ABOUT
WILDLIFE RESERVES SINGAPORE

Wildlife Reserves Singapore (WRS) is the holding company of the award-winning attractions Jurong Bird Park, Night Safari, Singapore Zoo and River Safari. WRS is dedicated to the management of world-class leisure attractions that foster conservation and research, while educating visitors about animals and their habitats.

A self-funded organisation, WRS also collaborates with various partners, organisations and institutions aimed at protecting local and global biodiversity. Each year, Jurong Bird Park welcomes over 850,000 visitors, Night Safari 1.1 million, Singapore Zoo 1.7 million and River Safari 1 million.

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CHAIRMAN’S MESSAGE

In FY2014/15, we continued to deepen and enhance our contributions to wildlife preservation at Wildlife Reserves Singapore. Celebrating the 20th anniversary of Night Safari was a major highlight of the year. It was especially meaningful for us to have former Prime Minister Goh Chok Tong, now Emeritus Senior Minister, as our guest-of-honour at the park’s birthday party on 23 May 2014, because he had officiated at the park’s opening two decades ago. The park has won many admirers around the world, winning accolades along the way, including 11 awards in the STB Best Attraction Visitor Experience category. Although it makes natural good sense to view zoo animals at night in a place like Singapore, since 90 per cent of tropical mammals (excluding primates) are nocturnal, Night Safari could sustain its success in the world of wildlife attractions only with the added application of expertise and ingenuity to leverage and maximise a blessing of nature. Singapore’s position just one degree north of the Equator gives regular sunset times and cool, mostly dry nights, hence making it an ideal geographical location for a night zoo.

The world’s first nocturnal park – and still one of the very few – is a symbol of some of the core aspirations of Wildlife Reserves Singapore. The spirit of always seeking to renew and to reinvent ourselves is expressed in our other park innovations such as River Safari, the region’s first river-themed park, as well as the new attractions to be unveiled in the future. The capacity to think and to act out of the box, in presenting the best of nature under the cover of darkness, is emblematic of our constant effort to push the boundaries of protecting the planet’s biodiversity and promoting conservation awareness and appreciation. Speaking of pushing boundaries, our launch of the River Safari Cruise in August 2014 literally reached into new territory. We have expanded our interaction with nature into a new space in the waters of the surrounding Upper Seletar Reservoir at Mandai. The 15-minute boat ride offers guests views of the Singapore Zoo and River Safari from the water, including sightings of elephants, rhinos and giraffes. They can also catch sight of wild animals such as white-bellied sea eagles, herons, kingfishers and water monitor lizards. This reservoir’s location highlights a few aspects of WRS parks and their connections with Singapore’s relationship with nature. The parks’ setting in one of Singapore’s largest water catchment areas reminds us of the island’s close ties with water and its intensive adaptations and adjustments to reach self-sufficiency in water – all this while sustaining enough wilderness in this highly urbanised country to still attract an increasing diversity of wildlife.

Our animal stars continued to occupy us as we worked to create connection between our guests and nature through these wonderful wildlife ambassadors. Even closer observation of our River Safari animal stars, the giant pandas Kai Kai and Jia Jia, started this year with the beginning of our “panda baby watch” at River Safari. From October 2014, we started with climate control to help simulate the seasons in the giant panda’s native home, to be followed by further stimulation and monitoring in April 2015, the mating season in spring. As we baby watch, the Zoology and Veterinary staff gain more knowledge in caring for these global symbols of conservation. Kai Kai and Jia Jia are now brought even closer to our guests with a special “Panda Rise and Shine” tour that gives access to the back-of-house area with hands-on experience in breakfast preparations for the well-loved bears.

Meanwhile, the new arrivals that we did welcome included a pangolin, Asiatic lions and giant river otters and a Javan langur for the first time, as well as king birds-of-paradise and Bali mynahs. Highlights of our ongoing display enhancements included the revamped Wings of Asia at Jurong Bird Park, a new exhibit in preparation for the arrival of the koalas from Australia to mark 50 years of bilateral relations between Australia and Singapore, and the upgraded Gibbon Islands, together with a new sheltered walkway from the Singapore Zoo’s main entrance to Ah Meng restaurant, to further improve the guest experience.

Our support for conservation was well-sustained, with 18 projects regionally and many more closer to home. We continued to back, and invest in, conservation of endangered species from the Bali mynah to the Tonkin snub-nosed monkey in Vietnam. On the domestic front, our projects aim to protect vital endemic species such as the Singapore freshwater crab. In the global conservation effort, we also need everyone’s help. This year, our two signature public awareness campaigns took the issue by the horns, as it were, with the “The Hornet’s Truth” aimed at combating the poaching of rhinos and the “You Buy They Die” on the illegal wildlife trade.

We substantially enhanced guest experience by improving our F&B offerings with new outlets and more varied menus. As for retail, our new merchandise store in Orchard Road is an outreach outpost into the commercial heart of Singapore, while the new online e-store connects with all our patrons across the globe. The launch of a mobile-friendly online ticketing site improved operation efficiency and is very popular with local visitors, with 35% of them purchasing tickets through this platform.

All our efforts paid off once again with appreciation from our guests and from industry recognition. WRS bagged four major awards this year: going one level up by earning an Exceptional Achievement award under the Special Recognition category for Night Safari. Night Safari was also recognised for its consistently outstanding efforts in emerging Best Attraction Experience for the third year running since 2012. The Best Attraction Experience award is Night Safari’s 12th honour – a truly fitting honour capping the park’s 20th anniversary celebrations. Our other awards included the River Safari’s “The River is Calling” marketing campaign being awarded Best Innovative Marketing Idea, and the Best Customer Service (Retail) which went to Zoo’s retail staff member Divine Real Clemosa Santos.

It has been yet another year of solid achievement and enhancement for WRS, with outstanding attainment all-round, thanks to the dedication of our passionate and professional team. I would also like to thank our Board Members, shareholders, members of various committees, honorary consultants, sponsors, donors, volunteers and friends, whose unstring support has brought us through the past few decades leading up to SG50. We look forward to achieving and contributing much more together with all of you, into the next 50 years.

Chairman
Wildlife Reserves Singapore
Ms. Claire Chiang, Senior Vice President, Banyan Tree Holdings, is a co-founder of Banyan Tree Hotels & Resorts, and also pioneered the group’s retail business in 1996 which has since grown to 60 over retail outlets worldwide. She serves also as the Chairperson for China Business Development, where she primarily focuses on the acquisition of new management contracts, and an Advisor to the group on Human Capital Development, where she guides key strategic issues in organisational and human capital capability.

Ms. Chiang is also the Chairperson of Banyan Tree Global Foundation, an associate of Banyan Tree Holdings that was established in March 2009 as the sustainability arm of the group. Her role involves directing and guiding the evolving process of the group’s commitment to corporate social responsibility and its mission to “Embrace the Environment, Empower the People”.

In April 2009, Ms. Chiang, together with Mr. Ho Kwon Ping, was a joint recipient of the Hospitality Lifetime Achievement Award at the annual China Hotel Investment Summit. The award was presented to honour outstanding individuals for a lifetime of extraordinary leadership, accomplishments and contributions to the hospitality industry.

Ms. Chiang serves on numerous public and private Boards and has won national and international awards for her advocacy in social and community issues. She is a member of the Tripartite Committee on Work-Life Strategy led by the Ministry of Manpower, the Chairperson of Employer Alliance and Board member of The Tripartite Alliance for Fair and Progressive Employment Practices (TAFEP) which is a network committed to creating an enabling work environment to empower work flexibility and engagement.

In July 2014, she was elected as the Chairperson of Executive Committee, National Book Development Council of Singapore. She is a member of advisory board for Crib Pte. Ltd. She serves as the community advisor for Honour Singapore and was appointed by Ministry of Defence (MINDEF) as a member in main ACCORD and the co-chairperson of the ACCORD (Family & Community Council). Most recently in Aug 2014, she was awarded the Public Service Star BBM for her contribution in implementing work-life integration, as part of Singapore’s commitment, to create fair, responsible and progressive work environment. Meanwhile Ms. Chiang was elected as a Pioneering Member for the Diversity Action Committee to build up the representation of women directors on boards of companies.

Mr. Philip Tan

Mr. Philip Tan was in the commerce and industry sector for 11 years prior to joining the banking and finance sector. He joined the Overseas Union Bank in 1979, holding various senior positions prior to his retirement in 2002 as Executive Vice President.

He holds a Bachelor of Accountancy from the University of Singapore and a Bachelor of Laws from the University of Walsingham, UK. He also holds a post-graduate diploma in Business Administration from the Manchester Business School, UK. He is a Fellow of the Institute of Singapore Chartered Accountants, CPA (Australia), the Association of Chartered Certified Accountants, UK and an Associate of the Chartered Institute of Management Accountants, UK.

Mr. Tan is currently a director of Union (2009) Limited, Alliance Financial Group Berhad and Alliance Bank Malaysia Berhad.

Mr. Tan retired from the Board of Wildlife Reserves Singapore, Singapore Zoological Gardens and Jurong Bird Park on 25th August 2014.

Mr. Chia Ngiang Hong

Mr. Chia Ngiang Hong has over 30 years of experience in the real estate industry. He first graduated from the University of Singapore with an Honours Degree in Bachelor of Science (Estate Management) and later obtained his Master in Business Administration with Distinction from the University of Hull, UK.

Mr. Chia was with the DBS Group before joining City Developments Limited (CDL) in 1981 where he is currently its Group General Manager.

He has been serving as the Vice President of the Real Estate Developers’ Association of Singapore (REDAS) for many terms. He is also a fellow in the Singapore Institute of Surveyors & Valuers (SISV).

Mr. Chia has also served as a Board Member and subsequently as Deputy Chairman of Building and Construction Authority (BCA). He is currently the First Vice President of the Singapore Green Building Council (SGBC). He is a member of the Charity Council, Ministry of Culture, Community and Youth (MCCY) and also a member of the Panel of Assessors for National Council on Problem Gambling (NCPG).

He chairs the Consultative Committee to the Department of Real Estate at National University of Singapore (NUS). He serves as a member of the NUS IDE School Advisory Committee (SAC) as well as a member of the Advisory Panel of the BCA Academy.

Mr. Yu has 30 years of experience in the financial industry. He is currently Chairman of Asia Pacific at ThreadNeedle Investments. Before this, he spent 27 years in Merrill Lynch & Co and was the Chairman of the Merrill Lynch group in Asia Pacific. He is the founding chairman of Abilities Beyond Limitations and Expectations (ABLE), a charity aligned to the physically challenged community in Singapore.

He also serves on the Board of Rickmers (RMT), a member of the Asia Pacific Advisory Committee of Australian Super and a member of the Global Advisory Committee of Bank Julius Beer & Co Ltd.

Mr. Yu is also a Board of fellows at the Thunderbird School of Global Management in Glendale, Arizona, U.S.A.

He obtained his degree in Business Administration from Ateneo De Devao University and has an MBA in International Management from the American Graduate School of International Management (Thunderbird).
MR LIONEL YEO

Mr Lionel Yeo is the Chief Executive of the Singapore Tourism Board. He was formerly the Dean & CEO of Singapore’s Civil Service College, and Deputy Secretary (Development) in the Public Service Division of the Prime Minister’s Office.

Lionel has been an officer of the Singapore Administrative Service since 1994. He has previously served in the Ministry of Trade & Industry, the Ministry of Finance, the Ministry of Information and The Arts, and the Ministry of Community Development. Lionel also serves on the boards of the Urban Redevelopment Authority, Sentosa Development Corporation, National Healthcare Group Pte Ltd, Wildlife Reserves Singapore Pte Ltd and on the Board of Governors of Raffles Institution.

He has a BSc in Economics from the London School of Economics and an MBA from the Massachusetts Institute of Technology’s Sloan Fellows Program.

MR LEE MENG TAT

Mr Lee Meng Tat is the CEO of Wildlife Reserves Singapore (WRS). Prior to joining WRS, he was the Chief Corporate Development Officer, Food & Beverages of Fraser and Neave Group (F&N) and he sat on the boards of a number of F&N’s F&B subsidiaries.

Before returning to F&N (Singapore) in 2009, Mr. Lee was on secondment to Asia Pacific Breweries Ltd (APB) where he was APB’s Regional Director in China and concurrently held the position of Chief Executive Officer of Heineken-APB (China) Management Services Co., Ltd.

Mr. Lee had held various positions with Singapore Tourism Board, Singapore Economic Development Board, Semibewing Leisure Pte Ltd, and DBS Bank Ltd.

Mr. Lee holds a Bachelor’s degree in Mechanical Engineering (National University of Singapore), and an MBA from Imperial College (London), and had completed the Advanced Management Programme at Harvard Business School.

Mr. Lee left WRS as CEO and Board Member on 31 March 2015.

MR KEE TECK KOON

Mr Kee is currently the Non-Executive Chairman of Changi Airports International Pte. Ltd., and Alexandra Health Fund Ltd. He is also engaged as a Corporate Advisor to Temasek International Advisors Pte Ltd., and holds directorship positions in NTUC Enterprise Co-operative Ltd, NTUC Income insurance Cooperative Ltd, Ascendas Pte Ltd, CapitalLand Ltd., and Raffles Medical Group Ltd.

Prior to Mr. Kee’s retirement as the Chief Investment Officer of CapitalLand Limited ("CapitalLand") on 1 July 2009, Mr. Kee held several senior appointments within the CapitalLand Group.

Between April 2003 and January 2007, he was responsible for overseeing the CapitalLand group’s Financial, Commercial and Retail businesses. Prior to that, he was the Managing Director and Chief Executive Officer of The Ascott Ltd. from November 2000 to April 2003.

Between 1996 and 2000, he was the Managing Director and Chief Executive Officer of Somerset Management and Development Services Co., Ltd ("Somerset") on 1 July 2009.

Mr Kee held several senior management appointments with several other organisations. He started his career in 1979 with the Singapore Armed Forces and the Ministry of Defence where he remained until 1991.

Mr. Kee holds a Master of Arts in Engineering Science from Oxford University, United Kingdom.

Mr. Kee joined the Board of Wildlife Reserves Singapore on 1 May 2013.

MS NEO GIM HUAY

Ms Neo Gim Huay is the Managing Director of Temasek International Pte Ltd. The Enterprise Development Group builds businesses, seeding, growing and nurturing promising enterprises in partnership with the Temasek portfolio of companies and other stakeholders.

Prior to Temasek, Gim Huay was an international management consultant with McKinsey & Co in the United States and Africa. She has also served in the Administrative Service of the Singapore Public Sector, with a focus on scenario planning, finance and international trade.

Gim Huay holds a MBA from Stanford University and a Masters of Mechanical Engineering and Bachelor of Arts from Cambridge University.

She currently sits on the Board of the Singapore National Library.

MR SIM HWEE CHER

Mr Sim Hwee Cher is PwC Singapore’s Vice Chairman of Operations and the Head of Audit. He is also a member of the PwC Executive Board for Singapore, China, Hong Kong and Taiwan. He has over 30 years of audit experience and has been actively involved in planning, executing and managing audits of large companies in the manufacturing, real estate, construction, healthcare, insurance companies and trading industries.

Hwee Cher sits on the council of the Institute of Singapore Chartered Accountants (ISCA), which sets the direction for the Institute’s development and oversees its operations as a whole. He is also a Fellow of the Chartered Public Accountants of Australia and the Association of Chartered Certified Accountants of United Kingdom.

Amongst other positions, he also is currently the Secretary General of National Council of Social Service and Community Chest, and member of the NUS School of Accounting Advisory Council.

Ms Neo Gim Huay is the Managing Director of Temasek International Pte Ltd. The Enterprise Development Group builds businesses, seeding, growing and nurturing promising enterprises in partnership with the Temasek portfolio of companies and other stakeholders.

Prior to Temasek, Gim Huay was an international management consultant with McKinsey & Co in the United States and Africa. She has also served in the Administrative Service of the Singapore Public Sector, with a focus on scenario planning, finance and international trade.

Gim Huay holds a MBA from Stanford University and a Masters of Mechanical Engineering and Bachelor of Arts from Cambridge University.

She currently sits on the Board of the Singapore National Library.
COMMITTEE MEMBERS & HONORARY CONSULTANTS

Expert Committee on Zoonoses
Chairman : Dr Leong Hon Keong
Secretary : Dr Charlene Fernandez
Members : Dr Ooi Eng Eong
   Dr Chan Kwai Peng
   Dr Koh Tse Hsien
   Mr Lee Meng Tat
   Dr Cheng Wen-Haur
   Dr Serena Oh
   Mr Kumar Pillai

Honorary Consultants
Dr Tan Hwa Luck
Dr Myra Elliott
Prof Soon-Chye Ng
Dr Koos van den Berg
Dr Curry Keoughan
Dr Anjulia Thomas
Dr Frederic Chua
Dr Hsu Li Chieh
Dr Chew Hock Chin

WRSCF Specialist Panel
Dr Shawn Lum (Chairman)
Dr Geoffrey Davison
Dr Astrid Yeo
Dr David Bickford
Dr Sonja Luza
Dr Leong Tzi Ming
Dr Cheng Wen-Haur

Animal Welfare and Ethics Committee
Chairman : Prof Leo Tan
Secretary : Dr Cheng Wen-Haur
Members : Dr Chew Siang Thai
   Dr Leslie Retnam
   Dr Tan Hwa Luck
   Mr Wong Tuan Wah
   Dr Chris R Shepherd
   Ms Grace Chua
   Dr Stephanie Ho
   Mr Lee Meng Tat

SENIOR MANAGEMENT

Mr Lee Meng Tat          Chief Executive Officer
Dr Cheng Wen-Haur        Chief Life Sciences Officer
Ms Isabel Cheng          Chief Marketing Officer
Mr Tan Choong Kiak       Chief Financial Officer
Mr Melvin Tan            Acting Chief Operating Officer
Mr Andrew De Silva       Director Parks Operations
Mr Barry Choong          Director Estate Management
Mr Cham Tiu Yinn         Director Exhibit Design
Mrs Daisy Ling           Director Corporate Services
Ms Jean Tan              Director Human Resources
Ms Julie Yeong           Director Sales
Mr Kumar Pillai          Director Zoology
Mr Lee Chin Peng         Director IT
Ms May Lok               Director Education
Mr Raja Segan            Director Animal Presentation
Dr Sonja Luz             Director Conservation & Research
Mr Steven Tan            Director Food & Beverage
Mr Steven Wong           Director Finance
Ms Linda Tan             Assistant Director Retail
Dr Luis Carlos Neves     Assistant Director Avian
Dr Serena Oh             Assistant Director Veterinary
Mr David Lim             Head Marketing
## ADOPTERS & DONORS

### PARK | ADOPTER | ADOPTION
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### JURONG BIRD PARK
- **Advanced Prestige Sdn Bhd**
  - Lesser Bird of Paradise Exhibit
- **Borden Company Pte Ltd**
  - American Bald Eagle, Sue Allen & Eagle Statue
- **Coca-Cola Singapore Beverages Pte Ltd**
  - Pair of Scarlett Macaws from the High Flyers Show, Vega & Petina
- **Digiphoto Entertainment Imaging Pte Ltd**
  - Macaw Island
- **Goodwood Park Hotel Limited**
  - Brahminy Kite, Ronnie II
- **Hong Leong Foundation**
  - 24 Flamingoes from the High Flyers Show
- **Lee Foundation Singapore**
  - Penguin Coast
- **M1 Limited**
  - Malayan Fish Owl Tupa
- **Protek Chemicals & Engineering Pte Ltd**
  - White-collared Kingfisher
- **Singtel Mobile Singapore Pte Ltd**
  - Blue-Breasted Kingfisher
- **SPH Foundation Ltd**
  - High Flyers Show
- **Starhub Mobile Pte Ltd**
  - Scarlet Ibis Exhibit
- **State Bank Of India (Singapore)**
  - Flamingo Lake
- **Thai Airways International Public Co. Ltd**
  - Trams at Jurong Bird Park
- **The Shaw Foundation Pte**
  - Fly Pass Macaws from the High Flyers Show
- **Unilever Singapore Pte Ltd**
  - Harris Hawk, Angel

### NIGHT SAFARI
- **Apple South Asia Pte Ltd**
  - Leopard Exhibit
- **Casa Italys Pte Ltd**
  - Bat-Eared Fox Exhibit
- **Chemical Industries (Far East) Ltd**
  - Malayan Tiger Viewing Shelter
- **Coca-Cola Singapore Beverages Pte Ltd**
  - Asian Golden Cat Exhibit
- **Goodwood Park Hotel Limited**
  - Fishing Cat Trail
- **Haw Par Healthcare Limited**
  - Malayan Tiger Exhibit
- **JTB Pte Ltd**
  - Lion Exhibit
- **JTB Pte Ltd**
  - Sambar Deer & Elephant Exhibit
- **Khoo Teck Puat Foundation**
  - Fishing Cat Trail
- **M1 Limited**
  - Giraffe Exhibit
- **M1 Limited**
  - Agile Gibbon, Gangsa
- **Martin Storey**
  - Babirusa Habitat
- **Mr & Mrs Lim Soo Peng**
  - Red Crowned Cranes
- **OCBC Limited**
  - Hippopotamus
- **Singapore Management University**
  - Clouded Leopard Exhibit
- **Singapore Refining Company Pte Ltd**
  - Marsh Bird Exhibit
- **Singtel Mobile Singapore Pte Ltd**
  - Anakolu Exhibit
- **Standard Chartered Bank**
  - Giant Flying Squirrel Exhibit
- **Starhub Mobile Pte Ltd**
  - Serval Segment - Creatures Of The Night Show
- **Thai Beverage PLC**
  - Asian Elephant, Chawang
- **The Shaw Foundation Pte**
  - Slow Loris Exhibit

### RIVER SAFARI
- **Capitaland Limited**
  - Presenting Sponsor & Conservation Donor of Kai Kai & Jia Jia
- **Coca-Cola Singapore Beverages Pte Ltd**
  - Scarlet Ibis
- **JTB Pte Ltd**
  - Red Panda Exhibit
- **M1 Limited**
  - Jewel Tank
- **Mitsubishi Corporation**
  - Jaguar Cave
- **Mitsui & Co (Asia Pacific) Pte Ltd**
  - Melong Giant Catfish Exhibit
- **Siemens Pte Ltd**
  - Sponsorship of Control Climate at Giant Panda Forest
- **Singapore Airlines Limited**
  - Official Airline of the Giant Panda Programme
- **Singapore Press Holdings Limited**
  - Amazon Flooded Forest
- **Singtel Mobile Singapore Pte Ltd**
  - Congo Beauties
- **The Shaw Foundation Pte**
  - Manatee Feeding Program
- **Vale International S.A. - Singapore Branch**
  - Jaguariundi Exhibit

### PARK | ADOPTER | ADOPTION
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### SINGAPORE ZOO
- **Abbott Laboratories (S) Pte Ltd**
  - Giraffe, Growie
- **Australia And New Zealand Banking Group Limited**
  - Australian Outback
- **Australian International School Singapore**
  - Camelon Trustee Limited
- **Cameleo Trustee Limited**
  - Malayan Tiger Exhibit
- **Cheong Kim Loone Foundation**
  - White Tiger, Omar
- **Coca-Cola Singapore Beverages Pte Ltd**
  - Sugar Cane Plant at Tropical Crops
- **ED & F Man Asia Pte Ltd**
  - Chimpanzee, Nosiah
- **Galborg Pte Ltd**
  - Agile Gibbon, Gangsa
- **General Motors Overseas Dist. Corp. Of Singapore**
  - Malayan Tiger Viewing Shelter
- **Haw Par Corporation Ltd**
  - Red-tailed Hawk Exhibit
- **Henkel Singapore Pte Ltd**
  - Chimpanzee, Gangsa
- **Hong Leong Foundation**
  - Fragile Forest Exhibit
- **Industrial And Commercial Bank Of China Limited**
  - Cotton-Top Tamarin Exhibit
- **Interbev (Singapore) Limited**
  - Wildlife Healthcare And Research Centre
- **Kentucky Fried Chicken Management Pte Ltd**
  - Zebra Exhibit
- **Lee Foundation Singapore**
  - Orang Utan, Endah
- **Lee Foundation Singapore**
  - Stables At Rainforest Kidzworld
- **M1 Limited**
  - Elephants at Work & Play Show
- **M1 Limited**
  - Orang Utan, Binte
- **Mitsui & Co. (Asia Pacific) Pte Ltd**
  - Orang Utan, Saloma
- **Mrs Christina Ong**
  - Orang Utan, Isha
- **Ms Isabella Loh**
  - Orang Utan, April
- **Ms Kay Kuok**
  - Orang Utan, Kenji
- **OCBC Limited**
  - Orang Utan, Ah Meng Junior
- **Pink Apple Pte Ltd**
  - Chimpanzee, Susie
- **Protek Chemicals & Engineering Pte Ltd**
  - Chimpanzee, Jengo
- **Renesas Semiconductor Singapore Pte Ltd**
  - Polar Bear, Inuka
- **Sime Darby Insurance Brokers (S) Pte Ltd**
  - Probocons Monkey Exhibit at SPH Conservation Centre
- **SPH Foundation Ltd**
  - Red Langoor Exhibit
- **Starhub Mobile Pte Ltd**
  - Asian Elephant, Gambir
- **State Bank Of India (Singapore)**
  - Asian Elephant, Tintin
- **Thai Airways International Public Co. Ltd**
  - Chimpanzee, Ida
- **The Shaw Foundation Pte**
  - The Shaw Foundation Amphitheatre
- **United Overseas Bank Limited**
  - Lion Exhibit
- **Vale International S.A. - Singapore Branch**
  - Coconut Exhibit
YEAR IN REVIEW

Night Safari celebrates 20th Anniversary
Launch of River Safari Cruise
‘Be A Feather Friend’ membership drive as part of SG50 Celebrations
Launch of Wings of Asia
Upgraded Gibbon Island reopens

Inaugural Safari Boo draws huge crowds
Safari Gate opens gateway to wildlife
Launch of Panda Rise and Shine Behind-The-Scenes
Launch of Fishy Business Behind-The Scenes Tour

Night Safari wins STB BEST Visitor Attraction Experience and Special Recognition Award
River Safari wins STB Most Innovative Marketing Idea for ‘The River Is Calling’ marketing campaign
Divine Real Clenista wins STB Best Customer Service (Retail) Award
WILD HAPPENINGS

20 YEARS OF FUN IN THE DARK

Night Safari, the world’s first zoo for nocturnal animals, marked its 20th anniversary on 23 May 2014 with a celebration – at night, of course – graced by the Guest of Honour Emeritus Senior Minister Goh Chok Tong who also officiated the park opening in 1994.

Night Safari was a wildlife park innovation conceptualised by the same visionaries who created the critically acclaimed Singapore Zoo. Since opening on 26 May 1994, the park provides local residents and tourists an insight into the mysteries of the tropical jungle after sunset, surprising many, many visitors over the years with its wide range of nocturnal animals in natural settings, in a densely urbanised country. The park also added meaning and new dimensions to Singapore’s ‘nightlife.’

The late Dr Ong Swee Law, founder and Executive Chairman of Singapore Zoo, in his project proposal for Night Safari, wrote: “Nothing like the Night Safari can be found anywhere else in the world: it is truly unique.” He also highlighted that it makes good sense to view zoo animals at night since 90 per cent of tropical mammals (excluding primates) are nocturnal.

Over the past 20 years, Night Safari has constantly been renewing and rejuvenating its animal collection, product offerings and facilities to improve visitor experience. To commemorate the 20th anniversary, the park introduced a pair of white lions and launched two new exhibits featuring Asiatic black bears and Malayan tigers as the finale exhibit at the end of the park’s 35-minute tram experience.

The majestic male white lion at Night Safari. White lions are a result of a gene mutation, which gives rise to the rare pale colour.

also, with dusk occurring every day around 7.30pm and cool nights, Singapore is an ideal geographical location for a night zoo.

Today, Night Safari stands at the forefront of wildlife conservation, adopting studied approaches to conservation science, partnership and research. The park opened the world’s first Sunda pangolin exhibit, and has successfully bred this species, which is one of Singapore’s few remaining mammals. Other endangered species bred include the Asian lion, Malayan tapir, clouded leopard and Asian elephant.

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To commemorate the 20th anniversary, the park introduced a pair of white lions and launched two new exhibits featuring Asiatic black bears and Malayan tigers as the finale exhibit at the end of the park’s 35-minute tram experience.

The celebrations continued with on-ground fringe activities and performances. Admission charges were reduced to $20 to tie-in with the 20th anniversary weekend, drawing more than double the usual visitorship.
RIVER SAFARI CRUISE OFFICIAL LAUNCH

WRS further expanded its wildlife offerings beyond the ‘conventional park boundaries’ with the official launch of the River Safari Cruise in August 2014. Guests can go on a relaxing nature cruise on the waters of the adjoining reservoir and enjoy views of clear blue skies, lush green forests and, more importantly, chance upon wildlife.

The 15-minute cruise plies the scenic Upper Seletar Reservoir – one of Singapore’s largest water catchment areas – and provides guests with a rare opportunity to commune with nature in the breathtaking setting of the tropical rainforest and shimmery waterways. Built in 1920, this reservoir holds up to 5,000 million gallons of water and is one of the four reservoirs in Singapore’s nature reserves. This man-made lake not only provides drinking water, but is also home to many native species such as the water monitor lizard, long-tailed macaque, heron, kingfisher and white-bellied sea eagle that thrive in or around the reservoir. During the journey, guests will learn about the beautiful forest giants that surround the reservoir and the delicate freshwater habitats.

The majestic beauty of Southeast Asian birdlife was on display once again at the Jurong Bird Park, with the official opening of the Wings of Asia in January, after a three-month renovation. Guest can marvel at over 500 birds representing 135 Asian species, including 24 threatened ones such as the Bali mynah, Luzon bleeding-heart dove and black-winged starling. These species have been successfully hatched and raised as part of the park’s ongoing conservation breeding programmes.

WINGS OF ASIA’ TAKES FLIGHT

The River Safari Cruise meanders along the outskirts of Singapore Zoo and Night Safari, giving guests a chance to spot wildlife such as giraffes and rhinos near the edges of these parks. Lucky guests may catch a glimpse of elephants going on daily walks along the water’s edge.

This latest boat attraction symbolises WRS’ commitment to creating immersive wildlife experiences by refreshing and rejuvenating exhibits and attractions across its four parks. The cruise complements the River Safari experience and the park’s focus on increasing awareness of freshwater habitats.

Previously known as the Southeast Asian Birds Aviary, the 2,600 square-meter exhibit underwent a makeover which included the expansion of smaller aviaries, theming work, refreshed educational displays for guests to learn about the different species of birds, and an overhaul of its aviary mesh for better viewing.

Mr Desmond Lee, Minister of State for National Development, as Guest of Honour for the opening of Wings of Asia, Jurong Bird Park.
SAFARI BOO – MERRY NOT SCARY

For the first ‘merry not scary’ Halloween celebration, River Safari was transformed into a fantasy wonderland where children could visit game stations for tricks or treats, meet friendly mermaids, view river monsters, enjoy close encounters with animals, and take photos with mascots and characters such as Pinocchio and Geppetto. The little ones came in their ‘scariest’ Halloween costumes to vie for the ‘best dressed’ title. The event, which offered an evening of wholesome family fun and opportunities to learn about wildlife, drew huge crowds. It is set to become a signature event at River Safari, adding another dimension to enhancing guest experience at the park.

WRS joined in the leadup to the celebrations in 2015 of SG50, Singapore’s 50th anniversary of independence. To mark SG50, the “Be a Feather Friend” promotion at Jurong Bird Park – available throughout 2015 – enabled visitors to become an annual member for unlimited visits through the 12 months for just the price of a normal one-day ticket. With another burst of promotion during the March 2015 school holidays, members’ attendance has increased by 237% during the reporting year.

Collaborations with the Singapore Tourism Board’s Tourism 50 promotions included the “Be a Panda Researcher”, “Fishy Business” and “Spineless and Successful” activities for families during the June 2014 school holidays. WRS’ contributions to the slew of SG50 celebrations drew many Singaporean residents and their children to discover – or rediscover – WRS’ attractions, together with their relatives and friends from overseas.

‘Fishy Business’ was one of the back-of-house tours offered during STB’s Tourism 50 promotions to encourage Singaporeans to rediscover WRS parks and hopefully become ambassadors in promoting the attractions to their overseas relatives and friends.

Safari Boo is a wholesome family event with great entertainment and learning opportunities. It was immersive fun, especially for those who attended the event, dressed to the nines.
OUR LIVING COLLECTION

WRS holds 13,625 specimens representing 950 species in its collection, one of the largest among wildlife institutions globally. Of the species held by WRS, 21% are listed as threatened* on the International Union for Conservation of Nature (IUCN). The Zoology, Avian and Veterinary staff continued to work tirelessly to deepen husbandry and veterinary expertise to care for the living collection. As always, WRS did well in breeding a number of threatened species and contributed towards boosting genetic biodiversity of these species through animal exchange programmes and research collaboration with other wildlife institutions.

*threatened species include animals that are extinct in the wild, critically endangered, endangered and vulnerable, classification is based on IUCN Red List of Threatened Species.

Non-Threatened
756 species (79% of total species)

Threatened species*
200 (21% of total species)

EW – Extinct in the Wild
1 species (Scimitar Horned Oryx)

CR – Critically Endangered
29 species

EN – Endangered
74 species

VU – Vulnerable
98 species

WRS Collection

Total Specimen
14,662

Total Species
958

PANDA BABY WATCH BEGINS

In the wild, giant pandas breed between March and May. Their breeding cycle is triggered by, amongst other factors, a change in temperature and day-length brought about by the changing seasons. To trigger the breeding cycle of Jia Jia, temperature and day-length adjustments were introduced in October in the giant panda facility to simulate the seasonal change to winter with shorter days and a lower temperature. The giant panda keepers kept a close watch on Jia Jia while all at WRS kept their fingers crossed in the hope that she would come into oestrus and eventually produce a giant panda cub. As March approached, Jia Jia’s keepers kept a close watch on her for signs of oestrus and readiness to mate.

NEW ARRIVALS

This year, WRS had a total of 398 successful births, representing 76 species, of which 23 are threatened. A good number of 477 chicks from 97 species were also hatched at Jurong Bird Park.

For WRS, babies are always good news as breeding successes are an indication that the animals are receiving high standards of care since they do not breed when they are in poor physiological state or when the environment is not conducive.

Beyond successful births is a long journey ahead, not just for the parents in raising the babies but also for the keepers who have to pay very close attention to ensure that the young are receiving proper care from their parents, failing which they may have to intervene and hand-raise the babies. Manatee calf ‘Canola’ at River Safari is one such animal that was successfully hand-raised by the aquarists and the veterinary team. ‘Canola’ was born on 6 August 14 to ‘Eva’. For unknown reasons, Eva abandoned her despite having successfully raised eight offspring in the past. The River Safari team had no choice but to step in to care for Canola. They had to monitor ‘Canola’ 24 hours for the first few days, bottle feed it every two to three hours during the first months before reintroducing it gradually to its family.

Manatee calf ‘Canola’ at River Safari is one such animal that was successfully hand-raised by the aquarists and the veterinary team. ‘Canola’ was born on 6 August 14 to ‘Eva’. For unknown reasons, Eva abandoned her despite having successfully raised eight offspring in the past. The River Safari team had no choice but to step in to care for Canola. They had to monitor ‘Canola’ 24 hours for the first few days, bottle feed it every two to three hours during the first months before reintroducing it gradually to its family.

‘Carlos’ and ‘Carmen’, the pair of giant river otters in River Safari fared a lot better this year – they managed
to raise two pups successfully from their second litter, after having lost their first pup the previous year. River Safari is the first zoological institution in Asia to feature the endangered giant river otter and is proud to have successfully bred and raised the species.

WRS’ conservation efforts of native species received a great boost with the birth of yet another female Sunda pangolin at Night Safari on 13 July 2014. One of the few remaining mammalian species in Singapore, the Sunda pangolin is a frequent victim of road accidents as rapid urbanisation on our island state encroaches on its forest habitat. This species is also found in Southeast Asia and is severely threatened by poaching for its scales and meat which are believed to have medicinal value. Apart from ex-situ conservation efforts through breeding the Sunda pangolin, WRS actively engages guests and the community on the plight of this and other threatened species through strong conservation messaging.

Night Safari successfully bred two Asian lions. This endangered big cat is found only in the Gir forest in India. According to the 2014 population census, there are 523 Asian lions in the wild, up from 411 in 2010. This piece of good news shows that with concerted efforts in habitat protection, public education, local community involvement and captive breeding, there is hope in wildlife conservation. WRS certainly wants to contribute in every possible way to this meaningful endeavour, through effective conservation messaging and call to action to stop the consumption and purchase of wildlife products and to reduce wastage of natural resources.

The two giant river otter pups from the second litter have been successfully raised by their parents, Carlos and Carmen. Being endangered, the pups are welcome additions to River Safari.
Jurong Bird Park hatched a number of rare feathered jewels such as the king bird-of-paradise, Bali mynahs, grey-winged starlings, palm cockatoos and blue-throated macaws. Four king bird-of-paradise chicks were hand-raised by Avian keepers after the first two weeks to enhance their chance of survival. The hornbill collection also expanded with the arrival first-ever Southern ground hornbill chick, and two Papuan hornbill hatching, after a hiatus of six years.

**ACQUISITIONS**

WRS’ big cat collection was enhanced through new imports of a pair of white tigers and three lionesses (from Zoo de Cerza, France) for display at Singapore Zoo, and a male Sri Lankan leopard for Leopard Trail at Night Safari.

A two-year-old male red panda was received from Hamilton Zoo, New Zealand through WRS’ participation in the Zoos and Aquariums Association (ZAA) Australian Species Management Programme for red pandas. It is hoped that this unrelated male will eventually breed with the existing female red panda at River Safari to enhance the genetic diversity of the captive population of the species.

**EXHIBIT ENHANCEMENTS**

Singapore Zoo's Gibbon Islands was upgraded with a wider water moat to resolve the issue of water overflowing onto the visitor path when torrential rain pours down. A waterproof membrane was also added to line the moat to prevent leakage. The exhibit, which houses a pair of critically endangered buff-cheeked gibbons, was re-opened in January 2015. A variety of mature trees were planted and vines added to simulate the natural environment of these apes and to allow them to brachiate as they would in the wild.

At Night Safari, construction of the elephant romp was completed in May 2014 to provide soft ground for the elephants when they are taken for walks during the day around Night Safari. This helps to alleviate common foot problems in elephants caused by walking on hard surface.

River Safari’s dwarf crocodile exhibit was re-opened in January, after upgrading works to incorporate an aviary to house kingfishers and weaver birds. The beaver exhibit was closed for conversion into a freshwater biodiversity display with colourful fish species, and a variety of animals that can be found along river banks, such as iguanas, tamarins, marmosets and mouse deer.

At Jurong Bird Park, the Wings of Asia was officially re-launched on 21 January 2015 by Mr. Desmond Lee, Minister of State for National Development. Previously known as the Southeast Asian Birds Aviary, it went through a three-month makeover to include the expansion of smaller aviaries and refreshed educational displays.

**ASSISTANT PROGRAMME FOR SURABAYA ZOO**

Following allegations on animal welfare issues in Surabaya Zoo, the Southeast Asian Zoo Association (SEAZA) set up an assistance programme to provide support and WRS chipped in by sending Zoology Specialist Sam Alagappasamy on a five-day trip to Surabaya Zoo. With two other SEAZA officials, he conducted training on animal husbandry, enrichment and safety protocol to help improve the standard of animal care in the institution.
SAVING WILDLIFE

This year, WRS continued to take the lead in initiating and managing conservation and research efforts. This is done through planning and collaborating with conservation partners on numerous in-situ projects in Singapore and Southeast Asia, raising awareness on various conservation issues through campaigns and outreach programmes and facilitating capacity-building through conservation strategy planning and training workshops.

REGIONAL PROJECTS SUPPORTED BY WRS

During the reporting period, WRS supported 18 conservation projects, of which 16 are located in Southeast Asia – a region with immensely rich but threatened biodiversity. The map (Fig. 1) shows the location and species of interest for these conservation projects.

*Map indicating conservation projects, mostly regional, supported by WRS.*

**Tonkin snub-nosed monkeys, Vietnam**

WRS continued its ongoing effort since 2009 to support conservation of the critically endangered Tonkin snub-nosed monkey in Khau Ca Area, Ha Giang Province. This helps with monitoring the monkey population, habitat and genetic variability, as well as regular patrolling for illegal human activity through the hiring of four local research assistants to enhance law enforcement.

**The Palawan pangolin, Philippines**

The Palawan pangolin is in high demand for international trade of skin, scales and meat. WRS supports the Katala Foundation Inc. to conduct a population survey of the pangolins as well as to study daily behavioural patterns using radio telemetry, to better assess numbers of wild population and provide scientific data to the red-list authorities of IUCN.

**The Philippine cockatoo**

The Philippine cockatoo, originally found on all major and hundreds of smaller islands within the Philippine archipelago, is now critically endangered mainly due to poaching and loss of lowland habitat. Support from WRS to the Katala Institute for Ecology and Biodiversity Conservation helped the acquisition of a portable brooder and voltage regulator for raising rescued hatchlings. The support also helped with a cockatoo exhibit for conservation education through construction of two observer huts along visitor trails, a cockatoo food garden and information boards to educate visitors on the cockatoos as well as other native species such as porcupines and the Palawan forest turtle.

**The Philippine forest turtle**

WRS is supporting a project by the Katala Institute for Ecology and Biodiversity Conservation (KIEBC) to improve the captive breeding facilities for the Philippine or Palawan forest turtle. KIEBC plays a key role in the conservation of the Palawan forest turtle as it holds the only range assurance colony of the species since 2007.

**The Proboscis monkey, Borneo**

WRS has been committed to proboscis monkey conservation since 2004, with the first comprehensive statewide survey of the species’ population and conservation status in Sabah, East Malaysia. It has been more than 10 years since the first survey was conducted and WRS is now supporting a study to reassess the status and extinction risk of proboscis monkeys in Sabah, East Malaysia and Balikpapan Bay, Kalimantan. The study serves to deepen the understanding of the habitats and food plants of the proboscis monkey, the knowledge of which is key to improving efforts for conservation of the species.

**Hydroelectric dam impact, Borneo**

The Bakun hydroelectric dam was implemented in Borneo in 2011. This study aims to create an inventory of species, especially primates and mammals, and to understand the effects of the dam on their ecology. The study also covers the impact of the dam construction on longhouse communities along the Balui River, now Balui Lake.
Illegal wildlife trade, Bali

WRS is supporting TRAFFIC, the wildlife trade monitoring network, in an in-deeper assessment of illegal wildlife trade in Bali. The assessment will provide better understanding of the issues to help TRAFFIC to be better placed to assist enforcement action towards reducing illegal wildlife trade.

The Bali mynah

WRS is assisting the Begawan Foundation for the conservation of the critically endangered Bali mynah in a five-year collaborative project to breed and release the species into the wild.

In February 2015, the WRS team joined the team from Begawan Foundation to perform an audit of the species on one of Bali’s offshore island, Nusa Penida, where the mynah had been released previously. The WRS team also provided veterinary advice and capacity-building to improve the husbandry of the birds in captivity on mainland Bali.

Coffee and Gibbons

This project seeks to protect the gibbons of Central Java by helping villagers there to see the connection between the Sokokembang Forest, which is home of these primates, and the value of coffee. Coffee generates income for the villagers who plant the crops under the natural shade of forest trees. This long-held practice of growing coffee in the wild, also known as shade-grown coffee, helps to preserve the forest and conserves the habitats of the Javan gibbon and other endemic species.

The support from WRS went towards raising awareness on local protection laws of the gibbons in the form of ‘ban’ boards installed in the forests. A radio campaign and education events were held to raise the awareness of the plight of the Javan gibbon amongst the youth, general community and schools in villages surrounding gibbon habitat, as well as equipping and supporting students in research activities (e.g. bioacoustics study). The support also helped in carrying out a survey on the Javan gibbon to better understand the population and developing a sustainable marketing strategy using coffee and palm sugar to encourage conservation, as well as a fundraising activity. A Javan gibbon information center was also established.

The Slow loris, Indonesia

WRS is supporting Yayasan IAR Indonesia to rescue, rehabilitate and conduct controlled and systematic reintroduction and translocation of the slow lorises back to their native habitats. The efforts include awareness programmes, reintroducing confiscated slow lorises into the wild, publishing scientific papers and collaborating with local communities, universities, the Indonesian government and other stakeholders to implement conservation initiatives and build capacity of local staff and students.

Threatened species, Java and Sumatra

WRS is supporting the Cikananga Conservation Breeding Center to maintain and expand captive colonies of four Javanese and one Sumatran endemic species. The species include the Javan warty pig, black-winged starling, Javan green magpie, Rufous-fronted laughing trush and Sumatran laughing trush. This year, WRS support helped mitigate security issues by enhancing surveillance and safety measures in the breeding complexes.

The Orang utan, West Kalimantan, Indonesia

WRS is supporting Yayasan IAR Indonesia to rescue, rehabilitate and conduct controlled and systematic reintroduction and translocation of orang utans from their native habitats. Education and awareness activities were conducted in an identified human-orang utan conflict area to engage and garner support of the local community in the conservation efforts of these endangered apes.
**Human-elephant conflict, Indonesia**

WRS supports a Conservation Response Unit (CRU) in Tangkahan managed by the Veterinary Society for Sumatran Wildlife Conservation, Sumatra. CRU patrols Mount Leuser National Park area to prevent illegal poaching. The monitoring activities and early detection of wild elephants by the CRU team, enables them to help mitigate human-elephant conflict (HEC) by driving wild elephants away from the villages before the elephants were able to venture into the farmland, preventing crop damage. The CRU team also trains the community on wild elephant behaviour and how to approach different conflict situations in an appropriate and effective way.

**Wild elephants, Malaysia**

WRS has been supporting the Management & Ecology of Malaysian Elephants (MEME) research project since 2012. This year, WRS funded the use of video camera traps to identify individual elephants, to provide the first data on the social organization and demographic parameters of Asian elephants in a Southeast Asian rainforest. The result will be used to advise the Malaysian Department of Wildlife and National Parks on suitable elephant conservation strategies.

**River terrapins, Indochina**

WRS and Wildlife Conservation Society (WCS) have joined efforts for the conservation of endangered turtles in Southeast Asia. This project focuses on four species of turtles. Southern River Terrapin Batagur affinis in Cambodia, Batagur trivittata from Myanmar, Rote island snake necked turtle Chelodina mccordi and the Vietnamese pond turtle Mauremys annamensis. WRS supported genetic analysis of 130 critically endangered southern river terrapin in Cambodia, to identify the 20 individuals most suitable to form an assurance colony. Genetic research is ongoing on the Burmese roofed turtle for a similar assurance colony in Myanmar. The Singapore Zoo received the Roti island snake-necked turtle and the Vietnamese pond turtle to establish assurance colonies.

**King cobras, Thailand**

WRS is supporting a research project on king cobras in Sakaerat Biosphere Reserve, Wang Nam Khiao, Thailand, using intensive radio telemetry to understand their behaviour and spatial ecology. This year, WRS’ support went towards local community engagement through village visits, school outreach programmes as well as hosting a king cobra seminar attended by locals and university students.

**Carnivorous caterpillars**

This project by Dr Melissa Whitaker from Harvard University’s Museum of Comparative Zoology aims to understand the ecology, life cycle of gossamer-winged butterflies, and to explore factors that determine their diet and symbiotic relationship with ants. Some of the caterpillars of gossamer-winged butterflies produce ‘honey dew’ to attract ants and drug them to become their body guards. For some species, the caterpillars live in ant nests and trick the ants into feeding and caring for them. They can become predatory and consume the ants eventually.

**Common palm civets**

This research project is conducted by N. Sivasothi, Fung Tze Kwan and Xu Weiting from the National University of Singapore (NUS), and Dr Christina Colon from Kingsborough Community College, City University of New York on the ecology of released common palm civets. This civet is commonly found in urban areas of Singapore, and has created human-civet conflict. Each year, some 20 ‘problem’ civets are rescued, sent to WRS, rehabilitated and eventually released. Little is known about the fate of these individuals. The study aims to provide answers to this question. Four civets released in the central catchment area were tracked via radio collars. Findings indicate that human-wildlife conflict can potentially be mitigated by translocation, as civets posing a problem in one area might not necessarily do so in another.
Reticulated pythons

The reticulated python is a common snake in Singapore, well adapted to the urban environment. While it plays an important role as a predator in controlling the population of the pesky rodents, it is not always welcome by residents. Through Singapore Zoo’s ‘mark-and-release’ programme, pythons captured in housing compounds and industrial warehouses are marked and translocated to secondary forest or wasteland areas away from densely populated areas. Little is known about their movement after that but it appears that they have strong homing instincts as they regularly return to their initial capture site after being released at a different location.

With funding support from WRSCF, Mary-Ruth Low from NUS is using radio- and GPS-telemetry to obtain a greater understanding of the spatial ecology of these snakes. This will generate more effective preventive strategies in keeping snakes from re-entering their initial capture sites near housing and industrial areas, thereby mitigating human-python conflict.

Coral reefs

In the past two decades, reef restoration, including artificial reef structures deployed on reefs at Singapore’s southern offshore islands and coral transplants on various reefs and seawalls have been carried out. To assess the effectiveness of coral reef restoration efforts, a study by Lionel Ng from NUS aims to evaluate if coral transplants have established themselves at Singapore’s offshore islands and contributed to larval supplies during the annual mass coral spawning events. This study also aims to establish if installation of artificial reef structures has provided ecosystem services such as habitat creation. Such evaluation is important in helping establish effective reef restoration strategy moving forward.

Tropical butterflies

Like bats, butterflies are important pollinators of flowers and contribute greatly to fruit production. Unknown to many, Singapore has rich butterfly biodiversity and is home to some 323 known butterfly species. This study by Anuj Jain from NUS maps the hotspots where butterflies are found in Singapore and aims to establish the threats to the reproduction and survival of butterflies species at risk. The effect of different habitats on the home range of butterflies was evaluated through a ‘mark-recapture’ technique. The evaluation will help to formulate a strategy on habitat enrichment using larval host plants and nectar plants as food sources for caterpillars and adults respectively. The study will quantify the effects of habitat enrichment and develop recommendations for conservation planning.

Singapore freshwater crabs

This project by Daniel Ng from NUS aims to study various aspects of ecology of the globally critically endangered Singapore freshwater crab (Johora singaporensis). This crab species is found only in three small streams in Singapore and nowhere else in the world. It is also one of the world’s top 100 most threatened species. Findings will be used to establish new populations by introducing the species to new suitable sites. The most suitable site for translocation has been selected and trials are being conducted for translocation. An ex-situ population is also being established within WRS. Together with National Parks Board and NUS, WRS has formed the Singapore freshwater crab conservation working group, putting together a conservation strategy plan for implementation.

Babblers

Babblers are found in the understory layer of forests and they are vulnerable to habitat change. Only four species of babblers are still found in Singapore. This study by Cros Emilie from NUS aims to analyse the genetic diversity of the populations of babblers to determine patterns of connectivity and gene flow and to assess the viability of their populations. Understanding how modifications to their habitat affect them is crucial for implementing appropriate measures for the conservation of these birds to prevent further extinction.
Biodiversity Surveys at WRS Parks

2011-2020 has been declared the United Nations Decade on Biodiversity. Joining in the world-wide efforts on understanding and increasing local biodiversity, WRS, with funding support from WRSCEF, commenced regular community-based surveys in 2014 to conduct in-situ wildlife conservation, increase biodiversity awareness in Singaporeans, and further the understanding of Singapore fauna, especially how animals may use altered habitats in WRS parks and across Singapore, such as railway corridors. Two surveys on birds, one each on reptiles and amphibians were conducted. These surveys revealed WRS parks to be biodiversity hotspots and home to more than eight locally threatened species. 64 species of birds and 10 species of amphibians were documented around our parks. A faunal survey conducted at the stream in the Night Safari also found four crustacean species and eight fish species.

Cross-Agency Efforts

WRS continues to work closely with other agencies, and to establish new partnerships, to share and expand on knowledge related to areas of human-wildlife encounters. The aim is to increase public awareness and to find new ways to mitigate potential conflict.

Singapore Pangolin Working Group

WRS facilitated the formation and followed up on the meetings of the Singapore Pangolin Specialist Group, comprising representatives from National Parks Board, Lee Kong Chian Natural History Museum, NUS, ILICN, WCS, National Institute of Education, Agri-food and Veterinary Authority of Singapore, Nature Society Singapore, Animal Concerns Research and Education Society, The Pangolin Story and Nanyang Technological University. At a meeting in August 2014, it was decided that protocols regarding pangolin husbandry, rescue and rehabilitation and roadkill need to be developed, together with a central database for live and roadkill sighting records as well as rescue and release sites. Further research needs to be developed in areas such as camera tracking for population estimates, behaviour for conservation breeding, genetic diversity and microbiomic composition of Singapore's pangolins.

Singapore Python Working Group

WRS, along with National Parks Board, NUS and Animal Concerns Research and Education Society, have formed a Singapore Python Working Group to collaborate on projects and activities for the conservation of reticulated pythons in Singapore. These efforts will take into account developments in aspects such as the use of physical space and shifts in behaviour of both animals and humans, as Singapore's urbanisation continues.
EDUCATING AND EMPOWERING
EVEN MORE

Grabbing conservation by the horns

For the first time, WRS used campaigns as a platform for conservation education and communication, and two were launched within the reporting year. Collaborating with TRAFFIC Southeast Asia, WRS stage a year-long “You Buy They Die” campaign to increase awareness of the threats faced by animals in the wild. Interpretive information panels in the three parks educated the public on the seriousness of illegal wildlife trade and how their everyday buying decisions can help support conservation. To complement this campaign, a children’s educational trail “Wildlife Rescue Mission” was held to encourage children to role-play as Rescue Rangers to save wildlife from poachers. The trail was very well-received and attracted 4,450 participants over nine days during the March school holidays.

Guests were presented with “The Hornest Truth” at a Rhino conservation campaign between 20 September and 19 October 2014, in conjunction with World Rhino Day. The campaign aimed to inspire visitors to be responsible consumers and not to purchase rhino horns or wildlife products. It featured a photography exhibition, rhino conservation public seminar with guest speakers Jennifer Fox from Thornybush Game Lodge in South Africa, Dr Naomi Doak from TRAFFIC Southeast Asia and Duong Viet Hong from Wildlife Conservation Society Vietnam.

Wildlife photographer Stephen Belcher shared his experiences in photographing the rarest and critically endangered Javan rhino. A nail-cutting booth encouraged guests to clip their nails as a symbolic act to pledge support for rhino conservation, as rhino horns are made of keratin, the same material as human nails and hair. At a Rhino Awareness Booth, young guests were engaged through games such as “Fix A Rhino Horn” and art-and-craft sessions to make air-dried clay rhinos.

Panda, Amazon tours open new worlds

A special glimpse into life of Kai Kai and Jia Jia was made possible on this exclusive “Panda Rise and Shine” behind-the-scenes tour at River Safari. Guests get close to the two most-loved bears in Singapore before the park opens for the day, through the back-of-house area of the Giant Panda Forest. They watch the keepers serve Kai Kai and Jia Jia their pre-breakfast snack and perform morning checkups before calling up their sleeves to help prepare a panda breakfast. The unique encounter is capped with a delicious Panda Pau breakfast at Mama Panda Restaurant, along with souvenir photos.

Over at the Amazon Flooded Forest, “Fishy Business” behind-the-scenes tour allows visitors to learn how WRS’ dedicated team of aquarists keep their charges in the pink of health before they try their hands at creating enrichment feeding devices for the manatees. They also get to feed the gigantic arapaimas and silver arowanas; the latter, also known as ‘water monkeys’, put up a spectacular display as they leap out of water to snatch the food.

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Engaging Future Movers and Shakers

Recognising that youth can create a strong impact on wildlife conservation as future opinion leaders and corporate decision makers, more resources are being used to plan and execute learning journeys that span over three days to five days, and cover four WRS parks. The participants gained insights into WRS’ in-situ and ex-situ conservation efforts, living collection planning as well as its push for innovation in exhibit design, animal care and guest experience to stay relevant and financially viable.

Collaborative efforts with ITE college, Nanyang Girls High, polytechnics, junior colleges and some secondary schools also yielded learning journeys that not only deepen knowledge but inspire the students to do more for wildlife through volunteering.
Zoo animals, pandas inspire pre-schoolers

The pre-school students of Odyssey Global School showed, once again, how a trip to the Singapore Zoo to learn about endangered animals can be so much more than just a learning journey. The children were so inspired that they wanted to do something for wildlife, and so, drew pictures of threatened animals and with the help of their teachers, to produce a book to raise $650 for the WRS Conservation Fund. This gesture touched many hearts but, most importantly, it was an indication that efforts in educating guests have translated into deep engagement and empowerment to act for wildlife, and that WRS is effectively playing one of the key roles of modern zoos.

As part of WRS’ role as a “living classroom” to promote the Chinese language, the River Safari’s star pandas Kai Kai and Jia Jia were immortalised in a pre-school book of nursery rhymes to interest pre-schoolers to learn Chinese. This popular reader is now used as a teaching resource in many schools.

For The Community By The Community

WRS continued to engage the volunteer community and attracted 2,304 volunteers from all walks of life to help spread the conservation message. Together, they devoted some 9,120 volunteer hours across four parks and beyond to project a powerful voice for wildlife. Particularly heartwarming is the steady increase in number of youth volunteers, who are our future leaders and hopefully agents of positive change.

A total of 2,304 volunteers served at WRS’ parks during the reporting year:

<table>
<thead>
<tr>
<th>VOLUNTEER GROUP</th>
<th>NO.</th>
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<td>Docents</td>
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<tr>
<td>Conservation Ambassadors</td>
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<tr>
<td>Wildlife Buddies</td>
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<td>Work Experience Programme</td>
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<td>Avian/Zoology Keeper Volunteers</td>
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<td>Vet Volunteers</td>
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<td>Be a Feather Friend</td>
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<td>Night Safari 20th Anniversary</td>
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<tr>
<td>Safari Boo</td>
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<td>River Safari Night Opening (during Peak Period, E.G. PH &amp; End of Year)</td>
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<td>Panda Party</td>
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<td>Vivocity – Biodiversity Outreach</td>
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<td>Republic Polytechnic - Zoology Observation Work</td>
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<tr>
<td>Ngee Ann Polytechnic Open House 2015</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>2,304</td>
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**DELIGHTING OUR GUESTS**

It was yet another good year for industry and public recognition for WRS’ work in contributing to the quality of life in Singapore and to its attractiveness to visitors. It was an equally successful year in the realm of new offerings for our tourists.

**Brand-new dining concepts**

In response to guest feedback, substantial new developments have refreshed the F&B offerings with new outlets to provide more varied menus.

At Singapore Zoo, the impact is immediately obvious as a brand-new bistro welcomes guests right at the entrance. Seating capacity has been increased from 80 to 250, and four dining concepts are on offer, namely Inuka Café, Ah Meng Kitchen, Chawant Bistro and Casa Italia Gelato.

Over at Night Safari, the entrance plaza added new outlets too – Casa Italia Gelato, Safari Sizzles, which offers snacks and drinks, and Night Safari Mart.

**Enhancing Retail Experience**

In the area of retail, WRS expanded its space – in both physical and virtual ways. WRS opened its first high-street satellite shop in Dec 2014 at Centrepoint Shopping Centre. The shop offers a wide variety of exclusive wildlife-themed merchandise including apparel, souvenirs, plush toys and collectibles. The shop will also help attract more visitors to WRS’ parks.

Shopping at WRS also went online with a retail E-shop launched in November 2014 for guests to extend their park shopping experience, with a user-friendly website, secured payment modes and fast shipping by courier in three to five working days.

**Official launch of Safari Gate**

To enhance accessibility to the three parks in Mandai and back to the city, WRS worked with Duck Tours to launch ‘Safari Gate’. The service features hourly departures from the city and on-board entertainment to give guests an insight into each park. This holistic approach focuses not only in bringing guests to the gates of WRS parks but also ensures that they have a free-hassle and comfortable journey back to the city after the visit. As part of the launch, a group of special guests from the Movement for the Intellectually Disabled of Singapore (MINDS) were among the first to experience this premium service, and to enjoy an afternoon at River Safari.

**WRS ticketing goes online**

Apart from upgrading existing exhibits and adding new ones, improving infrastructures, F&B, retail and programme offerings, the reporting year saw WRS used technology and innovation to its highest level to enhance product value, guest experience and operational efficiencies. On 1 April 2014, WRS launched its mobile-friendly online ticketing site with attractive discounts to incentivise guests to purchase tickets online. The platform proved to be very popular with locals, with a 35% take-up rate. The increase in operational efficiencies has greatly reduced the pressure on staff and operation cost, allowing WRS to pass on the savings to guests with up to 30% online discount.

**More appreciation for WRS**

Hosted and presented by the Singapore Tourism Board, the Singapore Experience Awards 2014 recognise and reward organisations and individuals in the travel and tourism industry for exemplary delivery in extraordinary experience. WRS bagged four major awards and went one level up by earning an Exceptional Achievement award under the Special Recognition category for Night Safari. Night Safari was recognised for its consistently outstanding efforts in emerging Best Attraction Experience for the third year running since 2012. The Best Attraction Experience award is Night Safari’s 12th honour – a signature honour capping the park’s 20th anniversary celebrations. Night Safari’s Adventurer Tour and Singapore Zoo’s Wild Discoverer Tour also emerged finalists in the Best Learning and Travel Experience category. River Safari’s “The River is Calling” marketing campaign was awarded Best Innovative Marketing Idea.

At individual level, Singapore Zoo’s retail staff member Divine Real Clenista Santos won for Best Customer Service (Retail). For the Best Customer Service (Visitor Attraction) category, two other staff members emerged finalists – Tan Han Qiang from Singapore Zoo and Lim Kuan Loong Bryan from Jurong Bird Park.

This year saw 83 finalists vying for 25 awards. Finalists were nominated by industry players and experts, with winners picked by a panel of judges.

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FINANCIAL HIGHLIGHTS FY14/15

TOTAL REVENUE FY 14/15 $152,786,047

- 57.0% ADMISSION & RIDES
- 22.1% F&B
- 8.8% RETAIL
- 9.7% OTHERS
- 2.4% ADOPTIONS & DONATION

TOTAL VISITORS 4,584,764
Books! 'tis a dull and endless strife:
Come, hear the woodland linnet,
How sweet his music! on my life,
There's more of wisdom in it.
And hark! how blithe the thrrostle sings!
He, too, is no mean preacher:
Come forth into the light of things,
Let Nature be your teacher.

Extracted from 'The Table Turned' by William Wordsworth