SRYAHWA PUBLICATIONS

Journal of Zoological Research
ISSN: 2637-5575 | Volume 5, Issue 1, 2023
https://doi.org/10.22259/2637-5575.0501003

RESEARCH ARTICLE

First Sighting of the Harp Seal Pagophilus Groenlandicus (Carnivora: Phocida) on the Algerian Coast (North Africa)

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Received: 20 November 2023 Accepeted: 02 December 2023 Published: 11 December 2023

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Abstract

Algeria is a vast country on the southern shore of the Mediterranean Sea, with an estimated coastline of 2148 kilometers. The Algerian coast is frequented by and is subject to the strandings of 11 species of Cetaceae (Ceartiodactyla), only one carnivorous pinniped, the Mediterranean monk seal Monachus monachus, has not been seen since 2007. On September 29, 2023, a juvenile of Harp Seal Pagophilus groenlandicus was observed and photographed on the red beach between the departments of Bejaia and Jijel. Five days later (October 3,2023) the same specimen reappears 62 kilometers east of the first locality in the department of Jijel. In October 5,2023 the same specimen was later found dead on the beach of Iftissen 10 kilometers east kilometers from the place of its second appearance. This is the first time that this species has been reported on the Algerian coast and it gives food for thought about its presence.

Keywords: Algerian Coast, Red Beach, Mediterranean Monk Seal, Harp Seal.

1. Introduction

The Phocidae (Phocidae) are a family of the classification of mammals within the order Carnivora. The eighteen current species include true seals and elephant seals. Among these marine mammals, the best-known species is that of the harbor seal, which gave its name to the family.Seals are opportunistic hunters, adapting their carnivorous diet to local conditions. They mainly consume coastal fish and a wide variety of molluscs, crustaceans, cephalopods, as well as the remains of penguins and other pinnipeds. (Robineau,2004). Seals usually live in groups of varying sizes depending on the species. Most of them are strongly linked to their territory. Thus, certain species remain all their lives and all year round in the same coastal zone. Migratory species, on the other hand, always return to the same territory. These mammals are absolutely gifted for life at sea but quite clumsy on land (Johnson and Lavigne, 1999)

The harp seal Pagophilus groenlandicusis a species which has a height of 160-170 cm, Condylobasal length of 19-23 cm, weight varies from 100 to 150 Kilograms and females are a little larger than males. Its coat is black and white in adults, it has a black saddle or U-shaped mark on its back, the head is relatively small and black in adults with the rest of

Citation: Mourad Ahmim, Madjid Slimanou, Adel Garrout, *et al.* First Sighting of the Harp Seal Pagophilus groenlandicus (Carnivora: Phocida) on the Algerian Coast (North Africa). Journal of Zoological Research. 2023; 5(1): 17-22.

the coat being white with small dark spots and the tail is a flattened dorso-ventrally. The claws are well developed. The adult dental formula is: I 3/2, C 1/1, PC 5/5 = 34. (Lavigne , 2009) and they have auxillary cups on the premolars and molars (Anders Gelatius , Pers. Comm)

Harp seals are the most abundant marine mammal in the north Atlantic. As an ice obligatory predator,they reflect changes in their environment, particularly during a period of climatic change.There are three populations of this species: White Sea/Barents Sea, Groenlad Sea and North-West Atlantic (Stenson et al., 2020). It is found in water most of the time, on the ice floes of the northern Atlantic Ocean and the Arctic Arctic Ocean for reproduction, and its biology is linked to the movement of the ice floes. It is gregarious during reproduction with groupings of several thousand individuals and it is very mobile and migratory and can move over 8000 kilometers during the year. Its food is mainly composed of Cod (Gadus morhua), Capelin (Mallotus villosus) and Herring (Clupea harengus) (Aulagnier et al.,2020)

2. Material and Methods

The region where the observation were made are located on the north-east coast of Algeria, in two departments which are Bejaia and Jijel, respectively 240 and 320 kilometers east of Algeirs. These two departments have a Mediterranean climate and they are mountainous regions. We found the forests of cork oak (Quercus suber), Zen oak (Quercus canariensis), Afares oak (Quercus afares), Aleppo pine (Pinus halepensis), Maritime pine (Pinus maritima) and important agricultural perimeters. The beaches are sandy and there are also pebble beach's, coves and some coastal caves. The mammal was videoed and the photos taken with smartphones by several different people in the three localities where it was observed (Fig 1). For the first locality we had received three videos and several photos taken first time by Madjid Slimanou, an amateur ecologist at Taksebt (Bejaia), Adel Garrout and his brothers as well a freinds Chawki, Djalal ,Mahdi and Lotfi citizens from El Eulma (Department of Setif) who were swimming nearby and by another citizen for the first place where the observation was made (Fig. 2). For the second occurrence in Sahel Beach in Beni Belaid a video was taken by Nabil Guehham and Tarik Bouchelik from Ecologie sans frontiers association (Fig 3).The third sighting of the animal was made on the beach of Iftissen in Beni Fergane,where it had been washed up dead by the waves and was subsequently buried by a fisherman. The corpse was dug up by the fishermen's association of Beni Fergane and was recovered by the Fisheries Directorate of the Wilaya of Jijel. It was then frozen and then we proceeded in collaboration with Mahmoud Bouherrar, to take body measurements of the animal, determining sex, weighed, biopsies for DNA analysis and analysis of its dentition since it is a determining criterion in determining the species (Fig 5). The corpse was handed over to the Zeralda Cynegetic Center where it will be subject to taxidermy.For the videos and photos different brands of smartphones were used, the measurements were made with a tape measure and for weighing we used a field scale.

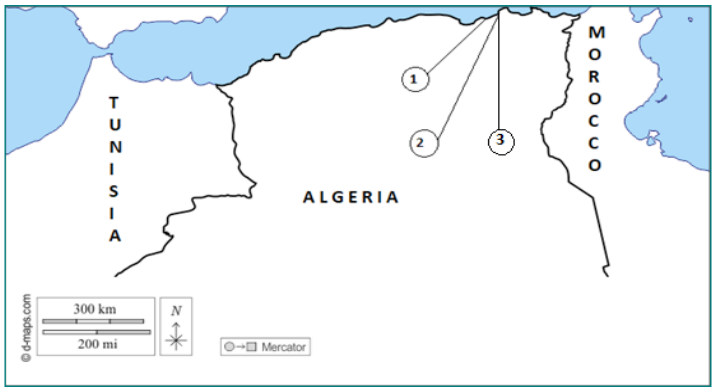

Figure 1. *Map of the two localities where the specimen of Pagophilus groenlandicus was observed (1 - Taksebt at Red Beach Bay on September 29, 2023, 2 - Sahel Beach in Beni Belaid on October 3, 2023 , 3- Iftissen beach Beni Fergane October 5,2023)*

3. Results and Discussions

For the first time there has been an observation of the harp seal on the Algerian coast in three locations, the first and the second are 62 kilometers, with the second and third at 10 kilometers apart. First it was observed on September 29, at Taksebt beach on the bay of Plage rouge located between Cape Boublatene and Cape Afaghir in Melbou which is a locality of the Wilaya (department) of Bejaia and which borders with the wilaya of Jijel to the East (36.65.48205348999 N, 5.42.2203465919059 E - MC3F+HGG, Melbou).

The secondsighting of the same specimen was reported on October 3, 2023, from Sahel beach in Beni Belaid in the coastal locality of Khiri Oued Ladjoul in the wilaya of Jijel (36.89.8152215220925 N, 6.16.3213888930968 E - W657+RQ, El-Milia). The third time on 5th October 2023 the specimen was sighted on the beach of Iftissen in Beni Fergane (36.91043 N 6.21402 E - W657+RQ, El-Milia). In on October 2023 the animal was washed up dead by the waves. Determining the species was difficult given that it was done on the basis of photographs and the different experts were divided between the common seal (Phoca vitulina), the harp seal and the grey seal (Halichoerus grypus). It was only after having had in hand the corpse of the specimen with its different spots on its body and the measurements were taken and the dentition studied that the expertise resulted in the identification of the individual as being a young female harp seal of 1.15 meters long with a weight of 12 kilograms and her dental formula was 3/2 Incisors, 1/1 Canines and 5/5 Molars. (Figures 2-4).

Another factor that made the determination difficult was the coloring of this species which varies greatly with age. The calf is white at birth, though it may have a slightly yellowish color due to amniotic fluid, though this will fade after a few days. After 21 or 22 days, it begins to lose its white fur in clumps. It is replaced by a silvery-white coat with irregular black spots. After 12 or 14 months, the black spots become larger. At sexual maturity, the spots come together to form two lines on the back. The head turns black (McKenna,2009). Due to limitations on slaughter and the involvement of conservation groups, harp seals are not a threatened species and their numbers have actually begun to increase over the last few years. They are listed as “least concern” on the IUCN Red List. (“Harp Seals”, 2004; Kovacs, 2008)

This is the first time that a harp seal has been reported on the Algerian coast because it is considered generally there is only one pinipede carnivore that comes to Algeria and it is the Mediterranean monk seal , which unfortunately has not been observed since 2007.

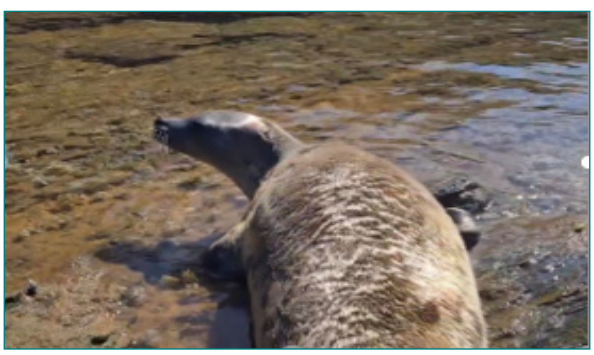

Figure 2. *Photos of the harp seal Pagophilus groenlandicus from September 29, 2023 in Taksebt Plage rouge Bay*

Figure 3. *Photos of the harp seal Pagophilus groenlandicus from October 3 at Sahel beach near Beni Belaid*

Figure 4. *Photos of the dentition of the seal specimen washed up in Algeria*

The global distribution of the harp seal is located in the Atlantic zone on the coastal waters, the high seas, pack ice, to the east in the north of Russia and to the west, in the Gulf of Saint Lawrence and Land -New.

Figure 5. *Global distribution map of Pagophilus groenlandicus (Blue: Distribution area of the species - Red: Probable trajectory of movement of the individual towards Algeria)*

Since the appearance of the harp seal specimen on the marine coasts, important questions have been asked: How did it get there? what is he doing on the Algerian coast? Serangeli (2003) mentioned that in 1896 a harp seal had gone up the Elbe River and arrived near Dessau 500 kilometers from the sea (Duguy, Robineau, 1992). The Elbe is one of the main rivers of Central Europe with a total length of 1094 km, it takes its source in the Giant Mountains in the north of the Czech Republic before crossing a large part of Bohemia (western half of the Czech Republic), then Germany and flowing into the North Sea at Cuxhaven, 110 kilometers northwest of Hamburg. The Elbe watershed is inhabited by 24.4 million inhabitants, the largest cities of which are Berlin, Hamburg, Prague, Dresden and Leipzig.This important observation shows that the harp seal can accidentally migrate to other areas, where it can become lost. Nowadays the only factor which could possibly be taken as having contributed to the straying of this seal is the heatwave experienced by the planet and especially the Mediterranean region, this remains an open hypothesis which should eventually be followed.

4. Conclusion

The specimen reported on the Algerian coast must probably have lost its way during a migration, but we noticed that it is possibly trying to find a suitable place to settle. Unfortunately he likely died either from either fatigue or by accident, although no apparent injuries were observed other than bleeding from the mouth when being buried and being handled to take measurements. To this end, monitoring work has been launched and surveillance of the beaches where he has been sighted. This will give a general idea of possible future behavior along the Algerian coast and also to check if there are no other individuals present in the southern Mediterranean of which Algeria(which covers 2148 kilometers).

5. Acknowledgements

We would like to thank everyone who helped report, photograph and film the seal specimen. Our thanks go first to the co-authors who did us the honor of allowing us to write and publish this article (Madjid Slimanou, Adel Garrout and Amir Allouti), as well as to all the people who gave us useful information as the members of the Association Ecologie sans frontieres, Fouaz Baili of the ecological association of Beni Fergane, Badreddine Djemaa, Abdesslam Moussaoui, Fares Boubzari, Khaled Leulmi, Yamine Aiche Lyes Moussaoui and especially Kamel Touati who was the first to draw our attention to the presence of videos of the species on social networks. We also thank Nabil Guehham who filmed and reported the presence of the seal during its second appearance as well as the members of the Commissariat National du Littoral, The Direction de la peche de Jijel , The staff of National Parc of Taza and the mayor of the commune of El milia. I could not forget Paul B. Purvis who corrected our manuscript and I would like to thank him greatly. Special thanks also go to John Hall of Mammal Watching and Orten Kure Kattenhoj and Anders Galatius who helped us make an exact determination of the species.

6. Funding information

The work undertaken and the writing of this manuscript did not receive funding from any party.

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