

*Regional Report 2020*. (eds. Phillott, A.D. & A.F. Rees). Pp. 117-198. Report of the IUCN-SSC Marine Turtle Specialist Group, 2020.

Shahid, A. 2020. As Iranian petrol smuggling threatens to cause another shortage, PSO turns its head. <https://profit.pakistantoday.com.pk/2020/10/17/as-iranian-petrol-smuggling-threatens-to-cause-another-shortage-pso-turns-its-head/>. Accessed on June 10, 2021.

Shockley, C.H. 1949. Herpetological notes for Ras Jiunri,

Baluchistan. *Herpetologica* 5: 121-123.

Wallace, B.P., B.A. Stacy, E. Cuevas, C. Holyoake, P.H. Lara, A.C.J. Marcondes, J.D. Miller, *et al.* 2020. Oil spills and sea turtles: Documented effects and considerations for response and assessment efforts. *Endangered Species Research* 41: 17-37.

Waqas, U., S.A. Hasnain, E. Ahmed, M. Abbasi & A. Pandrani. 2011. Conservation of green turtle (*Chelonia mydas*) at Daran Beach, Jiwani, Balochistan. *Pakistan Journal of Zoology* 43: 85-90.

## SLAUGHTERED GREEN TURTLES (*CHELONIA MYDAS*) STRANDED ON THE COAST OF TERENGGANU, MALAYSIA, HIGHLIGHTS THE NEED FOR GREATER EDUCATIONAL AWARENESS WITHIN LOCAL COMMUNITIES

NICHOLAS TOLEN# & MOHD UZAIR RUSLI

Sea Turtle Research Unit (SEATRU), Institute of Oceanography and Environment, Universiti Malaysia Terengganu, Kuala Nerus, Terengganu, Malaysia

#nicholas.tolen@gmail.com

### INTRODUCTION

Within the last year, two incidents of green turtle carcasses, one male and one female, believed to have been killed by the cutting of their throats, were reported off the coast of central Terengganu State, Malaysia. In both instances, the Sea Turtle Research Unit (SEATRU) of Universiti Malaysia Terengganu and the Terengganu State Department of Fisheries (DOF) were contacted to investigate and determine the cause of death and make a report regarding the stranded turtle carcasses.

### OBSERVATIONS

On the 4<sup>th</sup> October 2020, residents from Kampung Tengah Mengabang Telipot, in Kuala Nerus, Terengganu, reported the discovery of a green turtle carcass washed ashore on their local beach. They contacted SEATRU and DOF staff who conducted an extensive investigation and necropsy of the turtle carcass (Figure 1). The DOF report cited several key findings briefly describe below.

1. The turtle's sex was confirmed to be male due to the size and shape of its curved claws (brace claws) on its fore flippers.
2. The curved carapace length (CCL) measured

87.2cm, the curved carapace width (CCW) measured 77.4cm, and the turtle weighed 58.8kg.

3. The throat of the turtle was cut deeply, as if sliced open with a sharp knife.
4. The hind flippers and tail were eaten by monitor lizards, as reported by the villagers.
5. There was no significant bloating; therefore, death was assumed to have occurred within the previous 48hrs.
6. No foreign objects were observed in the digestive tract.
7. No external injuries like propeller or boat strikes were identified on the carapace, head, or limbs.
8. Several local fishers were interviewed who assumed that the mature male turtle was purposely killed and did not die from natural causes.

On the 26<sup>th</sup> May 2021, the carcass of another green turtle was found by the Kapas Conservation Society (KCS) floating offshore near the southern part of Kapas Island, off the coast of Terengganu State. The carcass was brought ashore by KCS who sent photographs to and



**Figure 1. Photos taken at Mengabang Telipot, in Kuala Nerus, Terengganu showing (A) author MUR and DOF officers measuring the carapace of the slaughtered green turtle during their investigatory necropsy, in which they determined (B) the turtle was male based on the large brace claws present on the fore flippers, and a deep slash wound across the turtle's throat. Photo credit: Syamsyahidah Samsol.**

communicated with the authors to determine the sex and cause of death (Figure 2). Later DOF staff performed an extensive investigatory necropsy of the turtle carcass and reported several key findings briefly describe below.

1. The turtle's sex was determined to be female due to the size of the tail and lack of large brace claws on its fore flippers.
2. The CCL measured 73cm and the CCW measured 67cm.
3. The throat of the turtle was cut deeply as if sliced open with a sharp knife.
4. There was a long and clean laceration along the central scute boundaries of the plastron, again appearing to be made with a sharp knife.
5. The turtle's internal organs were still intact within the peritoneal cavity.
6. There was also a small cut made to the back left flipper near the pelvic region.
7. The turtle was determined to be recently killed as there was no sign of bloating or scute peeling, typical in decomposed turtle carcasses floating at sea for long periods.
8. Locals believed that the plastron was cut open to retrieve unlaidd eggs from the deceased turtle's internal body cavity.

## DISCUSSION

Although most Malaysians consider sea turtles as part of their natural heritage and sea turtles are protected under the Fisheries Act of 1985 and the Terengganu Turtle Enactment of 1951 (Rahman *et al.* 2018), all four species of sea turtle found within Malaysia are in population decline and potentially facing extinction (Chan, 2006) due to the continued pressure from anthropogenic activities. The motive behind the separate killings reported here is thought to have been due to the turtles becoming entangled within offshore fishing nets, and the person/s responsible having killed the turtles to prevent them from thrashing and causing greater damage to their fishing gear. Enforcement of coastal fishing practices is particularly challenging in the region because these nets are often left at sea unattended for long periods, and it can be difficult to determine who the owners are, whether local or foreign, or whether licensed fishers or not.

The incidents reported here demonstrate one of the risks to turtles within Malaysia's coastal waters. An analysis of marine turtle stranding data off Peninsular Malaysia determined that stranding reports were concentrated



**Figure 2. Photos taken at Kapas Island, off the coast of Terengganu, depicting (A) the lacerations made to the throat and plastron of a slaughtered female green turtle, and (B) DOF officers measuring the carapace length during their investigatory necropsy of the turtle carcass. Photo credit: Rani Bin Awang.**

along the coast of Terengganu and Pahang, where the majority of turtle deaths were determined to be caused by anthropogenic factors; most notably from entanglement in fishing equipment, followed by boat strikes and external lacerations indicative of anthropogenic trauma. Furthermore, the stranding reports shows an increase in the number of turtle mortalities found within Malaysia's coastal waters from 2011 to 2019 (Mok, 2020).

Local fishers believe that the female turtle's plastron was cut open opportunistically to look for and retrieve its eggs. However, it would be easier to access the ovaries and oviduct through an inguinal cut, hinting at the inexperienced and opportunistic nature of the perpetrator/s. Therefore, it is most likely the perpetrator/s were not seasoned hunters, but more likely a coastal fisher who took the opportunity of a turtle entangled in their fishing net to retrieve some economic gain as the collection and sale of turtle eggs in Terengganu is highly profitable due to their exclusivity and high demand at local markets. This illustrates the adverse implications of the Terengganu state government sanctioning the commercial sale of green turtle eggs that encourage such heinous acts (see Mohd Jani *et al.*, 2020; Rusli *et al.*, 2020).

The carapace measurements of the slain female turtle (CCL=73cm and CCW=67cm), suggest that it would be a subadult yet to reach sexual maturity and not carrying eggs, as a study of 30 nesting green turtles at Chagar

Hutang Turtle Sanctuary on Redang Island, Terengganu, determined the average maternal CCL measured 96cm and ranged between 84-107cm (Azmi, 2020). However, this might not be common knowledge in coastal fishing communities and that the female turtle had its plastron cut for the sole reason of collecting eggs. That the perpetrator/s may have tried to extract eggs but not taken any of the meat suggests the perpetrator/s were local. In Terengganu, coastal and island communities are majority Muslim and show high religious compliance, and in doing so only consume turtle eggs as eating the turtle's flesh is forbidden by Islamic Law. Furthermore, if the perpetrator/s were foreign fishers, it is considered that they would not have left the remains behind as the green turtle's body parts- the meat and carapace- would have high commercial value outside of Malaysia.

## CONCLUSION

There is a need for greater marine conservation educational outreach in coastal fishing communities to educate people about the basic biology of sea turtles, their role as keystone species in coral reef and seagrass ecosystems, and the threat of extinction they face if their exploitation by humans is left unchecked. We suggest that the Malaysian State Government's DOF become more active in educating local fishing communities on what to do when they encounter turtles entangled in their fishing gear and make their officers better

available to respond to sea turtle emergencies, in order to help rescue turtles from such situations that caused the deaths of the turtles described in this report. Only through local community outreach, the engagement and education of the individuals who may encounter sea turtles within Terengganu's coastal waters during their daily lives- about why killing turtles or plundering their nests is detrimental to the future survival of endangered sea turtle populations- can we make strides towards preventing the extinction of one of Malaysia's most charismatic marine organisms and ensure their existence as a natural heritage icon for generations to come.

### ACKNOWLEDGEMENTS

We would like to thank Mohd Farith Rezza Isa for his dedication to sea turtle conservation, and for supplying SEATRU with photos and information about the slaughtered female green turtle discovered at Kapas Island, which ultimately motivated the concept of this report. In addition, we would like to thank Syamsyahidah Samsol for her assistance with the investigatory necropsy, and photographic documentary of the male green turtle found washed ashore in Kuala Nerus. Lastly, we would like to thank the Terengganu DOF officers who reported to these strandings, performed necropsies, and buried the carcasses of the deceased green turtles.

### Literature cited:

- Azmi, A.A.A. 2020. Relationship between maternal body size and the reproductive output of green turtle (*Chelonia mydas*) at Chagar Hutang, Pulau Redang. Bachelor of Science Thesis. Universiti Malaysia Terengganu, Malaysia.
- Chan, E.H., 2006. Marine turtles in Malaysia: on the verge of extinction? *Aquatic Ecosystem Health & Management* 9: 175-184.
- Mohd Jani, J., M.A. Jamalludin & S.L. Long. 2020. To ban or not to ban? Reviewing an ongoing dilemma on sea turtle egg trade in Terengganu, Malaysia. *Frontiers in Marine Science* 6: 762. DOI: 10.3389/fmars.2019.00762.
- Mok, W.D. 2020. Analyses of marine turtle stranding data off Peninsular Malaysia and Sabah- biometrics, spatio-temporal trends and major anthropogenic threats. Bachelor of Science Thesis. University of Nottingham, Malaysia.
- Rahman, M.A.A., M.U. Rusli, N.A. Mohd, H.M Rusli & W.I.A. Talaat. 2018. An appraisal of the Malaysian legal framework in conserving the marine endangered species. *Journal of Sustainability Science and Management* 13: 217-224.
- Rusli, M.U., S. Samsol, & N.P. Chen. 2020. Sea turtle egg online shopping during COVID-19 movement control order (MCO) in Malaysia. *Indian Ocean Turtle Newsletter* 32: 2-5.