

A Preliminary Checklist of Flowering Plants in Pangkor Selatan Forest Reserve, Perak, Peninsular Malaysia

Zohari Ahmad Fitri¹, Nik Hashim Nik Hazlan², Nik Ali Nik Norafida³, Mohd. Said Nizam^{1,4}, Abdul Latiff¹

¹Faculty of Science and Technology, University Kebangsaan Malaysia, Bangi, Malaysia

²Faculty of Applied Science, University Teknologi MARA, Cawangan Pahang, Bandar Tun Abdul Razak, Malaysia

³Forest Biodiversity Division, Forest Research Institute Malaysia, Kepong, Malaysia

⁴Institute of Climate Change, University Kebangsaan Malaysia, Bangi, Malaysia

Email address:

ahmadfitri@ukm.edu.my (Z. A. Fitri)

To cite this article:

Zohari Ahmad Fitri, Nik Hashim Nik Hazlan, Nik Ali Nik Norafida, Mohd. Said Nizam, Abdul Latiff. A Preliminary Checklist of Flowering Plants in Pangkor Selatan Forest Reserve, Perak, Peninsular Malaysia. *American Journal of Agriculture and Forestry*. Vol. 9, No. 4, 2021, pp. 258-268. doi: 10.11648/j.ajaf.20210904.23

Received: July 26, 2021; **Accepted:** August 10, 2021; **Published:** August 26, 2021

Abstract: A preliminary botanical survey was conducted in the coastal hill forest in Pangkor Selatan Forest Reserve, Perak, Peninsular Malaysia. Standard methods were used to record the species found around this forest. The first method involved the collection of herbarium specimens which are complete with fruit and flowers (fertile specimens). Unfortunately during this survey many species did not bear fruits or flowers. The second method involved the collection of sterile specimens (without fruits and flowers) to be used as voucher specimens and the third method was by random observation where the plants were observed without any specimen collection. The fourth method involved the establishment of small plots where all plants were enumerated. In the first and second methods, the specimens were collected and processed. The fertile specimens were kept in the Herbarium of Universiti Kebangsaan Malaysia (UKMB) as a reference in the future. Identification was done by comparing with those reference collections in herbarium UKMB and herbarium of Forest Research Institute (KEP) plus referring to local botanical books. A total of 237 taxa belonging to 170 genera and 64 families were recorded. Dicotyledons are represented by 59 families while the monocotyledons are represented by only 5 families. The family Euphorbiaceae is the most speciose with 21 species and followed by Dipterocarpaceae with 14 species. Both the genera *Diospyros* and *Syzygium* are the largest with 8 species each. The species that are commonly found in these forests include *Cnestis palala*, *Rourea minor*, *Hopea beccariana*, *Diospyros clavigera*, *Hydnocarpus filipes*, *Fordia unifoliata*, *Memecylon pubescens*, *Pternandra coerulescens*, *Ficus variegata*, *F. vasculosa*, *Knema stenophylla*, *Syzygium zeylanicum*, *Strombosia javanica*, *Eugeissona tristis*, *Orania sylvicola*, *Xanthophyllum affine*, *Gynotroches axillaris*, *Aidia densiflora*, *Diplospora malaccensis*, *Gardenia carinata*, *Psydrax* sp. 10, *Paramignya* sp., *Grewia laevigata*, *Schoutenia accrescens* ssp. *accrescens* and *Rinorea anguifera*. A total of 25 endemic taxa to Peninsular Malaysia has been recorded in this study including *Fordia unifoliata*, a small tree of ca. 10 m tall, endemic to Perak and restricted to coastal hill forest. In addition, a total of 48 species of flowering plants in Pangkor Selatan Forest Reserve was listed in 2020 IUCN Red List Categories and related reference. It is clear that this coastal hill forest has supported many species of flowering plants including endemic taxa and this forest need to be conserved.

Keywords: Pangkor Selatan Forest Reserve, Flowering Plants, Endemism, Peninsular Malaysia

1. Introduction

The coastal hill forest is one of several climatic forest types that can be found in Peninsular Malaysia and usually occurs at lower elevation of coastal hill sometimes near the

sea level or in certain off-shore islands [15]. It is found in coastal hills in many states of Peninsular Malaysia both in the west coast and east coast. In Perak, the coastal hills are well distributed in the district of Manjung whereby they are recorded in Lumut Forest Reserve, Teluk Muroh Forest

Reserve, Segari Melintang Forest Reserve, Tanjung Hantu Forest Reserve, Teluk Kopiah Forest Reserve and in off-shore island off Pangkor. Similar with other inland forests, the main threats of this forest is deforestation for the coastal development purposes, especially coastal resorts. In Pangkor Island, Pangkor Selatan Forest Reserve is the second largest forest reserve located at its southern part. This forest is gazetted on 27 January 1911, comprising only two compartments and covers a total area of 317.75 ha [2].

Botanical collections were conducted around the Pangkor Island since late 1800s and continued in early and middle 1900s by various plant collectors but no detailed localities were stated. In fact, the main collector in Pangkor Selatan Forest Reserve was Dr. T. C. Whitmore during his short trip to the island in February 1967. Other collector was J. Wyatt-Smith who made some collections too in January 1953. During the Pangkor Island Scientific Expedition held by Ecotourism and Conservation Society Malaysia (ECOMY) and VALE, we have made a preliminary botanical inventory in Pangkor Selatan Forest Reserve in 16 July 2017. The main

objective of this study is to provide preliminary checklist of flowering plants in Pangkor Selatan Forest Reserve along with identifying endemic species. The informations obtained are expected to contribute to the field of botany as well as in conservation of forest reserve by the responsible parties such as the Forestry Department of Peninsular Malaysia and Forestry Department Perak. In addition, the study in Pangkor Selatan Forest Reserve may contribute the additional information on Pangkor Island floras.

2. Materials and Methods

2.1. Study Site and Forest Types

Pangkor Selatan Forest Reserve is located in the south of Pangkor Island (4°12' N, 100°34' E) in the district of Manjung, Perak. Forest vegetation types in this forest reserve mainly covered by coastal hill forest and small patches of beach vegetation facing the sea. The elevation of this forest ranges from 0 m to 200 m.a.s.l. (Figure 1).

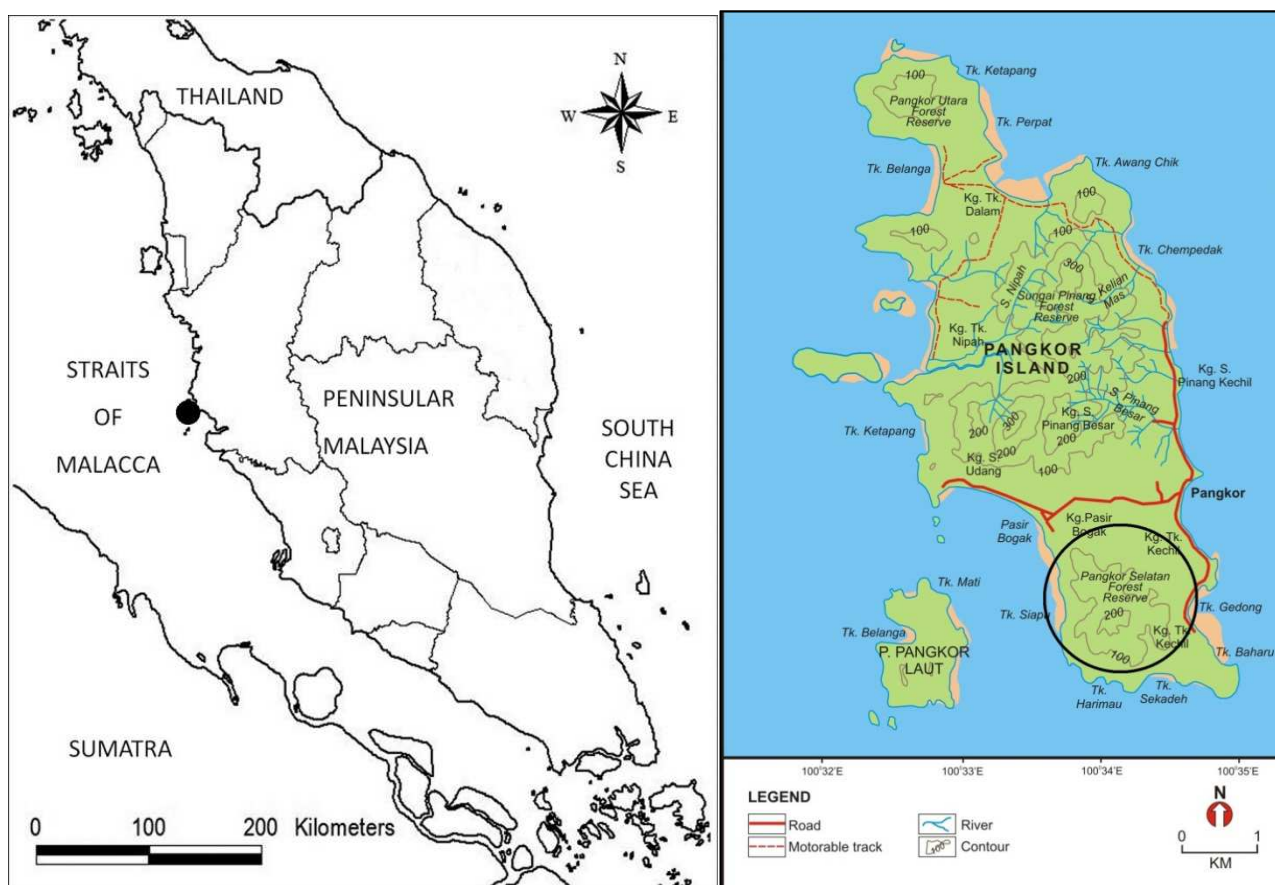


Figure 1. Location of Pangkor Selatan Forest Reserve (in circle), Pangkor Island, Perak.

2.2. Methods

In this study, standard methods were used to record the species found in Pangkor Selatan Forest Reserve. The first method involved the collection of herbarium specimens which are complete with fruit and flowers (fertile

specimens). Unfortunately during this survey many species did not bear fruits or flowers. The second method involved the collection of sterile specimens (without fruit and flowers) to be used as voucher specimens and the third method was by random observation where the plants were observed without any specimen collection. The

fourth method involved the establishment of small plots where all plants were enumerated. In the first and second methods, the specimens were collected and processed. The fertile specimens were kept in the Herbarium of Universiti Kebangsaan Malaysia (UKMB) as a reference in the future. Identification was done by comparing with those reference collections in herbarium UKMB and KEP plus referring to local botanical books e.g. *Flora of the Malay Peninsula* [14], *Forester's Manual of Dipterocarps* [15], *Tree Flora of Malaya* [12, 13, 18, 19], *Wayside Trees of Malaya* [5] and *Flora of Peninsular Malaysia* [8–11]. We have followed [3] for the classification of the flora with only a few exceptions for the recognition of genera. The

status of endemic species was derived from [17] and other relevant publications. The present list is also compiled with previous collections deposited in herbarium of Forest Research Institute Malaysia (KEP).

3. Results and Discussions

3.1. Floristic Composition

A total of 237 plant taxa belonging to 170 genera and 64 families was recorded in this study (Table 1). Dicotyledons are represented by 59 families while the monocotyledons by five families.

Table 1. Summary of groups, families, genera and species of flowering plants in Pangkor Selatan Forest Reserve, Perak.

Group	Number of Families	Number of genera	Number of Species and lower taxa
Angiosperms			
Dicotyledon	59	159	223
Monocotyledon	5	11	14
Total	64	170	237

The largest families of dicotyledons in terms of the highest number of genera are represented by Euphorbiaceae with 15 genera, followed by Rubiaceae with 12, Leguminosae with 8, and Lauraceae with 7 (Table 2). For monocotyledons, the largest family in term of genera is Palmae with 7 genera while the remaining families consist of a single genus. The most speciose family is also represented by Euphorbiaceae with 21 species followed by Dipterocarpaceae (14) and Rubiaceae (13) (Table 2). The dominance of Euphorbiaceae is also reported in Pangkor Utara Forest Reserve [1] and other coastal hill forests in Peninsular Malaysia (e.g. [16] in Bukit Bauk Forest Reserve).

Table 2. Ten leading of the most speciose families of flowering plants in Pangkor Selatan Forest Reserve, Perak.

Family	Number of genera	Number of species and lower taxa
Euphorbiaceae	15	21
Dipterocarpaceae	5	14
Rubiaceae	12	13
Leguminosae	8	10
Moraceae	4	10
Myrtaceae	2	9
Ebenaceae	1	8
Lauraceae	7	7
Connaraceae	5	7
Melastomataceae	4	7

The most diverse monocotyledonous family in Pangkor Selatan Forest Reserve is Palmae, represented by 9 species followed by Dracaenaceae with three species. The remaining three families only comprised of a single species. Besides that, for the genus level, *Diospyros* and *Syzygium* were the largest genera for the dicotyledons recorded with 8 species each followed by *Shorea* and *Ficus* with 5 species each.

3.2. The Vegetation

The major forest type in this study area is the typical

coastal hill forest dominated by one species, *Shorea glauca* (Dipterocarpaceae). This species is common and dominant in the adjoining forests of Sungai Pinang and Pangkor Utara Forest Reserves [1]. *Eugeissona tristis* (Bertam) is a common palm found throughout the forest in this island, implying this forest has been disturbed in the past. The forest strata still have five layers although in some places, the strata or layers are unclear and manifestly broken by gaps. The emergent layer is about 30-40 m tall followed by main canopy layer with 20-30 m tall, understorey 10-20 tall, treelet layer 2-10 m tall and ground floor layer between 0-2 m tall. The large old gaps are scarcely observed but the small gaps are common, infested by populations of pioneer species of *Macaranga* (*M. gigantea*, *M. hypoleuca*), *Mallotus* spp. and *Trema tomentosa*. The clearing on hillsides, forest fringes and near the roadsides are also dominated by the pioneer species as above in addition to *Vitex pinnata*.

3.3. The Flora

The species that are commonly found in these forests include *Cnestis palala*, *Rourea minor*, *Hopea beccariana*, *Diospyros clavigera*, *Hydnocarpus filipes*, *Fordia unifoliata*, *Memecylon pubescens*, *Pternandra coerulea*, *Ficus variegata*, *F. vasculosa*, *Knema stenophylla*, *Syzygium zeylanicum*, *Strombosia javanica*, *Eugeissona tristis*, *Orania sylvicola*, *Xanthophyllum affine*, *Gynotroches axillaris*, *Aidia densiflora*, *Diplospora malaccensis*, *Gardenia carinata*, *Psydrax* sp. 10, *Paramignya* sp., *Grewia laevigata*, *Schoutenia accrescens* ssp. *accrescens* and *Rinorea anguifera*. The emergent layer is dominated by trees of large size and tall dipterocarps such as *Anisoptera* spp., *Dipterocarpus* spp., *Hopea beccariana* and *Shorea* spp. The dipterocarp species of *balau* group such as, *Shorea glauca* and *S. maxwelliana* are commonly encountered. These species also grew up to 30-40 m tall and DBH more than 70 cm. *Shorea curtisii* is also observed. Other emergent trees

include *Alstonia angustiloba* (Apocynaceae), *Koompassia malaccensis*, *Sindora echinocalyx* (Leguminosae), *Pentace eximia* (Tiliaceae), *Dacryodes costata* (Burseraceae), and *Terminalia subspathulata* (Combretaceae). One individual of *T. subspathulata* has a DBH of 80 cm and ca. 30 m tall.

The main canopy layer is less dense and the species encountered include *Vatica cuspidata* (Dipterocarpaceae) and other non-dipterocarp species of *Atuna racemosa* ssp. *excelsa*, *Maranthes corymbosa* with DBH of more than 40 cm, *Crypteronia griffithii*, *Drypetes pendula*, *Ixonanthes reticulata*, *Cinnamomum porrectum*, *Adenanthera malayana*, *Ficus variegata*, *F. vasculosa*, *Zanthoxylum myriacanthum*, *Pouteria malaccensis*, *Gordonia multinervis*, *Gonystylus brunnescens*, and *Schoutenia accrescens* ssp. *accrescens*.

Meanwhile, the understorey layer is denser with the species observed include *Vatica lowii*, *Canarium pilosum*, *Dacryodes incurvata*, *D. rostrata*, *Diospyros* spp., *Erythroxylum cuneatum*, *Antidesma* spp., *Aporosa* spp., *Bridelia tomentosa*, *Drypetes longifolia*, *Macaranga lowii*, *Mallotus penangensis*, *Calophyllum* sp., *Cratoxylum cochinchinense*, *Sandoricum koetjape*, *Streblus elongatus*, *Knema stenophylla*, *Syzygium papillosum*, *Sarcotheca monophylla*, *Gynotroches axillaris*, *Pertusadina eurhyncha*, *Acronychia pedunculata*, *Melicope glabra*, *Xerospermum noronhianum* and *Sterculia foetida*. The rare species of *Canarium reniforme* was also recorded.

For treelets, the species observed are *Psydrax* sp. 10, *Eurycoma longifolia*, *Agrostistachys longifolia*, *Baccaurea brevipes*, *Breynia discigera*, *Cleistanthus hirsutipetalus*, *Koilodepas longifolium*, *Suregada multiflora*, *Ardisia* spp., *Rhodamnia cinerea*, *Syzygium attenuatum* ssp. *attenuatum*, *Champereia manillana*, *Galearia fulva*, *Leptonychia caudata*, *Symplocos adenophylla* and *Microcos tomentosa*. Shrubs are represented by *Phaeanthus ophthalmicus*, *Tabernaemontana corymbosa*, *Dracaena* spp., *Phyllanthus oxyphyllus*, *Trigonostemon verticillatus* var. *verticillatus*, *Microdesmis caseariifolia*, *Ixora javanica* var. *javanica*, *Lasianthus appressus*, *Urophyllum blumeum*, *Glycosmis macrophylla* and *Clerodendrum* spp.

Pioneer species are uncommon except near the roadsides or forest gaps and represented by *Arthrophyllum diversifolium*, *Endospermum diadenum*, *Macaranga gigantea*, *M. hypoleuca*, *Mallotus barbatus*, *Melastoma malabathricum*, *T. tomentosa*, *Vitex pinnata*. Woody climbers are also uncommon and the species recorded are *Ancistrocladus tectorius*, *Artabotrys grandifolius*, *Fissistigma* sp., *Melodorum aberrans*, *Combretum nigrescens*, *Agelaea borneensis*, *Agelaea macrophylla*, *Connarus odoratus*, *Rourea rugosa*, *Erycibe tomentosa*,

Tetracera scandens, *Grewia laevigata* and *Cayratia mollissima*. Palms are also common and represented by *Arenga westerhoutii*, *Calamus* spp., *Caryota mitis*, *Daemonorops calicarpa*, *Eugeissona tristis*, *Oncosperma horridum* and *Orania sylvicola*.

For the saplings, the common species include those of *Ellipanthus tomentosus* ssp. *tomentosus*, *Agrostistachys longifolia*, *Aidia densiflora*, *Champereia manillana*, *Diospyros clavigera*, *Eurycoma longifolia*, *Fordia unifoliata*, *Gironniera parvifolia*, *Gomphandra quadrifida* var. *ovalifolia*, *Hopea beccariana*, *Koilodepas longifolium*, *Pentace eximia*, *Pouteria malaccensis*, *Psydrax* sp. 10, *Pternandra coerulescens*, *Swintonia spicifera*, *Symplocos adenophylla*, *Syzygium cinereum*, *S. zeylanicum*, *Vatica cuspidata*, *V. lowii* and *Xanthophyllum affine*. Other species of sapling that are encountered include *Alstonia angustiloba*, *Anisophyllea corneri*, *Anisoptera curtisii*, *Clerodendrum laevifolium*, *Diplospora malaccensis*, *Dipterocarpus grandiflorus*, *Garcinia parvifolia*, *Gardenia tubifera*, *Gynotroches axillaris*, *Hydnocarpus filipes*, *Memecylon pubescens*, *Nauclea officinalis*, *Pouteria malaccensis*, *Shorea maxwelliana*, *Shorea multiflora*, *Strombosia ceylanica*, *Syzygium attenuatum* ssp. *attenuatum*, and *Xanthophyllum eurhynchum*.

On the ground floor layer, the vegetation is comprised of *Aidia densiflora*, *Alseodaphne nigrescens*, *Barringtonia macrostachya*, *Calophyllum* sp., *Champereia manillana*, *Clerodendrum laevifolium*, *Combretum nigrescens*, *Dalbergia* sp., *Diospyros* spp. (*Diospyros clavigera*, *D. venosa* var. *venosa*), *Diplospora malaccensis*, *Dracaena* sp., *Ellipanthus tomentosus* ssp. *tomentosus*, *Eugeissona tristis*, *Eurycoma longifolia*, *Fibraura tinctoria*, *Fordia unifoliata*, *Garcinia scortechinii*, *Gironniera parvifolia*, *Gnetum* sp., *Hopea beccariana*, *Hydnocarpus filipes*, *Knema stenophylla*, *Koilodepas longifolium*, *Koompassia malaccensis*, *Psydrax* sp. 10, *Rourea minor*, *Strombosia ceylanica*, *Swintonia spicifera*, *Syzygium zeylanicum*, *Vatica* spp. (*V. cuspidata*, *V. lowii*) and *Xanthophyllum affine*. Herbs are rare and only represented by *Donax grandis*. Only three species of stranglers are recorded in this study; viz. *Ficus globosa*, *F. microcarpa* and *F. xylophylla*.

3.4. Endemic Taxa

A total of 25 endemic taxa to Peninsular Malaysia has been recorded in this study (Table 3). *Fordia unifoliata*, a small tree of ca. 10 m tall is endemic to Perak and restricted to coastal hill forest has been observed including Pangkor Island [6].

Table 3. List of endemic taxa to Peninsular Malaysia recorded in Pangkor Selatan Forest Reserve, Perak.

Species	Status	Distribution
<i>Artabotrys grandifolius</i> King	Endemic	Kd, Pk, Ph
<i>Calamus insignis</i> Griff. var. <i>insignis</i>	Endemic variety	Kd, Tg, Pk, Ph, Sl, NS, Jh
<i>Calamus insignis</i> Griff. var. <i>robustus</i> (Becc.) J. Dransf.	Endemic variety	Pk
<i>Canarium reniforme</i> Kochummen & Whitmore	Endemic	Pk, Sl
<i>Casearia clarkei</i> King	Endemic	P. Msia
<i>Cleistanthus hirsutipetalus</i> Gage	Endemic	Pn, Tg, Ph, NS, Jh

Species	Status	Distribution
<i>Diospyros clavigera</i> C. B. Clarke	Endemic	Pn, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp
<i>Diospyros singaporensis</i> Bakh.	Endemic	Kd, Pk, Ph, Sl, NS, MI, Jh
<i>Dipterocarpus perakensis</i> P. S. Ashton	Endemic	Pn, Pk
<i>Eugeissona tristis</i> Griff.	Endemic	Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, MI, Jh
<i>Fordia unifoliata</i> (Prain) Dasuki & Schot	Endemic	Pk including P. Pangkor
<i>Goniothalamus tenuifolius</i> King	Endemic	Kd, Pn, Kl, Tg, Pk, Ph, Sl, MI
<i>Gordonia multinervis</i> King	Endemic	Pn, Kl, Tg, Pk, Ph, MI, Jh, Sp
<i>Hydnocarpus filipes</i> Symington ex Sleumer	Endemic	Tg, Pk, Ph, Sl
<i>Mallotus penangensis</i> Müll. Arg.	Endemic	Throughout
<i>Memecylon wallichii</i> Ridl.	Endemic	Pn, Kl, Pk, MI
<i>Mesua elegans</i> (King) Kosterm.	Endemic	Pk, Ph, Sl, NS, Jh, Sp
<i>Paramignya cuspidata</i> (Ridl.) Swingle	Endemic	Pk, MI
<i>Pentace eximia</i> King	Endemic	Pn, Pk, Ph
<i>Pentace strychnoidea</i> King	Endemic	Kd, Kl, Tg, Pk, Ph, Sl, NS
<i>Rourea rugosa</i> Planch.	Endemic	widespread
<i>Sarcotheca monophylla</i> (Planch. ex Hook. f.) Hallier f.	Endemic	Pk, Ph, Sl, MI
<i>Shorea lumutensis</i> Symington	Endemic	Pk
<i>Swintonia spicifera</i> Hook. f.	Endemic	Kd, Pn, Pk, NS, MI, Jh
<i>Vatica cuspidata</i> (Ridl.) Symington	Endemic	widespread

Notes: Pn = Penang, Pk = Perak, Kl = Kelantan, Tg = Terengganu, Ph = Pahang, Sl = Selangor, NS = Negeri Sembilan, MI = Melaka, Jh = Johor, Sp = Singapore.

3.5. Conservation Status

A total of 48 species of flowering plants in Pangkor Selatan Forest Reserve was listed in 2020 IUCN Red List Categories [7] and [4] (Table 4).

Table 4. Conservation status of flowering plants species in Pangkor Selatan Forest Reserve Forest Reserve, Perak based on the 2020 IUCN Red List of Threatened Species and [4].

Species	Family	Conservation status
<i>Anisophyllea corneri</i> Ding Hou	Anisophylleaceae	Lower Risk/least concern
<i>Anisophyllea curtisii</i> King	Anisophylleaceae	Vulnerable B1+2a
<i>Anisoptera costata</i> Korth.	Dipterocarpaceae	Near threatened
<i>Anisoptera curtisii</i> Dyer ex King	Dipterocarpaceae	Least Concern
<i>Aquilaria malaccensis</i> Lam.	Thymelaeaceae	Critically Endangered
<i>Archidendron ellipticum</i> (Blume) I. C. Nielsen	Leguminosae	Least Concern
<i>Bhesa paniculata</i> Arn.	Celastraceae	Lower Risk/least concern
<i>Canarium reniforme</i> Kochummen & Whitmore	Burseraceae	Lower Risk/conservation dependent
<i>Caryota mitis</i> Lour.	Palmae	Least Concern
<i>Coscinium fenestratum</i> (Gaertn.) Colebr.	Menispermaceae	Data Deficient
<i>Cratoxylum cochinchinense</i> (Lour.) Blume	Guttiferae	Lower Risk/least concern
<i>Dacryodes costata</i> (Benn.) H. J. Lam	Burseraceae	Lower Risk/least concern
<i>Dacryodes rostrata</i> (Blume) H. J. Lam	Burseraceae	Lower Risk/least concern
<i>Diospyros areolata</i> King & Gamble	Ebenaceae	Lower Risk/least concern
<i>Diospyros singaporensis</i> Bakh.	Ebenaceae	Lower Risk/least concern
<i>Dipterocarpus acutangulus</i> Vesque	Dipterocarpaceae	Endangered
<i>Dipterocarpus costulatus</i> Slooten	Dipterocarpaceae	Least Concern
<i>Dipterocarpus grandiflorus</i> (Blanco) Blanco	Dipterocarpaceae	Least Concern
<i>Dipterocarpus perakensis</i> P. S. Ashton	Dipterocarpaceae	Data Deficient
<i>Garcinia scortechinii</i> King	Guttiferae	Lower Risk/least concern
<i>Goniothalamus tenuifolius</i> King	Annonaceae	Lower Risk/least concern
<i>Grewia laevigata</i> Vahl	Tiliaceae	Least Concern
<i>Hopea beccariana</i> Burck	Dipterocarpaceae	Least Concern
<i>Hydnocarpus filipes</i> Symington ex Sleumer	Flacourtiaceae	Vulnerable B1+2a
<i>Ixora javanica</i> (Blume) DC. var. <i>javanica</i>	Rubiaceae	Least Concern
<i>Koompassia malaccensis</i> Maing. ex Benth.	Leguminosae	Lower Risk/conservation dependent
<i>Mallotus barbatus</i> Müll. Arg.	Euphorbiaceae	Least Concern
<i>Maranthes corymbosa</i> Blume	Chrysobalanaceae	Lower Risk/least concern
<i>Memecylon wallichii</i> Ridl.	Melastomataceae	Vulnerable B1+2c
<i>Mesua elegans</i> (King) Kosterm.	Guttiferae	Lower Risk/least concern
<i>Microcos tomentosa</i> Sm.	Tiliaceae	Least Concern
<i>Myristica iners</i> Blume	Myristicaceae	Lower Risk/least concern
<i>Orania sylvicola</i> (Griff.) H. E. Moore	Palmae	Lower Risk/near threatened
<i>Pentace strychnoidea</i> King	Tiliaceae	Lower Risk/conservation dependent
<i>Rhodamnia cinerea</i> Jack	Myrtaceae	Least Concern

Species	Family	Conservation status
<i>Sandoricum koetjape</i> (Burm. f.) Merr.	Meliaceae	Least Concern
<i>Sarcotheca monophylla</i> (Planch. ex Hook. f.) Hallier f.	Oxalidaceae	Lower Risk/near threatened
<i>Shorea curtisii</i> Dyer ex King	Dipterocarpaceae	Least Concern
<i>Shorea glauca</i> King	Dipterocarpaceae	Least Concern
<i>Shorea lumutensis</i> Symington	Dipterocarpaceae	Critically endangered
<i>Shorea maxwelliana</i> King	Dipterocarpaceae	Least Concern
<i>Shorea multiflora</i> (Burck) Symington	Dipterocarpaceae	Least Concern
<i>Sterculia parviflora</i> Roxb. ex G. Don	Sterculiaceae	Lower Risk/least concern
<i>Swintonia spicifera</i> Hook. f.	Anacardiaceae	Lower Risk/least concern
<i>Tabernaemontana corymbosa</i> Roxb. ex Wall.	Apocynaceae	Lower Risk/least concern
<i>Vatica cuspidata</i> (Ridl.) Symington	Dipterocarpaceae	Near threatened
<i>Vatica lowii</i> King	Dipterocarpaceae	Near threatened
<i>Vitex pinnata</i> L.	Verbenaceae	Least Concern

List of flowering plants at Pangkor Selatan Forest Reserve.

List of families and species of flowering plants in alphabetical order and grouped into angiosperms (dicotyledons and monocotyledons) is given below (Table 5). The entry

format is as follows: family name; accepted scientific names with authors in abbreviation; a record of whether the taxon is endemic to Peninsular Malaysia, distribution in Peninsular Malaysia and their conservation status.

Table 5. List of all taxa in Pangkor Selatan Forest Reserve, Perak including their endemism, distribution in Peninsular Malaysia and conservation status.

ANGIOSPERM					
No.	Family	Species	Endemism	Distribution in Peninsular Malaysia	Conservation Status
1	Alangiaceae	<i>Alangium griffithii</i> (C. B. Clarke) Harms		Kl, Tg, Pk, Ph, Sl, Jh	
2	Anacardiaceae	<i>Buchanania sessifolia</i> Blume		Throughout	
3	Anacardiaceae	<i>Gluta elegans</i> (Wall.) Hook. f.		Kd, Kl, Tg, Pn, Pk, Ph, Sl	
4	Anacardiaceae	<i>Mangifera griffithii</i> Hook. f.		Kd, Kl, Tg, Pk, Ph, Sl, MI, Jh, Sp	
5	Anacardiaceae	<i>Parishia maingayi</i> Hook. f.		Tg, Pk, Ph, Sl, Jh, Sp	
6	Anacardiaceae	<i>Swintonia floribunda</i> Griff.		Kd, Kl, Pn, Ph, Sl, NS, Jh	
7	Anacardiaceae	<i>Swintonia spicifera</i> Hook. f.	Endemic	Kd, Pn, Pk, NS, MI, Jh	Lower Risk/least concern
8	Ancistrocladaceae	<i>Ancistrocladus tectorius</i> (Lour.) Merr.		Widespread	
9	Anisophylleaceae	<i>Anisophyllea corneri</i> Ding Hou		Kd, Kl, Tg, Pk, Ph, Sl, NS, MI, Jh	Lower Risk/least concern
10	Anisophylleaceae	<i>Anisophyllea curtisii</i> King		Pn, Pk, Jh	Vulnerable B1+2a
11	Annonaceae	<i>Artabotrys grandifolius</i> King	Endemic	Kd, Pk, Ph	
12	Annonaceae	<i>Fissistigma</i> sp.			
13	Annonaceae	<i>Goniothalamus tenuifolius</i> King	Endemic	Kd, Pn, Kl, Tg, Pk, Ph, Sl, MI	Lower Risk/least concern
14	Annonaceae	<i>Melodorum aberrans</i> (Maingay ex Hook. f. & Thomson) J. Sinclair		Pk, Ph, NS	
15	Annonaceae	<i>Mezzettia parviflora</i> Becc.		Kd, Pn, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp	
16	Annonaceae	<i>Phaeanthus ophthalmicus</i> (Roxb. ex G. Don) J. Sinclair		Kl, Pn, Pk, Ph, Sl, NS, MI, Jh, Sp	
17	Apocynaceae	<i>Alstonia angustiloba</i> Miq.		Throughout	
18	Apocynaceae	<i>Kibatalia maingayi</i> (Hook. f.) Woodson		Pn, Pk, Ph, Sl, NS, MI, Jh	
19	Apocynaceae	<i>Tabernaemontana corymbosa</i> Roxb. ex Wall.		Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, MI, Jh, Sp	Lower Risk/least concern
20	Araliaceae	<i>Arthrophyllum diversifolium</i> Blume		Throughout	
21	Burseraceae	<i>Canarium pilosum</i> Benn.		Widespread	
22	Burseraceae	<i>Canarium reniforme</i> Kochummen & Whitmore	Endemic	Pk, Sl	Lower Risk / conservation dependent
23	Burseraceae	<i>Dacryodes costata</i> (Benn.) H. J. Lam		Kd, Tg, Pn, Pk, Ph, Sl, NS, Jh, Sp	Lower Risk/least concern
24	Burseraceae	<i>Dacryodes incurvata</i> (Engl.) H. J. Lam		Kl, Tg, Pk, Ph, Sl, Jh	
25	Burseraceae	<i>Dacryodes rostrata</i> (Blume) H. J. Lam		Ps, Kd, Tg, Pn, Pk, Ph, Sl, NS, MI, Jh, Sp	Lower Risk/least concern
26	Celastraceae	<i>Bhesa paniculata</i> Arn.		Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Jh, Sp	Lower Risk/least concern
27	Chrysobalanaceae	<i>Atuna racemosa</i> Raf. ssp. <i>excelsa</i> (Jack) Prance		Kd and Tg southward	
28	Chrysobalanaceae	<i>Maranthes corymbosa</i> Blume		Ps, Kd, Pn, Kl, Pk, Ph, Sl, NS, MI, Jh, Sp	Lower Risk/least concern
29	Combretaceae	<i>Combretum nigrescens</i> King		Widespread	
30	Combretaceae	<i>Terminalia subspatulata</i> King		Pk southwards	
31	Connaraceae	<i>Agelaea borneensis</i> (Hook. f.) Merr.		Widespread	

ANGIOSPERM					
No.	DICOTYLEDON				
	Family	Species	Endemism	Distribution in Peninsular Malaysia	Conservation Status
32	Connaraceae	<i>Agelaea macrophylla</i> (Zoll.) Leenh.		Widespread	
33	Connaraceae	<i>Cnestis palala</i> (Lour.) Merr.		Kd, Kl, Pn, Pk, Sl, Jh, Sp	
34	Connaraceae	<i>Connarus odoratus</i> Hook. f.		Pk	
35	Connaraceae	<i>Ellipanthus tomentosus</i> Kurz ssp. <i>tomentosus</i>		Widespread	
36	Connaraceae	<i>Rourea minor</i> (Gaertn.) Leenh.		Throughout	
37	Connaraceae	<i>Rourea rugosa</i> Planch.	Endemic	Widespread	
38	Convolvulaceae	<i>Erycibe tomentosa</i> Blume			
39	Crypteroniaceae	<i>Crypteronia griffithii</i> C. B. Clarke		Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp	
40	Dilleniaceae	<i>Tetracera scandens</i> (L.) Merr.		Widespread	
41	Dipterocarpaceae	<i>Anisoptera costata</i> Korth.		Widespread	Near threatened
42	Dipterocarpaceae	<i>Anisoptera curtisii</i> Dyer ex King		Widespread	Least concern
43	Dipterocarpaceae	<i>Dipterocarpus acutangulus</i> Vesque		NS	Endangered
44	Dipterocarpaceae	<i>Dipterocarpus costulatus</i> Slooten		NS northward	Least concern
45	Dipterocarpaceae	<i>Dipterocarpus grandiflorus</i> (Blanco) Blanco		Widespread	Least concern
46	Dipterocarpaceae	<i>Dipterocarpus perakensis</i> P. S. Ashton	Endemic	Pn, Pk	Data deficient
47	Dipterocarpaceae	<i>Hopea beccariana</i> Burck		Widespread	Least concern
48	Dipterocarpaceae	<i>Shorea curtisii</i> Dyer ex King		Throughout	Least concern
49	Dipterocarpaceae	<i>Shorea glauca</i> King		Ps, Kd, Pn, Kl, Tg, Pk, Ph, NS, Ml, Jh	Least concern
50	Dipterocarpaceae	<i>Shorea lumutensis</i> Symington	Endemic	Pk	Critically endangered
51	Dipterocarpaceae	<i>Shorea maxwelliana</i> King		Pn and Tg southward	Least concern
52	Dipterocarpaceae	<i>Shorea multiflora</i> (Burck) Symington		Throughout	Least concern
53	Dipterocarpaceae	<i>Vatica cuspidata</i> (Ridl.) Symington	Endemic	Widespread	Near threatened
54	Dipterocarpaceae	<i>Vatica lowii</i> King		Kl, Pk	Near threatened
55	Ebenaceae	<i>Diospyros areolata</i> King & Gamble		Kd, Pn, Pk, Ph, Sl, NS, Jh	Lower Risk/least concern
56	Ebenaceae	<i>Diospyros buxifolia</i> (Blume) Hiern		Throughout	
57	Ebenaceae	<i>Diospyros clavigera</i> C. B. Clarke	Endemic	Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp	
58	Ebenaceae	<i>Diospyros pendula</i> Hasselt ex Hassk.		Kd, Pn, Tg, Pk, Ph, Sl, Jh	
59	Ebenaceae	<i>Diospyros singaporensis</i> Bakh.	Endemic	Kd, Pk, Ph, Sl, NS, Ml, Jh	Lower Risk/least concern
60	Ebenaceae	<i>Diospyros venosa</i> Wall. ex A. DC. var. <i>venosa</i>		Throughout	
61	Ebenaceae	<i>Diospyros wallichii</i> King & Gamble ex F. N. Williams		Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml	
62	Ebenaceae	<i>Diospyros yeobii</i> Bakh.		Pk, Ph	
63	Elaeocarpaceae	<i>Elaeocarpus pedunculatus</i> Wall. ex Mast.		Throughout	
64	Erythroxylaceae	<i>Erythroxylum cuneatum</i> (Miq.) Kurz		Throughout	
65	Euphorbiaceae	<i>Agrostistachys longifolia</i> (Wight) Benth.		Throughout	
66	Euphorbiaceae	<i>Antidesma coriaceum</i> Tul.		Throughout	
67	Euphorbiaceae	<i>Antidesma cuspidatum</i> Müll. Arg.		Throughout	
68	Euphorbiaceae	<i>Aporosa aurea</i> Hook. f.		Throughout	
69	Euphorbiaceae	<i>Aporosa benthamiana</i> Hook. f.		Tg, Pk, Sl, NS, Jh, Sp.	
70	Euphorbiaceae	<i>Baccaurea brevipes</i> Hook. f.		Throughout	
71	Euphorbiaceae	<i>Breynia discigera</i> Müll. Arg.		Widespread	
72	Euphorbiaceae	<i>Bridelia tomentosa</i> Blume		Throughout	
73	Euphorbiaceae	<i>Cleistanthus hirsutipetalus</i> Gage	Endemic	Pn, Tg, Ph, NS, Jh	
74	Euphorbiaceae	<i>Drypetes longifolia</i> (Blume) Pax & K. Hoffm.		Widespread	
75	Euphorbiaceae	<i>Drypetes pendula</i> Ridl.		Throughout	
76	Euphorbiaceae	<i>Endospermum diadenum</i> (Miq.) Airy Shaw		Throughout	
77	Euphorbiaceae	<i>Koilocarpus longifolius</i> Hook. f.		P. Langkawi, Tg, Pk, Ml, Jh, Sp	
78	Euphorbiaceae	<i>Macaranga gigantea</i> (Rchb. f. & Zoll.) Müll. Arg.		Throughout	
79	Euphorbiaceae	<i>Macaranga hypoleuca</i> (Rchb. f. & Zoll.) Müll. Arg.		Throughout	
80	Euphorbiaceae	<i>Macaranga lowii</i> King ex Hook. f.		Throughout	
81	Euphorbiaceae	<i>Mallotus barbatus</i> Müll. Arg.		Kd, Kl, Tg, Pk	Least Concern
82	Euphorbiaceae	<i>Mallotus penangensis</i> Müll. Arg.	Endemic	Throughout	
83	Euphorbiaceae	<i>Phyllanthus oxyphyllus</i> Miq.		Throughout	
84	Euphorbiaceae	<i>Suregada multiflora</i> (Juss.) Baill.		Widespread	
85	Euphorbiaceae	<i>Trigonostemon verticillatus</i> (Jack) Pax ex Pax & K. Hoffm. var. <i>verticillatus</i>		Pn, Pk, Sl, Ml	
86	Fagaceae	<i>Lithocarpus wallichianus</i> (Lindl. ex Hance) Rehder	Endemic	Throughout	
87	Flacourtiaceae	<i>Casearia clarkei</i> King	Endemic	P. Msia	
88	Flacourtiaceae	<i>Hydnocarpus filipes</i> Symington ex Sleumer	Endemic	Tg, Pk, Ph, Sl	Vulnerable B1+2a
89	Guttiferae	<i>Calophyllum</i> sp.			
90	Guttiferae	<i>Cratogeomys cochinchinense</i> (Lour.) Blume		Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Sp	Lower Risk/least concern
91	Guttiferae	<i>Garcinia hombroniana</i> Pierre		All coasts	

ANGIOSPERM					
No.	Family	Species	Endemism	Distribution in Peninsular Malaysia	Conservation Status
92	Guttiferae	<i>Garcinia parvifolia</i> (Miq.) Miq.		Throughout	
93	Guttiferae	<i>Garcinia scortechinii</i> King		Throughout	Lower Risk/least concern
94	Guttiferae	<i>Mesua elegans</i> (King) Kosterm.	Endemic	Pk, Ph, Sl, NS, Jh, Sp	Lower Risk/least concern
95	Icacinaeae	<i>Gomphandra quadrifida</i> (Blume) Sleumer var. <i>ovalifolia</i> (Ridl.) Sleumer		Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp	
96	Ixonanthaceae	<i>Ixonanthes reticulata</i> Jack		Throughout	
97	Lauraceae	<i>Alseodaphne nigrescens</i> (Gamble) Kosterm.		Pn, Pk, Ph, Sl, Sp	
98	Lauraceae	<i>Cinnamomum porrectum</i> (Roxb.) Kosterm.		Ml and Ph northward	
99	Lauraceae	<i>Cryptocarya rugulosa</i> Hook. f.		Kd, Pn, Pk, Tg, Ml, Jh, Sp	
100	Lauraceae	<i>Litsea elliptica</i> Blume		Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp	
101	Lauraceae	<i>Neolitsea zeylanica</i> (Nees) Merr.		Throughout	
102	Lauraceae	<i>Nothaphoebe umbelliflora</i> Blume		Pn, Kl, Pk, Ph, Sl, NS, Jh, Sp	
103	Lauraceae	<i>Phoebe grandis</i> (Nees) Merr.		Throughout	
104	Lecythidaceae	<i>Barringtonia macrostachya</i> (Jack) Kurz		Throughout	
105	Leguminosae	<i>Adenanthera malayana</i> Kosterm.		Widespread	
106	Leguminosae	<i>Archidendron contortum</i> (Martelli) I. C. Nielsen		Widespread	
107	Leguminosae	<i>Archidendron ellipticum</i> (Blume) I. C. Nielsen		Widespread	Least Concern
108	Leguminosae	<i>Dalbergia junghuhni</i> Benth.		Widespread	
109	Leguminosae	<i>Dalbergia</i> sp.			
110	Leguminosae	<i>Derris amoena</i> Benth. var. <i>maingayana</i> (Baker) Prain		Widespread	
111	Leguminosae	<i>Fordia unifoliata</i> (Prain) Dasuki & Schot	Endemic	Pk including P. Pangkor	
112	Leguminosae	<i>Koompassia malaccensis</i> Maing. ex Benth.		Throughout	Lower Risk / conservation dependent
113	Leguminosae	<i>Sindora echinocalyx</i> (Benth.) Prain		Widespread	
114	Leguminosae	<i>Spatholobus ferrugineus</i> (Zoll. & Moritzi) Benth. var. <i>ferrugineus</i>		Widespread	
115	Linaceae	<i>Indorouchera griffithiana</i> (Planch.) Hallier f.		Widespread	
116	Loganiaceae	<i>Strychnos axillaris</i> Colebr.		Widespread	
117	Loganiaceae	<i>Strychnos flavescens</i> King & Gamble		Pn, Pk, Ml	
118	Melastomataceae	<i>Dissochaeta</i> sp.			
119	Melastomataceae	<i>Melastoma malabathricum</i> L.		Throughout	
120	Melastomataceae	<i>Memecylon lilacinum</i> Zoll. & Moritzi		Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, Ml, Jh	
121	Melastomataceae	<i>Memecylon minutiflorum</i> Miq.		Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp	
122	Melastomataceae	<i>Memecylon pubescens</i> (C. B. Clarke) King		Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp	
123	Melastomataceae	<i>Memecylon wallichii</i> Ridl.	Endemic	Pn, Kl, Pk, Ml	Vulnerable B1+2c
124	Melastomataceae	<i>Pternandra coerulescens</i> Jack		Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp	
125	Meliaceae	<i>Aglaia</i> sp.			
126	Meliaceae	<i>Chisocheiton patens</i> Blume		Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp	
127	Meliaceae	<i>Dysoxylum densiflorum</i> (Blume) Miq.		Pk, Ph, Sl, NS, Jh	
128	Meliaceae	<i>Lansium domesticum</i> Corrêa		Widespread	
129	Meliaceae	<i>Pseudoclausena chrysogyne</i> (Miq.) T. P. Clark		Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp	
130	Meliaceae	<i>Sandoricum koetjape</i> (Burm. f.) Merr.		Widespread	Least Concern
131	Menispermaceae	<i>Coscinium blumeianum</i> Miers ex Hook. f. & Thomson		Pn, P. Pangkor	
132	Menispermaceae	<i>Coscinium fenestratum</i> (Gaertn.) Colebr.		Widespread	Data Deficient
133	Menispermaceae	<i>Fibraurea tinctoria</i> Lour.		Widespread	
134	Menispermaceae	<i>Pericampylus glaucus</i> (Lam.) Merr.		Widespread	
135	Menispermaceae	<i>Tinomiscium petiolare</i> Hook. f. & Thomson		Widespread	
136	Moraceae	<i>Antiaris toxicaria</i> Lesch.		Widespread	
137	Moraceae	<i>Artocarpus integer</i> (Thunb.) Merr. var. <i>silvestris</i> Corner		Widespread	
138	Moraceae	<i>Artocarpus lanceifolius</i> Roxb.		Widespread	
139	Moraceae	<i>Artocarpus rigidus</i> Blume		Throughout	
140	Moraceae	<i>Ficus globosa</i> Blume		Pk and Ph southward	
141	Moraceae	<i>Ficus microcarpa</i> L. f.		Widespread	
142	Moraceae	<i>Ficus variegata</i> Blume		Throughout	
143	Moraceae	<i>Ficus vasculosa</i> Wall. ex Miq.		Throughout	
144	Moraceae	<i>Ficus xylophylla</i> Wall. ex Miq.		Throughout	
145	Moraceae	<i>Streblus elongatus</i> (Miq.) Corner		Kd, Pn, Tg, Pk, Ph, Sl, NS, Jh, Sp	
146	Myristicaceae	<i>Gymnacranthera farquhariana</i> (Hook. f. & Thomson) Warb.			
147	Myristicaceae	<i>Knema stenophylla</i> (Warb.) J. Sinclair		Kd, Pn, Kl, Tg, Pk, Ph, NS, Ml, Jh	

ANGIOSPERM					
No.	DICOTYLEDON				
	Family	Species	Endemism	Distribution in Peninsular Malaysia	Conservation Status
148	Myristicaceae	<i>Myristica iners</i> Blume		Throughout	Lower Risk/least concern
149	Myrsinaceae	<i>Ardisia crenata</i> Sims		Throughout	
150	Myrsinaceae	<i>Ardisia elliptica</i> Thunb.		coasts from Ps to Sp	Least Concern
151	Myrsinaceae	<i>Ardisia korthalsiana</i> Scheff.		Tg, Ph, MI, Jh	
152	Myrtaceae	<i>Rhodamnia cinerea</i> Jack		Throughout	
153	Myrtaceae	<i>Syzygium attenuatum</i> (Miq.) Merr. & L. M. Perry ssp. <i>attenuatum</i>		Kd, Pn, Ph, SI, MI, Jh, Sp	
154	Myrtaceae	<i>Syzygium cinereum</i> (Kurz) P. Chantaranothai & J. Parn.		Widespread	Least Concern
155	Myrtaceae	<i>Syzygium filiforme</i> (Wall. ex Duthie) P. Chantaranothai & J. Parn.		Pk to Sp	
156	Myrtaceae	<i>Syzygium garcinifolium</i> (King) Merr. & L. M. Perry		KI, Tg, Pk, SI, NS, Jh	
157	Myrtaceae	<i>Syzygium glaucum</i> (King) P. Chantaranothai & J. Parn.		Kd, Pn, Pk, Ph, SI, NS, MI, Jh, Sp	
158	Myrtaceae	<i>Syzygium papillosum</i> (Duthie) Merr. & L. M. Perry		Pk and Tg to Sp	
159	Myrtaceae	<i>Syzygium pyrifolium</i> (Blume) DC.		Kd to Sp	
160	Myrtaceae	<i>Syzygium zeylanicum</i> (L.) DC.		Kd and Tg to Sp	
161	Ochnaceae	<i>Campylospermum serratum</i> (Gaertn.) Bittrich & M. C. E. Amaral		Throughout	
162	Olacaceae	<i>Strombosia ceylanica</i> Gardn.		Widespread	
163	Olacaceae	<i>Strombosia javanica</i> Blume		Kd, Pn, KI, Pk, Ph, SI, NS, Jh, Sp	
164	Opiliaceae	<i>Champerea manillana</i> (Blume) Merr.		Widespread	Lower Risk/near threatened
165	Oxalidaceae	<i>Sarcotheca monophylla</i> (Planch. ex Hook. f.) Hallier f.	Endemic	Pk, Ph, SI, MI	
166	Pandaceae	<i>Galearia fulva</i> (Tul.) Miq.		Throughout	
167	Pandaceae	<i>Microdesmis caseariifolia</i> Planch.		Throughout	
168	Polygalaceae	<i>Xanthophyllum affine</i> Korth. ex Miq.		Widespread	
169	Polygalaceae	<i>Xanthophyllum eurhynchum</i> Miq.		Widespread	
170	Rhamnaceae	<i>Smythea macrocarpa</i> Hemsl.		Pn, Pk	
171	Rhamnaceae	<i>Ventilago maingayi</i> Lawson		Widespread	
172	Rhamnaceae	<i>Ziziphus horsfieldii</i> Miq.		SI, MI, Sp	
173	Rhizophoraceae	<i>Gynotroches axillaris</i> Blume		Throughout	
174	Rubiaceae	<i>Aidia densiflora</i> (Wall.) Masam.		Throughout	Least Concern
175	Rubiaceae	<i>Coptosapelta griffithii</i> Hook. f.		Widespread	
176	Rubiaceae	<i>Diplospora malaccensis</i> Hook. f.		Throughout	
177	Rubiaceae	<i>Gardenia carinata</i> Wall.		Throughout	
178	Rubiaceae	<i>Gardenia tubifera</i> Wall.		Throughout	
179	Rubiaceae	<i>Ixora javanica</i> (Blume) DC. var. <i>javanica</i>		Widespread	
180	Rubiaceae	<i>Lasianthus appressus</i> Hook. f.		Kd, Pn, Pk, SI, Jh, Sp	
181	Rubiaceae	<i>Morinda umbellata</i> L.		Widespread	
182	Rubiaceae	<i>Nauclea officinalis</i> (Pierre ex Pit.) Merr. & Chun		Throughout	
183	Rubiaceae	<i>Pertusadina eurhyncha</i> (Miq.) Ridsdale		Scattered	
184	Rubiaceae	<i>Psydrax</i> sp. 10		Widespread	
185	Rubiaceae	<i>Uncaria canescens</i> Korth.		Pn, Pk	Least Concern
186	Rubiaceae	<i>Urophyllum blumeianum</i> (Wight) Hook. f.		Throughout	
187	Rutaceae	<i>Acronychia pedunculata</i> (L.) Miq.		P. Langkawi, Kd, Pn, Pk, Ph, SI, Jh	
188	Rutaceae	<i>Glycosmis macrophylla</i> (Blume) Miq.		P. Langkawi, Pn, KI, Tg, Pk	
189	Rutaceae	<i>Melicope glabra</i> (Blume) T. G. Hartley		Widespread	
190	Rutaceae	<i>Paramignya cuspidata</i> (Ridl.) Swingle	Endemic	Pk, MI	
191	Rutaceae	<i>Paramignya</i> sp.			
192	Rutaceae	<i>Zanthoxylum myriacanthum</i> Wall. ex Hook. f.		Pn, Pk, Ph, SI, NS, MI	
193	Sapindaceae	<i>Guioa diplopetala</i> (Hassk.) Radlk.		Northern half of the Peninsula	
194	Sapindaceae	<i>Lepisanthes senegalensis</i> (Poir.) Leenh.		Widespread	
195	Sapindaceae	<i>Lepisanthes tetraphylla</i> (Vahl) Radlk.		Widespread	Least Concern
196	Sapindaceae	<i>Mischocarpus pentapetalus</i> (Roxb.) Radlk.		Scattered	
197	Sapindaceae	<i>Xerospermum laevigatum</i> Radlk.		Throughout	
198	Sapindaceae	<i>Xerospermum noronhianum</i> (Blume) Blume		Throughout	
199	Sapotaceae	<i>Palaquium sukoei</i> C. E. C. Fisch.		Tg, Pk, Jh	
200	Sapotaceae	<i>Pouteria malaccensis</i> (C. B. Clarke) Baehni		Throughout	
201	Sapotaceae	<i>Pouteria obovata</i> (R. Br.) Baehni		All coasts	
202	Simaroubaceae	<i>Eurycoma longifolia</i> Jack		Throughout	
203	Sterculiaceae	<i>Leptonychia caudata</i> (Wall. ex G. Don) Burret		Ps, Kd, Pn, Tg, Pk, Ph, SI, MI, Jh, Sp	
204	Sterculiaceae	<i>Sterculia foetida</i> L.		North and east of Malaya	
205	Sterculiaceae	<i>Sterculia parviflora</i> Roxb. ex G. Don		P. Langkawi, KI, Tg, Ph, SI, NS, Jh, Sp	Lower Risk/least

ANGIOSPERM					
No.	Family	Species	Endemism	Distribution in Peninsular Malaysia	Conservation Status
206	Symplocaceae	<i>Symplocos adenophylla</i> Wall. ex G. Don	Endemic	Widespread	concern
207	Theaceae	<i>Gordonia multinervis</i> King		Pn, Kl, Tg, Pk, Ph, Ml, Jh, Sp	Critically Endangered
208	Thymelaeaceae	<i>Aquilaria malaccensis</i> Lam.		Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp	
209	Thymelaeaceae	<i>Gonystylus brunescens</i> Airy Shaw	Endemic	Pn, Tg, Pk, Ph	Least Concern
210	Tiliaceae	<i>Grewia laevigata</i> Vahl		Widespread	
211	Tiliaceae	<i>Microcos tomentosa</i> Sm.		Widespread	
212	Tiliaceae	<i>Pentace eximia</i> King	Endemic	Pn, Pk, Ph	Least Concern
213	Tiliaceae	<i>Pentace strychnoidea</i> King		Kd, Kl, Tg, Pk, Ph, Sl, NS	
214	Tiliaceae	<i>Schoutenia accrescens</i> (Mast.) C. H. Curtis ssp. <i>accrescens</i>		Widespread	Lower Risk / conservation dependent
215	Ulmaceae	<i>Gironniera parvifolia</i> Planch.		Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp	
216	Ulmaceae	<i>Trema tomentosa</i> (Roxb.) Hara		Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp	
217	Verbenaceae	<i>Clerodendrum laevifolium</i> Blume		Throughout	Least Concern
218	Verbenaceae	<i>Clerodendrum nutans</i> Jack		Kd, Pn, Pk, Sl	
219	Verbenaceae	<i>Clerodendrum villosum</i> Blume		Throughout	
220	Verbenaceae	<i>Teijsmanniodendron coriaceum</i> (C. B. Clarke) Kosterm.		Kd, Kl, Tg, Pk, Ph, Sl, Jh, Sp	Least Concern
221	Verbenaceae	<i>Vitex pinnata</i> L.		Throughout	
222	Violaceae	<i>Rinorea anguifera</i> (Lour.) Kuntze		Throughout	
223	Vitaceae	<i>Cayratia mollissima</i> (Wall.) Gagnep.		Widespread	

MONOCOTYLEDON					
No.	Family	Species	Endemism	Distribution in Peninsular Malaysia	Conservation Status
224	Araceae	<i>Pothos scandens</i> L.		North P. Msia	
225	Dracaenaceae	<i>Dracaena conferta</i> Ridl.		Widespread	
226	Dracaenaceae	<i>Dracaena elliptica</i> Thunb.		Widespread	
227	Dracaenaceae	<i>Dracaena umbratica</i> Ridl.		Widespread	
228	Hypoxidaceae	<i>Molineria latifolia</i> (Dryand.) Herb. ex Kurz var. <i>latifolia</i>		Throughout	
229	Marantaceae	<i>Donax grandis</i> (Miq.) K. Schum.		Widespread	Least Concern
230	Palmae	<i>Arenga westerhoutii</i> Griff.	Endemic variety	Widespread	
231	Palmae	<i>Calamus diepenhorstii</i> Miq.		Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp	
232a	Palmae	<i>Calamus insignis</i> Griff. var. <i>insignis</i>		Kd, Tg, Pk, Ph, Sl, NS, Jh	Lower Risk / near threatened
232b	Palmae	<i>Calamus insignis</i> Griff. var. <i>robustus</i> (Becc.) J. Dransf.	Endemic variety	Pk	
233	Palmae	<i>Caryota mitis</i> Lour.	Endemic	Throughout	
234	Palmae	<i>Daemonorops calcarpa</i> (Griff.) Mart.		Pk, Ph, Sl, NS, Ml, Jh	Least Concern
235	Palmae	<i>Eugeissona tristis</i> Griff.		Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh	
236	Palmae	<i>Oncosperma horridum</i> (Griff.) Scheff.		Throughout	
237	Palmae	<i>Orania sylvicola</i> (Griff.) H. E. Moore		Throughout	

4. Conclusion

Pangkor Selatan Forest Reserve, Perak contains a total of 237 taxa belonging to 170 genera and 64 families was recorded, including 25 endemic taxa to Peninsular Malaysia such as *Fordia unifoliata* (Leguminosae). This leguminose species is endemic to Perak and restricted to the coastal hill forest. The dicotyledons are represented by 59 families while the monocotyledons are represented by only 5 families. The family Euphorbiaceae is the most speciose with 21 species and followed by Dipterocarpaceae with 14 species. Both the genera *Diospyros* and *Syzygium* are the largest with eight species each.

Acknowledgements

The authors are grateful and acknowledged the permission,

accommodation and assistance granted by the organizer, Ecotourism and Conservation Society Malaysia (ECOMY) and VALE. Special thanks also go to the staff of Perak Forestry Department and local guides for their assistance during the expedition.

References

- [1] Ahmad Fitri, Z., Latiff, A., Faridah-Hanum, I., Nurul Shida, S., Rosni, L. & Kamarulizwan, K. 2019. A checklist of higher plants in Pangkor Utara Forest Reserve, Perak, Peninsular Malaysia. *The Malaysian Forester* 82 (1): 99-122.
- [2] Anon. 2016. Laporan Jabatan Perhutanan Negeri Perak.
- [3] Brummit, R. K. 1992. Vascular Plant Families and Genera. Kew: Royal Botanic Gardens, 810 pp.

- [4] Chua, L. S. L., Suhaida, M., Hamidah, M. & Saw, L. G. 2010. *Malaysia Plant Redlist: Peninsular Malaysian Dipterocarpaceae*. Research Pamphlet No. 129. Kepong: Forest Research Institute Malaysia.
- [5] Corner, E. J. H. 1988. *Wayside Trees of Malaya*. Volumes 1 & 2. Third Edition. Kuala Lumpur: The Malayan Nature Society.
- [6] Dasuki, U. A. & Schot, A. M. 1991. Taxonomy of *Fordia Hemsley* (Papilionaceae: Millettieae). *Blumea* 36: 191-204.
- [7] IUCN. 2020. IUCN Redlist of Threatened Species (online). <http://www.redlist.org> (2 February 2020).
- [8] Kiew, R., Chung, R. C. K., Saw, L. G., Soepadmo, E. & Boyce, P. (eds.). 2010. *Flora of Peninsular Malaysia*. Volume 1. Series II: Seed Plant. Kepong: Forest Research Institute Malaysia.
- [9] Kiew, R., Chung, R. C. K., Saw, L. G., Soepadmo, E. & Boyce, P. (eds.). 2011. *Flora of Peninsular Malaysia*. Volume 2. Series II: Seed Plant. Kepong: Forest Research Institute Malaysia.
- [10] Kiew, R., Chung, R. C. K., Saw, L. G. & Soepadmo, E. (eds.). 2012. *Flora of Peninsular Malaysia*. Volume 3. Series II: Seed Plant. Kepong: Forest Research Institute Malaysia.
- [11] Kiew, R., Chung, R. C. K., Saw, L. G. & Soepadmo, E. (eds.). 2013. *Flora of Peninsular Malaysia*. Volume 4. Series II: Seed Plant. Kepong: Forest Research Institute Malaysia.
- [12] Ng, F. S. P. 1978 (ed.). *Tree Flora of Malaya*. Volume 3. Kuala Lumpur: Longman Malaysia Sdn. Berhad.
- [13] Ng, F. S. P. 1989 (ed.). *Tree Flora of Malaya*. Volume 4. Petaling Jaya: Longman Malaysia Sdn. Berhad.
- [14] Ridley, H. N. 1922-1925. *The Flora of the Malay Peninsula*. Volumes 1-5. London: L. Reeve & Co., Ltd.
- [15] Symington, C. F. 2004. *Foresters' Manual of Dipterocarps*. Second Edition Revised by Ashton, P. S. & Appanah, S. (2004). Malayan Forest Record No. 16. Kepong: Forest Research Institute Malaysia.
- [16] Tam, S. M. 1999. Floristic diversity of Bukit Bauk (Terengganu), Peninsular Malaysia. *Garden's Bulletin Singapore* 51: 257-308.
- [17] Turner, I. M. 1995. A catalogue of the vascular plant of Malaya. *Garden's Bulletin Singapore* 47 (1 & 2): 1-757.
- [18] Whitmore, T. C. 1972 (ed.). *Tree Flora of Malaya*. Volume 1. Kuala Lumpur: Longman Malaysia Sdn. Berhad.
- [19] Whitmore, T. C. 1973 (ed.). *Tree Flora of Malaya*. Volume 2. Kuala Lumpur: Longman Malaysia Sdn. Berhad.