

Youth Stewards for Nature 2023 Project Infographics



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Project Mentors: Elango Velautham, Chia Hui Tong

Project Members: Anika Udayakumar, Darnesh Ramu, Yee Zi Yin, Joleen Teo, Low Swan Yao Nathan

2. OneMillionTree movement – Digital outreach and engagement

Project Mentors: Jeanine Tan, Rachel Tan, Tan Wan Xin, Samantha Lam

Project Members: Lim Hui Ting, Lim Jian Ping, Tan Jun Xian, Chiam Rachel Ruan Xinpei

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Project Mentors: Wilson Wong, Joan Hung

Project Members: Koh Chee Seng, Pang Yoke Wei Chloe, Kho Qian Hui, Faith, Felicia Poh Shi Han, Dang Van Trang, Chen Jian Xi, Sarah-Ann Tham Yi-En

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Project Members: Hana Rahmah Binte Mohamad Jafri, Layla Grace O'Connor, Mary Treesa Augustine, Yeo Cai Ying Melody, Nurin Ardini Binte Mohd Herman, Nabil Wafy Bin Bohari

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Project Members: Khoo Jun Wei, Lim Rui Xuan Lecia, Koh Ying Xi

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Project Mentors: Edwin Lim, Joelyn Oh

Project Members: Dong Yukun, Tan Khai Yan, Ho Qian Yu, Goh Tian Ning

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Project Mentor: Felix Siew, Denise Chen

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Project Mentors: Chew Chi Sin, Hanim Yahman

Project Members: Amelia Hong Tze Qi, Tong Kai En Kayden, Ong Jun Xiang Isaac, Mabel Yeo Jing Yi, Noor Danial Bin Noorazman, Ryan Fahiman Bin Fahmirudin, Ng qian rui, Selvakumar Lavanya Shrinithi muhammad syabil bin sabudin

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Project Mentors: Samantha Lai, Alyssa Li, Kwan Mei Yen

Project Members: Loh Jia Ning Amanda, Wan Bing Hui, See Toh Ee Kin, Sow Jeng Wei, Chin Jun Yu, Rachel ong, Tay Rui En, Shaun Lau Jit Sen, Leow Si Ying, Lee Wee Meng

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Project Members: Chua Liang Wei, Collin, Chan Shi Hui, Elaine, Faith Tan Li-Ann, Ho Jie Xiang, Gerald, Joshua Liang, Kelsie Yasmin Muir, Nasrudin Bin Mohd Noordin, Muhammad Nasry, Raphael Moey Yanzhong, Regina Lai Enxi, Ronnie Lai Zhen Foong, Saloni Swaminathan, Tan Hui Min Steffi, Ho Sze Koy, Tay Li Si, Sean Ng Jing Wen, Ting Wai Kit, Anusha Shivram, Tan Wan Xian Priscilla

17. Rewilding Yishun Park

Project Mentor: Dora Toh

Project Members: Brian Chow Wei Xuan, Soh Yong Xian Dan, Yeoh Jun Ting, Lo Mei Hui, Heng Chin Yee, Sarah

18. Develop a guide for conducting terrestrial guided walks

Project Mentor: Ryuta Teo

Project Members: Ong Xiang Ting, Alicia, Seah Jun Wei Benjamin, See Aik Kai, Bryan, Tan Dionne, Bang Wen Han, Janice Siau Yu Xin, Shaylie Yu Shihui, Chin Yu Xun

CONSERVING RARE TREE SPECIES BY STUDYING THEIR CULTIVATION REQUIREMENTS

INTRODUCTION & AIM

- Understand the amount of **light reduction** required to induce **bud dormancy** in seedlings from the Dipterocarpaceae family.
- **Dipterocarps** are important for **timber production**, and providing **shelters** and **food for wildlife**.
- Project aid with **conservation efforts** through the monitoring of the **impact of light intensity** on seedling and sapling growth in our nursery and living collections at the **Singapore Botanic Gardens**.



METHODOLOGY

Tray and Soil Preparation

- Trays had **drainage holes** drilled, soil tested for **optimal pH levels**

Seedling Transplantation

- Species chosen: *Hopea nutans*, each seedling had **2-5 leaves**

Set-up and Measurements

- **3 different light intensities** (shade nets vary from 0-2)
- Changes recorded every **1-2 weeks**.



RESULTS

- The table shows the results obtained after **4 months of planting**
- All trays showed **new bud formations**
- The trays under a **3-layer netting** displaying **80% bud dormancy** at an average light intensity of **165.4 lux**.



Tray	Species being analysed	Light Intensity	No. of Seedling	Seedlings with new growth	Average height
001 (3 nets)	<i>Hopea nutans</i>	165.4	39/40	11 (1-2 leaves)	10.6cm
002 (3 nets)	<i>Hopea nutans</i>	165.4	36/40	11 (1-2 leaves)	9.1cm
003 (2 nets)	<i>Hopea nutans</i>	381.6	38/40	18 (2-3 leaves)	10.3cm
004 (2 nets)	<i>Hopea nutans</i>	381.6	37/40	13 (2-3 leaves)	10.5cm
Control	<i>Hopea nutans</i>	2549	39/40	24 (3-4 leaves)	8.86cm

CONCLUSION

- **Limitations** to the project: Due to our dependence on **sunlight**, it was prone to **inconsistent lighting**, e.g. light entering from the sides of the setup, cloud cover, and rainfall.
- **Suggestion**: seedlings should be observed under a **controlled lab environment** to control **light intensity, temperature, insect/animal disturbances & wind**.
- As an **ongoing** project under the **Singapore Botanic Gardens**, the seedlings will continue to be **monitored** over the **next 2 years**.



ONEMILLIONTREES MOVEMENT DIGITAL OUTREACH AND ENGAGEMENT

Project Members: Lim Hui Ting, Lim Jian Ping, Rachel Chiam, Ruan Xinpei, Tan Jun Xian
Project Mentors: Jeanine Tan, Rachel Tan, Samatha Lam, Tan Wan Xin

PROJECT OBJECTIVES: TO ENCOURAGE MORE YOUTHS TO BE A PART OF THE ONEMILLIONTREES MOVEMENT

HOW?



Drum up existing digital engagement efforts



Complement community engagement efforts on the ground

DIGITAL ENGAGEMENT



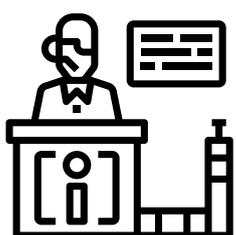
Main content: Tree planting benefits & importance; current tree-related efforts in Singapore, sharing on our tree planting experience

Provide up-to-date tree-planting events around Singapore

[@ONEMILLIONTREES4SG](#)

[@OMT4SG](#)

COMMUNITY ENGAGEMENT



INFORMATION BOOTHS

Festival of Biodiversity 2023
Singapore Polytechnic

Aims include:

- Encourage signing up for OneMillionTrees movement mailing list and other NParks initiatives
- Increase social media awareness
- Increase public awareness of the trees of Singapore through games



BRIDGING THE PAST & PRESENT THROUGH LOCAL EDIBLE PLANTS

MAIN OBJECTIVE: TO SHARE KNOWLEDGE ABOUT LOCAL EDIBLE PLANTS @ JLG WITH THE PUBLIC

JAN: VISIT TO THERAPEUTIC AND EDIBLE GARDENS @ JURONG LAKE GARDENS

WE FAMILIARISED OURSELVES WITH THE GARDEN & DISCUSSED THE LIMITATIONS WE FACED WITH GATHERING PLANT INFORMATION AND DECIDED TO FEATURE RECIPES SHOWCASING THE PLANTS THAT ARE BEING GROWN IN THE GARDEN THAT PEOPLE MAY NOT BE ABLE TO RECOGNISE.



MENTORS:
WILSON & JOAN

CHLOE, CHEE SENG, JIAN XI, SARAH, JEN, FELICIA, FAITH

MEMBERS

FEB-MAR: CRAFTING OF IDEAS AND TWEAKING OF PROJECT OUTCOMES

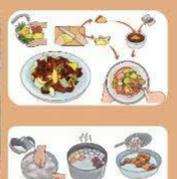
MID-PROJECT REVIEW

03 Progress Update

Our steps

- Phase 1: Past**
Conducting research on the history of local edible plants.
- Phase 2: Present**
Identifying the plants that are currently grown in the garden.
- Phase 3: Future**
Developing a plan to showcase the plants and their uses.

APR-MAY: TESTING OUR IDEAS THROUGH A RECIPE-BASED GARDEN PLOT @ JLG



WE RESEARCHED ON RECIPES OF LOCAL DISHES & TRIED THEM OUT OURSELVES. THESE WERE THEN ILLUSTRATED INTO POSTERS TO BE PLACED AT THE GARDEN PLOT

JUN: THE FINISHING TOUCHES

ONLINE SURVEY - WE WANTED TO FIND A WAY TO ENGAGE AND INTERACT WITH VISITORS AND FIND OUT WHAT OTHER EDIBLE PLANTS THEY WOULD LIKE TO SEE IN FUTURE.

What edible plants would you like to see at Jurong Lake...

Questions

- Do you have a recipe you would like us to feature or edible plants you would like to see here? Let us know!
- On a scale of 1-5 stars, how interesting did you find the plants and recipes featured here today?
1 star - Boring
5 stars - Very interesting
- Will you try adding the new ingredients we shared here the next time you make rojak or bubur chacha?
No Yes

BURBUR CHACHA
Bubur chacha is a traditional Malay dessert made from glutinous rice flour, coconut milk, and palm sugar. It is often served with various toppings like jackfruit, banana, and pandan leaves.

ROJAK YOUR OWN ROJAK CHA TODAY!
Rojak is a popular Malaysian snack made from a mixture of fruits, vegetables, and a special sauce. It is often served with a side of rice or bread.

HARMONY IN DIVERSITY WITH ROJAK
Rojak is a traditional Malaysian snack made from a mixture of fruits, vegetables, and a special sauce. It is often served with a side of rice or bread.

Brisk Ingredients: Kedondong
Kedondong is a traditional Malaysian ingredient used in various dishes. It is often used in rojak and bubur chacha.

BEFORE



OUR RECIPE PLOT TAKING SHAPE

AFTER



INSTA-READY PLOT



INSTALLATION OF POSTERS & PLANT TAGS



COME CHECK OUT OUR BURBUR CHACHA AND ROJAK RECIPE-THEMED PLOT!!



OUR FINAL SURVEY, POSTERS & PLANT TAGS

Design and Implement a Nature Way

Team Members:

Melody Yeo, Layla O' Connor, Mary, Nabil Wafy, Hana Rahman, Nurin Ardini

Project Mentors:

Marcella Chua, Jason Yong, Ronnie Mak, Esther Lim, Damien Qiu, Idrus Mohd



14 January

The six of us met each other, as well as our mentors, for the first time. We learnt more about what YSN and this project was all about, what we were going to do and experience, and the overall outcome of this project.

It was the start of a new adventure for us!



**YSN
Opening Session**



4 February

We met up at ECP to conduct our first biodiversity survey. We were taught the ins and out of conducting such survey, and we got to observe the different wildlife around the park. The mentors also pointed out and identified the different species of flora and fauna, giving us more information about them.



**1st
Biodiversity Survey**



29 April

Volunteers from the Church of Singapore came to ECP to plant trees! We assisted by giving demonstrations and helping them identify what tree they had planted. Though it was tiring, but being able to engage with the public and plant our own trees made it worth the sweat.



**One Million Tree
Planting**



17 June

Once majority of the planting along the nature way was completed, we went back to conduct another biodiversity survey. Our mentors led us along the route, pointing out and naming the new plants and shrub, as well as identifying the wildlife that we had spotted.



**2nd
Biodiversity Survey**

Diagram of the nature way



Diagram of the existing and proposed nature way at ECP

Site photos



Wildlife we spotted



Spotted Wood Owl



Olive Backed Sunbird



Pied Triller



Short Banded Sailor

REFRESHING THE SENSORY TRAIL

TEAM MEMBERS: KHOO JUN WEI, ZANDER KOH & LECIA LIM
PROJECT MENTOR: TED KAH MING



THE SENSORY TRAIL IS LOCATED NEAR THE MAIN VILLAGE ON PULAU UBIN, CREATED TO GIVE VISITORS A SENSE OF SINGAPORE'S HISTORICAL KAMPONG ATMOSPHERE. IT ALSO PROVIDES A VARIETY OF PLANTS TO EXCITE ONE'S SENSES OF TOUCH, SIGHT, AND SMELL.

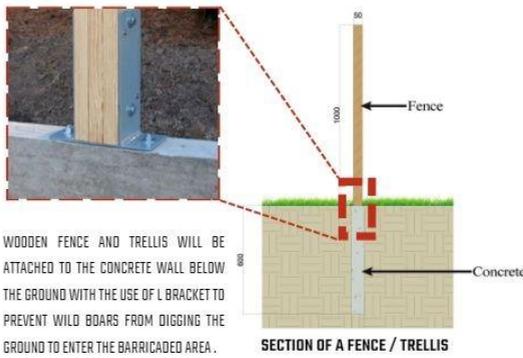
PROBLEMS IDENTIFIED

-  LACK OF EDIBLE PLANTS VARIATION
-  WILD BOAR INTRUSION
-  SURFACE RUNOFF DURING RAINY DAY
-  LACK OF CONNECTED PATHWAY



LAYOUT LEGEND

- A FRUIT ORCHARD
- B VEGETABLE GARDEN
- C SPICE GARDEN
- D HERB GARDEN
- E ECONOMIC CROP
- 1 RAIN GARDEN
- 2 QUARRY ROCK
- 3 WOODEN FENCE
- 4 WOODEN TRELLIS



PLANT SELECTIONS



REFRESH & CURATE CONTENT OF SKYRISE GREENERY TRAIL

Members: Goh Tian Ning, Tan Khai Yan,
Dong Yukun, Ho Qianyu
Mentors: Edwin Lim, Joelyn Oh

SKYRISE GREENERY

Skyrise Greenery refers to both rooftop and vertical greenery such as green roofs, rooftop gardens, green walls and trellises. It is a nature-based solution that contributes to the climate, ecological and social resilience of Singapore.

YSN Sharing Session



Review & Amendments

Editing and finalising trail map based on mentors' feedback

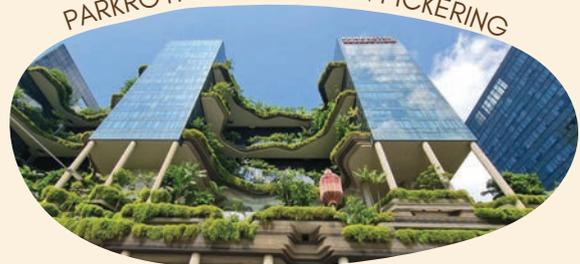
OCEAN FINANCIAL CENTRE



Site Visit

Site visit with our mentors - learnt about different types of rooftop and vertical greenery systems

PARKROYAL COLLECTION PICKERING



Trail Map Writeup & Design

Coming up with a draft of our trail map, ensuring that it is both educational and appealing to the general public

CAPITASPRING



Phototaking of Sites

Taking photographs of the finalised sites for our trail map

Did You Know?

Skyrise Greenery has many benefits such as mitigating the urban heat island effect, reducing storm water runoff, increasing green cover and improving the well-being of residents. We wanted to create more awareness of these benefits to the general public through this fun trail.



SCAN FOR TRAIL MAP



CO-FACILITATING THERAPEUTIC HORTICULTURE PROGRAMMES IN COMMUNITY ORGANISATIONS



Team Members: Chai Yu Qing, Amanda, Muhammad Syahid Bin Shamsuri
Project Mentors: Tan Pei Qin, Paul Bhathal

THERAPEUTIC GARDENS (TG)



Scientifically informed design principles are utilized in outdoor gardens to fulfil the **physical**, **psychological**, and **social** needs of park users.

THERAPEUTIC HORTICULTURE (TH)



Plants and nature-related activities promote low-intensity exercise, enhance motor skills, stimulate memory, foster positive social interactions, connect with nature, and encourage mindfulness

OUR OBJECTIVES

- Explore TG design principles and the science-backed benefits of TH
- Support TH programs in community organizations
- Engage & empower in TH outreach activities



TH ENGAGEMENT PROJECTS



Woodlands Botanical Garden



Health & Wellness Carnival at Ayer Raja CC

Metta School Carnival

TG DESIGN PROJECTS



Sensory Plant Selection and Design Elements



Chua Chu Kang Park



Telok Blangah Hill Park



Outram Community Hospital

MAIN KEY TAKEAWAYS

- TG and TH programmes benefits everyone of different needs.
- Community organisations are open to holding their own TH programmes but they require the knowledge to start.
- Existing and new TG in various locations may play a more significant role in fostering and encouraging more TH programmes across Singapore.

Team Members:
Nur Faiqah Shaheerah, Riska
Wulandari, Sofia Shuradi, Mervyn
Siew

Project Mentors:
Felix Siew, Denise Chen



LITTLE EXPLORER

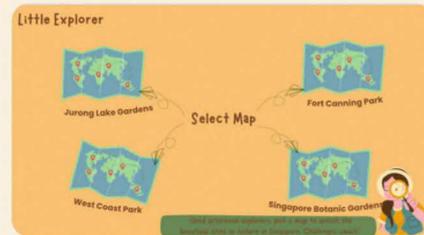
An app that encourages kids
to explore our green spaces



INSTRUCTIONS

STEP 1-CHOOSE A DESTINATION

PLAYERS GET TO CHOOSE THE DESTINATION
THAT THEY ARE VISITING.THE DESTINATIONS
WILL BE CATEGORISED BY DISTRICTS



STEP 2-CHALLENGES

AFTER SELECTING THE DESTINATION, PLAYER
WILL BE ABLE TO TO SELECT DESIRED TRAIL
PATHS AND LANDMARKS. EXCITING
CHALLENGES AWAITS!



STEP 3-POINT SYSTEM

ONCE A CERTAIN NUMBER OF CHALLENGES
ARE COMPLETED, PLAYER WILL RECEIVE IN-
APP REWARDS SUCH AS POINTS THAT CAN
LATER BE USED TO PURCHASE AVATAR'S
MERCHANDISE



BENEFITS



EXPLORE GREEN SPACES IN SINGAPORE



EXPOSE YOUNG CHILDREN TO NATURE

EXECUTION PLAN



SCHOOL

ORGANISE LEARNING JOURNEYS
AND USE THE APP TO EXPLORE
OUR GREEN SPACES



PARENTS

GUIDE AND PLAY ALONG



SOCIAL MEDIA

PUBLICISE THE APP USING TIKTOK,
INSTAGRAM AND FACEBOOK

D.I.Y SCHOOL/HOME GARDENING FOR THE YOUNG

Team Members:

Syahindah Binte Abdullah,
Banerjee Ayush Kushal,
Nur Farhana Natasha,
Nur Nadhrah Binte Radin Muhamad

Project 4: Educating the young about our City in Nature

Project Mentors:

Felix Siew, Denise Chen

Materials:

x1 1.5 litre bottle
&
x1 cooking oil bottle

String

Soil

Water

Kang Kong seeds

Spray bottle



OBJECTIVES

- Encourage students to contribute to our City in Nature
- Learn more about recycling
- Foster children's interest in growing their own plants
- Allow them to have a better understanding of nature
- Understand importance of sustainability and 3Rs

KANG KONG



INSTRUCTIONS

- Step 1: Clean the bottles thoroughly & make a hole the size of the 1.5 litre bottle cap, in the cooking oil bottle. Get an adult's help to use a sharp knife to do this
- Step 2: Cut the 1.5 litre bottle into half & get an adult's help to poke a hole in the middle of the bottle cap using a sharp knife
- Step 3: Tie a knot in one end of the string and pass the other end through the bottle cap hole. Screw the bottle cap onto the top half of the 1.5 litre bottle. Slot the bottle cap into the hole of the cooking oil bottle
- Step 4: Add in water that fills up half of the cooking oil bottle through the top half of the 1.5 litre bottle. The string should be wet
- Step 5: Add soil to the 1.5 litre bottle till it is $\frac{3}{4}$ filled. Place 5 Kang Kong seeds and cover them with a thin layer of soil. Spray some water onto the soil until it is damp



CHALLENGES

1. To find ways for a step by step video to be simplified and easy for the young to understand
2. Ensuring the video is interactive and engaging enough for preschoolers as they are visual learners.



Team Members :
Ng Shi Jie, Terry Boo

Project Mentors:
Felix Siew, Denise Chen

EXPERIENCING NATURE VIA VIRTUAL REALITY



What will they experience?

- The project's objective is to enable individuals to gain a deeper connection with native trees and animals by experiencing their life cycles from birth to death.
- By fostering this connection, the project aims to instil a sense of responsibility and understanding towards conserving these species and their habitats.



How does VR help?

Through this technology, students will be able to explore the lives of various animals and trees, including their behaviours, habitats, food sources, and roaming patterns. The project also includes a drone ride component, offering students a unique aerial perspective of Singapore's forests, allowing them to appreciate the beauty and scale of these natural environments

Key Takeaway

By leveraging VR technology and providing an immersive experience:

- We aim to foster a deeper connection between young students and the biodiversity in Singapore.
- Through this educational initiative, we hope to raise awareness about biodiversity conservation and inspire a new generation to actively participate in protecting our City in Nature.

Aims of project

Educate students aged 9 to 12, about the importance of biodiversity conservation through an immersive virtual reality (VR) experience



Nature Treks VR

The VR experience involves wearing a headset that tracks the user's movements and provides visual images in their field of view. Users will utilise an accompanying VR application on their smartphones, which will be linked to the VR headset, to display an immersive and interactive environments such as a rainforest



Using the VR

To reach our target audience, we plan to upload the VR application to popular app stores such as Apple and Google Play. NParks will support the dissemination of information about the project by sending emails to schools and promoting it on their social media platforms.

ALIENS HAVE LANDED: INVASIVE PLANTS ON PULAU UBIN

What are invasive plants?

Invasive plants are non-native plants whose introduction to the ecosystem causes harm to the native environment, the economy, or human health. They are often introduced as a result of human activity, such as cargo ships travelling across the ocean.

It's a party, and you're not invited!

Invasive plants are to native ecosystems what uninvited guests are to house parties: they take up food and space, and kill the vibe! ><



Spiked Pepper: A Case Study

Piper aduncum



Did you know?

The Spiked Pepper's leaves are used as an antiseptic by many native tribes in the Amazon Rainforest.

The Spiked Pepper is a shrubby tree thought to have spread to Singapore from neighbouring countries where it was already naturalised. It has a similar appearance and peppery odour to other native pipers such as *Piper caninum* and *Piper macropiper*.

How was the spiked pepper able to thrive in its new environment?



Large Seed Quantity

Gives it a higher chance of successful reproduction



Small Seeds

Light and easily dispersed



Adaptable

Able to survive rapid changes in environmental conditions



Short Juvenile Period

Plant matures more quickly and can thus reproduce at a faster rate

Other Invasive Plants On Pulau Ubin



Acacia Tree

Acacia auriculiformis



African Tulip Tree

Spathodea campanulata



Albizia

Falcataria falcata



Koster's Curse

Miconia crenata



Leucaena

Leucaena leucocephala



Mile-A-Minute Weed

Mikania micrantha

All that said and done...

Why should we care?

Issues affecting biodiversity on Pulau Ubin should not be disregarded just because it is a separate island.

Pulau Ubin remains one of Singapore's last rural areas not completely oppressed by modernisation. We must safeguard our vulnerable native plants from invasive species so that we can continue studying and enjoying our local flora and fauna. Since invasive species are often introduced as a result of man-made factors, we have an even greater responsibility to manage their spread.

In addition, invasive plants sometimes present a risk to public safety. For instance, due to their poor structural integrity, albizia trees growing along roads and public places on the mainland are a likely source of danger and destruction, especially during storms.

Studying invasive plants on Pulau Ubin gives us a better idea of how to manage them and prevent such complications in Singapore.

NATURE KAKIS NETWORK

TEAM MEMBERS

LETITIA CHEN, PHYLICIA GOH, LEWIS KWEK, PHOEBE ZHOU, YIP SUE MIN, SOFIA TANG, LEE WEI QIANG

MENTORS

KWAN MEI YEN, NAUFAL KHAN

WHAT IS NATURE KAKIS?

- A platform that makes City in Nature initiatives **more accessible** and **fosters community stewardship** through a range of volunteer-led activities
- Launched to the public at the 12th Festival of Biodiversity in May 2023

NATURE KAKI CHAPTERS

Currently we have **8 Chapters**, with more to come. Let's take a look at some that YSN supported!

Neer Soon

- Conducted nature guide training for brisk walkers
- Organised Nature walk with pets



Punggol

- Conducted nature guide training for Coney Island



Bukit Gombak

- Organised therapeutic horticulture workshops for residents
- Coordinated visit to therapeutic gardens



Pasir Ris

- Planned monthly Beach Clean-ups
- Conducted guide training for Pasir Ris Park Mangrove

Key Event #1

NATURE KAKIS NETWORKING

WORKSHOP (APRIL 15TH)

- Collated feedback and good practices from the different chapters
- Wrote a report summarising ideas, initiatives and problems to consider moving forward



Clockwise from top left: Participants sharing key discussion points; The YSNs; The representatives from the different chapters at the workshop

Key Event #2

FESTIVAL OF BIODIVERSITY (MAY 27TH-28TH)

- Minister Desmond Lee highlighted the Nature Kakis Network, emphasising its role in uniting passionate individuals and cultivating community stewardship
- YSN engaged visitors, addressed queries, and publicised the Nature Kakis Network
- Nature Kakis received positive responses from members of the public, with many displaying interest in participating



Left: People visiting our booth at FOB to learn more about Nature Kakis; Right: Our booth!

UNDERSTANDING RETICULATED PYTHON ECOLOGY & MOVEMENT IN SINGAPORE

NPARKS YOUTH STEWARDS FOR NATURE 2023

Photo Credit: Robbin Tan

Objectives

- Evaluating the effectiveness of translocation as a management strategy for python issues through the tracking of released pythons
- Gaining insights into the public's perception of snakes through outreach
- Educating the public on snakes and human-python conflict through outreach and social media

The Team

Tracking & Analysis

Jerryl (YM)
Shermaine (YM)
Delia
Eugene
Hong Wei
Josephine

Outreach

Yong Jen (YM)
Zuraidah (YM)
Koi Jun

Social Media

Insyirah
Jolin

NParks Mentor

Ashley
Cyrena
Pei Shan
Zhi Jie
Zhi Xin

*YM: Youth Mentor

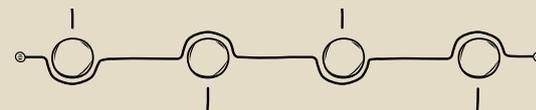
Tracking & Analysis

- Partnered with NParks staff to track the movement of a python captured in urban areas and relocated into nature areas
- Managed to assist in the tracking of **one python** of a suitable length and girth

Rescue python from urban area & implant trackers

Release python into study site

Process:



Track python & collate GPS data

Retrieve python, remove trackers & re-release into wild

Outreach

Conducted a perception survey to understand public perception of snakes - most respondents were youths

Key Findings

- Two-thirds of respondents have a negative or neutral perception of snakes
- Almost three in four respondents know who to approach when they encounter snakes in urban areas
- There is a slight fear of snakes among respondents, with them perceiving that snakes pose danger to other animals more so than humans
- More than 70% of respondents are interested to find out more about snakes in Singapore

Created brochures to educate public about snakes and snake encounters

Shared project with public during Festival of Biodiversity



'The Essential Snake Guide'



Social Media

- Created Instagram page (@snakeshacksg) to communicate a more positive message of snakes to the public, with 95 followers and 241 likes across 12 posts
- Posted two series of six posts on 'What are Snakes?' and 'Snakes in Singapore'



@SNAKESHACKSG



Butterfly Garden @ Stratton Walk Playground

Team member: Lamin, Kayden, Shrinithi, Ryan, Danial, Amelia, Shermaine and Syabil

Project mentors: Chi sin and Hanim

As part of improving the biodiversity of the park, we decided to relandscape the park and attract more butterflies



BEFORE



AFTER

OUR FINAL GARDEN

We selected species of shrubs and trees that have either aesthetic or ecological value such as serving as a nectaring or host plant. These plants then attract numerous species of butterflies that feed on their nectar.

13

SPECIES OF SHRUBS



Lantana camara 'Sundance'



Brunfelsia pauciflora



Cassia poliberrima



Cratogeomys cochinchinensis

SPECIES OF TREES

3

7

SPECIES OF BUTTERFLIES

During the pre-survey, we only observed 5 species and were mainly dominated by Grass Blue butterfly. However, after the re-landscaping, we observed a total of 7 species and a higher number of Plain Tiger butterfly!



Palaemonides
Pale Grass Blue



Glaucopsyche xuthippe
Painted Jezebel



Danaus genoveva
Plain Tiger



Gotha clodius
Lemon Emigrant



Creating an Intertidal Guidebook

Youth Stewards for Nature 2023

Team Members: Jun Yu, Wee Meng, Si Ying, Amanda, Rachel, Ee Kin, Shaun, Jeng Wei, Rui En, Bing Hui

Mentors: Samantha Lai, Alyssa Li, Rebecca Loy

INTRODUCTION

As Singapore progresses toward a 'City in Nature', it is important that citizens gain an appreciation for local biodiversity. With the expansion of nature parks across the island, citizens now engage with terrestrial biodiversity more frequently – but it is important to raise awareness about Singapore's rich marine biodiversity too, starting with our intertidal shores. Recent years have seen increased visits to the intertidal areas, especially during the COVID-19 period, when people patronized nature areas as a means of escape and relief. With higher footfall, it is important we ensure wildlife etiquette is practised to ensure the protection of wildlife.

OBJECTIVES

- 1) TO CREATE A GUIDEBOOK ABOUT OUR LOCAL INTERTIDAL BIODIVERSITY FOR PEOPLE TO BECOME GUIDES
- 2) TO CULTIVATE AN INCREASED APPRECIATION OF THIS NATURAL HERITAGE & SPREAD AWARENESS ON PROPER ETIQUETTE AT INTERTIDAL AREAS TO ENSURE THAT THE ECOSYSTEM REMAINS IN A HEALTHY CONDITION.

JANUARY 2023

CHECK TIDE LEVELS



In the starting phase of the project, the tide tables were first consulted to identify the days in January-June which had tides that were sufficiently low (below 0.7 metres) – this would allow for intertidal walks to survey the biodiversity present. A rough timeline was then planned based on selected dates which had low tides between 10 AM to 8 PM, as a consideration for our busy university schedules

FEBRUARY - MARCH

RECCE SITES



7 FEB: EAST COAST PARK CAMPING SITE G



20 FEB: CHANGI BEACH CARPARK 6



6 MAR: CHANGI BEACH CARPARK 6

A total of three site visits were conducted to look out for important information to include in the guidebook

- Photos of the venue
- Sensing of the intertidal organisms of the chosen site
- Photos of the intertidal organisms

GUIDEBOOK DESIGN



GUIDING TIPS FOR GUIDES



FAUNA DESCRIPTIONS



TIPS ON SPOTTING CREATURES



EMERGENCY RESPONSE

11 MARCH

MID PROJECT REVIEW



YSN PROJECT REVIEWS



DR ADRIAN LOO LOVES OUR IDEA

TIPS ON GUIDING BY

18 APRIL 2023

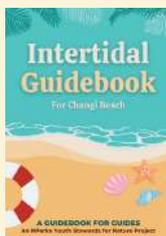
COFOUNDER OF "JUST KEEP THINKING" BIOGIRL MJ



Biogirl/MJ not only taught us more about the intertidal biodiversity at Changi Beach Carpark 6, but also highlighted how much more is needed to increase the appreciation and care shown to the intertidal habitats

FINAL PRODUCT

Edited based on feedback from mentors and grassroots leaders from Nee Soon South!



Scan me for the guidebook!

Staff Advisors and Mentors: Dr Adrian Loo, Hazelina Yeo, Darren Choo, Sandra Chia & Tay Li Si

Youth Mentors: Anusha Shivram, Priscilla Tan, Sean Ng, Ting Wai Kit & Tay Li Si

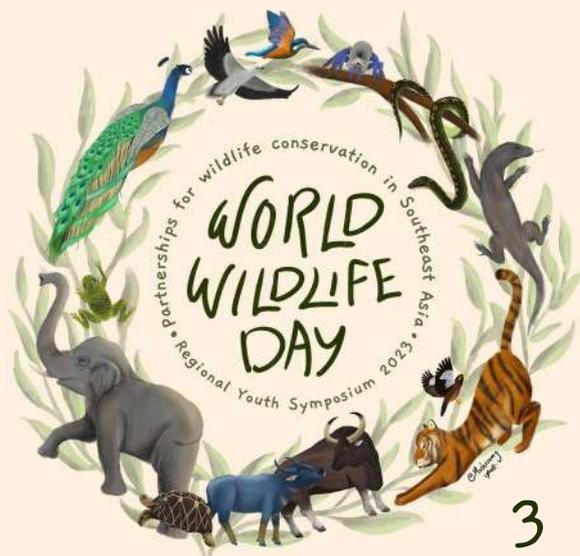
Youth Stewards for Nature: Gerald Ho, Regina Lai, Saloni Swaminathan, Ho Sze Koy, Nasrudin Noordin, Muhammad Nasry Bin Abdul Nasir, Kelsie Muir, Rachel Ong, Ronnie Lai, Steffi Tan, Raphael Moey, Faith Tan, Joshua Liang, Collin Chua, Elaine Chan & Phoebe Zhou

The second World Wildlife Day Regional Youth Symposium was held physically in Singapore from 3 to 5 March 2023. The event was organised by 16 youth stewards under the Youth Stewards for Nature Programme of Singapore's National Parks Board (NParks), with support from NParks, Mandai Nature (main event sponsor), and the ASEAN Centre for Biodiversity. The symposium physically brought together youth attendees to share their aspirations and discuss how youths could play a part in nature and biodiversity conservation.

Goals of the Symposium:

- anchor and grow the youth network in Southeast Asia
- to connect youths to Southeast Asian role models, and
- to raise international awareness on nature conservation in Southeast Asia.

3 Days, 3 Thematic Tracks



Day 0

On Day 0, youth facilitators and event partners from around the region had the chance to interact with each other through a series of activities including dinner, a fireside chat and trivia games. The youth facilitators consisted of youth champions who were active in Singapore's nature scene and Youth Biodiversity Leaders from the ASEAN Centre for Biodiversity's ASEAN Youth Biodiversity Programme. Following the networking and dinner, all guests attended a fireside chat. The panelists included Dr Melvin Gumal, Dr Jessica Lee and Dr Anna Wong, who shared their reflections on CITES CoP19.



First in-person Regional Youth Symposium, with 175 Youth Attendees hailing from 15 Countries

96 Local Participants

79 Regional Participants



85% of Participants wanting to join again

Average Rating of 4.5/5 across 3 days



Day 1

Opening & Closing Speakers



Mr Desmond Lee
Minister for National Development, Singapore



Tengku Hassanal
His Royal Highness
The Regent of Pahang



Ms Ivonne Higuero
Secretary General,
CITES



Dr Theresa Lim
Executive Director,
ASEAN Centre for Biodiversity



Dr Melvin Gumal
Deputy CEO II (Acting),
Sarawak Forestry Corporation



Dr Shawn Lum
Senior Lecturer,
NTU Asian School of
the Environment

Track 1: Living with Nature

The Living with Nature track was curated to highlight regional efforts that advocate for nature stewardship and promote human-wildlife coexistence



Ms Jannifer Tauli Corpuz
Managing Director for Policy,
Rio Tinto and
Policy Advisor, Tebteba



Mr Saravathana Tuy
Program Director,
Wild Earth Allies



Dr Anthony Medrano
Presidential Young Professor of
Environmental Studies,
Yale-NUS College



Mr Haw Cheon Bang
Director of the Wildlife
Management & Outreach
Branch, NParks

Track 2: Learning for Nature

The Learning for Nature track put a spotlight on regional efforts that transform scientific data into actionable, community-involved, conservation management tools.



Dr Anuwat Wiratsudakul
Associate Professor,
Mahidol University



Dr Reuben Clements
Professor, Chief Scientist,
Sunway University



Ms Nguyen Nga
Wildlife Health Specialist cum
Policy Influencing Team Leader,
Wildlife Conservation Society



Mr Ryan Lee
Group Director of
National Biodiversity Centre,
and of Fort Canning & Istana,
NParks



Ms Rili Djohani
Executive Director,
Doral Triangle Center

Track 3: Saving Nature

The Saving Nature track gave participants a chance for hands-on activities to effect change for the environment.

From tree planting, to wildlife forensics, to nature photography and more, these workshops showcased that truly successful conservation requires work across many different sectors!

Workshop 1: Tree Planting

Partners:



Workshop 2: NParks x WWF Cyber Spotter Programme 2.0 Crash Course

Partners:



Workshop 3: Conserving Southeast Asia's Most Threatened

Partners:



Workshop 4: R.E.C.L.A.S.S. The way you influence

pro-environmental behaviour
Partners: Professor Reuben Clements

Workshop 5: Nature Walk - Storytelling Through an Artistic Lens

Partners:



Workshop 6: Tackling Illegal Wildlife Trade through Wildlife Forensics

Partners: Centre for Animal Rehabilitation,



Additional Partners:



Supported by:



and more!

REWILDING YISHUN PARK

Mentor: Dora

Dan, Mei Hui, Sarah, Brian, Jun Ting

Introduction

Our project involved rewilding an under-utilised green site in Yishun Park. The site had 2 adjacent zones: Zone A with no undergrowth and only leaf litter, and Zone B which is a forest fringe. With the help of volunteers, planting was conducted to extend the forest's natural buffer zone, hence increasing the site's biodiversity.



Importance of Buffer Zones

- Protect habitats
- Reduce disturbances to wildlife
- Facilitate habitat connectivity

Aim

To measure our project's impact through pre and post-planting site observations, to determine if our project helped a return of wildlife to the site.



Tree Planting

After planning for 100 trees to be planted, we held a tree planting event with volunteers from NUS Ridge View Residential College! We planted 5 native and insect-attracting species of understory trees that are better suited to survive in the shade of larger trees!

Before, the site was bare...



But after planting, more wildlife are attracted!



CONDUCTING TERRESTRIAL GUIDED WALKS USING A GUIDEBOOK

HOW TO CREATE A GUIDED WALK?



OUR GUIDEBOOK AND HOW TO USE IT!

Photo of animal / plant

Common Name

Scientific Name

Description

Habitat

Found in Primary Forest **Found in Secondary Forest** **Found in Parkland**

SUMATRAN FLYING DRAGON
Draco sumatranus

Description: Growing up to 22 cm and with light and dark brown mottling on the dorsal surface. This species is sexually dimorphic. Males (shown) have a bluish forehead and a large yellow throated flap while females have a small blue throat flap (Ecology Asia, n.d.).
Distribution: Ranges from Sumatra, Borneo, Palawan, and the Malay Peninsula (NParks Flora & Fauna Web, n.d.).
IUCN status: Least Concern

Habitat:

Scientific Name: The first word in the genus is while the second word identifies the exact species in the genus.

Photo:

Photo Credit: *Recreoan/NParks*

SOME FLORA AND FAUNA IN THE GUIDEBOOK

STRAW-HEADED BULBUL
Pycnonotus aythyaicus

Description: Largest bulbuls in Singapore and Southeast Asia. It is a striking large male bulbul with a white face, throat, and a white breast. The bird also has a black cap and a long tail with long prominent black stripes on the base. In this species, the male has a large yellow throat flap. They breed generally in dense and tall forest. They are also found in parks and gardens. They are common near water bodies. A general feeder that feeds from ground level to trees.
Straw-headed Bulbul has the largest population followed by the smaller all white flycatcher and the white flycatcher in the country, north and south parts. The species is highly bred used in 2 different ways. It is highly bred used in the bird trade for its distinctive and melodious singing.
NParks Flora & Fauna Web

Habitat:

Photo:

Photo Credit: *Photo by Benjamin Seah*

SIMPOH AIR
Dillenia suffruticosa

Description: The simpo air is a large tree species in Singapore's forests, meaning that it plays a pivotal role in its ecosystem, as it houses and feeds all year round, serving as a potential food source for the forest. This shrub can grow up to 7m tall, and can be identified by its large yellow flowers and fruits that open up to the air, bright red soil. This pioneer plant needs to grow in areas with enough light to grow well. Simpo air is a large tree species that is traditionally used to wrap food such as tempeh for steaming, also chewing for and other.
Photo Credit: *NParks Flora & Fauna Web*

Photo:

Photo Credit: *Photo by Benjamin Seah*