

## Hawksbill Turtle

### **About the species**

Hawksbill turtles (*Eretmochelys imbricate*), named after their hawk-like beak are relatively small, measuring about 80cm in length and weighing a maximum of about 50 Kgs. They are typically brown with splashes of orange, yellow or reddish brown while juvenile hawksbills are black or dark brown with light brown or yellow coloration the edge of their shell and limbs.

### **Fun Facts**

1. Temperature determines the sex of offspring; at 29.3°C there would be 50% male and 50% female. Warmer temperatures produce mostly females, and cooler temperatures produce a majority of males.
2. Sea turtles lay 110 eggs in a nest, and average between 2 to 8 nests a season.
3. Historically, in the United Arab Emirates, marine turtles were exploited for their eggs and meat. Due to higher level of awareness and concern for conservation of these endangered species by the citizens, sea turtles and their foraging habitats are being protected.
4. Hawksbill turtles are the only sea turtles that lay their eggs in the UAE.
5. The normal lifespan of a Hawksbill turtle is 30 to 50 years.

### **Distribution**

Hawksbills are found in offshore waters of mainland and island shelves but are more common near coral reef formations. The Hawksbill Turtle's distribution is centered around tropical reef areas in the Atlantic, Pacific, and Indian Oceans from Japan to Australia and the British Isles to southern Brazil. They also can be found in the Gulf of Oman and Arabian Gulf coasts of the country. Most have been seen near the shallow, offshore coral reefs to the west of Abu Dhabi. Hawksbill turtles are the only sea turtles that lay their eggs on the shores of Abu Dhabi.

### **Behaviour**

Hawksbill turtles spend some time resting or sleeping wedged into coral or rock ledges. The hawksbill turtles are solitary for most of their lives; they meet only to mate. Hawksbills make migrate long distances in order to move from feeding sites to nesting grounds. Adults are opportunistic predators, using their sharp beak to prize invertebrate prey from crevices within the reef.

## **Reproduction**

Hawksbill turtles return to nest on the beaches they were hatched in every 2 to 3 years, typically around the months between March and June. Females lay at least 2 clutches, around 115 eggs, and only nest at night. Nesting occurs on undisturbed beaches, where eggs are laid in the vegetation, the incubation period is approximately 60 days.

After the incubation period, hatchlings emerge as a group and use the night sky over the water to find their way into the sea.

## **Diet**

Hawksbill turtles are omnivorous, they feed on seagrasses, sponges, jellyfish, squid, shrimp and other invertebrates found on coral reefs.

## **Threats**

Hawksbills are a critically endangered species due mostly to human impact. Some of the main threats to the turtles are:

1. Coastal development: construction, settlement, dredging, land filling and levelling activities have destroyed large areas of turtle nesting beaches around the world.
2. By-catch: Many turtles become entangled in nets and subsequently drown. Some also die due to ingesting of hooks.
3. Marine Debris: Hawksbill turtles may feed on discarded plastics, such as plastic bags, and subsequently die. Marine debris lining beaches can also cause obstruction and affect nesting.
4. Pollution: Nutrient enrichment can affect the health of corals, and in turn have an impact on Hawksbills. Moreover, heavy metals and Phthalate esters have been found in the tissues of turtles. Many of these chemicals have mutagenic and carcinogenic properties.
5. Over-exploitation: Hawksbills have been exploited for their meat and eggs. They are still hunted for commercial tortoiseshell in many countries.

## **Conservation**

Hawksbill Turtles are listed as Critically Endangered on the IUCN Red List of Threatened Species and are listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES).

In the UAE, the foraging and nesting habitats for Hawksbill turtles are still under natural and anthropogenic pressure. As a result, satellite tagging programs have been initiated in the UAE to identify the foraging habitats of Hawksbills, as well as establish the importance of migration in the sea turtles' life cycle. Moreover, a Marine Protected Area (Marawah) has been created which includes important hawksbill foraging habitats.

Sea turtles and their habitats are protected by UAE Federal Law 23 and 24 (1999). The UAE is signatory to the Indian Ocean South-East Asian, (IOSEA), Marine Turtle Memorandum of Understanding, that suggests a range of actions for conservation of sea turtles and the protection of their habitats.

## **Marine conservation efforts**

### UAE Sustainable Fisheries Programme

The UAE Sustainable Fisheries Programme Strategy is comprehensive and was developed in 2014 with the UAE Ministry of Climate Change and the Environment (MOCCAUEAE), with the objective of putting the natural balance of fisheries resources on the path to recovery. It assesses all aspects relevant to sustainable fisheries management in the UAE – with specific projects on Fisheries Science; Fisheries Socioeconomics; Governance; Traditional Fishing Knowledge; Monitoring, Control and Enforcement, Law and Policy; Fisheries Management Planning; and Information Management.

EAD's review of UAE fisheries scientific studies confirmed the Abu Dhabi findings, that the UAE's principal fisheries resources Hamour (*Epinephelus coioides*), Shaari (*Lethrinus nebulosus*), Farsh (*Diagramma pictum*) and Kanaad (*Scomberomorus commerson*) are 'severely overexploited' and have declined by nearly 90% over the past 30 years.

In recognition of the state of the fish stock and corresponding urgent need for integrated fisheries research programs across the UAE, together with our strategic partners - the MOCCAUEAE - EAD held a workshop with UAE based fisheries scientists and professionals, and developed a National Fisheries Research and Monitoring Plan, with implementation that commenced in 2016.

One critical project that was identified for implementation in 2016 was the completion of a UAE-wide Fisheries Resources Assessment Survey. Accordingly, in 2015 we planned and have commissioned this critical survey which commenced in March 2016, the results of which will be fundamental to Fisheries Management Planning and assessing of sustainable catch levels moving forward. Given the severely overexploited nature of the fishery, every expectation is that the survey will show stock levels will be lower than the previously reported 10% of virgin biomass stock size.

### **Development of Marine Protected Areas**

To secure the health of our marine environment, EAD has identified and established four marine protected areas (MPA): Marawah Marine Biosphere Reserve, Marawah MPA, Al Yasat MPA and Bul Syayeeef MPA. These areas make a safe habitat for hundreds of marine animal and plant species and enable us to monitor their health and growth.

The Marawah Marine Biosphere Reserve is now home to what is probably the densest dugong population on the planet.

### **Dolphin Conservation Programme**

The dolphin survey will continue to produce information on population sizes which will form a baseline for future status assessments. The survey is also fundamental to identifying threats to

dolphin populations which will serve as an input to developing a Dolphin Conservation Management Plan.

In 2015, summer and winter surveys of dolphins were completed in the coastal waters of Abu Dhabi. The use of the individual dorsal fin profiles to tag individuals revealed some animals moved up to several hundred kilometers between seasons. There was a large number of dolphins with scars that were attributed to propeller cuts indicating that vessel strike is a main threat to dolphin populations in Abu Dhabi's waters.