Project Update: August 2017

- Field Survey:

A total of seven field surveys were conducted at the sites Marsa Asalaya (n=1), Marsa Egla (n=1), Marsa Hermez (n=2) and Marsa Abo Dabbab (n=3). A total of 16 dives were performed (10 dives from shore, two dives from the boat and four dives by speedboat) (Fig 1).

- Feeding ecology:

We recorded the dugong feeding trails at all the sites, and the trails dimensions were taken (Fig 2, 3 and 4). Also, the seagrass cover and abundance were recorded for the different species. The amounts of seagrass removed from the trails were calculated to know the effect of dugong grazing.

- Dugong Photo ID:

The dugong was sighted in Marsa Hermez (25.320358°N and 34.746338°E) behind the jetty (Fig 5). The average depth of sighting was at 3 m at a distance of 130 m from the shore but sometimes at 7 m and 17 5m (Fig 6). Several photos were taken of the right and left flipper to identify obvious notches; photos for the tails were also taken. This individual was about 3 m long with one large deep v-shaped notch in the middle edge of the right flipper (Fig 7) and the same notch at the left flipper (Fig 8). The right fluke had one clear c-shaped notch (Fig 9). All the photos were perpendicular to these parts of the dugong body. Scars on the dorsal side were also recorded to monitor it in for the short term in the next survey.

Sex was determined by observing the distance between the genital silt and the anus; here the two openings are far apart which a male is. Several photos were taken from below to record the sex identification (Fig 10).

- Dugong behaviour:

I encountered the dugong at Marsa Hermez at 8:30 a.m feeding at 3 m depth. There were no any tourists at that time for more than 30 minutes, so I recorded several underwater videos using HD camera (GoPro 4 Silver edition) (Fig 11). Observations were made by maintaining a distance of 3 m from the dugong so as not to disturb it. I assumed the behaviour is natural in the absence of the tourism activities, where I'm the only one in the water with the dugong and kept 3 m distance using a long stick to avoid any disturbance. I recorded several behavioural categories like feeding, surfacing, resting and travelling (Fig 12, 13, 14, 15 and 16). After dugong resting on the substrate, it starts to be active by arching its body to push the substrate for ascending (Fig 17 and 18). Breathing at the surface was also recorded and photographed (Fig 19, 20, 21 and 22). Before breathing, the dugong exhales first before opening its nostrils out of the water to inhale for breathing which takes from 2 to 3 seconds.

I did another dive at 14:30 and encountered the dugong at 15 m depth. The dugong was resting at the bottom for some minutes until ascending to the surface for breathing then dives again for rest. Three speedboats with snorkelers were staying at surface waiting for dugong. At this time the dugong rested at the bottom and I took several videos and photos of him. On this day I got several videos for the dugong in a natural state (without tourism activities) and videos in the impacted state by tourists.

- Human activities with dugong:

Tourism activities include diving, snorkelling and speedboats. First of all the speedboat searches the dugong area before the tourists enter the water. For divers, they dive directly around the dugong and mainly use a professional camera with lights. Lights and camera flash have a negative impact on the eyes of species like dugong. Mainly the divers are very near to the dugong and sometimes cross its path during feeding. Snorkelers stay at surface waiting for the dugong to ascend for breathing, they follow the dugong and sometimes touch it. Once the dugong dives away, the speedboat takes the snorkelers to follow the dugong again. Some photos have documented the effect of human activities on the dugong (Fig 23, 24, 25 and 26).

At 9:30 a.m, one speedboat with tourists arrived from outside to see the dugong. Two divers and five snorkelers entered the water with the dugong, and I told them to keep a distance and don't touch the dugong. At that time I assumed the behaviour of the dugong would be affected by the tourism activities, so any videos recorded after that will use as impacted. The dugong was still feeding at 3 m depth until the second speedboat arrived with 10 snorkelers. This boat was still around the area searching for the dugong, which travelled away a little bit and dived to 6m depth. Dugong started going away from the shore to the deep water and travelled more than before until it disappeared.

- Public Awareness:

I did one presentation to the staff of Blue Ocean Diving Center at Marsa Abo Dabbab (Fig 27 and 28). The presentation includes; sirenian taxonomy, distribution, ecology, behaviour, survey methods and conservation.

Fig 1: After diving at Marsa Asalaya

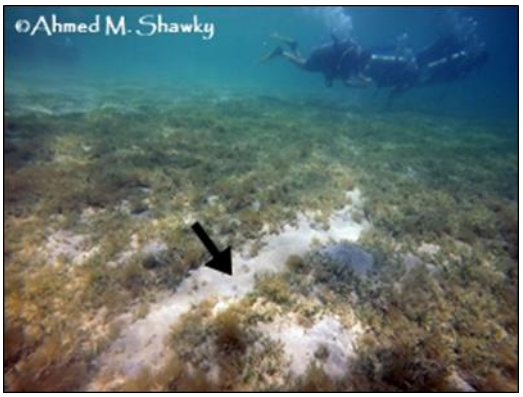


Fig 2: Feeding trail at Marsa Asalaya

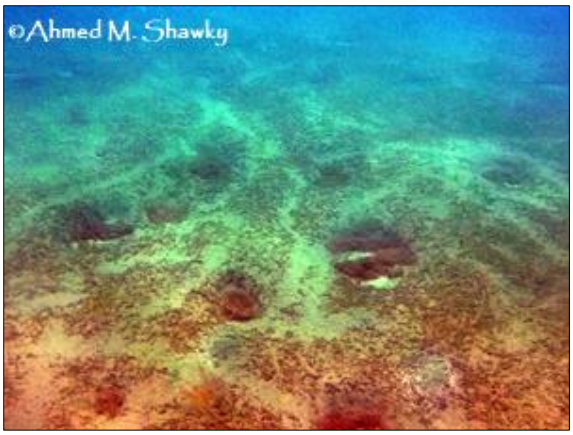


Fig 3: Feeding trails at Marsa Abo Dabbab

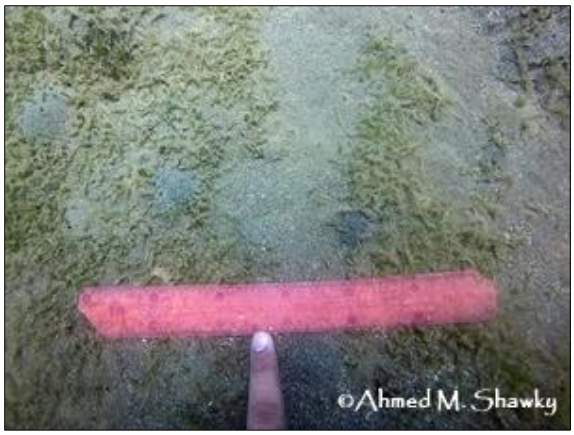


Fig 3: Feeding trails at Marsa Hermez

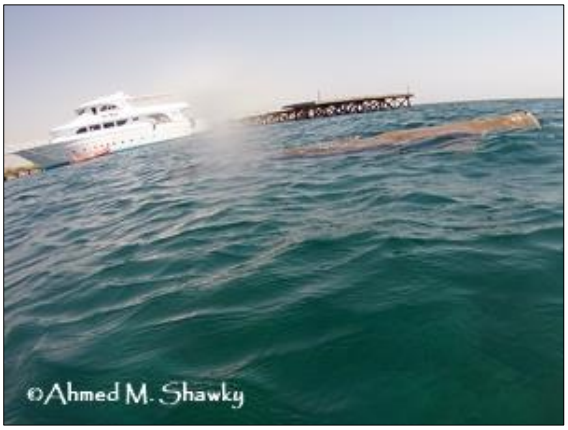


Fig 5: Dugong behind the Jetty

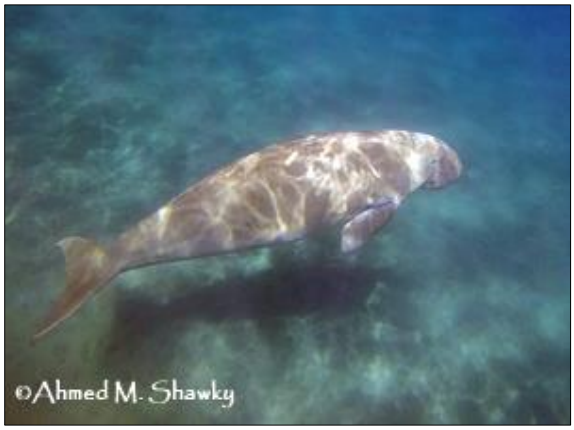


Fig 6: Dugong encountered at Marsa Hermez

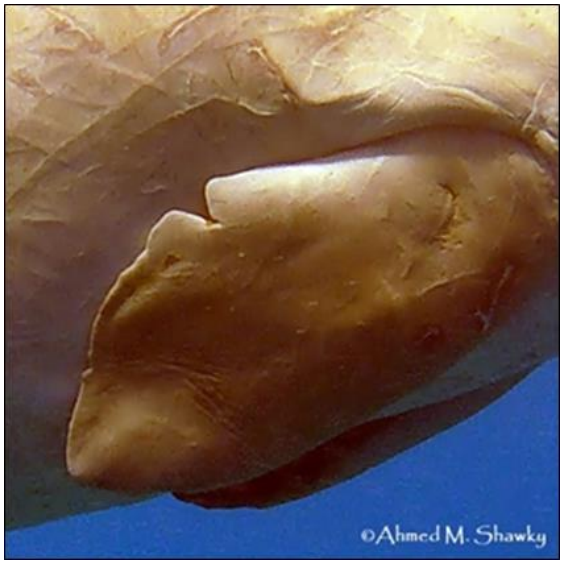


Fig 7: Photo ID of the right flipper

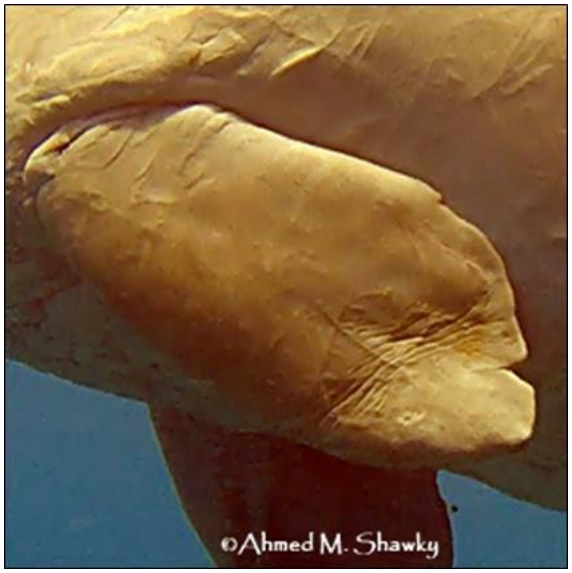


Fig 8: Photo ID of the left flipper

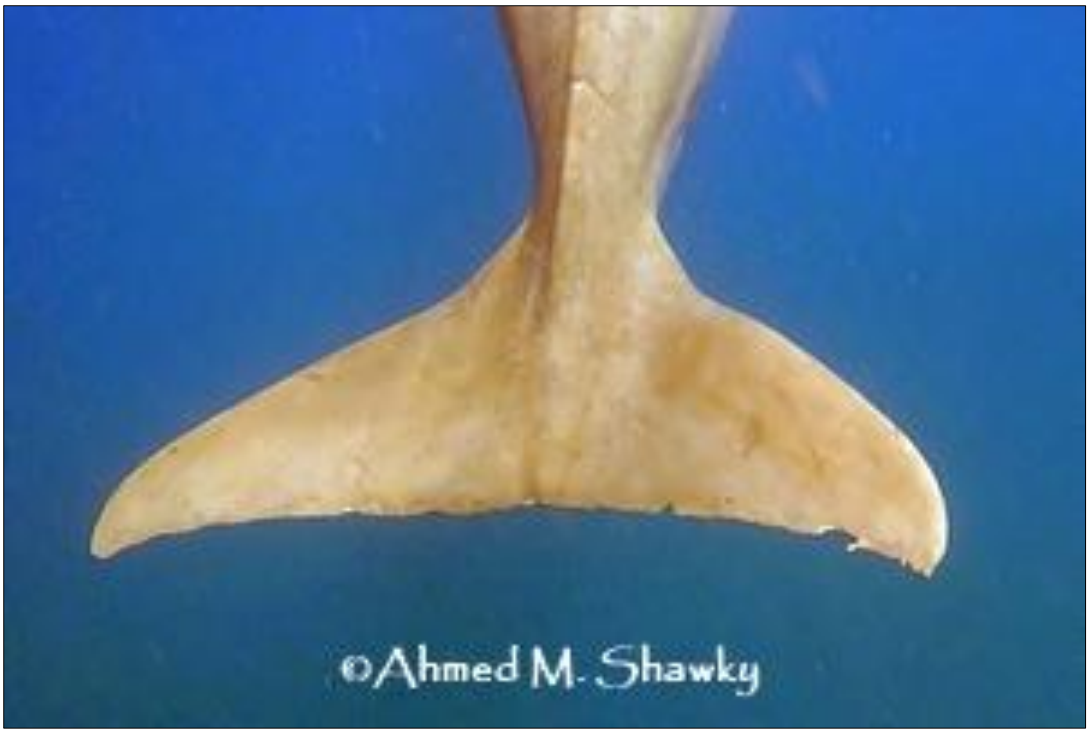


Fig 9: Photo ID of the dugong tail showing a clear notch at the right fluke

Fig 10: Ventral view of a male showing the position of the genital silt and anus.

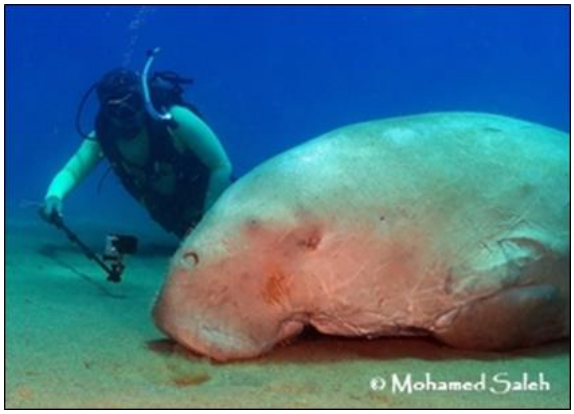


Fig 11: Ahmed M. Shawky record video shots for the dugong at Marsa Hermez

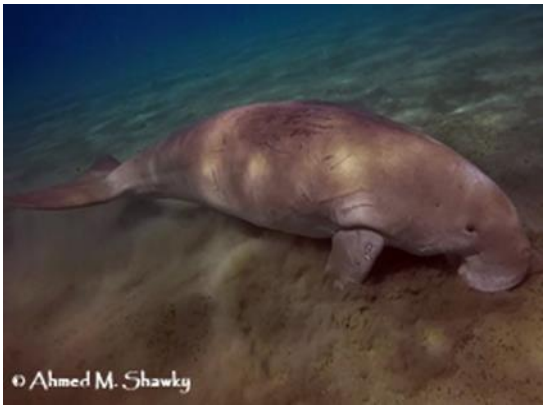


Fig 12: Dugong feeding behaviour

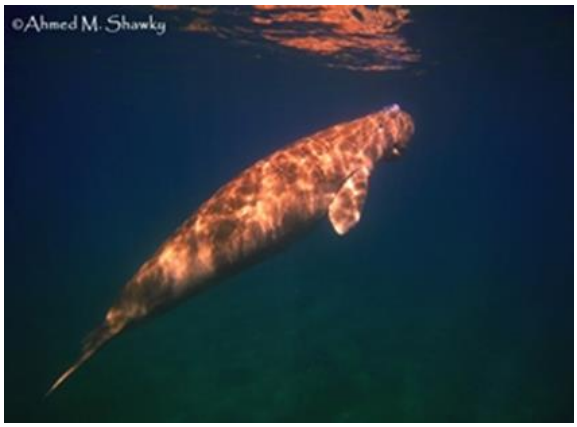


Fig 13: Surfacing behaviour (ascending)

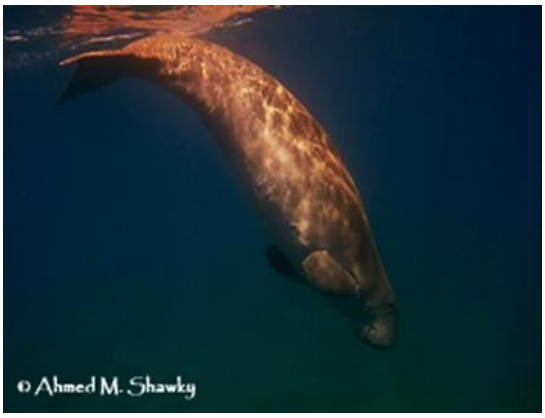


Fig 14: Surfacing behaviour (descending)

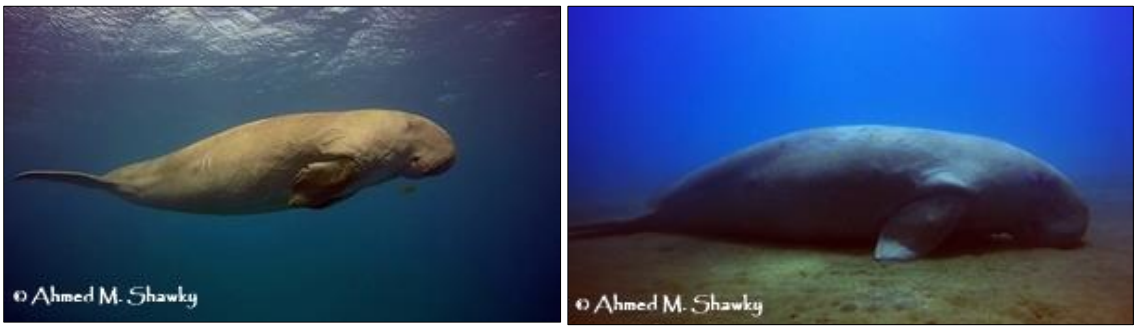


Figure 15: Dugong resting at mid water (left) and on substrate (left)

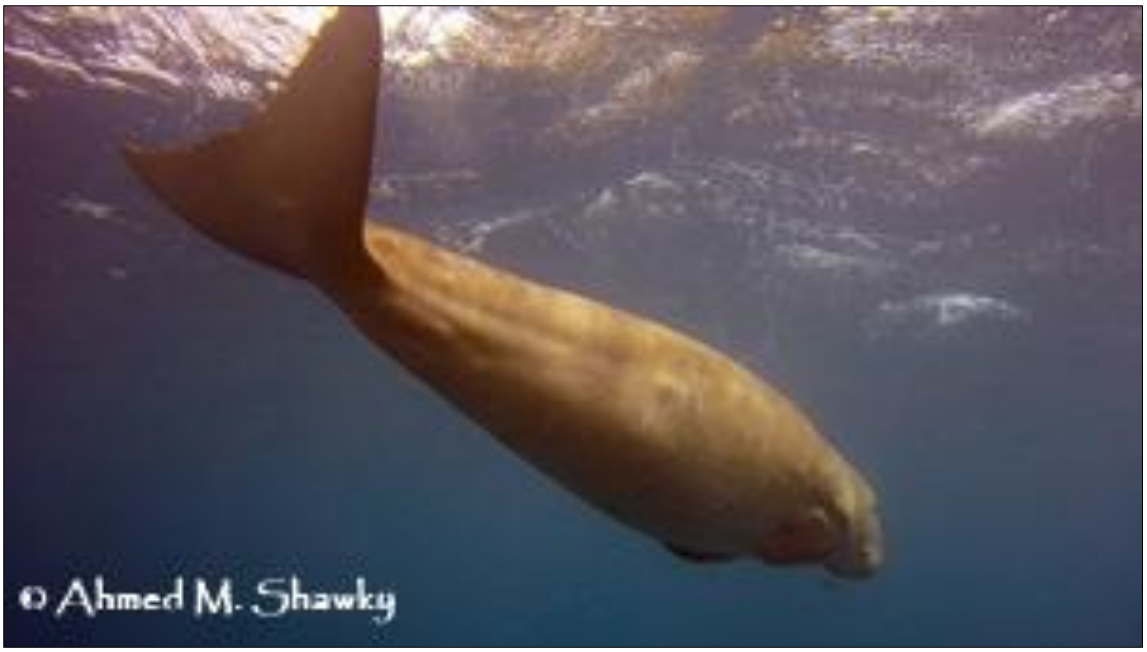
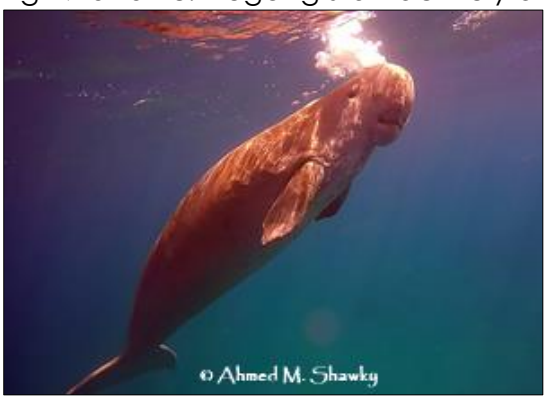


Fig 16: Dugong behaviour (travelling)

Fig 17 and 18: Dugong start actively after resting on the substrate



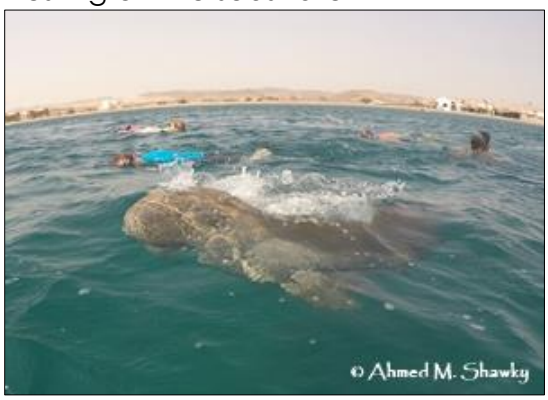


Fig 19 and 20: Dugong exhale at surface before breathing

Fig 21 and 22: Dugong inhale at surface to breath

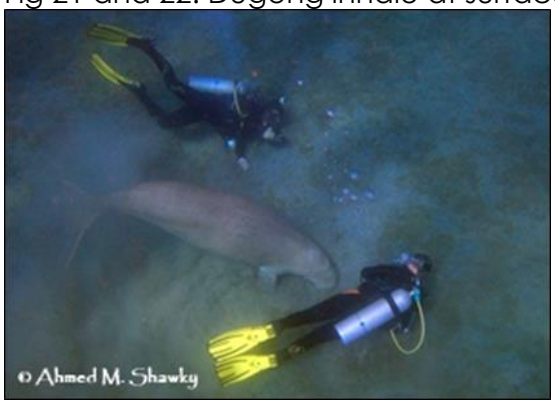


Fig 23: Divers intercept the dugong

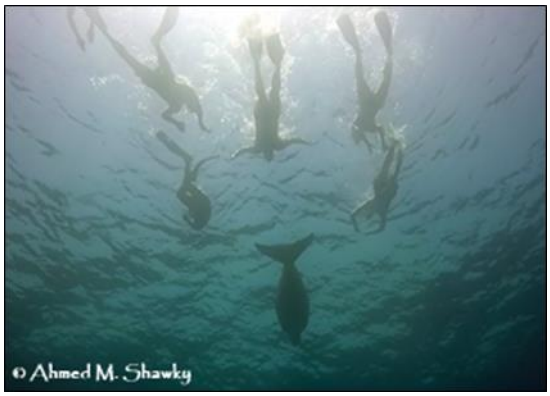


Fig 24: Snorkelers follow the dugong

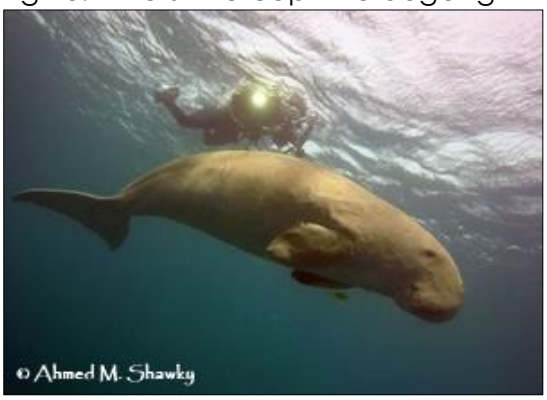


Fig 25: Divers using light with dugong

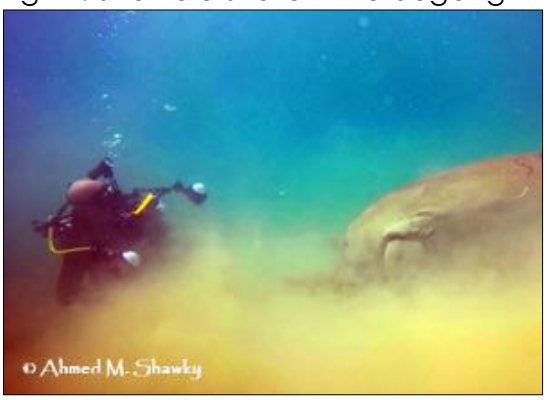


Fig 26: Diver using flash with dugong

Fig 27 and 28: Dugong presentation for the staff of Blue Ocean Diving Center