

Mumbai MTB, research centres like the Kalinga CRE and government organisations like the Mangrove Foundation.

On the whole, the lockdown did not have a major impact on any monitoring activities since the nesting season across India was nearing its end. Most organisations and individuals, approved by relevant local Government authorities, were able to continue any required monitoring activities without much disruption. With the reduction in fishing activities and other anthropogenic activities on the beaches during the lockdown, the impact of associated threats to sea turtles and their habitats were considerably lessened, though temporarily.

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PAKISTAN

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The COVID-19 pandemic triggered a major lockdown in Pakistan. There have been some positive outcomes for biodiversity and conservation, including local marine turtle populations, from this response. Adjacent to the metropolis city of Karachi in the Sindh Province are two major nesting beaches- Sandspit and Hawksbay- which are usually thronged by large numbers of picnickers. However, the beaches have been deserted since the last week of March 2020 because of the national lockdown. The peak visiting period is usually between March and September, which overlaps with the peak turtle nesting period from July to December (although nesting may occur year-round). Previously, high human presence on these beaches has disturbed nesting turtles by trampling the nests, damaged eggs after opening the nest and leaving it exposed to sun, scavengers and predators, and disrupted the seaward movement of emerged hatchlings by blocking their movement or picking them up and releasing them when the hatchlings are exhausted. The amount of solid waste pollution, which may be an obstacle for nesting turtles and hatchlings, has also reduced during the lockdown. A similar situation has prevailed on other beaches along the Sindh coast and on Astola Island in the Balochistan Province, where security

forces did not allow fishing or tourist boats to visit.

However, the situation is different elsewhere in the Balochistan Province. The number of people visiting Daran Beach at Jiwani substantially increased during the lockdown, due to low compliance with the order for restricted movement, and could have affected sea turtles and hatchlings as it did in Karachi. However, a major portion of Daran beach was extensively eroded by Cyclone Kyarr in late October of 2019, and it has not yet been reestablished by wave and tidal action; no turtles have been reported nesting since November 2019. Therefore, nesting turtles and hatchlings at Daran have not been impacted by the lockdown.

Despite strict control of the Sindh Wildlife Department, a small illegal trade of turtle hatchlings in pet shops, aquaria and the Sunday pet market occurs in Karachi. Hatchlings are removed from the nests along the Karachi and Balochistan coast and are illegally sold in these outlets. Since all markets have been completely closed during the lockdown, no such illegal sales have occurred since the last week of March 2020.

The government imposed a ban on fishing as part of the lockdown along the entire coast of Pakistan since

the last week of March till mid May 2020, and this has presumably reduced the threat of entanglement in fishing gear, subsequent injury or mortality, and disturbance to foraging areas. Partial fishing operations (daytime fishing only and within 5 nautical miles of the coastline) recommenced in mid-April. However, the annual two

month closed season for shrimp trawling and tuna gillnetting in the Sindh Province along with a total fishing ban in the Balochistan Province will be in place from the 1st June to 31st July, 2020, and hence will provide additional protection for turtle populations in the coastal and offshore waters of Pakistan.

RECENT SEA TURTLE UPDATES FROM THE ARABIAN GULF

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UNITED ARAB EMIRATES

Sea turtle nesting in the UAE usually begins in March and ends in June, so it overlapped with the lockdown period during the COVID-19 pandemic. Emirates Marine Environment Group (EMEG), an NGO supported by public authority, monitors sea turtle nesting at Jabel Ali Reserve (JAR), Sir Bu Na'air (SBN) Island, and 30 other islands. Two decades of records are available for JAR and SBN, the two core sites of the monitoring project. EMEG reports that higher numbers of hawksbill sea turtle nests at SBN have been recorded this year than in the previous year (EMEG, 2017, 2018, 2019; Figure 1). When 400 nests were reached on 12th June 2020, the head of the Environment and Protected Areas Authority (EPAA), of Sharja, visited SBN Island to celebrate what is believed to

be the highest number of annual nests of the species in the Arabian Gulf region. At JAR, 52 hawksbill nests were recorded last season and 45 nests have been counted to date in the 2020 nesting season. Green turtle nesting is always very low, with only one found annually at SBN and none at JAR.

The main impact of COVID-19 on turtle conservation work in the UAE is the reduced number of available field workers at SBN, down from 14 in 2019 to four in 2020 (including the EMEG President who will remain on the island for the entire season). Members of the smaller team worked two of three shifts each day, monitoring nesting sea turtles and seabirds (e.g., sooty gulls and bridled terns) as well as conducting dive missions related to the conservation of coral reefs. Fewer people also meant that beach cleanups were not possible at the start of the nesting season, and waste on the beach might have been an obstacle for nesting turtles (EMEG, 2019). However, EMEG, in collaboration with EPAA, organised a cleanup day for SBN beaches on World Environment Day, 5th June 2020.

QATAR

Hawksbill sea turtles mainly nest on mainland beaches of Qatar, unlike other Arabian Gulf countries where nesting occurs on islands. Qatar closes some, but not all, of its beaches from April until the beginning of August each year. However, the COVID-19 lockdown meant that there was limited use of most beaches from February.

The number of recorded hawksbill turtle nests has varied

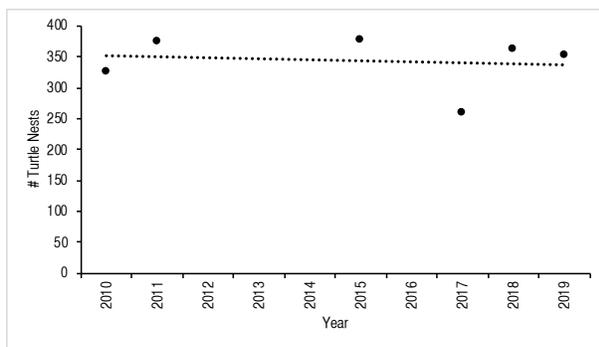


Figure 1. Number of hawksbill turtle nests recorded at Sir Bu Na'air Island over time (EMEG, 2017, 2018, 2019).