

MEDIA FACTSHEET B

Factsheet on species recovery programme

Introduced in 2015, the species recovery programme is part of the Nature Conservation Masterplan which outlines NParks' plans to coordinate, strengthen and intensify our biodiversity conservation efforts.

The species recovery programme aims to conserve native flora and fauna by targeting endemic, rare or threatened native species in Singapore through reintroduction, habitat enhancement and protection efforts. Some species targeted by the recovery programme occur in small populations in only a few places. The programme thus aims to increase the populations of these species and help them survive adverse environmental changes.

Species targets 2017

Orchids

S/N	Species Name	Status
1	<i>Acriopsis liliifolia</i>	Critically Endangered; Locally rare
2	<i>Bulbophyllum clandestinum</i>	Critically Endangered; Locally rare
3	<i>Bulbophyllum praetervisum</i>	Critically Endangered; Locally rare
4	<i>Callostylis pulchella</i>	Critically Endangered; Rediscovered from extinction.
5	<i>Cymbidium atropurpureum</i>	Critically Endangered; Rediscovered from extinction.
6	<i>Pinalia floribunda</i>	Critically Endangered; Rediscovered from extinction.
7	<i>Pomatocalpa latifolia</i>	Critically Endangered; Locally rare
8	<i>Robiquetia spatulata</i>	Critically Endangered; Rediscovered from extinction.
9	<i>Thrixspermum amplexicaule</i>	Critically Endangered; Rediscovered from extinction.
10	<i>Thrixspermum trichoglottis</i>	Critically Endangered; Locally rare

National Archives of Singapore

Gingers & Hanguanas

S/N	Species Name	Status
11	<i>Amomum hastilabium</i>	Critically Endangered; Rediscovered from extinction.
12	<i>Etilingera maingayi</i>	Critically Endangered; Locally restricted to a single location
13	<i>Globba leucantha</i>	Critically Endangered; Locally rare
14	<i>Hornstedtia conica</i>	Critically Endangered; Locally rare
15	<i>Cheilocostus globosus</i>	Critically Endangered; Rediscovered from extinction.
16	<i>Stachyphrynium parvum</i>	Critically Endangered; Locally restricted to 2 populations
17	<i>Hanguana neglecta</i>	Endangered; Locally restricted to a single location

18	<i>Hanguana nitens</i>	Critically Endangered; Locally restricted to a single location
----	------------------------	--

Other Plant Species

S/N	Species Name	Common Name	Status
19	<i>Aeschynanthus albidus</i>	NA	Critically Endangered; Rediscovered from extinction.
20	<i>Aeschynanthus pulcher</i>	Lipstick Plant, Basket Vine	Critically Endangered; Rediscovered from extinction.
21	<i>Cryptocoryne x timahensis</i>	NA	Critically Endangered; Endemic to Singapore
22	<i>Dischidia acutifolia</i>	NA	Critically Endangered; New Record to Singapore
23	<i>Fagraea splendens</i>	NA	Critically Endangered; Rediscovered from extinction.
24	<i>Ficus delosyce</i>	Striking Fig	Critically Endangered; Rediscovered from extinction.
25	<i>Ficus excavata</i>	NA	Critically Endangered; Rediscovered from extinction.
26	<i>Ficus stricta</i>	NA	Critically Endangered; New Record to Singapore
27	<i>Freycinetia javanica</i>	Climbing Pandan	Critically Endangered; Rediscovered from extinction.
28	<i>Hopea ferruginea</i>	Mata Kuching Merah, Damar Putih	Critically Endangered; New Record to Singapore
29	<i>Hopea sangal</i>	Chengal Pasir, Cengal Mata Kuching	Critically Endangered; Locally rare
30	<i>Hoya obtusifolia</i>	NA	Critically Endangered; Rediscovered from extinction.
31	<i>Hydnophytum formicarium</i>	Baboon's Head, Ant Plant, Dedalu Api Laut	Critically Endangered; Locally rare
32	<i>Kopsia singaporensis</i>	Singapore Kopsia, White Kopsia, Selada	Critically Endangered; Locally rare
33	<i>Margaritaria indica</i>	NA	Critically Endangered; New Record to Singapore
34	<i>Ormocarpum cochinchinense</i>	NA	Critically Endangered; Rediscovered from extinction.
35	<i>Piper porphyrophyllum</i>	Tiger's Betel	Critically Endangered; Locally rare
36	<i>Piper ribesioides</i>	Pepper Wood	Critically Endangered; Rediscovered from extinction.

37	<i>Portulaca pilosa</i> ssp. <i>pilosa</i>	Rose-Flowered Purslane, Seashore Purslane	Critically Endangered; Locally rare
38	<i>Pterisanthes cissoides</i>	Akar Gamat	Critically Endangered; Rediscovered from extinction.
39	<i>Pterospermum diversifolium</i>	Pambaram, Malavuram	Critically Endangered; Rediscovered from extinction.
40	<i>Rhopaloblaste singaporensis</i>	Singapore Walking-Stick Palm, Kerinting, Rintin	Critically Endangered; Locally rare
41	<i>Scindapsus lucens</i>	NA	Critically Endangered; New Record to Singapore
42	<i>Scolopia macrophylla</i>	NA	Critically Endangered; Rediscovered from extinction.
43	<i>Tetrastigma rafflesiae</i>	Rafflesia Vine	Critically Endangered; Locally rare
44	<i>Utania nervosa</i>	NA	Critically Endangered; New Record to Singapore

Fauna

S/N	Species Name	Common Name	Status
45	<i>Nyctixalus pictus</i>	Cinnamon Bush Frog	Vulnerable; confined to CCNR and BTNR
46	<i>Pteroptyx valida</i>	Mangrove Firefly	Endangered; confined to handful of mangrove sites
47	<i>Nandus nebulosus</i>	Sunda Leaf Fish	Critically Endangered
48	<i>Parathelphusa reticulata</i>	Swamp Forest Crab	Globally and nationally Critically Endangered

Species highlights

Species	Description
<p data-bbox="204 414 560 448"><i>Cymbidium atropurpureum</i></p>  <p data-bbox="204 1025 624 1093">Photo credit: Dr Yam Tim Wing, National Parks Board</p>	<p data-bbox="754 414 1382 645">This orchid is a new record for Singapore. The plant was discovered by NParks staff at the Central Catchment Nature Reserve in 2010. Seeds were collected from the parent plant and seedlings have been raised successfully. The first batch of seedlings will be reintroduced in 2018.</p>
<p data-bbox="204 1131 437 1164"><i>Pinalia floribunda</i></p>  <p data-bbox="204 1619 624 1686">Photo credit: Dr Yam Tim Wing, National Parks Board</p>	<p data-bbox="754 1131 1382 1462"><i>Pinalia floribunda</i> is one of the most recently rediscovered orchid species. It is found in Borneo, Java, Myanmar, Peninsular Malaysia, the Philippines, Sumatra, Thailand and Vietnam. It grows in warm lowland forest up to about 2,000 metres above sea level. This attractive species produces many inflorescences which bear numerous white flowers and is a sight to behold when it is in full bloom.</p> <p data-bbox="754 1503 1382 1731">It was first collected by the first Director of the Singapore Botanic Gardens, Henry Ridley, in 1890 at Sungei Buloh, and rediscovered in 2016 at the Nee Soon Swamp Forest. The plant has been propagated by cuttings, and the first batch of plants will be reintroduced to parks and nature reserves in 2019.</p>
<p data-bbox="204 1769 456 1803"><i>Etlingera maingayi</i></p>	<p data-bbox="754 1769 1382 2000">This forest-dwelling, clump-forming ginger has a tall inflorescence composed of a long peduncle topped with a small round head. The bracts forming the head are densely covered with shiny silver hairs, and support bright pink flowers. The young foliage has a bronze colour, contrasting with the older green foliage.</p>

 <p>Photo credit: Dr Jana Leong-Škorničková, National Parks Board</p>	<p>It was reported from Singapore during the mid-19th century, but has not been studied intensively. Currently, <i>E. maingayi</i> is considered Critically Endangered, but fortunately this species propagates fairly easily by rhizome cuttings. Preliminary trials from the plantings in the streetscape indicates its suitability for wider use in urban greenery.</p>
<p>Striking Fig (<i>Ficus delosyce</i>)</p>  <p>Photo Credit: Ng Xin Yi, National Parks Board</p>	<p>This beautiful strangling fig grows near water edges and in swamp forests, and was first described by E.J.H Corner in 1960. It was thought to be extinct until it was collected again in 2011. It grows readily from cuttings and is being propagated in the Pasir Panjang Nursery. It has also been planted at the Singapore Botanic Gardens and reintroduced to several areas in the Nature Reserves.</p> <p>Figs are keystone species in forests as they fruit year round and provide birds and other frugivores a steady source of food.</p>
<p>Climbing Pandan (<i>Freycinetia javanica</i>)</p>  <p>Photo credit: Ang Wee Foong, National Parks Board</p>	<p>This climber is a member of the Pandan family, and was thought to be extinct in the wild in Singapore until it was rediscovered in Nee Soon Swamp Forest. It was found along the forest edges and climbing up trees. Unlike other species of <i>Freycinetia</i>, this species is very distinct and unique, as it has shorter and rounder leaves compared to the long strappy leaves that look like pandan leaves.</p> <p>This plant has been reintroduced into HortPark and the Singapore Botanic Gardens Learning Forest.</p>
<p>Chengal Pasir (<i>Hopea sangal</i>)</p>	<p>The earliest record of the <i>Hopea sangal</i> in Singapore was in 1894. It was presumed to be extinct and was rediscovered in 2002. The joy</p>



Photo credit: Ang Wee Foong, National Parks Board

of rediscovery was cut short when the mature individual in Changi, estimated to be at least 150-years-old, was cut down without authorisation three months later.

Wood from the tree lives on in sculptures placed at the Singapore Zoo and Lee Kong Chian Natural History Museum. Fortunately, some of the seedlings and fruits were collected from where they had sprouted and fallen, and NParks managed to propagate the trees at the Pasir Panjang Nursery.

Several saplings that grew from those seeds have been planted all over the island. Last April, a sapling in Pasir Panjang Nursery fruited. The seeds have germinated, forming the third generation of *Hopea sangal* trees in Singapore.

Cinnamon Bush Frog (*Nyctixalus pictus*)



Photo credit: Alex Figueroa

The Cinnamon Bush Frog is an attractive rainforest frog which is confined to the Bukit Timah and Central Catchment Nature Reserves in Singapore. Unlike many frogs, this species lays its eggs in tree cavities, a microhabitat which is rare in Singapore's rainforests.

Prior research has shown that this species will breed in artificial containers placed in suitable habitats as a substitute for tree cavities. NParks is exploring the possibility of translocating such containers containing tadpoles of this species to suitable nature parks in order to expand their distribution.

Sunda Leaf Fish (*Nandus nebulosus*)



Photo credit: Cai Yixiong, National Parks Board

The Sunda Leaf Fish is an unusual inhabitant of slow-moving, well-shaded forest streams in Singapore. With its cryptic colouration and laterally compressed body, it resembles a dead leaf on the stream bed. This camouflage not only protects it from predators but also allows it to ambush unsuspecting prey that swim by. In Singapore, this species is confined to the remaining forest streams in the Central Catchment Nature Reserve.

NParks will be undertaking a comprehensive study of this species to determine its habitat requirements and distribution in Singapore. Once information on its habitat is obtained,

	NParks will explore the possibility of breeding the species in captivity with a view to reintroduce it to suitable forest streams within our nature areas.
--	--

Updates from ongoing species recovery efforts

Species	Description
<p>Singapore Freshwater Crab (<i>Johora singaporensis</i>)</p>  <p>Photo credit: Daniel Ng, National Parks Board</p>	<p>The globally critically endangered Singapore freshwater crab (<i>Johora singaporensis</i>) is endemic to Singapore and only known from a few hill streams in Bukit Timah, Bukit Batok and Bukit Gombak. Extensive habitat studies were conducted to determine a suitable site for translocating this species to expand its distribution, and a stream in Bukit Batok was found to be ideal. A total of 60 individuals were translocated in 2015.</p> <p>Baby crabs were sighted several months after the translocation, indicating that the species is breeding at this new site. Regular monitoring indicates that this species is still present, suggesting that the translocation has been successful.</p>
<p>Harlequin Butterfly (<i>Taxila haquinus</i>)</p>  <p>Photo credit: Jervis Tan, National Parks Board</p>	<p>The Harlequin butterfly is a shade-loving butterfly found in the understorey of tropical forests. Adult butterflies are typically observed perched on the leaves of low shrubs with their wings partially open. This species is widespread throughout Southeast Asia, but is very rare and localised in Singapore.</p> <p>NParks has commenced a captive breeding programme with members of the ButterflyCircle group. There has been some success and adult butterflies have been reintroduced to a suitable site to establish a wild breeding population.</p>
<p><i>Marsdenia maingayi</i></p>	<p>It was first collected in Singapore in 1885. After the 1920s, specimens could not be found and it was presumed extinct. However, more than 120 years after the first collection, a budding botanist and NParks undergraduate scholar, Ms Yeoh Yi Shuen, found a specimen along the forest</p>

	<p>margin in the vicinity of MacRitchie Reservoir. The discovery was made by chance after a tree fall in the area brought parts of this vigorous woody climber closer to the ground.</p> <p>Seedlings of this species have been found in the vicinity, and some have been collected for propagation. This climber produces a showy display of mildly fragrant white to yellow-orange flowers containing black nectar that are quite fetching.</p>
<p>Photo credit: Ang Wee Foong, National Parks Board</p>	
<p>Neptune's Cup Sponge (<i>Cliona patera</i>)</p>  <p>Photo credit: National Parks Board</p>	<p>There are five locally known individual Neptune's Cup Sponges in Singapore. These comprise the rediscovery of two individuals in 2011, after being absent from our waters for more than a century, and the subsequent discovery of three more individuals. This is the largest <i>in-situ</i> population of the Neptune's Cup Sponge in the world today, based on published records.</p> <p>One of the strategies in the conservation of the Neptune's Cup Sponge is to transplant them to locations that will give them proximity to each other so as to increase the opportunities for them to reproduce sexually. The transplantation efforts which started in 2015 have been successful, and we are monitoring whether the aggregation of individuals will help us better safeguard this species.</p> <p>NParks is working with the Tropical Marine Science Institute to experiment with propagation techniques. If propagation of this sponge is successful, we will work towards slowly increasing the population of the Neptune's Cup Sponge in our local waters.</p>
<p>Hawksbill Turtle (<i>Eretmochelys imbricate</i>)</p>	<p>Plans for a simple turtle hatchery on Small Sister's Island are currently being finalised. In the meantime, a temporary hatchery has been established to safeguard at-risk nests.</p>

 <p>Photo credit: National Parks Board</p>	<p>The Marine Turtle Working Group has been established, and is currently looking into initiating a beach monitoring programme.</p>
<p>Fluted Giant Clam (<i>Tridacna squamosa</i>)</p>  <p>Photo credit: National Parks Board</p>	<p>Our research collaborators have transplanted over 60 individuals of different size guilds to the Sisters' Islands Marine Park and other reef areas, and are currently monitoring the Fluted Giant Clam.</p>
<p><i>Gardineroseris planulata</i></p>  <p>Photo credit: National Parks Board</p>	<p>Although this species is classified globally as a species of "least concern", it is considered as locally threatened, as only one individual has been recorded in Singapore.</p> <p>A fragment the size of a dinner plate was collected and moved to the Sister's Islands Marine Park and monitored for recovery. As of March 2017, 50% of the bleached colony on the fragment perished, while the remaining 50% is recovering from bleaching. Numerous nubbins will be created from the recovered portion of the fragment and grown in aquaria before being out-planted onto Reef Enhancement Units.</p>