.2759	0.2989
	Chlorophyta	0.3390		0.4656	0.4878	0.5665	0.4981
	Rhodophyta	0.1348		0.2783	0.3709	0.3960	0.2761
	Ochrophyta	0.2957		0.3834	0.4444	0.4789	0.3682
	All species	0.2304		0.3509	0.4061	0.4471	0.3483
Philippines	Cyanophyta	0.0400	0.3099		0.1587	0.3294	0.4035
	Chlorophyta	0.2136	0.4656		0.3651	0.3908	0.5322
	Rhodophyta	0.0736	0.2783		0.2506	0.2601	0.2917
	Ochrophyta	0.3125	0.0000		0.3834	0.4129	0.3175
	All species	0.1549	0.3509		0.3029	0.3273	0.3649
Singapore	Cyanophyta	0.0000	0.1111	0.1587		0.1600	0.1266
	Chlorophyta	0.2778	0.4878	0.3651		0.4417	0.4324
	Rhodophyta	0.1277	0.3709	0.2506		0.3295	0.2538
	Ochrophyta	0.2087	0.4444	0.3834		0.3944	0.3431
	All species	0.1900	0.4061	0.3029		0.3604	0.3059
Thailand	Cyanophyta	0.0541	0.2759	0.3294	0.1600		0.3564
	Chlorophyta	0.2735	0.5665	0.3908	0.4417		0.4552
	Rhodophyta	0.1341	0.3960	0.2601	0.3295		0.3085
	Ochrophyta	0.4156	0.4789	0.4129	0.3944		0.3284
	All species	0.2228	0.4471	0.3273	0.3604		0.3515
Vietnam	Cyanophyta	0.0303	0.2989	0.4035	0.1266	0.3564	
	Chlorophyta	0.2066	0.4981	0.5322	0.4324	0.4552	
	Rhodophyta	0.0696	0.2761	0.2917	0.2538	0.3085	
	Ochrophyta	0.1264	0.3682	0.3175	0.3431	0.3284	
	All species	0.1109	0.3483	0.3649	0.3059	0.3515	

Table 6. Some gaps and tasks for enhancing marine algal diversity research in Southeast Asia

Gap	Task
Checklists for each country (sub- regions) including location, GPS data, ecological data	Expeditions Taxonomy workshops (eg. SEASTax) Monographs
Historical biodiversity data	Compile archives/historical reports Clearing house for publications Search herbaria worldwide
Methods (collection, processing, identification, systematics, phylogenetics)	Workshops for method standardisation Distribution of research tasks amongst regional laboratories Close cooperation amongst herbaria; Molecular systematics & phylogenetics
List of threatened, endangered, extinct species	Identify methods to determine threatened species Compile list of threatened species using periodic checklists
Regional marine protected areas	Identify habitats, regions for protection of the species

to collect local species as well. Training in laboratory and field identification as well as molecular and other techniques for morphological and anatomical examinations were conducted. After the workshop, participants carry on the taxonomic research in their home countries and submit the materials for publication in the SEASTax Monograph Series (Phang, Lewmanomont & Lim, 2008; Phang & Lim, 2013). The genera worked on included *Caulerpa*, *Caulerpella*, *Ulva*, *Neosiphonia*, *Polysiphonia*, *Gracilaria*, *Euclidean*, *Kappaphycus*, *Sargassum*, *Halimeda*, *Padina*, *Dictyota* and the Rhodophyta and Gelidiales. Members of SEASTax (27 from SEASTax I and 30 from SEASTax II) are from Thailand, Indonesia, Vietnam, Singapore, Japan, Korea, Hong Kong and Malaysia. We hope to encourage and instill the love of taxonomy in young phycologists to ensure continuity of this expertise especially in Southeast Asia.

Table 6 shows the gaps in marine algal diversity information in the region and the tasks ahead. There is a need to collaborate in the region, as the marine algal flora is a regional natural heritage. Issues like pollution, climate change and even overharvesting of natural populations of marine algae, are transboundary in nature, and are better solved together. The marine algae serve as an important source of revenue for the Asian region, especially for the poorer coastal and maritime communities of the Coral Triangle, where *Kappaphycus* and *Euclidean* farming brings in additional income.

CONCLUDING REMARKS

This first checklist of the marine algae of South China Sea within the waters of the Philippines, Indonesia, Singapore, Malaysia, Thailand and Vietnam, may be considered a baseline for future efforts in understanding the affinities and biogeographical distribution of the marine algal flora in the South China Sea and the Indo-West Pacific region. It is hoped that the flora of Taiwan and Southern China can be added in at a later stage. The documentation of the flora is important for conservation as well as management of the utilisation of this important resource which has potential for commercialization, especially in the production of new products like biopharmaceuticals and industrial materials.

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