




Nurturing
Biodiversity





From our nature reserves to our urban forests, along our coastlines and river banks, the rich DNA of Singapore's natural heritage is being recorded, catalogued and conserved, thanks to the efforts of many. A shared passion brings them together – the subject matter experts, students, volunteers, residents, community groups, public agencies and corporate partners. It is a passion combined with respect for the rich biodiversity that exists in our City in a Garden.

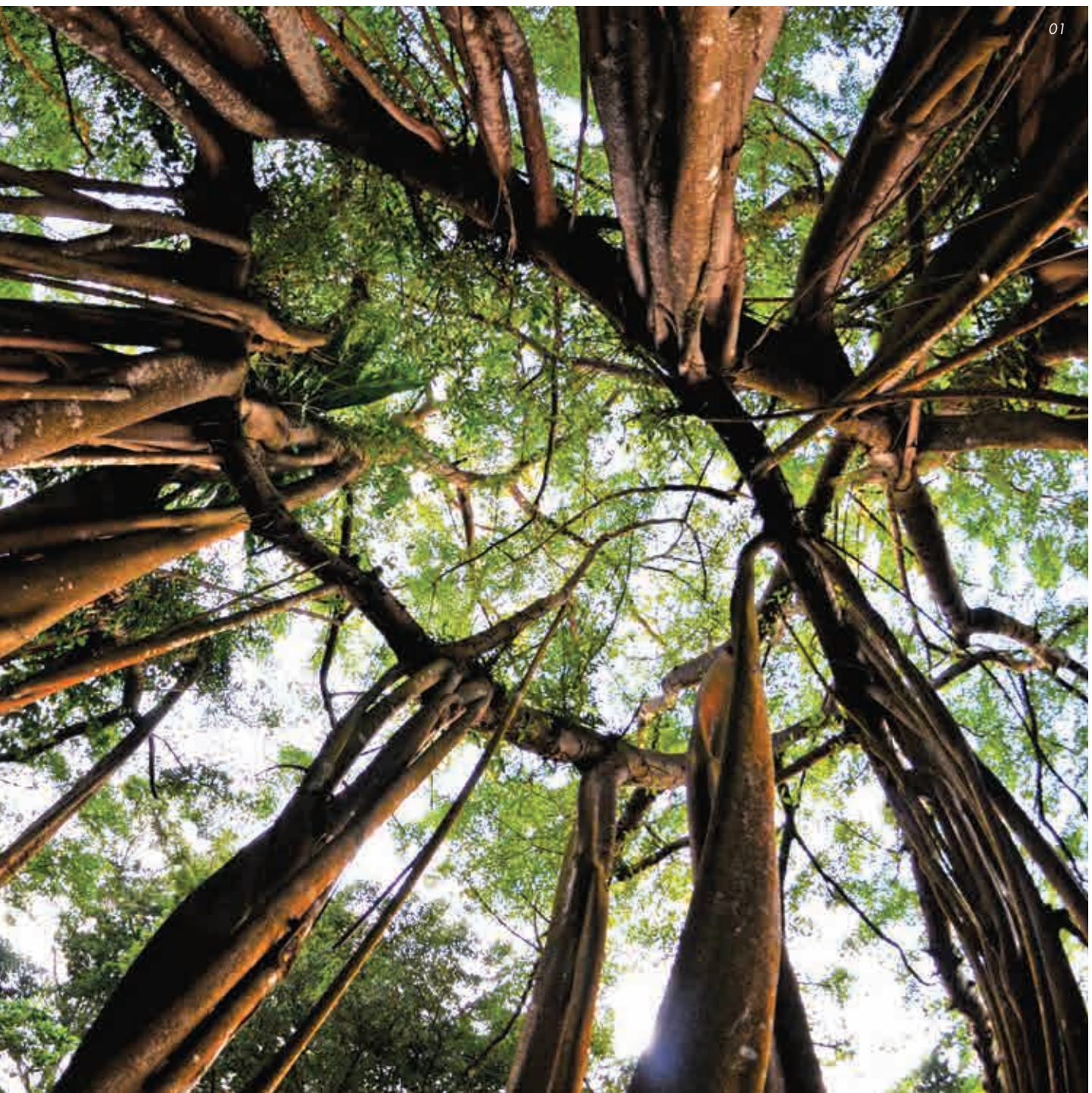
Collaborating to conserve Singapore's natural heritage

From green tree snails to rare orchids and elusive damselflies – over 500 species new to Singapore, including 100 new to science, have been discovered in the past 10 years of biodiversity conservation. Recorded in forests, and intertidal and sub-tidal habitats, some of these amazing discoveries of flora and fauna were showcased at an exhibition at the HortPark Gallery from 21 April to 2 May 2011. The exhibition *“A Decade of Biodiversity Conservation and Discoveries in Singapore”* was put together by NParks and the National University of Singapore's Raffles Museum of Biodiversity Research, and launched by Professor Tommy Koh, Ambassador-

at-Large, Ministry of Foreign Affairs, and Special Advisor, Institute of Policy Studies. Professor Koh is also the Patron of the Nature Society (Singapore).

During the exhibition, NParks launched a book on Singapore's dragonflies – the first in a series that will document Singapore's rich biodiversity and ecological heritage. The book *“Dragonflies of our Parks and Gardens”* was inspired by the findings of a two-year dragonfly conservation project that started in 2008.

Also unveiled at the exhibition was *Flora & Fauna Web* – a one-stop portal on plants and animals in Singapore. The portal (<http://florafaunaweb.nparks.gov.sg>) provides the public with access to information on more than 2,500 plant and 1,000 animal species.





- 01 *"Roots" by Aw Ah Choon won the merit prize in the "Trees and Forests" theme for the City in a Garden photography competition. It depicts the majesty of the aerial roots sharing space with the tree canopy at the Singapore Botanic Gardens.*
- 02/03 *The Rebecca's Sprite Damselfly (Archibasis rebecca) and White-spotted Cat Snake (Boiga drapiezii) were rediscoveries featured in the exhibition on "A Decade of Biodiversity Conservation and Discoveries in Singapore".*
- 04 *Visitors to the "Forests, People, Environment" exhibition held at the Singapore Botanic Gardens from 2 to 24 July 2011 learnt about the importance of forests, including the unique conservation of Singapore as an urban forest.*

With the support from photographers and corporate partners, the City in a Garden photography competition helps to document and share the beauty of Singapore's greenery and biodiversity.

Reaching out to mark the International Year of Forests

The celebration of 10 years of biodiversity conservation in Singapore dovetailed with activities to mark the United Nations' International Year of Forests in 2011. Public engagement and participation were the order of the day as NParks reached out to the community to raise awareness of Singapore's forests and trees. A special contest was organised for the public to share their photographs and their experiences at the parks and nature reserves, as well as their favourite tree, plant or forest animal.

Among the key events to celebrate the International Year of Forests was the launch of the *"Forests, People, Environment"* exhibition at the Singapore Botanic Gardens. Opened by then Minister of State for National Development and Manpower Mr Tan Chuan-jin on 2 July 2011, the

exhibition highlighted the rich biodiversity found in forests, their importance to people, and their relevance in the Singapore context where tree-lined roads, parks, nature reserves and green spaces linked by park connectors have given rise to urban green forests.

Launched in tandem with this was a year-long *City in a Garden* photography competition aimed at capturing the amazing biodiversity and rich greenery in Singapore. A collaboration between NParks and the Photographic Society of Singapore, the competition attracted the avid support of shutterbugs from across the island, as well as corporate partners including Clarins, City Developments Limited, Panasonic Singapore and Grand Hyatt Singapore.



Creating platforms for sharing and networking

The third *Biodiversity of Singapore Symposium 2011*, jointly organised by NParks and the National University of Singapore on 24 September, presented a platform for the biodiversity conservation community to interact, exchange knowledge and explore future collaborations. The seminar featured 21 speakers covering topics on terrestrial, freshwater and marine conservation. Awards were also presented to individuals and organisations who have made significant contributions to biodiversity conservation. Among the recipients was Ria Tan, who has been sharing information on biodiversity through her

wildsingapore and Flickr websites, as well as 10 schools and organisations for their longstanding participation in the International Coastal Cleanup.

Then Minister of State for National Development and Manpower Mr Tan Chuan-jin, who graced the event, also launched NParks' *Community in Nature programme*. It aims to establish a network of Singaporeans who are passionate about the country's natural heritage and can champion the cause of protecting it.



My Family In The Garden
Charlene Teo Wei Ting, 4
Helios Preschool



Loving The Tree
Koh Xin Rui, Reanna, 4
The Little Skool House International Pte Ltd

“I want my City in a Garden to be forest-like, with long walking trails and tall trees.”

Bee Hor

City in a Garden public engagement exercise

- 01 Through guided tours and learning journeys, the Community in Nature programme enables Singaporeans to understand and appreciate nature. Other nature-related activities will provide opportunities for them to grow from being casual observers to becoming more active participants.
- 02 Bukit Timah Nature Reserve is one of the places where the Missing Marvellous Katydid (*Phlugis thaumasia*) has been sighted at night. Also seen in Dairy Farm Nature Park and Central Catchment Nature Reserve, this species is predatory and feeds on other insects, unlike most grasshoppers.

Working together to document Singapore’s biodiversity

Two visiting biologists and 30 enthusiastic volunteers joined more than 20 staff from the National University of Singapore and NParks in a mini **marine biodiversity expedition** from 5 to 9 March 2012. Dr Kristine White from the University of the Ryukyus and Dr Bertrand Richer de Forges from the University of New Caledonia were among those who conducted activities ranging from inter-tidal surveys of Pulau Ubin’s coastal areas to dredging of the seabed to collect organisms and DNA samples. The study was carried out as a prelude to two other major expeditions planned as part of NParks’ Comprehensive Marine Biodiversity Survey, which started in 2010 to take stock of Singapore’s marine biodiversity. Besides experts from tertiary institutions and non-governmental organisations, and individual enthusiasts, this survey was also supported by corporations like Shell Companies in Singapore and the Care-for-Nature Trust Fund. Asia Pacific Breweries (Singapore) Pte Ltd – a new sponsor – donated \$250,000, and its employees also volunteered their time to participate in the survey.

Celebrating milestones in Singapore’s conservation journey

In a strong affirmation of Singapore’s conservation efforts, the 163-hectare Bukit Timah Nature Reserve was declared an **ASEAN Heritage Park** during the 13th Informal ASEAN Ministerial Meeting on the Environment, which took place in Cambodia on 18 October 2011. This made it the second nature reserve in Singapore – after Sungei Buloh Wetland Reserve – to join the prestigious network of 30 protected areas in the region.

In Singapore, the achievement was marked by a visit by President Tony Tan Keng Yam to the TreeTop Walk at the nature reserve. The strong student involvement in conservation efforts was also highlighted during his visit. Examples included their efforts in removing invasive species, planting trees to enhance the natural habitat and producing outreach collaterals on forest conservation issues.



From the outset, nature groups, non-governmental organisations, tertiary institutions, volunteers and government agencies have been working closely with NParks and LTA to conduct feasibility studies and ecological monitoring surveys for the Eco-Link project.

Sustaining the momentum with community support

Even as Singapore gains international recognition for its work on conservation, new projects have been initiated to ensure that the momentum continues. On 30 July 2011, NParks and the Land Transport Authority broke ground on a major initiative to conserve biodiversity in Singapore's urban landscape – the construction of the **Eco-Link** at Bukit Timah Expressway (Eco-Link@BKE). The first ecological corridor of its kind in Southeast Asia, the Eco-Link will connect the Bukit Timah and Central Catchment Nature Reserves across the BKE. When ready in 2013, native populations of birds, flying squirrels, insects, monitor lizards, palm civets, pangolins, porcupines and snakes will be able to use the Eco-Link as their own thoroughfare between

the nature reserves and in the process help propagate plant species through pollination and seed dispersal.

The Eco-Link project has been made possible because of the community's commitment to biodiversity conservation. Nature Society (Singapore), for example, provided expertise in monitoring birds and vertebrates during the pre-construction stage and would continue to do so after the Eco-Link is completed. An important NParks partner since the early 1990s, the society also supported programmes such as the Advanced Waders Workshop and Asian Waterbird Census held at Sungei Buloh Wetland Reserve in October 2011 and January 2012 respectively.



01 Lisbon and Curitiba are two cities which have applied the Singapore Index on Cities' Biodiversity. Seen in this picture are Mariana Cabral Cardoso from University of Lisbon (left) and Vinicius Abilhoa from Municipal Secretariat of Environment, Curitiba (right) who participated in the Third Expert Workshop on the Development of the City Biodiversity Index.

02 Nature Society (Singapore) supports NParks' programmes such as shorebird monitoring between Sungei Buloh Wetland Reserve and Mandai mudflats during the migratory season.



Gathering international expertise to shape the Singapore Index on Cities' Biodiversity

Over 30 international biodiversity experts and city officials gathered in Singapore from 11 to 13 October 2011 for the *Third Expert Workshop on the Development of the City Biodiversity Index*. The index, also known as the Singapore Index on Cities' Biodiversity, is an internationally-recognised self-assessment tool for cities to benchmark and monitor their biodiversity conservation efforts.

The workshop, organised by NParks and the Secretariat of the Convention on Biological Diversity, was held at Fort Canning Park. Participants discussed the scoring of the indicators and ways forward for the Singapore Index, which included a call to document cities' experiences, and the expansion of the network of cities applying the Singapore Index.



Warning

Evangeline Ng Shuo Yu, 17
Nanyang Academy of Fine Arts



Trees For Life

Joey Wong Zou Yu, 10
St Anthony's Primary School