A checklist of vascular plants and uses of some species for livelihood-making in Setiu Wetlands, Terengganu, Malaysia

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Academic editor: Ricarda Riina  |  Received 11 April 2020  |  Accepted 3 July 2020  |  Published 8 September 2020

Citation: Jamilah MS, Lee GE, Salam MR, Shahimi S, Pesiu E, Jani JM, Horsali NAI, Shahrudin R, Nor SMM, Chong JL, Mohamad F, Raffi A, Nikong D (2020) A checklist of vascular plants and uses of some species for livelihood-making in Setiu Wetlands, Terengganu, Malaysia. PhytoKeys 160: 7–43. https://doi.org/10.3897/phytokeys.160.52946

Abstract
The Setiu Wetlands, a unique area with nine interconnected habitats, comprises a considerable fraction of the total Peninsular Malaysia’s wetland flora. Although botanical collecting in the area has been active in the past 10 years, only a few studies dealing with the wetland flora have been published. Thus, a detailed checklist of this area is urgently needed to ensure the continuity of its inter-relating flora and fauna, as well as the livelihood of the local people. In this work we conducted a survey of the vascular plant flora of Setiu Wetlands and investigated the most important plants used by the local communities. Our checklist accounts for 406 taxa from 277 genera and 106 families, including 24 (6%) species of ferns and lycophytes, three gymnosperms, 257 (64%) dicotyledons and 122 (30%) monocotyledons. This comprehensive plant checklist will be a primary reference for the management of the newly gazetted Setiu Wetlands State Park covering more than 400 hectares of lands and water bodies.

Keywords
coastal ecosystem, diversity, flora, local community, Malesia, useful plants

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Introduction

Wetlands are not only among the most productive and complex ecosystems (Costanza et al. 1997), but are also known to benefit humans with significant economic and ecological values (Barbier et al. 2011). The importance of wetlands has increased tremendously following the 2004 catastrophic tsunami which affected many places severely in the Asian region. The Setiu Wetlands (SW) constitutes the largest wetland complex in the east coast of Peninsular Malaysia which is located in an arbitrary but exclusive zone referring to the larger Setiu district in Terengganu. The coastal lagoon is the largest part of the SW, stretching approximately 14 km, parallel to the coastline, from Lembah Bidong in the south up to Beting Lintang to the north, while the wetland basin covers about 23,000 ha of lands and 880 ha of water bodies (Nakisah and Fauziah 2003). In 2018, in lieu of protecting vital catchment areas and their natural heritage, the state government of Terengganu gazetted two new state parks, one of which was in the Setiu district. Driven by its importance for the local economy and the dire need to wisely manage SW for the sustainability, efforts to legally protect SW were initiated more than 20 years ago. However, it was not until recently that the state authority of Terengganu passed the Terengganu State Park Enactment 2017, under which, 432 ha of SW were gazetted as State Park in Phase 1 covering mainly the SW brackish lagoon and estuary (Fig. 1). In the near future, the gazettement for three more phases of this State Park will cover possibly one of the largest coastal freshwater lakes in Peninsular Malaysia, locally known as Tasik Berombak. Tasik Berombak is hydrologically important by supplying the primary source of freshwater into the brackish lagoon of SW (Sathiamurthy 2015) which is a hub for economic and livelihood activities of the SW local community. In addition, phases 3 and 4 of the gazettement intend to cover mostly mangrove islands in SW, but many issues and challenges, primarily related to land title, need to be addressed.

SW supports major wetlands ecosystem of marine, coastal vegetation, brackish and freshwater swamps with nine interconnected habitats of sea, beach, mudflats, lagoons, estuaries, rivers, islands, coastal and mangrove vegetation (Mohd Lokman and Sulong 2001; Nakisah and Fauziah 2003; Jamilah et al. 2014). The nine vegetation types (Fig. 2) including the beach-ridge vegetation or BRIS soil vegetation are lowland forest, mangrove swamp forest, peat swamp forest, freshwater swamp forest, riparian vegetation, beach vegetation, heath vegetation (coastal dunes forest), and disturbed vegetation. Each of the habitats is characterised by a unique yet intricate physical environment, supporting its biological entities. Intimate and complex interaction between wetlands, people and the environment could clearly be observed in Setiu district where most of the natural resources harvested from SW are vital for supporting local livelihoods (Faridah et al. 2015). Similar to other wetlands, SW integrity critically depends on the physical and biological environments. Vegetation or flora are the vital biological entity of the SW with many efforts conducted to document this entity (for example, Jamilah et al. 2014; Siti Fatimah et al. 2015; Razali et al. 2017; Rohani et al. 2017). Furthermore, the SW flora is edaphically adapted, for example, the BRIS soil vegetation which is largely confined to the sandy environment of Terengganu narrow coastal
stripe and such unique vegetation is not found on the west coast of Peninsular Malaysia (Jamilah et al. 2014).

Setiu lagoon supports several islets within the lagoon with healthy mangrove vegetation. However, the mangrove ecosystem here is also characterised by a relatively sandier habitat as compared to the typical mangroves on the west coast of Peninsular Malaysia such as the Matang mangroves. Setiu mangroves are not only supporting the three classes of common mangrove vegetation, namely exclusive, non-exclusive and associate (Japar 1994), but also additional vegetation associated with sand ridges. This vegetation, including vascular plants, offers significant ecosystem services, such as providing food and shelter to animals residing in the area, with many being economically important. Furthermore, Setiu lagoon, which is the longest brackish wetlands in Terengganu, includes several patches of sandy-mudflats which support a healthy community of bivalves [including Scapharca cornea (local name: kepah bulu) and Meretrix meretrix (kepah minyak)] (Wan Bayani and Zaleha 2015) that are harvested by the Setiu locals for sale (Faridah et al. 2016). Two species of seagrasses (Halodule pinifolia and Halophila minor) are recorded to thrive well here (Syarifah et al. 2008). This

Figure 1. The boundaries (red line) of the forest to be gazetted in Setiu Wetlands as state park. Map courtesy of the Terengganu State Parks.
The seagrass-mangrove continuum is reported to be an important nursery ground for the juveniles of fishes such as grouper, and pink ear emperor fish, *Lethrinus lentjan* (Le et al. 2018). The mangroves of Setiu, and its lagoon, are also an important habitat for highly demanded mangrove crabs, *Scylla* spp. (Ikhwanuddin et al. 2010), and is the source of income for many local fishermen in the area. The geography and the vegetation cover of the area support it as a hub for aquaculture activities, covering brackish water cage culture, pond culture, pen culture especially on groupers, and also oyster farming (Suratman et al. 2014).

In terms of soil origin, the Setiu coastal plain originated from marine-based deposit, arranged in a series of ridges and depressions parallel to the shoreline (Ali and Mohamed 2007; Sathiamurthy 2015) known as BRIS (Beach Ridges Interspersed with Swales). BRIS is oligotrophic or infertile and unsuitable for agriculture (Lim 2002) partly due to extreme water retention capacity and comprises 90% sand (Mohd Ekhwan et al. 2009). However, BRIS soil supports a distinct natural vegetation formation which is different from a typical evergreen rainforest (Jamilah et al. 2013). The ridge part supports heath-like ecosystem plants, while the depression site is usually a pocket of seasonal wetland with adapted vegetation (Jamilah et al. 2011).
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The nine habitats in SW are increasingly being exposed to various anthropogenic and natural pressures. This could threaten the integrity and ability of those natural ecosystems to fulfil their ecological roles for the benefit of the local community and the coastal environment. As vegetation is the most important entity of the wetlands that supports other important life forms, it is essential to highlight the diversity of flora in SW. The aims of this paper are to provide the first comprehensive checklist of vascular plants of SW, and to understand the use of wild plants for livelihood continuity and sustainability in SW. The latter also further aims to understand how the local community’s utilisation affects the plants’ sustainability, so that sustainable resource management and conservation policy for SW can be achieved.

Materials and methods

The checklist is based on the plant collections carried out by JMS, EP, SMMN and DN with the help of field assistant, MRS. More than 30 different localities were visited after 2010 in the nine different ecosystems of SW. Specimens were deposited at the Herbarium of Universiti Malaysia Terengganu (UMTP). In addition, the checklist is also based on a search of the literature (e.g., Mohd Lokman and Sulong 2001; Jamilah et al. 2014; Siti Fatimah et al. 2015; Razali et al. 2017; Rohani et al. 2017; Pesiu 2018) as well as herbaria that store collections of specimens collected from SW, such as the Herbarium of Forest Research Institute of Malaysia, Kepong (KEP) and the Herbarium of Universiti Kebangsaan Malaysia, Bangi (UKMB). The checklist includes family, species and local names, and life forms. It also provides the conservation status according to the IUCN Red List of Threatened species (IUCN 2020), Malaysia Plant Red List, Peninsular Malaysia Dipterocarpaceae (Chua et al. 2010), Malaysia Biodiversity Information System (MyBIS) and Convention on International Trade on Endangered Species of Wild Fauna and Flora (CITES).

A total of 188 houses from six villages, i.e. Beting Lintang, Gong Batu, Pengkalan Gelap, Fikri, Mangkok and Penarek, were opportunistically selected for a rapid livelihood survey to determine their dependence on SW wild flora resources. In addition to that, a stratified sampling of 10 households belonging to identified resource users was later conducted in Beris Tok Ku, to provide a better representation of wild flora resource utilisation in the area.

Results and discussion

Families, genera and species diversity

We recorded 406 taxa (400 species, three varieties and three hybrids) from 277 genera and 106 families of vascular plants in the nine habitats of SW, including 24 species of ferns and lycophytes, three species of gymnosperms (Cycas edentata, Gnetum cuspidatum
and *G. gnemon*), with 257 being dicotyledons, and 122 monocotyledons (Table 1). This represents 19% of 2168 species recorded growing in wetlands of Peninsular Malaysia (Said and Zakaria 1992) and also illustrates the fact that SW flora is relatively species rich. The most speciose family recorded from SW is Orchidaceae (56 species/28 genera), followed by Rubiaceae (24 species/20 genera) and Fabaceae (22 species/17 genera) (Fig. 3), while there are 43 families represented only by a single species e.g., Amaryllidaceae, Commelinaceae, Cycadaceae, Dioscoreaceae, Flagellariaceae and Pittosporaceae (see Appendix 1 for other families). Among the genera that contribute most to the total number of species are *Dendrobium* (11 species), *Bulbophyllum* and *Syzygium* with 10 species, while *Bruguiera*, *Cyperus* and *Sonneratia* have five species each. In terms of the life forms (Table 2), trees have the highest percentage (39.7%) followed by terrestrial herbs and epiphytes with 16.5% and 13.3% of the taxa, respectively. Apart from the trees, the herbaceous species which can be terrestrial, epiphytic or climbing, are represented by 27.8% of the species, which implies that trees and herbaceous flora are the most important components of the SW areas.

The Orchidaceae (Fig. 4) are well represented in SW, representing 23% of 245 orchid species recently reported in Terengganu (Besi et al. 2019). Thus, to date, there are 56 species of orchids found in SW from which 14 species were recorded by Siti Fatimah et al. (2015) and 42 represent new records in SW, mostly being recent collections by Dome Nikong. The highest number of orchid species in SW, as expected, are in the widespread genera *Bulbophyllum* and *Dendrobium*, similar to the results of Besi et al. (2019) in Tasik Kenyir logging sites. Both genera are found to be most abundant epiphytic orchids growing in disturbed and logged forests in which the weather and microclimate are favourable for growth and reproductive processes. However, orchid density is due in part to the severity of the disturbance in which highly disturbed logging sites harbour lower density than somewhat disturbed sites (Besi et al. 2019). Among the species recorded in SW, there are some that are exceptional. The orchid diversity in SW is enriched with the sighting of the uncommon *Papilionanthe hookeriana* that is confined to the freshwater swamp area of Tasik Berombak in SW. It usually coexists with shrubs and tall grasses for support (Pridgeon et al. 2014). On the other hand, the discovery of *Vanilla griffithii* in its uncharacteristic habitat of the BRIS forest signified its capability to thrive in xeric environment and supported its local genus distribution pattern suggested by Mohd Raffi et al. (2014) which was best described as constantly sparse, widespread and in many habitats.

As for the mangroves, there are about 33 exclusive mangrove species including three hybrids i.e. *Sonneratia × hainanensis*, *Bruguiera × rhynchopetala*,

**Table 1.** Number of families, genera and species from Setiu Wetlands, Terengganu.

| Families                  | Genera | Species |
|---------------------------|--------|---------|
| Ferns and lycophytes     | 12     | 16      | 24     |
| Gymnosperms               | 2      | 2       | 3      |
| Dicotyledons              | 73     | 191     | 257    |
| Monocotyledons            | 19     | 70      | 122    |
| Total                     | 106    | 277     | 406    |
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Figure 3. The 12 largest families and genera of the vascular plants of Setiu Wetlands.

Table 2. Number of species from Setiu Wetlands according to their life form.

| Life form                        | No. of species | Percentage (%) |
|----------------------------------|----------------|----------------|
| Trees                            | 161            | 39.7           |
| Terrestrial herbs                | 67             | 16.5           |
| Epiphytic herbs and shrubs       | 54             | 13.3           |
| Shrubs                           | 39             | 9.6            |
| Climbing herbs and shrubs        | 33             | 8.1            |
| Ferns                            | 23             | 5.7            |
| Aquatic herbs                    | 15             | 3.7            |
| Palms                            | 5              | 1.2            |
| Parasitic herbs and shrubs       | 5              | 1.2            |
| Palm-like (Pandanus spp.)        | 4              | 1              |
| Total                            | 406            | 100            |

*Rhizophora × annamalayana* and four individuals of *Bruguiera hainesii* located at Pulau Layat (Razali et al. 2017). However, the mangroves in SW and on the east coast of Peninsular Malaysia, in general, are not so diverse and widely distributed as compared to the west coast because the former are exposed to the lagoons and rivers (Latiff and
Figure 4. A selection of Orchidaceae species from Setiu Wetlands. A Ania penangiana B Thrixspermum amplexicaule C Pinalia atrovina D Papilionanthe hookeriana E Phalaenopsis pulcherrima F Cymbidium finlaysonianum G Grammatophyllum speciosum H Strongyleria pannea I Callistylis pulchella J Bromheadia finlaysonianum K Vanilla griffithii L Arachnis flos-aeris M Dendrobium secundum N Bulbophyllum trigonopus O Dendrodrium lasiopetalum.
Faridah-Hanum 2014), and are also threatened by strong waves during monsoon months as well as anthropogenic activities e.g., many mangroves in SW had been uprooted to make way for aquaculture, shrimp ponds and constructions of infrastructures.

The relatively species rich profile of SW reflects on the interconnected forest types in SW which consists of different plant communities (Fig. 5) including beach, mangroves, peat swamp and freshwater swamp plants. Beach vegetation includes Casurinaceae and Convolvulaceae and mixed mangroves plants such as the families Avicenniaceae, Lythraceae and Rhizophoraceae. Peat swamp plants can be found behind the mangrove belt and further inland, Melaleuca swamp forest dominates the waterlogged area associated with BRIS soil (Jamilah et al. 2015). On the other hand, the heath-like dune landscape established on the ridge areas of Setiu coast is characterised by stunted and low stature vegetation growing in a clumping pattern (Jamilah et al. 2014). The vegetation on the sandy and dry ridge is dominated by Myrtaceae family (Melaleuca cajuputi, Baeckea frutescens, Rhodomyrtus tomentosa and Syzygium spp.). Woody epiphytic shrubs (e.g., Ficus deltoidea) and herbaceous species such as orchids are adapted to grow underneath the clump on BRIS soil dune landscape (Jamilah et al. 2014). However, the natural ecosystem on BRIS soil ridge and swamps is becoming scarce and smaller in coverage due to various threats faced by the coastal ecosystem of SW. It has become more scattered and fragmented, resulting in difficulty in finding an area that could be a good representative of BRIS soil flora. Fragmentation and degradation also expose this natural ecosystem to the invasion of exotic invasive alien species, such as Acacia mangium, A. auriculiformis and their hybrids (Jamilah et al. 2014). It is predicted that without legal protection and authority commitment to conserve BRIS soil natural vegetation, it will soon be replaced by these alien species, particularly Acacia spp. Although the gazettement of BRIS soil habitat is still underway, land conversion in BRIS is rampant and to prevent further land uses, ecotourism activity is recommended. Therefore, the hope is that in the near future, BRIS soil habitat would be included in the next phases of State Park gazettement which will likely have a significant effect in ensuring the conservation of this unique habitat.

As for the wetland or swamp, a rainfed swamp with a water table is highest during the monsoon months. The swamp is dominated by Melaleuca cajuputi trees with larger diameter of M. cajuputi trees relative to trees growing on the drier ridge of BRIS soil, as it grows better in waterlogged conditions as compared to dry sites (Suzuki 1999). This Melaleuca swamp harbours carnivorous species of pitcher plants (Nepenthes spp.), sundews (Drosera burmannii in particular) and Utricularia bifida which are adapted to freshwater swamp. The hydrological contribution of patches of Melaleuca swamp as a seasonal wetland is worth exploring and the wetlands may provide a critical ecosystem service of mitigating floods, particularly in monsoon months in Terengganu (Jamilah et al. 2015). In addition, SW also harbours a large freshwater lake, locally known as Tasik Berombak. The water is contributed by rain and a few small river tributaries (Sathiamurthy 2015) and comprises BRIS soil with heath-like vegetation on its ridge, but is less rich than natural BRIS ecosystem. The lake is invaded by thick bush of Hanguana malayana and other aquatic and semi aquatic non vascular plants.
Figure 5. Different plant communities in Setiu Wetlands. **A** Mangrove plants **B** Nipa palm (*Nypa fruticans*) population **C** *Ceriops tagal* **D** *Pandanus tectorius* **E** Ant plant, *Hydnophytum formicarum* attached to *Bruguiera hainesii* **F** *Nepenthes ampullaria* **G** *Hoya coronaria* **H** *Ploiarium alternifolia*. 
The high diversity of wild orchids and other potentially useful plant species on coastal habitat of SW is indeed a natural capital for SW State Park and furthermore, the habitat supports an option value, which could be tapped in the future as outlined in Total Economic Value (TEV) (Costanza et al. 1997). The biodiversity resources in SW can be managed sustainably to support the local community green economy as an alternative to unsustainable economic activities such as sand mining. The SW State Park will also be crucial to protect the critically endangered Painted Terrapin (*Batagur borneoensis* (Schlegel & Muller, 1844)) and to serve as a refuge for some 29 mammals, 161 birds and 36 reptiles and amphibians (WWF-Malaysia). Furthermore, it is also classified as an Important Bird Area (IBA) by Birdlife International.

**Conservation status**

Eight species have been classified as threatened species including one Critically Endangered (CR), *Bruguiera hainesii*, two Endangered (EN), *Anisoptera marginata* and *Pterocarpus indicus*, and five Vulnerable (VU) (*Avicennia rumphiana*, *Halophila beccarii*, *Intsia bijuga*, *Ternstroemia wallichiana*, and *Vatica pauciflora*). The Critically Endangered, *B. hainesii* is only found in several localities in Southeast Asia including SW, and the lower estimates of mature individuals probably due to the low rates of propagation and germination (Polidoro et al. 2010). However, recent molecular analyses revealed that *B. hainesii* did not merit recognition of species as it has no unique haplotype/allele of its own but instead shared nuclear allele with *B. cylindrica* and *B. gymnorrhiza*, and thus indicating the hybrid origin of *B. hainesii* (Ono et al. 2016). Five species partially met the classification thresholds under the threatened species category and therefore were listed as Near Threatened i.e. *Cycas edentata*, *Myristica lowiana*, *Olax scandens*, *Phoenix paludosa*, *Sonneratia ovata*, while 155 species are regarded either as Least Concern (LC) or Data Deficient (DD). However, about half of the vascular plants (59%) occurring in SW have not been assessed and categorised under the IUCN Red List of Threatened Species.

For the Malaysia Plant Red List, two species have been classified as threatened species, namely *Anisoptera marginata* (EN) and *Anodendron candolleanum* (VU). There were nine species listed as Near Threatened i.e. *Cycas edentata*, *Cerbera odollam*, *Cerbera manghas*, *Vatica pauciflora*, *Drosera burmannii*, *Xylocarpus moluccensis*, *Horsfieldia irya*, *Myristica lowiana*, *Olax scandens* while 32 species were listed as Least Concern (LC). The other 369 species have not been assessed and categorised under the Malaysia Plant Red List but are available in MyBIS. On the other hand, there were 55 species (13%) listed under CITES of which 49 species were from Orchidaceae, three from Nepenthaceae, two from Ebenaceae and one from Cycadaceae. Almost all the orchids recorded (89%) in SW are listed in CITES. About 30,000 plant species have been listed and protected by CITES against over-exploitation through international trade of which more than half of the species assessed are orchids and cacti.
We found that in the SW, the local households’ utilisation mainly focused on three species, namely *Nypa fruticans* (nypa), *Lepironia articulata* (Blue-grey sedge) and *Pandanus tectorius* (Sea Pandan, Sea screwpine). Figure 6 shows the number of flora user households based on the species utilised in each village. *Nypa fruticans* records the highest number of users with 34 households from five out of seven villages. *Lepironia articulata* is a close second, with recorded utilisation in 28 households in five villages as well. Meanwhile *P. tectorius* is the least utilised of the three species with only nine user households in total from four villages. The wide use of *N. fruticans* coincides with the highest variety of products that can be made using its various plant parts (see Fig. 7). The nypa palm is the most versatile wild plant among the three as different parts of the plant are used to make different kinds of products. For example, the young leaves are used to make tobacco wrappers, its dried midrib is weaved into baskets, while mature fronds with leaves are used to make roof-thatch. The midribs of the nypa, which are unsuitable for weaving lekar baskets, are used to make brooms. Due to this, nypa is the most preferred plant species used in SW. Its utilisation is well documented in Malaysia (see Latiff 2009; Tsuji et al. 2011). It is not only an important wild resource for the Malays but also for indigenous tribes such as the Mah Meri who use nypa leaves to produce decorative items for spirit huts, altars, homes and dancers (Baba et al. 2013).
As for *Lepironia articulata*, although it can be used to make similar types of products as those made using *Pandanus tectorius*, i.e. mats and bags, its livelihood-based utilisation in Malaysia appears less recorded compared to the latter. Instead, there appears to be more documentation on its utilisation in grey water treatment (see Sim et al. 2008; Wurochekke et al. 2014). However, its utilisation is significant for the users in SW, as it supplemented up to 45% of their monthly household income and represents a strong cultural link to the local tradition for the users who are mostly exclusive (not using other flora resource) users of this resource. The 11 users from SW produced mats, six users made sacks, while 10 users made accessories’ items such as hats and bags. Our findings suggest that current utilisation is at a sustainable level thanks to the user’s knowledge about the ecology of these plants. Its use therefore poses no threat to the integrity of the state park. According to MacDonald (2009), *L. articulata* is listed among eight major species that are commonly used for weaving activities by the Plant Resources of South-East Asia (PROSEA) (Brink and Escobin 2003) due to their high suitability as a raw material for weaving activities, in particular their toughness, plasticity, sustainable strength and impermeability after being dried (Truyen et al. 2014).

The utilisation of *L. articulata* has been documented in other countries like Indonesia, Vietnam, Thailand and China where this plant is used to make handicraft or household materials such as bags, mats, baskets, and hats (Domyos and Te-Chato 2013; Truyen et al. 2014). Whereas *P. tectorius* is only used to make one type of product, i.e. mats by nine users in SW, although other types of handicrafts used to be made in the

![Figure 7. Number of producers based on type of products made from wild flora.](image-url)
past. Indeed, while pandan mats are produced in various parts of Malaysia (Ismail and Nawawi 2011; Baba et al. 2013) the quality of pandan mats produced by Terengganu weavers is of excellent quality (Ismail and Nawawi 2013). Therefore, it is highly probable that the weavers in SW could also produce a variety of products (Fig. 8), just as the weavers of Mah Meri tribe who are well known for producing varied, exquisite handicrafts such as purses, pouches, mats and baskets in Pulau Carey, Selangor (Baba et al. 2013). However, there needs to be a steady market demand that guarantees a good income stream, which is provided to the Mah Meri weavers by the Gerai OA, an NGO that helps market their products through fairs and online marketing.

Figure 8. Utilisation of *Lepironia articulata* (A1–3), *Pandanus tectorius* (B1–3), and *Nypa fruticans* (C1–3ii) in Setiu Wetlands. From left to right 1 Harvesting 2 Part used 3 Finished products.
Conclusions

Our survey indicates that the nine connected habitats in SW are relatively rich in vascular plants, harbouring nearly 20% of Peninsular Malaysia wetland flora. The current checklist is far from complete as additional species will likely be found with wider sampling coverage and additional systematic inventories. The utilisation of plant resources for the livelihood of coastal communities in SW is still significant for the three main species used in the area (Nypa fruticans, Lepironia articulata and Pandanus tectorius). Local communities play an important role in the sustainability of SW, so it is essential to understand their dependence on the intricate network of wetland ecosystems and their plant species to ensure that they are not overlooked in the management plans of the Setiu Wetlands State Park.

Acknowledgements

We are grateful to the Director of Terengganu State Parks, Muhammad Aizat Mohd Rashid and Nabila Husna Mohd Zohuri for providing and helping with the map, and Universiti Malaysia Terengganu for the facilities and utilities used during this study. Part of this paper is based on a research project awarded to JMJ (53131) undertaken for Universiti Malaysia Terengganu’s Niche Research Grant Scheme (NRGS) programme through funding by the Malaysian Ministry of Education. We are also grateful to the subject editor Ricardia Riina and two anonymous reviewers for providing very useful comments and also for suggesting substantial improvements to earlier drafts of this manuscript.

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Appendix 1

Checklist of vascular plants from Setiu Wetlands, Terengganu, Malaysia. The habitat for all species are abbreviated as MSF = Mangrove Swamp Forest; PSF = Peat Swamp Forest; RV = Riparian Vegetation; LF = Lowland Forest; HV = Heath vegetation including CDF = Coastal Dunes Forest; BV = Beach Vegetation; DV = Disturbed Vegetation; FSF = Freshwater Swamp Forest; and BRIS including Melaleuca vegetation (MV = Melaleuca vegetation). Six categories in the conservation status, EN: Endangered, VU: Vulnerable, NT: Near Threatened, LC: Least Concern, DD: Data Deficient, NE: Never Evaluated.

| Family                  | Species                                      | Local Name       | Life Form | Habitat | IUCN Status | Malaysia Red List/MyBIS |
|-------------------------|----------------------------------------------|------------------|-----------|----------|-------------|------------------------|
| **LYCOPHYTES**          |                                              |                  |           |          |             |                        |
| Lycopodiaceae           | *Lycopodiella cernua* (L.) Pic.Serm.          | Sorok-sorok      | Fern      | RV, DV   | LC          | NE                     |
| **FERNS**               |                                              |                  |           |          |             |                        |
| Aspleniaceae            | *Asplenium longissimum* Blume                |                  | Fern      | LF       | NE          | NE                     |
|                         | *Asplenium nidus* L.                        | Paku Sarang Burung, Daun Semun, Paku Langsuir, Paku Langsuyar, Paku Pandan, Paku Sakat, Rumah Langsuyar |   |         |             |                        |
|                         |                                              |                  | LF       | NE       |             | NE                     |
| Blechnaceae             | *Blechnum indicum* Burm.f.                   |                  | Fern      | CDF      | NE          | NE                     |
|                         | *Stenochlaena palustris* (Burm.f.) Bedd.     | Paku Miding      | Fern      | LF       | NE          | NE                     |
| Davalliaceae            | *Davallia denticulata* (Burm.f.) Mett. ex Kuhn. | Paku Tertutup, Paku Terutup |     |          |             |                        |
|                         | *Davallia solida* (Forst.) Sw.               |                  | Fern      | FSF, RV, DV | NE       | LC                     |
| Dennstaedtiaceae        | *Pteridium esculentum* (G.Forst.) Cockayne   |                  |          |          |             |                        |
|                         |                                              |                  | LF       | NE       |             | NE                     |
| Lygodiaceae             | *Lygodium flexuosum* (L.) Sw.                | Paku Ribu-ribu, Akar Sidin, Darai Paya |     |          |             |                        |
|                         | *Lygodium microphyllum* (Cav.) R.Br.         | Paku Ribu-ribu, Selada |     |          |             |                        |

https://www.e-sentral.com/book/info/269181/Setiu-Wetland-Species-Ecosystems-and-Livelihoods
| Family            | Species                                      | Local Name                                  | Life Form | Habitat       | IUCN Status | Malaysia Red List/ MyBIS |
|-------------------|----------------------------------------------|---------------------------------------------|-----------|---------------|-------------|--------------------------|
| **Nephrolepidaceae** | *Nephrolepis auriculata* (L.) Trimen         | Paku Hitam                                 | Fern      | DV            | DD          | NE                       |
|                   | *Nephrolepis biserrata* (Sw.) Schott         | Paku Hitam, Paku Larat, Paku Uban          | Fern      | DV            | LC          | LC                       |
| **Polypodiaceae** | *Drynaria quercifolia* (L.) J.Sm.            | Paku Sakat Tupai, Sakat Laipang, Daun Kelapa Tupai, Daun Kepala Tupai | Fern      | LF            | LC          | LC                       |
|                   | *Goniophlebium percussum* (Cav.) Wagner & Grether | Paku Pakis                                 | Fern      | LF            | LC          | LC                       |
|                   | *Phymatosorus cuspidatus* (D.Don) Pic.Serm.  | Paku Pakis                                 | Fern      | LF, DV        | DD          | NE                       |
|                   | *Phymatosorus scolopendria* (Burm.f) Pic.Serm. | Paku Wangi, Sakat Hitam                   | Fern      | LF, DV        | DD          | NE                       |
|                   | *Pyroaria lanceolata* (L.) Farw.             | Bulu Ayam, Sakat Batu, Tetumang           | Fern      | BV, CDF       | LC          | LC                       |
|                   | *Pyroaria pilelloides* (L.) M.G.Price        | Duit-duit, Sakat Ribu-ribu, Sisik Naga     | Fern      | LF, MSF       | LC          | LC                       |
|                   | *(Burm.f) C.V.Morton*                        | Sakat, Sului                               | Fern      | LF, FSF, DV   | LC          | LC                       |
| **Psilotaceae**   | *Psilotum nudum* (L.) P.Beauv.               | -                                           | Fern      | CDF           | NE          | NE                       |
| **Pteridaceae**   | *Acrostichum aureum* L.                     | Piai Raya, Paku Larat, Paku Laut           | Fern      | MSF           | LC          | LC                       |
|                   | *Acrostichum speciosum* Willd.               | Piai Lasa                                  | Fern      | MSF           | LC          | LC                       |
| **Salviniaceae**  | *Salvinia molesta* D.S.Mitch.               | Kiambang                                   | Fern      | FSF           | NE          | NE                       |
| **Schizaceae**    | *Schizaea dichotoma* (L.) Sm.                | Janggur kali, Payung Ali, Misai Rimau, Paku Cakar Ayam | Fern      | CDF           | LC          | NE                       |
| **GYMNOSPERMS**   |                                               |                                             |           |               |             |                          |
| **Cycadaceae**    | *Cycas edentata* De Laub.                   | Pokok Sakat                                | Tree      | CDF           | NT          | NT                       |
| **Gnetaceae**     | *Gnetum cuspidatum* Blume                    | Melinjau akar                              | Climbing  | LRW           | LC          | NE                       |
|                   | *Gnetum gnemon* L.                           | Melinjau/Cokok                            | Tree      | BV            | LC          | NE                       |
| **DICOTYLEDONS**  |                                               |                                             |           |               |             |                          |
| **Acanthaceae**   | *Acanthus ebracteatus* Vahl                  | Jeruju Putih                              | Shrub     | MSF, RV, LF   | LC          | NE                       |
|                   | *Acanthus ilicifolius* L.                    | Jeruju Hitam                              | Shrub     | MSF           | LC          | NE                       |
|                   | *Ruellia tuberosa* L.                        | -                                          | Terrestrial herb | DV  | NE          | NE                       |
|                   | *Thunbergia fragrans* Roxb.                  | Akar Patuk Tuau, Akar Sebiak, Kacang Akar, Kelemai Merah, Sambung Nyawa, Tunbergia Putih | Terrestrial herb | DV  | NE          | NE                       |
| **Anacardiaceae** | *Anacardium occidentale* L.                  | Gajus, Jambu Golok, Jambu Monyet,          | Tree      | CDF           | NE          | NE                       |
| Family               | Species                                           | Local Name                          | Life Form | Habitat | IUCN Status | Malaysia Red List/MyBIS |
|----------------------|---------------------------------------------------|-------------------------------------|-----------|---------|-------------|-------------------------|
| Anacardiaceae        | *Buchanania arborescens* (Blume) Blume           | Otak Udang Tumpul, Otak Udang, Katak Udang, Ketak Udang, Puah Pipit, Puan, Terentang Tikus | Tree      | RV, CDF  | NE          | NE                      |
|                      | *Buchanania sessilifolia* Blume                   | Otak Udang Tumpul                   | Tree      | LF      | DD          | NE                      |
|                      | *Campnosperma coriaceum* (Jack) Hallier f. ex Steenis | Terentang, Terentang Kelintang     | Tree      | SF, FSF | NE          | NE                      |
|                      | *Campnosperma squamatum* Ridl.                   | Terentang, Terentang Daun Kecil,    | Tree      | SF      | NE          | NE                      |
|                      | *Gluta velutina* Blume                            | Rengas, Rengas air                  | Tree      | SF, RV, CDF | NE          | NE                      |
|                      | *Mangifera griffithii* Hook.f.                   | Asam Raba, Asam Rawa, Rawa          | Tree      | LF      | NE          | NE                      |
|                      | *Mangifera pentandra* Hook.f.                    | Pauh, Mangga, Mangga Air, Mangga Dodol, Mempelam Bemban | Tree | LF | DD | NE |
|                      | *Gluta wallichii* (Hook.f.) Ding Hou              | Rengas                              | Tree      | PSF     | DD          | NE                      |
| Annonaceae           | *Annona glabra* L.                               | Nona Licin                          | Tree      | MSF     | NE          | NE                      |
| Ancistrocladaceae    | *Ancistrocladus tectorius* (Lour.) Merr.         | Akar Julong Hitam, Jejulong Akar    | Shrub     | LF      | NE          | LC                      |
|                      | *Alyxia reinwardtii* Blume                       | Palusari                            | Climbing shrub | LF, PSF | NE          | LC                      |
|                      | *Anodendron candolleianum* Wight                 | Akar kikat, Akar nirwali            | Climbing shrub | PSF, RV | NE          | VU                      |
|                      | *Calotropis gigantea* (L.) W.T.Aiton              | Reminggu                           | Shrub     | CDF, BV | NE          | NE                      |
|                      | *Cerbera odollam* Gaertn.                        | Pong-pong, Bumbata                 | Tree      | SF      | NE          | NE                      |
|                      | *Cerbera manghas* L.                             | Pong-pong, Pong Pong Pong Pong Pong, Butabuta, Nyan | Tree | MSF, BV | NE | NT |
|                      | *Dischidia major* (Vahl) Merr.                   | Akar Bano, Akar Kul                 | Epiphytic herb | BV | NE | NE |
|                      | *Dischidia nummularia* R.Br.                     | Daun Pitis Kecil                   | Epiphytic herb | FSF | NE | NE |
|                      | *Finlaysonia obovata* Wall.                      | Kalak kambing, Pelir Kambing       | Climbing shrub | MSF | NE | NE |
|                      | *Hoya carnosa* (L.f.) R.Br.                      | Akar Banok Jantan                  | Climbing shrub | BV | NE | NT |
|                      | *Hoya coronaria* Blume                           | Akar Setebal                       | Epiphytic shrub | MSF | NE | NE |
|                      | *Hoya coriacea* Blume                            | Akar Setebal                       | Epiphytic shrub | MSF | NE | NE |
| Family             | Species                                      | Local Name          | Life Form | Habitat | IUCN Status | Malaysia Red List/MyBIS |
|--------------------|----------------------------------------------|---------------------|-----------|----------|-------------|-------------------------|
| Ancistrocladaceae  | Hoya diversifolia Blume                      | Akar Setebal        | Epiphytic shrub | MSF     | NE          | NE                      |
|                    | Hoya verticillata (Vahl) G.Don               | Akar Setebal        | Epiphytic shrub | MSF     | NE          | NE                      |
|                    | Parsonia alophavevarcs (Dennst.) Mabb.       | -                   | Climbing shrub | MSF; PSF, BV | NE          | NE                      |
|                    | Tylophora flexuosa R.Br.                     | Akar Banok Jantan   | Climbing shrub | MSF     | NE          | NE                      |
| Aquifoliaceae      | Ilex cymosa Blume                           | Mensirah, Mensirah Puteh | Tree     | MSF     | NE          | NE                      |
| Araliaceae         | Arthrophyllum diversifolium Blume           | Tumbuh Kelapa       | Tree      | LF      | NE          | NE                      |
|                    | Schefflera elliptica (Blume) Harms.         | Cenama Gajah        | Climbing shrub | MSF     | NE          | NE                      |
| Apocynaceae        | Alstonia pneumatophora Baker ex Den Berger | Pulai Paya          | Tree      | FSF     | LC          | NE                      |
|                    | Catharanthus roseus (L.) G.Don               | Kemunting Cina      | Shrub     | CDF, MSF | NE          | NE                      |
|                    | Sarcocholus globosus Wall.                  | Buah Pitis          | Climbing shrub | MSF     | NE          | NE                      |
|                    | Secamone elliptica R.Br.                    | -                   | Shrub     | DV      | NE          | NE                      |
| Asteraceae         | Melanthera biflora (L.) Wild                | Serenai Laut, Serenai, Serenah, Sunai Laut | Climbing herb | MSF; BV | NE          | NE                      |
|                    | Mikania micrantha Kunth                     | Selaput Tunggul     | Climbing herb | DV      | NE          | NE                      |
|                    | Pluchea indica (L.) Less                    | Beluntas            | Shrub     | MSF     | NE          | NE                      |
|                    | Sphagnetica triloba (L.) Pruski             | -                   | Terrestrial herb | DV      | NE          | NE                      |
|                    | Symedrella nodiflora (L.) Gaertn.           | -                   | Terrestrial herb | DV      | NE          | NE                      |
|                    | Tridax procumbens L.                        | Butang Baju         | Terrestrial herb | DV      | NE          | NE                      |
| Avicenniaceae      | Avicennia alba Blume                        | Api-api Putih, Api-api Hitam | Tree     | MSF; RV | LC          | NE                      |
|                    | Avicennia officinalis L.                    | Api-api Ludat, Api-api, Api-api Sudu | Tree     | MSF     | LC          | NE                      |
|                    | Avicennia rumphiana Hallier f.              | Api-api Bulu        | Tree      | MSF     | VU          | NE                      |
| Bignoniaceae       | Dolichandrone pathacea (L.f.) K.Schum.      | Tui, Poko Kulo, Tuj, Kulok | Tree     | MSF     | LC          | NE                      |
| Bonnetiaceae       | Ploiarium alternifolium (Vahl) Melchior     | Riang-riang         | Tree      | FSF, DV | NE          | LC                      |
| Calophyllaceae     | Calophyllum inophyllum L.                   | Bintangor laut      | Tree      | CDF     | LC          | NE                      |
|                    | Calophyllum rupicola Ridl.                  | Bintangor           | Tree      | MSF, CDF | NE          | NE                      |
|                    | Calophyllum sclerophyllum Vesque            | Bitangor Jangkang   | Tree      | PSF     | NE          | NE                      |
|                    | Mesua ferruginea (Pierre) Kosterm.           | Sembawang           | Tree      | PSF     | NE          | NE                      |
| Casuarinaceae      | Casuarina equisetifolia L.                  | Rhu, Ru             | Tree      | CDF, BV | NE          | NE                      |
| Family                  | Species                                               | Local Name          | Life Form         | Habitat | IUCN Status | Malaysia Red List/MyBIS |
|------------------------|-------------------------------------------------------|---------------------|-------------------|---------|-------------|------------------------|
| Celastraceae           | Gymnosporia littoralis (Backer) Jordaan               | -                   | Shrub             | CDF     | NE          | NE                     |
|                        | Salacia chinensis L.                                  | Akar pelanduk       | Climbing shrub    | MSF     | NE          | NE                     |
| Chrysobalanaceae       | Licania splendens (Korth.) Prance                    | Nylas               | Tree              | PSF, LF | LC          | LC                     |
|                        | Parastemon urrophyllus (Wall.ex A.DC.) A.DC.         | Malas Siangus       | Tree              | CDF, BV | NE          | NE                     |
| Clusiaceae             | Garcinia bombroniana Pierre                          | Beruas              | Tree              | CDF, BV | NE          | NE                     |
|                        | Garcinia nigrolinata Planch.ex T.Anderson           | Beruas              | Tree              | CDF     | NE          | NE                     |
|                        | Garcinia brevirostrii Scheff.                        | Lulai, Kandis       | Tree              | CDF     | NE          | NE                     |
|                        | Garcinia parvifolia (Miq.) Miq.                      | Beruas              | Tree              | FSF     | NE          | NE                     |
| Combretaceae           | Lumnitzera littorea (Jack) Voigt                      | Teruntum Merah      | Tree              | MSF     | LC          | NE                     |
|                        | Lumnitzera racemosa Willdl.                          | Teruntum Putih, Teruntum Bunga Putih | Tree | MSF     | LC          | NE                     |
|                        | Combretum tetralophum C.B.Clarke                      | -                   | Climbing shrub    | PSF     | NE          | NE                     |
|                        | Terminalia catappa L.                                | Ketapang            | Tree              | MSF, CDF, BV | NE          | NE                     |
| Convolvulaceae         | Ipomoea cairica (L.) Sweet                           | Seri pagi jalar     | Terrestrial herb  | CDF, BV | LC          | NE                     |
|                        | Ipomoea pes-caprae (L.) R.Br                         | Tapak Kuda, Seri pagi | Terrestrial herb  | CDF, BV, BV | NE          | NE                     |
| Dilleniaceae           | Dillenia suffruticosa (Griff.) Martelli.             | Simpoh Air          | Tree              | LF, DV  | NE          | NE                     |
|                        | Tetracera indica (Christm. & Panz.) Merr.            | Akar Mempelas Licin, Akar Mempelas, Mempelas, Mempelas Minyak, Mempelas Paya | Climbing shrub | LF, DV | NE          | NE                     |
|                        | Tetracera scandens (L.) Merr.                        | Akar Mempelas       | Climbing shrub    | LF, DV, BV | NE          | NE                     |
| Dioscoreaceae          | Tacca leontopetaloides (L.) Kuntze                   | Lekir Pasir         | Terrestrial herb  | CDF, BV | LC          | NE                     |
| Dipterocarpaceae       | Anisoptera marginata Korth.                          | Mersawa Paya        | Tree              | PSF     | EN          | EN                     |
|                        | Vatica pauciflora Blume                              | Resak raya          | Tree              | MSF     | VU          | NT                     |
| Droseraceae            | Drosera burmannii Vahl                               | -                   | Terrestrial herb  | LF      | LC          | NT                     |
| Ebenaceae              | Diospyros ferrea (Willd.) Bakh.                      | Buey, Kayu Arang, Kayu Arang | Tree | MSF     | NE          | NE                     |
|                        | Diospyros lanceifolia Roxb.                          | Arang               | Tree              | LF      | NE          | NE                     |
|                        | Diospyros maingayi (Hiern) Bakh.                     | Kayu Arang, Siangus, Merpinang Daun Besar | Tree | PSF, LF | NE          | NE                     |
| Family          | Species                                      | Local Name           | Life Form | Habitat | IUCN Status | Malaysia Red List/MyBIS |
|-----------------|----------------------------------------------|----------------------|-----------|----------|--------------|-------------------------|
| Elaeocarpaceae  | *Elaeocarpus macrocerus* (Turcz.) Merr.      | Mendong              | Tree      | FSF      | NE           | NE                      |
|                 | *Elaeocarpus mastersii* King                | Mendong              | Tree      | LF, FSF, PSF | NE          | LC                      |
|                 | *Elaeocarpus petiolatus* (Jack) Wall         | Mendong              | Tree      | LF       | NE           | LC                      |
| Ericaceae       | *Styphelia malayana* (Jack) Spreng.          | Choreng atap, Chuchur Atap, Maki China, Tasek Timbul | Tree      | CDF, BV | NE           | NE                      |
|                 | *Vaccinium littoreum* Miq.                   | Inai batu            | Tree      | BV       | NE           | NE                      |
| Erythroxylaceae | *Erythroxylum cuneatum* (Miq.) Kurz.         | Cinta Mula           | Tree      | CDF, BV  | NE           | NE                      |
| Euphorbiaceae   | *Excoecaria agallocha* L.                    | Buta-buta, Bubutu, Bebuta, Betak-betak | Tree      | MSF      | LC           | NE                      |
|                 | *Macaranga hypoleuca* (Rchb.f. & Zoll.) Müll. Arg. | Mahang Putih         | Tree      | LE, DV   | NE           | NE                      |
|                 | *Macaranga laciniata* Whitmore & Airy Shaw. | Mahang               | Tree      | LE, DV   | NE           | NE                      |
|                 | *Shirakiospis indica* (Willd.) Esser         | Gurah                | Tree      | MSF      | LC           | NE                      |
|                 | *Suregada multiflora* (A.Juss.) Baill.       | Merlimau, Limau Hantu | Tree      | LF       | NE           | NE                      |
| Fabaceae        | *Aganope heptaphylla* (L.) Polhill           | Ketui Besar, Omis omis | Climbing shrub | MSF, BV | NE           | NE                      |
|                 | *Archidendron clypearia* (Jack) L.C.Nielsen | Petai Kera           | Tree      | PSF, DV  | NE           | NE                      |
|                 | *Caesalpinia bonduc* (L.) Roxb.              | Gorek                | Climbing shrub | CDF, BV | NE           | NE                      |
|                 | *Caesalpinia cristata* L.                    | Akar Kuku Tupai      | Climbing shrub | MSF     | NE           | NE                      |
|                 | *Canavalia rosea* (Sw.) DC.                  | Kekacang Laut        | Terrestrial herb | BV     | NE           | NE                      |
|                 | *Cynometra ramiiflora* L.                   | Katak Puru           | Tree      | MSF      | NE           | NE                      |
|                 | *Dalbergia candenatensis* (Dennst.) Prain    | Akar Kait, Api-api Jambu, | Climbing shrub | MSF     | NE           | NE                      |
|                 | *Dendrolobium umbellatum* (L.) Benth.        | Petal laut, Dedulang, Petal belalang, Petal laut | Shrub | MSF      | NE           | NE                      |
|                 | *Derris trifoliata* Lour.                   | Ketui, Tuba laut, Ketui, Salang, Selang, Setui | Climbing shrub | MSF     | NE           | NE                      |
|                 | *Desmodium adscendens* (Sw.) DC.             | Sisik Naga           | Terrestrial herb | PSF, DV | LC           | NE                      |
|                 | *Desmodium heterophyllum* (Willd.) DC.       | Sisik Naga           | Terrestrial herb | LF, DV  | NE           | NE                      |
|                 | *Desmodium triflorum* (L.) DC.               | Sisik Naga           | Terrestrial herb | DV     | LC           | NE                      |
| Family         | Species                                      | Local Name                  | Life Form | Habitat          | IUCN Status | Malaysia Red List/MyBIS |
|---------------|----------------------------------------------|-----------------------------|-----------|------------------|-------------|------------------------|
| Fabaceae      | Intsia bijuga (Colebr.) Kuntze               | Ipil, Merbau                | Tree      | MSF              | VU          | NE                     |
|               |                                              | Ipil, Merbau Changkat, Merbau laut |           |                  |             |                        |
|               | **Mimosa pudica L.**                        | Semalu                      | Terrestrial herb | DV   | LC   | NE                     |
|               | Ormosia sumatrana (Miq.) Prain              | Sepit-sepit                 | Tree      | LF               | NE          | NE                     |
|               | Peltophorum pterocarpum (DC.) K.Heyne       | Jemerlang                   | Tree      | MSF, BV          | NE          | NE                     |
|               | Pongamia pinnata (L.) Pierre                | Mempari                     | Tree      | MSF, BV          | LC          | NE                     |
|               | Pongamia pinnata (L.) Pierre var. xerocarpa (Hassk.) Alston | Malapari                  | Tree      | RV, LF           |             |                        |
|               | Pterocarpus indicus Willd.                  | Angsana                     | Tree      | CDF              | VU          | NE                     |
|               | Senna alata (L.) Roxb.                      | Gelenggang                  | Shrub     | LSF, DV          | NE          | NE                     |
|               | Senna occidentalis (L.) Link                | Gelenggang Pasir            | Shrub     | DV               | NE          | NE                     |
|               | Tamarindus indica L.                        | Asam Jawa                   | Tree      | LF               | LC          | NE                     |
| Gentianaceae  | Cyrtophyllum fragrans (Roxb.) DC.           | Tembusu                    | Tree      | FSF, DV          | NE          | NE                     |
|               | Fagraea auriculata Jack                     | Pelir Musang                | Tree      | CDF              | NE          | NE                     |
|               | Fagraea racemosa Jack                       | Kahwa Hutan                 | Tree      | LSF, DV          | NE          | NE                     |
|               | Fagraea fragrans Roxb.                      | Tembusu                     | Tree      | FSF, DV          | LC          | NE                     |
| Goodeniaceae  | Scaevola taccada (Gaertn.) Roxb.            | Ambong-ambong               | Shrub     | BV               | NE          | LC                     |
| Hemerocallidaceae | Dianella ensifolia (L.) DC.                | Siak-siak, Akar Siak, Benjuan, Jamaka, Lenjuang, Meroyan Bangkai, Setagit, Senjuang | Terrestrial herb | LF | NE | NE                     |
| Hypericaceae  | Cratoxylum arborescens (Vahl) Blume         | Geronggang                  | Tree      | PSF, DV          | LC          | LC                     |
| Lamiaceae     | Volkameria inermis L.                       | Lampin Budak, Gambir Laut, Pawan, Tulang-tulang | Shrub | MSF | NE | NE                     |
|               | Gmelina elliptica Sm.                       | Bulangan                    | Shrub     | DV               | NE          | NE                     |
|               | Premna serratifolia L.                      | Buas-buas, Bangku Kayu, Sarunai, | Shrub | MSF, BV | NE | NE                     |
|               | Vitex pinnata L.                            | Leban                       | Tree      | DV               | NE          | NE                     |
|               | Vitex rotundifolia L.f.                     | Langundi                    | Shrub     | BV               | NE          | NE                     |
|               | Vitex trifolia L.                           | Halban, Lagundi             | Tree      | MSF              | NE          | NE                     |
| Lauraceae     | Cassytha filiformis L.                      | Cemar batu                  | Parasitic herb | CDF, BV | NE | NE                     |
|               | Neolitsea zeylanica (Nees) Merr.            | Teja pasir                  | Tree      | CDF              | NE          | NE                     |
|               | Phoebe grandi (Nees) Merr.                  | Medang                      | Tree      | LF               | NE          | NE                     |
| Lentibulariaceae | Utricularia bifida L.                     | -                           | Herbaceous | PSF | LC | NE                     |
| Family        | Species                                      | Local Name          | Life Form   | Habitat | IUCN Status | Malaysia Red List/MyBIS |
|--------------|----------------------------------------------|---------------------|-------------|---------|-------------|-------------------------|
| Loranthaceae | *Dendrophthoe pentandra* (L.) Miq.           | Dedalu              | Parasitic   | LF      | NE          | NE                      |
| Lecythidaceae| *Barringtonia asiatica* (L.) Kurz.           | Putat Laut, Butong, Butun, Butung | Tree        | BV      | LC          | LC                      |
|              | *Barringtonia racemosa* (L.) Spreng.          | Putat Sungai, Putal Kedul, Putat Air, Putat Ayam, Putat Darat, Putat Kampung, Putat Padi, Putat Rambai, Putat Sawah | Tree        | MSF     | NE          | NE                      |
| Linaceae     | *Indorouchera griffithiana* (Planch.) Hallier f. | Akar Ipoh           | Climbing    | LF, PSF | NE          | NE                      |
| Lythraceae   | *Lagerstroemia speciosa* (L.) Pers.           | Bungor, Bungor Biru, Bungor Rya, Tibabah | Tree        | DV      | NE          | NE                      |
|              | *Sonneratia alba* Sm.                        | Perepat, Pauh Kijang | Tree        | MSF     | LC          | NE                      |
|              | *Sonneratia caseolariis* (L.) Engl.          | Berembang, Perapat, Perapat Laut, Perepat | Tree        | MSF     | LC          | NE                      |
|              | *Sonneratia x hainanensis* W.C.Ko            | Gedabu Hibrid      | Tree        | MSF     | DD          | NE                      |
|              | *Sonneratia lanceolata* Blume                | Berembang Putih, Rogam | Tree        | MSF     | LC          | NE                      |
|              | *Sonneratia ovata* Backer                    | Gedabu, Kedabu, Rogam | Tree        | MSF     | NT          | NE                      |
| Malpighiaceae| *Tristellateia australasiae* A.Rich.         | -                   | Climbing    | MSF     | NE          | NE                      |
| Malvaceae    | *Brownlowia argentea* Kurz.                  | Durian Laut         | Tree        | MSF,BV  | DD          | NE                      |
|              | *Commersonia bartramia* (L.) Merr.           | Angkut Besi        | Tree        | LE,DV   | LC          | NE                      |
|              | *Heritiera littoralis* Aiton                 | Dungun, Bayur Laut, Buah Pelir Kambing, Atun Laut | Tree        | MSF     | LC          | NE                      |
|              | *Talipariti tiliaeum* (L.) Fryxell           | Baru-baru Laut, Bebaru, Bebaru Laut | Tree        | MSF     | LC          | NE                      |
|              | *Thespesia populnea* (L.) Sol. ex Correa     | Bebaru, Baru Laut, Buah Keras Laut | Tree        | MSF     | LC          | NE                      |
|              | *Sida acuta* Burm.f.                         | Kelulut Putih      | Terrestrial herb | DV   | NE          | NE                      |
|              | *Urena lobata* L.                            | Pulut-pulut, Pepulut, Pulut Lembu | Terrestrial herb | DV   | DD          | NE                      |
| Family            | Species                                      | Local Name                  | Life Form | Habitat | IUCN Status | Malaysia Red List/ MyBIS |
|-------------------|----------------------------------------------|-----------------------------|-----------|---------|-------------|-------------------------|
| Melastomataceae   | Melastoma malabathricum L.                   | Senduduk, Kenduduk          | Shrub     | LF      | DD          | NE                      |
|                   | Memecylon caeruleum Jack                    | Dali Dedali, Delek Jambu    | Tree      | LF      | LC          | LC                      |
|                   | Memecylon edule Roxb.                       | Delek Air, Nipis Kulit, Delek Ayer | Tree      | LF      | LC          | LC                      |
| Meliaceae         | Xylocarpus granatum J.Koenig                | Nyireh Bunga, Nyireh        | Tree      | MSF     | LC          | LC                      |
|                   | Xylocarpus moluccensis (Lam.) M.Roem.        | Nyireh Batu                 | Tree      | MSF     | LC/NT       | LC                      |
| Menyanthaceae     | Nymphoides indica (L.) Kuntze                | Telipot                     | Aquatic herb | DV     | LC          | NE                      |
| Moraceae          | Ficus deltoidea Jack                        | Mas Cotek, Ara, Serapat Angin, Telinga Beruk | Shrub     | LF      | DD          | NE                      |
|                   | Ficus microcarpa L.F.                       | Beringin, Ara Jeawi, Jawi Jawi | Tree      | MSF     | LC          | NE                      |
|                   | Ficus sundaca Blume                         | Ara Berrih, Ara Punai       | Tree      | LF      | DD          | NE                      |
| Myrtaceae         | Baeckea frutescens L.                       | Cucur Atap, Tuturun Atap, Rempah Rempah | Tree      | PSF     | LC          | NE                      |
|                   | Melaleuca cajuputi Powell                   | Gelam Putih, Kayu Putih     | Tree      | PSF, MSF | LC          | NE                      |
|                   | Rhodamnia cinerea Jack                      | Mempoyan, Mempoyan Bukit, Mengkoyan Pinang | Tree      | LF      | LC          | NE                      |
|                   | Rhodomyrtus tomentosa (Aiton) Hassk.         | Kemunting, Lidah Katak Laut | Shrub     | BV      | LC          | NE                      |
|                   | Syzygium antisepticum (Blume) Merr. & L.M.Perry | Kelat Tikus, Gelam Tikus, Kadal Gelam | Tree      | LF      | NE          | NE                      |
|                   | Syzygium densiflora var. angustifolia Ridl. | -                           | Tree      | LF      | DD          | NE                      |
|                   | Syzygium grande (Wight) Walp. & Wight       | Jambu laut, Jambu Air Laut, Kelat Jambu Laut | Tree      | CDF     | NE          | NE                      |
|                   | Syzygium oblatum (Roxb.) Wall. ex A.M. Cowan & Cowan | Kelat Kecham              | Tree      | LF, PSF | DD          | NE                      |
|                   | Syzygium incarnatum (Elmer) Merr. & L.M.Perry | Kelat Kertas, Kadal Gelam  | Tree      | LF, PSF | DD          | NE                      |
|                   | Syzygium leucoxylon Korth.                 | Kelat Purih                 | Tree      | PSF     | DD          | NE                      |
|                   | Syzygium pyrifolium (Blume) DC.             | Kelat Putih, Kelat Lapis    | Tree      | LF, PSF | NE          | NE                      |
|                   | Syzygium palembanicum Miq.                 | Jambu, Kelat                | Tree      | LF      | NE          | NE                      |
| Family              | Species                               | Local Name                  | Life Form | Habitat | IUCN Status | Malaysia Red List/MyBIS |
|---------------------|---------------------------------------|-----------------------------|-----------|---------|-------------|------------------------|
| Myrtaceae           | *Syzygium syzygioides* (Miq.) Merr. & L.M.Perry | Kelat Hitam                | Tree      | LF      | NE          | NE                     |
|                     | *Syzygium zeylanicum* (L.) DC.         | Kelat Gelm, Jambu, Gelam Tikus, Kelat Nensi, Ubah Gelam | Tree      | LF, FSF | NE          | NE                     |
| Myricaceae          | *Morella esculenta* (Buch.-Ham. ex D.Don) I.M.Turner | Telur Cicak, Kesami, Keteng, Lenketing | Tree      | FSF     | LC          | LC                     |
| Myrisinaceae        | *Aegiceras corniculatum* (L.) Blanco | Teruntun, Kacang Kacang, Kuku Helang | Tree      | MSF     | LC          | NE                     |
|                     | *Rapanea porteriana* (Wall. ex A.DC.) Mez | Dedahruang                 | Tree      | MSF     | NE          | NE                     |
| Myristicaceae       | *Horsfieldia irya* (Gaertn.) Warb.     | Pianggu, Penaranah         | Tree      | MSF, FSF| LC          | NT                     |
|                     | *Knema conferta* (King) Warb.          | Penaranah Hitam            | Tree      | LF      | LC          | NE                     |
|                     | *Knema globularia* (Lamk.) Warb.       | Penaranah Padi, Chendarah Padi | Tree      | LF      | NT          | NE                     |
|                     | *Myristica lowiana* King               | Penaranah Arang, Penaranah Arang Gambut | Tree      | PSF     | NT          | NT                     |
| Nepenthaceae        | *Nepenthes ampullaria* Jack            | Periok Kera                | Climbing shrub | LF, FSF | LC          | NE                     |
|                     | *Nepenthes gracilis* Korth.            | Periok Kera                | Climbing shrub | PSF     | LC          | NE                     |
|                     | *Nepenthes mirabilis* (Lour.) Druce    | Periok Kera                | Climbing shrub | PSF, LF | LC          | NE                     |
| Ochnaceae           | *Brackenridgea hookeri* (Planch.) A.Gray | Bunga Kelat Merah, Mata Ketam, Kayu Luru | Tree      | LF      | LC          | NT                     |
| Olaceae             | *Olax scandens* Roxb.                  | Kodak Aching, Meribut      | Shrub     | DV      | NT          | NE                     |
| Oleaceae            | *Olea brachiata* (Lour.) Merr.         | Menserah                   | Tree       | BV      | NE          | NE                     |
| Opiliaceae          | *Champereia manillana* (Blume) Merr.   | Chemperai                  | Tree       | FSF     | LC          | NE                     |
|                     | *Canjeria rheedei* J.F.Gmel.           | Chemperai Akar             | Shrub  | BV      | NT          | NE                     |
| Passifloraceae      | *Passiflora foetida* L.                | Buah Letup, Buah Tikus, Pokok Lang Bulu, Timun Denfdang, Timun Hutan | Climbing herb | RV, DV | NE          |                      |
| Peraceae            | *Chaetocarpus castanoecarpus* (Roxb.) Thwaites | Membatu, Bebatu, Bedik    | Tree      | LF, PSF | LC          | NE                     |
| Pentaphylacaceae    | *Adinandra sarasinthera* Miq.          | Tetiup, Kelat Pamah, Petura Bukit, Pongpong Raya, Samak | Tree      | LF      | NE          | NE                     |
|                     | *Ternstroemia wallichiana* (Griff.) Engl. | Medang Bunga Lawang      | Tree      | LF      | VU          | NE                     |
| Family                  | Species                                      | Local Name                                      | Life Form | Habitat | IUCN Status | Malaysia Red List/ MyBIS |
|------------------------|----------------------------------------------|------------------------------------------------|-----------|----------|-------------|-------------------------|
| Phyllanthaceae          | *Antidesma cuspidatum* Müll.Arg.             | Beruni, Berunai, Sebasah Bukit                  | Tree      | LF, FSF  | NE          | NE                     |
|                        | *Antidesma ghaesembilla* Gaertn.             | Beruni, Balong Ayam, Guncak                     | Tree      | LF, PSF  | LC          | NE                     |
|                        | *Breynia racemosa* (Blume) Müll.Arg.         | Hujan panas, Amhin Kera, Peringat, Saga, Sumbar | Tree      | LF, BV   | LC          | NE                     |
|                        | *Glochidion littorale* Blume                 | Jambu Kera                                     | Tree      | BV, MSF  | LC          | NE                     |
| Pittosporaceae          | *Pittosporum ferrugineum* W.T.Aiton.          | Belalang Puak, Cemperai Ikan, Chabek Hantu      | Tree      | BV       | LC          | LC                     |
| Primulaceae             | *Aegiceras corniculatum* (L.) Blanco          | Kuku Lang, Kacang-kacang, Teruntun              | Tree      | MSF      | LC          | NE                     |
|                        | *Ardisia crenata* Sims.                      | Mata ayam, Akar Bebuluh, Mata Pelandok, Sirih Puyuh | Shrub     |          | NE          | NE                     |
|                        | *Ardisia elliptica* Thunb.                   | Mata pelanduk, Buah Letus, Daun Bisa Hati, Jambulan Pantai, Jangkang, Kayu Lampilan, Mepenai | Tree      | FSF      | NE          | E                      |
|                        | *Embelia ribes* Burm.f.                      | -                                              | Shrub/ Climbing shrub | LF | NE | NE |
|                        | *Rapanea porteriana* (Wall. ex A.DC.) Mez.  | Kicar, Dedahruang                              | Tree      | MSF      | NE          | NE                     |
| Rhizophoraceae          | *Bruguiera cylindrica* (L.) Blume            | Berus-berus, Bakau Putih, Berus Putih          | Tree      | MSF      | LC          | NE                     |
|                        | *Bruguiera gymnorrhiza* (L.) Lam. ex Savigny| Tumu Merah, Lenggadai                          | Tree      | MSF      | LC          | NE                     |
|                        | *Bruguiera sexangula* (Lour.) Poir           | Tumu Putih, Tumu Berau, Mata Buaya, Putut      | Tree      | MSF      | LC          | NE                     |
|                        | *Bruguiera hainesii* C.G.Rogers              | Berus Mata Buaya                               | Tree      | MSF      | CR          | NE                     |
|                        | *Bruguiera x rhynchopetala* (W.C.Ko) N.C.Duke & X.J.Ge | Tumu Hibrid | Tree | MSF | DD | NE |
|                        | *Carallia brachiata* (Lour.) Merr.           | Sisik Puyu, Merpuing, Meransi                  | Tree      | LF, MSF, BV | NE | NE |
| Family        | Species                               | Local Name                      | Life Form | Habitat                     | IUCN Status | Malaysia Red List/MyBIS |
|---------------|---------------------------------------|---------------------------------|-----------|-----------------------------|-------------|-------------------------|
| Rhizophoraceae| Ceriops tagal (Pers.) C.B.Rob.        | Tengar, Tengar Samak            | Tree      | MSF                         | LC          | NE                      |
|               | Ceriops zippeliana Blume              | Tengar                          | Tree      | MSF                         | LC          | NE                      |
|               | Gynotroches acicularis Blume           | Mata Keli, Bulu Bulu, Kandis Baru| Tree      | NE                          | NE          | NE                      |
|               | Rhizophora apiculata Blume            | Bakau Minyak, Bakau Akik, Bakau Tandok, Bangkita | Tree      | MSF                         | LC          | NE                      |
|               | Rhizophora mucronata Lam.             | Bakau Kurap, Bakau Belukap, Bakau Gelukap, Bakau Jankar | Tree      | MSF                         | LC          | NE                      |
|               | Rhizophora x annamalayana Kathir.     | Bakau Hibrid                     | Tree      | MSF                         | DD          | NE                      |
| Rhamnaceae    | Colubrina asiatica (L.) Brongn.       | Bidara Laut, Peria Pantai       | Shrub     | BV                          | NE          | NE                      |
| Rubiaceae     | Canthium confertum Korth.             | Kemuning Jantan                 | Tree      | BV, LF                      | NE          | NE                      |
|               | Catunaregam spinosa (Thunb.) Tirveng. | Duri Timbang Tahil              | Tree      | CDF                         | NE          | NE                      |
|               | Catunaregam tomentosa (Blume ex DC.) Tirveng. | Duri Timbang Tahil | Tree      | BV                          | NE          | NE                      |
|               | Gardenia tubifera Wall. ex Roxb.      | Mentinong Paya, Chempaka Hutan, Delima Hutan | Tree      | LF                          | DD          | NE                      |
|               | Guettarda speciosa L.                 | Seler Malam, Bebaru Laut, Katapang Pasir | Tree      | BV                          | NE          | NE                      |
|               | Gynotroches sublanceolata Miq.        | Akar sulong, Akar Lampai Hitam | Shrub     | LF                          | NE          | NE                      |
|               | Oldenlandia herbacea (L.) Roxb.       | Siku-siku                       | Terrestrial herb | BV          | DD          | NE                      |
|               | Hydnophytum formicarum Jack           | Kepala Berok, Sarang Semut      | Epiphytic shrub | PSF, BV    | NE          | NE                      |
|               | Hypobathrum racemosum (Roxb.) Kurz.   | Empawang Putih                 | Tree      | LF                          | NE          | NE                      |
|               | Ixora congesta R.Br.ex Hook.f.       | Pecah Periok, Bunga Penaga Riam, Jarum Saluang | Shrub     | LF                          | NE          | NE                      |
|               | Ixora grandifolia Zoll. & Moritzi     | Jenjarum                       | Shrub     | LF                          | DD          | NE                      |
|               | Kailarsenia tentaculata (Hook.f.) Tirveng. | Kecubong Paya, Kepayang Air  | Shrub     | RV                          | NE          | NE                      |
|               | Morinda citrifolia L.                 | Mengkudu Daun, Noni, Mengkudu, Mengkudu Besar | Tree      | DV                          | NE          | NE                      |
|               | Morinda umbellata L.                  | Mengkudu akar, Mengkudu Hutan  | Climbing shrub | BV, LF    | NE          | NE                      |
|               | Ixora congesta Roxb.                  | Pecah Periok, Bunga Penaga Riam, Jarum Saluang | Shrub     | LF                          | NE          | NE                      |
| Family       | Species                                                                 | Local Name             | Life Form | Habitat | IUCN Status | Malaysia Red List/MyBIS |
|--------------|-------------------------------------------------------------------------|------------------------|-----------|----------|--------------|--------------------------|
| Rubiaceae    | *Ixora umbellata* var. multibracteata* (H.Pearson ex King & Gamble) Corner | Pecah Periok           | Shrub     | LF       | DD           | NE                       |
|              | *Mussaenda glabra* Vahl                                                 | Balik Adap             | Shrub     | FSF, DV  | NE           | NE                       |
|              | *Myrmecodia tuberosa* Jack                                              | Periok Hantu           | Shrub     | MSF, FSF | NE           | NE                       |
|              | *Oxyceros longiflorus* (Lam.) T.Yamaz.                                  | Akar Kekait, Akar Bedara Laut, Akar Duri | Climbing shrub | MSF       | DD           | NE                       |
|              | *Psychotria sarmentosa* Blume                                           | Akar Daldaru, Kaum Kopi | Climbing shrub | LF, FSF   | NE           | NE                       |
|              | *Scyphiphora hydrophyllacea* C.F.Gaertn.                                | Chengam                | Shrub     | MSF      | LC           | NE                       |
|              | *Tarenna fragrans* (Blume) Koord. & Valeton                            | Julong-julong Jantan   | Tree      | LF,RV    | DD           | NE                       |
|              | *Timonius flavescens* (Jacq.) Baker                                    | Kurau, Kaum Kopi       | Tree      | LF,PSF   | LC           | NE                       |
|              | *Uncaria acida* (W.Hunter) Roxb.                                        | Gambir-gambir          | Climbing shrub | LF       | NE           | NE                       |
| Rutaceae     | *Acronychia pedunculata* (L.) Miq.                                      | Jenjagong              | Tree      | LF       | LC           | NE                       |
|              | *Melicope lun-ankenda* (Gaertn.) T.G.Hartley                            | Tenggek burung, Pepauh, Chabang Tiga | Shrub | LF       | LC           | NE                       |
| Salicaceae   | *Placourtia rukam* Zoll. & Moritzi                                      | Rukam                  | Tree      | RV       | NE           | NE                       |
|              | *Scolopia macrophylla* (W.& A.) Clos                                    | Rukam Hutan            | Tree      | MSF, RV  | NE           | NE                       |
| Santalaceae  | *Dendrotrophe buxifolia* (Blume) Miq.                                   | Setong Jundor          | Parasitic shrub | BV       | DD           | NE                       |
|              | *Viscum orientale* Wildd.                                                | Dedalu                 | Parasitic shrub | MSF      | DD           | NE                       |
|              | *Viscum ovalifolium* DC.                                                | Dedalu Emping, Api-api | Parasitic shrub | MSF      | LC           | LC                       |
| Sapotaceae   | *Palaquium obovatum* (Griff.) Engl.                                     | Taban Putih, Nyatoh, Nyatoh Putih | Tree | LF, FSF | LC           | NE                       |
|              | *Planchonella obovata* (R.Br.) Pierre                                   | Nenasi, Misi, Nyatoh Laut, Nyatoh Kunping | Tree | MSF, BV | NE           | NE                       |
| Sapindaceae  | *Allophylus cobbe* (L.) Raeusch                                        | Buah Penancang, Congkol, Cungkil, Kasai, Kasai Daun Kecil | Shrub | LF, MSF, BV | NE           | NE                       |
|              | *Dodonaea viscosa* (L.) Jacq.                                           | Serengan laut, Kayu Bertih | Tree | RV, BV  | LC           | NE                       |
|              | *Guioa bijuga* (Hiern) Radlk.                                           | Senyamok               | Tree      | LF       | NE           | NE                       |
|              | *Guioa pleuropteris* (Blume) Radlk.                                     | Senyamok, Samak, Kelentit, Nyamuk Laut, Pena-pena, Sempayan Ular | Tree | LF, RV  | NE           | NE                       |
| Family          | Species                                      | Local Name                                                                 | Life Form | Habitat | IUCN Status | Malaysia Red List/MyBIS |
|-----------------|----------------------------------------------|----------------------------------------------------------------------------|-----------|---------|-------------|-------------------------|
| Sapindaceae     | *Lepisanthes rubiginosa* (Roxb.) Leenh.      | Mertajam, Kelat Layu, Terajah                                              | Tree      | RV      | LC          | NE                      |
|                 | *Mischocarpus sundaicus* Blume                | Suji                                                                        | Tree      | LF      | NE          | NE                      |
| Simaroubaceae   | *Eurycoma longifolia* Jack                   | Tongkar Ali, Bidara Merah, Lepedu Pahit, Pasak Bumi, Setunjang Bumi       | Tree      | LF, BV  | NE          | NE                      |
|                 | *Quassia indica* (Gaertn.) Noot.              | Kayu Pahit, Gatip pahit, Kacang-kacang                                     | Tree      | PSF, MSF| NE          | NE                      |
| Symplocaceae    | *Symlocos adonophylla* Wall. ex G.Don         |Semugum, Jiak                                                                | Tree      | LF      | DD          | NE                      |
| Thymelaeaceae   | *Wikstroemia indica* (L.) C.A.Mey             | Depu                                                                        | Shrub     | DV      | NE          | NE                      |
| Vitaceae        | *Cayratia trifolia* (L.) Domin                | Galing-galing, Lakum                                                       | Shrub     | LF, DV  | NE          | NE                      |
|                 | *Cissus hastata* Miq.                        | Akar Asam Riang, Akar Kerayong                                            | Shrub     | LF      | NE          | NE                      |
| Ximeniaceae     | *Ximenia americana* L.                       | Bedara laut                                                                 | Tree      | BV      | LC          | NE                      |
| **MONOCOTYLEDONS** |                                            |                                                                            |           |         |             |                          |
| Aizoaceae       | *Sesuvium portulacastrum* (L.) L.             | Gelang Laut, Gelang Pasir, Saruni Air                                       | Terrestrial herb | MSF, CDF | NE          | LC                      |
| Amaryllidaceae  | *Crinum asiaticum* L.                        | Bakong, Tembaga Suasa                                                     | Terrestrial herb | RV, LF, FSF | NE          | NE                      |
| Araceae         | *Cryptocoryne ciliata* (Roxb.) Schott.       | Keladi Payau                                                               | Aquatic herb | MSF      | LC          | NE                      |
|                 | *Cryptocoryne cordata* Griff.                 |                                                                            | Aquatic herb | RV       | LC          | NE                      |
|                 | *Cryptocoryne griffithii* Schott.             |                                                                            | Aquatic herb | PSF      | NE          | NE                      |
|                 | *Lasia spinosa* (L.) Thw.                    | Geli-geli                                                                  | Terrestrial herb | PSF     | LC          | NE                      |
|                 | *Scindapsus hederacus* (Zoll. & Moritizi) Miq.| Akar Lebang Aleh                                                          | Climbing herb | PSF      | NE          | NE                      |
| Areceae         | *Calamus erinaceus* (Becc.) J.Dransf.        | Rotan Bakau                                                               | Palm      | MSF     | NE          | NE                      |
|                 | *Licuala sinosa* Wurmb.                      | Palas, Palas Duri                                                         | Palm      | MSF     | NE          | NE                      |
|                 | *Nypa fruticans* Wurmb.                      | Nipah                                                                      | Palm      | MSF     | LC          | NE                      |
|                 | *Onosperma tigillarium* (Jack) Ridl.         | Nibong, Ibas, Linau, Nibung, Nibong                                       | Palm      | MSF     | NE          | NE                      |
|                 | *Phoenix paludosa* Roxb.                     | Kedangsa, Dangsa                                                          | Palm      | MSF     | NT          | NE                      |
| Asparagaceae    | *Dracaena porteri* Baker                     | Jarum-jarum                                                               | Shrub     | LF, FSF | NE          | NE                      |
| Commelinaceae   | *Cytoris cristata* D.Don                     | Petungan                                                                   | Terrestrial herb | BV     | LC          | NE                      |
| Cymodoceaceae   | *Halodule pinifolia* (Miki) Hartog           |                                                                            | Aquatic herb | FSF     | LC          | NE                      |
| Family          | Species                                      | Local Name      | Life Form       | Habitat | IUCN Status | Malaysia Red List/ MyBIS |
|-----------------|----------------------------------------------|-----------------|-----------------|---------|-------------|--------------------------|
| Cyperaceae      | Bulbostylis barbata (Rottb.) C.B.Clarke     | Rumput rusiga  | Terrestrial herb| FSF     | NE          | NE                       |
|                 | Cyperus distans L.f.                         | Rumput rusiga  | Aquatic herb    | RV,PSF  | LC          | NE                       |
|                 | Cyperus digitatus Roxb.                      | Rumput rusiga  | Aquatic herb    | PSF     | LC          | NE                       |
|                 | Cyperus javanicus Houtt.                    | Rumput rusiga  | Terrestrial herb| MSF     | NE          | NE                       |
|                 | Cyperus rotundus L.                         | Rumput rusiga  | Terrestrial herb| RV,BV   | LC          | NE                       |
|                 | Cyperus stoloniferus Retz.                  | Rumput rusiga  | Terrestrial herb| BV      | LC          | NE                       |
|                 | Eleocharis geniculata (L.) Roem. & Schult.  | Rumput rusiga  | Terrestrial herb| RV      | LC          | NE                       |
|                 | Eleocharis ochrostachys Steud.              | Rumput rusiga  | Terrestrial herb| PSF     | LC          | NE                       |
|                 | Eleocharis retroflexa (Poir.) Urb.          | Rumput rusiga  | Terrestrial herb| RV      | LC          | NE                       |
|                 | Fimbristylis acuminata Vahl                 | Rumput rusiga  | Terrestrial herb| RV      | LC          | NE                       |
|                 | Fimbristylis cymosa R.Br.                   | Rumput rusiga  | Terrestrial herb| MSF     | LC          | NE                       |
|                 | Fimbristylis pauciflora R.Br.               | Rumput rusiga  | Terrestrial herb| LF      | NE          | NE                       |
|                 | Fuirena umbellata Rottb.                    | Rumput rusiga  | Terrestrial herb| RV      | LC          | NE                       |
|                 | Lepironia articulata (Retz.) Domin          | Kercut/Kerchut | Aquatic herb    | FSF     | NE          | NE                       |
|                 | Rhynchospora brownii Roem. & Schult.        | Rumput rusiga  | Terrestrial herb| HV,BRIS | NE          | NE                       |
|                 | Remirea maritima Aubl.                      | Rumput rusiga  | Terrestrial herb| CDF,BV  | NE          | NE                       |
|                 | Scleria levis Retz.                         | Rumput rusiga  | Terrestrial herb| FSH,DV  | NE          | NE                       |
|                 | Scleria poaeformis Retz.                    | Rumput rusiga  | Terrestrial herb| FSH,DV  | NE          | NE                       |
| Eriocaulaceae   | Eriocaulon truncatum Buch.-Ham. ex Mart.    | -               | Aquatic herb    | DV      | LC          | NE                       |
|                 | Eriocaulon willdenovianum Moldenke          | -               | Aquatic herb    | DV      | NE          | NE                       |
| Flagellariaceae | Flagellaria indica L.                       | Rotan Dini, Rotan Tikus, Rotan Kera | Climbing shrub | MSF, FSF | NE          | NE                       |
| Hanguanaceae    | Hanguana malayana (Jack) Merr.              | Bakong         | Aquatic herb    | RV, FSF | LC          | NE                       |
| Hydrocharitaceae| Blyxa aubertii Rich.                        | -               | Aquatic herb    | FSF     | LC          | NE                       |
|                 | Halophila beccarii Aschers.                 | -               | Aquatic herb    | MSF     | VU          | NE                       |
|                 | Halophila minor (Zollinger) den Hartog      | -               | Aquatic herb    | BV      | LC          | NE                       |
|                 | Halophila ovalis (R.Brown) J.D.Hooker       | -               | Aquatic herb    | BV      | LC          | NE                       |
| Family           | Species                                                                 | Local Name | Life Form | Habitat | IUCN Status | Malaysia Red List/MyBIS |
|------------------|--------------------------------------------------------------------------|------------|-----------|---------|-------------|-------------------------|
| Orchidaceae      | *Acriopsis liliifolia* (J. Koenig) Ormerod                              | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Appendicula cornuta* Blume                                              | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Appendicula uncata* Ridl.                                               | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Ania penangiana* (Hook.f.) Summerh.                                     | Orkid      | Terrestrial herb | BRIS    | NE          | NE                      |
|                  | *Arachnis flor-aeris* (L.) Rchb.f.                                       | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Arachnis hookeriana* (Rchb.f.) Rchb.f.                                 | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Bromheadia finlaysoniana* (Lindl.) Miq                                   | Orkid      | Terrestrial herb | BRIS    | LC          | NE                      |
|                  | *Bulbophyllum acuminatum* (Ridl.) Ridl.                                   | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Bulbophyllum apodum* Hook.f.                                             | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Bulbophyllum clandestinum* Lindl.                                       | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Bulbophyllum fenestratum* J.J.Sim                                       | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Bulbophyllum macranthum* Lindl.                                          | Orkid      | Epiphytic herb | BRIS    | LC          | NE                      |
|                  | *Bulbophyllum patens* King ex Hook.f.                                    | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Bulbophyllum plantibulbe* (Ridl.) Ridl.                                 | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Bulbophyllum purpurascens* Tejsm. & Binn.                               | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Bulbophyllum trigonopus* (Rchd.f) P.T.Ong                                | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Bulbophyllum vaginatum* (Lindl.) Rchb.f.                                | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Callostylis pulchella* (Lindl.) S.C.Chen & Z.H.Tsi                      | Orkid      | Epiphytic herb | HV, BRIS | NE          | NE                      |
|                  | *Ceratostylis subulata* Blume                                             | Orkid      | Epiphytic herb | BRIS    | LC          | NE                      |
|                  | *Claderia viridisflora* Hook.f.                                           | Orkid      | Terrestrial herb | BRIS    | NE          | NE                      |
|                  | *Cleisostoma teretifolium* Tejsm. & Binn.                               | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Coelogyne forstermannii* Rchb.f.                                        | Orkid      | Epiphytic herb | HV, BRIS | LC          | NE                      |
|                  | *Cymbidium finlaysonianum* Lindl.                                        | Orkid      | Epiphytic herb | HV, BRIS | NE          | NE                      |
|                  | *Cymbidium rectum* Ridl.                                                  | Orkid      | Epiphytic herb | HV, BRIS | NE          | NE                      |
|                  | *Dendrobium acerosum* Lindl.                                              | Orkid      | Epiphytic herb | BRIS    | NE          | NE                      |
|                  | *Dendrobium aloifolium* (Blume) Rchb.f.                                  | Orkid      | Epiphytic herb | BRIS    | LC          | NE                      |
| Family             | Species                                      | Local Name       | Life Form      | Habitat | IUCN Status | Malaysia Red List/ MyBIS |
|--------------------|----------------------------------------------|------------------|----------------|---------|-------------|-------------------------|
| Orchidaceae        | *Dendrobium angustifolium* (Blume) Lindl.    | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Dendrobium clavator* Ridl.                  | Orkid Merpati    | Epiphytic herb | MSF, BRIS | NE          | NE                      |
|                    | *Dendrobium crumenatum* Sw.                  | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Dendrobium lamellatum* (Blume) Lindl.       | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Dendrobium leonis* (Lindl.) Rchb.f.         | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Dendrobium pachyphyllum* (Kuntze) Bakh.f.   | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Dendrobium rhodostele* Ridl.                | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Dendrobium secundum* (Blume) Lindl. ex Wall. | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Dendrolium lasioptetalum* (Willd.) S.C.Chen & J.J.Wood | Orkid | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Eulophia graminea* Lindl.                   | Orkid            | Terrestrial herb | BRIS    | NE          | NE                      |
|                    | *Grammatophyllum speciosum* Blume            | Orkid Harimau    | Epiphytic/ Terrestrial herb | BRIS | NE | NE |
|                    | *Liparis ferruginea* Lindl.                  | Orkid            | Terrestrial herb | FWF    | NE          | NE                      |
|                    | *Luisia jonesii* J.J.Sm.                     | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Oberonia padangensis* Schltr.               | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Papilionanthe hookeriana* (Rchb.f.) Schltr. | Orkid            | Epiphytic herb | FWF    | NE          | NE                      |
|                    | *Phalaenopsis pulcherrima* (Lindl.) J.J.Sm.   | Orkid            | Terrestrial herb | HV, BRIS | NE | NE |
|                    | *Pinalia atrovinosa* (Carr) Schuit., Y.P.Ng & H.A.Pedersen | Orkid | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Pinalia floribunda* (Lindl.) Kuntze         | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Pinalia tenuiflora* (Ridl.) J.J.Wood        | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Plocoglottis lowii* Rchb.f.                 | Orkid            | Terrestrial herb | BRIS    | NE          | NE                      |
|                    | *Polystachya concreta* (Jacq.) Garay & H.R.Sweet | Orkid | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Renanthera elongata* (Blume) Lindl.         | Orkid            | Epiphytic herb | BRIS    | NE          | NE                      |
|                    | *Strongylaria pannea*(Lindl.) Schuit., Y.P.Ng & H.A.Pedersen | Orkid | Terrestrial herb | BRIS    | NE          | NE                      |
|                    | *Taeniophyllum pusillum* (Willd.) Seidenf. & Ormerod | Orkid hantu | Epiphytic herb | MSF, BRIS | NE | NE |
| Family       | Species                                                                 | Local Name    | Life Form      | Habitat | IUCN Status | Malaysia Red List/ MyBIS |
|--------------|-------------------------------------------------------------------------|---------------|----------------|---------|-------------|-------------------------|
| Orchidaceae  | *Thrixspermum amplexicaule* (Blume) Rchb.f.                           | Orkid         | Epiphytic herb | FSF     | NE          | NE                      |
|              | *Thrixspermum calceolus* (Lindl.) Rchb.f.                            | Orkid         | Epiphytic herb | BRIS    | NE          | NE                      |
|              | *Thrixspermum centipeda* Loure.                                        | Orkid         | Epiphytic herb | BRIS    | NE          | NE                      |
|              | *Thrixspermum scopa* (Rchb.f. ex Hook.f.) Holtum                      | Orkid         | Epiphytic herb | BRIS    | NE          | NE                      |
|              | *Thrixspermum trichoglottis* (Hook.f.) Kuntze                        | Orkid         | Epiphytic herb | BRIS    | NE          | NE                      |
|              | Vanilla *griffithii* Rchb.f.                                           | Telinga Kerbau | Terrestrial/ Epiphytic herb | BRIS | NE          | NE                      |
| Pandanaceae  | *Pandanus atrocarpus* Griff.                                           | Mengkuang Paya | Palm-like      | LF      | NE          | NE                      |
|              | *Pandanus helicopus* Kurz ex Miq.                                      | Mengkuang Paya, Rasau | Palm-like      | LF      | NE          | NE                      |
|              | *Pandanus tectorius* Parkinson                                         | Mengkuang Laut, Pandan Duri, Pandan Laut | Palm-like      | MSF     | LC          | NE                      |
|              | *Pandanus yvanii* Solms.                                               | Mengkuang Paya | Palm-like      | LF      | NE          | NE                      |
| Philydraceae | *Philydrum lanuginosum* Banks & Sol. ex Gaertn.                        | Rumput Kipas  | Terrestrial herb | FWS    | NE          | NE                      |
| Poaceae      | *Chloris barbata* Sw.                                                  | Rumput Jari Kembong | Terrestrial herb | CDF,BV | NE          | NE                      |
|              | *Chrysopogon aciculatus* (Retz.) Trin.                                | Kemuncup      | Terrestrial herb | CDF,BV | NE          | NE                      |
|              | *Chrysopogon serratatus* Trin.                                         | Kemuncup Besar | Terrestrial herb | CDF, BV | NE          | NE                      |
|              | *Cynodon dactylon* (L.) Pers.                                          | Rumput Minyak | Terrestrial herb | BV, DV  | NE          | NE                      |
|              | *Eleusine indica* (L.) Gaertn.                                         | Sambau        | Terrestrial herb | DV      | LC          | NE                      |
|              | *Eriachne pallescens* R.Br.                                            | -             | Terrestrial herb | BV, DV  | NE          | NE                      |
|              | *Imperata cylindrica* (L.) P.Beauv.                                    | Lalang        | Terrestrial herb | BV      | LC          | NE                      |
|              | *Ischaemum muticum* L.                                                 | Rumput Tembaga Jantan, Rumput Terutus Tembaga | Terrestrial herb | BV      | LC          | NE                      |
|              | *Leersia hexandra* Sw.                                                 | -             | Terrestrial herb | FSF     | LC          | NE                      |
|              | *Paspalum orbiculare* G.Forst.                                         | -             | Terrestrial herb | FSF     | NE          | NE                      |
|              | *Sacciolepis indica* (L.) Chase                                        | -             | Terrestrial herb | CDF,FSF | DD          | NE                      |
|              | *Zoysia matrella* (L.) Merr.                                           | -             | Terrestrial herb | BV      | NE          | NE                      |
| Restionaceae | *Dapsilanthus disjunctus* (Mast.) B.G.Briggs – & L.A.S.Johnson        | Terrestrial herb | Terrestrial herb | BV      | NE          | NE                      |
| Family       | Species                        | Local Name         | Life Form       | Habitat | IUCN Status | Malaysia Red List/MyBIS |
|--------------|--------------------------------|--------------------|-----------------|---------|-------------|-------------------------|
| Xyridaceae   | Xyris complanata R.Br.         | -                  | Terrestrial herb| RV      | LC          | NE                      |
|              | Xyris pauciflora Willd.        | -                  | Terrestrial herb| RV      | LC          | NE                      |
| Zingiberaceae| Alpinia aquatica (Retz.) Roscoe| Mankanang          | Terrestrial herb| FSF, RV | NE          | NE                      |
|              | Alpinia conchigera Griff.      | Lengkuas Ranting,  | Terrestrial herb| FSF, DV | NE          | NE                      |
|              |                                | Lengkuas Geting,   |                 |         |             |                         |
|              |                                | Lengkuas Kecil,    |                 |         |             |                         |
|              |                                | Lengkuas Padi      |                 |         |             |                         |
|              | Alpinia galanga (L.) Willd.    | Lengkuas           | Terrestrial herb| LF      | NE          | NE                      |
|              | Alpinia javanica Blume         | Lengkuas Hutan     | Terrestrial herb| LF      | LC          | NE                      |
|              | Alpinia ocymitra K.Schum.      | -                  | Terrestrial herb| LF      | NE          | NE                      |