



2023

ANNUAL REPORT

**LANG TENGAH TURTLE WATCH
TANJONG JARA RESORT**

SUMMING UP: 2023

LTTW @ TJR TEAM

4

STAFF MEMBERS

13

INTERNS

MILESTONES

9,590

HATCHLINGS RELEASED

988.5

KG OF TRASH REMOVED

GREEN SEA TURTLES

151

NESTS SAVED

14,219

EGGS SAVED

70.40%

HATCHING SUCCESS RATE

PAINTED TERRAPINS

67

NESTS SAVED

589

EGGS SAVED

72.29%

HATCHING SUCCESS RATE

COLLABORATORS AND SPONSORS



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ACKNOWLEDGEMENTS

The conservation and research work by Lang Tengah Turtle Watch (LTTW) was carried out in collaboration with the Department of Fisheries (DoF) and Tanjong Jara Resort. The educational outreach activities were successfully organised with the support of the Department of Education and schools around Dungun. We are extremely thankful to our rangers as well as the licensed egg collectors who worked tirelessly to patrol the nesting beaches and relocate the nests with care to our hatcheries.

We specially thank YTL, Ministry of Finance, MaGIC, Yayasan Sime Darby, Heriot-Watt University Malaysia, Save Our Blue Ocean, Miracle Spectrum and Simplify for their generous donations, fundraising efforts and/or in-kind support. We are extremely grateful to all the adopters who have supported our adoption programmes, which enabled us to increase our conservation and awareness raising efforts. We also express our appreciation to corporations including, but not limited to, Yayasan Kossan and Kitaran Recovery Sdn Bhd, higher education institutions, as well as schools both locally and internationally, such as The International School of Kuala Lumpur and Taipei European School in supporting our programmes.

We also thank all our collaborators including Fuze Ecoteer, Universiti Malaysia Terengganu's Sea Turtle Research Unit (SEATRU) and Laboratory for Pest, Disease and Microbial Biotechnology (LAPDiM), Turtle Conservation Society of Malaysia, Geng Plastik Ija (GPI) and TeamRakyat, whom we work closely with in research, conservation and/or outreach activities.

The work was carried out by our dedicated team of staff members and interns - Nur Isandra Shazlynn Shamsul Azmil, Audrey Symplicius, Amin Hamzah, Najihah Iskandar, Lynette Ong, Noor Aliah Syafiqah, Daniel Lassak, Joana Santos, Meghan Crebbin-Coates, Anna Wilson, Amirul Ammar, Nusrat Adawiyah, Nurul Syahida, Aimee Ly, Yobert Marc Juanillo and Long Seh Ling. We also would like to thank our Operations Coordinators, Eileen Nyeow and Mary Lowe, who supported us from the KL Office, as well as staff members and interns from other project sites who occasionally extended their help when needed.

Lastly, we extend our gratitude to Hayati Mokhtar, Raphe van Zevenbergen and Rahayu Zulkifli, founder, co-founder and directors of LTTW, for their continuous support.

OUR STORY

The founder of LTTW, Hayati Mokhtar, initiated turtle conservation efforts by managing in-situ turtle nests at Pasir Tok Enjut on Lang Tengah Island. She was later joined by the co-founder, Raphe van Zevenbergen, and together they set up a campsite on the beach, from which beach patrols along nesting beaches on the island were carried out.

Before LTTW's intervention, Lang Tengah Island's terrestrial and marine ecosystems remained largely unexplored, with marine park records from WWF categorising it as "data deficient." Our initiatives on the island seek to bridge these knowledge gaps, encompassing both terrestrial and marine species. We meticulously monitor turtle landings, deter egg poaching, and safeguard turtle feeding habitats. Our coral rehabilitation project at Tanjung Telunjuk exemplifies these efforts, where we nurture corals in a nursery before transplanting them onto the island's reefs. Volunteers are integral to our operations, aiding with daily tasks and contributing to turtle conservation efforts by collecting scientific data throughout the season. For those seeking adventure, we extend an invitation to join us in our endeavours.

In July 2016, our conservation efforts expanded to the mainland through a partnership with YTL Hotels at Tanjung Jara Resort in Dungun. Here, we oversee hatcheries and a Visitors' Hut, collaborating with local rangers and stakeholders to relocate eggs to our hatcheries and conduct awareness activities for guests, local communities, and schools - offering diverse turtle-themed experiences. The objectives of this project align closely with those of our founding initiative on Lang Tengah.

In 2022, we expanded our conservation efforts to Chakar Hutan in Kerteh. Working in conjunction with the Department of Fisheries (DoF), we monitor nesting beaches, manage a hatchery, and operate an information centre. Beyond sea turtle conservation, our project emphasises public awareness, community engagement in conservation efforts, promotion of "edu-tourism," and support for local livelihoods by creating job opportunities and income through turtle conservation tourism.



MEET PULIHARA

UNVEILING OUR NEW IDENTITY



PULIHARA

[pu.li.ha.ra]

Malay noun

1. To keep in a safe or sound state.
2. To avoid wasteful or destructive use of.

PULIHARA is a non-profit organisation duly registered with the Registrar of Societies in December 2023 under the name Persatuan Pemuliharaan dan Kajian Marin Malaysia (Marine Conservation and Research Organisation Malaysia), bearing Registration No. PPM-004-10-13122023. Formerly operating as Lang Tengah Turtle Watch (LTTW), a renowned entity in turtle conservation circles, a strategic decision was made to streamline and enhance our operations. As such, the Directors resolved to transition the conservation arm of LTTW to a separate non-profit organisation. This transition was completed on March 1 2024, marking the official commencement of operations for the conservation arm under PULIHARA.

Despite these changes, our commitment to protecting the marine ecosystem continues unabated, fuelled by the same passion that has driven us thus far. PULIHARA is dedicated to upholding the same mission, vision, and objectives that once resonated within the walls of LTTW, with the same teams across three project sites in Terengganu; Pulau Lang Tengah, Tanjong Jara, and Pantai Chakar Hutan. We warmly invite you to join us on this journey to safeguard the marine environment for generations to come.

OUR PEOPLE



Rahayu, Chief Executive Officer

Rahayu has had a diversified career in various sectors ranging from private legal practice, TV broadcasting, oil and gas, wildlife conservation and certified sustainable palm oil. Rahayu is responsible for the overall direction of the organisation, identifying funding requirements and sources, budgetary planning, ensuring timely project implementation, and aligning human capital with the organisation's goals.



Seh Ling, Principal Officer

Seh Ling graduated with a MSc in Conservation & Biodiversity from University of Exeter. She was recently conferred a Ph.D. at Universiti Malaysia Terengganu, of which her study focused on the sustainability of local community livelihoods and sea turtle conservation in Terengganu marine parks. She has over 10 years of experience working in sea turtle conservation and joined the LTTW team in July 2020.



Isandra, Project Manager

Isandra graduated with a BSc (Hons) in Applied Biology from Universiti Sains Malaysia and had worked on fungal diversity of green sea turtle nest sites as her dissertation. Prior to joining LTTW, Isandra was with Juara Turtle Project on Tioman Island. With a change in role in the managerial team, she oversees all the operations for LTTW @ TJR.



Audrey, Assistant Project Manager

Audrey's passion for the ocean led her to pursue Marine Science at University Malaysia Sabah. Audrey kicked off her conservation journey with LTTW as an intern in 2022. In 2023, Audrey returns as the other half of the managerial team and is responsible for the groundwork happening at LTTW @ TJR.

RESEARCH ASSISTANT INTERNS



First batch of interns: Najihah, Lynette, Meghan, Daniel, Joana, Aliah and Amin



Second batch of interns: Yobert, Aimee, Najihah, Anna, Nusrat, Syahida and Ammar



OBJECTIVES

Our utmost mission at the Tanjung Jara project site is to promote the long-term survival of turtle populations in Terengganu.

Our commitment involves safeguarding both the endangered green turtle (*Chelonia mydas*) and the critically endangered painted terrapin (*Batagur borneoensis*) through scientifically-sound conservation and outreach programmes, involving various stakeholders on local, state, and international levels.

This includes:

- Carry out ongoing conservation effort and long-term monitoring to better understand and conserve the nesting and in-water sea turtle population.
- Carry out scientific research that helps fill up the knowledge gaps about turtles in Terengganu and Malaysian waters in general.
- Educate and raise awareness among local communities and tourists through educational outreach programmes as well as engagements in research and conservation efforts.

HATCHERY MANAGEMENT AND MONITORING

Nesting beach monitoring is a widely implemented monitoring tool in use by the global sea turtle community and is an important component of a comprehensive conservation efforts to assess and monitor the status and trend of sea turtle populations.

The nesting season on the East Coast of Peninsular Malaysia is highly influenced by the monsoon season. This phenomenon occurs every year from November until February, and turtles are less to nest at this time. While green sea turtles usually nest between March and September, painted terrapins will only begin laying eggs from June onwards.

In 2023, the two beaches surrounding Tanjong Jara Resort - Tahu Tiga and Kuala Abang - were under our supervision, and as such, we were responsible for the protection of all turtles and turtle eggs that ended up on these beaches.

NEST ADOPTION PROGRAMME



With the promulgation of the Turtles Enactment 1951 (Amendment 2021), which came into effect on June 1 2022, the sale of turtle eggs is now strictly prohibited. This amendment not only entails a complete ban on the sale of all turtle eggs, including painted terrapins, but also substantially increases the penalties for violations involving these species. Although licenses are still being granted to egg collectors, allowing them to gather eggs laid along selected Terengganu coastlines, it is a condition of the license that the eggs must be incubated by either the Department of Fisheries or non-governmental organisations such as PULIHARA.

To further safeguard the nests, the Tanjong Jara project conducted Nest Adoption Programme, allowing guests and the public to adopt a turtle's nest. This initiative ensures that the precious turtle eggs are diverted from ending up on the black market. Contributions from adopters, along with funding from grants, enable the team to engage with license holders and acquire freshly laid nests to be incubated in the safety of our hatcheries.

We are pleased to announce that a **total of 218 endangered green sea turtle and critically endangered painted terrapin nests with a grand total of 14,808 eggs** were saved this season. The number of nests saved this year fell short of the record-breaking figure of 293 nests recorded last year (Figure 1). This discrepancy in nest numbers may be attributed to the unique nesting ecology of sea turtles. Unlike many other species, a single female sea turtle can lay multiple clutches of eggs within a single nesting season, contributing to the overall nest count. However, it's important to note that sea turtles do not nest every season.



Sea turtles, known for their nomadic nature, spend extensive periods in the open ocean, engaging in various activities such as foraging and migrating between feeding areas. As a result, the interval between nesting seasons typically spans between 2 to 4 years. During this time, female sea turtles navigate vast distances across the ocean, returning to coastal beaches only when conditions are optimal for nesting. This behaviour adds complexity to the conservation efforts, as it underscores the importance of long-term monitoring and protection of nesting sites to ensure the survival of these endangered species.

Out of the total 218 nests, **106 were adopted**, primarily by guests staying at Tanjong Jara Resort through our Online Adoption Programme. This season's adoption figures demonstrated the remarkable and continuous support that the resort's guests, as well as other adopters, have provided for our Nest Adoption Programme. We have already established a waiting list for prospective adopters, who will be notified as we allocate nests for them when the turtle nesting season recommences in mid-March this year.

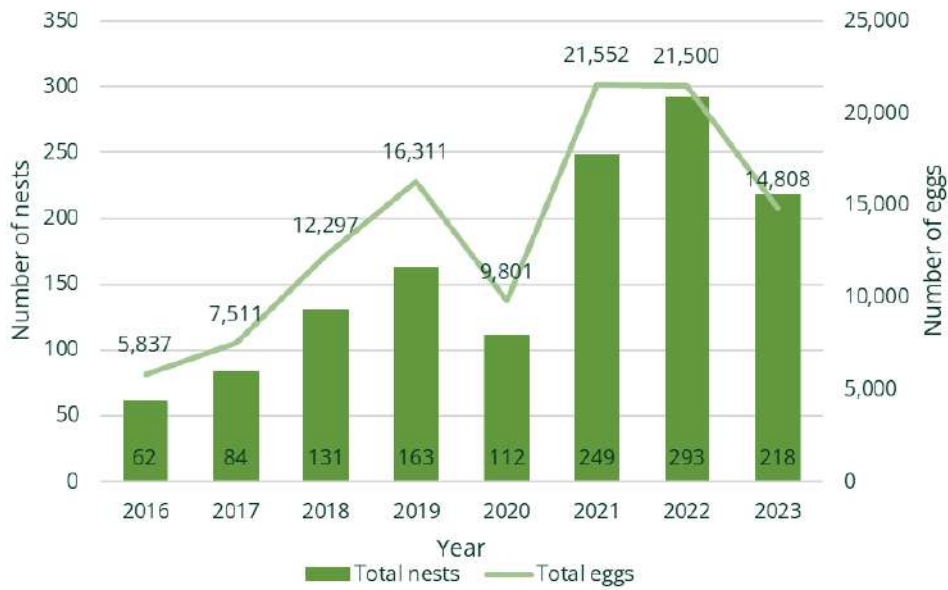


Figure 1. Comparison of green sea turtle and painted terrapin nests and eggs saved from 2016 to 2023.

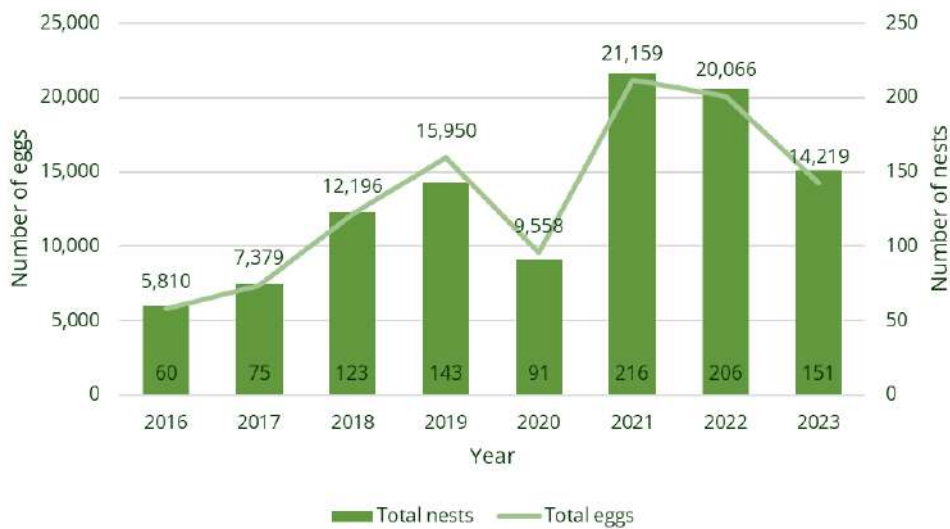


Figure 2. Comparison of green sea turtle nests and eggs saved from 2016 to 2023.

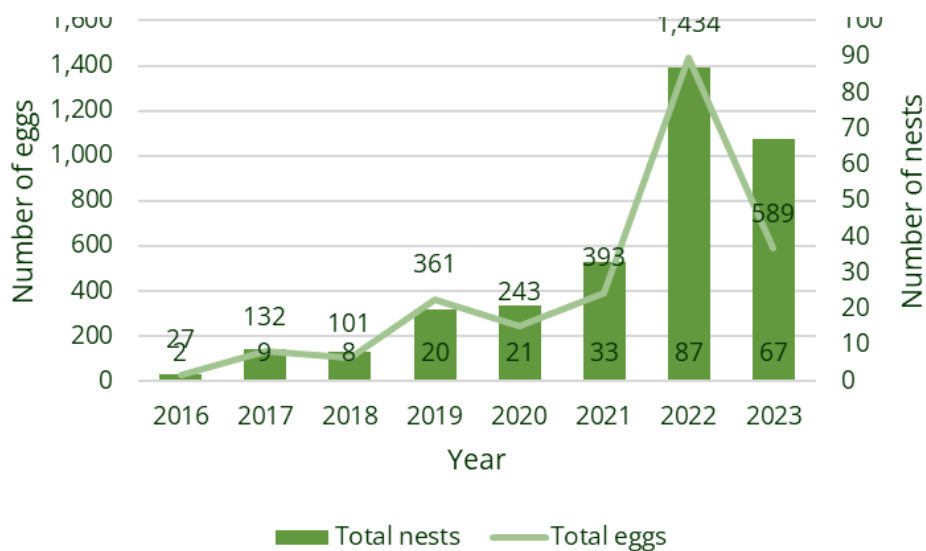


Figure 3. Comparison of painted terrapin nests and eggs saved from 2016 to 2023.

Special thanks to our adopters!

NEST ADOPTION

Amanda Seet
ISKL GAP 2022
Giandomenico Mercurio
Kitaran Recovery Sdn. Bhd.
Tugboat T
Elena Tully
Liang Jian Zhang
Stephenie Yap Shi Ying
Aria Khan Olsen
Zhou Chaobin
Aloysius Ho Juin Rong
Foo See Wan
Jurgen Kautt
Ed & Jill
Chin SenTan
Grace Mumu
Jonghee Chae
Jessica Choong
Arthur Galestian
Jason Minhui
Alan & Jill
Asha & Aanya
Angelika Lincoln
Lee Chin Seong
Carrine Tan
Ong Shu Ay
Yee Jiun
Suzi Walter

Tan Yi Ming
Paulo & Florian
Mendy & Ben
Phuong
Bobby Tan & Family
Du Chang Family
TechnipFMC
Jheeva and Sandy
Angel Tan
Oliver Khoo
Michael Mus
Jon Ho Family
June Koh
Jo Maclean
Thama
Chua Yi Ling
Nikki Yap
Soh Sook Ping
Ong Hai Leong
Suzi Walter
Anita
Kolej Tuanku Ja'afar
Primary
Sayyidi Hamzi
Mohammad Arif Azad
Alisha Azad
Lee Ai Moi

Thong Siu Fei
Adam Quah & Candy Tan
Nordiana
Wye Lyn Chin
Khy Wen & Khy Shen
Angelina Foo
Linda Lim
Nor Ashikin bt Ishak
Adilla Ahmad
Noor Aliah Syafiqah
Meghan Crebbin-Coates
Mila Zain
Yayasan Kossan
Noreen Daud
Tronson Ooi
Jason Gan
Jay Hiew
Eva Madeeha & Lea Hanania
Teoh Ming Hui
Taipei European School
Lan Kea Hong
Chan Tze Kang
Vivian & Eric Okuma
Vanessa Schultze
Sophiya
B Sujatha Balan
The de Jong Family
Vanessa Schultze

ADOPT A TURTLE

Vivian & Eric
Safeya
Arrayyan
Jasmine Shukran
Luna & Maurice
Eigenmann
Maine Lim
Magesvaran, Sivaneswary,
Sathurvelan & Pavatarani
Edelweiss Ooi Chia Mae
Kourosh Lashkari

Marlijn Beekman
Carmen Teng
Teng Kit Seng
Teng Soi Chin
Sai Bar
Izni
Yayasan Kossan
Deborah Ong
Mila Zain
Hiew

NEST INSPECTIONS

The typical incubation period for green sea turtle eggs to hatch and for hatchlings to emerge from the nest spans around two months. Painted terrapins, on the other hand, have a notably longer incubation period of three months.

Post-emergence inspection (PEI), alternatively termed nest inspection, involves excavating a nest a few days after the initial signs of hatchling emergence. This process aims to examine the nest contents and rescue any hatchlings that may be struggling to emerge independently. In cases where no emergence signs are detected, PEI is scheduled for Day 70 and Day 90 after the green sea turtle and painted terrapin nests are laid, respectively.

PEI offers guests the chance to witness firsthand our turtle conservation efforts and observe turtles at various stages of development, from egg to hatchling. Moreover, it provides an opportunity to educate guests on the significance of sea turtle conservation in Malaysia, as well as the biology and life cycle of these fascinating creatures.



HATCHING AND EMERGENCE SUCCESS RATE

To assess the hatching and emergence success rates, we conducted a comprehensive data collection, including counting the number of eggshells, unhatched eggs, depredated eggs, live hatchlings, and dead hatchlings. We also documented any abnormalities observed during the process, alongside instances of egg predation by various predators such as crabs, ants, termites, monitor lizards, maggots, or fungal infections.



Empty eggshells



Unhatched eggs

The hatching success rate was determined by calculating the percentage of empty eggshells discovered during post-emergence inspection (PEI) in relation to the total number of eggs laid. Figure 4 presents a comparison between the total number of green sea turtle eggs hatched and the average yearly hatching success rate. Throughout this season, green sea turtle nests relocated to our Tanjong Jara hatcheries exhibited an average hatching success rate of 70.40% (with a standard deviation of ± 27.84 from 151 nests). Concurrently, the average emergence success rate stood at 60.26% (with a standard deviation of ± 34.27).

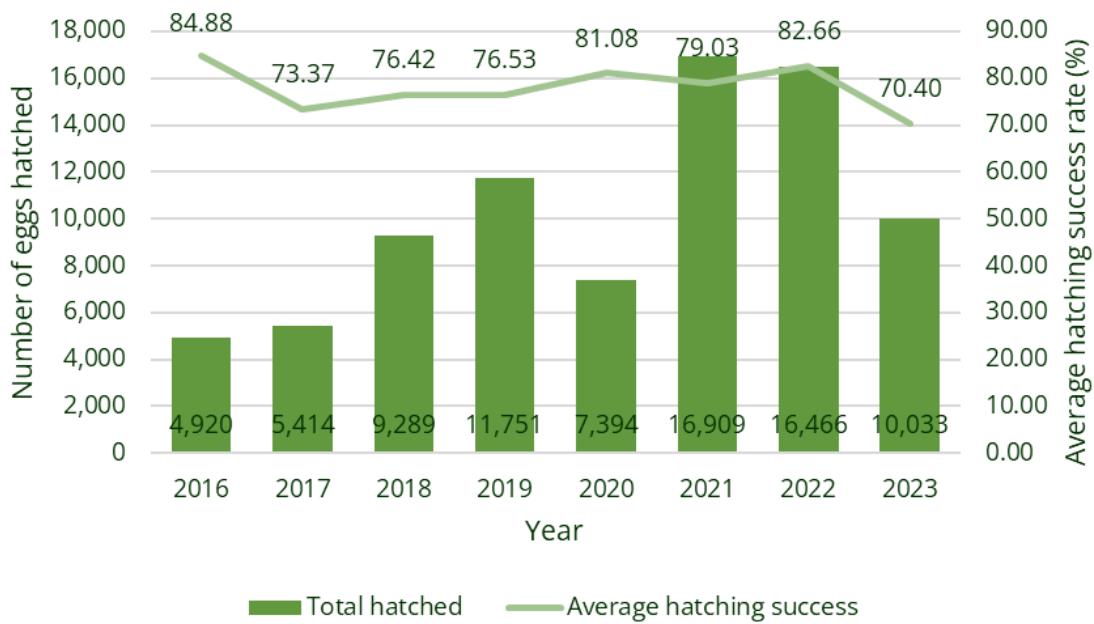


Figure 4. Comparison of average hatching success of green sea turtles by year.

Figure 5 illustrates the comparison between the total number of painted terrapin eggs hatched and the average hatching success rate. In general, painted terrapin nests relocated to our Tanjong Jara hatcheries this season demonstrated an average hatching success rate of 72.29% (with a standard deviation of ± 26.88 from 67 nests). Among these nests, 17 achieved a 100% hatching success rate. Meanwhile, the average emergence success rate for painted terrapins stood at 60.17% (with a standard deviation of ± 33.99).

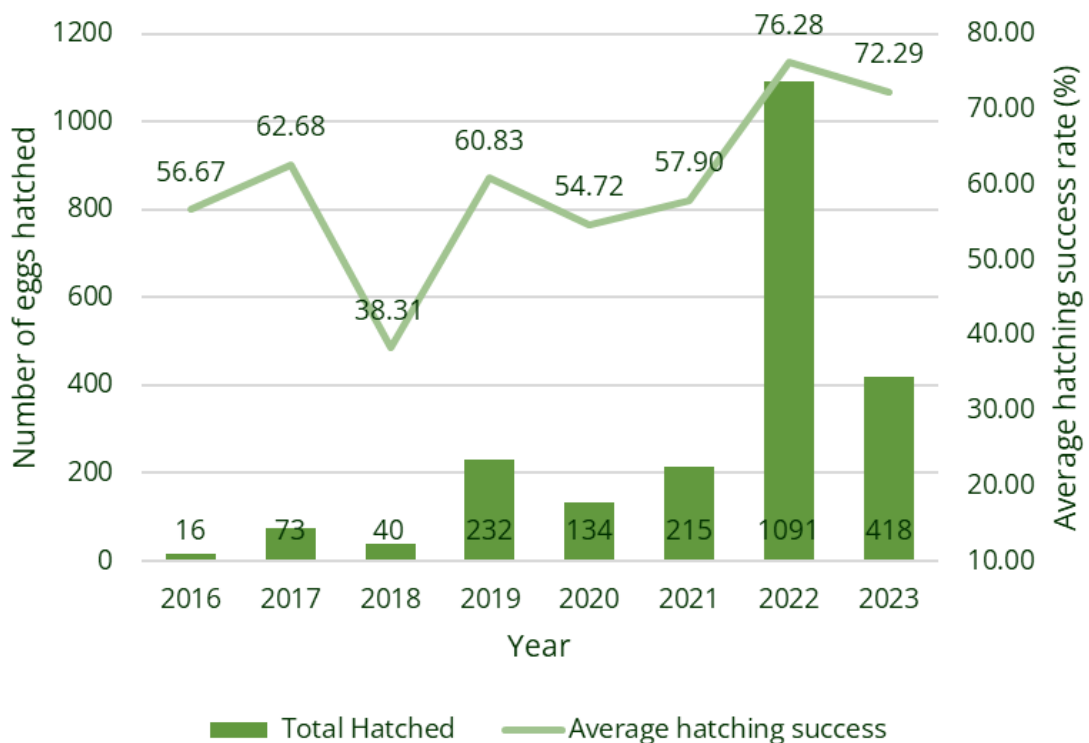


Figure 5. Comparison of average hatching success of painted terrapins by year.



HATCHLING RELEASES

Conducting nest inspections plays a crucial role in our operations as it allows us to monitor the developmental progress of the nests and predict potential emergence times. If, during these inspections, we observe hatchlings poised to emerge later in the evening, we promptly notify the reception staff, who then inform guests of a scheduled hatchling release set for 9 p.m.

Guests are warmly invited to gather at our Visitors' Hut shortly before 9 p.m., where we provide an informal discussion about the project and present a video showcasing our organisation's work. At 9 p.m., a detailed briefing is given regarding the release procedure, ensuring it is executed with utmost care to minimise stress on the hatchlings.

The hatchling release takes place approximately 300 meters away from the resort, chosen for its minimal light pollution, as bright light can disorient the hatchlings. Guests are carefully escorted to the release site along the beach under red lighting to avoid disturbing potential nesting mothers.

In 2023, we were able to release:

9,176

**ENDANGERED GREEN SEA TURTLE
HATCHLINGS**

414

**CRITICALLY ENDANGERED PAINTED
TERRAPIN HATCHLINGS**

As of now, PULIHARA at Tanjung Jara Resort has successfully released more than 83,000 endangered turtle hatchlings back into the sea. The generous support provided by Tanjung Jara Resort, YTL Hotels, funders, adopters, and supporters throughout 2023 has enabled us to sustain our conservation efforts. Looking ahead, we aspire to broaden our groundwork efforts and scientific research as we strive towards our mission of safeguarding endangered turtle populations along the East Coast of Malaysia.

GREEN SEA TURTLE POPULATION: NESTING POPULATION

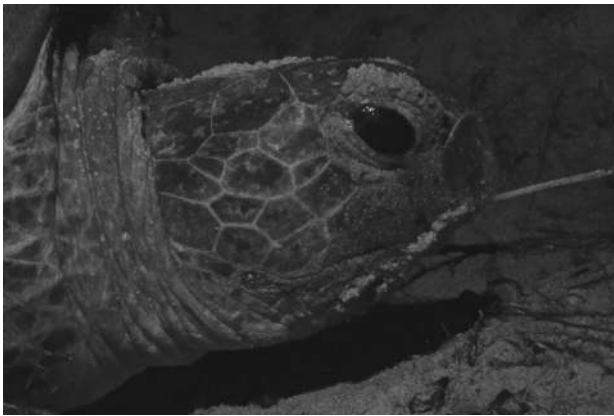
The facial scale patterns of nesting sea turtles were analysed manually by comparing left and right facial photos with the existing PULIHARA Tanjong Jara photo-ID database. Newly identified individuals were then given a unique Turtle ID that will help us to recognise them in the future.

This season, six individual females were successfully identified using the photo-ID method (refer to Table 1). Previous nesting records were cross-referenced with both the photo-ID database and flipper tag records. Particularly noteworthy were the documented re-sightings of a green turtle previously identified during the 2021 nesting season. Instances denoted as "NA" in Table 1 signify attempted nesting events, where the individual landed on the beach but did not proceed to nest.

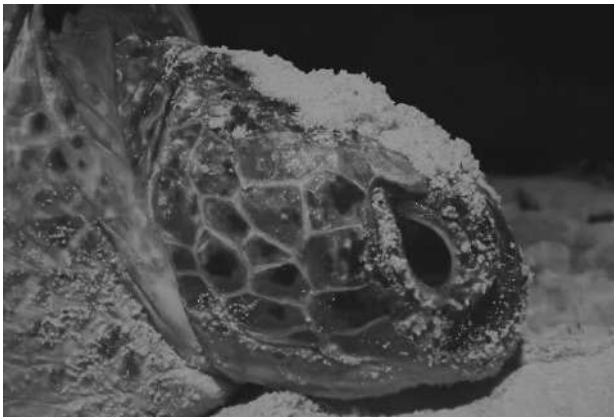
As of the current reporting period, the Tanjong Jara photo-ID database comprises a total of 41 identified individuals, attesting to the efficacy of our scientific data collection. This also underscores our commitment to maintaining a thorough and accurate repository of information concerning the local green turtle population.

Table 1. Nesting information of six individual female green turtles

Turtle ID	Turtle Name	New/ Returning Mother	No. of nests	Total eggs laid	Average clutch size (mean \pm SD)	Nesting site	Inter-nesting interval (Days)
TJG0020F	Moleiq	Returning	9	931	103 \pm 20.6	Kuala Abang	9 - 12
TJG0036F	Liaana	New	2	190	95 \pm 10.0	Kuala Abang	10 - 11
TJG0037F	Coco	New	3	321	107 \pm 3.74	Tahu Tiga	14 - 32
TJG0038F	Kate	New	4	396	99 \pm 8.09	Tahu Tiga	10 - 22
TJG0039F	Kayla	New	NA	NA	NA	Tahu Tiga	NA
TJG0041F	Shye	New	3	295	98 \pm 6.85	Tahu Tiga	9 - 18



TJG0020F Moleiq



TJG0041F Shye



TJG0037F Coco



TJG0038F Kate

NEST TEMPERATURES AND SEX RATIOS

Throughout the season, we deployed HOBO MX TidbiT 400 temperature loggers in 16 green sea turtle nests to monitor nest temperatures during incubation. Subsequently, we utilised a logistical equation to estimate hatchling sex ratios in each nest (refer to Table 2), based on a proposed pivotal temperature of 29.1°C for the Malaysian green turtle population. Sea turtle embryos undergo temperature-dependent sex determination (TSD), with warmer incubation temperatures leading to higher proportions of female hatchlings and cooler temperatures resulting in more males.

Both hatcheries erected in 2023 were situated adjacent to our Visitors' Hut, where the ambient temperature is cooler compared to the beach. The protective roofing of the hatcheries, combined with the additional shade provided by the surrounding trees, contributed to maintaining lower temperatures. This was evident in 2022 as well, where our inland hatchery produced a higher percentage of males compared to the beach hatchery due to its location and environmental conditions.

Given that both hatcheries this year are situated further inland, adjustments were made to the roof design. The gaps between roof panels in Hatchery 1 were widened to increase sun exposure, while the roof gaps in Hatchery 2 remained unchanged. Analysis revealed that, with a few exceptions, nests incubated in Hatchery 1 predominantly produced female hatchlings, whereas male hatchlings primarily emerged from nests incubated in Hatchery 2.

Based on the model, the pivotal temperature is estimated at 29.1°C. Assuming this pivotal temperature holds true for Tanjong Jara, nests relocated in Hatchery 1 are likely to skew towards producing more female hatchlings, while those relocated in Hatchery 2 are expected to produce more males. A balanced sex ratio in sea turtle hatchlings is crucial for species adaptability, reproductive success, and overall ecological well-being. It represents a critical factor in ensuring the long-term survival of these marine creatures in the face of environmental challenges, including climate change.

Table 2. Nest temperature and sex ratio of 16 nests in our hatcheries

Nest	Days of Incubation	Nest location	Average temperature during temperature-sensitive period (°C)	Percentage of female hatchlings (%)
9	55	Hatchery 1	30.10	99.62
28	59	Hatchery 1	29.38	85.64
34	59	Hatchery 1	29.33	81.88
44	60	Hatchery 1	28.76	18.00
47	57	Hatchery 1	29.75	97.65
68	60	Hatchery 1	28.94	36.28
72	58	Hatchery 1	29.47	90.42
78	NA	Hatchery 1	30.10	99.62
79	NA	Hatchery 1	29.56	93.90
85	60	Hatchery 1	29.18	67.23
103	NA	Hatchery 1	29.04	50.09
104	NA	Hatchery 1	28.35	2.57
174	53	Hatchery 2	28.66	11.72
196	61	Hatchery 2	28.64	10.68
199	NA	Hatchery 2	28.52	6.10
206	63	Hatchery 2	28.03	0.48



FUNGAL DIVERSITY

In collaboration with Dr. Siti Nordahliawate Mohamed Sidique from Universiti Malaysia Terengganu (UMT), our fungi studies commenced in 2021 with the objective of identifying fungal species within the hatchery and assessing the prevalence of fungal infections in nests. This endeavour aimed to mitigate the threat of fungal infections and enhance hatching success. Fungi naturally inhabit soil and have been found to cause egg mortality, as documented in studies conducted both in Malaysia and globally.

To minimise fungal infections, we regularly evaluate the soil in the hatchery for fungal presence and administer anti-fungal treatments. Before relocating eggs into the hatchery, the soil undergoes daily treatment with turmeric concentrate. Additionally, upon relocation, the nest chamber is treated with neem concentrate. These herbal remedies possess anti-fungal properties and are commonly utilised to combat plant pathogen infestations.

Nest inspections revealed an average fungal infection rate of 18.3% in green sea turtle nests (n=151) and 11.3% in painted terrapin nests (n=67). While some nests exhibited a healthy 0% fungal infection rate, others were severely impacted, with 100% of their eggs infected by fungus. The higher rate of fungal infection observed in green sea turtle nests this season in comparison to the previous season may be attributed to the location of the hatchery and its soil composition.

Common soil fungi such as *Aspergillus* and *Fusarium* are prevalent in the vicinity of our hatchery, as they are typically found in soil and vegetation. To gain deeper insights into the species and prevalence of infection, we collected sand samples from selected nests after hatchlings had emerged. These samples are currently undergoing analysis in the UMT lab. The findings from this study will enable UMT to develop treatments aimed at reducing fungal prevalence in sea turtle nests, thereby aiding in the management of fungal infections within our hatcheries at Tanjong Jara Resort.

COMMUNITY AND TOURIST MANAGEMENT



THE VISITORS' HUT AT TANJONG JARA RESORT

The Hut always been a great place for us to conduct our education and outreach activities. The added size and functionality of the Visitors' Hut at Tanjong Jara Resort provide guests another space within the resort that welcomes them with open arms. This season, we also had the pleasure of interacting with guests during the weekly Kampung Life held every Saturday.

Through interactive displays at the Visitors' Hut, we aim to enlighten guests about the importance of protecting sea turtles and their habitats. Activities offered such as Turtle Kids Club welcomes children to spend an afternoon playing turtle-themed games and filing up colouring books while learning about the turtles we save. With many marvelling over the expert craftsmanship of the Visitors' Hut, we were pleased to host guests keen on photoshoots and travel vlogs.



BEACH CLEAN-UPS

Beach clean-up efforts are paramount in ensuring a pristine habitat for marine species that uses the area, including sea turtles. The PULIHARA team is committed in keeping the nesting beaches clean, and thus we carry out bi-weekly beach clean-ups throughout the season. This conscientious endeavour is not limited to the team alone, as active participation is encouraged among students engaged in school programmes, as well as keen guests of the resort.



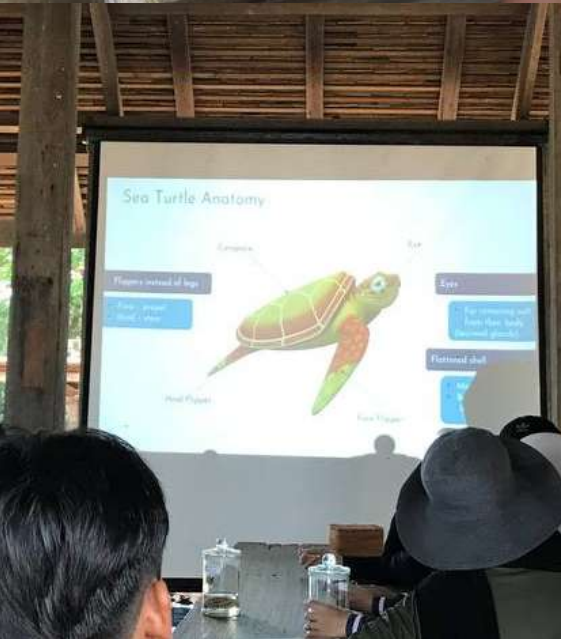
Collaborative beach clean-ups not only underscores a shared responsibility of environmental stewardship, but also contributes to an enhanced guest experience as they will enjoy cleaner beaches during their stay at the resort. A grand total of 988.5 kilograms of trash were removed from beaches around Tanjong Jara Resort, of which 468.6 kilograms directed towards recycling initiatives. All beach clean-ups this season utilises the d2w biodegradable trash bags, which were generously sponsored by Miracle Spectrum Sdn. Bhd.

SCHOOL PROGRAMMES

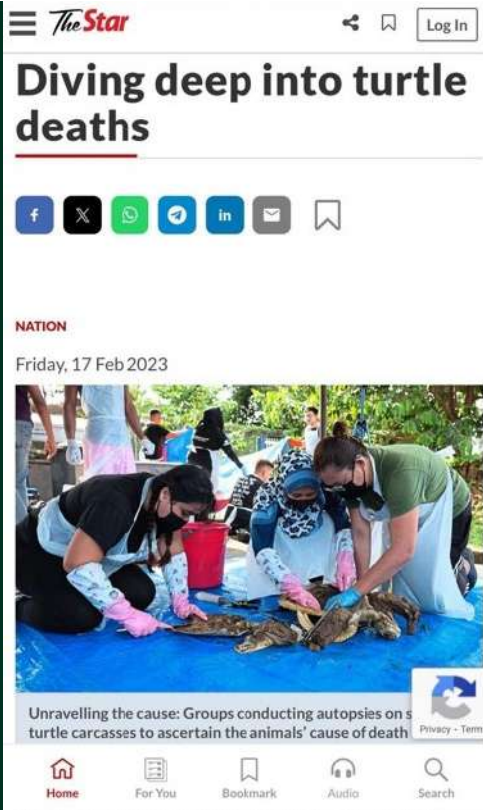
Educating children about protecting sea turtles is not just about saving a single species; it's about nurturing a generation of environmentally conscious, responsible, and caring individuals who will take an active role in safeguarding the natural world. The PULIHARA team actively conduct educational outreach programmes with schools around Dungun. Interactive talks which highlighted how marine pollution threatens sea turtles, hatchery tours, as well as in-depth information on sea turtles life cycle were presented by the PULIHARA team members. Throughout this season, the team welcomed 270 students from the following schools:

- SK Tanjung Pati**
- SMK Seri Dungun**
- SK Bandar Dungun**
- SK Balai Besar**
- SK Gong Pasir**
- SK Kampung Baru Kuala Abang**
- SK Pusat Dungun**
- SK Sura**
- SK Seberang Dungun**

Interactive talks which highlighted how marine pollution threatens sea turtles, hatchery tours, as well as in-depth information on sea turtles life cycle were presented by the PULIHARA team members. Surveys were conducted and collected from 219 students, of which 207 students rated at least 4 out of 5 for the activities conducted during the programme. By instilling a sense of responsibility for the environment, we hope to empower the younger generation to make informed decisions and advocate for the protection of sea turtles and other endangered species.



ACHIEVEMENTS



"The Fisheries Research Institute (FRI) Rantau Abang, Universiti Malaysia Terengganu (UMT), Terengganu Fisheries Department, Fuze Ecoteer Outdoor Adventures, Lang Tengah Turtle Watch and other NGOs said probing the circumstances surrounding turtle deaths is important as part of turtle conservation efforts."

The Star
17 February 2023



"Founded by Hayati Mokhtar in 2013, LTTW has been diligently working with the Department of Fisheries (DoF) to monitor and safeguard sea turtle populations and their habitats in Lang Tengah Island, Terengganu. The island holds a great importance as a turtle rookery, specifically green and hawksbill species in Peninsular Malaysia."

Maritime Fairtrade
4 September 2023



"From tirelessly patrolling beaches at night until the early hours of the morning and collecting data, to driving awareness through conservation talks and volunteerism, LTTW works hard to live – and share – its message of conservation."

BBC Travel
20 September 2023



"This year's remarkable recipients – the Bornean Sun Bear Conservation Centre, Lang Tengah Turtle Watch, The MareCet Research Organisation, Starfish Malaysia Foundation, PACOS Trust, The Asli Co., Kelab Alami, Buku Jalanan Chow Kit, Japson Wong and Graze Market – are dedicated to tackling a diverse range of issues."

The Star
3 November 2023



"With only about one in every 1,000 turtles surviving to adulthood, that is why several concerned individuals founded the Lang Tengah Turtle Watch (LTTW) to protect turtle's habitats and help save them from extinction."

The Star
3 November 2023

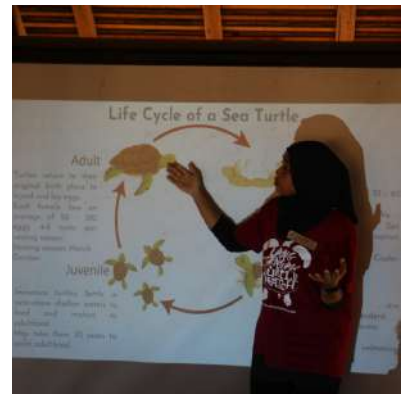
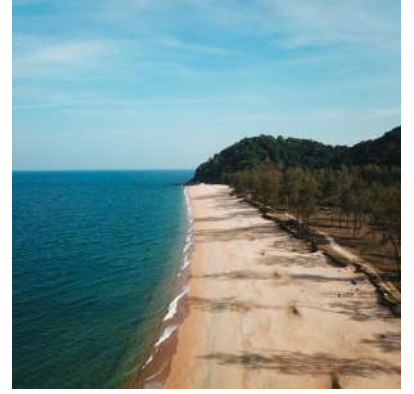


STAR GOLDEN HEARTS AWARD (SGHA) 2023

In 2023, PULIHARA (previously known as Lang Tengah Turtle Watch) was honored to receive the prestigious Star Golden Hearts Award (SGHA), presented annually by The Star and Yayasan Gamuda, in recognition of our unwavering commitment to turtle conservation. This award allows us to further amplify our mission, expand our reach, and deepen our impact in safeguarding marine ecosystems and promoting environmental sustainability.



GALLERY



CONCLUSION

In conclusion, 2023 has been marked by significant achievements in our conservation efforts at Tanjung Jara with the successful protection of 14,808 eggs from 218 endangered green sea turtle and critically endangered painted terrapin nests. Furthermore, our dedication led to the release of 9,176 endangered green sea turtle hatchlings and 414 critically endangered painted terrapin hatchlings into the sea, contributing to a cumulative total of over 83,000 turtle hatchlings released to date.

Our commitment to community engagement has strengthened, exemplified by outreach initiatives involving 270 students from 9 different schools and 50 students from PBSM UiTM, who visited our hatchery and gained insight into our conservation efforts. Concurrently, our bi-weekly beach clean-ups, supported by enthusiastic students and resort guests, resulted in the removal of 988.5 kg of waste, including 468.6 kg of recyclable materials.

Recognition of our efforts culminated in the receipt of The Star Golden Hearts Award by The Star and Yayasan Gamuda, underscoring our dedication to sea turtle conservation. As we transition into the Persatuan Pemuliharaan dan Kajian Marin Malaysia (Marine Conservation and Research Organisation Malaysia), or also known as PULIHARA, we remain steadfast in our mission, vision and goal. Our financial stability has been instrumental in achieving our objectives, and we are committed to maintaining this stability for future seasons.

With these accomplishments, we look forward to continuing our vital work in safeguarding the turtles and their habitats, paving the way for a brighter future for these magnificent creatures and our planet as a whole.

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