

Angiosperms

Scientific Name:

Ptyssiglottis kunthiana (Nees) B.Hansen

Common Name:

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Family:

Acanthaceae

National Status: Endangered (EN)

Habitat and Ecology: A herb of humid primary forest. Elsewhere, also associated with limestone forest.

Distribution: In Singapore, only known from Bukit Timah Nature Reserve. The species is widespread in the region, occurring in Vietnam, Thailand, Peninsular Malaysia, Borneo, Java and the Philippines.

Threats: Degradation of habitat and loss of small populations.

Scientific Interest and Potential Value: The discovery of *Ptyssiglottis kunthiana* in Bukit Timah Nature Reserve in 2021 was the first record of both the genus and species in Singapore. The species is morphologically very variable, especially in leaf shape.

Conservation Measures: The species grows within a nature reserve.

Photo: Matti Niissalo



Flower of *Ptyssiglottis kunthiana*.

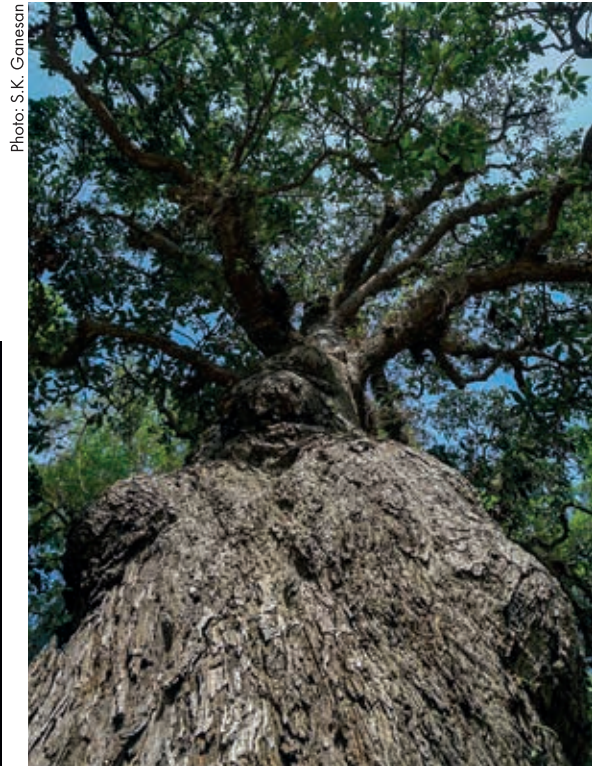
Scientific Name:
Mangifera magnifica Kochummen

Common Name:
Machang pulasan

Family:
Anacardiaceae



Close up of a dissected fruit of *Mangifera magnifica*.



Mangifera magnifica on St John's Island.

National Status: Critically Endangered (CR)

Habitat and Ecology: Lowland primary forest

Distribution: In Singapore, known from St John's Island, Pulau Tekong and the Central Catchment Nature Reserve. Also in Peninsular Malaysia, Sumatra and Borneo.

Threats: Degradation of habitat and small number of mature trees.

Scientific Interest and Potential Value: Adults of this species have wide-spreading and dense crowns making them ideal for planting in parks as a shade

tree. The potential problem of fallen fruits is somewhat minimized by its low frequency of flowering and fruiting, and if fruiting does occur, the edible fruits can be harvested before they fall.

Conservation Measures: The few mature individuals in Singapore are in protected and restricted areas, or protected under the Heritage Trees scheme. This species is included in NParks' Species Recovery Programme, through which seeds collected from the Central Catchment Nature Reserve and St. John's Island have been grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

Scientific Name:

Gongreos wallichii (Wight) Rodda et al.

Common Name:

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Family:

Apocynaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Twining climber found in lowland primary forests.

Distribution: In Singapore, only known from the Central Catchment Nature Reserve. Also, in Peninsular Malaysia and Borneo.

Threats: Degradation of habitat and loss of small populations.

Scientific Interest and Potential Value: The only known species of *Gongreos* in Singapore. This species

Photo: Yeoh Yi Shuen



Flowers of *Gongreos wallichii*.

was presumed Nationally Extinct (NEx) for nearly 200 years and was only rediscovered recently. It has potential for cultivation in urban environments. Cultivated plants develop small, urn-shaped flowers reminiscent of *Dischidia* species.

Conservation Measures: Seedlings have been collected and grown in NParks' Native Plant Centre nursery. Cultivation has been successful on fences and trellises.

Scientific Name:

Kopsia singapurensis Ridl.

Common Name:

Singapore kopsia

Family:

Apocynaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: A small tree or shrub of swamp forest. Elsewhere, also in lowland forest.

Distribution: In Singapore, only known from small populations in Nee Soon freshwater swamp forest and the Upper Seletar area of the Central Catchment Nature Reserve. It is also found in Peninsular Malaysia.

Threats: Degradation of habitat and loss of small populations.

Photo: Zaki Jamil



Flowers of *Kopsia singapurensis*.

Scientific Interest and Potential Value: With attractive flowers in the national colours, this has become a popular ornamental in Singapore, particularly in Singapore Botanic Gardens but increasingly also in parks around the country.

Conservation Measures: The remaining wild populations are in protected areas. It is also being widely cultivated from native stock, thereby reducing

the chances of loss of the species and also reducing potential pressures on the wild populations of this attractive plant. The cultivated plants are, however, almost entirely grown from cuttings or air-layering as seed is rarely set. From the few seeds grown from cultivated *Kopsia singapurensis*, there is some evidence that they may be hybridising with cultivated *Kopsia fruticosa*.

Scientific Name:
Homalomena nathanielii
S.Y.Wong & P.C.Boyce

Common Name:
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Family:
Araceae

National Status: Critically Endangered (CR)

Habitat and Ecology: A herb growing mainly in wet, tropical rain forests.

Distribution: Currently known with certainty only from Singapore. It is now only found in the Bukit Timah and Central Catchment Nature Reserves.

Threats: Degradation of habitat and small population size.

Scientific Interest and Potential Value: First discovered in Singapore in the 19th century but described as a distinct species only recently. It has ornamental foliage and leaves.



Photo: Yeoh Yi Shuen

Homalomena nathanielii by a small stream.

Conservation Measures: Its known localities are in protected areas.

Scientific Name:
Calamus lobbianus Becc.

Common Name:
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Family:
Areaceae



Photo: Choo Le Min

Calamus lobbianus in the forest.



Photo: Choo Le Min

Flowering shoot of *Calamus lobbianus*.

National Status: Critically Endangered (CR)

Habitat and Ecology: A non-climbing palm of primary forests. Elsewhere, the species is associated with hill forests up to 700 m in altitude.

Distribution: In Singapore, only known from a handful of localities in the Bukit Timah and Central Catchment Nature Reserves. The species is also recorded from Peninsular Malaysia, Sumatra and Borneo.

Threats: Degradation of habitat and loss of small populations.

Scientific Interest and Potential Value: This species is a curious example of a non-climbing, solitary rattan in a genus otherwise characterised by climbing rattans. The ripe fruits are said to be edible.

Conservation Measures: The species grows within nature reserves.

Scientific Name:
Dracaena breviflora Ridl.

Common Name:
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Family:
Asparagaceae



Photo: Matti Niissalo

Flowers of *Dracaena breviflora*.

National Status: Critically Endangered (CR)

Habitat and Ecology: In Singapore, the species seems to be restricted to swamp forest, near streams in shaded localities with permanently wet soil.

Distribution: In Singapore, the species is restricted to the Central Catchment Nature Reserve. There are several historical herbarium records, all well over 100 years old, of the species also occurring in Johor, Peninsular Malaysia.

Threats: Degradation of habitat including local stochastic events (e.g. microstorms, damage by wild boars), small population size and poaching.

Scientific Interest and Potential Value: Recently discovered in Singapore (observed in 2015 and formally recorded in 2020). Only three small populations are known in the wild but, if successfully propagated, the species could have horticultural value.

Conservation Measures: The species has been included in NParks' Species Recovery Programme. When ample material has been propagated, it will be trialed for re-introductions and made available to the public as an ornamental.

Scientific Name:

Dolichandrone spathacea (L.f.)
K.Schum.

Common Name:

Mangrove trumpet tree, Tui

Family:

Bignoniaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Tree in the back mangroves and banks of tidal rivers and estuaries.

Distribution: In Singapore, *Dolichandrone spathacea* was once common in the back of mangroves and tidal rivers but is now restricted to areas in Sungei Pang Sua, Sungei Buloh Wetland Reserve and surrounding islands such as Pulau Sakeng, Pulau Semakau, Pulau Sudong, Pulau Tekong, Pulau Ubin and Pulau Unum. Elsewhere, *Dolichandrone spathacea* is a widespread species occurring in tropical and subtropical regions from India to New Caledonia.

Threats: Degradation of habitat.

Scientific Interest and Potential Value:

Dolichandrone spathacea is used in traditional medicine to treat bacterial infections. In some cultures, the flowers are also eaten. Like all members of the Bignoniaceae,

Photo: Koh Sin Lan



Flower of *Dolichandrone spathacea*.

Dolichandrone spathacea has large, attractive and scented flowers and is therefore cultivated as an ornamental tree.

Conservation Measures: The remaining wild populations are mostly in protected areas. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

Scientific Name:

Triomma malaccensis Hook.f.

Common Name:

Malaccan triomma

Family:

Burseraceae

National Status: Critically Endangered (CR)

Habitat and Ecology: A tree, mainly found in primary lowland forests and rarely found in secondary forests and swampy or permanently flooded sites.

Distribution: In Singapore, it has been collected from the Bukit Timah and Central Catchment Nature Reserves and in the Singapore Botanic Gardens Rain Forest. It is also found in Peninsular Malaysia, Sumatra, Bangka and Borneo.

Threats: Degradation of habitat and loss of small populations.

Scientific Interest and Potential Value: *Triomma malaccensis* is the only species in the genus. It is dioecious, meaning that male and female flowers are borne on separate individuals and both need to be present and flowering at the same time for reproduction.

Photo: Seah Wei Wei



Leaves and inflorescence of *Triomma malaccensis*.

The timber is suitable for use in indoor construction and the resin is sometimes used for torches. Since 2018, two fruiting events of the single known female individual in the MacRitchie area of the Central Catchment Nature Reserve did not result in seeds, highlighting the challenges faced in recruitment and propagation of this species.

Conservation Measures: Most of its localities are in nature reserves or protected areas.

Scientific Name:

Garcinia griffithii T.Anderson

Common Name:

Elephant kandis

Family:

Clusiaceae

National Status: Endangered (EN)

Habitat and Ecology: In Singapore, a medium-sized tree reaching the lower canopy in lowland forest.

Photo: Chong Kwek Yan



Fruit of *Garcinia griffithii*.

Distribution: Peninsular Malaysia, Sumatra, Singapore. All known individuals in Singapore (except for one collection) are in the Bukit Timah and Central Catchment Nature Reserves and Windsor Nature Park.

Threats: Mature individuals are widely scattered and may be vulnerable to reproductive isolation due to fragmentation and loss of connectivity for pollinators.

Scientific Interest and Potential Value: Distinctive leaves that are the second largest among the *Garcinia*

species of this region and have often been described as 'cabbagy'. Possibly some potential as an ornamental tree.

Conservation Measures: Most wild individuals are protected in nature reserves/parks. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

Scientific Name:

Dillenia excelsa (Jack) Gilg var. *tomentella* (Martelli) Masam.

Common Name:

Simpoh ungu

Family:

Dilleniaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: A medium to large tree. In Singapore, it is found in primary and old secondary lowland mixed dipterocarp forests.

Distribution: In Singapore, it is only known from the Bukit Timah and Central Catchment Nature Reserves. Also known from Peninsular Malaysia (Johor).

Threats: Degradation and loss of habitat and loss of very small populations.

Scientific Interest and Potential Value: *Dillenia excelsa* (Jack) Gilg var. *excelsa* is commonly used as an ornamental and roadside tree because it flowers often

Photo: Ng Xin Yi



Flowers of *Dillenia excelsa* var. *tomentella*.

and profusely. *Dillenia excelsa* var. *tomentella* is likely to have similar flowering habits in cultivation and may likewise have ornamental value.

Conservation Measures: Its known localities are in nature reserves. No fruits have been observed on an individual monitored since 2020. Attempts to propagate the species from cuttings by NParks' Native Plant Centre have so far not been successful.

Scientific Name:
Rubroshorea pauciflora (King)
 P.S.Ashton & J.Heck.

Common Name:
 Nemesu

Family:
 Dipterocarpaceae



Flowers of *Rubroshorea pauciflora*.

Photo: S.K. Ganesan



Large tree of *Rubroshorea pauciflora*.

National Status: Endangered (EN)

Habitat and Ecology: Very big emergent tree, to 30 m tall in Singapore (up to 65 m tall in Borneo), of well-drained lowland forest.

Distribution: In Singapore, only known from the Bukit Timah and Central Catchment Nature Reserves. Also in Peninsular Thailand, Sumatra, Peninsular Malaysia and Borneo.

Threats: Degradation of habitat and loss of adult trees.

Scientific Interest and Potential Value: This tree produces one of the finest red meranti timbers in the world. A street in Singapore, 'Nemesu Avenue' is named after it. This tree is often the largest of the trees in primary forests in Singapore with trees exceeding 1 m diameter often encountered.

Conservation Measures: All known localities are in nature reserves. Wildings have been collected from several native localities and grown in NParks' Native Plant Centre nursery and will be planted out once they reach sufficient size.

Photo: S.K. Ganesan



Leaf and seed of *Rubroshorea pauciflora*.

Scientific Name:
Sindora velutina Baker

Common Name:
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Family:
Fabaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Tree to 45 m tall, generally found only in primary lowland forest.

Distribution: In Singapore, only known from the Bukit Timah and Central Catchment Nature Reserves. Also in Peninsular Malaysia, Sumatra and Borneo.

Threats: Habitat degradation and loss of small populations.

Scientific Interest and Potential Value: The rarest of all *Sindora* species in Singapore, *Sindora velutina*



Flowers of *Sindora velutina*.

is only known from eight scattered mature individuals. The colour, scent and other characteristics of the fresh flowers of this species were first documented in Singapore in 2021.

Conservation Measures: It is found within protected areas and seeds have been collected for propagation.

Scientific Name:
Whitfordiodendron erianthum (Benth.) Dunn

Common Name:
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Family:
Fabaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: A woody climber in primary and mature secondary forests.

Distribution: In Singapore, known from a handful of scattered populations in the Central Catchment Nature Reserve and one small population in the Singapore Botanic Gardens Rain Forest. Also known from Southern Thailand, Peninsular Malaysia, Sumatra and Borneo.



Woody pod and two seeds inside an open pod of *Whitfordiodendron erianthum*.

Threats: Degradation of habitat and small population size.

Scientific Interest and Potential Value: This is the only species of the genus known in Singapore. The small genus of four species was recently segregated from the genus *Callerya*. The woody pods are typically ovate to obovate, inflated, the surface rugose, and each contains up to two seeds.

Conservation Measures: Its known localities are in protected areas. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

Scientific Name:
Fagraea splendens Blume

Common Name:
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Family:
Gentianaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Shrub or hemi-epiphyte. In Singapore, found only in drier parts of freshwater swamp forest.

Distribution: In Singapore, found only in Nee Soon freshwater swamp forest of the Central Catchment Nature Reserve. Also found in Peninsular Malaysia, Sumatra and Borneo.

Threats: Loss of habitat and loss of very small populations.

Scientific Interest and Potential Value: With thick leathery leaves and beautiful flowers, it has potential to be a good ornamental plant for parks and gardens.

Photo: Ng Xin Yi



Flowers of *Fagraea splendens*.

Conservation Measures: Its known localities are in a nature reserve. Individuals have been propagated via air-layering in NParks' Native Plant Centre nursery and introduced to various sites in Singapore. Manual pollination of stock plants in the nursery has produced seeds from which other plants have been grown.

Scientific Name:
Codonoboea platypus
 (C.B.Clarke) C.L.Lim

Common Name:

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Family:
 Gesneriaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Terrestrial herb in shaded damp gullies in mature forest.

Distribution: In the Bukit Timah and Central Catchment Nature Reserves but in very small populations. Also known from southern Thailand, Peninsular Malaysia and Sumatra.

Threats: Degradation of habitat and small population size.

Scientific Interest and Potential Value: One of only two species recorded from Singapore in this hyper-diverse genus, most species of which are found in the mountains of Peninsular Malaysia, Sumatra and Borneo.

Conservation Measures: Its known localities are in nature reserves. Native stock is also being propagated in the Tissue Culture Laboratory in Singapore Botanic Gardens. Plantlets are being grown in NParks' Native Plant Centre nursery and established plants have been planted out to several suitable sites.

Photo: Paul Leong



Flowers and leaves of *Codonoboea platypus*.

Scientific Name:
Hanguana triangulata
Škorničk. & P.C.Boyce

Common Name:

Family:
Hanguanaceae



Fruits of *Hanguana triangulata*.



Habit of *Hanguana triangulata*.

National Status: Critically Endangered (CR)

Habitat and Ecology: Terrestrial rhizomatous herb growing in the understorey of lowland primary forest, often near or beside streams.

Distribution: In the Bukit Timah and Central Catchment Nature Reserves but in extremely small populations. Endemic to Singapore.

Threats: Degradation of habitat including local stochastic events (e.g., microstorms, damage by wild boars), small population size and poaching.

Scientific Interest and Potential Value: The species has potential value as a bioindicator of primary forest. In a sterile state, it is easily confused with *Hanguana podzolica*.

Conservation Measures: All known populations are in nature reserves. The species is included in NParks' Species Recovery Programme, but mass propagation has not been successful to date. The species, although apomictic, flowers and fruits very infrequently, is extremely slow-growing and is not easy to cultivate. Current efforts focus on frequent monitoring of wild plants and establishment in tissue culture.

Scientific Name:
Enhalus acoroides
(L.f.) Royle

Common Name:
Tape seagrass

Family:
Hydrocharitaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: A seagrass of shallow intertidal areas with sandy substrate.

Distribution: In Singapore, it can be found along the southern mainland coastline (including reclaimed areas) such as Tanah Merah, Labrador and East Coast. The species is widely distributed across the Indo-Pacific, from Northern Australia to Southern Japan, and extends to East Africa.

Threats: Degradation and loss of habitat.

Scientific Interest and Potential Value: The largest seagrass species, *Enhalus acoroides* has strap-like

Photo: Siti M. Yackub



Coastal stand of *Enhalus acoroides*.

leaves growing up to 150 cm in length. The seeds are harvested in some coastal communities for food.

Conservation Measures: Requires intertidal habitats to be protected and a halt to further damage to existing seagrass meadows.

Scientific Name:
Cratoxylum arborescens
(Vahl) Blume

Common Name:
Geronggang

Family:
Hypericaceae

National Status: Endangered (EN)

Habitat and Ecology: A medium to large tree. In Singapore, it is found in primary and old secondary lowland mixed dipterocarp forests. Elsewhere, it also occurs in lower montane, heath and peat swamp forests.

Photo: Ng Xin Yi



Branches and flowers of *Cratoxylum arborescens*.

Distribution: In Singapore, it is only known from the Bukit Timah and Central Catchment Nature Reserves. Also in southern Myanmar, Peninsular Thailand, Peninsular Malaysia, Sumatra and Borneo.

Threats: Degradation and loss of habitat and loss of very small populations.

Scientific Interest and Potential Value: Other members of this genus are commonly used as ornamental and roadside trees. This species may likewise have ornamental value as it produces attractive red flowers.

Conservation Measures: Its known localities are in nature reserves.

Scientific Name:
Litsea ridleyi Gamble

Common Name:
Ridley's litsea

Family:
Lauraceae

National Status: Endangered (EN)

Habitat and Ecology: Tree to 25 m tall in lowland forest.

Distribution: In Singapore, only known from the Bukit Timah and Central Catchment Nature Reserves. There are unconfirmed reports of the species from Borneo.

Threats: Degradation of habitat and loss of small populations.

Scientific Interest and Potential Value: If the material from Borneo is eventually identified as a different species, *Litsea ridleyi* will be confirmed as endemic to Singapore.

Conservation Measures: Its known localities are in nature reserves.



Photo: Ng Xin Yi

Fruits of *Litsea ridleyi*.



Photo: Ng Xin Yi

Flowers of *Litsea ridleyi*.

Scientific Name:
Magnolia singaporensis
(Ridl.) H.Keng

Common Name:
Singapore magnolia

Family:
Magnoliaceae

Photo: Ng Xin Yi



Fruit of *Magnolia singaporensis*.

National Status: Critically Endangered (CR)

Habitat and Ecology: A tree of lowland forest and freshwater swamp forest.

Distribution: In Singapore, now only known from Nee Soon freshwater swamp forest of the Central Catchment Nature Reserve. Also known from Peninsular Malaysia, Sumatra, Bangka and Borneo.

Threats: Habitat degradation and loss of very small populations.

Scientific Interest and Potential Value: One of only four native *Magnolia* species in Singapore. With attractive white flowers and seeds with a bright pink sarcotesta, this tree may be cultivated in parks and has the potential to become a popular ornamental in Singapore. It is also suitable for marshes and other waterlogged areas owing to its tolerance of wet conditions.

Conservation Measures: All the known wild trees are in a nature reserve. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

Scientific Name:
Durio singaporensis Ridl.

Common Name:
Durian bujor, Durian daun,
Singapore durian

Family:
Malvaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: A tree of lowland primary and late secondary forests.

Distribution: In Singapore, it is found in the Bukit Timah and Central Catchment Nature Reserves. Also known from Peninsular Malaysia.

Threats: Very small populations with few mature individuals.

Scientific Interest and Potential Value: The seed of this species of durian is devoid of an aril except at the base where there is a white leathery inedible aril. This species was first described by one of the past Directors of Singapore Botanic Gardens, H.N. Ridley, from material collected from Singapore and Johor. It can be used as an ornamental tree in the urban environment in Singapore because of its attractive leaves and tree form. Another attraction for planting is its specific epithet '*singaporensis*'. The potential problem of its fruits falling onto people can be mitigated by harvesting them before they ripen and fall.

Conservation Measures: All known populations of *Durio singaporensis* in Singapore are in nature reserves. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery.



Photo: S.K. Ganesan

Durio singaporensis tree.



Photo: Zaki Jamil

Flowers of *Durio singaporensis*.



Photo: Ng Xin Yi

Fruit of *Durio singaporensis*.

Scientific Name:
Phrynium hirtum Ridl.

Common Name:

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Family:
Marantaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Terrestrial rhizomatous herb in shaded damp gullies in primary forest.

Distribution: In Singapore, there is a single population of fewer than 10 individuals in the Central Catchment Nature Reserve. Also found in Thailand, Peninsular Malaysia, Sumatra and Borneo.

Threats: Degradation of habitat including local stochastic events (e.g. microstorms), small population size and poaching.

Scientific Interest and Potential Value: The species, first recorded in Singapore in 2016, is suitable for introduction into horticulture due to its beautiful foliage. It also has potential as a bioindicator of primary forest.

Photo: Jana Leong-Škorničková



Flowers of *Phrynium hirtum*.

Conservation Measures: This species has been included in NParks' Species Recovery Programme and the wild populations are frequently monitored for flowering and fruit set. Efforts also focus on propagation of plants at Singapore Botanic Gardens and in NParks' Native Plant Centre nursery. Established plants have been planted out to suitable sites.

Scientific Name:
Ficus delosyae Corner

Common Name:

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Family:
Moraceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Strangling hemiepiphyte or free-standing tree to 25 m tall in dry areas of freshwater swamp forest.

Photo: Reuben Lim



Leaves and figs of *Ficus delosyae*.

Distribution: Only one population in Nee Soon freshwater swamp forest of the Central Catchment Nature Reserve. Also known from Borneo, Peninsular Malaysia and Sumatra.

Threats: Degradation of habitat and loss of very small populations.

Scientific Interest and Potential Value: The fig-wasp pollinators for rare fig species in Singapore

have not been studied much. This species forms small, dense bushes like *Ficus microcarpa* when consistently maintained.

Conservation Measures: The wild population is in a protected area. This species has been included in the NParks' Species Recovery Programme since its inception. Seeds and cuttings have been collected for growing and individuals have been planted out at many suitable sites to establish new populations.

Scientific Name:
Endocomia canarioides
(King) W.J.de Wilde

Common Name:

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Family:
Myristicaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Tree to 30 m tall in lowland forest.

Distribution: Found only in two small populations in Bukit Timah Nature Reserve and the Singapore Botanic Gardens Rain Forest. Also known from southern Thailand, Peninsular Malaysia and Sumatra.

Threats: Degradation of habitat and loss of very small populations.

Scientific Interest and Potential Value: The only monoecious genus in the family with only one species in Singapore. The male flowers on a single individual can pollinate female flowers on the same individual to form fruits with viable seeds that are attractive to large frugivorous birds.

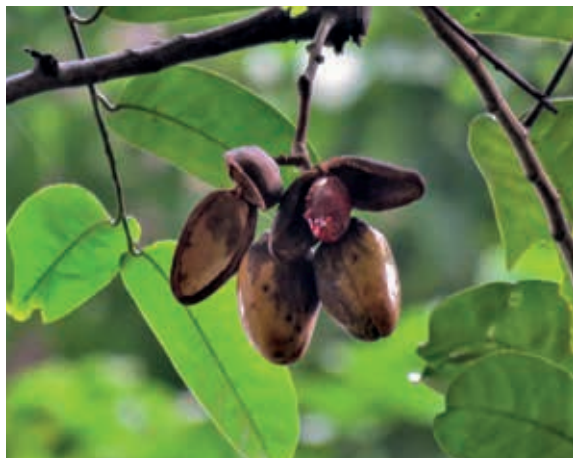
Conservation Measures: The wild populations are in protected areas. This species has been included in NParks' Species Recovery Programme. Seeds from both populations have been collected and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

Photo: Reuben Lim



Branches of *Endocomia canarioides*.

Photo: Reuben Lim



Fruit of *Endocomia canarioides*.

Scientific Name:
Syzygium singaporense
(King) Airy Shaw

Common Name:
Singapore syzygium

Family:
Myrtaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: A tree of freshwater swamp forest and lowland forest.

Distribution: In Singapore, *Syzygium singaporense* is known from Nee Soon freshwater swamp forest and the Bukit Mandai, Upper Seletar and MacRitchie areas of the Central Catchment Nature Reserve, and from Bukit Timah Nature Reserve. It is also known from Peninsular Malaysia (West Coast from Penang to Johor).

Threats: Degradation of habitat and loss of small populations.



Leaves and flowers of *Syzygium singaporense*.

Scientific Interest and Potential Value: *Syzygium singaporense* is a small- to medium-sized tree with a neat crown worthy of being introduced as a green screening tree for landscaping and streetscaping.

Conservation Measures: The remaining wild populations are within protected areas. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

Scientific Name:
Nepenthes rafflesiana
Jack

Common Name:
Raffles' pitcher plant

Family:
Nepenthaceae

National Status: Vulnerable (VU)

Habitat and Ecology: Scrambling vine in resam fern-dominated scrub, secondary forests and coastal cliffs. It is a carnivorous plant.



Pitcher of *Nepenthes rafflesiana*.

Distribution: In Singapore, found in the Central Catchment Nature Reserve, Kent Ridge Park, Western Catchment, and the Southern Islands. Also in Peninsular Malaysia, Borneo and Sumatra.

Threats: Habitat loss, poaching and ecological succession, as *Nepenthes rafflesiana* seldom persist in mature forests.

Scientific Interest and Potential Value: Attractive ornamental plant. Source of the protease nepenthesin, which has potential biomedical and biotechnological

applications. The pitchers act as aquatic habitats for many specialised invertebrates which are found nowhere else.

Conservation Measures: Large populations are well protected within nature reserves, but populations occurring outside of nature reserves in resam fern-dominated scrub are extremely vulnerable to development. Cuttings have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

Scientific Name:
Scorodocarpus borneensis
(Baill.) Becc.

Common Name:
Kulim, Bawang hutan

Family:
Olacaceae

Photo: Louise Neo



Trunk and branching of *Scorodocarpus borneensis*.

Photo: Louise Neo



Fruit of *Scorodocarpus borneensis*.

National Status: Critically Endangered (CR)

Habitat and Ecology: Slow-growing medium to large tree in primary and old secondary lowland mixed dipterocarp forests.

Distribution: In Singapore, it is only known from the Bukit Timah and Central Catchment Nature Reserves. Also in Peninsular Thailand, Peninsular Malaysia, Sumatra and Borneo.

Threats: Degradation and loss of habitat and loss of very small populations.

Scientific Interest and Potential Value: The only known member of its genus. The tree has a powerful odour of garlic which may be detectable even from a distance.

Conservation Measures: All known localities are in nature reserves. Flowering and fruiting events are being monitored by NPark's Native Plant Centre in the hope of collecting seeds to propagate.

Scientific Name:
Lepidogyne longifolia
(Blume) Blume

Common Name:
Long-leaved lepidogyne

Family:
Orchidaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Freshwater swamp forest.

Distribution: In Singapore, this species has only been recorded from Bukit Timah Nature Reserve. The species is widespread but often rare in the region, occurring in Peninsular Malaysia, Sumatra, Pulau Lingga, Borneo, Java, Flores, Philippines and New Guinea.

Threats: Small population size and loss of small populations due to stochastic events.

Scientific Interest and Potential Value:
Lepidogyne longifolia is the only species in the genus. It was first discovered in Singapore in 2019. Only

Photo: Matti Niissalo



Leaves of *Lepidogyne longifolia*.

four plants have been found so far and they have not flowered since their discovery. The species is diverse in size and flower colour and has sometimes been split into several separate species. The population continues to be monitored for signs of flowers so that the flower morphology of the Singapore plants can be recorded. The species is vegetatively distinct with long, narrow leaves and thick stilt roots.

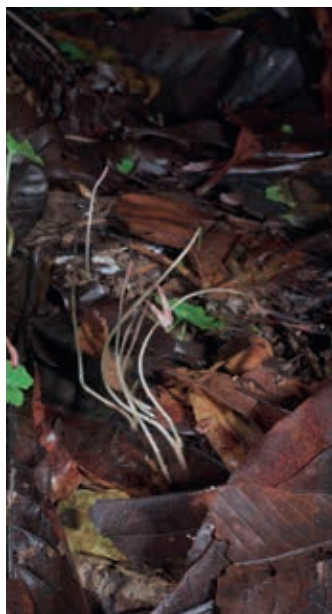
Conservation Measures: The species grows within a nature reserve.

Scientific Name:
Nervilia singaporensis
Niissalo

Common Name:
Singapore nervilia

Family:
Orchidaceae

Photo: Matti Niissalo



Nervilia singaporensis plant.

Photo: Matti Niissalo



Close up of flower of *Nervilia singaporensis*.

National Status: Endangered (EN)

Habitat and Ecology: Secondary forest, including old orchards, in leaf litter. Also found in freshwater swamp forest.

Distribution: This species is endemic to Singapore. It has been recently recorded in the Bukit Timah and Central Catchment Nature Reserves, Rifle Range Nature Park and Bukit Batok Nature Park.

Threats: Small population size and potential poaching.

Scientific Interest and Potential Value: *Nervilia singaporensis* is the only extant endemic orchid in Singapore. It has small flowers that never open fully, which makes it hard to find, and the species might be under-recorded. Unusually for the genus, this species produces new leaves and flowers year-round, but it can also go dormant during droughts.

Conservation Measures: The species grows within protected areas. This species is included in NParks' Species Recovery Programme and efforts are underway to propagate plants *ex situ*.

Scientific Name:
Glochidion singaporensis Gage

Common Name:
Singapore cheese tree

Family:
Phyllanthaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: A gap and understorey tree in secondary forests.

Distribution: In Singapore, only known from the Central Catchment Nature Reserve. Also known from Peninsular Malaysia, Borneo and Sumatra.

Threats: Degradation of habitat and loss of small populations.

Scientific Interest and Potential Value: Potential ornamental value as a small tree with droopy phyllanthoid branches and attractive red young foliage. Named after Singapore, where it was first observed.

Conservation Measures: Its known localities are in nature reserves. Seeds and cuttings have been collected from native localities and grown in NParks' Native Plant Centre nursery, but did not establish.

Photo: Lam Weng Ngai



Leaves of *Glochidion singaporensis*.

Scientific Name:

Piper porphyphyllum (Lindl.
ex Blandy) N.E.Br.

Common Name:

Sireh rimau, Tiger's betel

Family:

Piperaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: A slender climbing plant that is found in primary and mature secondary forest, near forest streams and on valley slopes. It climbs by adventitious roots at stem internodes which attach to the bark of trees. Slow growing, rarely observed in flower or fruit.

Distribution: In Singapore, only found in small numbers in localised spots in the Central Catchment Nature Reserve. It is also known from Thailand, Malaysia and western Indonesia.

Threats: Small, fragmented population and poaching.

Scientific Interest and Potential Value: The leaves on climbing stems in the forest understorey are dark green with an attractive speckled colouration, fading into a monotonous green in leaves that emerge into the exposed canopy. The leaves are reportedly used in traditional medicine for treatment of various maladies. Introduced as an ornamental in the horticultural trade for its attractive foliage.

Conservation Measures: All known populations are in protected areas. The species is included in NParks' Species Recovery Programme. Cuttings have been collected from native plants and grown in NParks' Native Plant Centre nursery. Established plants will eventually be planted out to suitable sites.

Photo: Lua Hock Keong



Piper porphyphyllum in the forest understorey climbing up a tree sapling.

Scientific Name:
Singaporandia macrophylla
(Hook.f.) K.M.Wong

Common Name:
Hidung babi

Family:
Rubiaceae

National Status: Vulnerable (VU)

Habitat and Ecology: A shrub or small tree in the forest understorey.

Distribution: In Singapore, it has been recorded from Nee Soon freshwater swamp forest and the MacRitchie area of the Central Catchment Nature Reserve and in the Bukit Timah Nature Reserve. There are older collections from Chan Chu Kang, Ang Mo Kio and Changi. In the Bukit Timah long-term dynamics study plot, the population seems stable over time, with recruitment and mortality roughly in balance. Also in Peninsular Malaysia, central Sumatra and the Riau Islands.

Threats: Degradation of habitat.

Photo: Ng Xin Yi



Flowers of *Singaporandia macrophylla*.

Scientific Interest and Potential Value: Restricted in distribution to Singapore's immediate region, the genus has a unique plant form in the *Gardenia* alliance, with lateral branches bearing just a single pair of expanded leaves before termination by a flower. With large showy flowers that are produced regularly, this species could be a good prospect for ornamental horticulture.

Conservation Measures: All extant localities are in nature reserves. Cuttings have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants will eventually be planted out to suitable sites.

Scientific Name:
Palaquium obovatum (Griff.)
Engl. var. *obovatum*

Common Name:
Nyatoh, Nyatoh putih

Family:
Sapotaceae

Photo: Aileen Phang



Palaquium obovatum tree.

National Status: Vulnerable (VU)

Habitat and Ecology: Tree to 40 m tall, mostly in primary or mature secondary lowland forest patches, but also in some coastal and swamp areas.

Distribution: In Singapore, fragmented wild populations are present in the Bukit Timah and Central Catchment Nature Reserves and also offshore on Sentosa, Pulau Ubin, Pulau Tekong, Pulau Pawai, Big Sister's, St. John's and Lazarus islands. Found too in parts of Indonesia, Borneo, Peninsular Malaysia, Thailand and the Philippines.

Threats: Loss of habitat, population fragmentation and decline of mature individuals.

Scientific Interest and Potential Value:

Historically felled for latex used in underwater cable insulation. Today, the latex is still used in dental fillings and implants. The trees have reddish, hard timber used in furniture and boat/house construction. With distinctive obovate leaves in spirally arranged clusters, they are sometimes planted as roadside trees.

Conservation Measures: Occurs in nature reserves, Singapore Botanic Gardens (both in the rain forest and cultivated zones) and some nature parks. The origins of cultivated trees are mostly unknown. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

Scientific Name:
Kadsura scandens
(Blume) Blume

Common Name:
Akar dama-dama

Family:
Schisandraceae

National Status: Critically Endangered (CR)

Habitat and Ecology: In Singapore, a climber in lowland forest. Elsewhere, also in tropical montane forests (to 2400 m altitude).

Distribution: In Singapore, only known from small populations in Nee Soon freshwater swamp forest of the Central Catchment Nature Reserve and in Bukit Timah Nature Reserve. Also known from Peninsular Malaysia, Sumatra and Java.

Threats: Habitat degradation and loss of very small populations.

Scientific Interest and Potential Value: One of only two native *Kadsura* species in Singapore. Some members of this genus have co-evolved with resin midges: the midges oviposit in the flowers, forming

Photo: Ng Xin Yi



Flower of *Kadsura scandens*.

resin-filled floral chambers that provide a food reward and nursery for their larvae; meanwhile the flowers are pollinated by the midges. With attractive red flowers, this twining climber may be cultivated on trellises and has the potential to become a popular ornamental.

Conservation Measures: All known localities are in nature reserves. Seeds have been collected and grown in NParks' Native Plant Centre nursery. Established plants will be planted out to suitable sites.

Scientific Name:
Zingiber singaporense Škorničk.

Common Name:
Singapore ginger

Family:
Zingiberaceae



Flower of *Zingiber singaporense*.



Zingiber singaporense in the nature reserve.

National Status: Critically Endangered (CR)

Habitat and Ecology: Terrestrial rhizomatous herb in shaded damp gullies in primary forest.

Distribution: In the Bukit Timah and Central Catchment Nature Reserves but in very small populations. Endemic to Singapore.

Threats: Degradation of habitat including local stochastic events (e.g. microstorms, damage by wild boars), small population size and poaching.

Scientific Interest and Potential Value: This species belongs to the same subgenus of *Zingiber* as

the ginger of commerce, *Zingiber officinale*. It also has potential as a bioindicator of primary forest. The species is suitable for introduction into horticulture.

Conservation Measures: All known populations are in nature reserves. The species is included in NParks' Species Recovery Programme. All currently known 13 genetic clones are cultivated at Singapore Botanic Gardens, in the nursery as well as the tissue culture lab, with plants being further propagated and reintroduced to nature reserves as well as nature parks by NParks' Native Plant Centre. Plants are also being made available to the public to alleviate stress caused by poaching.

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FUNGI

AMY M.F. CHOONG, SERENA M.L. LEE

Fungi can be found in many different habitats: in the air (outdoor and indoor, Lim et al. 1998; Shelton, 2002), soil (Egidi et al., 2019), freshwater habitats (Raja et al., 2018), mangroves (Lee et al., 2020) and marine), surfaces or interior organs of different flora, fauna and even other fungi as well as on man-made structures. They may be endophytic in the form of commensals or mutualists; parasites, symbionts, pathogens or saprotrophs. Not only that, their roles may switch from being a commensal to pathogen to saprotroph.

Fungi provide diverse ecosystem services. Fungal mycelia and fruiting bodies are eaten by meiofauna, insects, mammals and reptiles. Decomposition of leaf litter and wood releases nutrients to support growth of other plants and to avoid potential fire from litter accumulation. Should the decomposers decline in number, the rate of decomposition will drop. After the Chernobyl explosion, the high radiation nearest to the nuclear power plant led to a proportional increase in leaf litter accumulation (Mousseau et al., 2014). Mycorrhizal fungi are especially important. They mine phosphates and nitrates to pass to plants enabling them to grow, slow down decomposition, thus carbon remains locked and not released into the atmosphere. The extensive mycelia below ground store carbon critical in this climate crisis. Fungi can be rainmakers (Hassett et al., 2015) as their spores serve as nuclei for condensation of water in cloud formation. A number of fungi have medicinal properties and there are others that have antimicrobial potential (Manusamy et al., 2023). Endophytes can be a source of novel biological active secondary metabolites as they also protect host plants from herbivores and diseases (Schulz et al., 2002).

The records of fungi in Singapore are growing slowly but a lot about their ecology or biology is still unknown. Lee et al. (2019) have found mangroves' endophytes and fungi on the surfaces of mangrove plants. The Singapore Botanic Gardens (SBG) is documenting macrofungi and slime moulds and specimens are being vouchered at the Singapore Herbarium (SING). Undergraduate projects are working closely with SBG to identify fungi found and document fungal diversity in Singapore.

The national conservation status of fungi has not been assessed for Singapore owing to the paucity of mycological studies (Choong, 2022). At the global level, the situation is slightly better. At least, it is being investigated by The Global Fungal Red List initiative (<http://iucn.ekoo.se/iucn/about/>) which started in 2013 and is led by Dr Greg Mueller, chair of the mushroom, bracket and puffball specialist group. Other groups included under this initiative are Chytrid, Zygomycete, Downy Mildew and Slime Mould; Cup-fungi, Truffles and allies; Lichens; Rust and Smuts. To date, 597 species of fungi have been evaluated and half are considered threatened (Mueller, 2022).

Some records of fungi are indirect, for example, Singapore has recorded *Thismia aseroe* and *T. fumida* (Saunders, 1996). These are angiosperms that are mycoheterotrophs, relying on arbuscular mycorrhizal fungi to supply all their nutritional needs (Feller et al., 2022). However, we do not know if these fungi can switch host should the *Thismia* be extirpated.

Threats to local fungi are especially pronounced to ectomycorrhizal fungi (ECM) associated with Dipterocarpaceae, Fagaceae, Phyllanthaceae, Juglandaceae and some others as these native plants are already endangered (Corrales et al., 2022). With the loss of forested habitats, endophytes, symbionts, saprotrophs will not fare well. Introduction of exotic tree species with their associated mycorrhizal fungi or colonization of a site by invasive plants could displace native fungi which has been documented elsewhere (Pickett et al., 2019). As Singapore has past and on-going land use change, how does that affect the fungal community should be investigated. Brinkman et al. (2019) have shown that the soil fungal communities had a massive shift from ECM to endomycorrhizal symbionts and increase Ascomycota with a decline in Basidiomycota with corresponding rise in saprotrophs and pathogens when forests are converted to rubber or oil palm plantations.

Research questions that need to be addressed in the near future:

- What species of fungi we do have in Singapore? Are there changes seasonally or between years? Are they also present elsewhere in the region? The latter will require close collaborations with regional mycologists to understand fungal distribution.
- How tight are the mycological relationships between plants and fungi especially ectomycorrhizal fungi? Can the ECM switch host if the host becomes extinct? This may be difficult to answer, perhaps molecular studies and active inoculation experiments can be conducted.
- What are the fungal compositions in good quality aquatic habitats in Singapore, for example the Nee Soon Swamp forest, the freshwater streams from nature reserves? Are they pantropical or they vary from lentic and lotic habitats?
- Can forest soil transplant help in local reforestation? Busby et al. (2022) have shown it can be possible. Mycorrhizal seedling inoculation could also aid successful reforestation using non-native plants (Assad et al., 2022)

Scientific Name:

Amanita sculpta Corner & Bas

Common Name:

Sculptured Toadstool

Order/Family:

Agaricales: Amanitaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Recorded from old growth lowland forest.

Distribution: Found in Asia from Singapore (TYPE), Brunei, Malaysia, Thailand, Laos into China and Japan.

Threats: Loss of suitable habitat.

Scientific Interest and Potential Value: First collected by E.J.H. Corner in the Bukit Timah Nature Reserve (BTNR) on 15 Oct 1939 and 9 July 1940 and described by him as a species new to science in 1962.

Photo: Ang Wee Foong



Not recorded again in Singapore until it was collected on 30 Aug 2020. The specimen of 2020 is deposited at the Singapore Herbarium (SING).

Conservation Measures: Conservation of forest habitat, particularly old growth tropical lowland forest of dipterocarp species such as *Shorea leprosula* may be helpful.

Scientific Name:

Boletellus dissiliens (Corner)
Pegler & T.W.K. Young

Common Name:

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Order/Family:

Boletales: Boletaceae

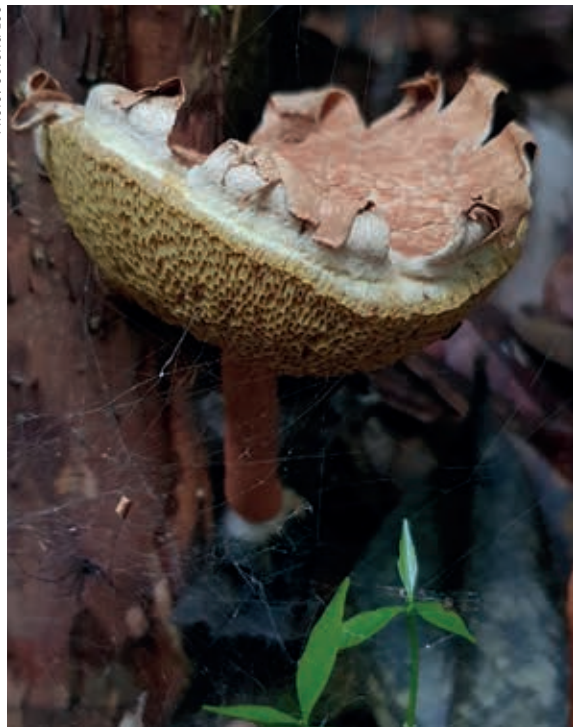
National Status: Critically Endangered (CR)

Habitat and Ecology: Recorded from lowland dipterocarp forest (dominated by *Quercus* spp.) and under *Oncosperma tigillarum*.

Distribution: Found in Australia, Borneo, India, Malaysia and Singapore (TYPE).

Threats: Loss of suitable habitat.

Photo: Serena Lee



Scientific Interest and Potential Value: First 4 collections were by E.J.H. Corner in Reservoir Jungle (current day MacRitchie area) over 1931 to 1940 and described by him as a species new to science in 1972. The next 2 collections were by Chang K.L. in 1974 and 1978 in the Bukit Timah Nature Reserve (BTNR) on Hempstead Path and Boundary path respectively, these areas are currently closed for public safety and

protection of key conservation sites. The recent most 2021 collection was found within the Central Catchment Nature Reserve. The last 3 collections mentioned, are deposited at the Singapore Herbarium (SING).

Conservation Measures: Conservation of forest habitats.

Scientific Name:

Fistulinella nana (Masse) E.

Horak

Common Name:

-

Order/Family:

Boletales: Boletaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Recorded from tropical lowland (kerangas) forest. Ectomycorrhizal.

Distribution: Found in Indonesia (Java), Malaysia (Sarawak), Singapore (TYPE) and Thailand.

Threats: Loss of suitable habitat.

Photo: Serena Lee



Scientific Interest and Potential Value: The type specimen was from the Singapore Botanic Garden, Ridley 39, ser. 2 (K), before 1909 but the 2 collections in 2021, 2022 were both from Bukit Timah Nature Reserve and deposited in SING.

Conservation Measures: Conservation of forest habitat, particularly coastal hill dipterocarp forest.

Scientific Name:

Pulveroboletus frians (Corner)

Singer

Common Name:

-

Order/Family:

Boletales: Boletaceae

Photo: Serena Lee



National Status: Critically Endangered (CR)

Habitat and Ecology: Recorded from tropical lowland dipterocarp forest. Ectomycorrhizal.

Distribution: Found in Australia, Brunei, Malaysia and Singapore (TYPE).

Threats: Loss of suitable habitat.

Scientific Interest and Potential Value: Another species in which Bukit Timah Nature Reserve (BTNR) is its type locality, last collected in BTNR in 1939. The common chrome yellow *Pulveroboletus icterinus* has been mistaken for this species.

Conservation Measures: Conservation of forest habitat, particularly coastal hill dipterocarp forest.

Scientific Name:

Entoloma murrayi (Berk. & M.A. Curtis) Sacc. & P. Syd.,

Common Name:

–

Order/Family:

Agaricales: Entolomataceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Recorded from secondary forest habitat in Singapore.

Distribution: Found in Brazil, Canada, China, Costa Rica, Honduras, Japan, Korea, Malaysia (Sabah), Mexico, Siberia, Singapore and USA (TYPE).

Threats: Loss of suitable habitat.

Scientific Interest and Potential Value: The species was first collected in Singapore in 2018 from the forested area, close to Upper Peirce Reservoir Park, it has not been found elsewhere to date.

Conservation Measures: Conservation of secondary forest habitat.

Photo: Derek Liew



Scientific Name:

Gloeocantharellus echinosporus
Corner

Common Name:

-

Order/Family:

Gomphales: Gomphaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Recorded from tropical lowland dipterocarp forest.

Distribution: Found in Malaysia, Borneo, Solomon Islands and Singapore (TYPE).

Threats: Loss of suitable habitat.

Scientific Interest and Potential Value: Another species in which Bukit Timah Nature Reserve (BTNR) it



its type locality, last collected in BTNR in 1939, it was Rediscovered in 2019 and is deposited in SING.

Conservation Measures: Conservation of forest habitat, particularly lowland dipterocarp forest.

Scientific Name:

Praeearthromyces corneri D. Stubbe,
T.J. Baroni, T.W. Kuyper & van de
Peppel

Common Name:

-

Order/Family:

Agaricales: Lyophyllaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Recorded from tropical lowland dipterocarp forest.

Distribution: Found in Malaysia, Singapore (TYPE).

Threats: Loss of suitable habitat. The species may already be lost to us as the area in which it was collected had undergone restoration work and has not been located since.



Scientific Interest and Potential Value: It was first described by Corner from Bukit Timah Nature Reserve in 1939 as *Tricholoma furcatifolium* Corner; It was rediscovered in 2016 and is deposited in SING. The current name was a new name given as the authors who examined the type specimens did not find the presence of arthroconidia and as the DNA of the type

was not able to yield any sequences to confirm, hence a new name was given. We have since sequenced our material and confirmed it to be the same organism.

Conservation Measures: Substrate/soil should not be removed nor added from site in forest (in 'restoration' works).

Scientific Name:

***Cyathus stercoreus* (Schwein.) De Toni**

Common Name:

-

Order/Family:

Agaricales: Nidulariaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Growing sparsely on mulch.

Distribution: Found in Argentina, Australia, Brazil, Canada, Japan, Mexico, Netherlands, Singapore, Spain, Switzerland, United States of America (TYPE).

Threats: Loss of suitable habitat.

Scientific Interest and Potential Value: Collected just once in Singapore (2013) and deposited in SING,

Photo: Ho Boon Chuan



it was in a mix collection, among the common *Cyathus subglobisporus*. It is possible that this fungus has been overlooked in collections made before 1979 and under recorded under the name of *Cyathus* sp.

Conservation Measures: Keep mulch and buffers moist.

Scientific Name:

***Cyptotrama asprata* (Berk.) Redhead & Ginns**

Common Name:

-

Order/Family:

Agaricales: Physalacriaceae

Photo: Serena Lee



National Status: Critically Endangered (CR)

Habitat and Ecology: Grows on deadwood.

Distribution: Widely distributed in tropical regions of the world, including Australia, Brazil, China, Costa Rica, Japan, Malaysia, Mexico, New Zealand, Singapore, Sri Lanka (TYPE), Thailand, South Africa, United States of America.

Threats: Loss of suitable habitat.

Scientific Interest and Potential Value: It was found on a fallen twig hanging on some vines in Bukit Timah Nature Reserve, Fern Valley in 2018. The only specimen collected so far.

Conservation Measures: Substrate should not be removed from site.

Scientific Name:
Favolus eos (Corner) Zmitr.

Common Name:

–

Order/Family:
Polyporales: Polyporaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Grows on well-decomposed wood.

Distribution: Malaysia and Singapore (TYPE).

Threats: Loss of suitable habitat.

Scientific Interest and Potential Value: Last reported in 1943 and rediscovered in 2015, only 3 known sites in Singapore, Bukit Timah Nature Reserve, Central Catchment Nature Reserve, Upper Seletar Reservoir.

Conservation Measures: Substrate should not be removed from natural sites.

Photo: Serena Lee



Scientific Name:

Lentinus tuberregium (Fr.) Fr.

Common Name:

-

Order/Family:

Polyporales: Polyporaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: On the ground from large sclerotia (can be absent), on rotten wood, in forests and in the open.

Distribution: African continent, Ambon Island (TYPE), Australia, China, Malaysia, Papua New Guinea and Singapore, Solomon Islands, Thailand.

Threats: Loss of suitable habitat.

Scientific Interest and Potential Value: Last reported in 1981 and rediscovered in 2013, known from Bukit Timah Nature Reserve (1939) and the other from Singapore Botanic Gardens (Rainforest), 1965.

Conservation Measures: Conservation of forest habitat, particularly old growth tropical lowland forest.

Photo: Serena Lee



Photo: Serena Lee



Scientific Name:

Lactifluus bicolor (Massei)
Verbeken,

Common Name:

-

Order/Family:

Russulales: Russulaceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Solitary, growing on exposed roots.

Distribution: Malaysia and Singapore (TYPE).

Photo: Serena Lee



Threats: Loss of suitable habitat.

(Rainforest), rediscovered in Bukit Timah Nature Reserve in 2018.

Scientific Interest and Potential Value: Last collected in 1916 from Singapore Botanic Gardens

Conservation Measures: Conservation of forest habitat, particularly coastal hill dipterocarp forest.

Scientific Name:
Pisolithus albus (Cooke & Massee)
Priest

Common Name:

-

Order/Family:
Boletales: Sclerodermataceae

National Status: Critically Endangered (CR)

Habitat and Ecology: Coastal sand, near *Acacia* (*Acacia auriculiformis*) trees.

Distribution: Australia (TYPE), Benin, Colombia, Italy, Madagascar, New Zealand, Nigeria, Singapore, Thailand.

Threats: Loss of suitable habitat.

Scientific Interest and Potential Value: New record, found so far only on Lazarus Island, Pulau Tekukur in 2019.

Conservation Measures: Conservation of coastal rocky shore and coastal forest habitats.

Photo: Serena Lee



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