HABITAT SUITABILITY AND SIGHTINGS OF THE MEDITERRANEAN MONK SEAL IN THE NATIONAL PARK OF AL HOCEIMA (MOROCCO)

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Abstract

Coastal habitat suitability and Monachus monachussighting information was collected in the National Park of Al Hoceima (Morocco). Two coastal sectors have caves that are most suitable for the species. Fishermen interviews indicate the species'historical and recent presence in the park and external areas.

Keywords: Mediterranean monk seal, Morocco

Introduction

A significant information gap exists on Mediterranean monk seal (Monachus monachus) distribution along north African coasts (1). Consideration of these areas is crucial for a species conservation strategy (2) and identification and recovery of small groups should be undertaken. Seal presence in the last decades hypothetically occurred between Al Hoceima and Cap des Trois Fourches (3) and the population may consist of 10 individuals (1). This study enriches the knowledge of the coastal habitat suitability and provides an update on *M.monachussightings in the National Park of Al Hoceima.*

Methods

The terrestrial National Park of Al Hoceima is situated about 50 km from the Straits of Gibraltar with a 47 km long coast. Fieldwork was undertaken within the MedMPA project, coordinated by UNEP-MAP's RAC/SPA and funded by the EC. Information on monk seal coastal habitat and sightings was collected, during summers 2002 and 2003. Rocky cliff sectors were first identified and subsequently aquatically investigated to verify for caves. Cave characteristics (protection from wave action, elevation of emerged beach, difficulty in observing the cave from the outside, protection from exposure to major motor traffic) were analysed in terms of their capacity to confer protection and these were ranked (1 =low, 2=medium, 3=high). Caves with highest ranking represent optimal locations for the species. Information on *M.monachussightings was collected by interviewing fishermen* operating from the park's landing sites and to the east until Sidi Chaib (20km). The questionnaire collected information on fishing activities and seal sightings through the use of cards (4) depicting images of other marine species as well.

Results

The area has rocky calcareous cliffs forming steep overhangs alternated to rock slides and pebble beaches. Five sectors of rocky coast (M1-M5) present medium-large fractures (Fig.1). Sectors M1-M3 are of compact dolomitic limestone while sectors M4 and M5 appear composed of bent strata of limestone. Sectors M1-M4 were fully inspected. 25% of sector M5 was inspected due to logistical difficulties. Small caves (<3mx3m), visible from sea, were disregarded. Eight caves were identified: one in M2, three in M3, two in M4 and two in M5. The obtained ranking was: high for two in M3 and one in M4, intermediate for two in M5 and low for the remaining caves. Forty-five fishermen were interviewed. M. monachuswas recognised by 35 of the interviewees and of these observations, 9 occurred in the period 2001-2002. Table 1 indicates the areas in which interviewees reported observing seals.

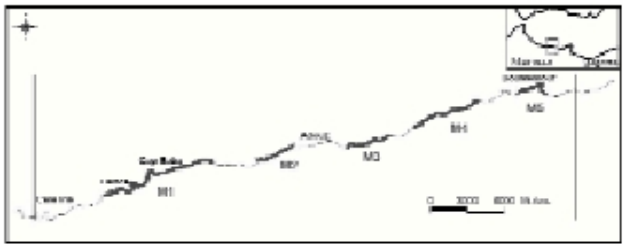

Fig.1. Rocky sectors (M1-M5) of the study area.

Table 1. Monk seal sightings recorded through interviews.

Date	Location and number of the sightings	
	Within the park	External to the park
1970-1979	Bades (1)	Al Hoceima (3)
1980-1989	Bousekour (1), Bades-Topos (1), Tala Youssef (1)	Mostassa (2), Carmela (1), Al Hoceima (4), Sidi Abed (1), Morra de Chica (1), Cap de l'Eau (1)
1990-1999	Cala Iris (1), Bouseekour (3),	Sidi Abed (3), Sidi Chaib-Cap Quilate (1), Sidi Asseir-Cap Quilate (2)
2000-2002	Topos (1), Bades (1)	Mostassa (1), Sidi Abed (1), Al Hoceima (2), Tofino (1), Sidi Chaib-Cap Quilate (1), Cap Trois Fourches (1)

Discussion

The study area has interesting physical coastal habitat for the species. Sectors M3 and M4 have caves that are most suitable for *M.monachusand require adequate protection and monitoring meas*ures. The observations drawn from the interviews indicate the historical and recent presence of M. monachusin the coastal stretch of the study area, confirming the need for a species-specific conservation plan. Various sightings reported in areas external to the park, as east as Cap de l'Eau and as far as Tofino, (18nm north of Al Hoceima) highlight the need to conduct further investigations and conservation initiatives in a wider geographical area, still appearing to host monk seal individuals.

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References

1-Aguilar A., 1998. Current status of Mediterranean monk seal populations. In: Meeting of experts on the implementation of the Action Plans for marine mammals (monk seal and cetaceans) adopted within MAP. Arta, Greece, 29-31 October 1998. UNEP (OCA)/MED WG.146/4.
2-Reijnders P.J.H., 1998. Vulnerability of small Mediterranean monk seal groups and conservation policy. Meeting of experts on the implementation of the Action Plan for marine mammals (monk seal and cetaceans) adopted within MAP. Arta, Greece, 29-31 October 1998.
3-Bayed A., and Beaubrun P.C., 1987. Les mammifères marins du Maroc: Inventaire préliminaire. Mammalia, Fr., 51: 437-446.
4-Boyd I.L., and Stanfield M.P., 1998. Circumstantial evidence for the presence of monk seals in the West Indies. Oryx 32(4): 310-316.