

ANNUAL REPORT 2020

Lang Tengah Island



SUMMARY

LANG TENGAH ANNUAL REPORT 2020

TEAM

8
STAFF
MEMBERS

12
INTERNS &
VOLUNTEERS

CLEAN-UPS

57.8 KG
TRASH
REMOVED

HAWKSBILL TURTLES

2
NESTS
SAVED

1
NESTING
TURTLE

1
IN-WATER
TURTLE

GREEN TURTLES

30
NESTS
SAVED

5
NESTING
TURTLES

COLLABORATOR & SPONSORS



ACKNOWLEDGEMENTS

The conservation and research work under Lang Tengah Turtle Watch was carried out in collaboration with the Department of Fisheries (DOF), including the department's Marine Park and Resource Management Division which was formerly the Department of Marine Park.

We would also like to specially thank LeaderSpace, particularly Richard Boston, Trinity Kids Malaysia and Rotary Club of Kelana Jaya for their very generous donations and fundraising efforts. Our volunteer programme was severely impacted by Covid travel restrictions, and their financial assistance was vital in sustaining the project during the second half of the season.

We are also thankful to all the tourism stakeholders on Lang Tengah Island, including Summer Bay Resort, Sari Pacifica Resort & Spa, D'Coconut Lagoon Resort and Dewati Camp Site, for their help and support.

The work presented here was carried out by our dedicated team – Taylor Swanburg, Luca Voscort, Nicky Allen, Alex Scott, Jordan Gledhill, Long Seh Ling, Jason Gan Yew Seng, Nur Abidah Zaaba, Syed Ahmad Fattahuddin, Ambrose Chin Ze Ann, Mok Weng Dee, Lisa Sunita, Aida Roslan and Eileen Nyeow @ Yau Yee Ling. We would also like to express our gratitude to our volunteers, particularly Syed Ahmad Faridudin, Syed Ahmad Fahimuddin, Natasha Zulaikha, Lee Kah Hao, Raymond Lim Zhi Yin and Charlene Alfonso Lee, for their help in patrolling the nesting beaches on a nightly basis, collecting nesting, landing and hatching data, as well as doing beach clean-ups. We are also thankful to Lang Tengah Turtle Watch's previous staff members, Rifqah Ahmad Rostam, Chew Kok Lynn and Sebastian Szereday, for offering their help.

Lastly, our utmost gratitude is extended to Hayati Mokhtar, Raphe van Zevenbergen and Dato' David Morais, co-founders and/or directors of Lang Tengah Turtle Watch, for their ongoing support and advice. We would also like to thank our Admin Assistant, Chen Suet Yen, who supported us administratively from the KL Office.

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INTRODUCTION

Lang Tengah Island, a popular tourist destination, lies approximately 20 km off the coast of Terengganu in Peninsular Malaysia. The island represents an important nesting and foraging grounds for two endangered sea turtle species – green turtle (*Chelonia mydas*) and hawksbill turtle (*Eretmochelys imbricata*). Lang Tengah Turtle Watch has been conducting sea turtle monitoring since 2013 in collaboration with the Department of Fisheries (DOF), to protect the sea turtle populations and their habitats around Lang Tengah Island. Prior to that, Lang Tengah was listed as a tendered beach where the highest bidder would get the license to collect sea turtle eggs and sell them for consumption. Now that the island is no longer listed for tender, Lang Tengah Turtle Watch has sole permission to collect sea turtle eggs – for conservation and research.

Over the years, we have expanded our work to also monitor the coral reefs and other marine life. We have been appointed Reef Care Taker for the Reef Care Programme under the DOF's Marine Park and Resource Management Division. In addition to this, we raise public awareness through various outreach educational programmes.

Our work in Lang Tengah Island is normally supported by our volunteer programme, under which visitors from Malaysia and abroad are able to live on

Lang Tengah beach, look after the nests, and contribute money in order to do so. The pandemic has ended all of that for the time being. Therefore, having just a small team of staff members and interns, we only managed to conduct nesting sea turtle monitoring from March to May and August to October. We kept up nightly beach patrols to ensure that the eggs were protected and to collect landing and nesting data, and did post-emergence nest excavation to determine the hatching and emergence success, but were not able to carry out coral restoration and monitoring work as well as other in-water monitoring surveys due to limited funds and manpower. Beach clean-ups were conducted only by our team members.

Furthermore, government guidelines have prevented group gatherings, so we could not organise any educational outreach programmes with the local schools and universities, or engage with the local tourism stakeholders and tourists in any activities that involve numbers of people.

However, we feel pleased that our organisation has survived this unprecedented year and that we have the opportunity to continue our work in conservation, research and outreach in years to come – towards achieving the objectives of our Lang Tengah Island project.

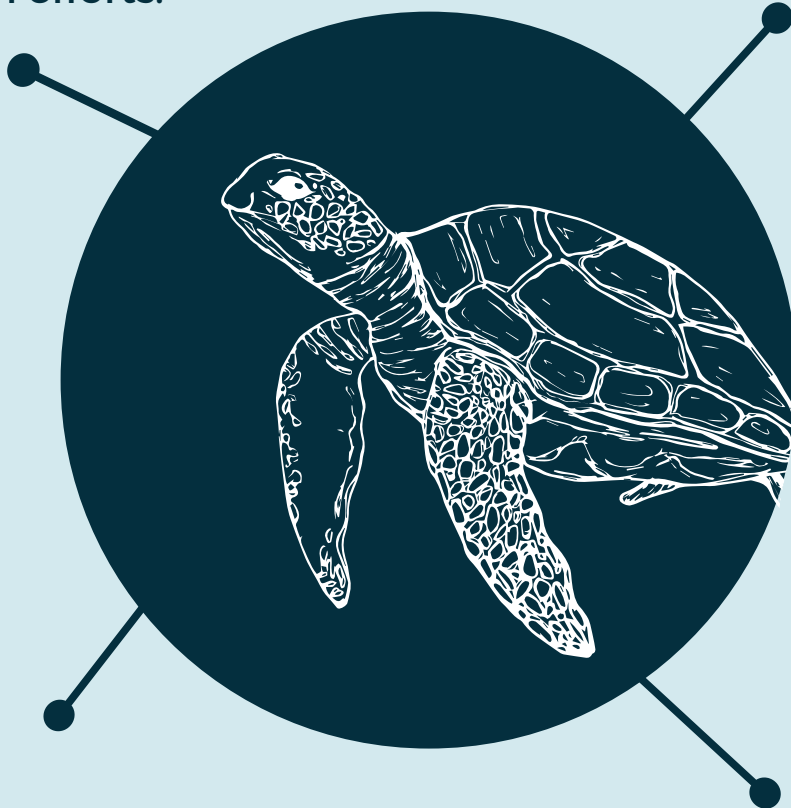
OBJECTIVES

04

Educate and raise awareness among local communities, tourism operators and tourists through educational outreach programmes as well as engagements in research and conservation efforts.

01

Save sea turtle eggs from the market.



03

Conduct long-term monitoring to better understand and conserve the nesting and in-water sea turtle populations including their habitats in Lang Tengah Island.

02

Conduct ongoing coral monitoring and restoration to mitigate coral population decline and preserve diversity.



SEA TURTLE MONITORING

This year, we started the project in March, shortly before the Movement Control Order (MCO) came in place. As conservation work falls under essential services, we were able to carry on our work until early May. However, we were not able to further receive volunteers due to the domestic and international travel restrictions. We had to close the project for a few months between early May and mid-August due to the lack of manpower and funds. During this period, Lang Tengah Turtle Watch paid local tourism stakeholders such as resort staff to protect the nests laid on the island, who would then send us the nesting data.

We resumed our operation around mid-August until we closed the project in mid-October. When our team was present on the island, we conducted nightly patrols on an hourly basis primarily at two nesting beaches, Turtle Bay where our project site is, and Lang Sari (Figure 1), from 8 p.m. until 7 a.m. to ensure that no nesting female is missed. Every night staff members, interns, and volunteers who were split into two teams patrolled Turtle Bay and Lang Sari simultaneously. We did not patrol Summer Bay but would relocate any nests reported to us. Nests laid on Lang Sari were also relocated to Turtle Bay. This is because the nests were vulnerable to poaching if left in situ. Meanwhile, nests laid on Turtle Bay were left in situ as our team was around to deter poaching.

**FIGURE 1
NESTING BEACHES ON
LANG TENGAH ISLAND**





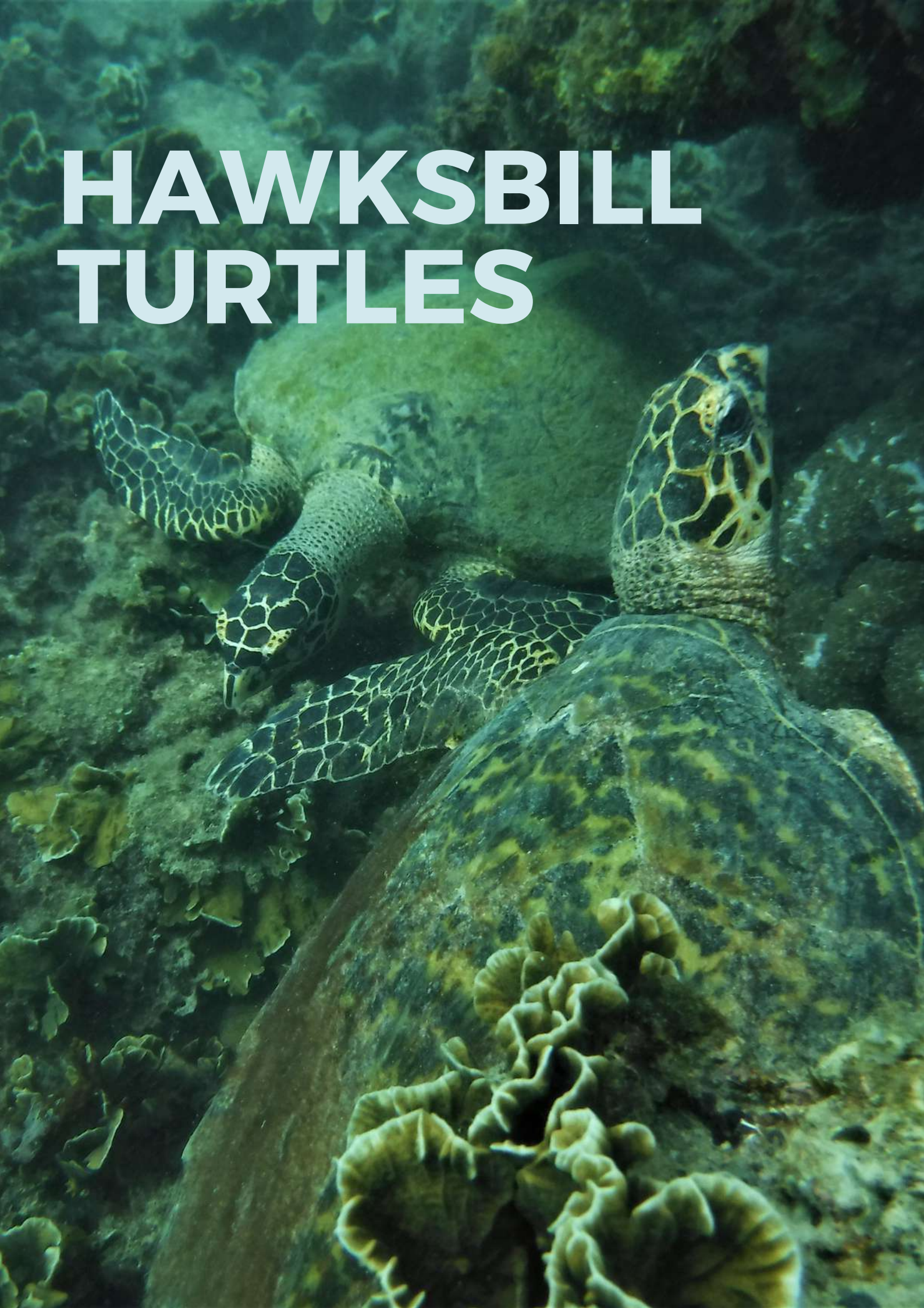
We also collected biometric data and photographs of the nesting turtles after they finished laying eggs. During the period when we were not around, the resort staff marked any nests encountered and left the nests where they were laid.

It takes on average about two months for the hatchlings to hatch and emerge from their nest.



The team conducted post-emergence inspection (PEI) by excavating the nest a few days after seeing the first sign of hatchling emergence. We counted the numbers of egg shells, unhatched eggs, depredated eggs, live and dead hatchlings to determine the hatching and emergence success.

HAWKSBILL TURTLES



Critically endangered hawksbill turtles nested in March and April. Figure 2 shows the number of hawksbill turtle landings, nestings and individuals identified in 2020. Of seven hawksbill turtle landings, two nests were recorded, one at Turtle Bay and one at Summer Bay. One individual female was identified. It was a returning mother named Cassiopeia that had nested every two years in 2014, 2016 and 2018. In total, six nesting hawksbill turtles have been identified between 2014 and 2020.

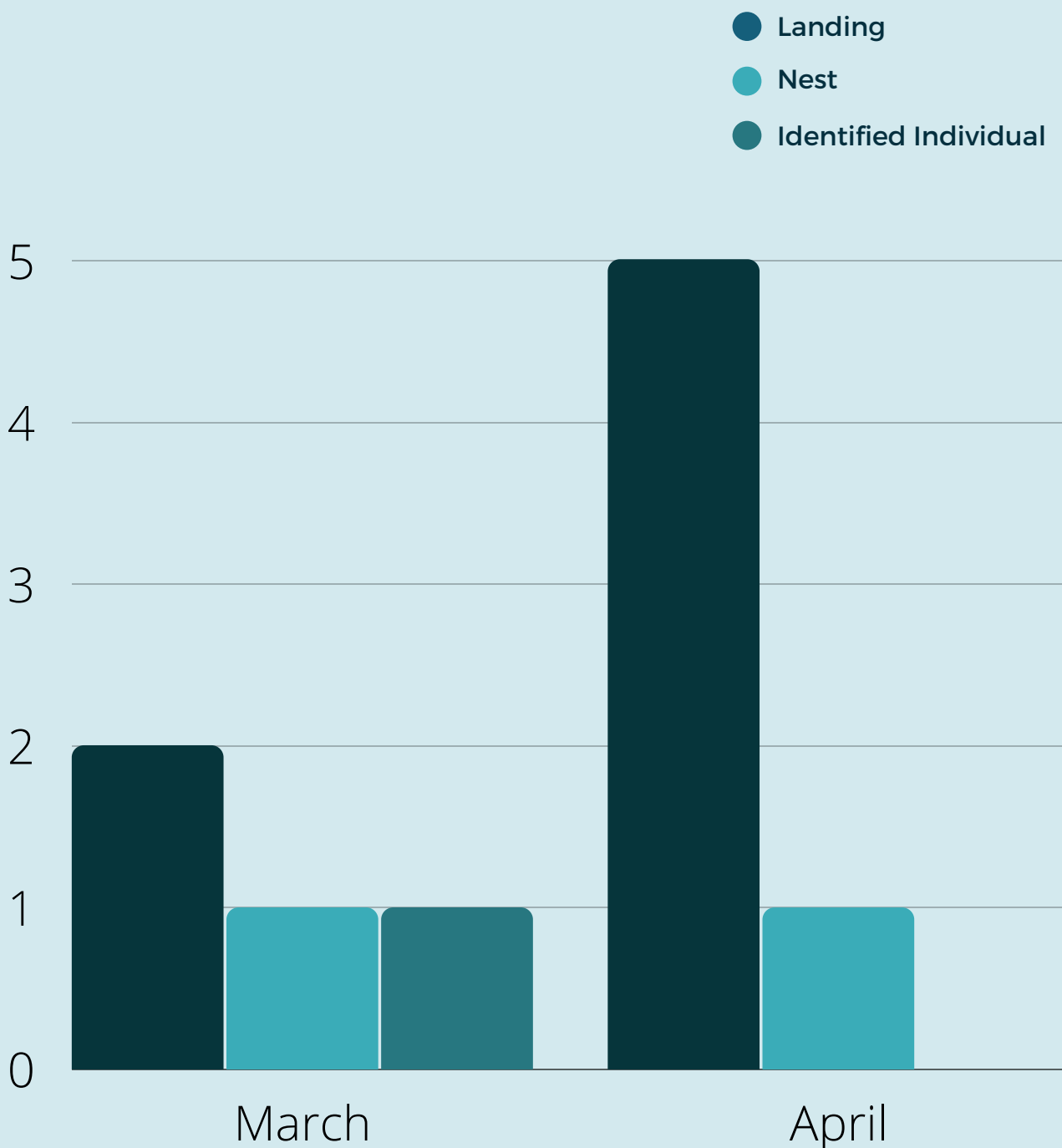


FIGURE 2. Number of hawksbill turtle landings, nests and identified individual females at Lang Tengah Island in 2020.

The number of eggs was only known for one nest with 123 eggs, as the nest was relocated to Turtle Bay. By the time the nests were due to hatch around May and June, our team was no longer on the island. So we did not carry out PEI for both nests. For this reason, we do not have the data of hatching and emergence success for the hawksbill nests this year.

This year, we sighted a hawksbill turtle in the waters of Turtle Bay. It was identified as a new individual as its facial photographs do not match any of the individuals in our current photo-ID database (Figure 3). Since 2017, seven individual hawksbill turtles have been recognised to be feeding, swimming or resting in the waters of Lang Tengah Island.



FIGURE 3. A HAWKSBILL TURTLE, FATE, WHICH IS A NEW INDIVIDUAL ADDED TO OUR PHOTO-ID DATABASE.

GREEN TURTLES



As shown in Figure 4, endangered green turtles nested from May to October. The highest landing and nesting occurred in June. Of 42 green turtle landings, 30 nests were recorded, with 15 nests each at Turtle Bay and Lang Sari.

The identified turtles shown consist of five individual females (Table 1) identified using photo-ID methods (Figure 5). But this number may not reflect the total individual nesting females that nested in 2020 as biometric data of the nesting females

were only collected when our team was present on the island. Two individual females nested once, another two individual females nested twice and one nested four times. Their inter-nesting interval ranged between 10 and 22 days. All of the identified individuals were new nesting turtles, except one returning female that had previously nested in 2014. All of them showed high fidelity to a specific nesting site, returning to the same beach they had nested before. In total, 76 individual nesting turtles have been identified since 2014.

FIGURE 4. NUMBER OF GREEN TURTLE LANDINGS, NESTS AND IDENTIFIED INDIVIDUAL FEMALES AT LANG TENGAH ISLAND IN 2020.



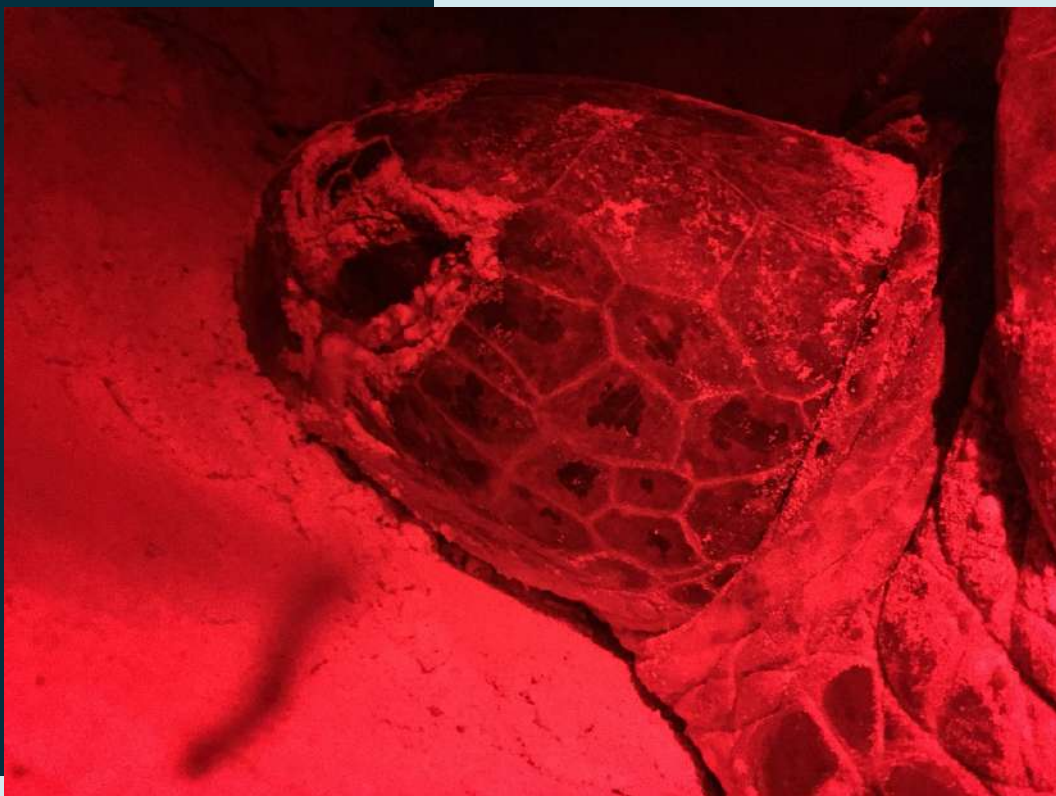


FIGURE 5. FACIAL PHOTOGRAPHS OF MICA (TOP), MICA AND UMIMO (BOTTOM) SHOWING DIFFERENT SCALE PATTERNS.

TABLE 1. NESTING INFORMATION OF 5 INDIVIDUAL FEMALES

Turtle ID	Turtle Name	New/Returning mother	No. of nest	Nesting site	Inter-nesting interval (days)
20G001*	Hujan	New	1	Lang Sari	-
20G002*	Norah	New	1	Lang Sari	-
20G003	Evie	New	2	Turtle Bay	10
20G004	Umimo	New	2	Lang Sari	14
14G004	Mica	Returning	4	Turtle Bay	11 – 22

* See the hatching and emergence success of the nests from these females in Table 2.

The total number of green turtle eggs laid in 2020 was not known. For ex-situ/relocated nests, we were able to count the number of eggs during relocation. There were 479 eggs from all five relocated nests (Table 2). Meanwhile, the number of eggs for in-situ nests was only calculated during PEI based on the number of empty egg shells, where each shell represented one hatched hatchling, unhatched and depredated eggs. Hence, the number of eggs for in-situ nests that we did not conduct PEI (because our team was not present) was not known.

Similarly, the hatching and emergence success were only calculated for the nests that we conducted PEI. Since we returned in August, we managed to locate and conduct PEI for one ex-situ and 12 in-situ nests (Table 2). For nests that we could not locate, it was because the nest marker was gone. Furthermore, we could not conduct PEI on the nests that were due to hatch after mid-October as our team was no longer on the island due to the onset of the monsoon. 473 eggs from these 12 in-situ nests were counted based on the number of empty egg shells found during PEI. First sign of hatchling emergence was recorded for five nests (i.e. nests no. 6, 9, 12, 13 and 16), showing incubation period of 57 to 79 days, with an average of 64.2 ± 8.8 (mean \pm SD) days.

TABLE 2. NESTING AND HATCHING DATA FOR 13 NESTS

Nest no.	Turtle ID	Type of nest	Total eggs	Empty egg shells	Hatchlings in nest		Unhatched eggs	Depredated eggs	Hatching success (%)	Emergence success (%)
					Live	Dead				
3	20G001	Ex-situ	86	8	0	0	13	8	9.3	9.3
4	NA	In-situ	7	2	0	0	5	0	28.6	28.6
5	NA	Ex-situ	102	NA	NA	NA	NA	NA	NA	NA
6*	NA	In-situ	17	15	0	0	2	0	88.2	88.2
9*	NA	In-situ	79	74	0	0	3	2	93.7	93.7
10	NA	In-situ	48	42	0	2	1	5	87.5	83.3
12*	NA	In-situ	99	87	1	0	5	7	87.9	86.9
13*	NA	In-situ	79	73	0	1	4	2	92.4	91.1
16*	NA	In-situ	16	13	0	2	0	3	81.3	68.8
18	NA	In-situ	87	78	0	2	5	4	89.7	87.4
20	NA	In-situ	36	35	0	0	0	1	97.2	97.2
21	20G002	In-situ	82	0	0	0	70	12	0	0
22	NA	In-situ	49	46	0	0	0	3	93.9	93.9
23	NA	In-situ	9	8	0	0	0	1	88.9	88.9
24	NA	Ex-situ	122	NA	NA	NA	NA	NA	NA	NA
29	20G004	Ex-situ	108 [^]	NA	NA	NA	NA	NA	NA	NA
30	20G004	Ex-situ	61 [^]	NA	NA	NA	NA	NA	NA	NA

Notes:

NA indicates that data is not available

* Incubation period known

[^] Excluding yolkless

The hatching and emergence success for in-situ nests may not reflect the true success. This is because the hatching and emergence success for ex-situ nests were calculated using the egg number as those found during the PEI and any eggs not found were not included. As shown in Table 2, it seems that many of the nests might have been poached by humans or predated by natural predators. For examples, 57 eggs were missing from nest no. 3 while nests no. 4, 6, 16 and 23 had fewer than 20 eggs per clutch.

CLEAN - UPS



We did several clean-ups around the island throughout the season, mainly at the nesting beaches. Furthermore, we also conducted a beach clean-up on 19 of September 2020 in conjunction with the International Coastal Clean-Up (ICC) Day 2020. On that day, a total of 57.8 kg of waste was removed from the beaches around Lang Tengah Island. Regular clean-up keeps the beach clean and safe, preventing nesting mothers from crawling through marine debris to find a place to nest, as well as ensuring that hatchlings do not get caught in the debris when trying to make their way to the ocean. Since 2016, a total of 9,863.5 kg of waste was removed, of which 7,644.5 kg was recycled.

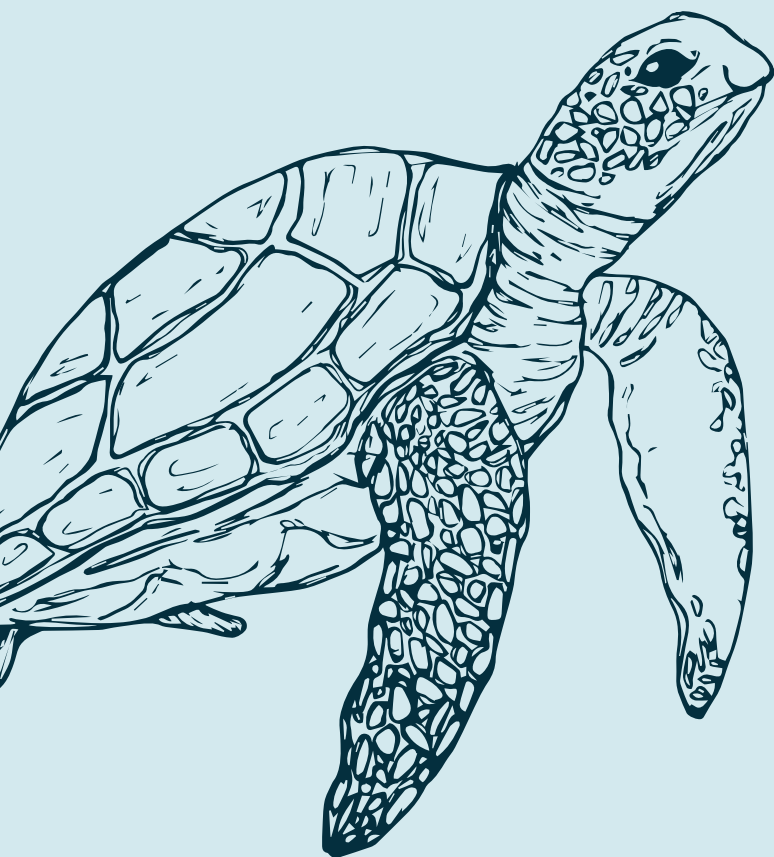


Regular beach clean-ups on Lang Tengah Island.



CONCLUSION

This season was different from the previous seasons as our team was not able to be at the project site throughout the whole nesting period. After the MCO came into force, our team continued the work without volunteers until early May. Nevertheless, Lang Tengah Turtle Watch engaged with some of the resort staff to mark any encountered nests. With a new team on board after MCO and financial help from our generous donors, we were able to continue our work in August. Due to limited funds and manpower as well as guidelines and SOPs following the pandemic, we focussed on protecting sea turtle nests by patrolling the nesting beaches every night and keeping the nesting beaches clean by doing regular clean-ups.



Despite the challenges, we managed to save a total of 30 nests, including the critically endangered hawksbill turtles. Although the sea turtle nesting density in Lang Tengah Island is not as high as the other neighboring islands such as Redang and Perhentian Islands, Lang Tengah Island remains an important nesting and foraging ground for two species of sea turtles. The biometric data of the nesting females show that the nesting females returned to the same nesting site for their subsequent nesting within the same season and even a few years after.

Learning from our experiences this season, we are more prepared for the next season to ensure that we have sufficient funds and manpower to carry out sea turtle conservation work in the midst of the pandemic. Continuous work is crucial for the long-term monitoring and conservation of endangered species. Such information will help inform decision-makers in changing policy and improving management plans. We also hope to resume the other research, conservation, and outreach activities in the future. Therefore, any support to ensure continuity of our work for the coming season is greatly welcome.



CONTACT US

GET IN TOUCH WITH OUR TEAM



www.langtengahturtlewatch.org



langtengah.tw@gmail.com

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