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No alien invasion in primary forests

Researchers find havens of natural plant life here despite urbanisation, and most have no foreign species

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SINGAPORE'S tiny pockets of pristine primary forests are havens of natural plant life, virtually unmolested by alien or exotic plant species introduced over the centuries.

The researchers who made this finding argue that this is yet another reason to preserve these gems of natural diversity.

'These areas are not just repositories of local biodiversity. We've learnt that they resist invasive plants as well,' said Associate Professor Hugh Tan, a member of the research team.

'This is pretty remarkable, considering the extent to which Singapore has been urbanised.'

The study by researchers from the National University of Singapore's department of biological sciences, Nanyang Technological University and the University of Hong Kong was published in Britain's respected Journal Of Biogeography.

The researchers said that about 200ha in all of primary forests remain in the centre of the island. The parcels range in size from 1ha to 30ha.

While most parcels held no foreign species at all, some had just one. But on wasteland, exotics may outnumber natives two to one, and take up two-thirds of the land area sampled.

In primary rainforests, the lone invader is Koster's Curse, but it struggles to survive. Spread by birds that eat its purple berries, this tropical shrub from America is a serious pest in many countries.

About one in 10 of Singapore's 3,000 or so plant species is an import that has adapted so well here that it is reproducing and spreading on its own. And new species that have 'escaped' into the wild are being discovered all the time.

Common native plants here include the casuarina and pong pong trees, and the sea lettuce, a shrub found at the beach.

Exotic species that have run wild here include the rubber and African tulip trees, morning glory and periwinkle.

The researchers checked seven types of different vegetation growth in 29 sites, namely lawn, beach, mangrove, primary forests, two different types of secondary forests and even wasteland cleared of its original vegetation.

The dim light in primary and some secondary forests is probably why non-native plants failed to take hold there, said the researchers.

In mangrove areas, salt water made the soil conditions too hostile for invading plants.

But the invaders thrived in wasteland and on lawns, because these had plenty of light and enough nutrients.

While Singapore's primary forests seem resilient to invading plants for now, there is no guarantee this won't change, said the researchers.

The situation must be monitored to nip potential problems in the bud, they said. 'If this is done, Singapore's forests could also act as an early warning system for the region as a whole,' the study reported.

Stressing the need to protect what is left of Singapore's forest areas, Prof Tan cited the example of cyclosporine - the drug that transplant patients take to prevent their bodies from rejecting the transplanted organs - which comes from a species of fungus.

'There's no way to predict the value of species which people may think are useless now.

'So little is known about many of them that we may not realise what we're losing until it's too late.'

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