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RESULTS OF A PRELIMINARY MISSION CARRIED OUT IN CYRENAICA, LIBYA, TO ASSESS MONK SEAL PRESENCE AND POTENTIAL COASTAL HABITAT

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Introduction

The Mediterranean monk seal population has declined almost to extinction throughout most of its historical range, with the exception of the Turkish and Greek archipelagos which at present represent the species' most conspicuous yet, overall, meagre foothold in the Mediterranean basin. Monk seal presence throughout the Mediterranean African coast is hypothesised as being low with respect to historical times but remains largely unassessed due to the absence of recent and continuous monitoring efforts. The most recent monk seal data along Libyan coasts dates back to 1972 (Norris) and indicates that reported sightings were in the Al Jabal Al Akhdar region where a small population was hypothesised to survive. Sergeant et al. (1978) indicated that this population at the time could have ranged around 20 individuals. Considering the significant extent of the Libyan coastline, the relatively low/nil impact of tourist activities and preliminary data indicating the high marine biodiversity of the Libyan Cyrenaican coast, it is hypothesised that monk seal individuals may still survive in this region and should this be the case, immediate action should be taken to assess their presence and draw up conservation measures. Such measures should lie within the greater scope of marine biodiversity protection and marine protected area establishment in Libya.

A field mission was carried out in the late spring of 2002 with the purpose of identifying potential “hotspots” for the presence of the Mediterranean monk seal in the Cyrenaica coastal region. The fieldwork was conducted under a Memorandum of Understanding coordinated by UNEP’s Regional Activity Center for Special Protected Areas (RAC/SPA) and involving the collaboration between the Environment General Authority (EGA) of Libya and the Istituto Centrale per la Ricerca Applicata al Mare (ICRAM) of Italy. The objectives of the field mission were to:

- collect information on past and recent monk seal sightings in Cyrenaica through a specific interview campaign directed at the fishermen operating out of the Cyrenaican landing sites and ports with a view to identifying “hotspots” characterised by the presence of monk seal individuals
- collect preliminary information on the coastal characteristics and habitat suitability for the species in Cyrenaica so as to identify sectors needing investigation from sea to be carried out in a later phase of work
- collect information on other marine species of secondary interest (with respect to the purpose of the present study) but which are nevertheless important from the point of view of marine biodiversity (i.e. other protected and rare species, invasive species).

Methods

The survey was conducted during May 21-June 4, 2002. All possible landing sites situated between Benghazi and the port of Bardiye (furthest eastern port on the Libyan coastline) were visited, covering over 500 km of coast. The fishermen were interviewed through a systematic survey form similar to that used to interview Caribbean fishermen by Boyd and Stanfield (1998) for the collection of information on the presence of Caribbean monk seal individuals. The authors believed that the high positive response result of this type of survey was linked to its strict application to fishermen as well as to the use of figurative images of marine species that the fishermen were most likely to have encountered. In such a way, the interviewees did not know the purpose of the questionnaire in advance and were less inclined to intentionally deceive the questioner. The fishermen were interviewed singly so as to avoid being influenced by each other’s answers. Each fisherman was presented with a series of cardboard-mounted cards, measuring 15 x 21 cm, depicting coloured drawings of the following species: *Cetorhinus maximus*, basking shark;

Caretta caretta, the loggerhead turtle; *Chelonia mydas*, the green turtle; *Monachus monachus*, Mediterranean monk seal (adult male and a subadult); *Siganus luridus*; *Sargocentron rubrum*, squirrelfish; *Mullus surmuletus*, red mullet; *Tursiops truncatus*, bottlenose dolphin; *Delphinus delphis*, common dolphin; *Ziphius cavirostris*, Cuvier's beaked whale; *Phocoena phocoena*, harbour porpoise; *Physeter catodon*, sperm whale; and *Balaenoptera physalus*, common fin whale.

Each fisherman was asked to indicate which species he encountered and knew of from his fishing activities. A drawing depicting an adult male and one depicting a sub-adult monk seal were both specifically included in the present survey method because of the distinct morphological traits which characterise adult male monk seals (large, black and with a distinct white abdominal patch) from sub-adult individuals (lighter greyish pelage and no distinct white ventral patch). Once this was ascertained the fisherman was asked qualitative questions concerning the monk seal sightings so as to collect more detailed information on each sighting (i.e. the location, the time of year, and the behaviour of the observed animal(s)). Fishermen were subsequently asked analogous information concerning sightings or the presence of some of the other protected species which they had chosen amongst the cards.

Attention was paid to collect as much information as possible on the physical conformation of the coastline as well as information on the accessibility of the coastline (presence of roads leading to the coast, presence of ports etc.). Details on the presence of fractures and apparent caves were recorded. If the accessibility to a particular stretch of coast was not feasible due to the absence of roads and the presence of rough terrain, information was gathered from locals on the coastal typology (cliffs, presence of caves) of the particular stretch of coast in question. Coastal sectors were identified based on the following coastline typology: sandy coast, low rocky coast with intermittent sand, medium-high coast, high coast.

Results

100 fishermen were interviewed throughout the entire study area out of 18 ports/landing sites. 41% of the fishermen recognised one of the two monk seal cards that were demonstrated and of these, 25% chose the card depicting a subadult animal while 16% chose the picture depicting the adult male. Almost 50% of the Libyan sightings reported by the fishermen had occurred between 1998-2002 while the remaining reported sightings had taken place between the period 1952-1997. The sighting information indicates that the species was historically observed throughout most of the study area while sightings occurring during the last five years occurred mostly in the area north-eastwards of Tolmeitha, eastward of Susah, eastward of Dernah, Barda island and on the western coast of Tobruk. A noticeable number of sightings reported the presence of a monk seal individual which had entered into the port of Benghazi during spring 2002. Two of the reported sightings involved Egyptian locations.

The fishermen's attitude towards the monk seal individuals which they would talk about did not seem to imply a negative attitude towards the animal, although no specific question was posed to them on whether the animal was, in general, viewed as being in conflict with their fishing activities or not. The reaction of the fishermen upon beginning each questionnaire appeared, in general, quite diffident but this behaviour tended to noticeably change once the species cards were presented. At this point, fishermen seemed to be eagerly inclined to give information on all the species that they had chosen, regardless of whether questions were posed to them regarding specific species. Reports of dead monk seals amount to 8; 4 of which occurred between 1957 and the late 70s and 4 recorded between 1992 and 1998. The first 4 reports are of animals which were intentionally killed while the remaining 4 concern 3 dead stranded animals and 1 animal found entrapped in a trammel net. The intentional kills of the 1950-70s were, according to interviewees, a common phenomenon and the animals were usually killed for the use of their skin and oil. According to most fishermen, the monk seal was more abundant in the past and was often observed even in groups of 3-4, and hauled out on protected small gravel beaches and coastal overhangs.

Discussion

The present study aimed at identifying whether monk seal individuals still survive along the Libyan Cyrenaican coast and, if so, how frequent were the sightings and where they occurred. The objective was also to identify sectors of the Cyrenaican coast worthy of further investigations regarding monk seal coastal habitat availability and monk seal coastal use. Such sites should in future be monitored for monk seal presence and conservation measures should be established to guarantee protection and recovery of the surviving monk seal nuclei.

The distribution of the reported sightings over time and in different sectors of the coast indicates how the species was historically observed along most of the Cyrenaican coast (with the exception of those sectors which are predominantly composed of sandy stretches of coast and which consequently explain the absence of reported sightings in such areas). The study also provides substantial evidence on the present distribution of monk seal sightings in Cyrenaica as reported by the fishing communities operating out of the major active landing sites of Cyrenaica. The survey demonstrated a strong recognition rate on the part of fishermen where this species was concerned, although it appears that the species is not recognised as frequently as more common species, such as red mullet, the loggerhead turtle and the bottlenose dolphin. Nevertheless, the fact that almost 50% of 46 reported sightings occurred during the last five years provides strong indications as to the species' actual presence along Libyan coasts, and also emphasises the importance of conservation efforts for the species in this Mediterranean region. The area is characterised by varying topography, offering apparently suitable habitat characteristics; that

could act as an advantage to the species in allowing a wide distribution throughout Libyan coastal territory. Further investigations should be conducted to verify the coastal presence of caves suitable for monk seal haul-out, and a careful analysis of their characteristics and their distribution throughout the different sectors should lay the groundwork for a sound program of future monk seal monitoring and conservation activities. Considering the vast extent of the Libyan coastline and the high number of sightings reported during the two-week study period, the study represents an encouraging starting point towards a sound monk seal conservation strategy for the area.

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