nature nurtures
Greenery remains a distinctive feature of the Singapore landscape, in spite of the pressures of urbanisation. Our green spaces function as important focal points, bringing different communities together for shared activities and active engagement.

In our City in a Garden, everyone enjoys easy access to flora and fauna found in our parks, gardens and nature reserves.

We have green spaces for recreation and education, inclusive playgrounds, therapeutic gardens and heritage trails, nature ways and park connectors; something for everybody in the community. In these green settings, bonds are built to strengthen the fabric of our society, and nature nurtures our minds and bodies.
CHAIRMAN’S MESSAGE

“As the lead agency for the greening of Singapore, we must not only plant trees and build parks, but also foster a public appreciation for nature and protect our natural heritage.”

NParks was originally established as the lead agency for the greening of Singapore. To achieve this, we must not only plant trees and build parks, but also foster a public appreciation for nature and protect our natural heritage.

Plants and green spaces, of course, remain core to our work. Over the past 12 months, NParks planted more than 52,000 trees, introduced 17 new species to our island and opened 80 km of nature ways. Our Park Connector Network now extends over 313 km, linking parks, nature areas and open spaces, while bringing communities together.

We develop green spaces for the benefit of all, and of course, with open spaces, plants, and nature, we also foster a public appreciation and understanding for nature. We have continued to deliver a broad range of activities. In October 2017, the inaugural Singapore Botanic Gardens Children’s Festival encouraged children to engage with nature through play at the Jacob Ballas Children’s Garden, the largest children’s garden in Asia. The Festival was an event to cater to heritage lovers, bringing the rich history at the Fort in February 2018, on the other hand, through play at the Jacob Ballas Children’s Garden, the Festival encouraged children to engage with nature through play at the Jacob Ballas Children’s Garden, the largest children’s garden in Asia. The Festival was an event to catering for the expatriates living here and to the local community.

In addition to our own events, we partner with community groups to deepen specific interests in nature. Our Friends of the Parks groups, such as Friends of Ubin and Friends of Bishan-Ang Mo Kio Park, help us promote stewardship and responsible use of our green spaces to their peers. The 1,350 Community in Bloom groups inspire interest and confidence in gardening. Our Community in Nature programme engaged over 4,500 citizen scientists in projects such as Butterfly and Dragonfly Watches. In May 2017, more than 35,000 participants, including 20,000 students and 330 partners, joined in Biodiversity Week activities across Singapore.

In our highly urbanised and land-scarce city-state, our biodiversity is a national asset that we must protect for generations to come. Over the last five years, over 500 flora and fauna species have been discovered or rediscovered on our islands and in our waters. These include, potentially, a small carpenter bee of the genus Ceratina, and the Acriopsis ridleyi, an orchid originally discovered in 1889 and rediscovered at the Bukit Timah Nature Reserve in 2016. While NParks’ efforts were recognised by the international community with the 2017 UNESCO Sultan Qaboos Prize for Environmental Preservation, most of our achievements are not ours alone. Collaboration is vital in conservation, as in the case of the hatching and release of 45 juvenile Critically Endangered Singapore Freshwater Crabs by the Crab Working Group, which includes researchers from NParks, National University of Singapore and Wildlife Reserves Singapore.

Such cooperation is true in every aspect of NParks’ work. I would like to thank everyone, from the Board of Directors and management to all staff, sponsors, donors, agency partners, business associates and volunteers, for their partnership in realising a green Singapore.

It has been an honour and privilege to serve as Chairman of this remarkable organisation for the past ten years. The incoming chairman, Mr Benny Lim, brings with him a wealth of experience and expertise. Under his stewardship, I have every confidence that NParks will continue to fulfil its mission of delivering a better quality of life for all Singaporeans through its expanded mission to manage our nation’s flora and fauna.

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NParks has come a long way. Over the last decade in particular, NParks has benefited from Mrs Christina Ong’s strong leadership and many contributions. I hope to be able to build on Christina’s legacy and to work as closely and warmly with the staff as she did during her tenure.

Mr Benny Lim Chairman, National Parks Board (from August 2018)
MEMBERS OF THE BOARD
As of September 2018

Mr Benny Lim was Permanent Secretary of the Ministry of National Development from 2011 to 2016, and held concurrent appointments as Permanent Secretary in the Prime Minister’s Office and for National Security & Intelligence Coordination. Prior to that he was the Permanent Secretary of the Ministry of Home Affairs from 2005 to 2011. Mr Lim was awarded the Meritorious Service Medal in 2010. He retired from the Civil Service in 2016 and serves presently as Special Advisor to the Centre for Liveable Cities, Special Advisor to the National Security Studies Programme, RSAHFU as well as Chairman of Temasek Foundation Connects CLG.

Mrs Christina Ong is founder, owner and managing director of the COMO Group, which comprises luxury fashion retail company Club 21, hospitality company COMO Hotels and Resorts, wellness brand COMO Shambhala, and philanthropic grantmaker COMO Foundation. In 1995, Mrs Ong was awarded the Cavaliere del Lavoro and grantmaker COMO Foundation. Shambhala, and philanthropic company Club 21, hospitality comprises luxury fashion retail. Mrs Christina Ong is founder, and is also currently a member of HSBC’s Asian Executive Committee, Mr Harvey-Samuel was formerly a member of HSBC’s board of directors, and served on the boards and committees of various organisations including Singapore Manufacturing Federation, Singapore Business Advisors & Consultants Council and Consumers Association of Singapore. He was also formerly the honorary consul general of the federal democratic republic of Ethiopia to Singapore.

Mr Harvey-Samuel was formerly Group Finance Director, Chief Executive Officer of The Hongkong and Shanghai Banking Corporation Limited (HSBC) Singapore. A member of HSBC’s Asian Executive Committee, Mr Harvey-Samuel was directly responsible for all HSBC operations based in Singapore. He continues to serve HSBC as an executive director, and is also currently a member of the Advisory Board of the National Youth Achievement Award Council and National Arts Council, as well as the boards of Surbana Jurong Private Limited and Jurong Town Corporation.

Dr Malonne-Lee is Director of the Centre for Sustainable Asian Cities, School of Design and Environment at the National University of Singapore. She has previously worked in strategic planning, urban planning policies and heritage conservation. Her current research focuses on urban sustainability, and its nexus with development, economic growth and city culture. She supports various regional and international organisations in their work on sustainable urban development, including the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), APEC and World Bank.

Mr Malonne-Lee was Director of Keppel Land Limited, Board Member of Sentosa Development Corporation, Chairman of Sentosa Cove Resort Management Ltd and Senior Advisor to private firms. In 2009, Mrs Koh-Lim was conferred the Meritorious Service Award by the Government of Singapore.

Dr George Huang is a potter and has been awarded the Meritorious Service Award by the Government of Singapore. She is currently a board member of national heritage Foundation, and serves in various public and community organisations. He is also a member of the board of Consumer Goods Forum, International Co-operative Alliance, Singapore Centre for Social Enterprises, Centre for Fathering and Singapore Olympic Foundation. He is a Fellow of the Singapore Institute of Directors and Chartered Institute of Marketing. He also chairs the Harvard Business School Club of Singapore and the Marine Parade Leadership Foundation.

Mr Benny Lim is Permanent Secretary of the Ministry of National Development from 2011 to 2016, and held concurrent appointments as Permanent Secretary in the Prime Minister’s Office and for National Security & Intelligence Coordination. Prior to that he was the Permanent Secretary of the Ministry of Home Affairs from 2005 to 2011. Mr Lim was awarded the Meritorious Service Medal in 2010. He retired from the Civil Service in 2016 and serves presently as Special Advisor to the Centre for Liveable Cities, Special Advisor to the National Security Studies Programme, RSAHFU as well as Chairman of Temasek Foundation Connects CLG.

Dr Dr. Seah Kian Peng is Chief Executive Officer of The Straits Times Press Ltd, and is Chairman of The Straits Times Press Press Ltd, and is Chairman of the board for The Straits Times School Pocket Money Fund.

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Mr Musa heads the SkillsFuture Division in the Ministry of Education where he is responsible for policy matters associated with adult training and the SkillsFuture movement. He holds a concurrent appointment in SkillsFuture Singapore (SSG) where he oversees the agency’s strategic and resource planning efforts. Prior to this, he has served in various agencies in the public service, including the Ministry of Manpower, Ministry of Finance and Monetary Authority of Singapore.

Dr. Seah Kian Peng is Chief Executive Officer of The Straits Times Press Ltd, and is Chairman of The Straits Times Press Ltd, and is Chairman of the board for The Straits Times School Pocket Money Fund.

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Mr Er began his career in National Parks Board (NParks) and has been involved in the planning, implementation and management of parks and green spaces in the city. In 2003, he was seconded to the Ministry of National Development, where he oversaw policies and was actively involved in the review of the existing park and greenery infrastructure, agri- veterinary issues, and building and construction. Mr Er has subsequently appointed General Manager at the National Parks Board, where he played a pivotal role in developing the Gardens from concept to concept. He was also concurrently Assistant Chief Executive Officer (Corporate Development & Services) at NParks. He was appointed Chief Operating Officer of Gardens by the Bay in 2012. Mr Er is presently the Chief Executive Officer of NParks.

Mr Benny Lim was Permanent Secretary of the Ministry of National Development from 2011 to 2016, and held concurrent appointments as Permanent Secretary in the Prime Minister’s Office and for National Security & Intelligence Coordination. Prior to that he was the Permanent Secretary of the Ministry of Home Affairs from 2005 to 2011. Mr Lim was awarded the Meritorious Service Medal in 2010. He retired from the Civil Service in 2016 and serves presently as Special Advisor to the Centre for Liveable Cities, Special Advisor to the National Security Studies Programme, RSAHFU as well as Chairman of Temasek Foundation Connects CLG.

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MANAGEMENT TEAM
AS OF SEPTEMBER 2018

DR ADRIAN LOO
GROUP DIRECTOR, CONSERVATION

DR KIAT W TAN
ADVISOR TO NPARKS

DR LEONG CHEE CHIEW
DEPUTY CHIEF EXECUTIVE OFFICER, PROFESSIONAL DEVELOPMENT & SERVICES CLUSTER, EXECUTIVE DIRECTOR, NATIONAL PARKS, GARDENS & NATURE RESERVES CLUSTER AND COMMISSIONER OF PARKS & RECREATION

KENNETH ER
CHIEF EXECUTIVE OFFICER

WONG TUAN WAH
GROUP DIRECTOR, EAST PARKS AND NATURE RESERVES CLUSTER

MS LEE PIN PIN
GROUP DIRECTOR, COMMUNICATIONS & COMMUNITY ENGAGEMENT

DR KIAT W TAN
ADVISOR TO NPARKS

MS ANG WEI PING
GROUP DIRECTOR, POLICY & PLANNING

CHIA SENG JIANG
GROUP DIRECTOR, PARKS 1

CHUAH HOCK SEONG
GROUP DIRECTOR, PARKS 2 AND ASSOCIATE DIRECTOR, CENTRE FOR URBAN GREENERY AND ECOLOGY (CUGE)

DR NIGEL TAYLOR
GROUP DIRECTOR, SINGAPORE BOTANIC GARDENS

MS TAN LAI KHENG
SENIOR DIRECTOR, LIFESTYLE BUSINESS

NG CHEOW KHENG
GROUP DIRECTOR, HORTICULTURE & COMMUNITY GARDENING

LEFT TO RIGHT

THE MANAGEMENT TEAM PHOTOS WERE TAKEN AT FORT CANNING PARK.

LEFT TO RIGHT

MS KARTINI OMAR
GROUP DIRECTOR, PARKS DEVELOPMENT AND JURONG LAKE GARDENS

DAMIAN TANG
SENIOR DIRECTOR, DESIGN

LIM LIANG JIM
GROUP DIRECTOR, NATIONAL BIODIVERSITY CENTRE

KONG YIT SAN
ASSOCIATE CHIEF EXECUTIVE OFFICER, PARK MANAGEMENT & LIFESTYLE CLUSTER

BIN HEE JUM
GROUP DIRECTOR, FINANCE & PROCUREMENT

OH CHEOW SHENG
GROUP DIRECTOR, STREETSCAPE

LEFT TO RIGHT

YEO MENG TONG
GROUP DIRECTOR, DESIGN RESEARCH & DEVELOPMENT AND ASSOCIATE DIRECTOR, CUGE

TEVA RAJ
SENIOR DIRECTOR, MUNICIPAL LANDSCAPES

DR LENA CHAN
EXECUTIVE OFFICER, INTERNATIONAL BIODIVERSITY CONSERVATION

TAN CHONG LEE
EXECUTIVE OFFICER, CORPORATE DEVELOPMENT & SERVICES CLUSTER

RYAN LEE*
ACTING GROUP DIRECTOR, CORPORATE STRATEGY & PLANNING AND CO-ORDINATING DIRECTOR, SINGAPORE BOTANIC GARDENS OPERATIONS

FRANCIS LIM
GROUP DIRECTOR, CORPORATE SERVICES

*Seconded to JTC Corporation as of 5 September 2018.
As the vision of a City in a Garden takes shape, greenery has become emblematic of the Singapore landscape. We have over 350 parks and four nature reserves covering some 2,000 hectares and our green footprint continues to grow, giving people easy access to nature.
Biophilic Play for Children

At the Singapore Botanic Gardens, the Jacob Ballas Children’s Garden doubled in size to 4 hectares, making it the largest children’s garden in Asia. Families with children up to 14 years old can enjoy the attractions and programmes which are designed to help the young understand the ecology of plants through nature play and experiential learning. The new extension was opened in November 2017.

Enhancement works have also begun at the National Orchid Garden with the development of a new Tropical Montane Orchidetum, increasing the combined display area by three times. The new orchidetum will enable visitors to admire a greater diversity of orchids, ranging from those found in rich mid- to high-elevation montane forest, in a single location in Singapore. These works will strengthen the Singapore Botanic Gardens’ role in orchid conservation, breeding and research, as well as its visitor offering.

Learning from Living History

Three historical gardens will be recreated to restore the rich heritage of Fort Canning Park and its surroundings. From the time of the 14th century kings to the founding of modern Singapore, Fort Canning Park is deeply rooted in history. The community can soak in this rich cultural relevance, after the Royal Garden, the First Botanic Garden and Jubilee Park are recreated within and around the park.

These enhancements will be accompanied by new education and outreach programmes as well as improved accessibility to the park. Visitors can also look forward to an exhibition in Fort Canning Park, one of our two national parks, as part of the Singapore Bicentennial celebrations in 2019.

Community Ideas for Jurong Lake Gardens

More than 14,000 suggestions and feedback were received from the community on the proposed concept for Jurong Lake Gardens Central and East. To gather opinions from residents and members of the public, many of whom have cherished memories of the area, a series of townhalls and roving exhibitions was held in community centres from November 2016 to April 2017. NParks went on to refine the concept design and include more sustainability features and spaces for the community into the blueprint.

Public engagement for the detailed design of the gardens continued into the first half of 2018, with members of the public contributing many ideas for Singapore’s first national gardens in the heartlands. Meanwhile, Jurong Lake Gardens West is expected to open in early 2019.

Families at Play

After two years of redevelopment, the 27-hectare Admiralty Park re-opened in October 2017 with 26 playground slides – the most number of slides in any park in Singapore. Located at the 7-hectare urban area of the park, the playground comprises three main play areas, for families and children of different ages to enjoy the diverse play equipment that encourage group and even multi-generation interactions.

A highlight is Singapore’s first family slide, which is wide enough for a family of four to slide together. There is also a new inclusive playground that supports play between children with and without special needs. This, together with another new inclusive playground at the Jacob Ballas Children’s Garden, increases the total number of inclusive playgrounds in Singapore to six.

Admiralty Park also includes a 20-hectare nature area featuring secondary forest, mangrove, riverine and open grassland habitats. It incorporates a mangrove boardwalk and viewing platform to allow visitors to get even closer to nature.
Enhancing East Coast Park

In another key enhancement project, NParks embarked on improvement works for three sites at East Coast Park - Raintree Cove, and the locations of the former Big Splash and Goldkist Chalets. When completed, families can enjoy a playground with water play features and open lawns for children to run about, while cyclists of varying skill levels can use a cyclist park with special circuits and trails.

The plans will be implemented progressively from 2017 to 2019, creating more open spaces, improving accessibility and enhancing amenities while retaining the unique character of East Coast Park.

Gardening Hub gets Better

Community gardeners know to head to HortPark for all things gardening-related. Since May 2017, they can visit a new Native Garden to learn more about Singapore’s natural heritage. With more than 100 species of native plants, the highest concentration in a single location in Singapore, the garden includes edibles, shrubs and trees. Visitors can learn more about using native plants for food, medicine and industry, how they support native fauna, and how to grow them.

Those interested in picking up horticulture-related skills can also visit HortPark. The bungalow at No. 394 Alexander Road was restored and named HortHouse, serving as a training centre for the Centre for Greenery and Ecology (CUGE). The landscape fronting the building features 11 plant families, providing an outdoor showcase of horticultural varieties to complement the lessons at HortHouse.

Upcoming Green Spaces

In November 2017, NParks launched a public exhibition for Sembawang Hot Spring Park ahead of the start of works in early 2018. The 1-hectare site, which will feature the only natural hot spring on mainland Singapore, will retain a rustic feel familiar to visitors, many of whom are nearby residents, whilst introducing new facilities that make use of the geothermally-heated groundwater.

Work has also commenced on the Rail Corridor (Central) between the Hillview area and the conserved Bukit Timah Railway Station, focusing on the biodiversity, heritage and recreational aspects of the 4-km stretch. A public exhibition was held in October 2017 to showcase concept ideas and the preliminary design based on early feedback and contributions. To further engage the community, a Friends of Rail Corridor group was formed. Trail enhancements will be done by end-2019, with the rest of the work scheduled to be completed in phases by 2021.

FAMILY BONDING IN OUR PARKS

Family time is precious for communications manager Wong Cuiyan, 37, and both she and her husband Chiam Sing Yang feel it is best spent outdoors.

“It’s important for the family to have the time together to create strong bonds,” said Cuiyan, who has a daughter, Lis, 4, and twin sons Keith and James, aged 2. “Spending quality time with my children helps instil a feeling of security, inculcates values and fills them with confidence.”

The time outdoors in parks and gardens also provides her children with opportunities to explore the natural environment and expend their energy. She said, “When indoors, they are restricted by space, and places like shopping malls are usually too crowded during the weekends.”

Cuiyan and her husband make weekly trips to the parks with their children. “They love being outdoors, where they can run around and explore,” she said. The family also goes cycling and jogging, and occasionally, has a picnic or enjoys special park activities such as movie screenings or kids’ craft activities.

Among the family’s preferred green spaces are Pasir Ris Park, Sembawang Park and Singapore Botanic Gardens, but Cuiyan’s personal favourite is Bishan-Ang Mo Kio Park. “The kids love the water playground, and there are two other playgrounds with interesting and colourful equipment. And when everyone gets tired, we can all sit down and admire the park’s scenic surroundings!” she said.

“As working parents, it’s always challenging to find the time to spend with our children. Each outing we have with them in the parks, is like a precious jewel that will be embedded in their memories, something they will cherish forever.”
Creating Lush Streetscapes

Singapore’s streetscapes continued to blossom with the planting of trees and the creation of more greenery. In the past year, more than 52,000 trees have been planted and 17 new species introduced to enhance the streetscape, rejuvenating more than 30 roads.

NParks rolled out 80 km of Nature Ways with the completion of Ang Mo Kio Nature Way Phase 1 and Sembawang Nature Way Phase 2 in 2017. This puts us on course to achieve our target of 180 km of Nature Ways by 2030.

In the year in review, seven new Heritage Trees were endorsed. The community had more opportunities to learn about our Heritage Trees and Heritage Roads; multiple learning journeys for teachers, seniors and the general public were conducted in 2017, giving them a deeper appreciation and understanding of Singapore’s natural heritage.

Under the centralisation of greenery maintenance, the Municipal Landscapes Division under NParks completed a visual assessment of 23,000 trees in vacant state land situated alongside expressways and major roads. To minimise fire risks, 300 grass-cutting buffers are also being established at the edges of forested lands next to footpaths and private housing estates.

Connecting People to Nature

Three stretches of park connectors – Pang Sua to Junction 10, Punggol Park Connector Seawall, and Stadium Road – were completed, bringing the total length of the Park Connector Network to 313 km. Some 16 km of existing park connectors were also upgraded. These include the Ang Mo Kio, Bukit Panjang, Geylang and Whampoa Park Connectors.

Meanwhile, work on the Coastal Adventure Corridor began in April 2017 with the construction of key amenities at Rower’s Bay Node. These park connectors help link communities to natural, cultural and recreational sites across the island.

Commuters rushing to work also have the chance to connect with nature – NParks greened up nine MRT stations, bringing the total number of greened MRT stations to 27. We also completed a trial cable trellis installation to screen MRT viaduct columns at the junction of Ang Mo Kio Ave 5 and Ave 8. The greening of 23 covered linkway roofs was also completed in 2017.

Developers’ Growing Support for Greenery

Singapore’s urban greenery footprint continued to grow with 100 hectares of skyrise greenery in 2017. We received a total of 29 applications for the Skyrise Greenery Incentive Scheme and a record 177 submissions for the Skyrise Greenery Awards 2017. This was 40% more than the 123 submissions received in 2015, underscoring the increasing importance that developers and building owners place on skyrise greenery.

The Awards were presented to 14 developments during the GreenUrbanScape Asia and International Skyrise Greenery Conference 2017 in November. Kampung Admiralty was recognised as an Outstanding Project for showcasing how greenery can be incorporated into community facilities.

A total of 14 new and existing developments were also recognised for excellence in greenery provision and management under the Landscape Excellence Assessment Framework (LEAF), bringing the total number of LEAF-certified developments to 58. Among these, SkyParc@Dawson, Eco Sanctuary, The Glades and NUS Ventus were recognised as outstanding projects.

1. The beautiful pink and white flowers of the Trumpet Tree (Tabebuia rosea) along Jalan Ahmad Ibrahim give a soft touch to the surrounding industrial estate.
2. Singapore’s busy expressways are brightened up by roadside plantings of lush greenery and colourful blooms.
3. Nature Ways, such as this one along Ang Mo Kio Avenue 8, connect areas of biodiversity to urban communities, bringing nature closer to residents.
4. Kampung Admiralty’s design integrates amenities with a rooftop community park and edible garden, winning praise at the Skyrise Greenery Awards.
Efforts to protect and enrich Singapore’s biodiversity continued to gain momentum with the creation of more green buffers to protect our nature reserves as well as closer collaboration with the community to conserve our natural heritage and drive citizen science initiatives.
Enjoying our Nature Parks

The community has more places to enjoy greenery with the opening of Singapore’s sixth nature park, the 75-hectare Windsor Nature Park, in April 2017. The park extends the green buffer for the Central Catchment Nature Reserve, and features new trails such as the specially curated Hanguana Trail lined with rare native plants, and the Drongo Trail, which includes a sub-canopy walk.

Work has also started on the development of Thomson Nature Park, a green buffer located to the east of the Central Catchment Nature Reserve, while plans have been announced for the 67-hectare Rifle Range Nature Park which will complement Hindhede and Dairy Farm Nature Parks as green buffers for Bukit Timah Nature Reserve.

Overcrowding in the nature reserves can harm native flora and fauna and may lead to human-wildlife conflicts.

Nature parks function as alternative nature venues, drawing visitors away from the reserves. They also provide a safe haven for native species and pit-stops for migratory birds.

Caring for our Wetlands

Urban wetlands play important roles, functioning as vital habitats for biodiversity and improving our water and air quality. As part of the World Wetlands Day celebrations, visitors to Sungei Buloh Wetland Reserve, Kranji Marshes, Jurong Lake Gardens, Pasir Ris Park, Pulau Ubin, St John’s Island and Singapore Botanic Gardens learned more about the significance of wetlands during the first two weekends in February 2018.

Visitors to these locations – where urban wetlands can be found in Singapore – attended workshops and participated in activities such as guided walks, bird watching and mangrove clean-ups.

In addition to the World Wetlands Day activities, staff from Sungei Buloh Wetland Reserve worked with the Friends of Sungei Buloh Wetland Reserve community to conduct the Mangrove Speaks public symposium in July and the Wonderful World of Waders event in September. Together, they showcase a series of walks, talks and exhibitions, highlighting the importance of wetlands to Singapore.

Conserving Ubin’s Rustic Character

NParks is working with the research community on a comprehensive two-year biodiversity survey on Pulau Ubin. The study, which started in late 2017, involves staff, volunteers, researchers from the National University of Singapore, and citizen scientists from various nature groups.

Data from the survey will help update the species inventory of Pulau Ubin and aid in the planning of future research, habitat enhancements and species recovery projects. The results will also be used for systematic long-term monitoring and management of the island.

The community is taking the lead on some projects to revitalise Pulau Ubin. For instance, NParks will connect interested groups with experts in architecture, heritage and related fields as well as volunteer networks through the Friends of Ubin Network, as part of a multi-year kampung house restoration effort. Work will be aligned with the overall look and feel of the island, retaining its cultural heritage and rustic character.

Complementing these efforts is an in-depth archaeological survey, which started in December 2017 with the examination of artefacts at a World War II site. A collaboration between NParks and the ISEAS-Yusof Ishak Institute, the 18-month survey will document the archaeological and historical remains at selected sites on Pulau Ubin, which are expected to shed light on Singapore’s history.
Diving into Singapore’s Marine Biodiversity

The first curated trail and guided walk at St John’s Island was launched in September 2017, showcasing the island’s rich biodiversity as well as its colourful history. Visitors to the island can join a free 90-minute monthly guided tour of a 2.8 km trail conducted by volunteers, and explore the enhanced Sisters’ Islands Marine Park Public Gallery for a deeper appreciation of Singapore’s marine biodiversity. New features include an immersive 3D virtual reality dive experience, a mangrove mesocosm and a viewing pool where visitors can study sea anemones, sea cucumbers, feather stars and other intertidal organisms up close.

Strengthening International Partnerships in Biodiversity Conservation

NParks conducted a Wetland Management course, supported by the Ministry of Foreign Affairs, in September 2017. The course provided international participants with a better understanding of coastal wetland ecosystems, migratory bird flyways with a special focus on the East Asian-Australasian Flyway, as well as shorebird conservation.

In collaboration with the China-ASEAN Environmental Cooperation Center, NParks organised the ASEAN-China Symposium on ecologically-friendly Urban Development in November 2017. The symposium focused on promoting the exchange of knowledge and experiences on ecologically friendly urban development as well as fostering partnerships internationally. Some 67 delegates and speakers, consisting of federal as well as city government officials, academics and private sector representatives from ASEAN and China, attended the symposium.

To engage youths, NParks hosted the Asian edition of the Youth Voices Capacity Building Workshops at the Singapore Botanic Gardens from 22 to 27 May 2017. Organised by the Global Youth Biodiversity Network, the workshop brought 25 young leaders in biodiversity conservation from 18 Asian countries together. They discussed timely topics such as the role of government in conservation as well as biodiversity targets, and developed project proposals which they subsequently implemented in their home countries.

Increasing Outreach and Awareness

As a biophilic city with rich biodiversity, it is important for its people to co-exist with wildlife. This is key for the continued protection and conservation of Singapore’s natural heritage. This is also why the youth branch of the Biodiversity Roundtable, the Biodiversity Friends Forum, introduced a challenge focusing on human-wildlife co-existence. Launched in January 2018 at the Singapore Botanic Gardens, it attracted more than 80 youth participants.

In May 2017, more than 35,000 participants, including 20,000 students and 330 partners, joined in Biodiversity Week activities across Singapore. In other education and outreach efforts, NParks collaborated with the Friends of the Marine Park community and other partners to launch a series of activities and programmes for the International Year of the Reef 2018. The year-long celebration, which kicked off in January, seeks to raise awareness of the impact of human activity on the marine environment and involve the community in conserving Singapore’s marine ecosystems.

Staff, volunteers and students from Nanyang Junior College, Ngee Ann Polytechnic as well as the School of the Arts also helped to raise awareness of the negative impact of animal release on Singapore’s biodiversity during Operation No Release in May 2017. A survey was conducted at 11 sites across nature parks and nature reserves and for the first time, it was administered on smartphones and tablets, in line with NParks’ sustainability practices.

1. Go diving without getting wet thanks to the immersive 3D virtual reality dive experience found in the enhanced Sisters’ Islands Marine Park Public Gallery on St John’s Island.
2. Connect with nature and take in the beautiful sights while exploring St John’s Island on the first curated trail and guided walk launched in September 2017.
3. Participants of the Youth Voices Capacity Building Workshops went for field trips to understand conservation issues, such as how wildlife like otters can coexist with humans in an urban environment.
4. Youths from 18 countries such as Mongolia, Iran and Japan, brought their unique perspectives to the issue of biodiversity conservation during the Asian edition of the Youth Voices Capacity Building Workshops.
5. Participating in an intertidal watch to record creatures found in the intertidal zones is an initiative to celebrate the International Year of the Reef 2018.
Involving the Community through Citizen Science

Citizen science continues to gain traction. In May 2017, the nationwide BioBlitz took place across more than 80 schools, parks, gardens and nature areas. For example, participants of the BioBlitz at Yishun Park concurrently conducted butterfly and plant surveys while the first marine BioBlitz was held at the Sisters’ Islands Marine Park. These initiatives help different communities to bond with, and over, nature.

In all, more than 4,500 Community in Nature citizen scientists, including about 2,000 students, supported the various biodiversity projects throughout the year. Besides the BioBlitzes, these included the Butterfly Watch, Garden Bird Watch and the newly-introduced Dragonfly Watch in July 2017 which attracted more than 200 participants.

Ms Gayathri supports such knowledge sharing, access to resources, as well as NParks’ innovation grant for schools to set up outdoor nature-related activities for children. “They benefit us as educators, enabling us to better formulate our lesson plans, and to create even more fun and essential programmes for our children.”

Ms Gayathri Dharamraj, 34, a principal at an early childhood education centre, believes in combining play with nature.

“Play is an important aspect of any child’s development and learning. It reinforces lessons taught in the class and builds different skillsets in the child. And when you combine play with nature, that’s even better!” she said.

At her school, the children are brought outdoors every day for at least 30 minutes, to visit a nearby garden and pond. “Being around greenery is good for their health, and gives them the chance to interact with the plants and animals around them. This enhances their learning and children better understand why they should take care of nature,” said Ms Gayathri.

To tap their innate curiosity about the world around them, NParks has been producing a range of pre-school learning resources about the conservation of Singapore’s flora and fauna for several years. This past year, some of the new material about human-wildlife interaction and appropriate behaviours within our nature areas were showcased at the Early Childhood Conference 2017 and the Social Studies Primary Symposium which reached out to educators of primary schools.

A talk was also given to about 200 students from Ngee Ann Polytechnic’s Early Childhood Education Diploma programme, introducing them to the importance of nature for a child’s development.

A participation in Citizen Science programmes has gone up, indicating a healthy interest among the public to help in biodiversity conservation efforts.

1. The Common Grass Yellow (Eurema hecabe contubernalis) is a commonly-sighted butterfly found in our forests, mangroves, urban parks and gardens.
2. The Common Flameback (Dinopium javanense) has a golden brown back and wings and an orange-red rump. The male has a bright red crest which makes it easier to spot during Garden Bird Watches.
3. The Common Flameback (Dinopium javanense) has a golden brown back and wings and an orange-red rump. The male has a bright red crest which makes it easier to spot during Garden Bird Watches.
4. Participants of the first ever Dragonfly Watch spotted the Sapphire Flutterer (Rhyothemis triangularis) in the ponds at Ang Mo Kio Town Garden West and Bishan-Ang Mo Kio Park.

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CONSERVATION EFFORTS BEAR FRUIT

A rare orchid and a bee species potentially new to science are just two of the more than 500 species that have been discovered and rediscovered in Singapore by staff, research partners and naturalists over the past five years. This was announced during the 6th edition of the Festival of Biodiversity in May 2017, organised in conjunction with the Biodiversity Roundtable to celebrate the efforts of the community to conserve Singapore’s natural heritage.

Here’s another success story: under the Conservation Strategy for the Critically-Endangered Singapore Freshwater Crab (Johora singaporensis), NParks researchers saw the successful hatching and release of 45 juvenile crabs into an aquarium by a wild-caught mother. This was an important first step towards proving that the aquarium set-up is capable of sustaining a population of these crabs and will pave the way towards a viable captive-breeding programme for this species.

Intensified efforts to monitor and document turtle arrivals and to safeguard nests and hatchlings have also borne fruit. The multi-stakeholder Marine Turtle Working Group, formed in late 2016, recorded 18 Hawksbill Sea Turtle (Eretmochelys imbricata) sightings, including arrivals, nests and hatchlings, on Singapore’s shores in 2017, compared to 43 sightings reported between 2011 and 2016. In January 2018, a rescued Hawksbill Sea Turtle hatching was also rehabilitated and successfully released back into the wild.

Despite Singapore being highly urbanised, such discoveries show that there is a lot more biodiversity in our City in a Garden, with some species yet to be discovered and studied. This also indicates that the decades of effort to enhance our urban greenery and safeguard our nature reserves and green areas is paying off.

The international community has taken notice. In November, NParks received the 2017 UNESCO Sultan Qaboos Prize for Environmental Preservation.

An international jury noted that through its Nature Conservation Masterplan, NParks has conducted significant conservation biology research resulting in the discovery of new endemic plant and terrestrial invertebrate species, and the results have been used to design better management plans and to facilitate science-based decision-making.

NParks and the Secretariat of the Convention on Biological Diversity have also developed the Singapore Index on Cities’ Biodiversity, an important self-assessment tool for the evaluation of biodiversity conservation efforts by cities.

The Acriopsis ridleyi, rediscovered by an NParks staff in 2016, is currently being propagated at the National Orchid Garden nursery.

The globally Critically Endangered Singapore Freshwater Crab is endemic to Singapore and only known from a few hill streams in Bukit Timah, Bukit Batok and Bukit Gombak.

The Ceratina sayang was found to be potentially new to science in 2014.

The Cinnamon Bush Frog (Nyctixalus pictus) is currently being propagated at the National Orchid Garden nursery.

The Climbing Pandan (Freycinetia javanica), once thought to be extinct in the wild in Singapore, has since been reintroduced into HortPark and the Singapore Botanic Gardens.
ENGAGING COMMUNITIES

Our parks and gardens are vibrant community spaces where people from all walks of life can step forward to take ownership of the environment, as well as enjoy a host of activities ranging from children’s festivals to rock concerts.
Bringing people together in our green spaces

Communities with different preferences find common ground in our green spaces. History and heritage buffs were drawn to the inaugural Festival of the Fort, held over two weekends in February 2018, which brought the rich history of Fort Canning Park and its surroundings to life. The festival featured over 50 programmes including a commissioned indoor performance, an interactive roving outdoor performance as well as guided walks, talks, and a plant marketplace.

NParks also kicked off the 2018 Concert Series in the Park: Rockestra® at the Festival of the Fort. Held at Fort Canning Green on 3 February 2018, the concert was themed Saturday Night Retro Fever and featured hits from the 60s to the 90s.

The Rockestra instalment at Bishan-Ang Mo Kio Park anchored NParks' Parks Festival in October 2017. The event featured themes such as arts and culture, gardening, nature, and sports and wellness. These were delivered through satellite programmes to some 12,500 visitors across five major parks island-wide.

In July 2017, NParks Satay Night Live returned for its fourth edition at Empress Lawn, attracting a crowd of 3,500. And for the first time, NParks teamed up with partners to bring a live screening of the English Premier League match-up between Manchester United and Liverpool on 14 October. A healthy crowd of more than 2,000 people attended this event at Empress Lawn along the Singapore River.

Further adding to the buzz in and around the civic district, NParks organised another edition of Artists’ Night Out in August in conjunction with the annual Singapore Night Festival, transforming Dhoby Ghaut Green with interesting art installations and exhibitions by partners.

Residents also learnt more about how they can care for our common spaces and clean environment during the Clean & Green Singapore Carnival held in Boon Keng in November 2017. This event was jointly organised by NParks with the National Environment Agency, PUB and Community Development Council.

Engaging Communities

1. The NParks Concert Series in the Park: Rockestra held at Fort Canning Park attracted more than 5,000 people.
2. NParks' Parks Festival was a good opportunity for children to get up close with some of the residents of our parks and gardens, like this praying mantis.
3. NParks CEO Kenneth Er presenting Prime Minister Lee Hsien Loong with a unique orchid hybrid, the Renanthera ASEAN 2018.
4. Deputy Prime Minister and Coordinating Minister for National Security Teo Chee Hean participating in a tree planting activity, leading the way in our continued efforts to green up Singapore.
Engaging Students

NParks conducted a series of educational and outreach initiatives in the reporting year. In addition to the multiple touch-points provided under the Community in Nature and citizen science umbrella, some 16,000 students learned more about the wonders of nature during assembly talks and roadshows.

To raise the awareness of a biophilic Singapore, a new play was introduced for primary school students. This interactive performance highlights interesting facts about our native biodiversity and educates students on appropriate behaviours while in nature, for example, respecting wildlife by maintaining a safe distance from them and keeping to marked trails.

NParks also worked with the Singapore Press Holdings, publishing two stories that explain what biophilia is and providing little known facts about some of our green spaces. Together, the play and newspaper articles reached out to about 90,000 students.

There was also a conscientious effort to engage about 1,600 pre-schools and their educators. Programmes included customised talks, guided walks and activities to excite the young and their educators about our flora and fauna. This included interactive talks on plants and insects for pre-schoolers at the Children’s Campus, Little Kinder Montessori and Little Greenhouse@Tampines.

Imagine performing a gig where your audience includes animals! This was the experience that musician Matthew Reavley, 21, had when he performed at the Jazz for Dogs event at the Singapore Botanic Gardens in 2017.

"It was an incredible experience! We had a beautiful stage and it was a fantastic venue to perform at," said Matthew who plays the bass guitar. "It was also really cool to see so many pets in one place; everyone just having a good time with their fluffy companions."

The Nanyang Technological University student can attest to the vibrancy of our green spaces as gathering spots for youths. Youths looking to work up a sweat can choose to go for a run or cycle along the park connectors, while nature lovers can hike or go for guided walks.

Avid photographers can also explore our green spaces to discover interesting angles and perfect sunsets for their insta-worthy shots.

Over the past 12 months, four NParks Concert Series in the Park: Rockestra® concerts attracted more than 30,000 attendees. Covering different genres of music and held in venues across the island such as Fort Canning Green, Jurong Central Park, Bishan-Ang Mo Kio Park and Choa Chu Kang Park, these events attract people outdoors to enjoy good music and company under a sky full of stars.

But visits to the parks and gardens need not always be about big productions. Matthew says he also enjoys just strolling about, chilling and de-stressing.

While I enjoy performing in the gardens, other times, it’s equally fulfilling just walking around and taking things in!" he quipped.
Community Gardening Continues to Blossom

In 2017, more than 100 new Community in Bloom (CIB) gardening groups were set up. These outdoor and indoor gardening groups helped boost the total number of community gardens to 1,350, putting NParks on track to achieve the target of 2,000 community gardens by 2030.

Six community gardeners were accorded the CIB Ambassadorship 2017, bringing the total number of CIB Ambassadors to 66. This award celebrates individuals who made significant contributions to the local gardening scene, fostering a love for gardening among Singaporeans.

Members of the public curious about gardening in their neighbourhoods can join tours of the new Teck Ghee and Bukit Gombak-Hong Kah community garden trails. They can also meet the friendly gardeners in their community and hear firsthand how they can start their own gardens. There are now five community garden trails, including the ones at Bukit Panjang, Tampines, and Fengshan.

To promote horticultural knowledge and enhance their competency, more than 100 community gardeners were trained under the Community Garden Training Series Level 1 during the year in review. New courses on edible gardening have also been introduced as part of the tiered training programme and NParks will continue working with partners to provide training for growing leafy edibles through the Master Growers programme.

Meeting the Demand to Grow Edibles

NParks announced the Edible Horticulture Masterplan which focuses on creating spaces for gardening, providing training opportunities and resources for edible gardening, promoting new plant varieties and horticultural technology, as well as education and outreach. This complements the burgeoning interest in edibles among community gardeners.

For the first time, the Community Garden Festival centred on the theme of edibles. Held in November 2017, the festival featured a display of over 11,000 plants spread over 2,100 sq m. This was nearly twice the number displayed at the 2015 festival. A record number of 481 entries was received for the Community Garden Edibles Competition, a 33% increase over the previous year, again highlighting the growing interest in edibles.

Gardening enthusiasts quickly snapped up 400 plots at HortPark, Punggol Park, Clementi Woods Park and Bishan–Ang Mo Kio Park in November 2017. Some 220 more allotment plots, in Bedok Town Park, Choa Chu Kang Park, Pasir Ris Park, Sengkang Riverside Park and Yishun Park, were opened to gardeners in 2018, to grow edible and ornamental plants of their choice.

The aim is to make more than 1,000 allotment garden plots available to residents by 2019.
ENGAGING COMMUNITIES

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various park connectors. Ambassadors for safety, spreading this message along PCN Appreciation Days. They have also served as bike maintenance clinics, Share the Track events, and involved in running several programmes including Singapore’s 52nd birthday.

Since its formation in 2016, the community has been a 20-km ride along the newly-opened Coastal Park Connector and the planting of 52 trees to celebrate Singapore’s 52nd birthday.

Friends of the Parks Community
The Friends of the Parks community plays an important role in enabling people to take ownership of the parks and promoting safe and responsible behaviours to improve park users’ experience.

The Friends of Ubin Network, Friends of the Marine Park, and Friends of Sungei Buloh Wetland Reserve communities have done much to contribute towards our conservation efforts.

In June 2017, the newly-formed Friends of Bishan-Ang Mo Kio Park community held its inaugural meeting and discussed ways to promote safe and responsible behaviours to improve park users’ experience. A month later, the Friends of Park Connector Network (PCN) celebrated its first anniversary with a 20-km ride along the newly-opened Coastal Park Connector and the planting of 52 trees to celebrate Singapore’s 52nd birthday.

Another community, the Friends of Chestnut Nature Park, spearheaded a tree-planting initiative by Ridge View Residential College as part of the National University of Singapore’s Day of Service. The newly-formed Friends of Bukit Timah Forest also held tree planting, weeding activities and trail maintenance sessions, as part of their efforts to promote the conservation and greater appreciation of Bukit Timah Nature Reserve and the nature parks adjacent to it.

The Friends of TreesSg members had their inaugural meeting in March 2018 and discussed how they would engage its visitors in anticipation of the gardens’ upcoming opening. It organised its first volunteer session in October where participants carried out tasks such as re-potting, weeding and fertilising some of the plant collections.

Online Engagement

NPParks has more than 40,000 active volunteers who serve at least 16 hours a year, participating in a wide range of activities such as visitor services, guided walks, gardening, outreach programmes, conservation programmes and marine biodiversity surveys. Volunteers help out regularly on horticulture maintenance works in different green spaces, including at Bishan-Ang Mo Kio Park and Fort Canning Park.

Jurong Lake Gardens set up a volunteer core this year, to better engage with its visitors in anticipation of the gardens’ upcoming opening. It organised its first volunteer session in October where participants carried out tasks such as re-potting, weeding and fertilising some of the plant collections.

To prepare for the Active Mobility Act, volunteers worked together with the Land Transport Authority’s Active Mobility Unit to launch Active Mobility Patrol teams for the Park Connector Network (PCN). The first such team was launched in Clementi in June 2017, as part of an ongoing initiative that encourages the community to play an active role in promoting safe and responsible use of the PCN and cycle paths.

NParks volunteers were also involved in other efforts to advocate safety along the PCN. In June, more than 160 joggers and cyclists turned up for the NParks-OCBC Ride Safe Programme: Share the Track event along the North Eastern Riverine Loop, and in September, over 700 participants attended the annual OCBC-NParks Ride Safe Programme Cycle-in Movie in Punggol.

Volunteers’ Contributions

Demonstrating engagement with youth and the online community, NParks’ online presence continued to grow with a 16% increase on Facebook (to 96,000 fans), 43% increase on Instagram (to 21,000 fans) and 65% increase on Twitter (to 32,000 fans).

In March 2018, trees.sg, a new community engagement portal, was launched. Showcasing the location of, and information on, over 500,000 trees, it is the most extensive urban tree map in Asia. The public can locate trees on the map, discover interesting details about them and even interact with them by leaving messages for the trees. Beyond such virtual tree engagement, the public can also join guided walks of tree trails or volunteer to care for the trees.

1. Love the beautiful majestic trees found around you? Visit trees.sg to find out more about them. On this website, you can indicate if a tree is flowering, upload pictures of it or leave messages for the tree.
2. Staff and volunteers are working together to actively engage cyclists, pedestrians, runners and personal mobility device users, to promote safe and responsible use of the PCN and cycle paths.
3. Volunteers from the Friends of the Rail Corridor community came together to plant trees and help with the upkeep of the Rail Corridor.
The landscape industry is an indispensable partner in NParks’ efforts to grow a City in a Garden. To expand and strengthen the industry, NParks continues to drive training, skills upgrading and strategic research initiatives.
Growing the Industry

Singapore is setting aside more than 100 hectares of land for landscape nurseries. Located in Lim Chu Kang and Sungei Tengah, the land parcels have been released in stages starting from November 2017, and is part of ongoing efforts to grow the landscape industry. The announcement was made at the Landscape Industry Fair held at HortPark in August.

NParks has also taken on the management and development of the orchid sector from the Agri-Food and Veterinary Authority of Singapore from 1 January 2018. NParks will develop manpower plans and incentive policies, and manage the orchid industry’s land needs. This move will consolidate resources and create better synergy for the industry.

In another industry update, more than S$4 million has been committed to supporting 60 companies under the Landscape Productivity Grant, a co-funding scheme under the Landscape Productivity Roadmap to help landscape companies defray investments in machinery and technology.

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1. The collaborative efforts between the government and industry partners have resulted in Singapore reaching a milestone of 100 hectares of rooftop greenery. This was announced at the third edition of the GreenUrbanScape Asia event.

2. During the Landscape Industry Fair, Minister for Social and Family Development and Second Minister for National Development, Mr Desmond Lee (extreme left), observes a robotic mower that autonomously maintains lawns. The use of such technology can potentially reduce reliance on manpower by half.

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To provide the industry with a platform for networking and to exchange ideas, GreenUrbanScape Asia, Asia’s only hybrid greenery and landscape design event, was back for its third edition in November 2017.

The three-day event featured a trade exhibition and consumer components, as well as the fourth edition of the International Skyrise Greenery Conference. The event attracted more than 2,300 trade professionals and visitors from over 30 countries, and generated potential sales of about S$6.3 million.

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Burnt out by work? Try gardening as a good way to manage stress!

Muhammad Ridhwan, who works in finance, has been gardening for about 15 years, with a particular fondness for growing orchids. The 29-year-old said, “I enjoy gardening. It helps me de-stress and also teaches me patience. And it’s a great way to increase your circle of friends.”

Ridhwan helped set up a Community in Bloom (CIB) garden on the grounds of his mosque in 2017. Currently, a group of some 20 volunteers meet fortnightly to keep the gardening plots around the building, including an orchid sanctuary, lush and verdant.

Across the island, the momentum for community gardening has been growing. In 2017, more than 100 new CIB gardening groups were set up, and NParks has been working to ramp this up. For instance, we worked with partners to design and implement a 180 sqm rooftop community farm in Kampung Admiralty which features more than 30 species of plants ranging from fruit trees to herbs and spices, leafy vegetables and medicinal plants.

Ridhwan is heartened by this rising interest in gardening, whether it is for edibles or ornamentals. He has been approached by nearby CIB gardeners hoping to learn more about growing orchids, and expects more youths will get involved over the next few years.

“I’ve met many youths who say they enjoy ‘cool’ activities outdoors, like exploring nature areas or going for long hikes. Gardening is a natural extension of this love of nature! After all, gardens attract biodiversity like birds and butterflies and gardening forms the foundation of our vegetable and fruit source. Now that’s what I call cool!” Ridhwan said with a laugh.
Promoting Skills Upgrading

In the reporting year, CUGE offered more than 4,300 Workforce Skills Qualifications (WSQ) training places and over 2,400 non-WSQ training places. Initiatives such as roadshows and a newly launched landscape industry page on the MySkillsFuture portal enable those interested to make informed choices on education and training opportunities as well as plan their career paths in the landscape industry.

Developing Expertise

In July 2017, CUGE organised the annual Regional Arboriculture Seminar at HortPark to boost knowledge development and expertise among practitioners. The one-day seminar covered various tree care management topics, new research findings, and updates on the latest industry standards.

NParks developed two new programmes under the Human-Wildlife Coexistence series focusing on interactions with snakes and bats, and launched a new workshop to help tree care workers spot signs of defects while performing arboriculture operations.

NParks continues to engage international expertise to enhance local know-how in urban ecology. Speakers from the United Kingdom, Australia and Belgium, among others, delivered workshops on topics such as insect interactions with snakes and bats, and launched a new workshop to help tree care workers spot signs of defects while performing arboriculture operations.

NParks continues to engage international expertise to enhance local know-how in urban ecology. Speakers from the United Kingdom, Australia and Belgium, among others, delivered workshops on topics such as environmental impact assessment, ecosystem services assessment in city planning, and the importance of insects in environmental assessments.

CUGE worked with other divisions to conduct a course on Greenery Planning and Biodiversity Conservation from 16 to 19 January 2018. Officials from 19 countries visited Sungei Buloh Wetland Reserve to learn about mangrove conservation.

1. Led by Hort Champs, staff learn how to differentiate bees from wasps and flies by looking at the size of the eyes, wings and shape of the abdomen.
2. Developed in collaboration with the Singapore University of Technology and Design, the Tree Inspection Micro Drone is used to check for defects on trees.
3. With his helpful nature and good knowledge of the Gardens, Mr. Thoha Zikri Bin Tamzin, Visitor Services Assistant at the Singapore Botanic Gardens, received the PS21 Star Service Award.
4. Recognising Our Best

Hort Champs are staff who take part in horticultural workshops and field trips and then share this knowledge with other staff or visitors to our green spaces. This past year, Hort Champs shared about topics such as bee identification; management and conservation; mangrove ecology and management; managing pest and disease; composting; plant selection; as well as landscape design. The quarterly Hort Colloquia continue to be important platforms for knowledge sharing. Besides covering topics such as conservation and biodiversity, as well as trends in the landscape industry, staff also shared experiences from overseas learning trips during these sessions.

Attended by about 800 officers from across the various divisions, the annual Staff Conference was held at Suntec Singapore Convention & Exhibition Centre on 18 April 2017. Speakers highlighted the importance of using innovation to help overcome challenges while the NParks Greenery Excellence Awards recognised the teams behind outstanding projects.

Recognising Our Best

Staff were recognised for their exemplary service to visitors and co-workers this past year. Mr. Thoha Zikri Bin Tamzin, Visitor Services Assistant at the Singapore Botanic Gardens, received the PS21 Star Service Award, while Mr. Jason Soon, Deputy Director/Human Resources, received the PS21 Star Manager Award. For its perseverance and quick thinking while attending to emergency incidents, particularly in the case of a hiker who was lost for three days in September 2015, the Central Nature Reserve Emergency Response Team received the PS21 Star Service Team Award.

Good design was also rewarded: For incorporating user-centric philosophy into its design principles, operations and maintenance, Parkland Green in East Coast Park picked up the GoldPlus Building and Construction Authority Universal Design Mark Certification. Marine Cove at East Coast Park and one-north Park also received the Gold standard under the same certification.

At the Orchid Society of South East Asia orchid show held at HortPark in September 2017, the team from the National Orchid Garden bagged 19 awards. This included the Grand Champion Trophy and a First Class Certificate Award for a specimen of Dendrobium lawrenceae, a species from the Philippines, which had 11 sprays of fragrant flowers. The National Orchid Garden’s Dendrobium Samurai x Dendrobium leporinum picked up the Reserve Champion Plant trophy and a Certificate for Cultural Commendation.
Giving Back to the Community

During the annual Kindness Day held on 21 November 2017, staff offered their time towards various causes. Different groups of volunteers conducted a therapeutic horticulture session for seniors, helped to weed and prune the garden at the Handicaps Welfare Association and cleaned cages and walked dogs at the Society for the Prevention of Cruelty to Animals. As part of ongoing engagement with the community, over 10 kindness-related activities were conducted throughout the year, including regular blood donation drives that help replenish Singapore’s blood bank.

1. Staff regularly visit the garden at the Handicaps Welfare Association to aid in the weeding and maintenance of the garden there, just one of many kindness-related activities to give back to the community.

GREENERY AS THERAPY

This past year, NParks opened therapeutic gardens in Bishan-Ang Mo Kio Park and Tiong Bahru Park.

Modelled on the first therapeutic garden at HortPark, the two new gardens were developed based on best practices and evidence-based design principles as well as research in environmental psychology. They not only incorporated elderly-friendly features but were also aimed at alleviating the onset of dementia through therapeutic horticulture to provide respite and help to improve the mental well-being of visitors, including seniors.

Research has shown that humans find comfort in, and are rejuvenated by, nature. This innate connection to nature, or biophilia, is an important part of therapeutic horticulture. Towards this aim, NParks has developed customised programmes to increase social interaction and promote healing and recovery through plant and nature-related activities.

Bishan-Ang Mo Kio Park kicked off its Therapeutic Horticulture Programme in January 2018, introducing seniors from nearby activity centres to plants like the Laksa Plant (Persicaria odorata) and Dwarf Yang Yang Tree (Cananga odorata var. fruticosa) that evoke memories of kampung days, before engaging them in hands-on activities such as making scent bags and leaf collages. Tiong Bahru Park conducted a similar programme three months earlier. Since introducing the pilot programme at HortPark, over 50 sessions have been conducted, benefitting some 300 participants.

As part of capacity building, train-the-trainer workshops and tour sessions were conducted to introduce staff and volunteers to the therapeutic gardens and the theories behind therapeutic horticulture, as well as to provide hands-on practice in conducting related activities.

To expand knowledge sharing, workshops were organised with experts and partners from the National University of Singapore, Nanyang Polytechnic and the University of Florida. These covered topics such as therapeutic gardening for geriatric settings, therapeutic garden design and developing goals and activities for therapeutic horticulture programming. Therapeutic horticulture courses were also organised specially for staff and members of the Agency for Integrated Care and Singapore Association of Occupational Therapists.

The therapeutic benefits of greenery are not restricted to seniors. NParks is working with the Ministry of Health and Alexandra Health to develop the first purpose-built parkland for patient healing, part of the upcoming Woodlands Health Campus. The Healing Forest Garden will be adjacent to, and integrated with, the hospital. It is developed based on studies that show that a person’s focus and attention is improved by spending time in, and looking at, nature, and is targeted to be completed in 2020.

To further promote the role of greenery in therapy, CUGE conducted its inaugural Certificate in Therapeutic Horticulture programme in November 2017, training professionals to create, implement and weave therapeutic horticulture activities and features at their facilities. This programme is open to health and social care practitioners, landscape designers, horticulturists and anyone interested to pick up useful skills in therapeutic horticulture.

Visitors to the therapeutic garden at Bishan-Ang Mo Kio Park have a chance to connect with nature and find respite from the stresses of everyday life.

Visitors’ sense of sight, touch and smell are heightened in the therapeutic garden, thereby helping to improve their mental well-being.

Staff have been conducting hands-on activities like making scent bags for seniors, as part of the Therapeutic Horticulture Programme.

GREENERY AS THERAPY
Charity Registration Number/Unique Entity Number: T02CC1634C
Charity Registration Date: 19 November 2002
IPC Number: IPC000104
Auditor: Ernst & Young LLP

The Garden City Fund (GCF) is a registered charity and an Institution of Public Character (IPC), with its registered address at National Parks Board, Singapore Botanic Gardens, 1 Cluny Road, Singapore 259569.

The GCF seeks to enhance the enjoyment of our City in a Garden by working with corporations and individuals to support the development of amenities and special features in Singapore’s green spaces; community activities and programmes that promote awareness, research and education in nature and conservation; and citizen involvement to encourage greater ownership of our City in a Garden.

The Board of NParks serves as the trustee of the GCF and has appointed the GCF Management Committee to plan, develop, promote and manage the GCF in accordance with its Trust Deed.

The Management Committee comprises mainly non-executive members except for the GCF Secretary Dr Leong Chee Chiew, who is also the Deputy Chief Executive Officer, Professional Development & Services Cluster at NParks; Executive Director, National Parks, Gardens & Nature Reserves Cluster; and the Commissioner of Parks & Recreation.

Between 1 April 2017 and 31 March 2018, the total amount of cash donation income through the GCF was about S$3.2 million.

The members of the eighth GCF Management Committee appointed from 1 November 2016 to 31 October 2018 are:

Chairman: Professor Leo Tan Wee Hin
Treasurer: Mr Goh Kong Aik
Secretary: Dr Leong Chee Chiew
Members: Mr Tan Khin Nguan, Mrs Fu E-Len, Mrs Kirtida Mekani, Dr Malone-Lee Lai Choo, Mr Daren Shiau, Mr Vincent Lien Jown Jing

As part of the GCF Accountability and Governance Framework, any member of the Board, Committee or Sub-committee has to give prior written disclosure of any actual or potential conflict of interest for any transaction or project in connection with the GCF, and will not be able to participate or cast a vote in the transaction/project.

Towards Conservation and Enhancing Biodiversity

NParks’ biodiversity and conservation efforts were boosted, thanks to the strong support from individuals and corporate sponsors, through the GCF. In the year in review, these sponsors included Ascendas, ExxonMobil, HSBC Bank, OCBC Bank, Sembcorp Industries and Temasek, among others.

In June 2017, OCBC Bank partnered NParks to pioneer a habitat enhancement programme at Coney Island Park, committing S$250,000 in funding and volunteer efforts. Under this project, over 50 species of native coastal plants will be planted, to increase the biodiversity in the area.

Over the next five years, an estimated 1,400 OCBC staff volunteers will work with NParks on various activities in the park, ranging from plant propagation to coastal clean-ups.

At the Singapore Botanic Gardens, the new extension of the Jacob Ballas Children’s Garden was opened in November 2017. This project was partially supported by the Jacob Ballas Estate and Friends; and other fundraisers. With the contributions, the children’s garden will now support programmes for youngsters up to 14 years old. This will enable them to continue to play outdoors and have a greater connection with our natural heritage.
Outreach, Education and Hands-on Support

Ascendas contributed over S$300,000 towards the Concert Series in the Park: Rockestra®, and the construction of a Therapeutic Garden in Choa Chu Kang Park, among other NParks projects, to enhance the park-going experience for the young and old.

Other regular participants of the PAT programme who came on board to do their bit for the environment included Standard Chartered Bank which planted 100 trees at Labrador Park; UPS with 87 trees at Dairy Farm Nature Park; and Shimano (Singapore) which planted 50 trees along the Pang Sua Park Connector.

To celebrate World Environment Day on 5 June, over 40 participants from the World Wildlife Fund planted 50 trees along River’s Bay at Lower Seletar Reservoir Park. In August, 109 participants from Great Eastern Life celebrated its 109th anniversary by planting 51 trees at East Coast Park.

This past year, long-term GCF partner HSBC Bank continued its support for the conservation and growth of our natural heritage. Some 80 staff volunteers helped propagate coral nubbins at workshops held at the Sisters’ Islands Marine Park Outreach and Education Centre on St John’s Island in May 2017. The bank also contributed S$100,000 to seed collections for the conservation of important plant species in the Southeast Asia region.

Greening up our City

The GCF’s Plant-A-Tree (PAT) programme continued to garner strong support from individuals and corporations with over 33,000 trees pledged by more than 600 corporations and some 2,700 individuals since the programme’s inception in 2007. The programme provides a platform for corporations to plant trees on various occasions.

Path Forward

Looking ahead, the GCF remains committed to engaging different segments of the community, supporting NParks’ conservation and research efforts, as well as its outreach and educational initiatives. The aim continues to be to cultivate a love for the environment, promote a sense of ownership, and encourage the community to play a larger role in preserving Singapore’s legacy as a City in a Garden. Visit www.gardencityfund.org for more information.

GARDEN CITY FUND DONORS’ ACKNOWLEDGEMENT (FY 2017)

We acknowledge and thank the following donors who have generously supported our City in a Garden efforts, including those who wish to remain anonymous.

$1 million and above

Keppel Care Foundation

$100,000 and above

Ascendas Land (Singapore) Pte Ltd
Lim Sook Ngee
Ocbc Management and Staff
Rosslyn Leong Sou Fong
Symasia Singapore Fund - Mingxin Foundation
Takashimaya Singapore Ltd
Temasek Capital Management Pte Ltd
The Hongkong and Shanghai Banking Corporation Limited

$10,000 and above

Advance Sports Technologies Pte Ltd
Amorepacific Singapore Pte Ltd
Applied Materials SEA Pte Ltd
Asia Geographic Magazines Pte Ltd
ExxonMobil Asia Pacific Pte Ltd
Goldbell Foundation
Ikano Pte Ltd
Jessie Wu
Kimly-Shimizu Joint Venture
Louis Vuitton (Singapore) Pte Ltd
Malayan Banking Berhad
Mao Sheng Quan Ji Construction Pte Ltd
Mooje Media Pte Ltd
Nikon Singapore Pte Ltd
Oversea-Chinese Banking Corporation Limited
ParexGroup Pte Ltd
Shell Companies in Singapore
Shimano (Singapore) Pte Ltd
Singapore Press Holdings Foundation Limited
Singapore Pools (Pte) Ltd
Singapore Telecommunications Limited
SMCC Overseas Singapore Pte Ltd
Standard Chartered Bank
Tan Jiew Hoe
The Great Eastern Life Assurance Company Limited
The Norinchukin Bank
The UPS Foundation
Unison Construction Pte Ltd
WWF Singapore

Below $10,000

Adencom Investments Pte Ltd
Amriteswari Society
Ang Puay Kim Jami

Donations listed above are of a minimum amount of $1,000. We thank all other individuals and organisations who have given to the charity.

1. In the past year, park-goers had the opportunity to enjoy thrilling performances during the Concert Series in the Park: Rockestra®.
2. HSBC Bank staff helped to propagate coral nubbins in a nursery at the Sisters’ Islands Marine Park Outreach and Education Centre. These coral fragments, when grown to a suitable size, can be transplanted onto a reef at the Marine Park.
Our Sustainability Story

Greenery has become our national identity and makes Singapore highly liveable. Our parks, gardens, nature reserves and verdant streetscapes are valuable assets that contribute to improving the quality of our living environment.

NParks is committed to conserving nature and biodiversity; nurturing greater community stewardship; and building capabilities within the organisation and industry to sustain the momentum of our City in a Garden programme.

Our sustainability strategies are:

- **Sustaining our City in a Garden**
  Creating the best possible living environment through excellent greenery and recreation.

- **Nurturing Communities**
  Strengthening Singapore’s greenery and biodiversity in partnership with the community.

- **Creating a Great Workplace**
  Developing our staff and taking care of their well-being.

### Sustaining Our City In A Garden

#### CREATING A NETWORK OF GREENERY

With over 350 parks and four nature reserves under our care, NParks is responsible for maintaining and enhancing the greenery for future generations. Our nature reserves function as hotspots of rich biodiversity where the public can discover a plethora of wildlife in their natural habitats.

As part of our holistic conservation approach, nature parks have been established on the margins of the nature reserves, acting as green buffers. We enhance the habitats within these buffers so that they remain rustic and forested, while providing an alternative venue for visitors to enjoy recreational activities. Nature parks also buffer the nature reserves against developments that abut the reserves.

Complementing this is an extensive network of roadside greenery and strategic green corridors. These Nature Ways connect areas of high biodiversity and facilitate the movement of biodiversity such as birds and butterflies. They also connect green areas to urban communities, bringing them closer to nature. In addition, NParks champions the integration of skyrise greenery into our built environment, as well as the creation of community gardens to connect residents with nature.

### Creating Urban Ecosystems

Our greening approach is aimed at restoring natural habitats and bringing people closer to nature. For example, the wetland and forest habitats at the Singapore Botanic Gardens’ Learning Forest were restored and recreated to conserve a wide variety of native flora and fauna.

A network of park connectors, roadside greenery and Nature Ways also help strengthen the ecological resilience of our nature reserves, the primary repository of native biodiversity.

### Saving Species

A species recovery programme was initiated in 2015 to conserve native flora and fauna by targeting locally endemic, rare or threatened native species through reintroduction, habitat enhancement and protection efforts. Some of these species occur in small populations in only a few places, and the programme aims to increase these populations and help them survive adverse environmental changes.

Over the past five years, staff, research partners and naturalists have discovered and rediscovered more than 500 marine, terrestrial and plant species in Singapore. This consists of species that are potentially new to science, those recorded in Singapore for the first time, and those previously thought to be extinct.

<table>
<thead>
<tr>
<th>Species Category</th>
<th>Number of Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine species</td>
<td>~100 species possibly new to science</td>
</tr>
<tr>
<td>Terrestrial fauna</td>
<td>37 species new to science</td>
</tr>
<tr>
<td>Terrestrial flora</td>
<td>7 species new to science</td>
</tr>
</tbody>
</table>
GETTING INVOLVED
To date, we have more than 40,000 volunteers who play an integral role in helping us achieve our vision of making Singapore our City in a Garden. Aged from nine to over 80, they range from students, homemakers, working professionals to retirees. Many volunteer because they appreciate the opportunity to learn about, and contribute towards, our conservation efforts. Volunteers often become advocates of our messages, and share with others about important biophilic issues.

STRENGTHENING COMMUNITY STEWARDSHIP
Introduced in 2016, the Friends of the Parks initiative builds on the groundswell of community participation. There are now nine Friends of the Parks communities; each comprises local stakeholders, volunteers and enthusiasts coming together to develop ground-led initiatives to promote stewardship and responsible use of our parks and nature reserves.

CREATING A GREAT WORKPLACE
LEARNING AND DEVELOPMENT
Staff are encouraged to grow their professionalism, build capabilities and provide service excellence. NParks develops staff through a competency development framework focusing on business, operational and people excellence. In 2017, each staff received an average of 42.3 hours of training, equating to some 41,291 hours of training across the whole organisation.

The Centre for Urban Greenery and Ecology (CUGE) and professional certification bodies conduct in-depth training for operational staff, including formulating a specialised roadmap to develop professional arborist competency.

Corporate staff can get certified by industry-recognised agencies such as the Institute of Singapore Chartered Accountants and Institute for Human Resource Professionals.

Staff with Professional Operational Certifications (in 2017)
- 114 Certified Park Manager
- 209 ISA Certified Arborist
- 35 Certified Playground Safety Inspector
- 101 Certified Practising Horticulturist

RECOGNITION AND AWARDS
Each year, deserving staff are recognised for their exemplary service and work with the Excellent Service Award and Divisional Star Award. In 2017, 27 staff were commended for providing excellent service to internal and external customers, while 12 teams, including members across units and functions, were awarded the Greenery Excellence Awards for their outstanding teamwork and operational standards.

This past year, 161 staff received their Long Service Award for their contributions towards building and caring for our City in a Garden.
ASEAN Biodiversity Heroes

Professor Leo Tan
Chairman
Garden City Fund
Advisor, Lee Kong Chian Natural History Museum
Director of Special Projects, Faculty of Science, National University of Singapore

National Day Awards

PUBLIC ADMINISTRATION MEDAL (SILVER)
Oh Cheow Sheng
Group Director
Streetscape

PUBLIC ADMINISTRATION MEDAL (BRONZE)
Ms M Pungkothai Kay
Director (Community-In-Bloom & Skyrise Greenery)
Horticulture and Community Gardening

Ms Linda Goh
Director (Biodiversity Information & Policy)
National Biodiversity Centre

COMMENDATION MEDAL
Mrs Poh-Lim Siew Lan
Senior Manager (Development Management)
Parks Development

Ms Koh Ah Chin
Deputy Director (Budget/Expenditure)
Finance & Procurement

Ms Lin Wenmi Dawn
Deputy Director (Human Resource)
Corporate Services

EFFICIENCY MEDAL
Ng Lee Khiang
Senior Manager (Streetscape)
Streetscape

Sa’im bin Sarbu
Senior Officer (Horticulture)
Fort Canning Park & Istana

Long Service Medals

Gan Wan Ming James Terence
Director (Wildlife Management)
National Biodiversity Centre

Ms Siti Zubaida binte Mumhude
Senior Officer (Streetscape)
Streetscape

Ms Halilah binte Ahmad
Senior Officer (Conservation (Outreach))
Conservation

Tan Chai Yong
Manager (Garden City Fund, Cash Management & Assets)
Finance and Procurement

Yee Chung Yao
Director (Park Connector Network)
Parks 1

Liew Chan Hing
Manager (Herbarium)
Singapore Botanic Gardens

Awards and Accolades

EXCELLENT SERVICE AWARD 2017
Attractions
3 Star, 4 Gold, 6 Silver

EXCELLENCE IN PUBLIC SERVICE AWARD 2017
PS21 Star Service Award 2017
Thoha Zikri Bin Tamzin

PS21 Star Manager Award
Soon Hwee Yeow Jason

PS21 Star Service Team Award
Central Nature Reserve Emergency Respond Team

MND FAMILY MINISTER’S AWARD (TEAM) 2017
Singapore Botanic Gardens Learning Forest
Singapore Garden Festival 2016

MUNICIPAL SERVICES AWARDS 2017
Construction of Staircase at Ulu Pandan Park Connector

COMMUNITY CHEST SHARE GOLD AWARD 2017

SINGAPORE HEALTH AWARD (PLATINUM) 2014
(Valid for four years)
CUGE Training Programmes

The Centre for Urban Greenery and Ecology (CUGE) was established by NParks as a regional centre of excellence to advance an urban and green living environment, and a one-stop training and knowledge hub in urban greenery and ecology.

Workforce Skills Qualification (WSQ) Courses

- WSQ Certificate in Landscape Operations
- WSQ Higher Certificate in Landscape Operations (Arboriculture)
- WSQ Advanced Certificate in Landscape Supervision (Arboriculture)
- WSQ Advanced Certificate in Landscape Supervision (Landscape Design and Construction)
- WSQ Advanced Certificate in Landscape Supervision (Nursery)
- WSQ Advanced Certificate in Landscape Supervision (Parks, Reserves and Gardens)
- WSQ Diploma in Landscape Management (Arboriculture)
- WSQ Diploma in Landscape Management (Landscape Design and Construction)
- WSQ Diploma in Landscape Management (Nursery)
- WSQ Diploma in Landscape Management (Parks, Reserves and Gardens)
- WSQ Diploma in Landscape Management (Turf, Sports Grounds and Greens)
- WSQ in Nature Interpretation

Professional Certification Programmes

- Certificate in Therapeutic Horticulture
- Certified Park Manager Programme
- Certified Playground Safety Inspector Programme
- Certified Practising Horticulturist Programme
- ISA Certified Arborist Preparatory Programme
- ISA Tree Risk Assessment Qualification

International Briefings and Overseas Executive Programmes

- CUGE Overseas Executive Programme on Greenery Planning & Management
- Briefings for Overseas Delegates

Seminars / Professional Speaker Series / Workshops

- 7th Regional Arboriculture Seminar
- ABCs to Setting Up Green Roofs and Green Walls
- An Overview of Marxan
- Assessment of Tree Forks
- Basic Tree Defects Identification
- Biomimicry - Designing with Nature in the Built Environment
- Biochar: An Effective Soil Amendment for Urban Soils and Tree Growth
- CUGE Professional Speaker Series
- Developing Goals and Activities on Horticultural Therapy Programmes
- Edible Landscaping using Permaculture Techniques
- Environmental Impact Assessment: Focus on Biodiversity and Ecosystems
- Ecosystem Services Assessment in City Planning
- Ecology of Singapore Termites
- Formative Pruning for Young Trees
- Fundamentals of Soil Science and Urban Soils
- Habitat Enhancement Seminar
- Health and Safety for Landscape Industry
- Horticulture Standards for NParks Staff
- Human-wildlife Coexistence – Bats in Anthropocene
- Human-wildlife Coexistence – The Wild Boar
- Human-wildlife Coexistence – Interacting with Snakes
- IML-Resi PD Series Certification Workshop
- IML-Resi MD300 Certification Workshop
- Importance of Insects in Environmental Assessment
- Implementing Green Roofs and Vertical Garden Projects - the Why, How and What
- Integrating Skyrise Greenery with Sustainable Building Solutions
- International Standards and Trends in Impact Assessment for Biodiversity
- Landscape Safety Orientation Course
- Lightning Damage: Preventing and Battling Bolts From the Blue
- Managing Irrigation Systems for Skyrise Greenery
- NParks Legislation & Enforcement Management Course
- Occupational First Aid
- Plant Diversity and Nomenclature – Part I, II, III, IV, V, VI, VII
- Playground Maintenance Technician Course
- Risk Assessment for Skyrise Greenery
- Pruning Strategies for Urban Mature Trees
- Skyrise Greenery Module 2 – Design for Safety on Rooftop Greenery
- Therapeutic Gardening for Geriatric Setting
- Therapeutic Garden Design
- Themed Gardens – Attracting Birds into Gardens
- Themed Gardens – Butterfly Gardens: A Practical Design
- Themed Gardens – Fragrant Garden
- Tree Decay – The Fundamentals
- Tree Inspection Level 1
- Tree Inspection Level 2
- Tree Inspection – Failure Documentation and Analysis
- Tree Transplanting Level 1
- Turfing Know How – Axonopus Compressus
- Urban Ecology Strategies for Coexistence with Bees
- Urbanisation and Biodiversity Conservation: Examples from Global Studies and New York City
- Veteran Tree Care

FACTS & FIGURES FY 2017

International Briefings/ Overseas Executive Programmes

- 500
- Short Courses, Seminars, Workshops & Professional Speaker Series
- 2,407
- WSQ Courses
- 4,395
- Certification Programmes
- 194
- TOTAL NUMBER OF TRAINING PLACES
- 7,496
### Facts & Figures FY 2017

#### Regional Parks Maintained by NParks

<table>
<thead>
<tr>
<th>Nature Reserve</th>
<th>Area (ha)</th>
<th>Nature Reserve</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admiralty Park</td>
<td>25.67</td>
<td>Lower Seletar Reservoir Park</td>
<td>8.49</td>
</tr>
<tr>
<td>Ang Mo Kio Town Garden East</td>
<td>4.88</td>
<td>MacRitchie Reservoir Park</td>
<td>12.00</td>
</tr>
<tr>
<td>Ang Mo Kio Town Garden West</td>
<td>20.63</td>
<td>Marsiling Park</td>
<td>10.94</td>
</tr>
<tr>
<td>Bedok Reservoir Park</td>
<td>42.39</td>
<td>Mount Faber Park</td>
<td>58.80</td>
</tr>
<tr>
<td>Bedok Town Park</td>
<td>12.26</td>
<td>My Waterway @ Punggol</td>
<td>12.30</td>
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<tr>
<td>Bishan-Ang Mo Kio Park</td>
<td>62.00</td>
<td>one-north Park</td>
<td>3.39</td>
</tr>
<tr>
<td>Bukit Batok Nature Park</td>
<td>35.74</td>
<td>Pasir Ris Park</td>
<td>73.39</td>
</tr>
<tr>
<td>Bukit Batok Town Park – Little Guilin</td>
<td>42.16</td>
<td>Pasir Ris Town Park</td>
<td>12.36</td>
</tr>
<tr>
<td>Bukit Timah Nature Reserve</td>
<td>162.64</td>
<td>Pearl’s Hill City Park</td>
<td>8.50</td>
</tr>
<tr>
<td>Central Catchment Recreation Area</td>
<td>455.00</td>
<td>Pulau Ubin Recreation Area</td>
<td>692.13</td>
</tr>
<tr>
<td>Changi Beach Park (including Changi Point Promenade)</td>
<td>28.52</td>
<td>Punggol Park</td>
<td>16.66</td>
</tr>
<tr>
<td>Chestnut Nature Park</td>
<td>81.00</td>
<td>Rifle Range Nature Park</td>
<td>67.00</td>
</tr>
<tr>
<td>Choa Chu Kang Park</td>
<td>11.81</td>
<td>Sembawang Park</td>
<td>15.58</td>
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<tr>
<td>Clementi Woods Park</td>
<td>11.48</td>
<td>Sengkang Riverside Park</td>
<td>21.08</td>
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<tr>
<td>Coney Island Park</td>
<td>50.00</td>
<td>Singapore Botanic Gardens</td>
<td>82.00</td>
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<tr>
<td>Dairy Farm Nature Park</td>
<td>63.00</td>
<td>Sisters’ Islands Marine Park</td>
<td>47.68</td>
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<td>East Coast Park</td>
<td>238.08</td>
<td>Springleaf Nature Park</td>
<td>10.78</td>
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<td>Esplanade Park</td>
<td>2.40</td>
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<td>193.31</td>
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<td>Hindhede Nature Park</td>
<td>9.00</td>
<td>Tampines Eco Green</td>
<td>36.61</td>
</tr>
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<td>Hong Lim Park</td>
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<td>Telok Blangah Hill Park</td>
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<tr>
<td>HortPark</td>
<td>24.57</td>
<td>Tiong Bahru Park</td>
<td>3.33</td>
</tr>
<tr>
<td>Istana Park</td>
<td>1.29</td>
<td>Toa Payoh Town Park</td>
<td>4.91</td>
</tr>
<tr>
<td>Jurong Central Park</td>
<td>7.98</td>
<td>Upper Peirce Reservoir Park</td>
<td>4.00</td>
</tr>
<tr>
<td>Jurong Lake Gardens West and Jurong Lake Gardens Central</td>
<td>84.69</td>
<td>Upper Seletar Reservoir Park</td>
<td>15.00</td>
</tr>
<tr>
<td>Kallang Riverside Park</td>
<td>5.16</td>
<td>War Memorial Park</td>
<td>1.74</td>
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<td>Kent Ridge Park</td>
<td>48.40</td>
<td>West Coast Park</td>
<td>50.13</td>
</tr>
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<td>Kranji Marshes</td>
<td>56.29</td>
<td>Windsor Nature Park</td>
<td>75.00</td>
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<tr>
<td>Kranji Reservoir Park</td>
<td>4.13</td>
<td>Woodlands Waterfront Park</td>
<td>11.22</td>
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<tr>
<td>Labrador Park and Nature Reserve</td>
<td>25.88</td>
<td>Yishun Park</td>
<td>13.22</td>
</tr>
<tr>
<td>Lower Peirce Reservoir Park</td>
<td>10.00</td>
<td>Zhenghua Nature Park</td>
<td>17.30</td>
</tr>
</tbody>
</table>

**Total** | **3,271.70***

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* Excludes Bukit Timah Nature Reserve, Central Catchment Nature Reserve, Sungei Buloh Wetland Reserve and Labrador Nature Reserve which have been computed under “Nature reserves”

** Excludes Bukit Timah Nature Reserve, Central Catchment Nature Reserve, Sungei Buloh Wetland Reserve and Labrador Nature Reserve which have been computed under “Nature reserves”

*** Greenery on vacant land taken over from agencies

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**Total Area Maintained**

<table>
<thead>
<tr>
<th>Parks, playgrounds, open spaces, fitness corners and park connectors **</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature reserves</td>
<td>3,347</td>
</tr>
<tr>
<td>Istana and Parliament</td>
<td>42</td>
</tr>
<tr>
<td>House grounds</td>
<td>2,124</td>
</tr>
<tr>
<td>Roadside greenery</td>
<td>66</td>
</tr>
<tr>
<td>Vacant state land</td>
<td>3,749</td>
</tr>
<tr>
<td>State land taken over from Mar 2018***</td>
<td>7</td>
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</table>

**Total** | **12,142**

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* Subject to rounding adjustments
CORPORATE GOVERNANCE FY 2017

Board Members

NParks is overseen by a Board comprising 11 members. The current Chairman is Mrs Christina Ong.

All the Board members are non-executive members, except the Chief Executive Officer, Mr Kenneth Er. The Board derives its strength from the extensive and complementary backgrounds, qualifications and experience of its members.

The Board’s key responsibilities are to:

- Endorse broad directions, policies and strategies relating to NParks’ achievement of its vision, mission and objectives, and performance of its functions;
- Oversee NParks’ operating and financial performance taking into account NParks’ budget, expenditure, assets, transactions and projects;
- Provide guidance on matters relating to NParks’ parks and infrastructure development programmes; and
- Approve NParks’ tenders (as members of the relevant Tender Boards).

The Board has established the following committees to assist it in carrying out its duties:

- Human Resource and Compensation Committee;
- Audit Committee;
- Operations Risk Committee; and
- Garden City Fund Management Committee.

The Human Resource and Compensation Committee’s role is to review key human resource policies and provide strategic oversight of related risks. The Audit Committee ensures a high standard of corporate governance through independent reviews of internal controls, financial reporting processes and financial risks. In addition, the Audit Committee reviews the audited financial statements, as well as the audit plans and observations of external and internal auditors, and also reviews the effectiveness of internal audit. The Operations Risk Committee provides strategic oversight on NParks’ operations risk management framework and conducts reviews of NParks’ operations risks. The Operations Risk Committee also oversees the implementation of risk mitigation plans, policies and practices. The Garden City Fund Management Committee plans, develops, promotes and manages the Garden City Fund in accordance with its Trust Deed.

Board’s Conduct of its Affairs

The Board meets four times a year and as and when necessary to address any significant matters that may arise. To enable the Board to fulfil its responsibilities, the Management Team provides the Board members adequate information during Board meetings and on an ongoing basis. The Board also has direct and independent access to the Management Team if further information and explanation are required.

Accountability and Audit

The Board’s accounts are audited by the Auditor-General or such other auditor who may be appointed annually by the Minister in consultation with the Auditor-General. The auditor engaged for the financial year which ended on 31 March 2018 was Ernst & Young LLP. The audited financial statements and the auditor’s report were submitted to the Board and the Ministry of National Development, and also presented to Parliament.

Internal Control Framework

NParks’ internal control system ensures that assets are safeguarded, proper accounting records are maintained, and financial information is reliable. The overall control framework includes:

- An organisation structure with clearly defined authority and delegation limits and reporting mechanisms to higher levels of management and to the Board;
- An annual budgeting and quarterly financial reporting system for all operating units that enables progress against annual plans and objectives to be monitored;
- Compliance with the provisions of the National Parks Board Act (Chapter 198A), Statutory Board Financial Reporting Standards, Government Instruction Manuals, Finance and PSD Circulars and Minutes for policies and procedures related to operations, human resource management and financial controls and regulations; and
- A risk management framework which ensures close monitoring with proper mitigating measures for all identified high risk areas.
1. **Singapore Garden Photographer of the Year**

   Singapore Garden Photographer of the Year won the Grand Award in the 2016 APEX Awards for Publication Excellence under the category of One-of-a-Kind Publication – Green.

2. **Rainforest in a City**


3. **Footprints on an Island – Rediscovering Pulau Ubin**

   Footprints on an Island – Rediscovering Pulau Ubin won the 2016 Silver Award in the Multicultural & Indigenous category.

4. **Gingers of Cambodia, Laos & Vietnam**

   By Jana Leong-Škorničková and Mark Newman

5. **A Walk Through History – A Guide to the Singapore Botanic Gardens**

   By Nigel Taylor and Ada Davis

6. **Migratory Birds of Sungei Buloh Wetland Reserve**

   By James Gan, Mendis Tan and David Li

7. **My Green Space: Indoor Gardening Made Simple**

   By Lily Chen, Ng Shan Jun, Ang Wee Foong, et al.

8. **A Guide to the Common Epiphytes and Mistletoes of Singapore**

   By Jean W.H. Yong, James Wang Wei, Joanne Y.T. Khew, Sheue Chiu Rong and Wong Wei San


   By Shee Zhi Qiang, Ang Xing Qi, Lahiru Wijedasa and Nigel Taylor (Singapore Botanic Gardens)

10. **Native Orchids of Singapore – Diversity, Identification and Conservation**

    By Dr Yum Tim Wing

11. **Dragonflies of Our Parks and Gardens**

    By Robin Ngiam

12. **The Hunt for the Green Boomerang**

    By Neil Humphreys and illustrated by Cheng Puay Koon

13. **Secrets of the Swamp**

    By Neil Humphreys and illustrated by Cheng Puay Koon

    Secrets of the Swamp won the Best Book award for 6-8 year olds in the 2014 Harper’s Bazaar Junior Toy Awards.

14. **Living in a Garden – The Greening of Singapore**

    By Timothy Auger

15. **Trees of Our Garden City**

    Edited by Teo Swee Ping

16. **Caterpillars of Singapore’s Butterflies**

    By Horace Tan and Khew Sin Khoon

17. **1001 Garden Plants in Singapore**

    By Lily Chen, Ang Wee Foong, Arthur Ng, Jessica Teo and Dr Jennie Tang

18. **Hornbills in the City – A Conservation Approach to Hornbill Study in Singapore**

    By Marc Grenades and Ng Soon Chye

19. **Our Fragile Rainforest**

    By Dr Leong Tzi Ming and James Gan

**Journals**


    Supplement 1 to the Gardens’ Bulletin Singapore, March 2018

**CUGE Standards**

21. **CS ET2: 2017 - Design Guides to Promote Biodiversity on Roof Gardens**

**Periodicals**

22. **Gardenwise, August 2017 & February 2018**

23. **CITYGREEN, issue 14 - Nature In Urban Spaces**

    CITYGREEN, issue 15 - Verdant Cities


These publications are available for sale at the Gardens Shops at the Singapore Botanic Gardens and the online shop www.botanicgardensshop.sg. Visit www.sbg.org.sg for more information.
These papers and other publications are from January 2017 to December 2017.
**FINANCIAL REVIEW**

**Income**

The Group’s income comprised mainly rental income from souvenir kiosks and food & beverage outlets in Singapore Botanic Gardens and Fort Canning Park. The income for the year was $23.5 million. The decrease from last year’s income was mainly due to the decrease in admission charges and plan fees.

**Operating Expenditure**

The Group’s operating expenditure for the year was $286.2 million. The 4% increase from last year’s expenditure was mainly due to an increase in maintenance of parks and staff costs, offset by a decrease in general and administrative expenses.

**INCOME FOR FY 2017 & FY 2016**

<table>
<thead>
<tr>
<th>Income</th>
<th>FY 2017</th>
<th>FY 2016</th>
<th>Increase/(Decrease)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rental income</td>
<td>$9,732</td>
<td>$9,864</td>
<td>($132)</td>
<td>(1)</td>
</tr>
<tr>
<td>Admission charges</td>
<td>$2,140</td>
<td>$2,764</td>
<td>($624)</td>
<td>(23)</td>
</tr>
<tr>
<td>Plan fees</td>
<td>$2,428</td>
<td>$2,890</td>
<td>($462)</td>
<td>(16)</td>
</tr>
<tr>
<td>Course fees</td>
<td>$1,455</td>
<td>$1,481</td>
<td>($26)</td>
<td>(2)</td>
</tr>
<tr>
<td>Agency fees</td>
<td>$1,514</td>
<td>$1,637</td>
<td>($123)</td>
<td>(8)</td>
</tr>
<tr>
<td>Interest income</td>
<td>$2,957</td>
<td>$3,073</td>
<td>($116)</td>
<td>(4)</td>
</tr>
<tr>
<td>Carpark income</td>
<td>$880</td>
<td>$1,092</td>
<td>($212)</td>
<td>(19)</td>
</tr>
<tr>
<td>Miscellaneous income</td>
<td>$2,401</td>
<td>$2,664</td>
<td>($263)</td>
<td>(10)</td>
</tr>
<tr>
<td><strong>Total income</strong></td>
<td><strong>$23,507</strong></td>
<td><strong>$25,465</strong></td>
<td><strong>($1,958)</strong></td>
<td><strong>(8)</strong></td>
</tr>
</tbody>
</table>

**OPERATING EXPENDITURE FOR FY 2017 & FY 2016**

<table>
<thead>
<tr>
<th>Operating Expenditure</th>
<th>FY 2017</th>
<th>FY 2016</th>
<th>Increase/(Decrease)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff costs</td>
<td>$102,528</td>
<td>$95,200</td>
<td>$7,328</td>
<td>8</td>
</tr>
<tr>
<td>Maintenance of parks</td>
<td>$134,246</td>
<td>$124,947</td>
<td>$9,299</td>
<td>7</td>
</tr>
<tr>
<td>General and Administrative expenses</td>
<td>$38,070</td>
<td>$41,920</td>
<td>($3,850)</td>
<td>(9)</td>
</tr>
<tr>
<td>Depreciation</td>
<td>$11,313</td>
<td>$12,132</td>
<td>($819)</td>
<td>(7)</td>
</tr>
<tr>
<td><strong>Total operating expenses</strong></td>
<td><strong>$286,157</strong></td>
<td><strong>$274,199</strong></td>
<td><strong>$11,958</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>
**Capital Expenditure**

The Group’s capital expenditure for the year was $16.8 million. The increase in capital expenditure was mainly due to an increase in development work-in-progress.

**Capital Expenditure for FY 2017 & FY 2016**

<table>
<thead>
<tr>
<th></th>
<th>FY 2017</th>
<th>FY 2016</th>
<th>Increase/(Decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$'000</td>
<td>$'000</td>
<td>$'000</td>
</tr>
<tr>
<td>Land</td>
<td>-</td>
<td>3,957</td>
<td>(3,957)</td>
</tr>
<tr>
<td>Equipment</td>
<td>2,024</td>
<td>2,487</td>
<td>(463)</td>
</tr>
<tr>
<td>Motor Vehicles</td>
<td>66</td>
<td>37</td>
<td>29</td>
</tr>
<tr>
<td>Development work-in-progress</td>
<td>14,691</td>
<td>6,010</td>
<td>8,681</td>
</tr>
<tr>
<td></td>
<td>16,781</td>
<td>12,491</td>
<td>4,290</td>
</tr>
</tbody>
</table>

**Financial Position**

As at 31 March 2018, the Group’s total assets stood at $391 million, an increase of 4% over last year. Non-current assets and current assets represent 31% and 69% of total assets respectively. Non-current assets consisted mainly of leasehold land and buildings and structures at Singapore Botanic Gardens and Fort Canning Park. Capital and reserve stood at $192 million, while current and non-current liabilities stood at $83.6 million and $115.5 million respectively.

**Total Assets**

<table>
<thead>
<tr>
<th></th>
<th>FY 2017</th>
<th>FY 2016</th>
<th>Increase/(Decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity &amp; liabilities</td>
<td>$’000</td>
<td>$’000</td>
<td>$’000</td>
</tr>
<tr>
<td>Capital &amp; reserves</td>
<td>192,042</td>
<td>191,436</td>
<td>606</td>
</tr>
<tr>
<td>Non-current liabilities</td>
<td>115,496</td>
<td>115,393</td>
<td>103</td>
</tr>
<tr>
<td>Current liabilities</td>
<td>83,624</td>
<td>68,151</td>
<td>15,473</td>
</tr>
<tr>
<td></td>
<td>391,162</td>
<td>374,980</td>
<td>16,182</td>
</tr>
</tbody>
</table>
Bougainvillea Garden at East Coast Park

CHAPTER DIVIDERS

Visitors can learn about the rich historical and cultural significance of Fort Canning Park while soaking in the verdant greenery of this 18-ha green space in the city.

In January 2018, a rescued Hawksbill Sea Turtle hatchling was rehabilitated and successfully released back into the wild.

NParks adopts a variety of tools, like interactive plays, activity books and on-site visits, to rouse the innate curiosity children have about the plants and animals around them.

The therapeutic garden at Bishan-Ang Mo Kio Park provides respite for visitors, with the objective of improving their mental well-being.

We thank staff and partners of NParks who kindly contributed photos to this annual report.
