

PHOTO-ESSAY

POCKETS OF LIFE

Images by Cai Yixiong
Additional images as credited

The conservation agenda gained momentum in the 1990s. The newly formed National Parks Board initiated a milestone six-year survey of the physical and biological aspects of our nature reserves in 1991, and Singapore signed the Convention on Biological Diversity in 1993 then ratified it two years later.

One of her strategies has been to advance nature conservation without compromising economic growth, which has birthed innovations such as the Park Connector Network that weaves through offices, residences, and other urban areas to offer safe passage and refuge to animals.

Today Singaporeans can be proud of the over 23,000 species of terrestrial organisms and over 12,000 marine organisms including 384 bird species, at least 1,416 native vascular plants, 57 mammal species, 98 reptile species, 29 amphibian species, 318 butterfly species, 125 dragonfly species, and more that cohabit our tiny island home.

But these figures are betrayed by the critically endangered status of some of the amazing species found here. A pocket of rare biodiversity is Nee Soon Swamp Forest, located to the southeast of Seletar Reservoir in Central Catchment Nature Reserve, which also encompasses MacRitchie, Upper Peirce, and Lower Peirce Reservoirs.

At 87 hectares large in extent today, Nee Soon Swamp Forest is the last substantial patch of primary freshwater swamp forest in Singapore. It is the only known home on earth of the lonely, endangered Swamp Forest Crab, discovered just in the 1980s by local biologist Peter Ng. The crab favours well-shaded acidic water environments, stained the colour of tea due to tannins from decomposing plants, and feeds mostly on plants.

This secretive nocturnal creature is one of the native fauna of Singapore featured in this collection of photographs selected with the help of the National Biodiversity Centre. Most were taken by shrimp taxonomist and naturalist Cai Yixiong, whose interest in photography was sparked documenting wildlife for his research.









1. The stick-like Big-jawed Spider (*Tetragnatha mandibulata*), photographed at Upper Peirce Reservoir, is often found on water edges and can cling onto plants using its long legs.
2. The Singapore Shadowdamsel (*Drepanosticta quadrata*) is common in Bukit Timah Nature Reserve and Central Catchment Nature Reserve near small streams.
3. The Green Crested Lizard (*Bronchocela cristatella*) is bright green with blackish eye-rings and ears and commonly found in forests.





4. The brightly-coloured Red-crowned Barbet (*Megalaima rafflesii*) is an uncommon species sometimes seen in primary forests.

5. Shallow, slow-flowing streams permeate the dense forests of Bukit Timah Nature Reserve, supporting a rich diversity of aquatic fauna. Once adjoined to Central Catchment Nature Reserve, Bukit Timah Nature Reserve comprises the largest contiguous patch of primary rainforest left in the country.





6. A small beautiful cascade hidden in the depths of Bukit Timah Nature Reserve.

7. The Branded Imperial (*Eooxylides tharis distanti*) is commonly seen in Central Catchment Nature Reserve, often perching on its host plant *Smilax bracteata*.

8. The vulnerable freshwater Peracca's Land Crab (*Geosesarma peraccae*) is semi-terrestrial and spends most of its time out of water.









9. Nee Soon Swamp Forest is the last substantial patch of freshwater swamp forest in Singapore. The unique freshwater swamp forest habitat supports a rich diversity of flora and fauna adapted to survive in changing hydrological regimes.

10. The colourful Harlequin Rasbora (*Trigonostigma heteromorpha*) is the most abundant species in Nee Soon Swamp Forest, although it is an endangered species in Singapore and often exploited for ornamental fish trade.

11. The Malayan Forest Halfbeak (*Hemirhamphodon pogonognathus*) is often seen in groups on the water surface in forest streams.

12. The Malayan Forest Betta (*Betta pugnax*) has greenish-blue spots and frequents shallow waters in Nee Soon Swamp Forest.

13. The Two-spot Rasbora (*Rasbora elegans*) is a common species in Nee Soon Swamp Forest that inhabits the upper and middle water levels.

14. The critically endangered Torrent Prawn (*Macrobrachium platycheles*) frequents fast-flowing waters. Within Singapore, it is only found in Nee Soon Swamp Forest.

15. The critically endangered Singapore Little Warty Catfish (*Parakysis longirostris*) has a distinctive skin colouration composed of irregular black patches. It is only found in Nee Soon Swamp Forest throughout Singapore.

16. The critically endangered Buff-backed Spiny Eel (*Macrognaathus maculatus*) is an elusive nocturnal bottom dweller only found in Nee Soon Swamp Forest throughout Singapore.





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17. The endemic Swamp Forest Crab (*Parathelphusa reticulata*) has distinct reticulated patterns on its carapace. This endangered species is restricted to heavily shaded streams with muddy substrates and slow-moving water in Nee Soon Swamp Forest.

18. The endemic Johnson's Freshwater Crab (*Irmengardia johnsoni*) frequents slow-flowing, acidic waters and is an endangered species in Singapore.

19. Often found on trees and hard structures in Nee Soon Swamp Forest, the endangered Green Tree Snail (*Amphidromus atricallosus temasek*) is endemic to Singapore (Photo: Lim Weihao).

20. The Horsfield's Flying Squirrel (*Iomys horsfieldii*) is an endangered species in Singapore found only in Central Catchment Nature Reserve (Photo: Holly Siow).

21. The Black-eyed Litter Frog (*Leptobrachium nigrops*) has irregular blotches on its body and lives among dense leaf litter on the forest floor (Photo: Low Bing Wen).

22. The colourful Fiery Gem (*Libellago aurantiaca*) is often seen perching on semi-submerged logs in quiet parts of clear forest streams in Nee Soon Swamp Forest.

23. The Gold-ringed Cat Snake (*Boiga dendrophila*) has distinct yellow bands on its body and inhabits mature forests and mangroves.