

THE MAGAZINE OF
NATURE SOCIETY
SINGAPORE

NATURE WATCH

PEOPLE | PLANET | PARTNERS

VOLUME 33
ISSUE 3
JUL–SEP 2025

A Nature-Based Vision for Long Island

An NSS concept for enhancing
Singapore's mega land-reclamation project

ISSN 0218-6853



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Making new friends at Fraser's Hill Bird Race
Sambar deer numbers are growing – what should we do?
Why Springleaf forest may be vital to birds



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MESSAGE

We're embarking on a new Eco-Journey

Ms Huang Ningxin

Executive Director, Nature Society Singapore Secretariat

IN THIS ISSUE of *Nature Watch*, you will learn more about the impact we created through our flagship citizen-science programme, Every Singaporean a Naturalist (ESN), in the first half of the year, including the ESN Biodiversity Race 2025, which drew the participation of 177 students from 14 primary and secondary schools. We also completed our 2nd Swallowtail Race where we raised awareness of the plight of Singapore's butterflies, and how community efforts can help to conserve these animals.

These are just two of our major citizen-science events, with another yet to come, the 41st Singapore Bird Race 2025, with which we hope to end the year with a loud bang (and lots of chirps!). The race will take place on 15 to 16 Nov, with registration opening in September, so please keep a lookout for it on our social media. As we continue to organise more community-engagement events, we greatly appreciate your support – in both attendance and donations – to help people reconnect with nature through **Engaging Participants** and developing **Competent Volunteers**.

I'm also very excited to introduce our final addition to the NSS Secretariat, Mr Albert Liu, who joined us in August as Assistant Director (Conservation). Albert has been volunteering

with NSS for 12 years, and he is an active member of the Friends of Ubin Network, as well as the co-founder of Accessible Ubin. We look forward to his contributions towards our strategic goal of **Impactful Conservation**, at both local and regional levels, through partnerships.

I cannot stress enough that NSS is not anti-development. We aim instead to preserve green and blue spaces for future generations to decide their value.

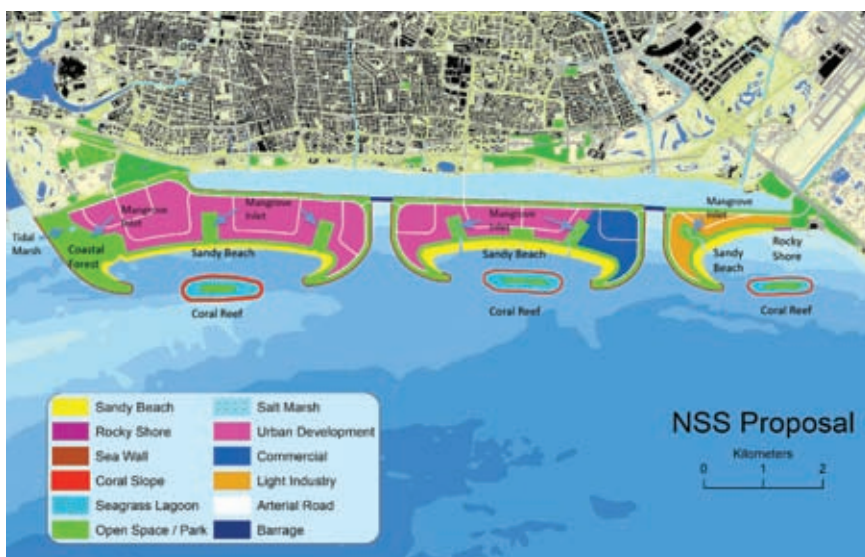
And this brings me to our new Eco-Journeys programme. In September, Albert will be taking Singapore teachers to Bintan island as part of our first Eco-Journey. There, the teachers will be able to observe **UN Sustainable Development Goals** in action, and we hope they can take these experiences back to their schools, and better prepare their students to be **future-ready, global citizens**.

In the meantime, NSS remains a passionate advocate for protecting our remaining green and blue spaces. In this issue of *Nature Watch*, you can read about our conceptual plan for improving the government's seed design for the "Long Island" project. You can also read about the importance of Springleaf forest as a nature corridor for birds and other species.

I cannot stress enough that NSS is not anti-development. We aim instead to preserve green and blue spaces for future generations to decide their value. I look forward to sharing more about our 2026 plans in the next issue of *Nature Watch*. Till then, keep greening!

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ON THE COVER Nature Society Singapore has proposed a nature-based conceptual design that builds on the government's Long Island reclamation plan to protect the East Coast from rising seas. Photo: Freepik/Aopsan

NATURE WATCH

Official Magazine of Nature Society Singapore

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We welcome your articles, surveys, studies, observations, artworks and photo essays on biodiversity, natural history, conservation and related fields. Please email your story proposal to contact@nss.org.sg. Do include samples of your photographs (maximum 20 images per submission). We require high resolution JPEG images (ideally uncropped) in the largest size available, labelled with a descriptive file name.

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Nature Watch is printed on LumiArt paper from Stora Enso Europe with ISO 14001 Environmental Management Certification. Mainly recycled paper is used, the rest is pulp from sustainable and controlled sources in Finland, Brazil and other European countries.

MDDI (P) 055/05/2025

ISSN: 0218-6853

Printing by Generic Print Pte Ltd

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CORAL REEFS, MANGROVES, & PARKS



Here's how they're possible in
the NSS 'Long Island' concept

Nature Society Singapore has proposed adding natural features like coral reefs and mangroves to the government's Long Island plan for protection against rising seas, along with details on how these suggestions could be implemented.

By **TONY O'DEMPSEY** and **JOHN YIP**

Nature Society Singapore (NSS) has prepared a conceptual design for the government's Long Island plan to protect the East Coast area against rising sea levels. The concept includes nature-based solutions like the establishment of artificial coral reefs, intertidal habitats, and mangrove inlets, and maps out in detail the landscape considerations for implementing these suggestions.

The government's plan, announced in November 2023, involves the reclamation of about 800ha of land along the East Coast. The reclaimed land could take the form of three "long islands" designed to strengthen flood protection in the area, as well as to improve Singapore's water resilience through the creation of a new reservoir.

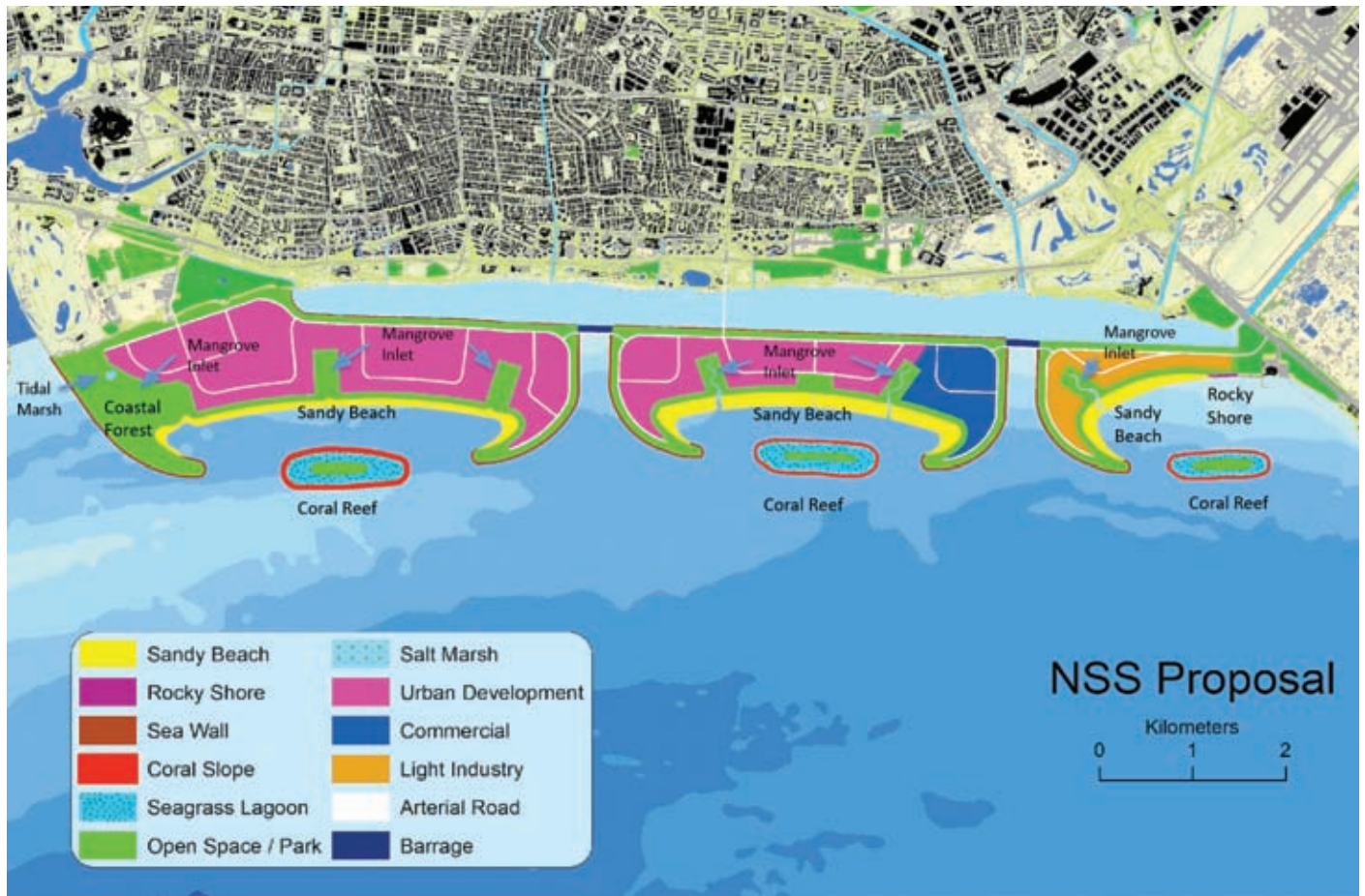
The NSS concept builds on the government's

"seed design", and calls for the development of curved coastal frontage along the south shores of each "long island", as well as the establishment of three artificial coral reefs (see Figure 1). These curved coastlines, along with the coral reefs, will help calm the tidal currents along the outer extent of the long islands, enabling safe conditions for water activities that would not be possible with a long, straight sea wall.

"In general, the Nature Society is always interested in changes to Singapore's landscape, and the Long Island plan represents a major change in both the landscape and the intertidal landscape of the East Coast area. So, we felt that we should make some significant contribution to the process," said NSS member and environmental consultant Tony O'Dempsey.

FIGURE 1

Overall view of the NSS Long Island proposal



- NSS has proposed the development of curved coastal frontage along the south shores of each “long island”, forming sandy beaches.
- NSS is also proposing the establishment of an artificial coral reef off the shores of each curved beach.
- The proposal includes the creation of water courses to serve as mangrove inlets in each “long island”. These inlets are designed to maintain intertidal habitats through the careful management of elevation and gradients.
- The curved coasts and coral reefs will help calm the tidal currents along the outer extent of the long islands, and bolster the coastal-protection objectives of the Long Island plan.

Mr O’Dempsey worked with Mr Lester Tan and Mr Kua Kay Yaw to brainstorm ideas for the NSS Long Island concept. Both Mr Tan and Mr Kua are from the NSS Marine Conservation Group; Mr Tan is the current chair of the group, while Mr Kua is its former chairman.

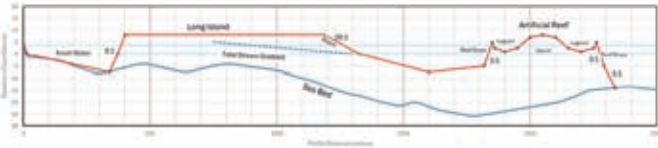
“We wanted to offer suggestions that could be viable from our point of view,” said Mr O’Dempsey. “Take mangroves, for example. A lot of people have called for mangroves to be implemented as part of the Long Island

plan, but that’s easier said than done. Mangroves are very difficult to set up, with a success rate of only about 30% in many parts of the world.

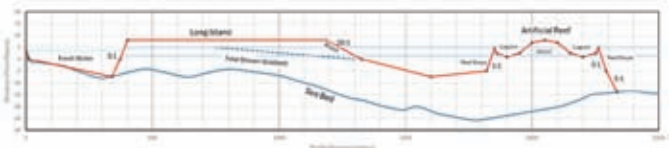
“So we looked at the idea and decided that we can’t have mangroves along the frontage of the proposed ‘long islands’, because that’s not where mangroves would naturally grow. Instead, we’ve proposed the creation of five ‘mangrove inlets’ across the development.

“We wanted to offer suggestions that could be viable from our point of view. Take mangroves, for example. A lot of people have called for mangroves to be implemented as part of the Long Island plan, but that’s easier said than done. Mangroves are very difficult to set up, with a success rate of only about 30% in many parts of the world.

Current tidal range



Future tidal range



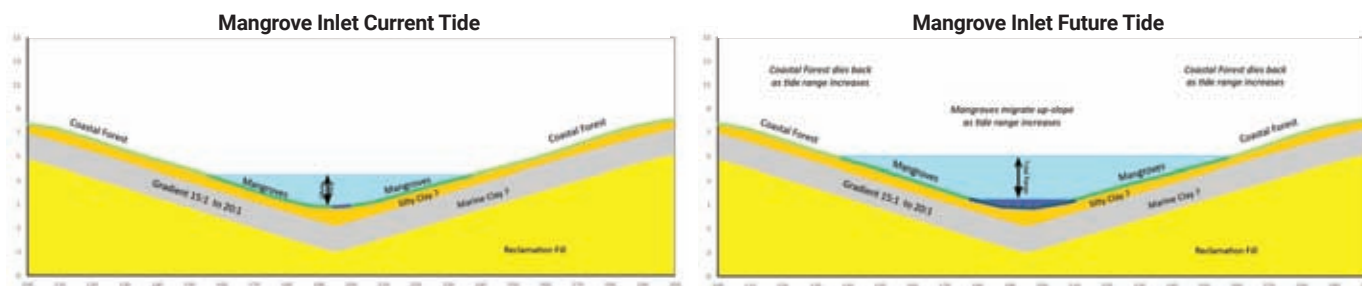
- This is the cross section of the gradients and elevations of the proposed reclamation works (red line), matched against the current tidal range (light blue; the upper line indicates maximum water level at high tide, while the lower line shows the water level at low tide).
- The blue dotted line indicates the proposed gradient of the water courses that will serve as mangrove inlets (see Figure 2 for more information).
- The cross section of the proposed artificial coral reef can be seen on the right side of the diagram (see Figure 3 for more information).
- This is the cross section of the gradients and elevations of the proposed reclamation works, matched against the future tidal range, which is projected to be as much as 1.5m above the current tidal range.
- Crucially, the NSS proposal anticipates the overlap between the current and future tidal ranges in the design of the mangrove inlets and the artificial coral reefs.

FIGURE 2

How the 'mangrove inlets' work



- The proposed mangrove inlets are designed to be wide enough to cope with the anticipated impact of rising tidal ranges.



- More importantly, the banks of the inlets are designed to have a gradient that will allow mangrove trees and their propagules to progressively move upslope in response to rising tidal ranges.

“These would be artificial water courses, and we envision the elevation and gradients of these systems – in effect, the vertical profile of the channel – to be such that they would not only facilitate the establishment of mangroves, but also allow them to progressively move upslope as sea levels rise.”

The NSS concept also outlines how the Long Island plan could help reestablish corals. “Our proposal for

- The NSS proposal also calls for the establishment of coastal forests above the high-water mark at the current tidal range. These coastal-forest habitats will naturally recede as the tidal range increases over time, and will be replaced by the natural establishment of mangroves.

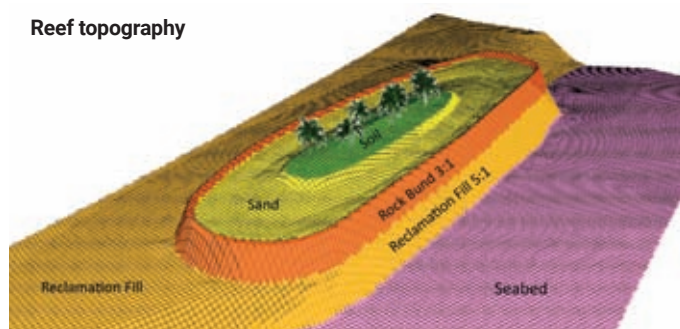
curved coastal frontages and gentler intertidal slopes creates an opportunity to have artificial reefs,” said Mr O’Dempsey. (see Figure 3)

“This can be achieved by reclaiming small islets off the centre of each curved coastline, and adding rocky material on top of the reclaimed soil. The rocky substrate would be able to support coral establishment, and we could end up with a patch reef.”

FIGURE 3

How to establish the artificial coral reefs

Reef topography

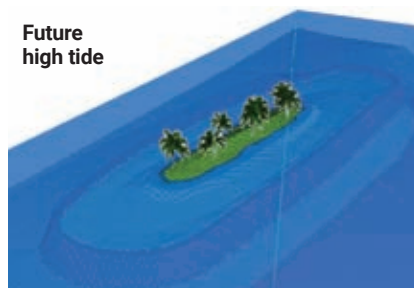


- This is the 3D view of the proposed reclamation strategy. It indicates the relative heights of the sub-surface reclamation, that is, the sections of reclaimed soil that will be underwater.
- The NSS proposal calls for a rock bund (dark orange) to be added on top of the reclamation fill (orange).
- The rock bund should consist of rocky substrate that coral spawn can attach to.
- Coral spawn will be carried in naturally by tidal currents, but the manual establishment of corals should also be considered.
- Seagrass may also establish themselves, and this can be further facilitated by direct planting.

Mr O’Dempsey said it is likely that corals will naturally establish themselves on the rocky substrates due to the availability of coral spawn released annually into the tidal currents. However, manual establishment of corals could also be considered, depending on cost and the availability of resources.

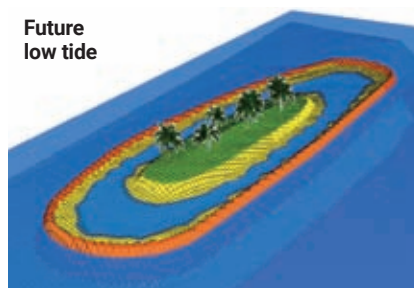
The NSS concept for the Long Island plan has already been presented to the authorities. In the meantime, the Urban Redevelopment Authority and its partner agencies have indicated that they remain open to public feedback, with more in-depth engagements to

Future high tide



- This image shows the extent to which the coral reef will be submerged during future high tides, with only a small strip of land remaining above the high-water mark.

Future low tide



- Conversely, at low tides, the intertidal habitat becomes accessible. The NSS proposal anticipates that some form of public access to the artificial reef and intertidal habitat will be allowed.

- The NSS proposal anticipates that the proposed islets, which will sit above the highest projected tidal levels, could be “greened” and developed into parks or picnic facilities.

be conducted over the next few years, alongside progress on technical studies.

Mr O’Dempsey readily agreed that further research is needed. The Long Island plan is, after all, a mega project that will take decades to develop, and the stakes – and their associated costs – will be very high. “We don’t expect our proposed concept to become the final design. We understand that there is a lot of work yet to be done – more designs and more research – before planners and scientists come in to assess if any of these are feasible.” 🌱

Birds and friendships know no borders

NSS volunteers and staff joined the 36th Fraser's Hill International Bird Race in June, and made new friends and memories along the way.

By **NAZURAH BINTE AMIR HAMZAH**

Birds don't have boundaries," Mr Shanmugaraj Subramaniam said, while visiting a bird exhibition located in Fraser's Hill. "There are areas where certain bird species cross over from elsewhere into Malaysia, as they journey on the East Asian-Australian Flyway, which Singapore is also a part of."

Mr Shan is the executive director of the Malaysian Nature Society (MNS), which advocates for the conservation of nature and wildlife in Malaysia. MNS, along with global non-governmental organisation BirdLife International and its partners, had come to Fraser's Hill to support the 36th International Bird Race hosted by Tourism Pahang.

Fraser's Hill is a well-known destination for bird-watching due to its higher altitude and cool temperature, which attract a diverse range of birds depending on the season. The hotels and restaurants at the former colonial



Mr Shanmugaraj Subramaniam (left), a local birder and an executive manager of the Malaysian Nature Society, took the NSS members on a bird walk around Fraser's Hill the day before the event. Photo: Nazurah Binte Amir Hamzah



Participants from 58 countries, including Singapore, formed 127 teams for the 36th International Bird Race in Fraser's Hill.



hill station are not far apart, with many trails and gently sloping roads connecting them together, making the resort an ideal destination for eco-tourists of varying fitness and experience.

The 36th International Bird Race is one of the most important events on the calendar of Pahang Tourism, as it offers a unique opportunity to bring together naturalists and bird enthusiasts from all over the world to a beautiful corner of Malaysia. More importantly, for conservation advocates like Mr Shan, the Race is also a way to gather annual data on the birds in the area. Such data is useful for gauging the population trends of various bird species.

Participants from 58 countries, including Singapore, formed 127 teams for the Race, which took place on the weekend of 20 to 22 June. Representing Singapore were 24 NSS volunteers and staff. For most of them, the Race was also an opportunity to go birdwatching in another country, and to make new friends.

The Race officially kicked off on the morning of 21 June and lasted 24 hours. While the majority of the NSS volunteers were not experts in birdwatching or were new to Fraser's Hill, they were mostly happy to get the chance to learn more about the local birds.



NSS members spotted unique birds such as the black and crimson oriole (left), and the lesser shortwing (above). Photos Mithilesh Mishra

The hotels and restaurants at Fraser's Hill are not far apart, with many trails and gently sloping roads connecting them together, making the resort an ideal destination for eco-tourists.



Also spotted were the little pied flycatcher (left) and the rufous-brown flycatcher (right). And then there's the red-headed trogon (centre), one of the biggest "stars" of Fraser's Hill. Photos Mithilesh Mishra



The organisers launched the 36th Fraser's Hill International Bird Race on the morning of 21 June at the resort's "town square". More than 120 teams from several countries participated in the 24-hour race. Photo: Nazurah Binte Amir Hamzah



For most of the NSS participants, the trip was an opportunity to make new friends and go birdwatching in a different country. To their pleasant surprise, one of the race teams among them came in fourth in the Novice category. Photo: Michelle Hariff

The 41st Singapore Bird Race

November 15–16, 2025



If you liked what you just read about the Fraser's Hill International Bird Race, you might be interested to know that NSS will be holding the 41st Singapore Bird Race (SBR) on 15–16 Nov 2025, in partnership with Mapletree, BirdLife International, NParks, and eBird.

The 41st SBR aims to promote the appreciation, awareness, and conservation of wild birds in Singapore. The theme this year is "Woodland Birds", highlighting the importance of conserving our remaining patches of woods, which are home to many species that are adapting to survive in our city. They include the common flameback and the long-tailed parakeet, which will be the main mascots for the 41st SBR.

Sign up at: nss.org.sg/nss-bird-race/

SEVEN CATEGORIES

- **Marathon** - participants have 24hrs to do their bird-watching.
- **Sprint** - for advanced bird-watchers.
- **Novice** - for bird-watchers with up to two years of experience.
- **Family** - for teams that have at least two family members, including at least one parent and one child (up to 12 years old).
- **Photographer** - for two-member camera teams.
- **School (Primary)** - for primary-school pupils; each team must be accompanied by a teacher.
- **Youth** - for 13- to 18-year-old participants.

REGISTRATION FEES

- S\$15 per adult NSS member.
- S\$20 per adult non-NSS member.
- Free for youth and students up to 18 years old, but registration is still required.

Except for the participants of the "Marathon" category, everyone else will start the Race on 16 Nov 2025.

"I was quite lucky to be in a team with a lot of the older, birding members. So, I learnt a lot from them," said Ms Guo Yichen, a fresh graduate from the National University of Singapore (NUS).

By the end of the Race on 22 June, the NSS volunteers had found and identified over 50 species of birds, including birds such as the red-headed trogon (*Harpactes erythrocephalus*). Better yet, they also spotted animals from other taxa, such as the black-furred gibbon known as the siamang (*Symphalangus syndactylus*) and the Rajah Brooke's birdwing (*Trogonoptera brookiana*), Malaysia's national butterfly.

"The trip really opened my eyes to the diversity of species across Southeast Asia," Ms Guo said. "We need to be able to conserve these regions, but also more broadly to understand the effects of global warming on these types of habitats."

Significantly, birds can often be a lead indicator of emerging ecological trends in natural areas, as they are easier to spot and monitor compared to other taxa. Some of the NSS volunteers observed during the Race, for example, that some species that are more typically found in lowland forests could also be seen now in Fraser's Hill. This could possibly indicate the impact of climate change driving species to higher altitudes to escape warmer temperatures in their original habitats.

"We need a lot of eyes to watch birds and to create interest in loving nature," Mr Shan said. "When birders from other countries come here and document birds, they will naturally share their findings with others in their own organisations. This could indirectly encourage the host country to look at this as another important area where we can promote nature conservation." 🌿



Nazurah binte Amir Hamzah is an intern at Nature Society Singapore. She enjoys exploring different parts of Singapore to gain new experiences. She finds joy in reading and writing stories, along with other forms of creativity.



The common hill myna was one of the three species that a group of citizen scientists monitored in Springleaf forest.
Photo: Mithilesh Mishra

The birds of Springleaf forest

Springleaf forest could be an important ‘green corridor’ for wildlife, based on the data gathered by a group of citizen scientists who found a rich diversity of bird species in the area.

By **QIU JIAHUI** and **LAN TIANXIANG**

Straw-headed bulbuls, long-tailed parakeets, and the common hill myna have a significant presence in Springleaf forest, making the area potentially important for providing our resident birds with a safe habitat and connection to nearby woodlands.

That is what we discovered after a series of monthly surveys conducted from February 2021 to

January 2022. We recorded a total of 77 bird species, of which 20 (or 26 per cent of the total) are listed as vulnerable, near-threatened, or endangered in the third edition of the Singapore Red Data Book. Although 11 of the species we observed were not evaluated due to their non-native status, the overall numbers still hint at the rich biodiversity that can be found in the area.

We are a group of alumni from the Bachelor of Environmental Studies programme at the National University of Singapore. We believe that one way to understand and raise awareness of a forest's conservation value is to ascertain its importance to species of conservation significance. That was why we identified three target bird species to focus on in our study of Springleaf forest, namely the straw-headed bulbul (*Pycnonotus zeylanicus*), the long-tailed parakeet (*Psittacula longicauda*) and the common hill myna (*Gracula religiosa*).

The straw-headed bulbul, in particular, is critically endangered globally. Singapore is its last stronghold, but even here it is classified as endangered. As for the long-tailed parakeet, it is listed as vulnerable in the IUCN Red List, and rated as near-threatened in Singapore, with a decreasing population trend. Similarly, the population of the common hill myna is in decline, prompting the recent change of its local conservation status from least concern to near-threatened.

We hatched the idea of surveying Springleaf forest as far back as 2019, when we first got together to plan and discuss the project. To ensure its rigour, we sought advice from Dr Yong Ding Li of Birdlife International and Dr Ho Hua Chew of Nature Society Singapore. We surveyed the forest to identify four observation routes or "transects", each containing six to seven count stations spaced about 100m apart. We then put out a call for volunteers, and carried out training sessions to familiarise them with the study site and survey methodology.

Unfortunately, we had to put the project on hold due to Covid-19. We adapted accordingly, for example, by holding one component of the volunteer training online, and organising multiple in-person training sessions in separate groups, in compliance with social-distancing rules. The training went smoothly, thanks to everyone's cooperation, and by the time the Covid restrictions were relaxed in 2021, we were ready to get started right away.

We conducted our surveys



SPRINGLEAF FOREST is a small patch of woods nestled between the Central Catchment Nature Reserve and Lower Seletar Reservoir, and it links these areas to the dense woodlands of the Khatib-Ubin Important Bird and Biodiversity Area farther east. The forest is made up of two parts: The northern half is managed under Springleaf Nature Park, while the southern half has been earmarked for development into private housing, and is not under legal protection. Springleaf's location makes it a potential corridor for wildlife moving to and from the larger forests nearby. It is crucial to understand and conserve what is left of the forest, due to its potential value to local biodiversity.

TABLE 1

Conservation status of the recorded species, according to the Singapore Red Data Book (3rd edition)

Least Concern species	Vulnerable species	Near Threatened species	Endangered species	Un-evaluated species	All observed species
46 (59.7%)	9 (11.7%)	8 (10.4%)	3 (3.9%)	11 (14.3%)	77 (total)
					65 (north transect)
					50 (south transect)

over a period of 12 months, and recorded sightings of the straw-headed bulbul at 58% of our 24 transect points (that is, 14 out of 24); we had the same figure for the common hill myna, which was observed at 58% of the transect points, and the long-tailed parakeet was recorded at every transect point.

We believe that Springleaf forest could be well-suited to the straw-headed bulbul, as it favours woodlands that are next to large water bodies. Similarly, the forest's proximity to the central water catchment area may be a reason for the presence of the long-tailed parakeet, which favours lowland

The straw-headed bulbul is critically endangered globally. Singapore is its last stronghold.
Photo: Mithilesh Mishra



transitions.

Qiu Jiahui holds a Bachelor of Environmental Studies from NUS. She is interested in the study of ecosystem services, climate policy, and energy



population ethics, and anti-natalism.

Lan Tianxiang is an alumnus of the NUS Environmental Studies programme. He is especially interested in philosophical issues related to the environment, including environmental ethics,

Long-tailed parakeets favour lowland swamp forests, but they have also been observed in Springleaf forest.
Photo: Mithilesh Mishra



Our findings suggest that Springleaf forest could serve as both a habitat and a nature corridor. The connectivity provided by secondary forest patches like Springleaf is crucial to biodiversity conservation, especially in a densely urbanised city like Singapore, where forest fragmentation is extensive.

swamp forests. The common hill myna, in contrast, prefers to forage in denser forests, and it may be in Springleaf because it is using it as a connection between the larger forests nearby.

Our findings suggest that Springleaf forest could serve as both a habitat and a nature corridor. The connectivity provided by secondary forest patches like Springleaf is crucial to biodiversity conservation, especially in a densely urbanised city like Singapore, where forest fragmentation is extensive.

The idea of enhancing habitat connectivity between forest fragments is not new to Singapore, and promising results have been achieved in recent years. For instance, there is evidence that the Rail Corridor is now used extensively by the straw-headed bulbul and other bird species of conservation significance. We think there is potential for the same to happen in Springleaf forest.

We are now working on revisions to our data, in preparation for its submission to an academic

journal. The Straw-Headed Bulbul Watch planning team, consisting of Lan Tianxiang, Kee Jing Ying, Vera Sim, Fang Ning Too, Yew Ke Yao, Wei Qiang, Dennis Tan and Qiu Jiahui would like to thank the citizen-science volunteers of the Straw-Headed Bulbul Watch. This study would not have been possible without their valuable time and effort. We also received technical assistance from Dr Yong Ding Li, Anuj Jain, and Dr Ho Hua Chew. We are grateful for their advice. 🌿



Having spotted and pointed out leafcutting bees around the National Library, NSS volunteer James Khoo told his audience that bees sting only when they feel threatened. By letting the bee wiggle its body after it has stung someone, it can even fly away alive.
Photo: Hwang Kok Siong

Making nature come alive

At Festival of Biodiversity 2025, Nature Society Singapore set up booths, conducted an insect walk, and collaborated with several schools to raise awareness of local conservation work.

By LIN SHIQI SARAH



From left: The pupils of Teck Whye Primary School drew different animals, such as the mousedeer and pangolin, that other children could then colour and paste on paper headbands that they could take home; NSS executive director Huang Ningxin sharing her hopes for nature education with Education Minister Desmond Lee at the Festival of Biodiversity. Photos: Hwang Kok Siong

Organised by the National Parks Board (NParks), the Festival of Biodiversity (FoB) is an annual event

to create awareness and foster appreciation of our natural heritage. This year's festival was held at the National Library building on 31 May and 1 June.

NSS participated with a couple of booths, and organised walks and talks to highlight different conservation efforts. Students from two schools participating in our Every Singaporean a Naturalist (ESN) programme – Raffles' Girls School (Secondary) (RGS) and Teck Whye Primary School – also pitched in to help.

Bringing out the fun

The RGS students engaged the visitors with their self-led interest groups, Project BioBliss and TheWildSide. TheWildSide was started in 2014 to raise awareness about bird conservation in Singapore. It encourages the public to play a part, for example, by uploading their bird sightings to platforms like iNaturalist, a global network of nature enthusiasts who record and share their observations of biodiversity.

When asked about what she thinks would inspire other youth to care for nature, RGS student Binnie Chan, a member of Project BioBliss, said: "You can start by advocating for the area of biodiversity that you're most passionate about. It doesn't have to be something that is a global issue. It can be just what you feel is important for others to know and appreciate."

Meanwhile, the pupils from Teck Whye Primary School conducted a headband-making workshop to raise awareness of Singapore's endangered animals. Their workshop was pitched at young children and their parents, and made use of interactive iPad games that provided information about common birds and mammals in Singapore.

Our ESN schools were not the only ones who helped out at the festival. We were also joined by the students from Hwa Chong Institution (Secondary), who shared



RGS students set up interactive games at the NSS festival booth to engage the public and raise awareness of Singapore's diverse wildlife. Photos: Lin Shiqi Sarah



Among other things, NSS exco member and past president Shawn Lum told his audience it's not always clear that exotic species are invasive and harmful to native biodiversity. Photo: Hwang Kok Siong

the findings from their horseshoe crabs conservation project at the NSS booth. The students were mentored by Mr Lester Tan, chairman of the NSS Marine Conservation Group.

Meet and greet

The festival was also an opportunity for important stakeholders to meet the various nature groups in Singapore. These guests included Minister for National Development Chee Hong Tat; Minister for Digital Development and Information Josephine Teo; Minister of State for National Development, Trade and Industry Alvin Tan; and Minister for Education Desmond Lee.

Making lessons come alive

Besides the booths and workshops, NSS exco member and past



Hwa Chong Institution (Secondary) students were also at the NSS booth to tell visitors about horseshoe crabs. Photo: Lin Shiqi Sarah

president Shawn Lum also gave a seminar at the festival, entitled "Singapore's Amazing Plant Life". The talk was attended by about 200 members of the public.

Dr Lum shared insights into Singapore's native plant and tree species, and explained how some of them have proved surprisingly resilient despite our country's heavily urbanised environment.

Meanwhile, NSS volunteer James Khoo conducted insect walks around the grounds of the National Library building. He showed his participants that interesting insects can still be found even in the middle of a concrete jungle, including amazing finds like leafcutting bees and bi-coloured ants.

All in all, the FoB 2025 provided multiple opportunities for meaningful conversations between nature groups, key policymakers, and members of the public. We are grateful to have had the chance to spread our love for nature and Singapore's natural heritage. 🌿



Lin Shiqi Sarah is an intern at Nature Society Singapore. Outside of work, she is an avid traveller who cherishes time with family and friends. She finds joy in nature walks around her neighbourhood, admiring the beauty of local flowers and fauna.

Shaping the environmentalists of tomorrow

It's been a busy year so far for the NSS ESN team. Here's a look back on what we've achieved in the first half of 2025.

By LIN SHIQI SARAH

Every Singaporean a Naturalist (ESN) is Nature Society Singapore's (NSS) flagship citizen-science and education programme, through which we develop the knowledge of our students and teachers. Every year, we organise a variety of workshops, activities, and competitions for our participants, to engage and inspire them to become the next generation of environmental stewards.

NSS Nature Educators Workshop

CONDUCTED on 8 Feb at Raffles Girls' School (Secondary), the Nature Educators Workshop aimed to help teachers better understand how they can approach and interact with nature through other perspectives. A total of nine teachers from eight schools attended the workshop. NSS Education Committee chair Tan Beng Chiak conducted a variety of nature-education activities and reflections that the teachers could adapt and use with their own students.



Chair of the NSS Education Committee Tan Beng Chiak (centre) presented ways in which teachers could engage their students through nature activities. Photo: NSS ESN



In an innovative exercise, the teachers were blindfolded, forcing them to rely on smell and touch to identify plants. This was meant to help the teachers gain first-hand experience in the other ways to describe plants. Photo: NSS ESN

Festival of Biodiversity 2025

THE NATIONAL Parks Board's annual Festival of Biodiversity was held this year at the National Library building, where we set up a booth, and conducted walks and talks for the public on 31 May and 1 Jun. Two of our ESN schools also participated in the festival. For example, students from Raffles Girls' School (Secondary)'s Project BioBliss and TheWildSide interest groups shared their initiatives for raising awareness of nature and biodiversity, while the pupils from Teck Whye Primary School's Green Club demonstrated their hands-on nature-learning activity. Separately, students from Hwa Chong Institute (Secondary) mentored by NSS Marine Conservation Group chair Lester Tan showcased the ongoing efforts to protect Singapore's horse-shoe crabs.



Minister for National Development Chee Hong Tat (right) met our president, Mr Leong Kwok Peng, at the NSS booth for the straw-headed bulbul working group, where we showcased plans for conserving the critically endangered species. Photo: Lin Shiqi Sarah

The participants raced to spot and record wildlife in six nature parks across Singapore, including Bishan-Ang Mo Kio Park, Jurong Lake Gardens and Singapore Botanic Gardens. Photo: Brandon Koh



NSS ESN 4th Biodiversity Race 2025

One of the biggest events on the NSS ESN calendar, this year's Biodiversity Race drew a record total of 177 students from 14 primary and secondary schools. Together, they formed 46 teams that raced to spot and record as many species as they could in six locations across the island on 4 Jun. The race began at 8am and lasted three-and-a-half hours, after which the students and their teachers went to Mapletree Business City to share their Race reflections through poems, skits, and songs.

During the prize-giving ceremony, the guest-of-honour Alvin Tay, Independent Non-Executive Director of MPact Management Ltd and Mapletree CSR Board Committee Member, talked about the importance of conservation and shared his memories of nature when he was young. He congratulated the participants for making

a total of 951 observations of 106 species, of which almost 90% were of research grade. Mr Tay then presented the prizes to the top three teams with the Highest Number of Species with Research-grade Observations.

Dr Andie Ang, Head of Primate Conservation and Singapore Programmes at Mandai Nature, then presented the awards for the teams with the Most Unique Observations. She was followed by Ms June Ang, Director of Corporate Strategy & Communications at Canon Singapore, who presented the prizes for the Best-photographed observations.

The Biodiversity Race would not have been possible without the support of our programme co-sponsor Mandai Nature, our event co-sponsor Mapletree, venue sponsor Mapletree Business City and our imaging equipment sponsor Canon Singapore. We thank the NSS Exco, ESN Working Group, staff, interns, and volunteers for their hard work behind the scenes. And of course, we would also like to congratulate all teams for their enthusiastic participation!

Through these initiatives and more, the NSS ESN team are working with our partners to pave the way for a generation of informed and passionate naturalists, dedicated to preserving the rich biodiversity of Singapore and beyond.



Team Nature Champs from Teck Whye Primary School won the Most Unique Observation prize for spotting a four-lined tree frog. Photo: NatureChamps



Team Avis Fera from Raffles Girls' School (Secondary) captured this picture of a grey heron in action, and won third place for Best-photographed Observation. Photo: Jovina Cheong



The participants enjoyed a delicious lunch at Mapletree Business City, where the Award and Closing Ceremony was held. Photo: Brandon Koh



Our guest-of-honour Alvin Tay, representing Mapletree, congratulated the teams for recording 951 observations of 106 species, of which nearly 90% were of research grade. Photo: Brandon Koh



Urgent action needed to manage Singapore's deer population

The majestic sambar deer is the largest terrestrial mammal in Singapore's shrinking forests, and there is a rising risk of serious human-wildlife conflict with the species unless effective management measures are taken soon.

By **JOHN YIP**

The number of sambar deer (*Rusa unicolor*) in Singapore has grown alarmingly, and may even exceed 100 very soon, according to an independent nature group that has been monitoring the species since 2021. Mr Jay Lim, founder of the Sambar Deer Conservation Group, says an action plan must be implemented to manage the burgeoning deer population, or the risk of human-wildlife conflict – such as from vehicle collisions with stray deer – would become inevitable.

The Sambar Deer Conservation Group was started informally in late 2021 by a number of individuals with a shared interest in observing the largest species of terrestrial mammal in Singapore. Initially, they shared their sightings only among themselves but, gradually, as they became more familiar with the animals, they also started to identify and profile individual deer, and to conduct herd censuses, area by area.

“By early 2022, we were in contact with the NParks (National Parks) wildlife management team to share our information and pro-



Sambar deer tend to come out and feed from the late evening and into the night. They were thought to have been nearly wiped out in Singapore by the 1970s, but it cannot be ruled out that a remnant population had survived in hiding.
Photo: Tan Yong Lin

vide feedback,” said Mr Lim. “We were especially concerned about the need for safety buffers in high-risk areas to prevent roadkills. This marked the beginning of a good working relationship with NParks, and the start of a more serious and productive commitment by the members of the group.”

Officially, the number of sambar deer in Singapore is believed to be about 15, according to a paper published by NParks in 2021. A separate study published in 2023 by 24 researchers from the United States, Australia, and Singapore found evidence that sambar deer were



The Sambar Deer Conservation Group has set up multiple camera traps along forest trails to monitor the movements of the animals, and also to track their numbers. This male was photographed in April 2025. Photo: Jay Lim

“We expect the **total population to breach 90 this year**, so it’s necessary to implement an action plan as soon as possible, or **human-wildlife conflict and road accidents** with the deer will become inevitable.”



Sambar deer are very shy animals and female deer, like the one pictured here, are often on the lookout for potential danger when it is travelling in a herd. Photo: Jay Lim

making a comeback, despite having been nearly wiped out between the 1940s and 1970s, due to hunting and habitat loss.

While the academic study did not provide a specific estimate of the sambar deer population, it noted that the species had spread from the Mandai forested areas near the Singapore Zoo into parts of the Central Catchment Nature Reserve (CCNR) — as far south as MacRitchie and as far west as Bukit Timah.

The Sambar Deer Conservation Group has been independently monitoring the deer herds with camera traps. “By early 2022, we

were recording an estimated population of 46 deer spread across three herds in the areas around Mandai, Chestnut Nature Park, and Seletar,” said Mr Lim. “In February 2023, a part of the Mandai herd broke away to form a fourth herd in Gali Batu. And by the end of 2024, we had recorded an estimated total of 80 individuals across the island.

“Early in 2025, we discovered a new group comprising two males and two females in the forest near the Singapore Island Country Club (SICC). Together with members of the NParks team, we surveyed the site and got permission from SICC to



Mr Jay Lim has closely studied captive sambar deer (above) in Indonesia in order to learn their habits and behaviours. He has built up so much trust and familiarity with the wild deer he monitors in Singapore that a few would voluntarily come up close to him, as they no longer consider him a threat. Photo: Jay Lim

deploy camera traps. We conducted three months of field surveillance along the club's perimeter, and regularly recorded the deer's presence. Over time, it's possible that this group would become the fifth sambar deer herd in Singapore."

However, Mr Lim is alarmed by the rapid expansion in sambar deer numbers. "We expect the total population to breach 90 this year, so it's necessary to implement an action plan as soon as possible, or human-wildlife conflict and road accidents with the deer will become inevitable."

Getting into an accident with sambar deer can have very serious consequences, as these are large animals weighing 100kg to 150kg.

One way to address the risk to public safety would be to install "exclusion fencing" along major roads where the sambar deer and other wildlife have been known to appear. It was announced in April 2025 that NParks will set up more of such fencing near the Bukit Timah and Central Catchment reserves. At up to 1.8m high, these fences would be tall enough to prevent large animals like the sambar deer from jumping over, and the barriers are slated for completion by 2026.

The Sambar Deer Conservation Group was among the stakeholders that NParks had consulted for this initiative, alongside groups like Acres, the Herpetological Society

of Singapore, the Jane Goodall Institute (Singapore), the Mandai Wildlife Group, and Nature Society Singapore.

Mr Lim believes that more can still be done. "The key factor influencing deer behaviour is the lack of food," he said. "Most fruiting plants or trees are found along the fringes of the forest, and these are often close to urban areas, public parks, and roads. So, besides fencing, we should also consider introducing abundant 'all-season' varieties of fruit trees around and inside the CCNR. Such trees would not only support the deer population, but also provide food for other wild animals like bats, insects, and birds."

Mr Lim said there should also be stronger enforcement against night-time intrusions into the Central Catchment Nature Reserve. "All sections and trails of the CCNR must be closed to the public by nightfall," he said. "This will prevent intruders from disturbing and interfering with the feeding activities of nocturnal animals like the sambar deer, pangolins, porcupines, mousedeer, and civets."

"I'm confident that with such measures, there will be a drastic reduction in wildlife intrusions into public areas. Crucially, for the sambar deer, there will also be a significantly reduced risk of death or injury from road accidents." 🌿

DID YOU KNOW?

It's usually a **female sambar deer that leads the herd**, and not the male, which typically lives alone. However, a male would often take the lead when a herd is making a long-distance relocation to a new area.

The sambar deer loves water and is actually a **strong swimmer**, capable of swimming up 2km to 3km in search of new grounds.

Sambar deer were native to Singapore, but they were **believed to have been locally wiped out by the 1970s**. It cannot be ruled out, though, that a few individuals had survived and remained hidden. The **current population is likely descended from individuals that escaped from captivity**, including from public or private zoos.



Sambar deer are herbivores, but they also need **minerals** to stay healthy. Unfortunately, areas like the Mandai forest lack natural mineral licks, also known as salt licks. **Artificial licks** can be created by placing blocks of salt (pictured above) in strategic locations. The deer can consume them to acquire essential nutrients like calcium and iron for bone and muscle growth.



John Yip is a Senior Executive of the NSS Every Singaporean a Naturalist programme. He joined NSS after a long career in print and broadcast journalism, and is currently the editor of the *Nature Watch* magazine. He enjoys hiking and cycling and outdoor adventures.



TRIBUTE

As National Development Minister, Mr Desmond Lee has done a lot for the nature community, listening to our

Desmond Lee *A Champion for Nature*

concerns and implementing lasting conservation initiatives. Nature Society Singapore would like to share some of our words of gratitude and well wishes, as Mr Lee embarks on his new role as Education Minister.





Dr Geh Min

Former president of NSS (2000-2008),
former nominated member of Parliament
(2005-2006)

Every meeting I've had with Minister Lee was memorable but perhaps the most memorable for me was when he was first appointed to head the National Development Ministry (MND). Emboldened by his reputation for approachability, I requested an informal meeting to discuss the nature-conservation agenda and I was impressed by his prompt acceptance.

"He proved to be not only a deeply knowledgeable member of the nature community but also a virtuoso in the art of active listening. I left with the conviction that he would do his best to comprehensively integrate nature conservation into his portfolio.

"This belief was justified by his subsequent policies, many of which I believe will be foundational and recognised as such over time. But I feel the most lasting effect of his term as National Development Minister is the better trust and cooperation that has been fostered between nature groups and the government.

"His new appointment as Education Minister is great news. I believe he will implant and strengthen environmental awareness and literacy in young Singaporeans, with himself as an ideal role model for the younger generation."

Dr Ho Hua Chew

Former chair of NSS Conservation Committee

I met Minister Lee face-to-face for the first time many years ago at a government function where he was the guest-of-honour. Through our brief conversation, I was surprised to find that he was quite aware of my role in the NSS Conservation Committee at the time. This inspired me to push on with our NSS conservation efforts.

"Mr Lee is very well-known for his contributions to conservation in Pulau Ubin, but I wish to highlight two of his other contributions as also highly important. Firstly, the conservation of the remaining mangroves and mudflats in Sungei Mandai, as well as their integration into the northeastern coastal wetlands, from the Sungei Buloh Wetland Reserve, to the Sungei China mangrove at the end of Lim Chu Kang Road. This initiative was ecologically visionary, and fundamental to the sustainability of critically endangered wetland wildlife such as the black-and-red broadbill, the estuarine crocodile, and smooth-coated otters.

"The Khatib Bongsu mangrove was the other ecologically important habitat that Mr Lee had helped to conserve. Lying east of the Causeway, on the northeastern coastline, this intertidal habitat is a major haven for the straw-headed bulbul (critically endangered globally) and other wetland wildlife.

"I have great hopes that, with his experience in conservation and his solid ecological background, Mr Lee will be able to restructure our education system at all levels as Education Minister, and inculcate in students a love for nature."



Lester Tan

Chair of NSS Marine Conservation Group

I feel that Minister Lee's most important contribution was his passion and willingness to initiate discussions with nature groups much earlier in the development phase. This allowed for greater flexibility in planning, and a deeper understanding of the constraints on all sides.

"This open-mindedness — demonstrated by Mr Lee's willing heart and listening ears — has helped to foster a more constructive environment for engagement. As a result, developments are now more thoughtfully managed, leading to reduced impact on biodiversity and, in many cases, even enhancements to the surrounding natural environment.

"It also helps that Mr Lee is a nature lover. I fondly remember a kayaking trip with him in Sungei Jurong. I was his kayaking buddy, and we enjoyed a scenic cruise while keeping an eye out for birds. We also shared meaningful conversations about the area's history.

"Now that he is the Minister for Education, I hope Mr Lee will be able to integrate nature appreciation and conservation topics into the school syllabus. There is a valuable opportunity here to instil an early love for nature, and nurture a deeper sense of environmental responsibility, as well as support the broader vision of a City in Nature."

Wing Chong

Former chair of NSS Bird Group

I vividly remember the first time I met Mr Lee in 2014: It was 4am, and he came from the carpark dressed in a khaki long-sleeved shirt, along with hiking pants and boots, and carrying binoculars, a small camera, and a bottle of water. He had accepted our invitation to join the 30th Singapore Bird Race in 2014. We wanted to make the Race bigger and better, and therefore hoped to get a minister to participate.

“Mr Lee was Minister of State for National Development at the time, and we thought he could be an important partner to work with on future conservation issues. Apparently, that was his introduction into our birding world, and he subsequently participated in many more bird races, including the 40th edition last year, which drew a record number of participants.

“Through the years, Mr Lee has worked very closely with people on the ground on conservation-related issues. Activists will remember him as a hands-on person, and a down-to-earth friend. He actively promotes love for nature, and has initiated and even led nature walks for young people in his constituencies. He consulted us in the setting up of the highly successful Nature Kaki group, and we were invited to some of its activities. Mr Lee has also been hosting the Ubin Festival and Ubin Day every year.

“I hope that, in his new role as Education Minister, Mr Lee will be able to drive and promote conservation activities in all education institutions. This will help shape and groom conservation champions for future generations.”



Leong Kwok Peng

President of NSS

Over the 10 years or so, I have organised many kayaking trips that involved Minister Lee, and he was always obliging and energetic when he joined us on these explorations of our remaining wild spaces, particularly Singapore's last remaining mangrove-lined rivers.

“One of my most memorable moments with Mr Lee was when a large flock of shorebirds suddenly flew overhead, right in front of him, as we kayaked in Sungei Mandai Besar. It was a magical sight, and I was convinced at the time that the Mandai mangrove would be conserved. Sure enough, I remember Mr Lee recalling that experience years afterwards in some of his public speeches.

“During his term in MND, the government gazetted the Mandai mangrove and mudflats, as well as Sungei Khatib Bongsu as nature parks. The Sisters' Islands were also gazetted as a marine park to protect the corals and marine life there.

“It is my hope that, as the Minister for Education, Mr Lee can influence schools to initiate more nature-awareness programmes. It is only when the young start to notice nature in their neighbourhoods that they will understand the important role of green and blue spaces in supporting life, and that is when even more magic will start to happen.”



Snapshots of Past NSS Events



1 **Butterfly walk at Bukit Gombak Park, 27 Apr 2025.** The participants had a great time, with a common birdwing butterfly showing up almost as soon as they started. A total of 26 butterfly species were recorded, including the common mormon, plain tiger, and painted jezebel. They also found Dutchman pipes that had ripened. The participants were able to bring home some seeds to plant, as these vines are host plants for the common birdwing and common rose butterflies.



2 **Birdwatching at Pasir Ris Park, 17 May 2025.** A total of 17 participants recorded 31 bird species, including the black-crowned night heron, rufous woodpecker, rose-ringed parakeet, and the oriental pied hornbill.



3 **Butterfly walk at Pulau Ubin, 17 May 2025.** It was sunny and bright, with minimal humidity – perfect weather for butterfly watching, especially for the participating families. Parents had a wonderful time bonding with their children while enjoying the wonders of nature. They even encountered a great mormon butterfly!



4 **Forest clean-up at Pulau Ubin, 14 June 2025.** A total of 14 participants pitched in to help pick up litter in Pulau Ubin's forests. There was an exciting moment when they spotted a lesser false vampire bat.

Plant walk at Fort Canning Spice Garden, 14 June 2025. A total of 18 participants got to see the plants that provide the spices that are commonly used at home. They also learnt about the differences between asam jawa (tamarind) and asam keping (asam gelugor) trees. The tamarind is used in mee siam, while the asam gelugor is used for curry fish head dishes.





Join us!

We organise a variety of events that are open to NSS members and the public, from educational talks to birdwatching and rewilding activities. You can go to nss.org.sg/events for more information.



Birdwatching at Pulau Ubin, 15 June 2025. It was a good day for the 17 participants despite the hot and humid weather because they sighted as many as 22 bird species, including the stork-billed kingfisher, oriental pied hornbill, white-rumped shama, crested serpent eagle and even straw-headed bulbuls.

Training for mobile-phone macro photography at Pulau Ubin, 21 June 2025.

Eight participants were guided through the ins and outs of taking good macro photographs with their just mobile phones. They even got the chance to put their newfound skills to the test when one of them spotted the caterpillar of a common rose butterfly.



Rambling in Pulau Ubin, 21 June 2025. It was a fine morning for the 11 participants, despite the crowd, thanks to the sightings of many interesting animals, including the white-bellied sea eagle, white-rumped shama, a large flock of Asian openbill storks, and even a mousedeer!



Tree walk and forest bathing at Pulau Ubin, 22 June 2025. Led by Cynthia Wan, a large group of 15 participants learnt to tune their senses to the forest around them, and experience nature more intimately.



Birdwatching at Pulau Ubin, 28 June 2025. A total of 18 participants spotted as many as 30 bird species today. Everyone enjoyed very good views of the white-rumped shama. They also spotted the oriental pied hornbill, white-throated kingfisher, pacific swallow and the brahminky kite.

Shining a Spotlight on Our Volunteers

Our volunteers are at the heart of NSS' outreach and conservation efforts. We feature two volunteers who have made a big difference over the years.

Text by **NAZURAH BINTE AMIR HAMZAH**

A semi-retired energy and carbon-management consultant and lecturer, Mr Andrew Bell, 65, was a member of the Singapore branch of the Malayan Nature Society (MNS) in the 1980s.

Today, however, he is an active volunteer for Nature Society Singapore (NSS), especially for our

Andrew Bell

Making rewilding fun for newbies

helps out as a safety facilitator. For example, there is always a risk of heat injury during an outdoor activity, so Mr Bell takes care to remind rewilding volunteers to drink regularly and plentifully.

He also enjoys encouraging people to try new things. "When I'm out rewilding, especially with new people who are joining us for the first time, I try to make it fun for them by pointing out any birds, bird

rewilding programme, in which he

calls, butterflies and dragonflies which come by. I'm always hoping that I will make them enthusiastic enough to come again, or even become an NSS member."

Mr Bell believes more can still be done beyond the government's One Million Trees campaign. "Can we recreate green spaces which are suitable for insects as well?" he says. "Where insects thrive, there will also be trees, and a diversity of plants and wildlife, all living side-by-side with us, enriching our lives. That's how we can be truly connected with nature."

Mr Barry Clarke, 62, has been a member of the Nature Society since 1993, when he first volunteered to help create a map of Singapore showcasing the hard-coral relocation campaign run by the NSS Marine Conservation Group. He became a life member in 1997, and he and his wife later joined the NSS Every Singaporean a Naturalist (ESN) programme. Since then, they have been volunteering for our rewilding programmes at every opportunity.

For Mr Clarke, rewilding is a physical manifestation of the regenerative economy that everyone should be working towards. "Our personal growth is more important than GDP growth," he says. "Our prosperity, health, and human flourishing is as

Barry Clarke

We can be the change we want to see



reliant on nature and biodiversity as it is on income."

In this regard, the NSS rewilding programme has been fantastic for him. "The camaraderie

in doing something physical together reminds me of the team sports I used to play – and getting muddy is part of the fun, too!" says Mr Clarke. "But it's the shared sense of optimism that is the most wonderful, because that optimism prevails despite occasional setbacks, such as losing the Dover forest to public-housing development.

"We can be the change we want to see," he says, adding that rewilding activities can help people mentally as well as physically. "You can see and feel the progress."

As for his hopes for the future, Mr Clarke says: "I would like to see Singapore's efforts to rewild corners of the island regionally recognised, and equally for Singaporeans to be more aware of the Asean region's biodiversity, as well as the efforts to preserve and conserve the wildlife and natural landscapes that benefit us all."

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VISION To be Singapore's leading advocate of biodiversity and habitats.

MISSION With our evidence-based approach and partnerships with agencies, peers, and corporates, we lead habitat and biodiversity conservation in Singapore and with partners in the region. Through engagement, education, advocacy, and research, we inspire and enable people to take action towards a sustainable and biodiverse planet.

Why Join NSS?

Nature Society Singapore or NSS is dedicated to the study, conservation and enjoyment of the biodiversity and natural heritage of Singapore, our neighbouring countries and the wider world. The Society is a non-profit, non-government organisation. Our members work with commitment and altruism to conserve Singapore's remaining nature areas such as forests, mangroves, wetlands and reefs.






NSS was formerly known as the Singapore Branch of the Malayan Nature Society (MNS), formed in 1954. In 1991, we became independent as Nature Society Singapore. Both NSS and MNS continue to maintain strong links with each other.

NSS organises guided nature walks, horseshoe crab rescues, nature surveys, clean-ups, talks, exhibitions, and overseas nature trips. Going on an NSS outing allows you to meet people from all walks of life with a common passion!

Join NSS Today & Receive *Nature Watch* for Free!

The values that NSS upholds are a bulwark against the excesses of an ultra-materialistic society. If you too feel that protecting our biodiversity and natural heritage are important, join NSS today and support the Society in our work. Members will receive four issues of *Nature Watch* (NSS quarterly magazine) and a regular e-newsletter for free. Members also get to participate in fascinating nature-based activities and events which enable one to forge friendships with fellow nature lovers.

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How to Join NSS

To join as a NSS member, please fill in this form <http://tinyurl.com/NSSmembershipform>. It allows you to settle the membership fees within the link. Once your membership is approved by the Executive Committee, you will receive *Nature Watch* and the e-newsletter for free, as well as be able to attend all member-only events.

How to Join NSS as a Volunteer or Intern

- To join as a NSS volunteer, please fill in this form <http://tinyurl.com/NSSvolunteerform>.
- To apply for internship, please fill in this form <https://tinyurl.com/NSSinternshipform>.

Payment for Memberships and Donations

- Payment for donations and memberships can be made by PayNow or PayLah! by scanning the QR code or doing a PayNow transfer to Nature Society Singapore's **Unique Entity Number (UEN) S61SS0142H**. Please enter your name, contact number or email address in the UEN/Bill Reference Number. 
- Fund transfers can also be made to Nature Society Singapore's **DBS Bank Current Account Number 0339023574**.
- For other modes of payment, please get in touch with us via email: contact@nss.org.sg.
- We also welcome individual and corporate donations to the Society. Please inform us via email (contact@nss.org.sg) of the amount you wish to donate, along with your name, title or organisation. Donations may be made by the payment methods mentioned above. Your generosity is much appreciated. Donations are tax exempt.



Let Singapore's Abundant Biodiversity Be Your Legacy

Have you loved nature all your life? Please consider helping our conservation work with a gift to Nature Society Singapore in your will.

How to make a gift to the Society in your will

You can choose to inform us if you have considered us in your will, but it is not strictly necessary. Please ensure that your solicitor writes in the full name of the Society. We suggest below suitable forms of words that can appear in your will:

*I give to Nature Society Singapore (hereinafter called NSS), **Unique Entity Number S61SS0142H**, _____ % of the residue of my estate*

OR

a specific gift of _____

and I direct that (i) the proceeds may be used for the general purposes of NSS and (ii) a receipt signed by a person for the time being authorised by the Executive Committee of NSS shall be a good and sufficient discharge to my executors.



EST. 1954

**NATURE
SOCIETY**
S I N G A P O R E



NSS works to protect creatures such as the Mangrove Horseshoe Crab (*Carcinoscorpius rotundicauda*), whose numbers are in decline due to habitat loss and anthropogenic activities.
Photo: Lester Tan