FUZE ECOTEER

CONNECTING PEOPLE WITH NATURE

SUSTAINABLE DEVELOPMENT GOALS

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MaGIC

MALAYSIAN GLOBAL INNOVATION AND CREATIVITY CENTRE

KEMENTERIAN PELANCONGAN DAN KEBUDAYAAN MALAYSIA

Jabatan Perikanan Malaysia

2020 Annual Report

OVERVIEW

Who is Fuze Ecoteer Outdoor Adventures?

- Fuze Ecoteer Outdoor Adventures Sdn Bhd is a Malaysian registered tour operator under MOTAC and an SE.A, accredited social enterprise under MaGIC.
- Fuze Ecoteer aims to ‘Connect people with nature’, with the guiding statement:

  "In the end we will conserve only what we love; we will love only what we understand; and we will understand only what we are taught." (Baba Dioum, 1968.)
- Fuze Ecoteer has initiated several projects including the Perhentian Turtle Project, Perhentian Marine Research Station, Perhentian Eco Education Project, Malayan Rainforest Station, and in 2020, the Ocean and River Plastic Recycling Project.
- Fuze Ecoteer runs programmes for schools and universities, corporate volunteering, voluntourism and biodiversity consultancy.

OVERVIEW

Vision and Mission

FUZE ECOTEER
CONNECTING PEOPLE WITH NATURE

Vision

Connecting people with nature.

Mission

To create positive impact for wildlife and communities through internationally recognized projects in South East Asia

OVERVIEW

Why Fuze Ecoteer?

Fuze Ecoteer seeks to establish self-funded conservation projects which, after a seed fund, are self-financed.

The values of Fuze Ecoteer are

Humble but confident
We listen to everyone. Listening before acting is vital to us. This is what gives us the confidence in our efforts.

Caring
We care about the environment, the local communities we work with and of course our volunteers.

OVERVIEW

Sustainable Development Goals

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Fuze Ecoteer encourages people to reduce their consumption and manage their wastes. FE does this at their project sites and via social media and directly with individuals and companies.

Fuze Ecoteer actively addresses this goal through its conservation projects in the Perhentian Islands that focus on marine conservation including sea turtles, coral reefs and ocean pollution reduction.

Fuze Ecoteer always seeks to work in partnerships, be it working with a local dive centre to reduce their impact or a local community to increase their seamless involvement in conservation. We can't achieve much alone but a HUGE amount together.

Recognitions & Achievements

2020

- Article publication on Environment Coastal and Offshore digital magazine: Why Are Our Reef Collapsing?
- Awardee of EWC Earth Optimism Awards: Southeast Asia: Research & Discovery
- Awardee of EWC Innovation Fellow 2020: Fall Newsletter
- Partner in Vulnerability to Viability Project - https://www.v2vglobalpartnership.org/

Why Are Our Reefs Collapsing?

Investigating coral reef degradation at the Perhentian Islands, Malaysia

By Melissa Versteeg, Dive & Volunteer Coordinator, Perhentian Marine Research Station

During a leisurely snorkel along a formerly healthy coral patch on a site called 'Seabell,' project manager Hidayah Halid noticed part of the reef now displayed clear signs of stress and coral degradation. Degradation is a term often used in conjunction with the Perhentian Islands when describing coral reef health. Seabell's recent deterioration reiterates the importance of a question central to the research and conservation activities of the Perhentian Marine Research Station (PMRS): *What causes reef collapse around the Perhentian Islands? And how do we manage these causes within a community completely reliant on the coral reefs?*

Formerly recognized as an important layover point for traders traversing between Bangkok and Malaysia, the Perhentian Islands are located in the South China Sea. East of peninsular state Terengganu. The Perhentian archipelago consists of a handful of islands within the Sunda Shelf Region. The two most well-known are Pulau Perhentian Kecil and Perhentian Besar. Their names underline a historical role in former trading industries as these names literally translate to 'little' and 'big stopping point'. Until the mid-'80s, the islands' waters had been increasingly exposed to unsustainable fishing practices: overfishing and the use of trawling nets.

Recognitions & Achievements

2020

- Awarded the Social Enterprise Accredited Status under MaGIC in Dec 2020
- Star Golden Hearts Award Winner - Watch video below

GROUPS

Project Impact

Groups - in Person

In 2020 Fuze Ecoteer hosted three in-country groups, these were

University of La Verne, US - 21 day biology study tour at KL, Raub, Merapoh, Belum and Langkawi.

College Sainte-Anne de Lachine, Canada - 11 students designed and funded a portable marine escape room which will be used in 2021 as a marine awareness tool and donated a shark and turtle mould for the Precious Plastic machines in the Perhentian Islands.

German School of Kuala Lumpur - 14 students visited our site in Ipoh to learn about Orang Asli culture and team building.

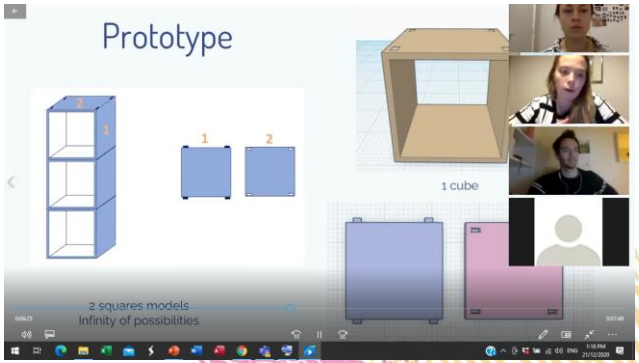
Project Impact

Groups - Virtual

As an adaption to COVID-19 Fuze Ecoteer led virtual field trips, these were:

University of Portsmouth - A 3 part virtual session where the students learnt about our turtle research and citizen science projects in the Perhentian Islands and about the research work of the Malayan Rainforest Station. The virtual field trip was well received and resulted in the students conducting research projects with the past data collected.

MAD Travel - As part of the MAD Social Enterprise online courses Fuze Ecoteer presented about their work to students from EM Lyon University and gave them a problem to solve. The students presented their work with some innovative solutions.



PEEP

PERHENTIAN

ECO EDUCATION PROJECT

Project Impact

Perhentian Eco Education Project

PEEP
PERHENTIAN ECO EDUCATION PROJECT

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- **Title:** Involving the students of SK Pulau Perhentian (SK PP) in environmental education and biological citizen science.

- **Objective:** To improve the knowledge and consequential passion in marine conservation of the students of SK Pulau Perhentian.

- **Result:** The 2020 year, though short due to the impact of COVID-19, was successful as it was the first year the English and Eco Clubs became an official co-curriculum subject for the students at SK PP. The student participation numbers consequently increased with 30-40 students attending each session. It is suggested the clubs continue as a co-curriculum subject in 2021.

Classes run by PEEP in 2020	Total hours	Total Attendance
English Class (Tuesday & Saturday)	7.5hrs	207 students
Junior Eco Club (Friday)	7hrs	173 students
Senior Eco Club (Thursday)	7hrs	204 students

PERMENTIAN
TURTLE PROJECT

Project Impact

Perhentian Turtle Project

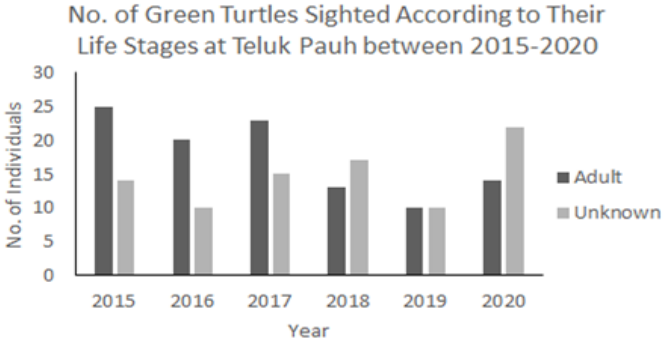

Figure 4: The number of adult and unknown (their exact life stages, juvenile or sub-adult, could not be confirmed) green turtles at Teluk Pauh

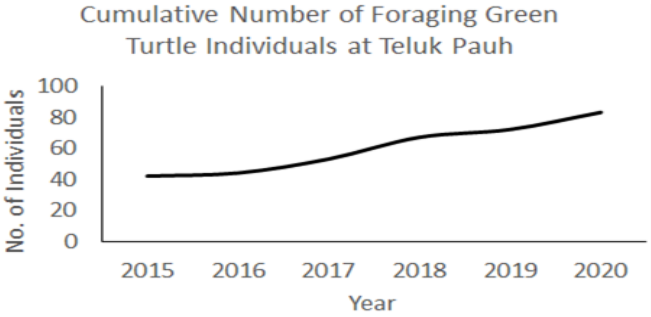

Figure 5: The cumulative number of foraging green turtles at Teluk Pauh between 2015-2020.

- **Title:** Monitoring the foraging sea turtles at Teluk Pauh seagrass bed, Perhentian Islands Marine Park.

- **Objective:** To assess the number of turtles and their life stage which forage at Teluk Pauh to provide management recommendations.

- **Result:** The increase in individuals sighted in 2020 may be due to the COVID-19 pandemic, particularly because there are more juveniles and sub-adults (aka Unknowns) which are more wary of human presence and the data corresponds to lack of tourists due to the COVID-19 lockdown in Malaysia, especially between Mar-June. If the previous inference is true, then it is possible that, Teluk Pauh's population is larger than expected, Perhentian's green turtles' foraging range is larger than expected, as inferred in the 2019 report, human overcrowding is a major influence on Teluk Pauh's green turtle foraging behaviour, consequently affecting differences in feeding times.

Project Impact

Perhentian Turtle Project

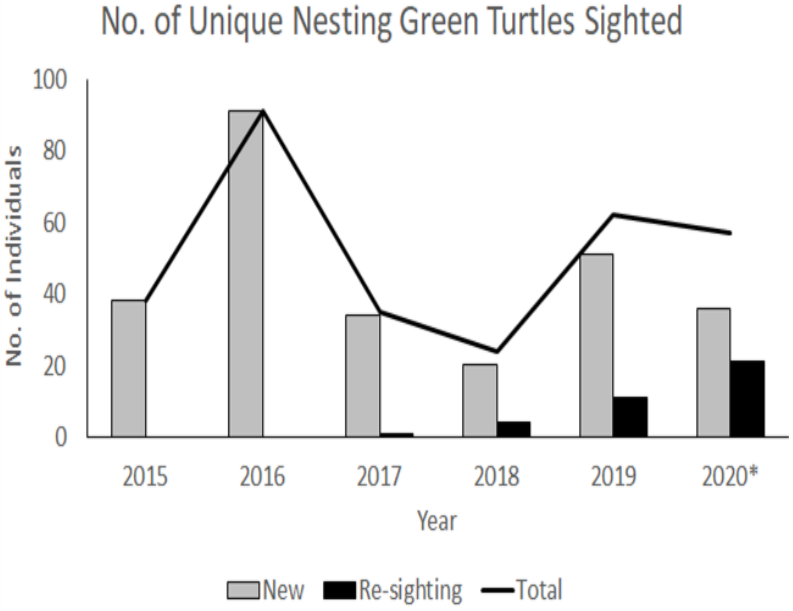

Figure 6: The number of nesting green turtles sighted at Tiga Ruang and the Bubbles Dive Resort, the only two beaches where individuals are catalogued and 'share' nesting individuals..
*2020 Tiga Ruang data incomplete due to infrequent night patrols

- **Title:** Monitoring the mother sea turtles that nests in the Perhentian Islands Marine Park.

- **Objective:** To assess the number of females nesting in the Perhentian Islands Marine Park to establish if they are increasing, stable or decreasing.

- **Result:** 70% of the data collected from Bubbles beach due to infrequent night patrols at Tiga Ruang. Nesting trend was expected to be similar to that of 2017. Unable to confirm trend as at Tiga Ruang PTP only opportunistically sighted 18 individuals but with 10 returning mothers from 2014, 2015, 2016, and 2017. Bubbles recorded more turtles than 2017 (highest since 2016) with12 of 28 being resighted individuals from 2016 and 2017. Local rangers observed more individuals nesting closer to camp (often empty and dark this year). Though unable to confirm the trend, based on Bubbles' data and hatchery data, 2020 data would have recorded as many individuals as 2016, if not higher.

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Project Impact

Perhentian Turtle Project

Table 1: The number of nests relocated into the hatchery between 2015-2020*

Year	# Nests
2015	260
2016	423
2017	141
2018	76
2019	316
2020	448

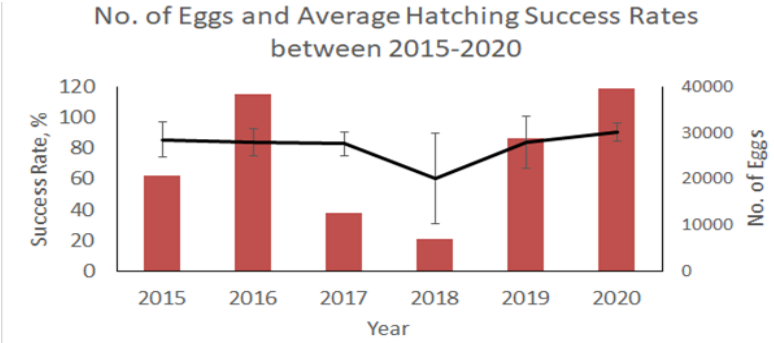

Figure 7: The number of eggs (right y-axis) relocated into and average hatching success rates (left y-axis) of nests in the hatchery. Error bars represent standard deviation.*

- **Title:** Monitoring the sea turtle nests at the hatchery at Tiga Ruang, Perhentian Islands Marine Park.

- **Objective:** To assess the number of nests and hatchling success rate of the hatchery to monitor and suggest improved hatchery management measures.

- **Result:** In 2020 PTP expected a low nesting season i.e. fewer nests and eggs than 2019. Instead, the number of nests (448) and average hatching success rates (90.18%) has been the highest since 2015. It is difficult to determine if this is related to COVID-19 as 2020 maybe a high nesting year. It is possible that the lack of people movement around the islands may encourage more nesting activity. In addition, the higher 2020 hatching success rates may be related to the hatchery relocation towards the middle of the beach (i.e. changes in sand quality and more shade).

Project Impact

Perhentian Turtle Project

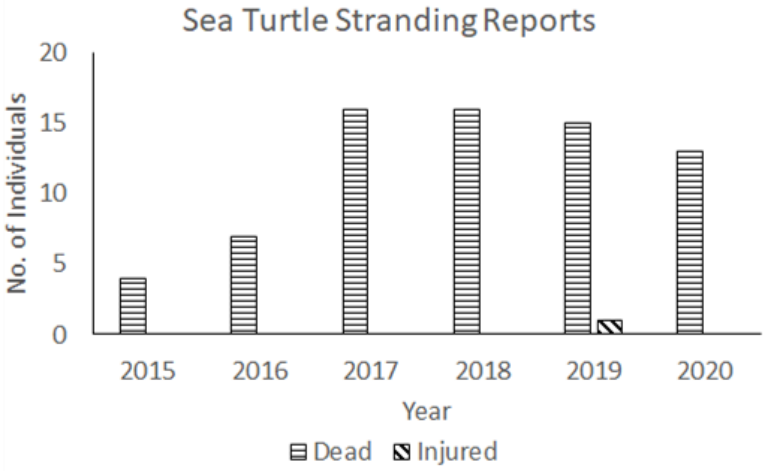

Figure 8: The number of sea turtles we received and responded to between 2015-2020.

- **Title:** To monitor the extent of sea turtle strandings in the Perhentian Islands Marine Park.

- **Objective:** To assess the pattern of sea turtle stranding to help direct future conservation measures.

- **Result:** PTP responded to 12 of 13 reports of dead turtles (no injured/stranded cases reported) in 2020. Though fewer than previous years, PTP observed more dead immature individuals with boat strike injuries this year (2020: 5; 2019: 3; 2018: 4; 2017: 1). While the injuries could have happened post-mortem, one of the individuals was still alive when found, with organs exposed due to a cut in the bottom right of its carapace. It was a juvenile from the PTP database, PG0199U, first sighted by a stakeholder at Shark Point. However, It is important to note that the numbers in Figure 8 does not reflect the actual number of stranded individuals.

PMRS

PERHENTIAN

MARINE RESEARCH STATION

Project Impact

Perhentian Marine Research Station

PMRS
PERHENTIAN MARINE RESEARCH STATION

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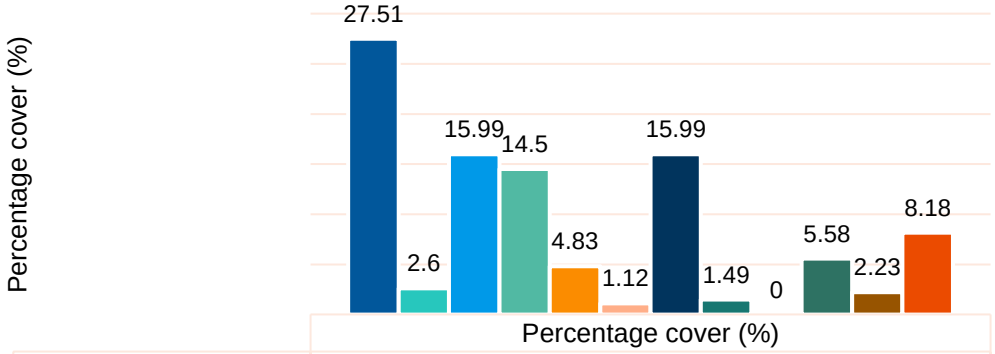
- **Title:** To Develop Reef Mapping Methodology For Preliminary Reef Assessment at Village Reef of Perhentian Islands: Random Swim Technique.

- **Objective:** To conduct a random swim survey technique to determine the coral distribution at Village Reef, Perhentian Island.

- **Result:** The highest percentage of coral cover was Hard Coral Branching (HCB) with 27.51% followed by Hard Coral Foliose (HCF) and Hard Coral Irregular (HCI) at 15.99%. The third highest was Hard Coral Encrusting (HCE) with 14.5%. The Hard Coral Solitary had the lowest coverage within the sampling area while Hard Coral Table (HCT) fall into the second lowest coverage.



	Percentage cover (%)
Hard Coral Branching	27.51
Hard Coral Massive	2.6
Hard Coral Foliose	15.99
Hard Coral Encrusting	14.5
Hard Coral Plate	4.83
Hard Coral Solitary	1.12
Hard Coral Irregular	15.99
Hard Coral Table	1.49
Soft Coral	0
Other	5.58
Rock	2.23
Rubble	8.18

Project Impact

Perhentian Marine Research Station

PMRS
PERHENTIAN MARINE RESEARCH STATION

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- **Topic:** Substrate Monitoring - Understanding coral complexity, ecosystem dynamics and implications for phase shifts at the Perhentian Islands

- **Objectives:** to survey the substrate cover of the reef in determining the habitat complexity.

- **Results:** Nemo reef showed higher intra-site variation within the survey sites, characterise by dominant coral morphologies compared to Teluk Keke. Nemo reef is more structurally complex when comparing both abundance and diversity of coral morphologies. Inverse relationship between Live Coral Cover (LCC) and Nutrient Indicator Algae (NIA)

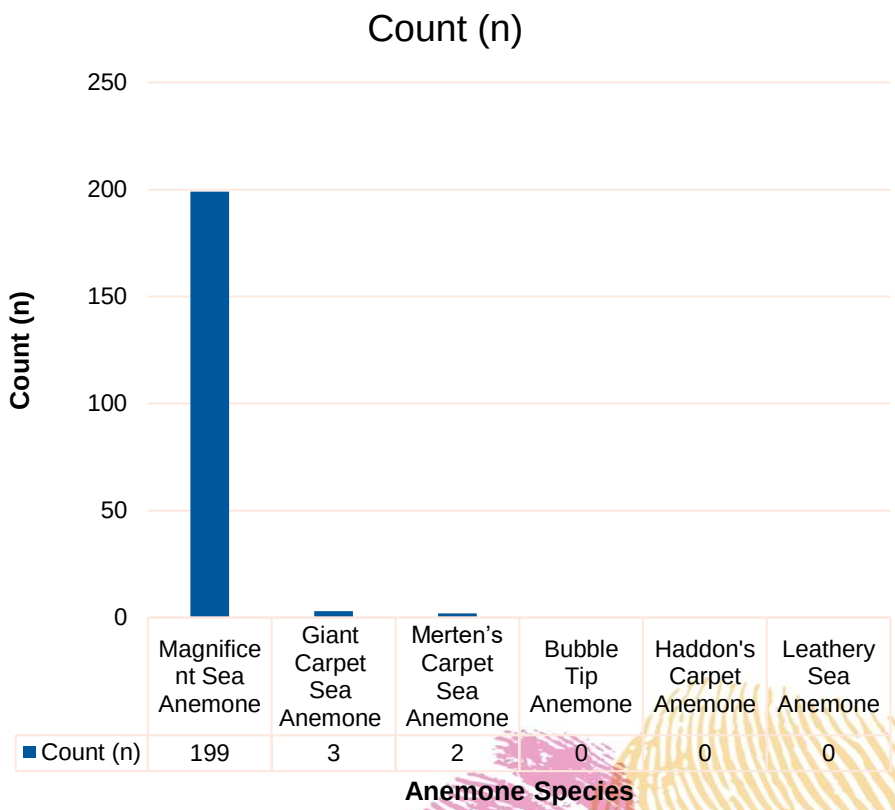
Project Impact

Perhentian Marine Research Station

- **Title:** Anemone abundance and its distribution at Nemo Reef

- **Objective:** To investigate whether these abundance levels indicate dominance shifts on Perhentian reef sites.

- **Results:** Three (3) species were recorded within the sampling area out of 6 species present in Perhentian Islands. Meanwhile, more than 60% anemone were found in cluster formation. Higher abundance of the anemones are negatively impacting live coral cover (LCC) on the reef. This finding indicates that, since anemones and corals require similar environmental condition, they are in direct competition for available resources.



Project Impact

Perhentian Marine Research Station

Beach Clean Ups: PMRS conducted a joint BCU with other *Fuze Ecoteer* projects, plus collaborations with various stakeholders around the islands to help clean up the beaches around Perhentian Islands.

- 14 BCU's conducted in 2020
- 12 underwater reef cleans
- 1 International Coastal Clean (ICC) up event.

***322.6kg** of trashs were collected, sorted and weighed in 2020 season.*

Straw collection: PMRS collaborated with local eateries to collect their used plastic straws in bid to reduce straws been dumped to landfill or trashed into the sea. Six (6) local restaurants participated in the initiative since June to September 2020. More than 5000 straws were collected and will be use in the production of Precious Plastic Machine.

Kayu Ara River Project

Project Impact

Kayu Ara Project

- **Title:** Developing a replicable and scalable self funded project which removes solid waste from waterbodies.

- **Objective:** To develop a social enterprise which focuses on selling upcycled products from wastes found in and around waterbodies.

- **Results:** The Kayu Ara Project started in August 2020. This is a collaborative project between Global Environment Centre, Water Warriors, Ecoknights, TTDI Community Centre and Urban Farm and Fuze Ecoteer. Each entity focuses on different aspects with Fuze Ecoteer focusing on solid waste pollution and the area from Kelana Jaya to the mouth at Ara Damansara. The project combined with the Perhentian Island is hoping to provide an example of how to self-sustainably manage solid waste in and around water bodies. In just 18 hours with a total of 21 different volunteers helping a total of 895.2KG of waste has been removed from the Kayu Ara River in Selangor. The area being cleaned is home to a family of 5 smooth coated otters and numerous wading birds and birds whom live close to water.

NGO'S FE SUPPORTS

Project Impact

MRS
MALAYAN RAINFOREST STATION

In collaboration with UMK, MRS has worked on the following projects in 2020

- Ecological and behavioural studies of flying squirrels
- Nesting Behaviour of Rhinosaurus Hornbills.

In addition MRS has raised over RM22,000 for COVID-19 relief for the local Malay and Bateq Communities

MRS has secured funding from the UNDP GEF Small Grant to continue their community work with the Malay and Bateq people in 2021.

Project Impact

WRC
WILDLIFE RESCUE CENTRE
Jogja

Animals Rescued

March- 1x Changeable Hawk-eagle
August- 1x Barn owl (died few days later due to internal damage)
November- 2x Barn owl
December- 1x Reticulated Python with 9 eggs

Animals Released

April- 2x Crested Serpent Eagle in Jatim Olio (east Java)

May- 1x changeable Hawk-eagle, 1x Crested serpent eagle, 1x White-bellied Sea eagle and 2x Peafowl in Baluran National Park (east Java). 1x Python Molorus translocate to GL Zoo Yogyakarta

June- 5x Saltwater Crocodile in Way Kambas National Park (Southern Sumatra)

November- 2x Barn Owl in WRC Jogja

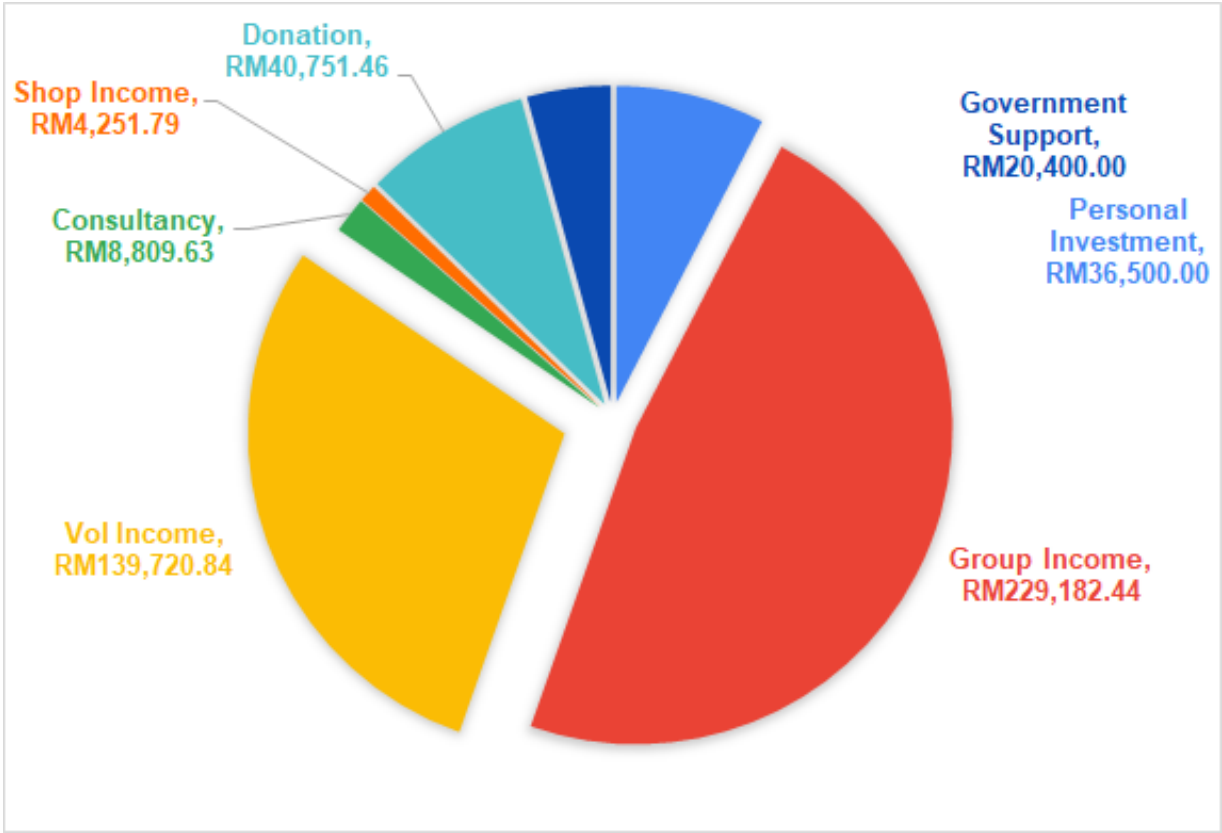
Extra updates: 2 ongoing release programs.
2 orangutans (Ucokwati & Mungil) translocated to Jungle School in Kalimantan (Borneo)

Financial Accounts

Sustainability Impact

Income

- The graph shows the breakdown of income generated by Fuze Ecoteer in 2020.
- The income totalled RM479,616 which is a drop by 78% from 2019 income.
- Groups and volunteer fees were still the main contributors to income for Fuze Ecoteer with donations, government support, shop sales and personal investment being new revenue streams.

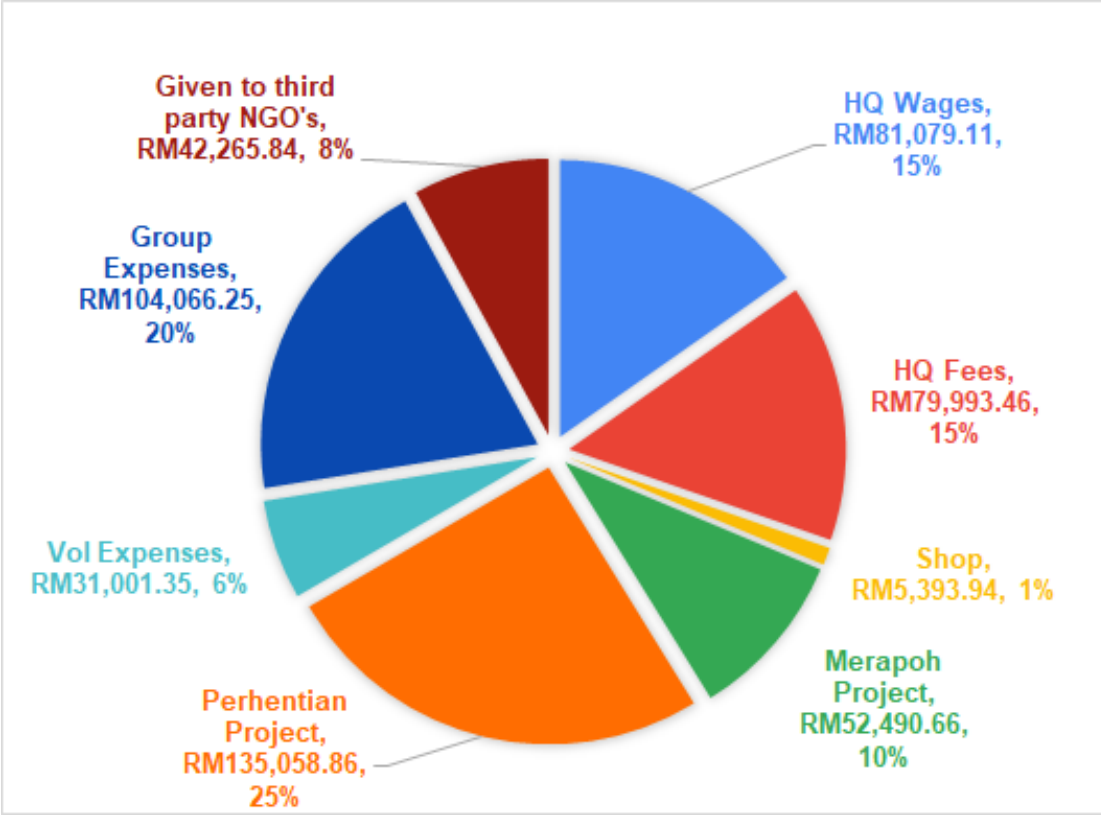


Sustainability Impact

Expenditure

- The graph shows the breakdown of expenses of FE in 2020, FE is due to make a loss in excess of RM50,000 in 2020.
- 43% of the expenditure was spent directly towards conservation and community purposes
- 26% was spent on programme fees such as food, accommodation, transport etc

Income	Expenditure	Percentage
FE Projects	RM187,549.52	35%
Other NGOS	RM42,265.84	8%
Programme Expenses	RM135,067.60	26%
HQ/TAX/Accounts/Marketing	RM161,072.57	30%
Shop	RM5,393.94	1%



Conclusion

Next year and beyond

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- In 2021 our focus for finances change with an increasing amount of revenue coming from grants. We will also primarily focus on the Perhentian Islands and the Kayu Ara River in Selangor.
- The focus at these project sites will be working with the local communities and getting their input on how they would like to manage their resources.
- We will develop our upcycling project and turn the Kayu Ara Project into its own self-sustainable project just like the others which focuses on turning ocean and river plastic into everyday products such as coasters, shelving, dive slates and more
- We will also expand our educational programmes with hybrid solutions of virtual and in-person programmes
- Finally we will integrate the Travel life values into the company.

OVERVIEW

Thank you

2020 has been a different year! With a drop of 78% in income we had no choice but to reduce our team and overheads. A huge thank you to the team whom we had to part with including the KL headquarters team and to the Merapoh team whom we had to stop funding from April 2020. FE took on the challenge to #SavePerhentian and it worked with 448 turtle nests being recorded, that's our highest EVER as well as the best hatchling success rate of over 90%. These great results would not be possible if it wasn't for HUGE sums of money being fundraised. MASSIVE THANKS TO ALL THOSE THAT DONATED TIME AND MONEY ESPECIALLY LUCY, TILLY, MELISA, NORHIDAYAH and ALANAH for their creative fundraisers e.g. Burps for Turts and Research Dives for Corals.

- We would like to express our gratitude to all the interns and volunteers who have stood with us during the pivoting of COVID-19. You have shown the highest teamwork, passion and dedication this season.

- To the communities of Perhentian Islands, Merapoh, and Kayu Ara for all your help and assistance throughout this year.

- Our stakeholders: Department of Fisheries, Marine Park Division, MOTAC, MaGIC, Local diveshops and resorts in the Perhentian Islands (especially Alunan, Universal, Bubbles Dive Resort, Anti Gravity and Sea Voice Divers), Malayan Rainforest Station, Wildlife Rescue Centre Jogja, Malaysian Wildlife, ISKL, Outlook Expeditions, World Challenge, Reef Check Malaysia, Luah Associates and MAD Travel.


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THANK YOU