



2nd Annual Conservation Status Report

*of the Mediterranean Monk Seal Population at the
island of Gyaros*

Executive summary

June 2015

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INTRODUCTION

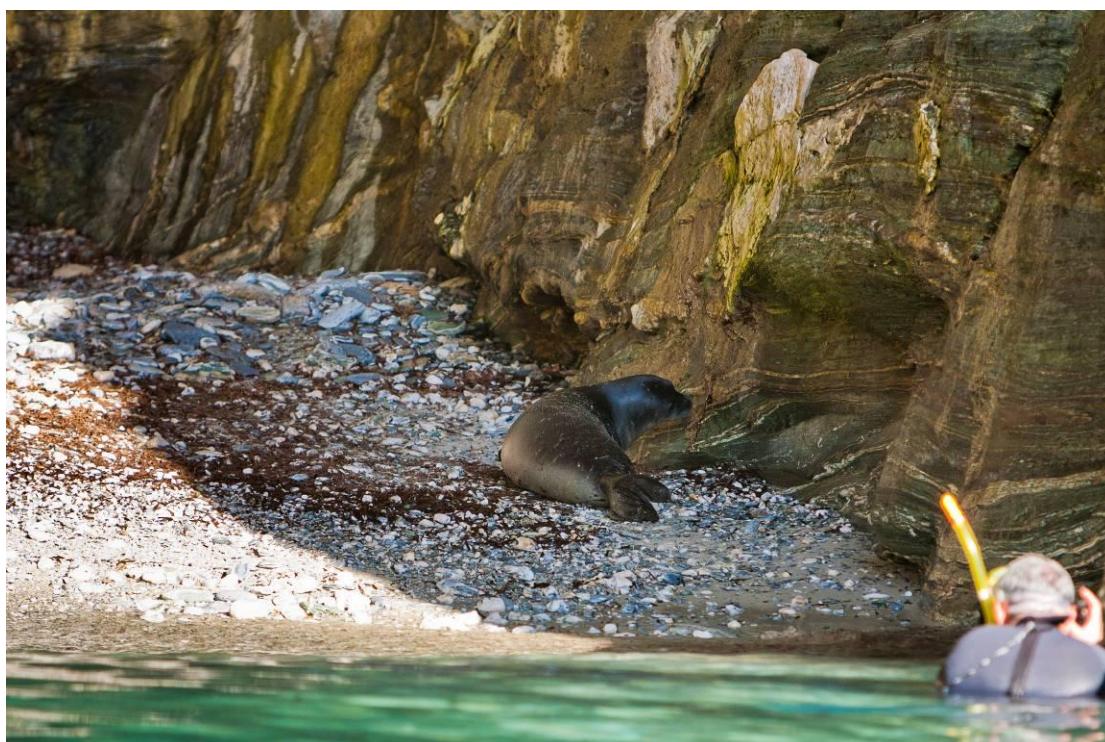
The Mediterranean monk seal (*Monachus monachus*) is the rarest extant member of the Phocidae family, classified by the IUCN as “Critically Endangered”. Once widely and continuously distributed in the Mediterranean and Black Seas, and in the north Atlantic waters from Morocco to Cap Blanc, including the Azores, the Canary and the Madeira Islands, the species is currently found only in the eastern Mediterranean, in Madeira and in Cabo Blanco. In the eastern Mediterranean the main stronghold of the Mediterranean monk seal is in Greece; one of the most important populations of the species has been identified at the island of Gyaros in the northern Cyclades. This report provides an overview of the main research findings of more than a decade of monitoring the species at the island of Gyaros by the MOm/Hellenic Society for the Study and Protection of the Monk seal.



Picture 1 Newborn pups at the island of Gyaros (© A. Karamanlidis/MOm)

METHODOLOGY

Studying monk seals has been based on standard monitoring methodology, including the operation of a Rescue and Information Network that provides information on monk seal presence, regular field surveys to evaluate habitat availability and suitability and record basic demographic parameters and the operation of a network of automatic cameras to identify individuals, record demographic parameters and study social and individual behaviour.

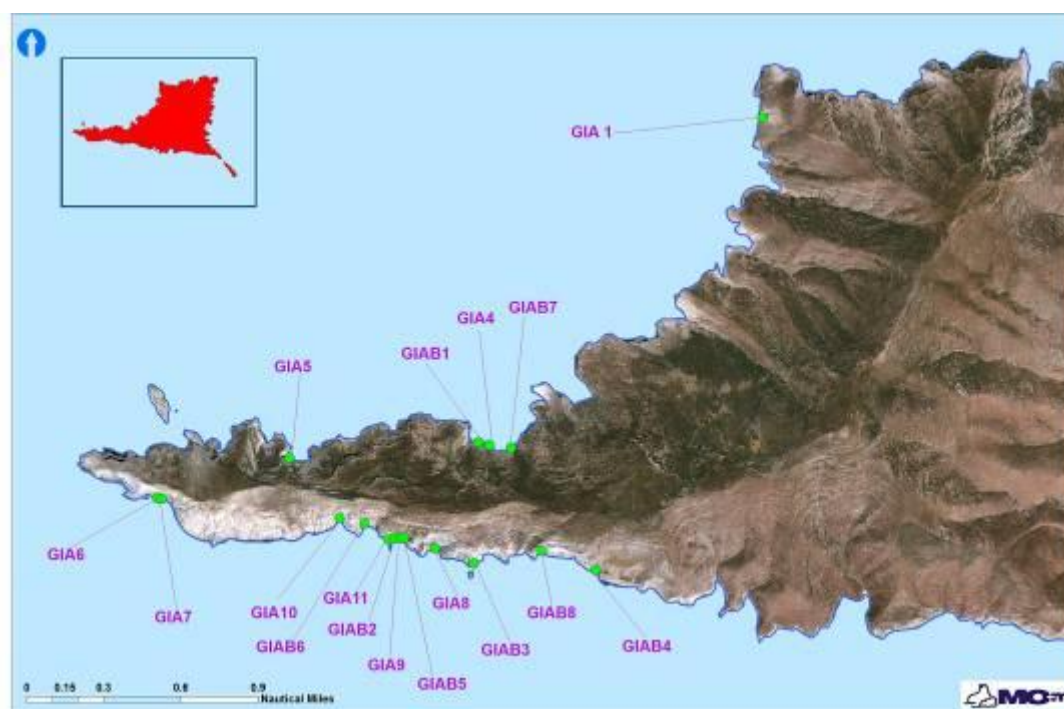


Picture 2. Recording the presence of a young monk seal at an open beach (© A.Karamanlidis/ MOm)

RESULTS

The main results obtained so far:

- Throughout the 37.05 km coastline of Gyaros nine suitable coastal caves have been identified. Two of the caves (GIA 4 and GIA10 –see map below-) are used by the seals on a yearly basis for breeding and nursing of the pups. In another seven caves regular use by the seals has been also recorded. In addition, on eight open beaches presence of hauling-out seals (nursing pups and/or resting) has been documented so far. The extensive use of open beaches by the monk seals in this area and especially by mothers with pups is considered as a unique for this species phenomenon worldwide.
- Most monk seal shelters at the island of Gyaros have entrances above water surface that lead through long entrance corridors to the main cave chamber, which includes one or more dry surfaces (internal beaches) for resting and/or pupping. The resting/pupping area is a beach consisting of sand and/or pebbles.



Map 1. Location of the terrestrial monk seal habitats at the island of Gyaros

- Terrestrial habitat use appears to be constant and intense throughout the year with a considerable increase during the pupping season. Seals have been observed using all parts of the beaches in the two main pupping caves at Gyaros; even during considerably bad sea conditions there usually is a dry part of the beach that provides refuge to the seals in the cave.
- From 2004 until the end of 2014 the birth of 72 monk seals was recorded. The mean annual pup production for the years 2011, 2012, 2013 and 2014, when systematic monitoring efforts were carried out, was 9.75. During this time only one pup was found dead within the first two months of its life. No adult monk seals have been found dead at the Island of Gyaros.

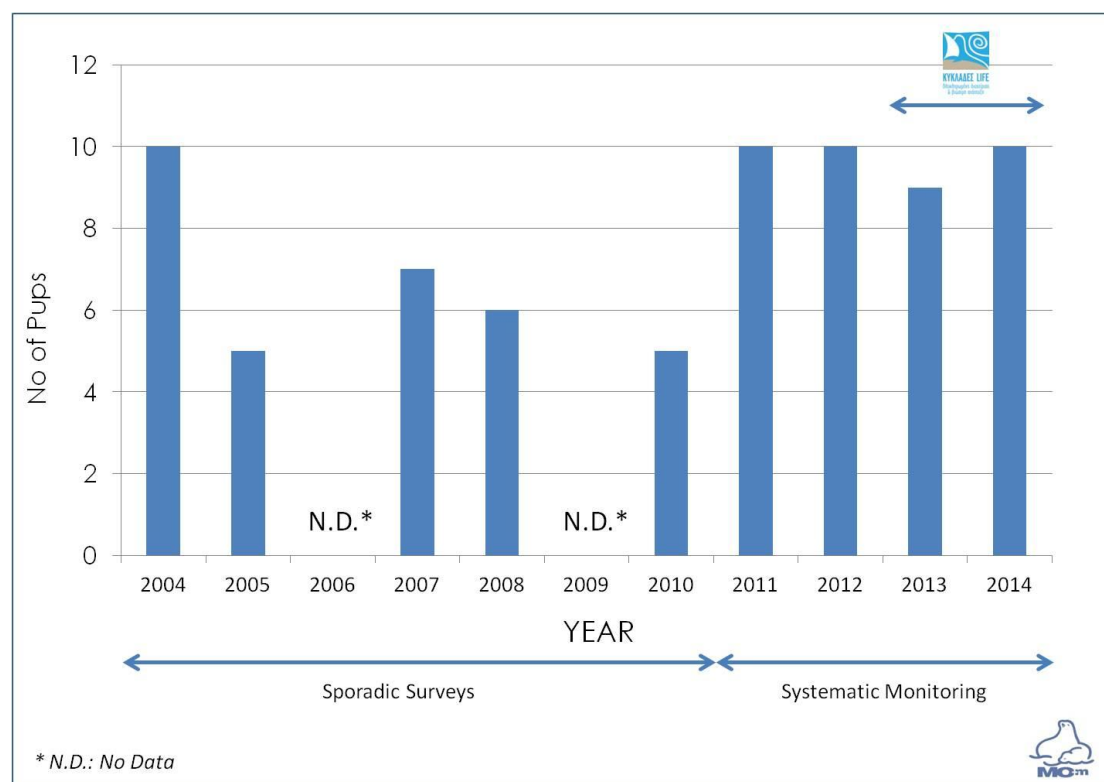
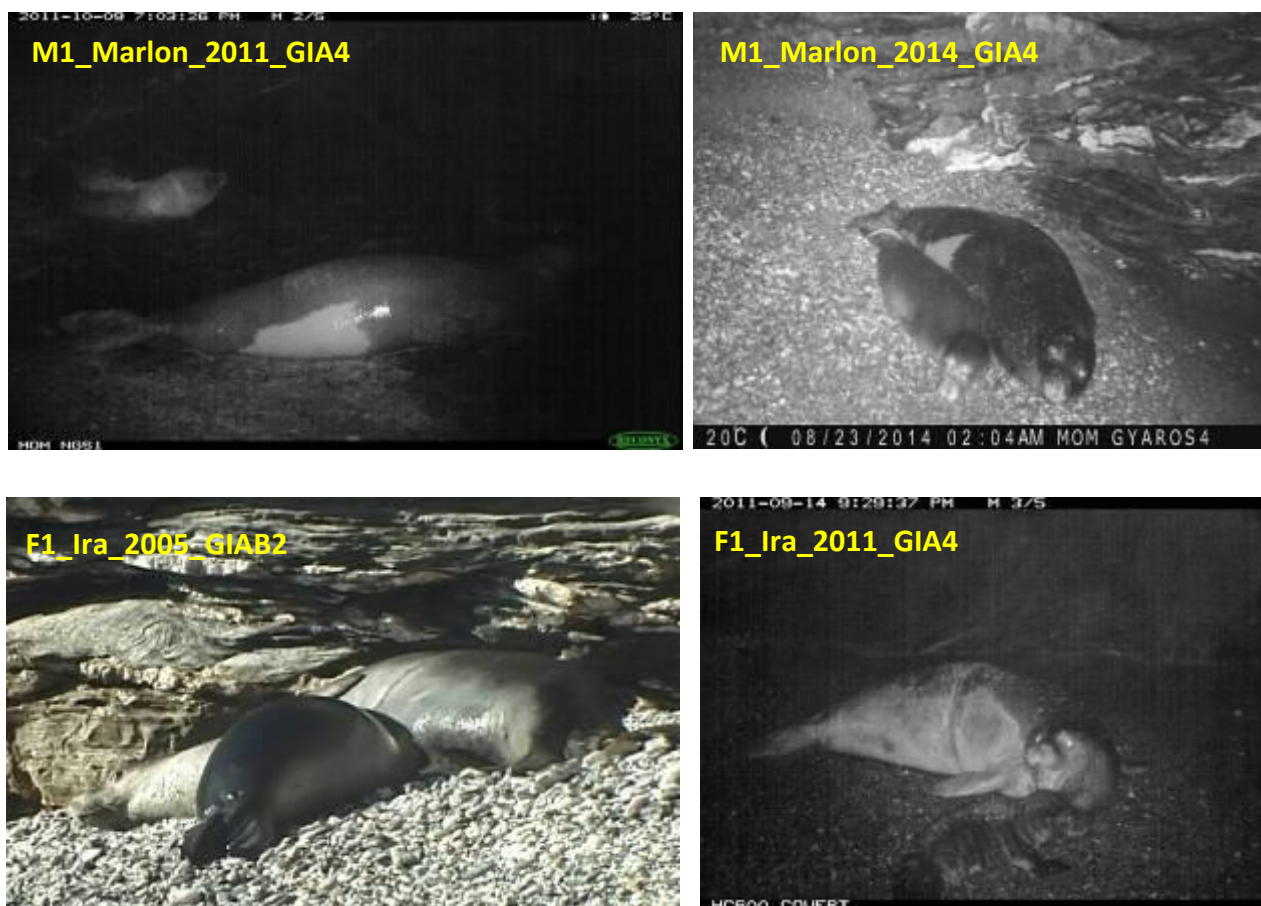


Figure 3 Annual pup production at Gyaros island

- Analysis of the audiovisual material collected so far (12068 photographs obtained from infrared cameras installed) has enabled the individual identification of 24 individuals [excluding newborn pups; i.e., 20 adult females, 4 adult males]. Based on the mean annual pup production value we estimate that approximately 65 - 70 non-pup individuals live at Gyaros.



Picture 4. Characteristic identification cards of 1 male and 1 female at the island of Gyaros

- In regard to the behaviour of the species, monk seals have been observed resting on seven open beaches at the western part of the island. On one particular occasion in November 2010 five seals were observed resting simultaneously on an open beach. Furthermore, fostering behaviour, aggressive interactions between adult females and the nursing activity of adult females have been recorded.

CONCLUSION

Following the thorough evaluation of the data collected so far we conclude that:

- Terrestrial habitat availability and quality for the Mediterranean monk seal at the island of Gyaros is similar to that of other important monk seal populations in the eastern Mediterranean, such as the Northern Sporades in the northern Aegean and Kimolos & Polyaigos, and Karpathos & Saria in the southern and southeastern Aegean, respectively. The two main pupping caves at Gyaros possess ideal morphological characteristics for pupping and cave GIA4 has had one of the highest number of pups ($n = 10$) ever recorded simultaneously in a cave in the eastern Mediterranean.
- The mean annual number of births ($n = 9.75$) recorded at the island of Gyaros is one of the highest recorded for the species in the Mediterranean Sea.
- The demographic structure and behaviour of the Mediterranean monk seal population at the island of Gyaros is similar to that observed at the monk seal population at Cabo Blanco and is indicative of a population with the typical demographic structure of a seal colony. This is the only known monk seal population so far in the eastern Mediterranean with this population structure.
- Resting, suckling and pupping on open beaches are behaviours which are indicative of low levels of human disturbance, never reported from the eastern Mediterranean within the past fifty years.

The present findings in respect to demographic structure, habitat availability, quality and density, annual pup productivity and, most importantly, the fact that the species uses in the area open beaches as pupping sites, show clearly that the island of Gyaros represents an area of outstanding importance for the survival of the Mediterranean monk seal.

However it should be noted that the increasing recognition of Gyaros as a unique place for the survival of the critically endangered Mediterranean monk



seal and its popularity among wildlife enthusiasts may result in increased levels of human disturbance for the species if no adequate protection measures are taken. It is of utmost importance that management and protection measures that will regulate human activity at the island of Gyaros are implemented as soon as possible.



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LIFE-Nature Project LIFE12 NAT/GR/000688

CYCLADES Life: Integrated monk seal conservation of Northern Cyclades

