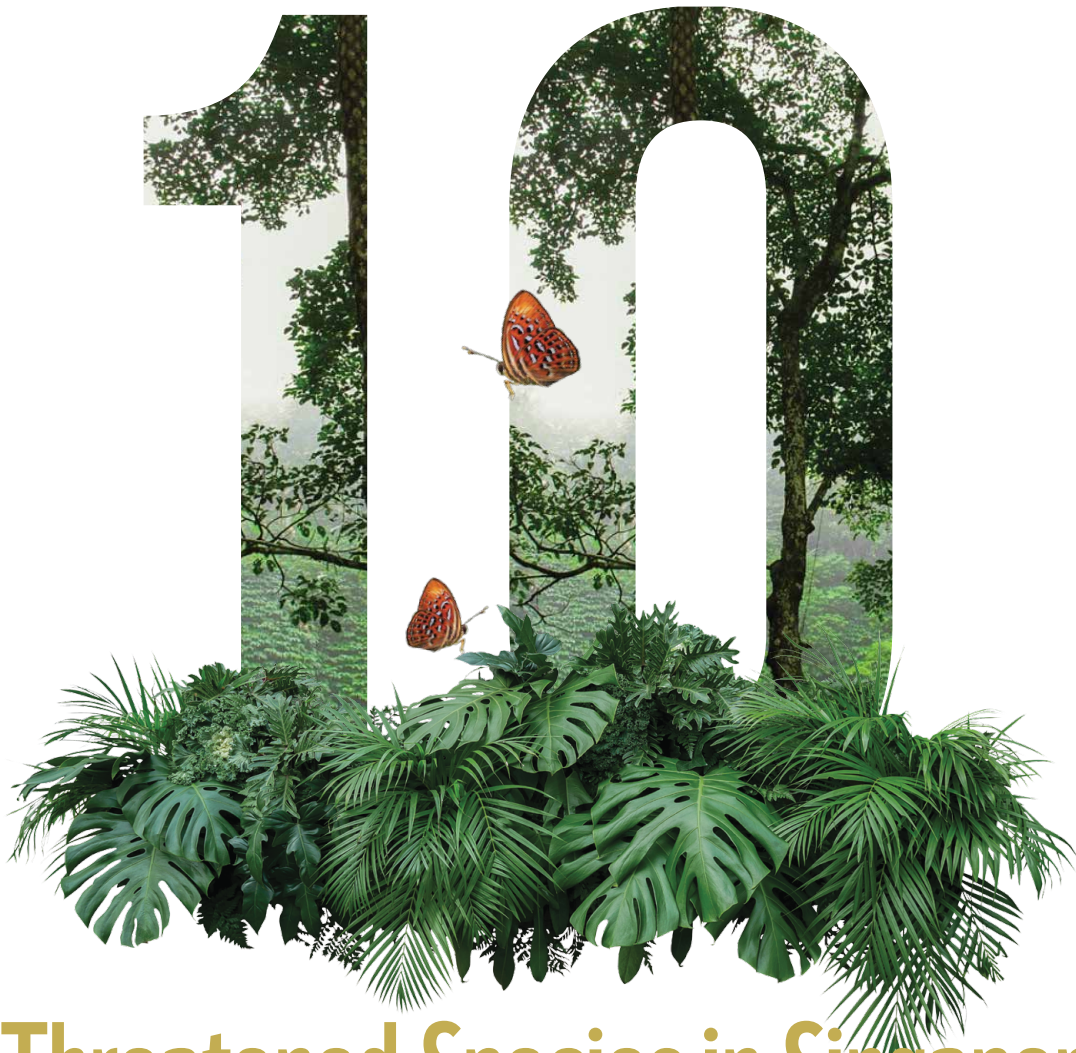


— The *Sayang* List —

Conserving



Threatened Species in Singapore

Joint Publication by



Overview

**We cannot protect what we do not love.
We cannot love what we do not know.**

Biodiversity is the infrastructure that supports all life on Earth. Natural systems and cycles help maintain our atmosphere, oceans, forests, landscapes and waterways. They are a prerequisite for modern and prosperous societies, providing a range of services such as clean air, water, healthy soils and pollination.

For the first time in the Earth's history, a single species has the power to shape the face of our planet. That's us, humans.

Around the world, nature is disappearing at an alarming rate due to pressures from human activity. Species are going extinct at rates 100 to 1,000 times higher than ever recorded in Earth's history.

WWF's Living Planet Report 2018 has found an overall decline of 60% in the population sizes of vertebrate animals between 1970 and 2014.

**We are the first generation that has a clear picture
of the value of nature and the enormous impact
we have on it. We may also be the last that can act
to reverse this trend.**



Conserving Threatened Species in Singapore

Some of the world's rarest animals and plants call Singapore home.

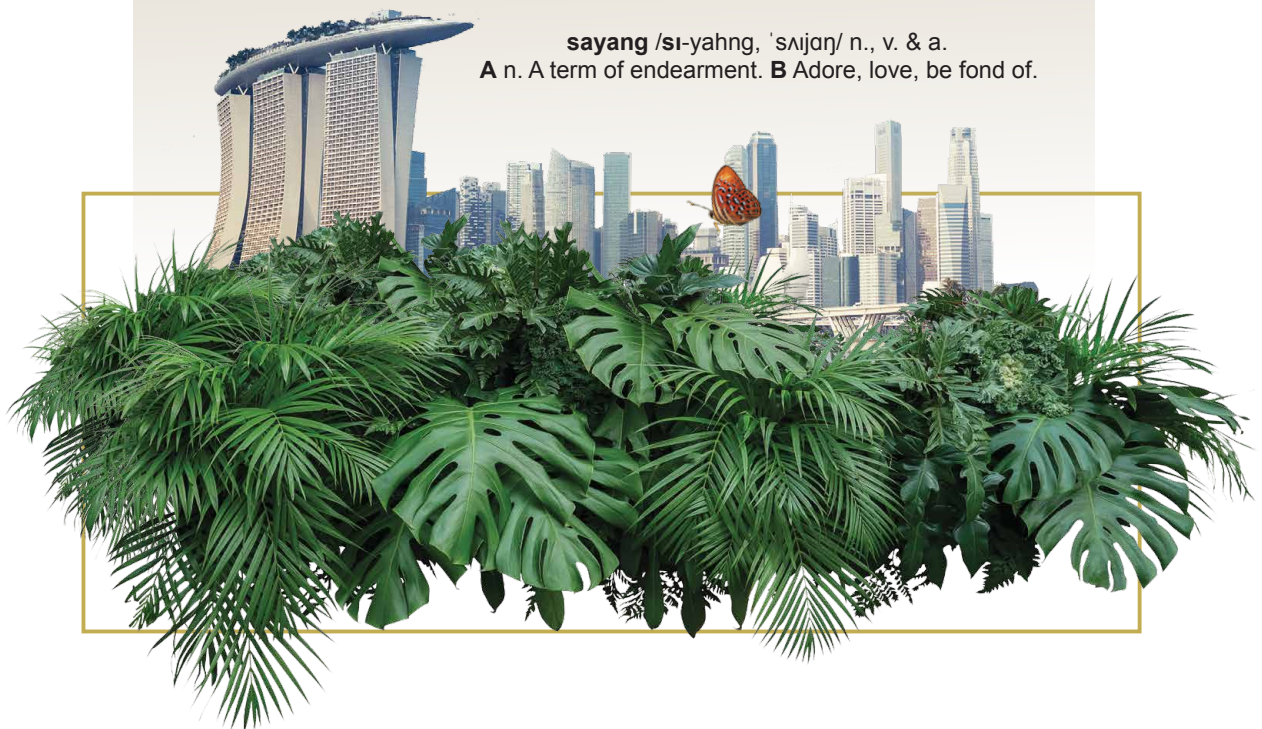
Our city state is living proof that nature and urban living are not mutually exclusive. Nature in urban environments provide benefits such as pollution reduction, water purification and improved human physical and mental health.

The solutions that work for Singapore provide important lessons about how nature can be integrated into urban environments.

This change is already underway in Singapore, supported by a master plan for nature, species protection and recovery programmes, by research institutions, environmental groups and passionate people.

In partnership with Singapore's National Parks Board (NParks), WWF is highlighting 10 threatened species in Singapore currently under active conservation. By no means exhaustive, this list highlights some globally significant, truly Singaporean and universally well-loved species – to put it in local terms, “*sayang*”.

sayang /sɪ-yahng, 'slɪjɑŋ/ n., v. & a.
A n. A term of endearment. **B** Adore, love, be fond of.



10

© Max Khoo / NParks



Cinnamon bush frog

Conservation Status: **Vulnerable**

This small arboreal frog is usually more heard than seen in the forest. It is impacted by the destruction and degradation of forest habitats and is confined mainly to the Central Catchment Nature Reserve and the Bukit Timah Nature Reserve.

Conservation Efforts:

In Singapore, research on its ecology and translocation efforts are currently being undertaken by NParks as part of a species recovery effort. Singapore's mature forest habitats are also monitored and conserved to safeguard this species.

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© Max Khoo / NParks



Harlequin butterfly

Conservation Status: **Endangered**

The Harlequin is a shade-loving jungle butterfly. It is impacted by the destruction and degradation of forest habitats – one of the major threats to biodiversity globally.

Beautiful but very rare in Singapore, its survival depends on the availability of host plants. A small population of Harlequin butterflies are known to persist in one forested area in Singapore's western region, with rare sightings of individuals in other forested areas.

Conservation Efforts:

In Singapore, ex-situ breeding and reintroduction efforts are currently being undertaken by NParks and the ButterflyCircle as part of a species recovery effort for the Harlequin butterfly.

In the rest of Southeast Asia, WWF's work to halt land conversion while restoring forests is key to protecting the habitats of such forest-dwelling species.

8

© Karenne Tun / NParks



Neptune's cup sponge

Conservation Status: **Unknown**

A century after it was thought to be extinct, the Neptune's cup sponge was rediscovered in 2011, in the waters of Singapore. These goblet-shaped sponges can grow to a large size. In the past, the sponge was harvested by people for museums and private collections, as well as some who used its cup-like structure as babies' bathtubs.

Conservation Efforts:

Five Neptune's cup sponges have been transplanted to the Sisters' Islands Marine Park. Coupled with efforts to propagate the sponge, these measures help safeguard the species and increase reproduction opportunities.

7

© Mendis Tan / NParks



Straw-headed bulbul

*Conservation Status: **Endangered***

Poaching for the pet bird trade has decimated many species across Southeast Asia, especially Indonesia. One of its biggest victims: the melodious-voiced Straw-headed bulbul, which has gone extinct from Thailand and most parts of Indonesia.

Conservation Efforts:

Singapore is a global stronghold for this endangered songbird. The nature reserves in which this species is found are currently protected. To further enhance its conservation, other habitats such as parklands are being enhanced and connected with the nature reserves through multi-tiered planting of streetscapes and park connectors.

Regionally, cracking down on Southeast Asia's illegal bird trade will protect this species from overexploitation.

6

© Tan Yong Lin



Smooth-coated otter

*Conservation Status: **Critically Endangered***

Charismatic and photogenic, the smooth-coated otter has made a strong comeback in Singapore's waterways. Everywhere else in Southeast Asia, otters are in greater danger due to habitat loss, pollution and poaching for the illegal pet trade.

Conservation Efforts:

There is a collective, multi-disciplinary approach towards otter conservation, with the involvement of NParks and the Otter Working Group. With local communities, the group monitors otter populations and movement in Singapore to resolve issues and protect the species.

5

© Stephen Hogg / WWF-Malaysia



Sunda pangolin

*Conservation Status: **Critically Endangered***

This shy, solitary mammal is seldom seen but has been plundered all over the region for the illegal wildlife trade. The overexploitation of species through poaching is one of the world's biggest threats to wildlife.

One million pangolins have been poached in the last decade. With the Sunda pangolin on the brink of extinction, it may come as a surprise that a small population of this species finds refuge in Singapore's nature reserves and remaining forested areas.

Conservation Efforts:

The Singapore Pangolin Working Group leads a National Conservation Strategy and Action Plan. This includes establishing wildlife-conscious urban planning policies, coupled with rescue, rehabilitation and release strategies that help conserve and protect this species.

Globally, WWF is involved in efforts to stop poaching, close illegal wildlife markets across Asia and reduce demand for illegal wildlife products.

4

© naturepl.com / Inaki Relanzon / WWF



Hawksbill turtle

Conservation Status: *Critically Endangered*

The Hawksbill turtle is important for healthy coral reef ecosystems but faces the threats all too common in modern oceans: fishing nets and plastic pollution. Millions of tonnes of land-based plastics enter the oceans each year, and the world has lost around half of its shallow water corals in the last 30 years.

Hawksbill turtle sightings and reported nestings have increased significantly with expanded efforts to understand their behaviour and stronger public awareness.

Conservation Efforts:

The Marine Turtle Working Group has trained volunteers to patrol the shores for signs of nesting turtles, and to sight and protect turtle nests. The first turtle hatchery at Sisters' Islands Marine Park has also been established by NParks. Over 80 turtle nestings have been reported and more than 500 hatchlings released since 2017.

Around the world, WWF protects ocean health and conserves marine life and resources. This includes managing Marine Protected Areas for biodiversity and people, protecting coral reefs and eliminating plastics from the oceans.

3

© Max Khoo / NParks



Raffles' banded langur

Conservation Status: *Critically Endangered*

An icon in the making, the Raffles' banded langur represents the conservation challenge of modern cities: habitat loss and fragmentation from urban and suburban development. Just 10 of them remained in Singapore back in the 1980s, but the population has been showing signs of recovery since 2010.

Conservation Efforts:

NParks, in collaboration with the Raffles' Banded Langur Working Group, leads a National Conservation Strategy and Action Plan which includes habitat conservation and enhancement, improving green connectivity and focused enrichment planting.

2

© Jana Leong-Škorničková / NParks



Singapore ginger

Conservation Status: *Critically Endangered*

The Singapore ginger was only discovered in the Central Catchment Nature Reserve and Bukit Timah Nature Reserve recently. It is very rare and globally confined to the primary forests of Singapore. With only five small known populations, the Singapore ginger can be considered Critically Endangered, nationally and globally.

Conservation Efforts:

The Singapore Ginger is closely monitored in the wild, in addition to ongoing efforts to propagate the species for reintroduction into local nature reserves and the Singapore Botanic Gardens. About 20 plants have been propagated to date, and now reside on the grounds of the Istana as well as NParks' Pasir Panjang Nursery.

© Cai Yixiong / NParks

1



Singapore freshwater crab

Conservation Status: Critically Endangered

Freshwater habitats globally are under enormous pressure, from activities such as habitat destruction, pollution and overfishing. Freshwater ecosystems are experiencing some of the highest extinction rates in the world.

This unassuming Singaporean crab smaller than the size of a thumb is among the world's most threatened species and not found anywhere else in the world.

It has a preference for hill streams – one that is now at higher risk due to habitat loss and habitat acidification. It is only found in selected, rare freshwater habitats in Singapore.

Conservation Efforts:

In Singapore, the Freshwater Crab Working Group leads conservation measures to increase wild populations of this species. NParks has successfully hatched more than 150 crablets in captivity and has begun to release these captive-born individuals into the wild.

To protect freshwater species globally, freshwater conservation work by WWF focuses on ensuring free-flowing and well-connected river and wetland systems.

Biodiversity in Singapore

2,145 plant species

12 seagrass species

255 hard coral species

324 butterfly species

392 bird species

>200 sponge species

122 dragonfly species

65 mammal species

> 800 spider species

> 480 new species of animals and plants discovered in the past five years

A Master Plan for Nature

Guided by science-based principles, Singapore's Nature Conservation Master Plan (NCMP) consolidates, coordinates, strengthens and intensifies local biodiversity conservation efforts. These efforts will build ecological resilience through the strengthening of ecological linkages to help conserve native biodiversity and adapt to the effects of climate change.



Acknowledgements

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