

**“Who are our seals? Moving towards a standardised population estimate approach for *Monachus monachus*”**

**Workshop conducted within the framework of the European Cetacean Society Annual Conference [an event sponsored by RAC/SPA (Tunis) and Pelagos-Monaco (Principality of Monaco)]  
February 28th, 2009  
Istanbul, Turkey**

**Conclusions of the workshop presented within the framework of the conference**

The workshop was attended by 38 participants coming from 12 countries. Mediterranean monk seal scientists working in the following geographical areas: Atlantic Sahara, Madeira archipelago, Greece and Turkey presented a synthesis of their fieldwork involving population monitoring, and photo identification techniques applied to the Mediterranean monk seal. Daniel Cebrian, expert of UNEP-MAP RAC/SPA provided an overview on the situation in other Mediterranean countries where the populations are rarer. All presenters were invited to summarise the results of their oral contributions so as to publish them in a future issue of the *Monachus Guardian* so as to facilitate knowledge transfer to the wider public. This information will also be summarised in the RAC/SPA reporting to the Barcelona Convention Contracting Parties and will be used to stimulate the definition of forthcoming policy actions.

Very diverse, but on the other hand similar, methodological approaches emerged between and within the Atlantic and Mediterranean region due to diverse environmental scenarios that can be found throughout this species' range. Population estimates reported for the Atlantic Sahara population by two different working groups (Manel Gazo from Submon on behalf of the University of Barcelona and Pablo Fernandez de Larrinoa from CBD-Habitat) covering early and recent study periods and based on mark-recapture analysis of handheld photographic and videocamera images, indicated effective population monitoring of this colony. Most importantly, this monitoring was able to detect the reduction in number and age structure of the population following the 1997 mortality event and the colony's subsequent recovery.

The final workshop discussion approached the issue of the usefulness of questionnaires as a tool to first identify monk seal presence /absence and possibly distribution. Participants expressed the view that it is worth trying to exploit data from questionnaires, provided that there be a direct contact with the person providing the information and that corollary environmental data be collected as a control. Participants expressed concern over the need to overcome possible false-negative or false-positive responses that may be triggered for example by fear of future restrictions (i.e. fisheries) in the case of monk seal presence.

Monitoring changes in population level of a species that is widely distributed in low numbers was recognized as being a difficult problem in the Mediterranean sea. Lex Hiby from Conservation Research Ltd. suggested that repeated surveys of extensive coastline to record the proportion of caves showing fresh tracks/traces could be an efficient way of monitoring population changes provided that some artificial tracks were used to identify the caves that were likely to have been washed out since the last visit. Participants agreed that this method could be useful in monitoring changes in the trend of habitat use. However, Alexandros Karamanlidis suggested that, according to MoM's experience, it would be more efficient to concentrate available effort in monitoring only known breeding caves during the breeding season thereby estimating the population based on pupping counts. Cameratrapping / videocamera survey of selected breeding caves should, wherever possible, be used to relate the all-age population to the observed number of pups born. There was diffuse concern of whether exhaustive knowledge over the distribution of pupping caves and the timing of the breeding season would be available in all areas of the Mediterranean. An alternative

scenario proposed by Lex Hiby was population estimation by frequent relocation of camera traps leading to mark-recapture analysis. Many participants supported this alternative scenario.

Two participants specifically shared their working experience in the use of cameratraps but recognized that continuous improvement in camera technology may provide imminent useful alternatives for camera trap models. Based on present experience, the MoM expert found the use of camera traps equipped with an infrared flash most useful for the purpose of photoidentification. General advice given on the use of this camera trap type is to: mask the infrared flash surface with a water-soluble marker so as to reduce the visible component of the flash and thereby decrease the possible disturbance to the seals, set the camera to multiple exposure (times 3) and a short time delay (1 minute) between successive detections. Ali Cemal Gucu from METU found the use of an alternative camera trap type equipped with visible flash most suitable for photoidentification since it provides high quality picture rendering thereby facilitating scar pattern identification. General advice given on the use of this camera trap type is to: set the interval between successive detections at 30 minutes in order to minimise disturbance, orient the angle of view so as to encompass either only the haul-out area or the water surface, use low sensitivity setting when the camera is oriented towards the haul out areas to avoid detection of other cave fauna (bats, etc.) and medium sensitivity when the camera is oriented at the water surface so as to detect seals in the water.

Discussion took place on the usefulness of exchanging data and setting up a unique and regional photoidentification catalogue to better understand animal movements. Some participants agreed to the need of such a tool for the Mediterranean sea but MoM expressed disagreement at the time being for such a tool. Concern was expressed over the need to ensure that sufficient management resources and long-term commitment be allocated to the running of such a proposed scheme. Some participants requested that existing catalogues be made easily available immediately within the scientific community. Some participants expressed interest over the use of automated image matching software but general consensus was reached that it is currently not required as manual matching of images is effective.

Workshop co-organisers: A.C. Gucu, G. Mo  
March, 2 2009

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**European Society Annual Conference  
February 28th, 2009  
Istanbul, Turkey**

**9:30-17:00  
Askeri Müze  
Fevzi Çakmak Hall  
Harbiye- Şişli / İSTANBUL**

## **AGENDA**

### **Introduction - Framework aspects of investigations:**

- “RAC/SPA support to Monk seal population assessments in the Mediterranean: Estimates versus census. Where is the balance needed for conservation purposes?” (Daniel Cebrian, UNEP/ MAP - RAC/SPA, Tunisia)
- “Species monitoring foreseen by the European Community Habitats Directive 92/43. Implications for EC Member States and countries who will accede to the EC treaty in the near future”. (Giulia Mo, Leonardo Tunesi, Sabrina Agnesi, ISPRA, Italy)
- "Monitoring Mediterranean monk seals, a population widely dispersed at low densities?" (Lex Hiby , Conservation Research Ltd., UK)

### **COFFEE BREAK**

### **Constructing photoidentification catalogues / population assessments:**

- Themes covered: The Atlantic Sahara Case study, period 1995-2000 (Manel Gazo, Submon, Spain)
- Themes covered: The Atlantic Sahara Case study, period 2000- present (Pablo Fernandez de Larrinoa, Fondacion CBD Habitat, Spain)
- Monk seal photo-identification in Madeira (Rosa Pires, National Park Service, Portugal)
- Themes covered: The Ionian Greek experience (Aliko Panou, Archipelagos, Greece)

### **LUNCH BREAK (13:00-14:00)**

### **Tricks and trades of photo-trap use: experiences, advice and drawbacks for various methodologies:**

- “20 years of monitoring populations of Mediterranean monk seals in Greece” (Alexandros Karamanlidis, MOM, Greece)
- Lessons learnt; photo-trapping experience on the south coast of Turkey (Ali Cemal Gucu METU-IMS, Turkey)

### **COFFEE BREAK**

Discussion and elaboration of an advised strategy for monitoring populations  
All participants

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