

NOTES



SPEARGUN IMPALEMENT OF A GREEN SEA TURTLE FROM KALBA, SHARJAH, UNITED ARAB EMIRATES

FADI YAGHMOUR^{1,#}, CHRISTIAN WILSON², PANAGIOTIS AZMANIS^{3,4}, ABDUL KAREEM VETTAN⁴, JOERG KINNE⁵ & ULRICH WERNERY⁵

¹Hefaiyah Mountain Conservation Centre (Scientific Research Department), Environment and Protected Areas Authority, Kalba Sharjah, United Arab Emirates

²Hefaiyah Mountain Conservation Centre, Wildlife Operations Manager, Environment and Protected Areas Authority, Sharjah, United Arab Emirates

³Dubai Falcon Hospital, Dubai, United Arab Emirates

⁴Dubai Turtle Rehabilitation Project, Dubai, United Arab Emirates

⁵Central Veterinary Research Laboratory, Dubai, United Arab Emirates

#fadi.mohd@epaa.shj.ae; fadi.epaa@gmail.com

The United Arab Emirates (UAE) coastline and waters contain important sea turtle habitats (Pilcher *et al.*, 2014), including sites listed as Ecologically and Biologically Significant Marine Areas (EBSAs, see www.cbd.int), and Wetlands of International Importance (<http://www.ramsar.org/>). Historically, these areas have been exploited for resources including sea turtles for their meat and eggs. Public interest in consuming sea turtles is perceived to have faded with the implementation of laws banning the use of all marine turtle products, including UAE Federal Law No. 23 in 1999 concerning the exploitation, protection and development of the living marine resources and Federal Law No. 24 in 1999 concerning the protection and development of the environment, and the designation of various marine protected areas. However, sea turtles in the UAE are still under immense pressure from anthropogenic threats, including climate change, coastal development, oil spills, agricultural run-off, boat strikes, bycatch, ghost fishing/entanglement, and ingestion of marine debris (Yaghmour *et al.*, 2018a, 2021; Yaghmour, 2019, 2020; Stewart, 2020). Here, we present a case of a green sea turtle stranding near the city of Kalba, Sharjah, United Arab Emirates, that demonstrates impalement by spearfishing.

On the 29th October 2020, a live-stranded green sea turtle was observed by the Environment and Protected Areas Authority (EPAA) around the rocky reefs in the Alqurm Wa Lehhfaiiah Protected Area (25.014°N, 56.360°E), a shallow tidal inlet comprising a series of channels fringed with grey mangrove *Avicennia marina* in the city of Kalba, Sharjah, UAE (25.013°N, 56.360°E). The initial external examination revealed

a large perforation on the lateral side of the base of the left hind flipper and a much smaller perforation on the lateral side of the base of the right hind flipper (Figure 1). The turtle was transported to the Sharjah Desert Park to be held overnight prior to transport to the Dubai Turtle Rehabilitation Project (DTRP) the next morning.

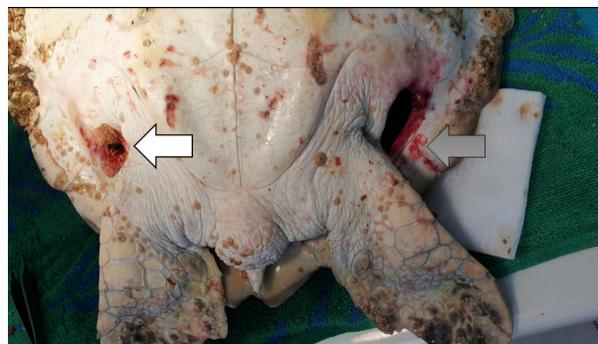


Figure 1. Spear gun impalement of a green sea turtle with the entry wound (white arrow) lateral to the base of the right hind flipper and the exit wound (grey arrow) lateral to the base of the left hind flipper. (Photo by F. Yaghmour.)

On the 30th October 2020, the turtle was admitted to the Dubai Falcon Hospital (DFH) by the staff of DTRP. The turtle was emaciated, weak in its responses, and weighed 9.2kg. The perforations in the pre-femoral spaces were determined to be horizontal entry and exit wounds resulting from impalement with a spearfishing arrow and were filled with debris and necrotic tissue. The plastron was concave and the skin surrounding the wounds was ragged, necrotic, and mildly elevated with erythema (i.e., redness) indicating septicemia. Radiography

was performed to detect potential impaction and abnormalities (e.g., fractures, free air in the coelomic cavity, possible gastrointestinal stasis, foreign bodies such as hooks, or disease processes such as pneumonia), and revealed soft tissue opacity with air around the pre-femoral wounds, loss of detail in the caudal coelomic cavity (indicating the presence of fluid or other material), and impaction of the large intestine. After light sedation with Butomidol (Butorphanol, 0.3mg/kg), the right (smaller) entry wound was debrided, and its depth, distribution, and possible connection with the gastrointestinal tract assessed. The turtle received vitamins, subcutaneous fluids, antibiotics, and anti-inflammatory drugs, while further supportive care (including force feeding, warmth, breathing monitoring, dry box) was recommended. Further advanced diagnostic procedures were planned after initial stabilisation. Prognosis was deemed guarded to poor.

On the 1st November 2020, the turtle was found dead by the DTRP staff and subsequently transferred to Central Veterinary Research Laboratory (CVRL). Post-mortem examination revealed two wounds (20-25cm deep) in the pre-femoral fossa without connection to internal organs, oedema in the lungs and skeletal muscle tissue surrounding the entry and exit wounds, plastic marine debris in the gastrointestinal tract blocking the large bowel, and free fluid in the abdominal cavity. Cultures for parasites and fungi, and examination for parasite adults and eggs, were negative. Bacterial culture indicated the presence of *Pseudomonas aeruginosa* in multiple organs. The cause of death was established to be *Pseudomonas* septicemia and impaction of the middle jejunum with plastic debris.

The identification and documentation of anthropogenic threats is an essential component of conservation management plans and threat mitigation programs (Hazel & Gyuris, 2006; Denkinger *et al.*, 2013). This case is the first published record of speargun impalement of a sea turtle from the United Arab Emirates and the wider Arabian region. The chronic inflammation and septicaemia, reduced overall condition, and amount of necrotic tissue around the wounds suggests that the impalement occurred several weeks prior to the turtle stranding, but it is impossible to determine if this injury was sustained within the proximity of the Alqurm Wa Lehfhaiiah Protected Area. It is also impossible to determine if the turtle was targeted or if it was shot accidentally. Fortunately, spearfishing of marine turtles is likely a rare occurrence globally with only a few previous records, mostly from the waters of Florida, USA (WDRB, 2019). Hence, spearfishing is not perceived as a prevalent threat to sea turtles regionally or globally, this case report demonstrates an additional regional hazard that should

be considered in the development of holistic turtle conservation management strategies. Unfortunately, the gut impaction observed in this turtle is common both locally and globally. Previous studies found that 75-86% of green sea turtles sampled from the Gulf of Oman coast of the UAE ingested high quantities of marine debris items, which mostly consisted of plastics (Yaghmour *et al.*, 2018b, 2021). No relationship between gut impaction and vulnerability to spearfishing or otherwise being the target of human fishing activities could be drawn from this case.

ACKNOWLEDGMENTS

The authors express their gratitude for the support of His Highness Sheikh Dr. Sultan bin Mohammed Al Qasimi, Supreme Council Member and Ruler of Sharjah. The authors would also like to acknowledge the support of her Excellency Hana Saif Al Suwaidi, chairperson of Sharjah Environment and Protected Areas Authority. We acknowledge the support of Dalal Al Yammahi EPAA Kalba office manager.

Literature cited:

- Denkinger, J., M. Parra, J. Munoz, C. Carrasco, A.J. Murillo, E. Espimosa & V. Koch. 2013. Are boat strikes a threat to sea turtles in the Galapagos marine reserve? *Ocean & Coastal Management* 80: 29-35.
- Hazel, J. & E. Gyuris. 2006. Vessel-related mortality of sea turtles in Queensland, Australia. *Wildlife Research* 33: 149-154.
- Pilcher, N.J, L. Perry, M. Antonopoulou, M.A. Abdel Moati, T.Z. Al Abdessalaam, M. Al Beldawi, M. Al Ansi, *et al.* 2014. Short-term behavioral responses to thermal stress by hawksbill turtles in the Arabian region. *Journal of Experimental Marine Biology and Ecology* 45: 190-198.
- Stewart, H.A. 2020. Threats to Sea Turtles on the Persian Gulf Coast of the United Arab Emirates. Masters Thesis. University of Edinburgh, Edinburgh, Scotland.
- WDRB. 2019. Endangered sea turtle recovering in Florida after being shot in neck with spear. https://www.wdrb.com/news/national/endangered-sea-turtle-recovering-in-florida-after-being-shot-in-neck-with-spear/article_afc59618-d494-11e9-8dbc-ab2221feae1f.html. Published on September 11, 2019.
- Yaghmour, F., M.W. Al Bousi, J. Pereira, S. Garcia-Nunez & J. Budd. 2018a. Impacts of the traditional baited basket fishing trap “gargoor” on green sea turtles *Chelonia mydas* (Testudines: Cheloniidae) Linnaeus, 1758 from two case reports in the United Arab Emirates. *Marine Pollution Bulletin* 135: 521-524.
- Yaghmour, F., M.W. Al Bousi, J. Pereira, S. Garcia-Nunez & J. Budd. 2018b. Marine debris ingestion of green sea turtles,

Chelonia mydas, (Linnaeus, 1758) from the eastern coast of the United Arab Emirates. *Marine Pollution Bulletin* 135: 55-61.

Yaghmour, F. 2019. Are oil spills a key mortality factor for marine turtles from the eastern coast of the United Arab Emirates? *Marine Pollution Bulletin* 149: 110624.

Yaghmour, F. 2020. Anthropogenic mortality and morbidity of marine turtles resulting from marine debris entanglement and boat strikes along the eastern coast of the United Arab Emirates. *Marine Pollution Bulletin* 153: 111031.

Yaghmour, F., F. Samara & I. Alam. 2020. Analysis of polychlorinated biphenyls, polycyclic aromatic hydrocarbons and organochlorine pesticides in the tissues of green sea turtles, *Chelonia mydas*, (Linnaeus, 1758) from the eastern coast of the United Arab Emirates. *Marine Pollution Bulletin* 160: 111574.

Yaghmour, F., M. Al Bousi, H. Al Naqbi, B. Whittington-Jones & C.J. Rodriguez-Zarate. 2021. Junk food: Interspecific and intraspecific distinctions in marine debris ingestion by marine turtles. *Marine Pollution Bulletin* 173: 113009.

FIRST OFFICIAL RECORD OF LOGGERHEAD SEA TURTLE CARCASS STRANDED IN STRAITS OF MALACCA, MALAYSIA

HIN BOO WEE^{1,#}, SEH LING LONG^{2,3}, MOHAMAD SAUPI ISMAIL⁴, SYED MOHAMAD AZIM BIN SYED MAHIYUDDIN⁵ & WEI CHEN LIM⁶

¹Institute of Climate Change, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia

²Lang Tengah Turtle Watch, 17 Jalan Tunku, Bukit Tunku, Kuala Lumpur, Malaysia

³Institute of Oceanography and Environment, Universiti Malaysia Terengganu, Kuala Nerus, Terengganu, Malaysia

⁴Fisheries Research Institute Batu Maung, Batu Maung, Penang, Malaysia

⁵Fisheries Research Institute Langkawi, Langkawi, Malaysia

⁶The Datai Langkawi, Jalan Teluk Datai, Langkawi, Kedah, Malaysia

#weehinboo@ukm.edu.my

Of the seven species of sea turtle worldwide, four have extensive records in Malaysia: the green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), olive ridley (*Lepidochelys olivacea*), and leatherback (*Dermochelys coriacea*) turtle. The records of these turtles in Malaysia consist of primarily nesting (Hendrickson, 1958; Siow & Moll, 1982; Mortimer *et al.*, 1993; Chan *et al.*, 1999; Chan, 2006, 2013; Hamann *et al.*, 2006; Mohd Salleh *et al.*, 2012, 2018) and stranding data (Chan, 2006; FRI, 2020). Unfortunately, most of the strandings are of dead turtles, including 90.1% (n = 90/99) of the records from Malaysian waters in 2019 (FRI, 2020). The cause of mortality has been attributed to bycatch, illegal take, mortal injuries (including vessel strike), ingestion of plastics, exposure to oil slicks, and diseases such as fibropapillomatosis (Siow & Moll, 1982; Chan, 2006; Joseph *et al.*, 2019). These are concerning as it indicates the insidious effect of anthropogenic activities on sea turtles in Malaysia.

In comparison to the other four species, not much is known about loggerhead sea turtle nesting in Malaysia, except for the historical mention of loggerhead turtle nesting in small numbers in Sarawak (Leh, 1985).

The nesting of loggerhead turtles in Malaysia was also mentioned by Chuang (1961), but this may have been a misidentification of an olive ridley turtle as a loggerhead, as the photo shown is of the former species. The in-water presence of loggerhead turtles has been recorded in the South China Sea (Kobayashi *et al.*, 2011); however, these records are sparse and little is known about the loggerhead turtles in Malaysia and Southeast Asia (Chuang, 1961; Leh, 1985; Abdul Rahman *et al.*, 2021). In 2019, a stranded loggerhead sea turtle was found entangled in a ghost net off the coast of Pulau Kendi (5.235° N, 100.192° E), an island south of Penang Island on the western coast of Peninsular Malaysia. This was the first documented loggerhead sea turtle encountered in the Straits of Malacca. The turtle was rehabilitated and released later in the same year (Abdul Rahman *et al.*, 2021).

On 8th December 2020, a female loggerhead turtle carcass with a wound at the top of the carapace was washed ashore at the west end of the beach of The Datai Langkawi Resort (6.426° N, 99.669° E), Langkawi, Malaysia (Figure 1). The carcass was severely decomposed (State 3 *sensu* López-Barrera *et al.*, 2016), with the skin and scales