The Monachus Guardian
monachus / schauinslandi / tropicalis

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Cover Story: One talking fish with a whale of a tale

In Focus: 50 years on, a return to Mallorca

Research: Cave cries, or the Song of the Sirens?

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Guest Editorial

Vol. 11 (2): November 2008

Recovering the Balearic Islands for the Monk Seal

by Miquel À. Grimalt i Vert

April 2008 marked the fiftieth anniversary of the shooting, on the north coast of Majorca, of the last Mediterranean monk seal in the Balearic Islands. Nevertheless, despite this extinction at a local level, the environmental administration of the Balearics has maintained a constant attention towards the species: educational publications (some of which have been translated and adapted to other countries of the Mediterranean), audiovisual productions, support of conservation initiatives in other countries, a feasibility study for a future local recovery of the species, and so on.

Last year we edited an attractive multilingual book on the monk seal (available for download from The Monachus Guardian, PDF 6.1MB), and very soon, in collaboration with Fundació Caixa de Catalunya, we will launch an itinerant exhibition on this species visiting the main harbours along the coast of our Archipelago. A notable momentum has been obtained in favour of the species, and even the professional fishermen's organisations have voted in favour of the plans prepared for restoring the presence of the monk seal along our coasts.

We are aware that our efforts in favour of this emblematic species are a contribution, among many others, to fulfil the conservation objectives for the species and also to do our bit to reach the best possible environmental standards for the Mediterranean: the monk seal is not only intrinsically important, but is also a powerful flagship species for coastal and marine ecosystems.

The efforts of the Balearic Government to protect the surrounding sea are visible in 49.600 ha of marine reserves (more than 18% of the waters under the jurisdiction of the Balearic Islands Government), a national marine/terrestrial park, several nature reserves that include marine zones, and 106.000 ha of marine areas included in the Natura 2000 network. We are proud of being the Mediterranean region with the most extensive legal framework and unrivalled infrastructures to protect the marine environment.

We believe, therefore, that the moment has come to take one more step, and to offer our island coasts and our society to the international community to promote the recovery of the species in the Western Mediterranean. Our islands lie at a key point that would allow contact between the main surviving populations of *Monachus*

monachus (the Aegean Sea and the Atlantic Ocean), and overcome the geographical barrier that separates them. It was for that reason we promoted, in the recent IUCN World Congress, a motion in favour of the species. This motion [see IUCN resolution calls for monk seal action, this issue] has, for the first time, resulted in the IUCN General Assembly making a specific formal resolution in favour of the Mediterranean monk seal.

But by far the best news is that, for several months, an adult monk seal has been living along the west coast of Majorca. The animal has spent the entire summer living in intensely touristic surroundings, and yet has shown that the Majorcan environment is compatible with his presence. It seems that the species has reappeared here as support and encouragement for the conservation initiatives of the Balearic islanders.

We promise we will try not to disappoint our guest and eagerly await his decision to stay forever!

Miquel À. Grimalt i Vert
Minister of the Environment
Government of the Balearic Islands

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International News

Vol. 11 (2): November 2008

International Alliance takes shape in Madeira

Although a long time in the making, the beginnings of an international monk seal conservation alliance assumed form and substance in Madeira in November 2008. Recognising a long-standing need for broader cooperation between organisations involved in the study and conservation of *Monachus monachus*, the founding members of the Alliance met to formalise their association through a unanimously endorsed memorandum of understanding, setting down the rules and principles governing their collaboration.

Founding members of the International Monk Seal Conservation Alliance (or ***i-Monk Alliance*** as it is to be known in short) are CBD-Habitat (Fundación para la Conservación de la Biodiversidad y su Hábitat) of Spain, IFAW (International Fund for Animal Welfare), MOm (The Hellenic Society for the Study and Protection of the Monk Seal) of Greece, The Monachus Guardian (an international journal and website dedicated to monk seals), the Parque Natural da Madeira of Portugal and SAD-AFAG (Underwater Research Society / Mediterranean Seal Research Group) of Turkey – all of which have been working on monk seal conservation and research issues across the species' range.

The ***i-monk Alliance*** aims to develop and implement joint, collaborative actions, where warranted and agreed by its constituent members; document the joint efforts of its member organizations; disseminate information; raise awareness; promote marine conservation, and facilitate the recovery of the Mediterranean monk seal throughout its current and historical range.

Founding members have committed themselves to pursue the Objectives of the Alliance, which are:

1. To enhance collaboration between bodies involved in the conservation and research of the species and its habitats, to promote the free-flow of relevant

information between all involved parties, and to further develop capacity-building in conservation and research throughout the species' range;

2. To develop common strategies and policies, and to work collaboratively on critical issues affecting the conservation of the species and its habitats across its range;
3. To promote and/or to contribute to the establishment and effective management of protected areas across the species' range so as to ensure the long-term conservation of key populations and habitats, respecting in parallel the need for the ecologically-sustainable development of human communities living within them;
4. To encourage relevant stakeholders and the public of the need for concerted international action on the conservation of the species and its habitat;
5. To share the Alliance members' know-how and experience, individually or as a group, with third parties, which are or wish to become involved in the conservation of the species.

The ***i-monk Alliance*** is now developing a plan of concerted actions for the immediate future. It is also hoped that other prospective members, whose work meets the founding principles and operating criteria of the Alliance, will consider applying for membership in due course. 'Observer' status may also be considered for organisations or individuals wishing to attend specific meetings or working group sessions, but which may not necessarily be applicable for full membership.

For further information, please contact the current ***i-monk Alliance*** Secretariat: MOm / The Hellenic Society for the Study and Protection of the Monk Seal, Athens, Greece. The full text of the announcement can be downloaded from the Monk Seal Library (see below).

i-Monk Alliance. 2008. International Monk Seal Conservation Alliance. Announcement on the establishment of the i-Monk Alliance Funchal, Madeira, 9 November 2008: 1-2. [PDF 127KB]

The case for Open Access

The Monachus Guardian notes with appreciation that increasing numbers of scientific research papers on monk seals are being published as 'Open Access'. In other words, that research of possible fundamental importance to the conservation of these critically-endangered species, or capable of encouraging wider public interest in their fate, is being offered free of charge for download, rather than as restricted 'payment-only' access, the policy of most journals.

Several 'Open Access' papers are listed in this issue's Recent Publications section, and are available for download, including research into Hawaiian monk seal mortality, and studies on the Mediterranean monk seal in history and culture.

While some journals are allowing open access to selected papers, many others remain closed, except to those with access to a university library subscription or a credit card.

A search of the Internet can sometimes reveal how preposterous this policy can be. Elsevier's Science Direct, for example, offers a 1981 Biological Conservation paper – cogently predicting the Mediterranean monk seal's extinction by the year 2000 – at $31.50. Fetching the same price is a 2-page summary of the landmark First International Conference on the Mediterranean Monk Seal, in Rhodes, Greece in 1978 (the fact-filled proceedings, by contrast, ran to 183 pages).

More disturbing, however, is that contemporary research papers are also being sold at the same inflated prices. That may be acceptable to some universities and institutes, but will only serve to reinforce the already prevalent view that monk seal science is somehow a closed world, of no great interest or significance to the general public. – TMG.

Monk seal histories republished as open access ebooks

Thanks to Leiden publisher Backhuys and the Netherlands Commission for International Nature Protection, TMG is pleased to announce that two landmark studies on the Mediterranean monk seal in human history and culture are being made available for PDF Open Access download.

> **Johnson, William M. and David M. Lavigne.** 1999. Monk seals in antiquity. The Mediterranean monk seal (*Monachus monachus*) in ancient history and literature. Mededelingen 35. The Netherlands Commission for International Nature Protection, Leiden: 1-101., 17 figs. [PDF 1.6MB]
>
> **Johnson, William M.** 2004. Monk seals in post-classical history. The role of the Mediterranean monk seal (*Monachus monachus*) in European history and culture, from the fall of Rome to the 20th century. Mededelingen 39. Netherlands Commission for International Nature Protection, Leiden: 1-91, 31 figs. [PDF 2.0 MB]

To mark the occasion, we are also publishing in this issue an overview of humanity's historical relationship with *Monachus monachus*, 'One Talking Fish With A Whale Of A Tale', commissioned by the Czech Ministry of Environment for the forthcoming anthology 'Of Animals and Men'.

In Caribbean monk seal's extinction, lessons for the Hawaiian

The NOAA/NMFS announcement earlier this year [see So many seals, so little time: The rapid extinction of the Caribbean monk seal, TMG 11(1): June 2008] formally recognising the extinction of the *Monachus tropicalis* by the US authorities, generated an unexpected wave of press and media coverage, particularly in North America.

The NMFS press release accompanying the announcement found its way into numerous local and national newspapers and magazines, onto Internet news sites, television and radio.

While the US media readily picked up on the significance of the Caribbean monk seal's extinction to the dwindling fortunes of the Hawaiian monk seal, the same, unfortunately, could not be said for the media across the Pond, and the Mediterranean monk seal.

In fact, to large bodies of the European media even the tragic passing of the Caribbean monk seal itself slipped by virtually unnoticed.

Further information

NOAA. 2008. NOAA confirms Caribbean monk seal extinct; other monk seal populations struggling. News Release, 6 June 2008.

MP questions European Commission on action against extinction

The formal announcement by the US authorities of the Caribbean monk seal's extinction did, however, appear in political circles on this side of the Atlantic, with one Greek MEP submitting a written question to the European Commission over the fate of Europe's own monk seal, *Monachus monachus*.

Highlighting the extinction announcement, MEP Margaritis Schinas requested a Commission response to the following question:

> In view of the direct link between the sustainability of marine ecosystems and the abundance of marine species, will the Commission say what measures it has taken, and what measures it will take in the future, to protect the Mediterranean monk seal vigorously and effectively?

Replying on behalf of the Commission, Environment Commissioner Stavros Dimas underlined a range of international and community-wide legislation aimed at protecting endangered species, including the Mediterranean monk seal.

The Commissioner went on to state that: "In Greece, the efforts to conserve the monk seal have led to the establishment of a strictly protected National Marine Park, 72 Special Areas of Conservation (SACs), a National Action Plan and the establishment of management bodies for two of the monk seal's most frequented areas."

To those who are as baffled as we are, we can only respond with the following, alternative answer:

(1) The National Marine Park of Alonissos, Northern Sporades remains in management crisis, with little public support and frequent violations of the monk seal core zone.
(2) Of the 72 so-called Special Areas of Conservation referred to, virtually all are purely theoretical at present, with no practical protection or management measures in force.
(3) Of the two Natura 2000 sites generally cited as potential monk seal reserves with proven breeding populations (Kimolos-Polyaigos in the Cyclades, N. Karpathos in the Eastern Aegean), only the latter possesses any management plan or infrastructure.

Further information

European Parliament. 2008. Parliamentary questions, 19 June 2008. Written Question by Margaritis Schinas (PPE-DE) to the Commission. Subject: Protection of the Mediterranean monk seal, E-3519/08.

European Parliament. 2008. Parliamentary questions, 2 September 2008. Answer given by Mr Dimas on behalf of the Commission, E-3519/2008.

IUCN resolution calls for monk seal action

The IUCN World Conservation Congress, held in Barcelona, Spain, on 5-14 October 2008, has approved a motion calling on all Mediterranean countries to "maintain and increase their efforts to aid the recovery" of the Mediterranean monk seal, *Monachus monachus*.

The motion, sponsored in part by the Government of the Balearic Islands, also calls for the following specific measures to be undertaken by IUCN member states:

> Extending the network of marine protected areas and improving their management, in accordance with the Protocol on Specially Protected Areas and Biodiversity in the Mediterranean of the Barcelona Convention.
>
> Regional strategies that would enable existing or recently extinct populations to recover, so that "genetic flow between the Atlantic and Aegean populations can be re-established".

The motion also calls upon the IUCN Director General to:

> "Stimulate and facilitate collaborative Monk Seal conservation projects among IUCN's Mediterranean members with the assistance of the Pinniped Specialist Group of the Species Survival Commission."

The Barcelona Congress, according to IUCN, attracted some "8,000 of the world's leading decision makers in sustainable development: from governments, NGOs, business, the UN and academia; together in one place for 10 days: to debate, share, network, learn, commit, vote and decide. The objective: ideas, action and solutions for a diverse and sustainable world."

The current Chair of the Pinniped Specialist Group (PSG), Kit Kovacs, told TMG: "Mediterranean monk seals are obviously a long-standing issue. I think that the PSG will be helpful in 'progressing' conservation action with this species. We will meet in December to prepare action plans and talk about how monk seal issues can be worked on constructively."

TMG will report on further developments as and when they happen.

The final version of the resolution is expected to be released by IUCN in early 2009.

Further information

IUCN. 2008. Motions. IUCN World Conservation Congress, Barcelona, 5–14 October 2008. [Conservation and recovery of the Mediterranean Monk Seal. A motion for a resolution on the Mediterranean monk seal, CGR4.MOT029: 44-46.] [PDF 1.5 MB]

IUCN SSC. IUCN Species Survival Commission Specialist Groups.

Obituary

David Ernest Sergeant, a prominent figure in Mediterranean monk seal research and conservation in the 1970s-1980s, passed away peacefully at Victoria Hospital in Montreal, Canada on 30 June 2008.

David Sergeant was born in 1927 in Hangzhou, China, the son of a medical missionary. He obtained a Ph.D. degree in Zoology at Corpus Christi College, Cambridge, England. In 1951, he began his career in Canadian east coast fisheries research, studying beluga whales and harp seals.

In the late 1970s, together with Keith Ronald, Jean Boulva, and Fikret Berkes, he became a central player in Mediterranean monk seal research and conservation, travelling widely in Greece and Turkey, encouraging budding local groups to take up the cause of the species, and also playing a key role in the first and second international conferences on the monk seal, held in 1979 and 1984 respectively, in

Rhodes, Greece and La Rochelle, France.

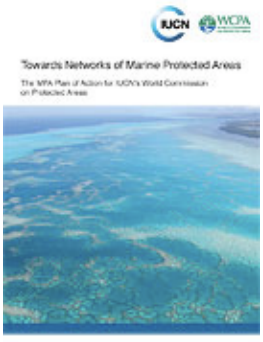
Excerpted and adapted from the Montreal Gazette, 5 July 2008, reproduced in the NatureNB archives.

Publications Watch

We take the opportunity of alerting our readers to the following publications on protected area management, marine biodiversity and broader conservation issues.

National Research Council. 2008. Tackling Marine Debris in the 21st Century. Committee on the Effectiveness of International and National Measures to Prevent and Reduce Marine Debris and Its Impacts, National Research Council: 1-224. [PDF Summary]

> "Marine debris from ships and other ocean-based sources – including trash and lost fishing gear – contributes to the spoiling of beaches, fouling of surface waters and the seafloor, and harm to marine animals, among other effects. Unfortunately, international conventions and domestic laws intended to control marine debris have not been successful, in part because the laws, as written, provide little incentive to change behavior. This report identifies ways to reduce waste, improve waste disposal at ports, and strengthen the regulatory framework toward a goal of zero waste discharge into the marine environment. Progress will depend on a commitment to sustained funding and appropriate institutional support. [...]
>
> Humans once viewed the ocean as limitless, believing that disposal of waste from vessels would do little harm. However, awareness of the impacts of marine debris has grown. The public image of the problem has often centered on horrific images of seabirds, turtles, and marine mammals, dead and dying as a result of ingesting or becoming entangled in debris. It is hard to quantify these impacts, but some have conservation and legal implications. For example, entanglement of Hawaiian monk seals, the most endangered seal in the United States, is arguably the most significant impediment to that species' recovery. Littered beaches and surface waters impair recreational activities and reduce tourism, among other socioeconomic effects."



Laffoley, D. d'A. (ed.). 2008. Towards networks of marine protected areas. The MPA Plan of Action for IUCN's World Commission on Protected Areas. IUCN WCPA, Gland, Switzerland: 1-28. [PDF 1.8 MB]

> Launched at IUCN's World Conservation Congress in Barcelona, this publication, published by the World Conservation Union and the World Commission on Protected Areas, outlines the plan to expand the number, scope and effectiveness of marine sanctuaries.
>
> "Significant progress is now needed in order to conserve marine biological diversity and productivity. This is to maintain but increasingly recover ecosystem structure, function and processes in order to support the necessary economic and social values and uses of nations and regions, and deliver sustainable development. This Plan of Action is a key part of that process."

IUCN World Commission on Protected Areas (IUCN-WCPA). 2008. Establishing marine protected area networks – making it happen. Washington, D.C.: IUCN-WCPA, National Oceanic and Atmospheric Administration and The Nature Conservancy: 1-118.

Also launched at IUCN's World Conservation Congress in Barcelona, this publication emphasizes the practical challenges and hurdles in establishing effective and well-managed marine protected areas.

"Five main elements compose this guide for management application:

1. Essential information on the role of MPAs and the value of scaling up to networks.
2. The importance of understanding the social, economic and political context and the need for broader marine and coastal management frameworks.
3. Emerging best practices for planning and implementing MPA networks.
4. A comprehensive summary of the best available scientific information on 5 ecological guiding principles in relation to MPA network design.
5. Case studies from the field that demonstrate methods used to design and implement both scientifically rigorous and functional MPA networks."

EndQuote

MPA Crystal Ball Gazing

Hugh Possingham [...] director of the Spatial Ecology Lab at the University of Queensland, Australia:

In ten years' time, all MPA planning and management will be done using decision support tools. The ad hoc planning and management of huge natural assets will be seen as inappropriate – as ridiculous as running an engineering firm without modeling and economic software. Some of the more enlightened marine reserve networks will have public and auditable biodiversity accounts that inform us transparently and credibly about their state. These accounts will be derived from cost-effective long-term monitoring regimes. Monitoring with no apparent purpose will be a thing of the past.

Once we have professional and expert management and accounting for marine reserves then international companies and governments will begin to invest in these natural assets by buying auditable outcomes. For example, countries or agencies that can deliver transparent and credible data that show they are maintaining or restoring biodiversity in their marine ecosystems will be rewarded and become prosperous. The bottom line: MPA management will become a fully accountable and professional enterprise that rewards performance based on outcomes. These professionals will be as highly trained as engineers and be continually retrained.

Source: What will MPA planning and management be like in 10 years?: MPA practitioners forecast the future, MPA News Vol. 10, No. 3 (September 2008).

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Hawaiian News
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Monk seal may gain 'Critical Habitat' on main Hawaiian Islands

In response to a petition filed by three environmental groups, the federal government has announced its intention to consider designating additional critical habitat for the Hawaiian monk seal. The petition, filed by the Center for Biological Diversity, KAHEA: The Hawaiian-Environmental Alliance, and Ocean Conservancy, seeks to have beaches and surrounding waters on the main Hawaiian Islands and additional areas in the Northwestern Hawaiian Islands protected as critical habitat under the Endangered Species Act.

Input – particularly from the science community – is currently being sought, and will be accepted until 2 December. Of particular interest is information on monk seal habitat needs. Through the process initiated by the petition, the Endangered Species Act requires that the government launch a detailed review on the habitat needs of the monk seal and, if warranted, propose a new critical habitat designation by the summer of 2009.

The monk seal currently has critical habitat designated only in parts of the Northwestern Hawaiian Islands (NWHI), a chain of small islands and atolls northwest of the main islands. In that northwestern area, monk seals are dying of starvation and populations of monk seals are plummeting. Seal pups have only about a one-in-five chance of surviving to adulthood. Other threats include becoming entangled and drowning in abandoned fishing gear, shark predation, and disease.

In contrast, monk seals in the main Hawaiian Islands are thriving and giving birth to healthy pups. Hawaiian monk seals are present on each of the main islands, and their numbers are steadily increasing. Thus, the main islands are becoming important habitat for the monk seals.

"This government finding that it will consider designating critical habitat for monk seals in the main Hawaiian Islands marks an important step toward preventing the extinction of the Hawaiian monk seal," said Miyoko Sakashita, a staff attorney with the Center for Biological Diversity and author of the petition. "Habitat in the main Hawaiian Islands is essential for the survival of the imperilled monk seals."

Habitat in the main islands will also provide a refuge for monk seals as sea-level rise floods the low-lying Northwestern Hawaiian Islands. Global warming is an overarching threat to the Hawaiian monk seal and its habitat. Already, important beaches where seal pups are born and raised have been lost due to sea-level rise and erosion.

“We have already seen the extinction of the Caribbean monk seal – a relative of the Hawaiian monk seal. The threat is real and we must act now,” said Vicki Cornish, vice president of marine wildlife conservation at Ocean Conservancy. “We are greatly encouraged by this consideration to extend critical habitat designation in the main Hawaiian Islands. It is a necessary step in making sure Hawaiian monk seals do not suffer the same fate as their relatives.”

Critical habitat designation will mean greater protection of Hawaiian monk seal habitat under the Endangered Species Act. Once designated, any federal activities that may affect the critical habitat must undergo review to ensure that those activities do not harm the Hawaiian monk seal or its habitat.

In passing the Endangered Species Act, Congress emphasized the importance of critical habitat, stating that “the ultimate effectiveness of the Endangered Species Act will depend on the designation of critical habitat.” Recent studies have shown that species with critical habitat are twice as likely to recover as species without it.

“What happens in the coming few years will determine the survival of this species,” according to Marti Townsend, Program Director of KAHEA: “We cannot afford the extinction of a creature so sacred in Hawaiian culture and endemic to these islands. And we cannot expect to save this species without engaging in the hard task of meaningfully protecting habitat.” – KAHEA.

Meanwhile, NOAA Fisheries (Pacific Islands Regional Office) states on its website:

‘In July of 2008, the NOAA Fisheries Service (also known as the National Marine Fisheries Service) recieved a petition by three conservation groups to review and establish revised ‘critical habitat’ for the Hawaiian monk seal. Certain areas are given this designation because they are considered necessary for the survival and the recovery of a species. The Endangered Species Act (ESA) in turn prohibits any changes or ‘destruction or adverse modification’ by Federal activities (those that are federally funded or permitted) to these areas that will diminish its value as important habitat for the survival and recovery of the species. It is important to note that critical habitat designation does not turn an area into a reserve, refuge, Marine Protected Area (MPA) or a park. Public access and usage in areas that are designated as critical habitat are NOT affected.

Currently the details and recommendations of the critical habitat petition are being evaluated. The public will have a chance to comment on any critical habitat proposal that may be developed. Any potential critical habitat designation project would take at least a year or more to complete.’

Further information

Center for Biological Diversity / KAHEA / Ocean Conservancy. 2008. Petition to revise critical habitat for the Hawaiian monk seal (*Monachus schauinslandi*) under the Endangered Species Act, 2 July 2008: 1-46. [PDF 1.2 MB]

Center for Biological Diversity. 2008. Critical habitat protection sought for Hawaiian monk seal. Petition seeks habitat on main Hawaiian Islands for endangered seals seeking refuge from sea-level rise. News Release, 2 July 2008.

NOAA. Critical Habitat. What it is; what it is not; how it will affect you.

Orphan in rehab

As readers will note from the Press Watch section below, an orphaned, three-day old Hawaiian monk seal was taken into care in May on the Main Hawaiian Island of Kauai, following his mother's rejection.

Attempts to reunite mother and pup failed, leaving the NOAA rescue team to airlift the male neonate to the Kewalo Research Facility on Oahu on a Coast Guard C-130. NOAA staff were later joined by experts from the Marine Mammal Center, an NGO experienced in rehabilitations, and a former partner of NOAA in the Hawaiian monk seal 'Captive Care' programme [Captive care lends seals a headstart, TMG 10(1): 2007].


Photo: NOAA

Despite initial concerns that the pup's survival might be touch-and-go, with rehab specialists voicing concern that this was the youngest captive Hawaiian monk seal ever to undergo treatment, the orphan gradually began to gain weight, from 14.7 kg a day after its arrival at Kewalo to 24.9 kg on 16 June.

Code-named KP2, the pup's envisaged release date was described as 'indefinite', with NOAA staff admitting that the animal would have to weigh in at an optimum 68-79 kg before such a move could be contemplated.

It appears rehab staff, dissatisfied with meagre weight gains in the pup initially, supplemented its diluted milk formula diet with food of a higher calorific value, before moving on to solid fish.

"The population of Hawaiian monk seals has dwindled to 1,100 and continues to decline at around 4% each year," said Dr. Frances Gulland, Director of Veterinary Science at The Marine Mammal Center. "Every effort we can put forth in helping this young pup and others like him to survive can make a difference in helping the entire species continue to thrive in the wild."

NOAA's press spokesperson, Wende Goo, told TMG that "KP2 continues to grow and make progress toward a release back to the wild at the earliest opportunity – no date has been determined at this time. He appears to be enjoying his shore pen, swims throughout the day, is eating well, and is bright and active."

At the time of writing, no information was available from the Marine Mammal Center or responsible NOAA officials regarding the pup's specific feeding regime or veterinary treatment. Realising the potential benefits of shared monk seal rehabilitation experiences from the Mediterranean, Atlantic and Hawaii, we hope that such information will eventually find its way into print.

Further information

NOAA. KP2 progress page, NOAA, Pacific Islands Fisheries Science Center.

NOAA. 2008. Newborn monk seal pup abandoned on Kauai – Pup brought into captive care rehabilitation. News Release, 3 May 2008: 1-2 [PDF 28 KB].

Marine Mammal Center. 2008. The Marine Mammal Center aids abandoned Hawaiian monk seal pup. News Release, 9 May 2008: 1. [PDF 76 KB]

Inbreeding doubtful cause of population decline

Recently-published research in the Journal of Heredity has confirmed that the Hawaiian monk seal exhibits an "extreme paucity of genetic diversity" — the apparent legacy of its encounter with humans in the 19th century, when the species was hunted almost to extinction. Analysing samples from 2409 Hawaiian monk seals researchers found, however, that there is scant evidence for current inbreeding within the population. Pointing out that minimal genetic variation did not prevent a partial recovery up until the 1950s, the authors conclude that the condition is unlikely to be a causative factor in the continuing decline of the species, currently numbered at less than 1,200 individuals, and declining by some 4% per year.

An abstract is available free online; the full text is available via paid access only.

Further information

Schultz, J.K., J.D. Baker, R.J. Toonen and B.W. Bowen. 2008. Extremely low genetic diversity in the endangered Hawaiian monk seal (*Monachus schauinslandi*). Journal of Heredity Advance Access published online on September 23, 2008.

Marine Mammal Commission. 2008. The biological viability of the most endangered marine mammals and the cost-effectiveness of protection programs. The Marine Mammal Commission's Report to Congress, February 2008: 1-448. [PDF 5.5MB]

New threats seen in management flaws

The proposed 15-year management plan for the Papahānaumokuākea Marine Monument continues to draw fire, with environmental and cultural organisations charging that envisaged restrictions within the sanctuary are being diluted. In a review of the current draft management plan, KAHEA: the Hawaiian Environmental Alliance, the Sierra Club and the Ilioulaokalani Coalition (a grouping also known as the NWHI hui), charge that the 'precautionary principle' that should guide human activities and conservation within the Monument is increasingly being abandoned in favour of various economic and military activities.

"This plan was to be the golden opportunity to look at full conservation of a fragile coral reef ecosystem and perpetuation of our unique Hawaiian culture," said Marti Townsend, Program Director for KAHEA. "Instead, we see over a quarter of a billion dollars in public money going to open this place up for increased tourism, research, and military use, with little dedicated to reducing the impact of human activity there. For example, over 50% of the proposed budget is for government operations and scientific research, while a mere 12% goes to reducing existing threats, like clean up of marine debris and legacy military contamination."

According to NWHI hui's analysis, the current draft management plan, issued by the Department of Commerce, Department of Interior and the State of Hawaii, fails to limit or mitigate the U.S Navy's plans to expand military exercises in the Monument, and includes proposals to increase extractive research, ecotourism, and vessel traffic among the area's fragile atolls.

KAHEA states that exercises proposed by the Navy include "ballistic missile tests over the Monument, chemical dumping in the Monument, experiments with hypersonic weapons and vehicles near the Monument, use of high-intensity active sonar, and massive releases of marine debris."

The “Monument co-trustees,” it continues, “have incorrectly stated that military activities are beyond their jurisdiction.”

NOAA Fisheries initiated a public comment procedure in June, seeking reactions to its proposed measures to protect marine mammals around Hawaii as the Navy conducts sonar exercises.

In a June 2008 press release, NOAA stated: “NOAA’s Fisheries Service does not expect the exercises to result in serious injury or death to marine mammals, and is proposing the Navy use mitigation measures to avoid injury or death. However, exposure to sonar in certain circumstances has been associated with the stranding of some marine mammals, and some injury or death may occur despite the best efforts of the Navy. The draft authorization allows for incidental impacts on marine mammals, including injury or death of up to 10 animals of each of 10 species over the five years covered by the authorization.”

Further information

KAHEA. 2008. NWHI hui issues critical review of the Management Plan proposed for the Papahañaumokuaƙea Monument in the NWHI, KAHEA, July 2008.

NOAA. 2008. NOAA Seeks comments on measures to protect marine mammals as Navy conducts sonar operations off Hawaiian Islands. News Release, 23 June 2008: 1-2. [PDF 32 KB]

Midway Atoll reopens

Midway Atoll was reopened to the public earlier this year, following a 6-year hiatus in which the only inhabitants were base personnel, Fish & Wildlife Service wardens, researchers, Laysan albatrosses, terns, turtles and monk seals.

A contract was finalised with a new provider of tour services in May last year, the NOAA, Fish & Wildlife Service and State of Hawaii opting for the non-profit Oceanic Society.

Tours to the remote atoll (a four-and-a-half hour flight into the Pacific from Honolulu on a Gulfstream turboprop), had previously been suspended in 2002 by the FWS, following disagreements with its contractor, Midway Phoenix Corporation [Midway births, TMG 5 (2): November 2002].

Midway Phoenix, reportedly operating the franchise at a loss, had been keen to increase visitors, a move the FWS resisted after already experiencing repeated human disturbance to wildlife, including beach-loafing seals and nesting birds.

It remains to be seen whether the new guided expeditions to Midway will placate some critics and avoid previous disturbance issues.

Midway is now the only publicly accessible wildlife refuge within the Papahañaumokuaƙea Marine National Monument and, despite the steep costs attracts both wildlife enthusiasts and military history buffs .

Further information

Oceanic Society’s tours to Midway: Midway Atoll
US Fish & Wildlife Service: Midway Visitor Services Plan

Conference considers Hawaiian seals

The theme of the 2008 Hawai'i Conservation Conference was 'Island Ecosystems: The Year of the Reef'. Organised by the Hawaii Conservation Alliance, the July gathering in Honolulu also featured its own symposium on the Hawaiian monk seal, a reflection, perhaps, of gathering anxiety among government officials and conservationists alike that the extinction of the species is becoming an alarmingly tangible possibility.

An introduction to the Symposium states: "Hawaiian monk seals have been sunning themselves on the beaches of Hawai'i for nearly 13 million years, and are one of only two endemic mammals found in the island Archipelago. Now, critically endangered, monk seals number less than 1200 individuals, and continue to decline by 4% per year. In September of 2007 the National Oceanic and Atmospheric Administration released a revised recovery plan with a renewed focus on more intensive management actions to recover the seal. These efforts include establishing a captive care program to improve survival of young female monk seals, reducing mortality to all individuals and building better capacity in the Main Hawaiian Islands to manage the monk seals and their interactions with the public. One bright spot for the monk seal in recent years is its reoccupation of the Main Hawaiian Islands. Monk seals are now found on all of the main islands and several islands have recorded births in recent years. The growing numbers of monk seals in the MHI is not without problems however, as increasingly seals are coming into contact with the public and these interactions can be detrimental to the seals. These interactions with the public pose a management challenge, but also a great opportunity to engage local communities in the Hawaiian monk seal's recovery.

The monk seal is an iconic species of the newly established Papahānaumokuākea Marine National Monument, but it is also the proverbial canary in the coal mine. Caught in between many human impacts – climate change, overfishing, marine waste, coastal development and disease – the monk seal's recovery will involve improving ocean stewardship in many diverse arenas. Supplementary efforts to recover the monk seal include research identifying and actions mitigating sources of mortality in the Northwest Hawaiian Islands including male aggression, shark attacks, starvation and entanglement in marine debris. The monk seal population is at a critical juncture; efforts at recovery need to aggressively move forward in the next few years. This symposium will highlight the ongoing research and management actions planned and being undertaken by the staff of NOAA to implement the Hawaiian monk seal recovery plan."

Please refer to our Recent Publications section for further details on papers presented at the Symposium.

News Watch

300 volunteers carry out critical Hawaiian Monk Seal count

Some 300 volunteers fanned out across the Islands between 10 a.m. and 1 p.m. today for the fourth semi-annual Monk Seal Count – a two-year-old program aimed at tracking the endangered Hawaiian Monk Seal on the same times and dates on each of the main Hawaiian Islands.

A primary purpose is to draw attention to and educate the public about Hawaiian Monk Seals, said David Schofield, regional marine mammal response coordinator for the National Oceanic and Atmospheric Administration Fisheries.

"There are fewer than 1,100 of these seals that are known to exist – only 100 of them being in the main Hawaiian Islands," said Schofield. "And they are declining at a rate of 4 percent a year."

By tracking them twice a year with volunteer help, Schofield said the hope is that researchers can learn enough about the seals to stem the rate of decline and perhaps even begin to increase their numbers. […]

300 volunteers carry out critical Hawaiian Monk Seal count, Honolulu Advertiser, 20 October 2008.

Government to consider larger habitat for monk seals

The federal government will consider designating areas in the main Hawaiian islands as critical habitat for endangered Hawaiian monk seals.

The announcement, to be published today in the Federal Register, comes in response to a petition filed by three environmental groups.

The petition seeks to expand a protected area now comprised of the Northwestern Hawaiian Islands to include the beaches and waters of the main islands. Environmentalists say monk seals in the main Hawaiian islands are thriving.

Government to consider larger habitat for monk seals, Honolulu Star Bulletin, 17 October 2008.

Monk seal pup found dead in Waimanalo

Necropsy findings into what caused the death of a monk seal pup found over the weekend in Waimanalo were inconclusive, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service announced today.

RW18, nicknamed "Hoku", was born in May on the north shore of O'ahu.

The carcass was relatively decomposed, so drowning or another cause of death could neither be ruled out nor confirmed, officials said. Some samples were taken for analysis for pathogens or toxins. The seal appeared to have been in "good body condition" when it died, NOAA said.

"Over forty volunteers watched over the pup from sun up to sun down for six weeks while it was being reared on the beach by its mother," said David Schofield, marine mammal response coordinator. "Understandably, a lot of dedicated volunteers are very saddened by the loss. With so few monk seals remaining in the Hawaiian Islands, we can't afford to lose even one." […]

"While the evidence doesn't conclude the seal was drowned, we want to remind people of the existing state laws regarding use of gill nets, which are intended to protect marine mammals," said Laura H. Thielen, DLNR [Department of Land and Natural Resources] chairperson.

Thielen added, "O'ahu DOCARE [Division of Conservation and Resources Enforcement] has pulled over a mile and a half of illegal gill nets out of O'ahu waters in the last year. We ask that people register their nets, make sure they check them within the required time limits, and respect the 'no-lay' net zones."

Monk seal pup found dead in Waimanalo, Honolulu Advertiser, 6 October 2008

America's Underwater Junkyard

Below America's waters lies a junkyard. Every year, thousands of boats, barges and ships sink or are abandoned in the U.S., having been rendered unusable due to accidents, weather damage, age or an owner's financial duress, and the vast majority of them are never recovered. […]

Abandoned ships wreak havoc on the marine ecosystem long after they've sunk. Decaying wreckages leach toxic chemicals like petroleum products and PCBs that remain in the water harming or destroying sea life and potentially enter the food chain, eventually getting ingested by humans. Sometimes dead watercraft foster the growth of new sea life that threatens the pre-existing local ecosystem. […]

Sunken vessels can also trail deadly debris. Fishing boats, for example, which are stocked with nets and traps, often continue to "ghost fish" after the ship itself has been abandoned. The biggest man-made threat to the endangered monk seal of Hawaii is entanglement in derelict fishing gear, according to Keith Criddle, a marine-policy professor at the University of Alaska in Fairbanks. […]

America's Underwater Junkyard, Emily V. Driscoll, Time, 30 September 2008

Report: Ocean debris will likely worsen

HONOLULU (AP) — Birds and turtles are developing digestive problems as their stomachs fill with plastic they mistakenly believe is food. The endangered Hawaiian monk seal population is struggling as many of the mammals get entangled in improperly discarded fishing nets.

These examples underscore that efforts to prevent and reduce ocean debris are inadequate and the problem will likely worsen, according to a congressionally mandated report released Friday. [Tackling Marine Debris in the 21st Century]

The report by the National Research Council recommends the U.S. take the lead in coordinating regional management of marine debris.

It said international maritime regulations should be changed to ban the dumping of trash into the ocean. […]

Other findings in the report:

> Ports should have adequate facilities for accepting and managing vessel waste.
>
> Ships should have incentives to dispose of their waste in port.
>
> Marine debris responsibilities are spread across organizations, slowing progress.
>
> The National Oceanic and Atmospheric Administration should develop fishing gear marking protocols to reduce gear loss and abandonment.

Report: Ocean debris will likely worsen, Associated Press, 21 September 2008.

Hot celebs find serenity on cool Kailua Beach

The Kailua Beach neighborhood where Barack Obama is staying for his vacation has seen its share of celebrities over the years.

Neighbors have seen Cameron Diaz and Justin Timberlake, Harrison Ford, Michelle Pfeiffer and William Shatner enjoying the sandy beach and picturesque views that stretch from the Mokapu Peninsula to Flat Island. […]

As for the other celebrities they've spotted, "who cares about them? We'd rather see Barack," another neighbor added.

But it was only a few months ago when another celebrity drew hundreds of people to the beach.

A monk seal, officially called RK 15 but better known as Chester, spent several weeks on Kailua Beach in January.

The National Marine Fisheries Service had to put up yellow tape to keep people a respectful distance from him.

"As of right now, Chester had more visitors than Obama," said neighbor Dan Pence.

To which his neighbors added, they hope it stays that way.

Hot celebs find serenity on cool Kailua Beach, Honolulu Star Bulletin, 8 August 2008.

Marine monument languishes
The chain of islands in northwestern Hawaii has seen funding drop and debris accumulate

WASHINGTON – Cleanup efforts have slowed and garbage continues to pile up in a remote chain of Pacific islands that President Bush made the biggest and most environmentally protected area of ocean in the world two years ago.

Winning rare praise from conservationists, Bush declared the 140,000-square-mile chain of islands in northwestern Hawaii the Papahanaumokuakea Marine National Monument in June 2006.

His proclamation featured some of the strictest measures ever placed on a marine environment, including a prohibition on any material that might injure its sensitive coral reefs and 7,000 rare species – a fourth of them found nowhere else in the world – even if the debris drifts in from thousands of miles away.

It hasn't happened.

Ocean currents still bring an estimated 57 tons of garbage and discarded fishing gear each year to the 10 islands and waters surrounding them, where the refuse snares endangered monk seals, smothers coral reefs and fills the guts of albatrosses and their young with indigestible plastic.

Debris removal, meanwhile, has averaged 35 tons a year since the islands became a monument, about a third of the 102 tons of derelict fishing gear collected on average before that.

The Bush administration slashed the debris cleanup budget by 80 percent from the $2.1 million spent in 2005 and requested only $400,000 a year for it through 2008. […]

Marine monument languishes, Honolulu Star Bulletin, 8 August 2008.

Pup makes daily progress
Orphaned monk seal: officials optimistic but cautious

More than a month after a baby Hawaiian monk seal was abandoned by his mother on Kauai, marine mammal experts say the pup continues to improve but will remain in captivity indefinitely.

"We're pleased with his progress, but we're still being optimistically cautious because he has a long way to go," said Wende Goo, National Oceanic and Atmospheric Administration spokeswoman.

The male pup, identified by marine experts as KP2, was found on May 2 on the North Shore of Kauai. KP2's mother rejected him and responded aggressively when NOAA specialists attempted to reintroduce the two. […]

KP2 has been under quarantine at the NOAA Fisheries Kewalo Research Facility on Oahu ever since.

"This is uncharted territory because we have never brought a seal that young in before. So our partners, the Marine Mammal Center, are the experienced ones and they're helping," Goo said.

At 55 pounds [24.9 kg] and growing every day, KP2 is beginning to show his first teeth. […]

Despite gaining 22 pounds [10 kg] since May 8, there are no immediate plans to release KP2 into the ocean, Goo said.

"We do know that, in the wild, when a pup is weaned he weighs somewhere in the neighborhood of 150 [68 kg] to 175 pounds [79 kg]," she said. […]

The pup's possible release date will all depend on how quickly he gains weight, while experts continue to closely monitor his health.

Pup makes daily progress, Honolulu Star Bulletin, 18 June 2008.

Monk seal off hook for surgery
A full exam reveals the absence of a hook inside the rare animal

A female Hawaiian monk seal code named "DP4" had a lucky break yesterday when veterinary specialists could not find a fishhook she was believed to have swallowed.

"DP4" was first spotted off Kauai on May 26 with a fishing line coming out of her mouth, said Dr. Bob Braun, contract veterinarian with the National Marine Fisheries Service.

On Tuesday she was found again, this time without any visible fishing line in her mouth. Researchers thought she might have swallowed the hook, and relocated her to Oahu as a team was flown in from the mainland for a potentially risky hook-removal surgery that would entail removal of the stomach and intestines and many stitches.

Yesterday she was examined in preparation for surgery. “What we did was anaesthetize, go in with an endoscope and look inside her whole gi (gastrointestinal) tract,” said Braun. No trace of the hook was found, he said, even after an ultrascan. He was amazed that she had apparently removed the hook and line herself.

“It was certainly a drama for her to be over here and held captive,” said Braun, but he is pleased that she is healthy. “On a scale of 1 to 10, it was definitely a 9,” he added, describing the seal’s health. Federal fisheries officials plan to release the seal soon off Kauai’s south shore. […]

Monk seal off hook for surgery, Bali Fergusson, Honolulu Star Bulletin, 28 June 2008.

Injured monk seal awaits risky surgery on stomach

The Hawaiian monk seal that was airlifted from Kauai will undergo surgery this morning after veterinarians were unable yesterday to remove a swallowed fishhook lodged above its stomach.

Veterinarians located the 5-inch fishhook in the esophagus, just above the entrance to the stomach, said Robert Braun, a veterinarian with the National Marine Fisheries Service.

Veterinarians sedated the monk seal – called ‘TT-40’ after the identification tag that was placed on its flipper earlier this year – and inserted an endoscope (a fiber-optic viewing device) through its mouth down to the stomach.

The two-hour procedure began at 9:04 a.m. yesterday at a laboratory at Marine Corps Base Hawaii in Kaneohe. Veterinarians said they will try to remove the hook by cutting through the stomach in a risky and delicate procedure that could take even longer.

“Unfortunately, where the hook is and the type of hook the animal has isn’t removable with the endoscope,” said Dr. Martin Haulena, a veterinarian from the Marine Mammal Center in Sausalito, Calif., flown in to anesthetize the seal. “We have to go in through a more invasive procedure in order to specially remove it.” […]

The seal is now resting at the Marine base. Braun said the chances for survival for the 500-pound, 20-year-old male seal are good, and they hope to release him back into the wild after recovery, which could take weeks or months. […]

Brad Ryon, a NOAA marine biologist, said while endangered monk seals have been hooked before, TT-40’s case is unusual.

“It’s the only one in recent years that swallowed it,” he said. “Most of them, the hooks are still in their mouths.” […]

Injured monk seal awaits risky surgery on stomach, Honolulu Star Bulletin, 16 June 2008.

Monk seal species officially deemed extinct
The Caribbean variety, related to the Hawaii mammal, is no more

The Caribbean monk seal has gone extinct.

The sea mammal had long been thought to be extinct, but the National Oceanic Atmospheric Administration's Fisheries Service said yesterday it was official.

The federal agency warns that the two remaining monk seal species could be next. There are fewer than 1,200 Hawaiian and 500 Mediterranean monk seals remaining, and their populations are declining.

Monk seal species officially deemed extinct, Honolulu Star Bulletin, 7 June 2008.

Hawaiian monk seal named Hawaii's state mammal

Congratulations to the Hawaiian monk seal – now our official state mammal.

Hawaii Lieutenant Governor Duke Aiona signed a bill into law last week giving the endangered and much-beloved seal the official designation. Wildlife experts – who have long considered the seal one of the world's most-endangered species – hope the move will raise international awareness about the native Hawaii mammal's plight. […]

Hawaiian monk seal named Hawaii's state mammal, Hawai'i Today, 15 June 2008.

Baby boom
The number of monk seals born on Oahu in a year hits a record

Two monk seals were born this week on Oahu, delivering a new record – three – for seals born within a year on the island, according to the National Oceanic and Atmospheric Administration.

The young seals also raised the total number of pups born in the main Hawaiian Islands since the beginning of the year to 10, compared to seven at this time last year, which saw a total of 13 newborn pups. […]

Baby boom, Honolulu Star Bulletin, 16 May 2008.

See also: Monk seal pupping season in full swing, NOAA, News Release, 15 May 2008 [PDF 28 KB].

Pup critical but stable

Marine experts say a 5-day-old endangered monk seal abandoned by his mother shortly after birth last week on a secluded Kauai beach has about a 50 percent chance of surviving.

The pup is in critical but stable condition and is missing essential nutrients since marine experts believe he did not nurse from his mother, which significantly weakened his immune system. Veterinarians and monk seal experts remain hopeful that the young pup will survive, but acknowledge that its outlook appears grim. […]

This is a unique case for NOAA specialists, who had never cared for a monk seal this young. In the past they took in pups about 2 weeks old.

"This is something pretty foreign to us," [Charles] Littnan said. "It's going to be a tragedy if we lose this pup. But this situation is going to help us better respond and treat animals in the future, primarily in learning what pups this young are able to eat." [...]

The pup, which weighs about 32 1/2 pounds [14.7kg] and is about 3 1/2 to 4 feet long [106-120cm], is staying at NOAA's Kewalo Research Facility near Ward Warehouse. Veterinarians let him swim and sleep in addition to feeding him diluted milk.

Pup critical but stable, Honolulu Star Bulletin, 6 May 2008.

Orphan seal pup found

A team of marine experts is working to save a newborn Hawaiian monk seal abandoned by its mother on Kauai.

"We've never dealt with a seal this young before and are guardedly optimistic," said Charles Littnan of the Monk Seal Research Program in a National Oceanic and Atmospheric Administration news release. "The animal will be stressed and susceptible to disease so strict quarantine measures will be observed."

The male pup, believed to be about three days old, was flown yesterday from Kauai to the NOAA Fisheries Kewalo Research Facility on Oahu on a Coast Guard C-130.

A bystander found the animal in a remote area of Kauai's north shore and reported it Friday morning.

A NOAA team went to Kauai and experts tried to reintroduce the pup to its mother, but the female monk seal barked at it and displayed aggressive behavior. She appeared more interested in an adult male seal, said NOAA spokeswoman Wende Goo. [...]

NOAA is working with the Marine Mammal Center to help save the newborn. In 2006, the two organizations cared for malnourished twin monk seals, which were eventually returned to Midway Atoll.

Orphan seal pup found, Honolulu Star Bulletin, 4 May 2008.

Group seeks seal-recovery funds

Funding for the National Oceanic and Atmospheric Administration's recovery plan for the endangered Hawaiian monk seal population falls short, critics charge.

The Marine Conservation Biology Institute is leading a national campaign to urge congressional lawmakers as well as the U.S. Department of Commerce to allocate more.

Hawaii Program Director Keiko Bonk said the institute is focusing now on Hawaii to build a collective, unanimous effort to support the campaign to protect what is described as the "most endangered mammal in America."

For fiscal year 2008, only $2.2 million was appropriated for the National Marine Fisheries Service's Pacific Islands' Region monk seal recovery plan. The same amount is expected to be appropriated in fiscal year 2009, according to Mike Tosatto, deputy regional administrator.

Bill Chandler, vice president of government affairs for the institute, based in Washington, D.C., plans to lead a coalition to Washington to urge an increase in funding to an estimated $7 million a year.

The plan, which took effect in August, calls for research and management that includes capture and care of juvenile females, study of the population's food supply, marine debris removal from the Papahanaumokuakea Marine National Monument, a facility to care for wounded and abandoned seals, and support for ongoing education programs in Hawaii. [...]

Charles Littnan, head of NOAA's Hawaiian Monk Seal Research Program, said cuts have reduced staffing and the number of field trips to the monument to assess the seal population.

"If we are going to carry out the scientific and management efforts that have been highlighted in the recovery plan, we'll need those supported," Littnan said. [...]

The recovery plan, which took effect in August, called for an estimated $35.9 million over a five-year span, but only $2.2 million of a $40 million budget for the National Marine Fisheries Pacific Islands Region was appropriated for fiscal year 2008 to support the recovery plan.

Group seeks seal-recovery funds, Rosemarie Bernardo, Honolulu Star Bulletin, 1 May 2008.

EndQuote

Barack and the Seal

Maya Soetoro-Ng is a local Oahu girl, a schoolteacher and the mother of a four-year-old girl, Suhaila. Oh yeah, and her older brother is Barack Obama. [...]

"Barack was so happy to be here," she said. "He had such a good time being in Hawaii. He saw Grandmom, took the kids to the ocean and saw a monk seal up in Mokuleia. He did one rally to thank the people of Hawaii for their support."

Sister act. Barack Obama's sister discusses family, hope and inspiration, Maui Time Weekly, 25 September 2008.

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Mediterranean News

Vol. 11 (2): November 2008

Gibraltar

Seals on the Neanderthal diet

Archaeologists excavating 30,000 year old fossil remains in coastal caves on Gibraltar have shed new light on Neanderthal diets. While previous theories have generally portrayed Neanderthals as hunters and meat-scavengers, the recently-published research from Gibraltar concludes that this extinct species of human also ate fish, shellfish, dolphins and Mediterranean monk seals.

The research results generated substantial coverage in both the popular and scientific press, excerpts from which we quote in the News Watch section below.

Caves once occupied by Neanderthals at the Rock of Gibraltar, including Bennett's, Gorham's, and Vanguard. Credit: Clive Finlayson, Gibraltar Museum.

Lower jaw of a Mediterranean monk seal found in the Vanguard cave, Gibraltar. Credit: Clive Finlayson, Gibraltar Museum.

Further information

Stringer, C.B., J.C. Finlayson, R.N.E. Barton, Y. Fernández-Jalvo, I. Cáceres, R.C. Sabin, E.J. Rhodes, A.P. Currant, J. Rodriguez-Vidal, F. Giles-Pacheco, and J.A. Riquelme-Cantal. 2008. Neanderthal exploitation of marine mammals in Gibraltar. Proceedings of the National Academy of Sciences of the United States of America PNAS 105(38): 14319-14324. [Abstract]

Natural History Museum. 2008. Neanderthal diet like early modern human's, 23 September 2008.

Sample, I. 2008. Neanderthals had a taste for seafood. Our doomed cousins the Neanderthals clung to life in seaside caves in Gibraltar by eating mussels, baby seals and dolphins. The Guardian, 22 September 2008.

News Watch

Neanderthals hunted marine mammals

Alongside the butchered bones of land mammals including wild boar, bear, ibex, red deer and rabbit in the caves the experts also found the bones of young monk seals

and bottlenose dolphins.

“The seal bones we found have clear cut marks and peeling, from Neanderthals bending and ripping them from the body to remove meat and marrow,” said Stringer, while “the mussel shells had been warmed on a fire to open them.” […]

Peter Brown, a palaeoanthropologist of the University of New England in Armidale, Australia, said it’s great to have more evidence of the diversity of behaviours in human relatives, but that he was “not all that surprised that Neanderthals were smart enough to use adjacent marine resources at Gibraltar.”

Brown argued that for both of the marine mammals found in the caves, the numbers are very small, “suggesting a rare opportunity, perhaps scavenging, rather than the regular targeting of species.” Young monk seals would have been easy to surprise on the beach, he said, while the dolphins eaten may have been stranded.

Neanderthals hunted marine mammals, John Pickrell, Cosmos, 23 September 2008.

Neanderthals ate seals and dolphins

The diet of prehistoric Neanderthals living in caves on the Rock of Gibraltar included seals and dolphins, showing once again that the hominids had skills rivaling those modern humans living then, according to a new study.

The discovery of seal, dolphin and fish remains in the caves dating from 60,000 to 30,000 years ago provides the first evidence that Neanderthals ate sea mammals as well as land grub.

Archaeologists found the mammals’ remains among Neanderthal hearth sites in Vanguard and Gorham’s Caves on the Rock of Gibraltar. The bones of some of the animals have cut marks that were likely made by Neanderthals using flint knives, also found on site, to cut the meat off.

“Deep down there is this idea that modern humans are cognitively superior and therefore able to outcompete Neanderthals,” said researcher Clive Finlayson, director of the Heritage Division at the Gibraltar Museum. “I suppose we’ve thrown a bit of a spanner in the works by showing that Neanderthals were doing exactly the same thing.”

The researchers can’t be sure how the ancient Neanderthals hunted their seafood, but suggest that perhaps Neanderthals used clubs to kill seals that came close to the beach to have their pups. This skill might have involved knowledge of the seasons, and prediction of seal birthing time. And maybe they snatched dolphins that swam too close to shore, or got stranded on the beach. […]

Neanderthals ate seals and dolphins, Clara Moskowitz, LiveScience, 22 September 2008.

Greece

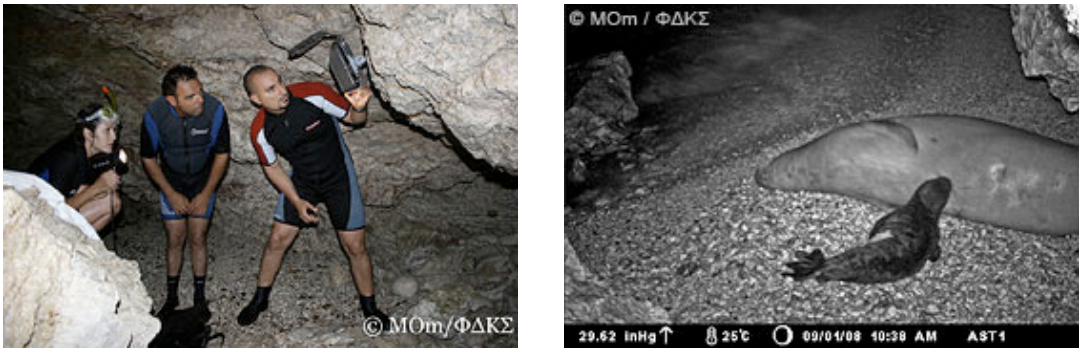
Monitoring in the Karpathos-Saria Ecodevelopment area

Research efforts by MOm during the past decade have highlighted the islands of Karpathos and Saria, in the Southern Dodecanese, as one of the most important

breeding locations of Mediterranean monk seals in the eastern Mediterranean, with a mean annual pup production of approximately four animals.

The recent establishment of the management body of the Northern Karpathos-Saria Ecodevelopment Area, which was created within the framework of national efforts to manage and safeguard the country's natural heritage, provided the opportunity for the establishment of a permanent monitoring scheme for *Monachus monachus* in the protected area of northern Karpathos and the island of Saria.

With that aim in mind, MOm undertook the task of preparing and running such a monitoring scheme for the year 2008. MOm researchers, in collaboration with the staff of the management body, initially visited, mapped and evaluated the 22 coastal monk seal shelters that had been previously identified; 14 in Karpathos, 5 in Saria and 3 at the remote islet of Astakida. Of these 22 caves, 3 were considered suitable for pupping, while the remaining 18 were considered suitable only for resting. Following this initial visit to the caves in February 2008, regular follow-ups are being carried out in order to record habitat use, behaviour of the species and basic demographic and reproductive parameters.



Monitoring on Karpathos, using infrared motion detection cameras.

To date, the monitoring team has recorded cave use in approximately 30% of all visits carried out and identified four females, two juveniles and six pups (two from the 2007 pupping season and four from this year's pupping season). In addition, the deployment of three infrared motion detection cameras in two of the pupping sites has provided more than 1,300 photographs of monk seals (mainly of the four females and their pups) and important information on the reproductive behaviour of the species.

The available data and their preliminary assessment confirm the importance of the area for the survival of the species in the eastern Mediterranean and will provide essential information in its effective management and protection. – Mariana Psaradelli and Alexandros Karamanlidis, MOm.

Orphaned pup dies on Evia

An orphaned monk seal pup was discovered by a member of MOm's Rescue and Information Network (RINT), following a storm on the Greek island of Evia on 19 September 2008.

The newborn pup, not older than 24 hours, still carried the umbilical cord.

MOm's Athens-based Rescue Team initially provided guidance by telephone, advising the observer on Evia to remain hidden and to keep watch over the pup, in case the mother reappeared.

In the meantime, the Rescue Team travelled to the stranding site and, upon arrival, set about examining the young animal. The pup was found to be in critical condition, exceedingly weak, and with very high fever; it was exhibiting symptoms of both gastric and neurological problems. Regrettably, 45 minutes after receiving first aid and with the mother still absent, the pup died.

The Evia pup undergoes examination by MOm Rescue Team members.

The necropsy, conducted with the collaboration of Prof. Dr. Thijs Kuiken, Erasmus University, Rotterdam, revealed problems in the heart, lungs, and brain of the pup. The exact aetiology of death may become apparent during laboratory examination of the samples collected. – E. Androukaki, MOm.

Deliberate killing on Hydra

On 3 September 2008, port police authorities on the Aegean island of Hydra notified MOm that a dead Mediterranean monk seal had been discovered. According to the necropsy, the adult female seal's death was due to a deep wound at the right side of the animal's neck, caused by a sharp instrument. The advanced state of decomposition did not permit positive identification of the type of implement used in the killing.

Death of a monk seal.

The Mediterranean monk seal is a priority species for the EU and is protected by EU and Greek law. However, from January 2008 to date, MOm has conducted 7 necropsies, with the Hydra death being the second recorded deliberate killing incident in Greek waters during that period.

With the species critically endangered, it is evident that deliberate killing still poses a serious threat to *Monachus monachus*. – Calliope I. Lagonika, MOm.

Monk seal and fisheries update

MOm's EU LIFE/Nature-funded project, focusing on the sometimes lethal interaction between monk seals and fisheries, has released its latest progress report, covering the period July 2007-June 2008.

Progress MOm highlights in the report includes:

- Ongoing sampling aboard fishing boats and collection of landing data, in collaboration with local fishermen in the Alonissos and Kimolos "hot spot" areas. In parallel, interviews using special questionnaires on seal-fishery interactions were conducted in 5 of the 7 hot spots, with considerable participation by the local coastal fishermen. MOm adds that, to date, analysis suggests that all hot spots are actively and intensively fished, with local fishermen encountering monk seals with considerable frequency; they are reported to suffer significant gear damage from both seals and dolphins.

Membership of the existing Rescue and Information Network has increased by more than 50% since the start of the project, reaching almost 1,800. Through the Network, reports of seal sightings have been collected at an increased rate, allowing the team to monitor the mortality of the species nationwide.

In the effort to raise awareness and stimulate the participation of key stakeholders in the hot spot areas, the MOFI project's public outreach campaign continued utilising both established and new communication tools, including open events at the hot spots. In addition, training seminars for local fishermen and other stakeholders on rescuing monk seals were held in 4 hot spot areas, attracting more than expected participation.

MOm's biannual MOFI newsletter, providing further information, is available in English and Greek.

A new TV and radio spot is now airing via national and local broadcasters, focusing on the brighter side of the uneasy relationship between fisherman and seal.

Available only in Greek, the TV spot, "Nicolas and Victoria", can be viewed on the MOFI website. – Calliope I. Lagonika, MOm.

Further information

MOm. 2008. Monk seal and fisheries: mitigating the conflict in Greek seas. Progress report covering the project activities from 01.07.2007 to 30.06.2008. MOm /Hellenic Society for the Study and Protection of the Monk Seal: 1-33. [PDF 1.2 MB]

What a summer!

It was a busy-busy summer for the 50 volunteers who spent the better part of their annual vacation helping MOm raise awareness about the Mediterranean monk seal and the marine environment.

Summer volunteers on Alonissos.

Scattered among the islands of Alonissos, Skopelos and Kimolos and – for the first time – in Attica, they guided the 22,131 visitors to MOm's Information Centres through the world of the elusive *Monachus monachus* and carried out various environmental education activities.

MOm has been carrying out its Summer Volunteers Programme in areas of importance for the monk seal since 1990. Each volunteer spends 2 weeks at the Island/Information Centre of his or her choice with costs of accommodation fully covered by MOm.

To become a MOm volunteer you need to be over 18 years of age, speak English and Greek, enjoy team work and, last but not least, care for the marine environment.

For more information about MOm's Summer Volunteer programme, please contact us on +30 210 52 22 888 or drop us an email at info @ mom.gr. – Calliope I. Lagonika, MOm.

Seal shot dead at Milos

On 17 October, MOm's research biologists were confronted by yet another deliberate killing incident, this time at the Aegean island of Milos, an area bordering the important monk seal breeding habitat of Kimolos, and also hosting a number of seal caves itself.

The dead seal was a 1-year old male that had been shot with a rifle, the bullet penetrating the animal's left lung, the heart, and eventually becoming lodged in the chest.

Based on weather conditions in the area at the time, and on the state of decomposition, the young seal is thought to have been shot on Wednesday the 15th of October in the bay of Milos. MOm was notified of the incident by the local port police authorities.

This is the third case of confirmed deliberate killing in 2008 according to the necropsies conducted by MOm. In order to halt these crimes, MOm has requested that the port police step-up their surveillance and control for guns carried on boats, something that is already illegal. The local fishing association was also notified of the incident.

According to MOm's 20-year research efforts, 50% of all adult seals found dead have been deliberately killed. Greek fishermen and MOm have been working together since 2005 in the EU-funded MOFI project, that aims to reduce the negative consequences of monk seal and fishery interactions. – Calliope I. Lagonika, MOm.

News Watch

Problems and challenges at the Sporades Marine Park (NMPANS)
[Excerpted from an interview with Vassilis Kouroutos, biologist at the Management Body of the NMPANS]

AthensPlus: What sort of problems did you encounter?

V. Kouroutos: Protesters raided our offices, pelted us with eggs and yogurt, vandalized our boat and our cars. The worst episode, last December, was when a well-known local fisherman turned up outside my house and tried to shoot me. He shouted my name, I came out onto the balcony and he fired a gun at me. Thankfully, I ducked and wasn't hurt.

AthensPlus: Had you had problems with this man before? Are other fishermen so hostile?

V. Kouroutos: During patrols of the no-access zone of the marine park, I spotted the same guy twice, spearfishing, which is absolutely forbidden. But he persisted. We have tried to adopt a more flexible attitude to park visitors, chiefly fishermen and tourists. Many fishermen resent us as they believe the marine park stops them from earning a living. This is ridiculous – only Piperi is out of bounds. […]

AthensPlus: So why do they covet this tiny islet?

V. Kouroutos: Fish supplies are dwindling. They don't catch as many fish as in years gone by. So they want access to the one tiny patch they are banned from, as if that will solve their problem. They are pushing for access to Piperi except for the three months when the seals reproduce (September to November). There should be a response by the end of the year.

AthensPlus: What made you decide to devote your life to protecting the Mediterranean monk seal?

V. Kouroutos: If you could enter one of their refuges and see a seal up close, you would understand. It's an amazing experience. They are very friendly. You pick up a baby and it suckles at your armpit or chest immediately, it doesn't react defensively. The babies of other species of seal are not as trusting – they usually bite. The monk seals are very curious. When we enter one of their caves in our boat to check on them, they often swim around the boat to check us out. [...]

– A mission to save an embattled species. Vassilis Kouroutos – A key figure in the struggle to preserve the monk seal speaks of his joys and frustrations. Niki Kitsantonis, AthensPlus, Kathimerini, 31 October 2008. [PDF 15.7MB]

EndQuote

Best beaches, glorious illusions

Take your pick of gorgeous beaches lining the gloriously undeveloped 25 mile coastline. Grottos, secret coves and hidden, pearly-white sands are backed by limestone cliffs, sculpted rock formations and forests of holm oak, juniper and macchia in one of Europe's last coastal forests.

Cala Luna is a white half-moon crescent lapped by crystal-clear waters, overlooking the Gulf of Orosei. On one side of the beach there are six small caves and, nearby, is the Grotta del Bue Marino, the last Sardinian hiding place of the endangered monk seal and the largest, most dramatic of the many beautiful grottos.

Source: The best beaches in Sardinia, Times Online, 29 May 2008.

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Mediterranean News

Vol. 11 (2): November 2008

Italy

GFM in Greece and Croatia

During a July excursion to Greece coordinated by Luigi Guarrera, several members of GFM (Gruppo Foca Monaca), visited the Ionian island of Kefalonia and there met with monk seal researcher Aliki Panou of the NGO Archipelagos. Together, they visited several points on the island, both on land and at sea, appreciating the fact that, in spite of the high-summer tourism pressure, the large island still maintains various habitat areas suitable for the seals.

A monk seal sighted near Lefkada.

One seal was observed on the eastern part of the island, together with several swimming sea turtles (*Caretta caretta*). Possible cooperation and support activities between GFM and Archipelagos were discussed.

Cooperation with the Croatian NGO Mediterranean Monk Seal Group (Grupa Sredozemna Medvjedica) also continued, following a spate of recent monk seal observations in the Adriatic. At the same time, GFM received several reports of seal sightings from Greece (3 were of seals around Lefkada); from northern Cyprus; and from Croatia (close to the Kornati islands), most accompanied by photographic evidence and related descriptions. GFM's public awareness activity through the media has also continued, with an article on monk seals published in the October supplement "Viaggi" (Travelling) of the important Italian newspaper "La Repubblica". – Luigi Guarrera, GFM.

Madeira

Aiming for higher public participation in monk seal monitoring...

The Mediterranean monk seal population in the Madeira Archipelago is gradually recovering, and dispersing from the outlying Desertas Islands towards the main island of Madeira, in search of new habitat.

Madeira's human inhabitants and the maritime authorities play a key role in providing information on the species, particularly on population numbers and distribution.

Consequently, the monk seal population was the object of a more intense public awareness campaign around the island of Madeira between May and October 2008.

The number of monk seal sightings is significantly higher in fishing and recreational areas, where the most common activities are swimming, surfing, windsurfing, diving, sailing and canoeing, increasing the probability of observation. As a result, the sensitisation campaign was directed at these areas, under the slogan, "What should you do when sighting a monk seal?" Public awareness materials, such as books, posters and monk seal sighting observation forms were also distributed.

Bringing maritime authorities, beach guards and others into the monk seal monitoring process.

In order to encourage greater involvement of the maritime authorities in monk seal monitoring, the Service of the Parque Natural da Madeira held several explanatory sessions for the Madeira maritime police, the National Republican Guard and the beach Life Guards. The objective was to inform personnel about what steps they should take when encountering a monk seal, what should be recorded during the observation, and what action should be taken if the seal is sick, wounded or dead.

Feedback from the campaign was very positive. Not only did reports of monk seal observations increase in Madeira, but also the information was more accurate, a decisive factor in improving our knowledge about population dynamics. The feedback also provides baseline data for future monitoring and management of potential interactions between Mediterranean monk seals and human activities, whilst promoting Mediterranean monk seal conservation through the public dissemination of the results. – Rosa Pires and Carolina Santos, Parque Natural da Madeira.

Challenge: "Create a monk seal toy"

The challenge was posed to the pupils of middle schools in Madeira in an island-wide competition: create a monk seal toy.

Children 10-15 years old participated in the contest, building 19 toys of various type and design. All the toys were later exhibited at the Culture House in Santa Cruz in May, along with information on the species itself. – Rosa Pires and Carolina Santos, Parque Natural da Madeira.

Prize-giving at the Santa Cruz toy exhibition.

Spreading the word about monk seal and whale conservation in Madeira…

Two exciting events were recently held in Madeira to highlight monk seal and whale conservation on the island. Parque Natural da Madeira and the Madeira Whale Museum teamed up with the International Fund for Animal Welfare's team from research vessel *Song of the Whale* to hold two days of activities and events in both

Funchal and Machico. Local children were invited onboard the boat – over 200 in total – to learn about monk seal and whale conservation.

Children from Machico and surrounding areas with Tim Lewis, Song of the Whale scientist.

Also, two VIP events were held that were well attended by representatives from government, education and local NGOs. Local TV, radio and print journalists were invited to attend a press day on the boat, and coverage of the issues was achieved in all three mediums. Rosa Pires, Biologist and Monk Seal Co-ordinator from Parque Natural da Madeira said: "We have been delighted to partner with IFAW and the Madeira Whale Museum to put on these events. It has been a great opportunity to highlight the work that we are doing here on Madeira both for monk seals and for whales and we look forward to more joint working in the future."

IFAW representatives Lesley O'Donnell and Hemmo Muntingh also attended the events. – Bridget Jones, Song of the Whale Research Team, IFAW.

Mauritania & Western Sahara

Lactation on an open beach in Cabo Blanco: first known record since 1945

Since the creation of the 'Coast of the Seals' marine-terrestrial reserve in 2001, observations of animals using open beaches has increased progressively. This phenomenon was particularly evident last year, when groups of seals and even juveniles and pups were observed hauling out on an open beach close to one of the breeding caves.

Even though this was a great achievement in itself, we could not even imagine that the next step forward would come so soon. This October, however, we observed a mother rearing her pup on an open beach called 'playa del Halcón'. The pup had been born in a nearby breeding cave, but moved to the beach with its mother when it was 1 month old. After several days, we saw the mother vocalising, coming and going from the beach where animals have been observed hauling out since last year. A few minutes later, at the southern beach, we observed the encounter between the pup and its mother. They moved out of the reach of the waves and, no more than five minutes later, the pup began suckling from its mother.

This is the first time that lactation at an open beach has been reported since Morales Agacino described it in 1945, over 60 years ago. The pup continued to be reared by its mother, a well-known breeding female 14 years of age, and even moulted in its new habitat. This development makes us very optimistic about the progressive recolonization of open beaches, no longer just for hauling out, but also for breeding. – Mercedes Muñoz and Pablo Fernández de Larrinoa, Fundación CBD-Habitat.

Cabo Blanco annual pup production

To date, the birth of 43 pups has been recorded during 2008 at the Cabo Blanco colony breeding caves. With the breeding season not yet closed, however, further births are expected, especially since several pregnant females have been observed in the caves area. The monitoring of the births has proved harder this year than in previous years, because a new cave has been used by seals to haul out and give birth. The absence of a video-monitoring camera in this cave and the fact that only a part of its inner beach is visible from the entrance, has prevented a complete monitoring of the birth period. As a matter of fact, a minimum number of 4 pups have been born in this cave, and groups of at least 27 seals have been observed inside.

Up until today, the monitoring team has been able to identify 80% of the breeding females that gave birth during this year, and even though some pups have not yet reached moulting age, we can say that the provisional pup mortality rate is low, around 25%. We hope to be able to report in the next issue of The Monachus Guardian that the productivity for the whole year has increased in respect to previous ones, and that mortality rates have remained low. – Miguel Angel Cedenilla and Moulaye O. Haye, Fundación CBD-Habitat.

Visitors centre 'Le Phoque Moine' open to the public

The first visitors centre in a protected area in the whole of West Africa has recently been opened to the public in the Satellite Reserve of Cap Blanc (National Park of Banc D'Arguin) and, as to be expected, it is devoted to the marine environment and the Mediterranean monk seal. The 'Phoque Moine' centre was built as part of a project executed by CBD-Habitat Foundation and the National Park of Banc D'Arguin, and funded by the International Spanish Cooperation Agency and the National Parks of Spain, with the participation of UNESCO.

The centre holds a permanent exhibition with panel displays, a life-size adult male monk seal and a video documentary about the species in Cabo Blanco. A nature trail around the reserve has also been marked-out, guided with informative panels so that visitors can discover the area's natural wealth and diversity. The centre is visited by people from the nearby city of Nouadhibou, and mainly students, since several activities are being developed with primary and secondary schools. – Ana Maroto and Hamdi M'Barek, Fundación CBD-Habitat.

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Mediterranean News
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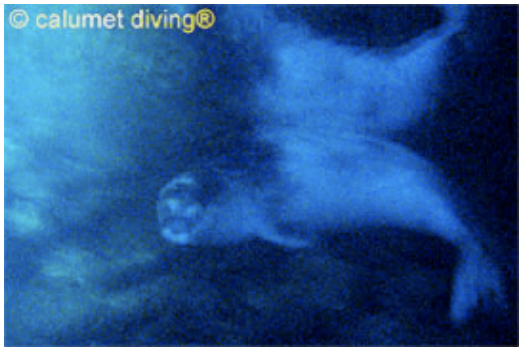
Spain

Seal returns after 50-year absence

It was an exceptional event by any standards, yet even more so given the fact that the Mediterranean monk seal has been considered extinct in Spain and the Balearic Islands for half a century.

In what may yet turn out to be a pivotal moment in the species' potential future recolonisation of the Balearics, repeated sightings of an adult Mediterranean monk seal were made around Mallorca or its off-lying islands between June and September 2008.

The first confirmed observation, by Alvaro Garí, a diver from Palma, was made in the marine reserve of Isla del Toro in the southwest of Mallorca, at 11.30 hrs on 15 June.



The Isla del Toro sighting, June 2008.

Although the third such observation at the time, it was the only one to have been confirmed by photographic means.

Government officials at the Conselleria de Medi Ambient (Environment Council), quickly mobilised to assemble a coordinating team, consult monk seal experts in Spain and abroad, alert coastal authorities and the management of protected areas, and prepare a monitoring system that would hopefully yield further sightings [see Sighting and Response, this issue].

By contacting professional and hobby fishermen, owners of leisure craft, local tour operators and others in frequent contact with the sea, an additional 14 sightings were made up until September.

The Conselleria prepared monk seal sighting sheets, adapted from Greek (MOm), Madeiran (Parc Natural da Madeira) and Turkish (AFAG) forms, and also printed alert leaflets in Catalonian, Spanish, German and English for distribution to members of the public. The leaflets emphasised the endangered status of the seal, its exceptional appearance in Mallorca, and advised potential observers that approaching within 100m was not permitted. An SOS hotline number was provided in case of sightings.

These ranged from observations in busy tourist areas with intense high-summer boat traffic, to areas far less disturbed, including the island of Dragonera, a Natural Park

off Mallorca's west coast (the last dependable sighting, on 10 September).

The monk seal has been considered extinct in the Balearic Islands since the 1950s. Though there is disagreement among scientists, conservationists and government officials on how it might be achieved (translocation or natural recolonisation), most concerned parties are in favour of a return of the species.

That said, some are of the opinion there is both insufficient food and habitat to support a monk seal presence in the Balearic Islands, while others also worry that the return of the species might reopen old conflicts with fishermen.

The Government of the Balearic Islands has implemented various conservation measures over the years to prepare for or encourage a return, including the establishment or enhancement of protected areas and management, and a range of educational and public outreach programmes [see Reversible absence, TMG 11 (1): June 2008].

With this individual likely to be a vagrant rather than a Balearic resident born and bred, its possible origins quickly became a subject of speculation among experts (Algeria? Morocco?). The means of ensuring its future protection – should it decide to call the Balearics 'home' – also became a very real concern.

The Balearic Islands government is currently commissioning a study that will map potential monk seal habitat in the western and north-western area of the island.

Further info

Monk seal spotted off coast of Mallorca, Iberia Nature, 17.06.2008.

Medio Ambiente intentará averiguar el sexo de la foca monje y encontrarle pareja, Soitues actualidad, 17.06.2008.

Un equipo de buceadores fotografía en Mallorca una foca que podría ser monje, después de 50 años, Libertad Balear, 17.06.2008.

¿Es esto una extinta foca monje? El Pais, 17.06.2008.

Unos buceadores avistan una foca monje en la costa de Mallorca, Baleares 24h, 17.06.2008.

El ´vell marí´ vuelve a nadar en Mallorca, Diariodemallorca, 18.06.2008.

50 años de la eliminación a tiros del último ejemplar, Diariodemallorca, 18.06.2008.

El Govern protegerá los lugares donde se detecte la presencia del ´vell marí´, Diariodemallorca, 25.07.2008.

Medio Ambiente pide ayuda a Madrid para reintroducir el ´vell marí´ en la isla, Diariodemallorca, 25.08.2008.

Our thanks to Toni Vecina of Mallorca for help in compiling this publications list.

Common seal sighting in Catalonia

On 19 September, a juvenile common seal (*Phoca vitulina*) was discovered at the delta of the river Ebro. This is a protected area on the Catalonian coast where there have never previously been sightings of this species; as a result, and because of recent confirmed sightings of a monk seal at Mallorca, it was initially theorised that this might also be a *Monachus monachus*.

Some fishermen saw the seal around 19:00h, resting on the sandy shore, and apparently it did not show any signs of harm or of being in distress. The official organization responsible for the assistance and rehabilitation of marine animals in Catalonia, the CRAM Foundation, was alerted, but when the veterinarians and rescue team arrived at the site, the seal had returned to the water.

Early the next morning, the rescue team returned to the area and were able to locate the seal nearby. Assessing its state of health, they concluded that the animal was in a very poor nutritional condition, displaying weakness, and abnormal behaviour and respiratory patterns. They decided to take the seal urgently to the CRAM rehabilitation centre, located in Premià de Mar (Barcelona), where they would be able to continue the assessment and start the appropriate treatments. Unfortunately, the animal died en route, so instead it was taken to the University (Universidad Autónoma de Barcelona), where pathology specialists could perform the postmortem examination in order to determine the cause of death.

The postmortem revealed that the seal was a young female weighing 15 kg and measuring 95 cm in length. It showed a serious intestinal impaction in the cecum, 26 cm long, fibrinous enteritis, a serious parasitism by nematodes in the stomach that produced a diffused gastritis and lung collapse. Further microbiology and histopathology exams are currently being carried out by experts in these subjects.

The common seal (*Phoca vitulina*) lives in Arctic and subarctic waters of the Pacific and Atlantic seas; its presence in the Mediterranean is highly unusual.

Recognising the exceptional nature of this event, further investigations are currently being carried out in order to discover the causes by which the seal could travel to this latitude. It is unknown how a female that has not yet reached the adult state could be found in Catalonian waters. – Beatriz González Melcón, Veterinary Surgeon, CRAM Foundation.

Turkey

Tourists captured on seal monitors

In an attempt to gain a wider view on the distribution of monk seals and their habitat, the Middle East Technical University Institute of Marine Sciences surveys a new area each year. By now, almost all the seal caves on the coast of Northern Cyprus and the coast between Mersin and the Turkish/Syrian border have been discovered. In 2008, with a grant from TUBITAK (Scientific and Technological Research Council of Turkey), the surveyed area was expanded to Antalya (see Survey in Antalya, below). Antalya represents the core of tourism in Turkey; nine million tourists visited Antalya in 2008. The majority are hosted at beach resorts, although the rocky coast has remained rather intact since a significant part of it is included in the Olympos-Beydaglari National Park. Also, part of the national park is banned for divers. On the other hand, there is no limitation for boat owners organizing daily trips to the coast of the park.

A monk seal captured by automatic camera in a cave in the Olympos-Beydaglari National Park.

The same camera captures 7 tourists in the same National Park cave.

Three surveys were conducted along this impressive coast; in June, August and November respectively. A total of eight caves were considered suitable and monitored with photo-traps. During the first two surveys (but particularly in August) many boats were sighted very near to the caves used by the seals. Moreover on several occasions, the team met people inside those caves with open and easy access. Most shocking and frightening of all, however, are the photographs taken automatically in one of the caves. It is shocking because the photographs were taken in the very small air chamber (not more than 4m2), located at the distant end of a cave with a very narrow and long entrance. Seven people of varying age may be seen on the photographs. It is frightening since the cave is still used by the seals; two seals were identified in the cave. The data collected indicated that the number of visits by tourists is by far greater than the visits by seals. Luckily, or intentionally, the seals use the cave at night. However, it doesn't seem so likely that seal and tourists will partition the cave in such a manner for long. It is more probable that the very few seals still inhabiting the area will eventually abandon the national park, as in many other sad examples occurring elsewhere in the Mediterranean. – Ali Cemal Gücü, METU-IMS.

Dead pup found on Cilician coast

The whelping season starts in early autumn in the northeastern Mediterranean and lasts until mid-winter. The conservation team of Middle East Technical University Institute of Marine Sciences visits all recorded seal caves on the Cilician coast in order to assess the reproductive success of the colony in each breeding season. The team has observed that whelping occurs in 8 particular caves of the area, each having almost identical features; a large platform, an inner pool and a narrow entrance protecting the inner part against high waves. Apart from breeding caves, the team has observed seals while resting in several other caves, some of which are frequently used throughout the year.

On 6 November 2008, a pup was found dead in one of these caves that had never previously been used for whelping. The cave has several but very narrow platforms which are not large enough for breeding. The pup was still in the inner part of the

cave floating on the water. Although the carcass was badly decomposed it was possible to see the umbilical cord still attached to the body, indicating that the pup is not older than a week.

Competition for breeding habitat among females has never been observed in the past. Moreover, two different mothers gave birth in the same cave (one month apart) in 2005 and 2006. Just why the mother gave birth to her pup in such an unfavorable cave, while a suitable one was just a few nautical miles away, remains an important, unanswered question. – Ali Cemal Gücü, METU-IMS.

Monk seal survey in Antalya

The current distribution of the Mediterranean monk seal population in the Mediterranean is becoming clearer with recent studies. The coast of Antalya, despite being acknowledged as important monk seal habitat, has never been studied systematically. On the other hand, signs of a possible seal presence in the region were suggested by coastal topography and the frequency of recent monk seal sighting reports.

Western Antalya, with its small islands and rocky cliff-bound coast, appeared to be the most favourable area, including cape Gelidonya where human disturbance appears minimal. Three surveys were carried out between June and November 2008. The research team was composed of 6 people – 5 scientists from Middle East Technical University Institute of Marine Sciences, and a volunteer. During the first phase of the study, the entire coastline between Kemer and Finike was surveyed. Forty-one caves were discovered, both along mainland and island coasts. Of these, only 8 were considered suitable for seal use.

The second phase was the installation of automatic cameras and infrared monitors, with a total of 11 being installed in those 8 caves. The third phase was to retrieve the cameras and recorded digital images, and reinstall. More than 200 seal photographs were collected from 3 caves; these were used for seal identification purposes. All the markings visible on the photographs were plotted on scar-charts and 4 individual seals were identified. A GIS inventory was created with the results of surveys.

A monk seal resting in an island cave near Olympos.

Tour boats around a seal cave near Olympos this summer.

Human disturbance was observed to be very high throughout the monk seal habitats, and the most serious pressure appeared to be the human intruders who were even observed in the caves, captured by the installed cameras and infrared monitors [see

Tourists captured on seal monitors, above]. The results of this study are not only important for conservation planning within the studied region, but also for improving our understanding of the seal population, as well as seal interaction and habitat use throughout the Turkish areas of the Mediterranean. – Serdar Sakinan, METU-IMS.

Badem released from 'protective custody'

From Hürriyet's Badem photo gallery.

With the 2008 tourist season on the wane and beachgoers diminishing, monk seal 'Badem' was released from her temporary captivity in September.

The rescued seal had been taken into protective care in early July, both for her own safety and that of bathers, with whom she was increasingly interacting [see Ambassador with attitude, TMG 11(1): June 2008; Badem under armed guard, Latest News, June 2008; and Badem in 'protective custody', Latest News, 2 August 2008.]

The move followed several injuries that the playful or deliberately provoked seal inflicted upon swimmers, and concerns by tourist enterprises and local government that her antics might ultimately drive away tourists rather than attract them.

Rescued in December 2006 as an orphaned pup, Badem underwent rehabilitation in Foça with expertise provided by the Zeehondencrèche Lenie 't Hart of the Netherlands, but became imprinted on her human carers during the 5-month process.

Despite ups and downs since her original rescue and release, Badem has become a powerful ambassador for her species among the Turkish public, appearing in numerous newspapers and television reports. Paradoxically, however, the attention has also served to exacerbate rather than diminish her longing for human contact.

Turkish NGO SAD-AFAG, that coordinated Badem's rehabilitation, had earlier voiced the hope that the young seal, once separated from humans within a customized 2500m2 fish farm enclosure, might regain a more natural seal-like behaviour.

Recent press reports, however, suggest that following her release Badem quickly returned to her old, fun-loving ways, frolicking with late-season bathers.

The organizations responsible have yet to release their detailed assessment and scientific findings of the rehabilitation and release procedures applied in Badem's case. There can be no doubt that assessments of this kind can prove invaluable aids to other monk seal rehabilitation efforts, the science of which remains poorly understood. For monk seal pups brought into rehabilitation, survival is by no means a foregone conclusion; a substantial number die during the process. Information remains a vital key in improving rescue and rehabilitation techniques, and may even end up saving the lives of future orphans.

Other sources and photographs

Hürriyet. Badem Photo Gallery.
Hürriyet. Fok Badem'e denizde yuva, 6 July 2008.
NTV/MSNBC. Fok Badem koruma altında, 7 July 2008.
Hürriyet. 2500 m2'lik özel havuzda, 14 July 2008.
Hürriyet. Fok Badem'in keyfi yerinde, 18 July 2008.

The Didymian. Badem meets visitors in a new pool. 26 July 2008.
YouTube. Killer Seal. "Killer seal" at Defnelli Bay, October 2008.

News Watch

Seal is enjoying a taste of freedom

Badem, who is being looked after courtesy of one of Turkey's richest businessman, Mustafa Koç was released from the pool in Marmaris. It was kept in a pool to preserve its natural instincts and not to get close to people. But on her release, Badem went straight to Akyaka beach to play with people.

Badem was found in sea off Didim on December 5th, 2006 with injuries to her body. The Turkish Underwater Research Group (SAD-AFAG) kept Badem in the Mediterranean Seal Rehabilitation Centre in Izmir's Foca city for 5 months. Badem was kept under control and rehabilitated by top veterinarians and sea biologists from Lenie 't Hart Zeehondencreche and Turkish Underwater Research Group during this 5 month period.

After the rehabilitation period, Mustafa Koc sponsored Badem by donating all the costs associated with looking after the seal.

In 2007 Badem went to the Gokova Gulf and started to interact with people. SAD-AFAG, who is monitoring the seal, took it to a pool in Marmaris to stop its contact with people. It was released from the pool at the end of September as it was hoped that it wouldn't interact with people again. But Badem went straight to the beach where it was previously playing with people.

The seal is now surviving by itself following the fishing boats and passing the time by playing with people.

Source: Seal is enjoying a taste of freedom, The Didymian, 18 October 2008.

Research and analysis projects for Foça

In May 2008, the Environment Protection Agency for Special Areas (EPASA) nominated SAD-AFAG to carry out two research and analysis projects in the Foça Special Environment Protection Area: *Marine Vessel Carrying Capacity of Foça SEPA* and *Monitoring of the Mediterranean Monk Seal and its Habitat in Foça SEPA.*

The Foça Carrying Capacity project was launched in early June 2008 and will last 7 months after the protocol signature. EPASA aims to identify carrying capacity of marine vessels in the coastal SEPAs in Turkey, and the Agency has already completed the first research and analysis project in this field in Göcek SEPA in Fethiye Bay last year. Foça will be the second SEPA and fishing vessels, both industrial and artisanal, will constitute the main target group in the research and analysis. Both ecological and maritime transport subjects will be analyzed in parallel. First, the importance and potential of biological diversity will be studied and reported, with special emphasis on endangered marine and coastal species in the Foça SEPA. Second, the total number of boats, maritime traffic, anchorage areas, discharges from ships, ports and piers will be analysed by SAD-AFAG in order to ensure optimum shipping activities in Foça, ultimately aiming to minimize the harmful impacts of maritime traffic upon the ecological assets of the Foça SEPA and vicinity.

Foça marine protected area and islands from the southern hills.

Purse-seiners in Büyük Liman port in Foça.

The aim of the second research and analysis project is to identify specifically the current status of the Mediterranean monk seal and its habitat in the Foça protected area, initiated following a protocol between EPASA and SAD that was concluded on 28 May 2008. Although the quality of habitat has not changed in years, the frequency of monk seal sightings in the Foça SEPA has been reduced since 2004, while no breeding has occured since 1996. Therefore, this project also aims at identifying the factors negatively affecting the monk seals in the area, and to provide an assessment and proposals for remedial action by the responsible official bodies. The project will reflect the updated status of monk seals between 2004 and 2008. A book and a leaflet will also be designed and published in cooperation with EPASA and SAD-AFAG during the project period, and will be distributed to the main stakeholders and public, mainly in Foça.

Both projects will be completed by the end of 2008, and the results used by EPASA in Foça SEPA Management Planning for implementation in the near future. – Cem O. Kıraç, SAD-AFAG.

Integrated coastal and marine management planning project for Gökova SEPA

Sedir Island (with lighthouse) and northern Gökova coasts (background).

SAD-AFAG and the Netherlands-based Rubicon Foundation have developed a joint project entitled *Putting PEEN (Pan-European Ecological Network) to Practice in Marine and Coastal Areas; a demonstration project ensuring the ecological resilience, coherence and sustainable future of Gokova Bay SEPA in Turkey*. The project was approved by a jury headed by the Dutch Ministry of Agriculture. As project partners, the Environment Protection Agency for Special Areas (EPASA) and Ministry of Agriculture and Rural Affairs (MARA) of Turkey provided official backing, prior to project approval. Eurosite, a network of organizations managing Europe's natural heritage, has also taken a partnership role. The project's long-term target is to protect marine biodiversity in Turkey through effective national legislation and planning via national and local management mechanisms. The immediate objective is to achieve the conservation of Gökova Bay, in part through new national fishery legislation developed and tested within the framework of the sustainable management planning of Gökova Bay SEPA.

Ecological components, including fish, birds, marine mammals and posidonia, and socio-economic components, including tourism, marine traffic, and fisheries, will be studied individually. Pollution loads and sea water quality levels will also be analyzed. All the data will be input into a GIS database to be specially designed for this project.

The most important outcome will be integrated coastal and marine management planning (ICMM) for Gökova SEPA, based on the cumulative data incorporating various layers of human use (socio-economic conditions), threats, habitats and biological diversity. Since EPASA and MARA have already provided their official letter of intent to SAD-AFAG prior to the project, the cooperation and support from the relevant state departments are keenly anticipated. It is also expected that the EPASA will be putting the ICMM Plan into force after the completion ofthe project. – Cem O. Kıraç, SAD-AFAG.

Bahtiye Mursaloglu Science Camp at Foça

SAD-AFAG Foça science camp.

SAD-AFAG hosted one of three science camps between 4 and 31 August 2008. The camp was organized in the Foça SEPA, where SAD-AFAG has been carrying out monk seal conservation projects since 1993. The aim of the Science Camp is to train 3rd or 4th grade undergraduates or beginners of graduate school in the applied marine conservation sciences and management, in particular on monk seals, sea grass meadows and fish. The name of the camp was chosen as 'Prof. Dr. Bahtiye Mursaloglu Foça Science Camp' in honour of the first scientist to work on critically-endangered monk seals in Turkey. The camp comprised 4 weekly modules; two dedicated to monk seal surveys, conservation and management, one to *Posidonia* meadow habitat survey techniques, and the last to marine fish survey methods. Academic support was provided by the Institute of Marine Sciences and Technology of Dokuz Eylül University. Thirty-six students of Biology Departments or Aqua Product Faculties from 10 different Turkish cities participated. Twelve trainers were actively involved during the science camps. SAD-AFAG is planning to continue these camps on an annual basis. – Harun Güçlüsoy, SAD-AFAG Foça Office.

UNDP-GEF supports integrated coastal and marine protected areas in Turkey

UNDP-GEF, in partnership with Turkey's Environment Protection Agency for Special Areas (EPASA), is expected to embark upon a wide-ranging management project by 2009.

The project, known by its formal title as *Strengthening the protected area network of Turkey: catalyzing sustainability of marine and coastal protected areas (MCPA),* proposes innovative protected area management solutions.

The project objective is to facilitate expansion of the national system of marine and coastal protected areas and improve its management effectiveness. The project is for 5 years with a total budget of $6,530,000 (GEF grant $2.530.000, co-financing $4,000,000).

Expected outcomes are:

- Responsible institutions have the capacity and internal structure required for prioritizing the establishment of new marine and coastline protected areas and for more effectively managing existing MPAs,
- MPA financial planning and management systems facilitate effective business planning, revenue generation and cost effective management, and
- Inter-agency coordination mechanisms will be in place to regulate and manage economic activities within multiple use areas of MCPAs.

These components are likely to result in a full check-up for Turkey's MCPAs: 9 Specially Protected Areas, 3 National Parks and 1 Ramsar Site, while also providing the opportunity for other coastal and marine protected areas (SEPAs) to be established by the MoEF and EPASA in consultation with relevant organizations experienced in their various fields.

Cem O. Kıraç, Harun Güclüsoy and N. Ozan Veryeri represented SAD-AFAG in the project's inaugural meeting, held in Ankara in 4 September 2008, in which several other specialists from NGOs and universities, as well as governmental delegates, also participated.

SAD-AFAG representatives assumed tasks in three separate working groups relevant to their own work experience. They observed that their partners in the groups all showed strong motivation and know-how in this inter-disciplinary project.

Following the presentation and evaluation sections of the workshop, it seems that the UNDP and EPASA representatives are satisfied with the amount of original data produced in such a short period of study, and with the harmony of collaboration between independent actors.

The project proposal is expected to be submitted by the project team by November 2008 and GEF Agency approval is expected by April 2009. Implementation of the project may start by September 2009. – N. Ozan Veryeri, SAD-AFAG Karaburun Office.

EndQuote

Dream Homes Antalya

This world famous tourist region has the highest number of diving schools in the country, containing many contrasting dive sites. A French military transportation ship at the entrance of Antalya harbour lies at a depth of 20 - 32m. The islands in the open seas around Tekirova has [sic] a wonderful array of sea life including huge thornback rays, and is also a good location for cavern diving. During August and September there is a huge amount of tuna fish and seals, and dolphins can be seen throughout the year.

Source: Dream Home Turkey, Antalya & Province, 18 May 2008.

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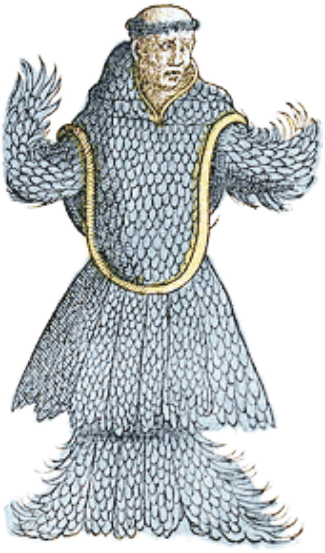
Cover Story

Vol. 11 (2): November 2008

One talking fish with a whale of a tale

William M. Johnson

Thanks to Leiden publisher Backhuys and the Netherlands Commission for International Nature Protection, TMG is pleased to announce that two landmark studies on the Mediterranean monk seal in human history and culture, *Monk Seals in Antiquity*, and *Monk Seals in Post-Classical History*, are being made available for PDF Open Access download [see Recent Publications]. To mark the occasion, in this issue's Cover Story we are also publishing *One Talking Fish*... an overview of humanity's historical relationship with *Monachus monachus*, commissioned recently by the Czech Ministry of Environment for the forthcoming anthology 'Of Animals and Men'.



Belon's Sea Monk, *Monachus marinus, 1555.*

The Mediterranean monk seal is Europe's most endangered marine mammal – but why? What has made it so?

Taken at face value, the evidence has always appeared to implicate the grinding ecological pressures that 'algae-bloomed' during the 20th century – overfishing and destructive fishing methods, rampant coastal development, the locust swarms of summer tourists and boaters, the toxic ooze of industrial and agricultural pollution.

A reading of more distant history, however, tells a somewhat different story, and arguably delivers a lesson as pertinent today as it was two millennia ago, when ancient Rome first witnessed the spectre of overfishing, erosion, urban overcrowding, forest denudation and the disappearance of species.

In ancient minds

Although it may be thought of as an obscure species today, its very survival hanging by a thread, the Mediterranean monk seal has appeared in numerous writings inked onto papyrus, parchment or paper during the last 3000 years.

While most Europeans today are scarcely even aware of its existence, the seal formerly touched the lives of many, including emperors, poets, philosophers, sorcerers, physicians, explorers and, of course, fishermen.

Homer, Aristotle, Hippocrates, Plutarch, Galen, Avicenna and Gesner are among some of the ancient and Renaissance world luminaries who recorded observations about the Mediterranean seal and its relationship to human culture, folklore, science and economy.

Monk seal colonies were once found throughout the Mediterranean, the Marmara and Black Seas. The species also frequented the Atlantic coast of Africa, as far south as Mauritania, Senegal and the Gambia, as well as the Atlantic islands of Cape Verde, the Canary Islands, Madeira and the Azores. It is likely that across its original range, the Mediterranean monk seal once numbered in the tens of thousands.

A kinder place: the monk seal in ancient Greek myth, depicted on a water jug, some 2,500 years old.

Today, several thousand years later, fewer than 600 individuals are thought to survive, mainly in two disconnected populations, one along the mainland coasts and islands of Greece and Turkey in the eastern Mediterranean, and the other in the Atlantic, along the cliff-bound coasts of the disputed Western Sahara.

France, Spain, Italy, Egypt, Israel and Lebanon are among some of the nations that saw the disappearance of the species during the 20th century. More recently, the monk seal is also thought to have become extinct in the Black Sea. Despite sporadic sightings – possibly of stragglers from other regions – *Monachus monachus* is also effectively extinct along the Adriatic coasts and islands of Croatia, and the Sea of Marmara. Similarly, only a handful of individuals now reportedly survives along the Mediterranean coasts of Tunisia, Algeria, Libya and Morocco.

Habitat

With all the threats arrayed against the species that have involved killing by spear, trident, club, rifle or dynamite, it is sometimes easy to forget that habitat plays its own hidden role in the monk seal's tenuous survival.

Significantly, ancient texts portray the animals as living in large herds, and inhabiting open sandy beaches, shoreline rocks and great, arching sea caves.

In the Odyssey Homer describes how the seals, herded by their guardian, the sea god Proteus, son of Poseidon, flocked to such great caverns to sleep, finding shade from the noonday sun. The animals – numbering hundreds in some respected translations and commentaries – then lay in rows "along the sands" near the breaking waves.

The great "arching caverns" immortalised by Homer, once traditional habitats of Mediterranean monk seals, now offer little security from human disturbance.

In his *Historia Animalium*, the Father of Natural History, Aristotle, describes seal rookeries on rocky outcrops or promontories, observing that both adults and pups would allow themselves to slide

down steep inclines into the sea. He also describes mothers giving birth to their pups "on dry land… near the shore."

Today, throughout the Mediterranean, it is rare to hear even of a solitary seal basking on an open beach or clambering onto shoreline rocks.

Similarly, although the great "arching caverns" immortalised by Homer can be found in many parts of the Mediterranean, most – if not all – appear to have been abandoned by seals long ago because they could offer little security from hunters and fishers or, in more recent times, summer tourists. [see Tourists captured on seal monitors, this issue]

The species is normally characterised as shy, retiring, and craving solitude, behaviour patterns that convinced some present day naturalists – albeit in error – that the animal was christened the 'monk' precisely because of these reclusive traits.

In fact, the name was inspired by the animal's physiognomic rather than its behavioural traits. German naturalist Johann Hermann, in the first modern scientific description of the species in 1779, proposed the name *Phoca monachus* following his detailed study of a captive individual he discovered in a travelling show in Strasbourg, France. Observing how the animal arched itself up against the edge of its container, and vaguely recalling how some people along the French Mediterranean may have known the animal colloquially as the 'moine', he wrote: "It looked from the rear not dissimilar to a black monk in the way that its smooth round head resembled a human head covered by a hood, and its shoulders, with the short stretched feet, like two elbows protruding from a scapular…"

That said, the conventional scientific description of the seal's retiring character and temperament is seriously at odds with many older historical records. Over the centuries, these have portrayed the creature as gregarious, inquisitive, docile, and even mischievous towards humans.

Why the discrepancy? – Evidence in the historical record suggests that this apparent change in temperament is linked both to human persecution and habitat deterioration.

Rather than being a learnt reaction alone, it is also possible that the change came about by natural selection, in that it was those docile, gregarious, sand-loafing seals that naturally presented the easiest targets for hunters and fishers. Once these had been exterminated, only those animals of a naturally shy and reclusive disposition survived.

Deteriorating habitat: a juvenile monk seal in Greece, sleeping in a water-filled, crevice-like cave.

Various historical accounts record the apparent docility of seals when confronted by hunters. Describing the hunting of seals in Roman times in his treatise *Astronomica*, Marcus Manilius states that the unsuspecting animals "deem themselves as safe as in the open sea". Portuguese explorers exploiting the 5000-strong seal herd at the Bay of Dakhla in 1436 found the animals "easy to kill", reported the official chronicler of the expedition. Similarly, records from the conquest of Madeira portray sleeping seals "outstretched on the beach... disinterested, not dreaming of the new enemy which was coming to take them by surprise in a barbaric fashion."

Today, the monk seal in the Mediterranean occupies habitat far more marginal than in ancient times, including desolate cliff-bound coasts, and narrow, inaccessible caves, some with underwater entrances and escape routes.

Though offering some protection from human disturbance, such deteriorated habitat has, in some cases, also been described as being incompatible with the biological needs of the species; sometimes, they are little more than water-filled crevices, with no inner beach or haul-out area.

While discouraging colony formation because of their limited size, some caves may also be vulnerable to autumn and winter storm conditions during the height of the pupping season. Waves and surges have been known to funnel into such caves, washing weaning pups out into the sea, either to drown or to become stranded, orphaned from their mother's care.

Myths and legends

In Greek mythology, monk seals were placed under the protection of Poseidon and Apollo because they showed a great love for sea and sun.

Animistic imaginations transformed the creatures into nymphs and mermaids.

Several Greek and Roman texts also link the animals to the myth of the Sirens and the sweet, irresistible song that could reputedly lure sailors to their doom. Recently discovering some grains of truth to the ancient legend, field researchers have noted the high-pitched, siren-like cry that mother seals make in warning their pups of danger, the sound echoing out from desolate, cliff-bound coasts. [see The Song of the Sirens, this issue]

One of the first coins, minted around 500 B.C. by the powerful city state of Phocaea – itself named after the species – depicted the head of a monk seal.

In recent excavations on the island of Rhodes, archaeologists discovered the skeleton of a monk seal ceremonially buried next to a dog and several humans; they theorise that the seal may have become a pet who received honoured burial rites after its death.

Subsistence

Though there may have been regional exceptions at one time or another, there is no evidence to suggest – as was the case with the 'sacred' dolphin, whose killing was sometimes deemed tantamount to murder – that there were any legal or moral injunctions against killing seals.

The historical record suggests that coastal dwellers hunted the animals for the basic necessities of their own survival – fur, oil, and sometimes meat – but initially did not kill them in large enough numbers to endanger their existence as a species.

Furs were used as clothing, or the skins turned into leather for shoes, sandals, belts and farm harnesses. The fat of the seal fuelled oil lamps, and made tallow candles.

That subsistence approach to the hunt, however, was eventually eclipsed by a far more systematic and intensive exploitation as coastal cities expanded, trade routes

proliferated and demand increased. It was an exploitation that resulted in the monk seal being killed and captured for far more than its skin.

Medicine men

While Hippocrates and Aristotle had both extolled the virtues of seal oil and 'rennet' to treat such illnesses as epilepsy and gynaecological disorders, it was in ancient Rome that the seal provided the greatest number of remedies – and body parts – to the Roman pharmacopoeia. So too, did many other future endangered species of animal and plant found around the Mediterranean basin.

Vying with medicine men, magicians, faith healers and street hawkers, droves of poorly-qualified doctors descended upon Rome and her greater urban centres, finding a thriving market in illness ripe for the picking. With them came new, exotic remedies from distant parts of the Empire, and beyond. Among their eager patients, these rapidly grew in popularity.

In terms of its impact on wild animals, the Roman obsession for quack medical recipes and rituals has been equated with today's insatiable demand for magic cures in the Middle East and Asia, where a thriving trade in aphrodisiacs and other dubious remedies is driving some species, like the Siberian tiger, to the brink of extinction.

Unwittingly, Rome's renowned scholar Pliny the Elder did much to encourage this trend, cataloguing several thousand remedies in his 37-volume encyclopaedia *Natural History*. Rather than conducting his own research, he tirelessly amassed recipes, both botanical and zoological, from every source imaginable, including the bizarre concoctions of the Magian priests, for whom he actually professed nothing but contempt. Yet, within a few years, his inventory of remedies had insinuated itself firmly into Roman lore and traditions.

The sheer abundance of popular remedies involving seal derivatives suggests that the trade must have had a severe impact upon the species during this period.

What was termed seal 'rennet' – but what was in reality the curdled milk found in the stomachs of unweaned pups – was regarded as a particularly valuable and efficacious medical by-product, and was used to treat diseases ranging from epilepsy to tetanus, dysentery to tonsillitis.

In the first century A.D., physician and botanist Dioscorides observed that, ideally, the 'rennet' should be extracted from seal pups before they had learnt to swim. Assuming that physicians and traders heeded those words, the impact upon the species, in losing its progeny, is likely to have been substantial.

Pliny the Elder, who confirms that seal pups were hunted specifically for their 'rennet', also lists numerous other cures and remedies, the fat of seal, for example, being recommended as a treatment for gout, hydrophobia arising from "the bite of a mad dog," ringworm and leprous sores.

Magic and superstition

Like many other wild species, the seal was also prized for its uses in magic and superstition – even if it was difficult, under the influence of the Magian sorcerer-healers, to tell magic from medical practice.

Because of its infamously sleepy habits, the right flipper of a seal, placed under the pillow, was thought to cure insomnia. The whiskers, distilled into a potion, could win friends and lovers or drive off enemies.

Since the seal was never known to be struck by lightning, Roman tents were covered with seal hides.

Such superstitions were not only confined to poor fisher folk, farmers, or even the legions. The Roman biographer and historian, Suetonius, tells us that thunder and lightning also struck terror into the most powerful figure of the Empire, Caesar Augustus, "against which he always carried a piece of seal-skin as an amulet."

Plutarch adds that ship-owners had their mastheads wrapped in seal pelts, in the belief that they would offer protection against lightning strikes. When allied with the apotropaic powers of coral, the skins were also reputed to guard against supernatural forces, protecting vessels against perilous winds, waves and storms.

Such superstitions also made their way into other walks of life.

According to a fourth century A.D. treatise on agricultural pursuits, a seal pelt dragged around a field and then hung at the entrance or yard would save a farmer's crops from hail storms.

Coliseum

Along with countless other wild species, the monk seal was also destined to suffer ritual abuse and public torment in the Roman circus and amphitheatre.

More than any other single factor, it is this icon of popular Roman culture that can provide an unambiguous reflection of then prevailing human attitudes towards nature and animals, and the scope of that civilisation's exploitation of wildlife.

The tests of stamina and skill in athletics and chariot racing inherited from the hippodromes of ancient Greece had gradually given way to gladiatorial contests, animal baiting and finally, the wholesale carnage of both man and beast under the thin guise of 'hunting' and 'sport'. The resulting crowd frenzy only led to demands for more – demands that even an emperor-god would have been foolhardy to deny.

Such was the insatiable public hunger for the games, that a vast organisational apparatus was established to capture and transport wild animals, and to keep the Empire's amphitheatres well-stocked with victims. Powerful, private syndicates dominated this highly-lucrative enterprise, and because the passion for the blood games consumed commoners and emperors alike, the animal round-ups were ably assisted by the army.

A Roman mosaic depicting human-animal combat, baiting and 'entertainment' in the arena.

"The vast numbers of animals," observes the historian H.H. Scullard, such "as elephants, lions, tigers, leopards, panthers and hippopotami, that had to be shipped to Rome to gratify Roman cruelty gave rise to a large-scale trade in wild-beasts."

Indeed, even by today's standards, it was an exploitation of astronomical proportions, and may even have acquainted the Romans with the concept of species extinction.

In 55 B.C., at the inauguration of Pompey the Great's amphitheatre in Rome, officials offered 500 lions, 410 leopards and 17 elephants. Similarly, at the dedication of the Coliseum by Titus in 80 A.D., 9,000 wild animals were sacrificed in a spectacle lasting a hundred days.

In a deceptively innocuous account of monk seals entertaining the crowds, Pliny emphasises the docility and intelligence of the animals, and their ability to perform tricks for their audience. As a result of their training, sea-calves could "be taught to salute the public with their voice and at the same time with bowing, and when called by name to reply with a harsh roar."

Other accounts, however, paint a far darker picture, describing animal baiting contests in the arena, with bears and seals provoked into attacking one another. First century poet Calpurnius Siculus expressed his dazed wonderment at the sight, as exotic beasts emerged, one after the other, from the warren of cellars beneath the arena: "Nor was it my lot only to see monsters of the forest: sea calves also I beheld with bears pitted against them..."

Fish and fishing

Fish was an important staple of the ancient Mediterranean diet, but it was the Roman era that saw a marked increase in the sophistication of boats, equipment, and trading infrastructure.

While Hellenistic art largely conveyed a romantic view of subsistence coastal fishing, archaeological digs at Roman sites have unearthed various artefacts illustrating large-scale fishing with nets in the open seas. Roman authors such as Manilius and Oppian of Cilicia describe the use of huge dragnets – an early form of trawling – whose catch would fill large tanks and wine vats.

In cities throughout the Empire, fish of the finest quality gradually assumed luxury status, the exorbitant prices they commanded in the marketplace reflecting not only the actions of profiteers and speculators but, in some areas, also the effects of over-exploitation.

A Roman fishing mosaic from the Spanish city of Alcalá de Henares.

Seas and rivers were scoured far and wide to meet escalating demand. While improvements in roads and shipping led to booming trade routes throughout the Roman Empire, and even beyond to India and the Orient, the rich fisheries of the Black Sea and the western and eastern reaches of the Mediterranean were still days or weeks away by ship. Apart from thriving local demand, such outposts were geared towards the preservation and processing of fish for export – especially *garum*, a spicy fish sauce that the Romans used to garnish many a dish.

For its fresh seafood, Rome had to rely on the Ligurian and Adriatic Seas, and it was here that the spectre of over-exploitation first became apparent.

Pliny even notes that an attempt was made to boost local fish yields by restocking the coast between Ostia and Campagna with fish caught in the southern Aegean.

Such measures, however, appear to have had little impact on scarcity and prices.

In *Natural History*, Pliny complains that one mullet equalled the price of nine bulls. Small fish may have been cheap and plentiful, but they were also looked upon with disdain – arguably another compelling reflection of the decadence that was eating Rome alive. The Roman poet Martial, in *Epigrams*, confirms Pliny's observations: "Do not dishonour your gold serving-dish by a small mullet: none less than two pounds [908 grams] is worthy of it." As Juvenal scathingly remarks in his *Satires*:

> "Did *you* pay so much for a fish, Crispinus, you who once
> Went around in a loin-cloth of your native Egypt? Why,
> You could have bought the fisherman for less than the fish."

A later writer, Macrobius, observes that in his time – the fifth century A.D. – such exorbitant prices had disappeared, yet intriguingly, this also coincided with the final disintegration of the Empire, and with a tumultuous period when demand for fish, and supply through the export trade, almost certainly plummeted because of collapsing infrastructure.

While Roman overfishing might pale in comparison to today's scouring of the Mediterranean by industrial pelagic trawlers, its intensive coastal and open sea seining also appears to have increased competition between fishermen and seals. Modern studies indicate a clear link between the intensity of competition among fishermen, the severity of overfishing, and the level of fishermen's hostility towards the monk seal.

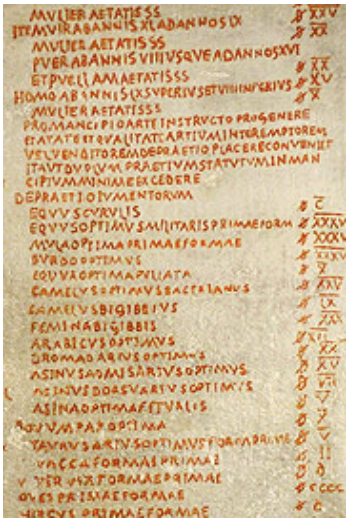
In an account uncannily reminiscent of today, Oppian describes how fishermen looked upon the seal as a net-damaging, fish-stealing pest, the animals being swiftly dispatched with "trident and mighty clubs and stout spears."

The Edict

There can be few better illustrations of the starkly utilitarian nature of Roman attitudes towards wildlife than the numerous ways in which the monk seal was exploited for commercial gain.

By implication, the scope of the trade itself, and the vast numbers of animals required to feed it, also provides additional evidence of the seal's abundance during the height of this exploitation.

By 301 A.D., however, there were significant signs of change, as revealed in a document known as the Edict of Diocletian, the military-elevated emperor who instituted a command economy in an effort to tame rampant inflation and profiteering by merchants, hoarders and speculators.



A fragment from Diocletian's Edict on Maximum Prices.

His Edict set compulsory maximum prices for a wide range of goods and services, and was applied throughout the Roman Empire, appearing on papyrus scrolls, painted wooden display boards, and even engraved

onto stone tablets.

By comparing the Edict's maximum prices for seal skins with other animal hides, and with wages in the various strata of the social hierarchy, it is possible to ascertain just how rare a luxury monk seal skin had become by 301 A.D. At the bottom rungs of the ladder, labourers, herdsmen, mule-drivers and sewer-cleaners were paid 20-25 denarii a day. Three days of toil were enough to buy a cheap pair of shoes; a month's savings, a shirt. Carpenters, bakers, and elementary schoolteachers could double those salaries; a skilled and respected figure painter might expect 150 denarii a day, and an advocate 1,000 denarii for pleading an entire case. Yet a single untanned seal skin would set them back 1,250 denarii, a tanned hide 1,500 denarii. Clearly, this was beyond the means of all but the most affluent. Among other skins, seal also ranks as the most luxurious commodity, outclassing even the hides of leopard, lion, lynx, wolf and bear.

Though some monk seal colonies may have experienced a temporary revival of fortunes with the collapse of the Empire, transport infrastructure and demand, it appears likely that the large herds depicted by Homer and Aristotle were a thing of the past.

While the large colonies populating the Atlantic coast of Africa, Madeira, and the Canary Islands may have been beyond the reach of the Empire, history tells us that these were quickly exterminated in the 15th century by colonial explorers from Portugal and Spain, in search of quick profits in skins and oil.

Symbolism

Today, the species that was once placed under the protection of Poseidon and Apollo because it showed a great love of sea and sun has come to possess a different kind of metaphor altogether: one of ecological decay and destruction.

As the Mediterranean's most critically endangered species, the monk seal is now viewed as an ecological symbol of the ailing sea and coastline it inhabits, its very fate tied to the threats facing the marine ecosystem as a whole.

In summer the monk seal must run the gauntlet of tourist-invaded beaches and, with a boom in pleasure boating, diving and snorkelling, their own caves, too. They must try to find food in a sea depleted by industrial overfishing, trawling and dynamiting. They must avoid the fisherman's gun while trying to snatch what food there is left from the nets. They must nurse and care for their pups in caves that they were never meant to raise them in, and be on alert for the storm that might wash their offspring away.

What then, does a reading of history tell us about the seal of the Mediterranean and human attitudes towards it?

At its most favourable, mythology saw seals protected by the gods, and transformed them into sea nymphs and mermaids. At one time, catching sight of the animals frolicking in the waves or loafing on the beaches was considered an omen of good fortune for seafarers.

And yet aside from such benign traditions, history shows that the human relationship with *monachus* has always been starkly utilitarian.

Although there are some notable exceptions, by and large this relationship was governed by the species' perceived value in fur, oil, and meat, its efficacy in medicine and magical rites, its public appeal in circuses.

Some explorers won small fortunes by boiling seals into oil, and even the poorest fisherman or farmer might benefit by turning the animals into shoes or harness leather.

For the most part, then, monk seals have always been worth far more dead than alive.

The monk seal as the Marine Triton, or Sea Devil, *Triton marinus,* in Gesner, 1558.

Even when counting costs rather than profits, attitudes towards the species were still essentially utilitarian in nature – the seal branded as a pest that threatens fish stocks and damages fishing nets, for example. Such hostility was probably responsible for transmuting the mermaid seal into the Sea Devil in the folklore in the Dark Ages, and also inspired the myth that the seal would hunt down fishermen in vicious, tooth-gnashing, packs.

Guillaume Rondelet's Mediterranean seal from the island of Lerinus, still betraying signs of the species' 'devilish' character; in Rondelet, 1554.

Even for zoos and menageries of the 18th century – which presumably had a vested interest in keeping their captives alive for as long as possible – monk seals were obviously worth far more out of their element than along the coasts of their birth. The showman's 'Talking Fish' may have had a limited shelf life as it was carted around Europe in appalling conditions, but still generated more than enough gold and silver coin to enrich its owner and pay for its own replacement.

Detail of a handbill distributed in Germany, advertising the arrival of a showman from Livorno, Italy, with his "Live Sea Lion" ca. early 1800s. According to Faust, Barthelmess and Stopp (1999), after 1800, live seals were often exhibited, and such handbills were typical of the period. Courtesy Klaus Barthelmess, from Faust, Barthelmess & Stopp, 1999.

Historically, even conservation of the species has rarely risen above the prevailing utilitarian tide.

In the 19th century, hunters noticed the decline of the monk seal and appealed for its preservation – if only to allow other specimens to be peppered with shot.

A century later, international charities and scientific institutions were voicing concern about the plummeting fortunes of the seal, yet largely inspired by the same utilitarian reasoning. Monk seals had to prove their value and usefulness to human beings in order to be deemed worthy of survival. A report to the International Union for the Conservation of Nature (IUCN) in 1962, for example, advocated the following measure to halt the continuing decline of the species: "To point out to governments that Monk Seals are an important but now only a potential natural resource. Managed properly the seal could become a permanent source of skins, meat and oil".

More recently, scientists have pondered whether the monk seal might, if protected, regain some of its legendary tameness, thereby becoming a potential attraction for the tourist industry, whose current indifference bears no small measure of responsibility for shunting the species into an early grave. Others have suggested that fishermen might be persuaded to relinquish their traditional hostility towards the seal by ferrying paying tourists into marine protected areas.

While the logic of bringing such protagonists into the conservation process may be unassailable from a pragmatic standpoint, it does little to alter the fact that, fundamentally, utilitarian attitudes towards the species remain intact.

Even passive arguments tend to reflect the same utilitarian and anthropocentric values, the disappearance of the species, for example, being lamented as a loss to 'our' human heritage. In much the same vein, research that is often invasive in itself is justified on the basis that it will benefit science. Few words are ever spoken, it seems, of the monk seal's intrinsic value, irrespective of human self-interest.

The apparent reluctance of the international conservation community to address, consistently and comprehensively, the dwindling fortunes of the monk seal may eventually prove attributable to the same factors.

Shunned by most multinational conservation charities, it appears that the Mediterranean monk seal – despite the dubious privilege of being elected Europe's most endangered marine mammal – has yet to prove itself capable of rivalling the financial clout, public recognition and press coverage of, say, the giant panda, the African elephant or the harp seal.

While many myths are rooted in utilitarian values, on occasion, the inverse may be equally true.

For coastal fishermen, for example, the seal continues to be a scapegoat for 'their' diminishing fish stocks, even as industrial trawlers plunder the sea a figurative stone's throw from their own boats.

Islanders posing with a dead seal on Vis, Croatia, in 1931.

Or consider the comforting myth – so reminiscent of a more ancient one, "Rome has spoken; the matter is settled!" – that legislation outlawing the killing of monk seals has actually had a measurable effect in stemming the decline of the species. Indeed, with remote, tortuous coastlines and lack of enforcement, direct killing has consistently remained the most serious mortality factor affecting *monachus* in the eastern Mediterranean.

Likewise, international conference resolutions, treaties and conventions, action plans endorsed by governments and scientists, often conjure up the myth that conservation of *Monachus monachus* is a coherent, tangible force with assured funding, established targets and regular audits of results. Such is not the case, however, and has little prospect of becoming so in the foreseeable future.

The reality on the ground is that conservation of the species continues to be met by official indifference.

Apparently paling at the measures required, and the reluctance of governments to take them, some have even labelled the extinction of the Mediterranean monk seal as "inevitable".

That, however, again speaks more loudly of human attitudes than seal realities. Among other lessons, it also ignores the conservation success story at Madeira where, on the uninhabited Desertas Islands, monk seals have been brought back from the brink of extinction as a result of strict enforcement, non-invasive research and other measures. In recent years, mothers with pups have even been observed returning to open beaches in the Desertas Islands Nature Reserve, suggesting that the seals now feel sufficiently confident to leave the security of their cave shelters for resting and nursing. Similar progress is now also being seen along the Coast of Seals, in the disputed Western Sahara. [see Lactation on an open beach in Cabo Blanco: first known record since 1945, this issue]

The Mediterranean presents a bleaker picture altogether, despite the single-minded efforts of grassroots organisations in Greece and Turkey to persuade governments and industry to take their obligations and their responsibilities seriously.

It is now almost thirty years since a landmark UN-sponsored conference in Rhodes drew up a raft of measures to prevent the seal's extinction and promote its recovery. At that time, there were still hopeful presentations being made of saving the seal in the Black Sea, the Marmara, the Adriatic, and the Mediterranean coasts of Africa.

Yet today, almost three decades after the event, governments have barely established even one fully-functioning marine protected area for the species in the Mediterranean basin, let alone the interconnecting network of reserves envisaged at Rhodes.

Arguably, it is only through the reading of history that we can begin to understand why the seal of the Mediterranean sea is so perilously close to extinction. Travelling these 3000 years, we begin to perceive the monk seal's significance to the fate of other wild species, to the marine and coastal environment, and above all, to the human relationship with the natural world as a whole.

Beyond the deceiving bark, this is one 'talking fish' with a whale of tale.

Author's note: Full references to sources cited in this article can be found in Johnson (2004) and Johnson and Lavigne (1999); see below.

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The Monachus Guardian
monachus / schauinslandi / tropicalis

In Focus

Vol. 11 (2): November 2008

Sighting and Response

Antoni Font, Joan Mayol, Manu Sanfelix and Carlota Viada

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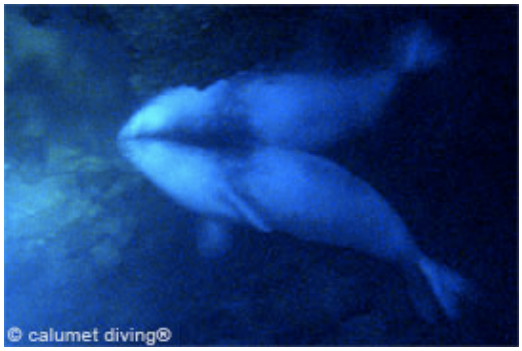
When a Mediterranean monk seal decided to turn up unexpectedly at Mallorca this summer, following the species' fifty-year absence from the Balearic Islands, alarm bells rang and people swung into action. This is a record of events as they occurred...

On 4 May 2008, a group of persons aboard a motor yacht repeatedly saw a seal swimming calmly in a quiet little cove on the north coast of Mallorca, some 10 km NW of the island of sa Dragonera. The animal appeared 10m from the boat and they were able to see it clearly on the surface; it dived and surfaced four or five times. A photograph was taken with a pocket camera, but unfortunately only when the animal was already too far away; in it, one can just barely see a small head in the water. Their sightings lasted about 20 minutes. They later reported the encounter to the personnel of the Natural Park of sa Dragonera, who passed on the news to the Service of Endangered Species of the Balearic Islands Government. Some days later, the seal was seen twice in the close vicinity of the Natural Park of sa Dragonera.

On 14 July 2008 Álvaro Garí, an experienced diving instructor, photographed a monk seal during an underwater encounter in a cave situated some 18 km SE of Sa Dragonera, where he sometimes leads pleasure-diving groups. This is how he describes the encounter:

"I moored my boat at one of the buoys of the El Toro Marine reserve, about 20m away from the coast. In total, with my group and a group from another company, we were about 25 divers. One of the divers told me that he had seen a big white thing floating inside the little cave beside the mooring buoy: he believed it was a dead cetacean, and I headed to the place to check.



One of the pictures taken by Alvaro Gari

The cave is about 20m wide and 5m deep, penetrating 10m into the cliff, so there is some natural light inside. I directed my dive light at the white object, and guessed it was a big animal in a sleep-like position with its nostrils out of the water, in a small air bubble in the roof of the cave.

When I approached, the animal turned slowly towards me and waited for some seconds, looking at me. It was clearly some species of seal. It seemed to me enormous in such a confined space. After visiting the cave some days after, I realize now that its real size is likely to be smaller, around 2.5m. Then it started to move inside the cave, slowly, without losing visual contact with me, finally leaving the cave without any sign of stress. The encounter lasted some eight minutes and it was one of the most intense experiences I have ever had as a diver."

Luckily, Álvaro carried a small compact camera (Sony DSC-T100) with a basic underwater housing. After overcoming the initial surprise, he obtained 10 photos of the animal. Though light conditions inside the cave, coupled with the camera's autofocus and flash limitations, were always unlikely to produce high-quality images, copies of the photographs produced were sent to a group of international experts, who determined without any doubt that the animal was a Mediterranean monk seal.

Some speculated that it was probably an adult female.

Suddenly, we were facing the first confirmed sighting of a monk seal in the Balearics since 1958.

Though there had been a series of sporadic sightings during the intervening years, some of them very detailed, none were ever backed up with photographic evidence. That lack of images made it impossible to either verify or discard the observations.

Despite the limited technical quality, Alvaro's photos also held a deep evocative quality: that of a fleeting encounter, and the monk seal's long-awaited return after a 50-year absence. Coming only half a year after the publication of 'The monk seal, a reversible absence', the coincidence now almost seemed like a premonition [PDF 6.1MB].

Decision making after the encounter

Following his encounter, Álvaro alerted the marine reserve personnel, who duly transmitted the news to the General Direction of Fisheries and the Service of Protected Species in the Environment Ministry of the Balearic Islands Government. An urgent decision-making meeting was convened as soon as the animal had been confirmed as a monk seal. It was decided to launch several initiatives on three fronts: to inform the population (especially users of the sea); to seek new information on the presence and behaviour of the animal; and finally, to open a collaboration with the professional fishermen to diminish the risk of an accident, and to be able to take whatever decisions were deemed necessary as a result.

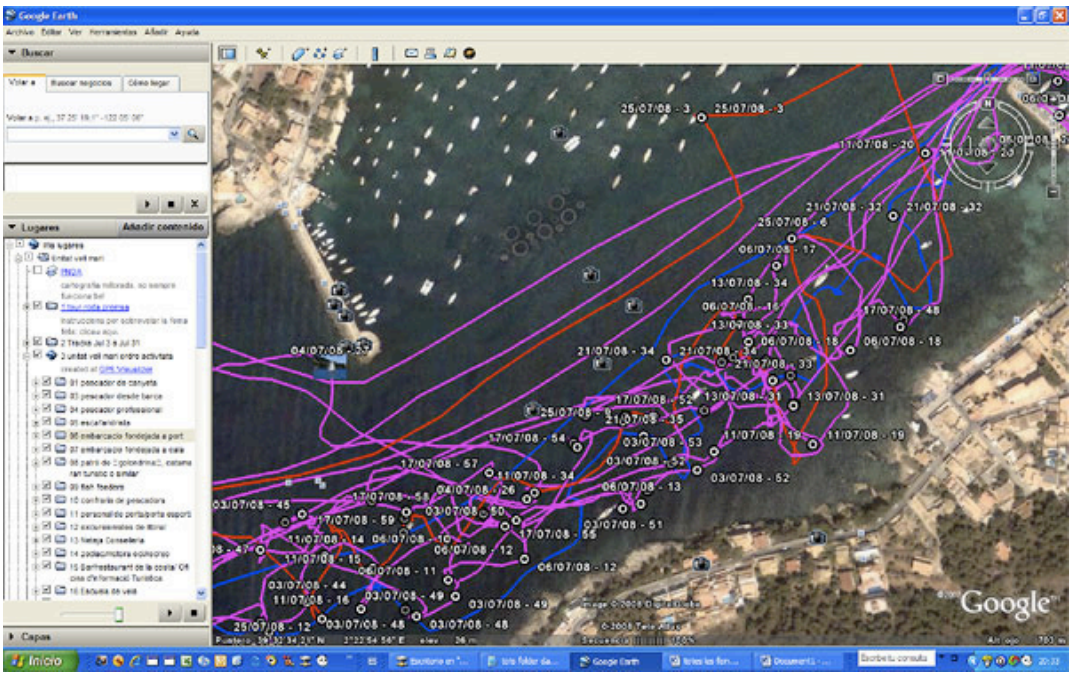
Informing the citizenship

A multilingual leaflet was produced (in Catalan, Spanish, English and German) informing readers about the return of the seal monk to our coasts, explaining how to behave in case of a sighting, and letting them know that a hotline was available by dialling the standard emergencies number 112.

Copies were distributed to various official bodies in coastal communities: town halls, marinas, port police, professional and recreational associations of relevance to the marine environment. The presence of the monk seal made headlines in various newspapers, magazines, radio and television.

Reinforcing the impact of the leaflets, a team of two persons (the 'Unit Vell Marí') was hired to undertake a range of tasks by boat, such as:

- Personal interviews with diverse users of the sea, including professional and recreational fishermen, speargun fishermen, sailors, tourists and maritime authorities...
- Informative talks to groups linked to the sea (sailing schools, marina workers...)
- Systematic observation and photography of positive (caves, areas suitable for haul-out, resting...) or negative (waste, disturbance of the coast ...) features in the habitat.
- Observation from vantage points with good visibility if the weather conditions were appropriate.
- Collation of all information within a database, including the GPS positioning of all team movements (tracks) and events (waypoints), including caves, observations, photographs, interviews, and relevant historical events.



Google Earth can be used to show the tracks and waypoints registered with a GPS. This screenshot shows several visits to port d'Andratx. Waypoints are classified in folders.

Twenty effective working days allowed some 3,000 people to be informed through 881 personal interviews, involving sailing more than 800 km. By nationality, 49% were Spanish (Balearic Islands 40%, Catalonia 2%, other parts of the state 7%). The remaining 51% were foreigners, with a prevalence of British (20%), Germans (15%) and French (8%). The remainder were mostly Dutch, Italian, Belgian, Swedish, Swiss and Portuguese.

The team recorded the coordinates of 213 points of interest for the conservation of seals (caves which should be explored, possible rest areas, accumulations of waste, possible risks to the seal etc.).

To obtain new information about the presence and behaviour of animal

The information campaign was evaluated as especially productive in terms of obtaining evidence and observations of the seal. Up to 14 testimonies from observers were collected using a sightings form adapted from those designed by MOm (Greece), SAD-AFAG (Turkey) and the Natural Park of Madeira (Portugal). The rapid collection of these model forms was made possible by TMG. The first observations dated back to October 2007, so it was deemed possible that the arrival of the animal might have been around or even before this period. Because there are far fewer sailors in the winter, it is possible that the animal had not been observed for several months during the season.

In addition, a team of researchers was hired to monitor more than 40 miles of coastline to locate and classify caves that might serve as a refuge for seals, with special emphasis on identifying the most suitable shelters where a possible future visual or automated follow-up system could be established.

The field work is still ongoing. It began in August taking advantage of recent sightings and the good weather at that time of year. To date, 17 days of effective field work have allowed us to monitor the area designated for the study: from Cala Figuera to Soller. The first objective is to locate and inventory the potential areas of rest, mostly caves and rocky platforms, so as to know where to start looking for the animal in its haul-outs. The team has travelled the entire coastline with a 5m Boston Whaler, towing a diver with the objective of locating all existing caves along the coast. Each time the diver spotted a possible cave, he undertook a closer inspection. Using this system, the team has geo-referenced 101 points (mainly caves, beaches and rocky platforms).

Also, along with the survey work, they install cameras with interval timers, and look for seal tracks and traces of droppings and/or hair. If found, the search protocol includes the taking of biological samples for a DNA profile of the individual to determine the sex and possibly, to trace the animal's origins.

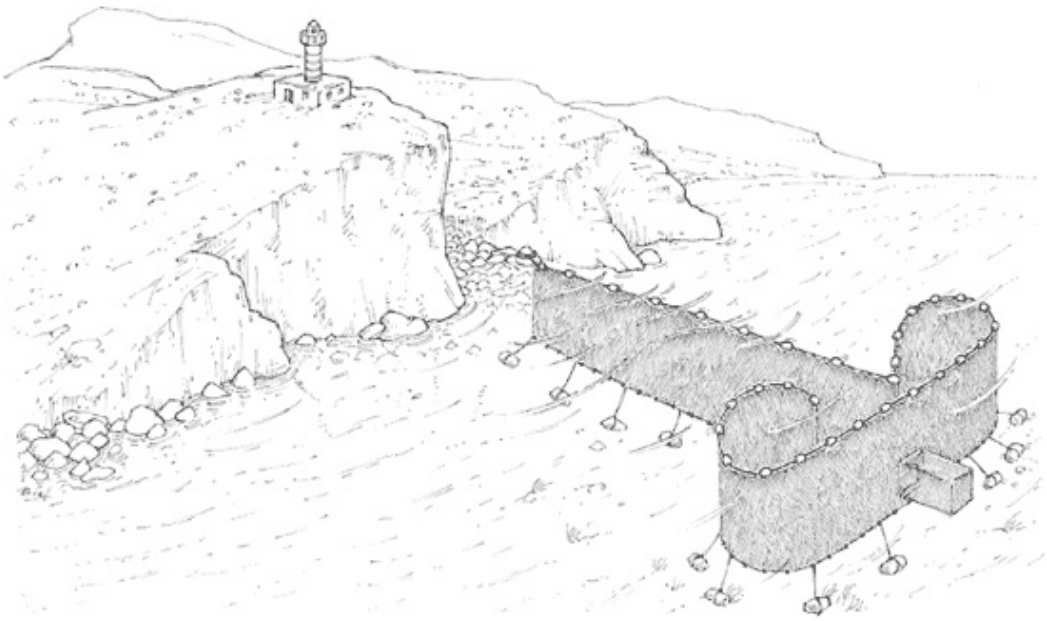
Interactions with fisheries

From the moment the seal sighting was confirmed, it became clear that it would be necessary to obtain the cooperation of local fishermen in order to assess the potential risks arising from fishing activities, whose maximum intensity – both professional and recreational – occurs in summer.

In the early stages, it was found that all observations of the seal had been made in the vicinity of the setting points of a fishing device called a 'moruna'. This is a traditional form of fishing gear of remarkable complexity and considerable dimensions. The morunas are set at coastal points with very specific current/depth requirements. The points are randomly allocated each year among professional fishermen. The gear is set to drive large pelagic fish (tuna, carangids etc.) through a labyrinthine system and into an inner cage in which the fish are kept alive until the moment of collection by the fisherman.

Historical seal mortality records have reported some deaths in morunas, although the last case recorded off the coast of Santanyí (in 1951) was later confirmed as an intentional catch, and not an accidental death: 45 years later, the old fisherman

admitted that after repeated 'attacks' by the seal on his moruna, he modified some parts of the gear to act as a trap, so that the animal would drown after entering.



Drawing of a 'moruna' coastal fishing device (by Gabriel Bonnin, courtesy Parc Nacional de Cabrera).

Google Earth photo of a 'moruna'

Despite the slight risk that the morunas might pose, officers of the Directorate General of Fisheries had to face the fact that such a device was set in the area of the marine reserve of El Toro, a mere 1200m from the seal sighting. The gear posed a potential risk to the animal.

Moreover, along the 50km of coastline where the sightings occurred, about ten additional morunas were deployed from May to August.

The authorities asked the fisherman to voluntarily lift the moruna from the El Toro marine reserve, offering him the alternative of setting the gear elsewhere. The professional, a young fisherman from Port d'Andratx, who had been authorized this year to set morunas at other points of the coast, readily understood the problem and agreed to dismantle it without argument. He also declined to set the moruna at an alternative point, reasoning that the device requires considerable work in custom design to adapt it to a specific point, and that this work is customarily done in winter, when tasks at sea are not possible.

Thanks to the information team we know now that in one of the morunas fishermen had noticed that, on some days, some of the medium-sized fish caught in the vertical nets of the gear appeared gashed in a very particular way, as if bitten and crushed by a dog. For an old retired fisherman, it was the unmistakable signature of a monk seal, but the moruna crew, still ignorant of the seal's reappearance, remained unaware of the cause.

In any case, it is noteworthy that there has been no negative response towards the seal from the fishing world, and that the interest and enthusiasm with which the media have followed the case has not generated even the slightest shadow of conflict. Quite the contrary: the people with whom the information team had contact reacted with enthusiasm to the return of the monk seal, some with a tinge of disbelief, but in any case with complete readiness to cooperate.

Current situation

Evidence suggests that the animal is still in the area, with the last sighting occurring on 18 September, 2008. The sightings are dispersed and unpredictable, sometimes in places with high-intensity boat traffic, where it makes no sense to create areas of exclusion. Measures of that kind are, at this moment, considered unnecessary, because they would be difficult to justify by the administration and difficult to understand for citizens. At times, the animal has remained in a specific coastal area, despite intense boat traffic. Likewise, there are no indications of conflict with fishing activities, so it seems unreasonable to propose restrictions at a time when fishing is already shrinking due to economic pressures.

If at some point a resting area is identified (or in the unlikely event that the animal is a pregnant female that might give birth in coming weeks in an identified cave shelter), it would be necessary to implement a surveillance programme, in accordance with the importance this has for the Balearic Islands in taking the first step towards achieving a resident population of monk seals.

It's true that our ancestors killed seals with the same dedication with which some people still hunt for other animals indiscriminately (See EndQuote). It is also the case, particularly unfortunate, that it was an officer of the Guardia Civil who, fifty years ago, killed the last monk seal in Mallorca. At that time, there were no voices of protest in Balearic Islands society. But in 2008, the reappearance of this animal has triggered a wave of interest and sympathy for the monk seal cause. Although many parameters show that the pressure on the coast of the Balearic Islands is much higher than it was 150 years ago, there is no longer the direct animosity towards the seals that led them to extinction here.

The presence of the animal and the interest it generates among the population, provides a very powerful incentive to engineer the means by which its local recovery

can become a reality, since we now have incontestable proof that the seal can live in an area crowded with touristic infrastructure, especially when, as is the case, they find food. It is likely, in this sense, that the existence of a marine reserve with proper surveillance, in which the fish fauna has achieved a remarkable density, has been helpful in keeping the animal here. For the moment, we follow developments closely, and the coming winter will see the systematic exploration of the identified potential cave shelters. Prudence should guide the decision-making process that will take place in coming months; this as a continuation of the work first started in 1990, whose results can be found here: http://dgcapea.caib.es/pe/vell_mari.htm.

EndQuote

Let's talk finally about the seal hunt, a common practice on some places of the coast. The hunter, carrying a double-barrelled shotgun, loaded with iron or lead ammunition, silently approaches the cave from the top of the cliffs, and if the seals he finds are asleep, he shoots them in the head at point-blank range. If they are not successful in getting their prey, they must find a suitable place inside the cave and wait for the animals to come back ashore.

Sometimes one can find three, four, five and even six seals together. They spend a long time playing and swimming. When one of them leaves the water, the hunter shoots; if the animal is not dead it will try to escape by diving again. To prevent this, the hunter must set a strong net at the (underwater) entrance of the cave. This obstacle will force the animal to surface, and this moment must be seized by the hunter to shoot again. Nevertheless, is not unusual that the animal breaks the net and disappears. One can also try to capture seals with a hook and a line, using an octopus tied with a strong steel line, hanging from a reed. The seal swallows the octopus with the hook, and now the difficult part is to land the animal, because it tries to break the steel line by rubbing it against the rocks with all its might.

– Die Balearen, Archduke Ludwig Salvator of Austria, 1869.

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Perspectives

Vol. 11 (2): November 2008

Legal protection of the Mediterranean monk seal in Croatia

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Zagreb, Croatia

The Mediterranean monk seal (*Monachus monachus*; Croatian/standard/: *sredozemna medvjedica*, Croatian/dialectal/: *morski medvid*, *morski čovik*) is the only species of seal that inhabited the Adriatic Sea, part of which belongs to the Republic of Croatia.

Although Croatians never commercially exploited monk seals (e.g. for food, skins or oil)(1), the animals have since ancient times been blamed for destroying fishermen's nets, and have been mercilessly killed in revenge by the fishermen.

The present status of this species in the Adriatic is a subject of some discussion among Croatian biologists. The only certain fact is that occasionally monk seals are sighted along the Croatian coast, although these sightings are very rare and some of them (quite) doubtful(2). Nevertheless, it is certain that even today Mediterranean monk seals can (if very infrequently) be observed in the Croatian Adriatic.

With monk seal sightings on the rise in Croatian waters, are protection laws capable of safeguarding the returning species?

There exist two explanations for these sightings. According to the first, the Mediterranean monk seal in the Adriatic is extinct, and reported sightings are of individual animals that wander into the Adriatic from the Ionian Sea, and afterwards return (assuming they don't perish on the journey). The population of Mediterranean monk seals indigenous to the Adriatic Sea no longer exists(3). In contrast, the second theory suggests that there exists, even today, a very small population of Mediterranean monk seals of no more than 20 individuals, that still inhabits the Croatian Adriatic(4). The reports of the sightings are of those individuals indigenous to the Croatian Adriatic.

While it is not the aim of this article to debate the merits of either theory or to delve deeper into the status of the monk seal in Croatia, it is clear that legal protection of the species within the Republic of Croatia is of importance to the survival of the species and its possible recovery.

This is despite the fact that – with no survivors or only intermittent sightings, legal protection remains largely hypothetical.

Though its effectiveness may be open to debate, Croatian law contains several provisions to provide for the protection of *Monachus monachus*. In fact, the species was legally protected for the first time in 1935 by the decree of the Directorate for Maritime Affaires in Split, and it has remained protected under Croatian law ever since([5]). Unfortunately, this did not prevent its disappearance and possible extinction in Croatia.

The main contemporary legal act that provides for the protection of the Mediterranean monk seal in Croatia is the 2006 'Ordinance on declaration of some wild species protected and strictly protected'([6]), that declares this animal a 'strictly protected species'. This legal status of monk seals is protected by the 'Ordinance on damages caused by an illegal act against protected animal species'([7]). Under this legal statute, a person convicted of killing a Mediterranean monk seal may be fined up to 100.000 HRK (ca. 14.000 EUR). It has to be noted, though, that since there were no reported Mediterranean monk seal killings in Croatia during the last few decades, these legal provisions have never actually been exercised before Croatian courts of justice.

Still, we have to note that in case such an act would occur, the foreseen fine would obviously seem unsatisfactory, bearing in mind the critically-endangered status of the seal throughout the Mediterranean, and especially in Croatia (assuming that such a remnant population does survive). Fortunately, the Criminal Code of the Republic of Croatia would consider the killing of a Mediterranean monk seal to be a felony, punishable according to article 259 (its title is 'Illegal fishing', but it is applied to all marine animals, not just fish) of the said Code by a prison sentence of up to 1 year.

While direct killing by fishermen was largely responsible for the eradication of the species in Croatia, law enforcement rarely met the obligations required of it.

Bearing in mind that the fine for killing of a monk seal was established in 1996, and that its relative value has since significantly diminished (due both to the rise of salaries and of prices in Croatia), it is clear that this should be augmented in the near future, so it would more accurately reflect the severity of the crime. This would be especially necessary in case the sightings of monk seals in the Croatian Adriatic were to become more frequent (as seems to be the case over the last few years), or if the existence of a small monk seal colony in the Adriatic happens to be confirmed.

Footnotes

[1] Cf. H. Gomerčić, 1998: Zaštita morskih sisavaca - etičko i racionalno pitanje, u: Etika u odnosu čovjeka i životinja (Gomerčić, H., urednik), Hrvatska akademija znanosti i umjetnosti, Zagreb, p.59.

[2] For details on recent sightings of the Mediterranean monk seal in Croatia cf. Gomerčić et al. (2005): Recent Sightings of the Monk seal in Croatian areas of the Adriatic, Monachus Guardian 8 (2): December 2005. The most recent sighting was on 14 August 2008, near the island of Cres, when it was possible even to capture the monk seal on video (for article and video cf. http://www.jutarnji.hr/clanak/art-2008,8,15,sredozemna_medvjedica,129972.jl).

[3] Cf. Gomerčić, 1998: Zaštita morskih sisavaca..., p. 59. ; Gomerčić et al., 2004: Vrste, brojnost i rasprostranjenost morskih sisavaca u hrvatskom dijelu Jadranskog mora / Abundance, population size and distrubution of marine mammals in the Croatian part of the Adriatic Sea, Zbornik radova 1. hrvatsko-slovenskog simpozija o egzotičnim i divljim životinjama-Zbornik radova 1. hrvaško-slovenskog simpozija o ljubiteljskih in prosto živečih vrstah živali (K., Vlahović, A. Marinculić, urednici), Hrvatsko veterinarsko društvo, Zagreb, p. 16. ; H. Gomerčić (1998): Čovjek je njezin (ne)prijatelj, Eurocity, 2, p.33. ; H. Gomerčić (1997): Sredozemna medvjedica, Najrjeđa i najugroženija hrvatska životinjska vrsta, Novosti American Express 13, 1 (42), p. 16.

[4] Such is the opinion of Jasna Antolović, cf. Sredozemna medvjedica opet u vodama Hvara i Visa, Slobodna dalmacija, 11.06.2008 ; Ronilac susreo 'morskog covika', Slobodna dalmacija, 19.02.2007 ; Antolović et al. 2007. Monk seal (Monachus monachus) sightings in the Croatian part of the Adriatic with a special reference to the population of open-sea islands, The Monachus Guardian 10 (1): June 2007. (In this article the number of Monk seals in the Croatian Adriatic is estimated at 6-8 individuals.)

[5] Cf. Gomerčić, Zaštita morskih sisavaca..., p.59. As a matter of fact, Croatia was among the first countries providing legal protection to the Mediterranean monk seal (e.g. on the other side of the Adriatic, in Italy, the Mediterranean monk seals are legally protected only since 1939. Cf. Johnson, 1998. Monk seal myths in Sardinia, Monachus Guardian 1 (1): May 1998.

[6] Pravilnik o proglašavanju divljih svojti zaštićenim i strogo zaštićenim, Narodne novine (Official Gazette of the Republic of Croatia) No. 7/2006

[7] Pravilnik o visini naknade štete prouzročene nedopuštenom radnjom na zaštićenim životinjskim vrstama, NN (Official Gazette of the Republic of Croatia) No. 84/1996 and 79/2002. The same legal act provides for the fines for other acts against protected species (injuring, destruction of shelters, capturing etc.), that range from 20% to 80% of the fine for the killing of such an animal.

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Research

Vol. 11 (2): November 2008

The Song of the Sirens

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MOm/Hellenic Society for the Study and Protection of the Monk Seal

Mother-pup calls in Pinnipeds seem to play an important role during the lactation period. It has been suggested that the identification of pups by their mothers is achieved by a combination of their vocalizations as well as olfactory and visual cues. Mediterranean monk seals seem not to be an exception to this rule. Field observations from different areas in Greece, made by MOm's research team over the past twenty years, show clearly that newborn pups and female Mediterranean monk seals frequently produce audible, air-borne sounds while communicating; these vocalizations are most frequent during the first two – three weeks after birth. During the last few years we have been lucky enough to record several different types of these vocalizations. Considering the fact that practically nothing is known regarding this aspect of the species' biology and behaviour and the fact that most probably very few people have ever heard these sounds, we thought it would be interesting, both for the scientific community and the general public, to present for the first time some of the characteristic sounds of this rare marine mammal.

After all, monk seal vocalizations, apart from their rarity and their scientific importance, are intriguing for another, less profound reason; they have been linked to the Homeric legend of the Sirens!

According to the ancient Greek poet, the Sirens were the wicked women who lured sailors to their death with their beautiful song. Some years ago Dr. Karl-Heinz Frommolt, head of the Archive of Animal Sounds at the Humboldt Museum in Germany, claimed [Odyssey Sirens 'were monk seals', BBC News 19/05/2005] that the song of the Sirens could be the 'moaning' of Mediterranean monk seals. Dr Frommolt placed the Sirens' lair on the Li Galli islands, off Sorrento on Italy's Amalfi coast. This island is known as Le Sirenuse, the Island of the Sirens. Dr. Frommolt found there a configuration of rocks which amplifies sounds coming from the island.

We do not know if Dr. Frommolt has actually ever heard monk seal vocalizations or whether Homer, when immortalizing the songs of the Sirens, had in mind the callings of Mediterranean monk seals. Listening however to the distinctive and rather peculiar sounds made by females when calling their pups (file 2) we believe that all this might not be as irrational and unfounded as might seem to be the case at first sight. From a biological perspective, MOm is seeking to 'solve the mystery of the song of the Sirens' by collecting additional information and by analyzing the already existing dataset. For the latter, we are in the process of establishing a collaboration with bioacoustics experts.

The sounds presented here are the vocalizations of:

1) A newborn pup, approximately ten days of age.

2) An adult female Mediterranean monk seal.

3) An adult female (different vocalization).

Image of a female Mediterranean monk seal vocalizing, captured by an automatic infrared camera, installed in a breeding cave.

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Research

Vol. 11 (2): November 2008

The *in situ* treatment of a Mediterranean monk seal pup at Piperi Island, National Marine Park of Alonnisos Northern Sporades (NMPANS)

Christos Neofitou[1], Lenie 't Hart[2], Vassilis Kouroutos[3], Kitty Attema[4], Elefteria Tsalie[5] and Clare Reed[6]

The NMPANS has witnessed the successful birth of six Mediterranean monk seal pups in the shelters around the reserve since September this year, all of which seem to be well nursed by their mothers.

Two of the seal pups, together with their mothers, were observed in the same cave on the southeast coast of the island of Skopelos. Currently, the NMPANS does not incorporate the S.E. coast of Skopelos in its protection area, despite the fact that this island is included in the Natura 2000 Network and is well-known for its important monk seal shelters. It is expected that this area will become part of the Marine Park in the summer of 2009 when the Management Plan of the NMPANS is approved.

The other four pups were observed in shelters on the island of Piperi, the core zone of the Park, together with their mothers. A placenta and hair samples from four seal pups were collected for genetic analysis.

It is also important to note that the birth of these seals occurred 10 days (20 September) earlier this year than in 2007.

Three out of these four pups, observed in the same shelter at Piperi, seemed to be in excellent condition, while the fourth had a serious ocular condition. An *in situ* assessment of the eye and the pup's general health condition was made by a team consisting of the Marine Park's veterinarian, a biologist from MOm's Monk Seal Rescue and Rehabilitation Centre, and Park personnel on 18 October. It was established that the left eye was infected, but also that the pup was still being nursed by its mother. An attempt to provide on site treatment to the pup proved unsuccessful due to the presence of the other three pups in the shelter, which were alert to the team's presence. Photographs taken of the infected eye were sent to the Seal Rehabilitation and Research Centre Lenie 't Hart (SRRC), Pieterburen, for consultation with the SRRC's eye-expert, veterinarian, and Lenie 't Hart. They advised the NMPANS to treat the animal on site, if possible, and thus attempt to conserve the bond between mother and pup.

The use of a long-acting antibiotic (Cevofecin) was recommended by the SRRC's veterinarian, since the SRRC have experienced some good results using this treatment. The antibiotic makes it possible to keep seal handling to a minimum; its antimicrobial effects last for 14 days.

On 18 October, a certified assistant vet from the SRRC was invited by the President of the National Marine Park of Alonnisos Northern Sporades. She arrived the following day.

A team set out for Piperi on the 20 October. Upon arrival at the cave, only two pups (from the four previously observed in the shelter) were present, both in good physical condition. One of the pups, born the previous week, was sleeping halfway up in the cave, while the other slept with its back towards the entrance and hind flippers touching the water. It was this individual that proved to be the half-blinded pup.

The experienced seal nurse (assistant vet) was able to catch and restrain the animal. The mucous membranes of the mouth had a healthy pink colour, and the pup proved to be very strong. After administering the antibiotic subcutaneously, the nurse took a bacterial and viral swab of the left eye for further analysis.

After the pup was released it sought safety in the water. This was a good way to assess whether it had any other underlying (physical/neurological) problems; from watching it swim, it was concluded that this was not the case. It swam for about 50 metres along the rock face before hauling out on a ledge, which proved it was a good swimmer for such a young pup. It did not seem overly affected by the ordeal.

It is now imperative that the mother continues nursing the pup in order to encourage the healing process of the eye. There will be a follow-up to check on the condition of the pup's eye after the antibiotic has had time to show its effects.

The Progression of the Eye Infection

15 October: The cornea appears white/yellow. Some purulent discharge from both nostrils. A red (inflamed) third eyelid. From this picture it is hard to establish what the actual problem might be. It could be a symptom of a more serious underlying problem, but could also be a straightforward eye infection.

17 October: Significant amount of purulent discharge from both nostrils. The left eye is oozing pus and bloody fluid. The infection itself is most probably a combination of a nasopharyngeal and ocular infection. It should heal over time with the antibiotics administered. The eye has spontaneously ruptured. After the infection has cleared the eye will probably atrophy. In some cases at the SRRC however, recovery of the eye has been observed, but it is hard to predict what will happen.

20 October: The globe of the infected eye is smaller than the normal right eye. The reddish colour of the vascular infiltration is a sign that the healing process is already starting. The bluish tinge in the rest of the eye is oedema of the cornea, which is a normal occurrence with eye problems/infections. If the infectious debris (pus) were properly drained and new build-up prevented by the antibiotic, then the eye could improve. Depending on the severity and underlying cause of the initial infection and physical condition of the pup, it could take several days to weeks until the eye is properly healed; this is hard to estimate.

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Letters to the Editor

Vol. 11 (2): November 2008

Translocation plans: reasons for caution

The sudden appearance this summer of a solitary monk seal in the island of Mallorca (Spain), after decades without any reliable record, can be considered almost a 'miracle' event in favour of the regional Government's plan to translocate animals here, since it seems to prove that our island still provides suitable conditions for the survival of at least some individuals of this highly endangered species.

On the other hand, the seal's unexpected appearance also represented a challenge to the authors of that plan, because in some ways it provided the opportunity to demonstrate their ability to manage the presence of the species in our territory (monitoring its movements, taking special measures to minimize the risk of disturbance from tourists and leisure craft, or interaction with fishermen and fishing gear, etc.).

However, the fact that this individual settled for a period in an area that is surrounded by heavily built-up stretches of coast does not prove, in my opinion, that this part of Mallorca is still suitable for a viable population of seals to thrive. If my information is correct, the seal has not been seen (despite an intense search) for a couple of months now, and no one knows its fate (nor from where it originated, although as to the latter I dare say that it was probably from the very endangered Algerian monk seal population, just 250 km south of Mallorca).

In some ways, the arrival of this seal in Mallorca also confirmed something that has been stated by several people, including myself: that the return of the monk seal to our territory by natural means, from Northern Africa, could not be totally discounted, and is much preferable to an artificial translocation.

As an inhabitant of Mallorca, and someone who has been working for the protection of the monk seal since I was a teenager, it goes without saying how happy I would be to see monk seals re-established around the island where I live. However, it is my opinion that, at least under present conditions, and most probably in the short and medium term, a plan to artificially reintroduce the species in this or any other area should not be dealt with as a priority. Rather, priority should be given to efforts to preserve all naturally surviving populations, especially since this survival constitutes the main proof that these areas are really suitable for the species.

As to the Cabrera National Park (protecting a small archipelago and its surrounding waters, south of Mallorca), which has been pointed to as the ideal recipient site for the translocation plan, I think there is little doubt that

it does preserve one of the best potential habitats for the monk seal in European waters (probably only Greece has better areas, with the important difference that seals still live there). But the regulation of traditional fisheries within the boundaries of the National Park is far from ideal as far as establishing a monk seal population is concerned, and unfortunately it seems that creating better conditions for the return of the monk seal is not presently a priority for the Cabrera Park's administrators. Changing this situation is, in my opinion, the first step to be taken by the Government of the Balearic islands, prior to even talking about any translocation plan.

Another essential point for discussion is whether a translocation of monk seal individuals from the Saharan colony in the Atlantic Ocean to any place in the Mediterranean could be scientifically justified – and not only because it would be irresponsible to embark upon an experiment of uncertain success with one of the few populations that have long-term chances of survival.

Patrol boats moored at the National Park of Cabrera.

In the translocation plan of the Balearic Government there is an assumption that, to my mind, is completely flawed. It is their argument that, as no biometric data has been found to support the existence of any morphological difference between the Atlantic and the Mediterranean populations of the monk seal, then there can be no significant differences between them, and they can therefore be translocated and mixed freely. Some even believe that this mixing would be a wise idea, in order to prevent possible inbreeding depression.

But this neglects an important part of what adaptation means in the evolution of organisms: it may be that both populations are morphologically uniform, but at the same time show significant differences in their genomes that are the result of their selective adaptation to completely different environmental conditions (local prey, presence/absence of significant tides, average water temperatures, etc.). Reducing all adaptation analysis to biometry is in my view a very incomplete approach.

But the main objection to such a translocation plan remains the inherent vulnerability of the intended donor colony in Western Sahara/Mauritania. While this population has made a slow but steady recovery since the catastrophic 1997 die-off (thanks mainly to the excellent protection plan designed by Luis M. Gonzalez, Pablo Fernandez and their CBD-Habitat Foundation, together with a group of local Mauritanian colleagues), it is still far from reaching the carrying capacity of the local habitat. I see no justification at all, therefore, for using this colony as the source of any individuals in any translocation plan (and even less to the Mediterranean area).

- *Xisco Avella*, Fondo para la Foca del Mediterraneo (FFM), Mallorca, Spain, 5 November 2008.

Mallorca sighting

Hello, I write to you from the island of Mallorca. I found the Monachus Guardian site this summer, while looking for information about the monk seal after the sighting of one in Mallorca.

This is a great web site and I hope you can continue with this great work.

By the way, do you know if there was ever any more news about that Mallorca monk seal?

Thanks and bye for now,

– *Toni Vecina,* Mallorca, Spain

✓ **Editor's note:** As it happens, we are publishing a number of reports from Mallorca this issue, including our Guest Editorial by Miquel À. Grimalt i Vert, Minister of Environment of the Government of the Balearic Islands; a feature article on summer 2008's reappearance of the monk seal in Mallorca and, of course, the letter above by respected monk seal conservationist Xisco Avella.

Petition plea for threatened coasts of Corsica

Dear friends of the monk seal,

First let me thank all of you for your efforts! I hope that someday I can join your work in this noble cause.

The Scandola nature reserve in Corsica.

I've always been interested in Mediterranean wildlife. I could discuss for hours with my Dad about the rare sea turtles he spotted around the island of Corsica some 20 years ago. When I was sixteen my Dad offered me my first harpoon, but more importantly taught me the respect for life that should always go with it.

When I first read about the presence of the monk seal in Corsica I felt a strong relationship between this animal and me. The Mediterranean Sea is my environment, and even though I currently study biology in Switzerland, the island of Corsica is the place where I feel at home. There sometimes I spend up to 9 hours a day in the water to catch my dinner. These last years, though, leisure activity increases more and more. This year I was almost hit three times by a boat! Jet skis and overpowered boats race the areas, which were once quiet fishing paradises (even though Corsica still remains well preserved compared to other islands of the Mediterranean).

This reminds me of the fate of our friend *Monachus monachus*. The last one in Corsica was killed in 1970 in Scandola, which unfortunately became a protected area only 5 years later.

I am greatly interested in the projects to protect the monk seal in the remaining areas of its geographical distribution, because I have great hopes

that it will someday recolonise the coast of Corsica, especially the nature reserve of Scandola.

In my opinion protected areas should be enlarged and strict regulations established, especially against leisure activities. These biological reservoirs should cover large marine areas and include large areas on land. Fishing or hunting should be entirely prohibited in these areas of course, but also diving, or boat traffic of any kind. Furthermore, access on land should also be limited. These areas would be of great benefit to a local sustainable fishing industry. To my knowledge very successful projects of this kind have been established off the coast of New Zealand.

In Scandola for instance, even though the regulations are very strict compared to other places, there is still too much access for leisure activities. For instance, dropping anchor is only forbidden in a tiny subpart of the reserve.

As a consequence, the abundant natural caves are visited by tourists, and lose their potential to host monk seals.

In my opinion it would be more efficient to totally forbid access. Protected areas could fulfil their role as reservoirs more efficiently and "ecotourism" could then take place in neighbouring parts of the reserve.

Corsica is the fourth largest island of the Mediterranean and in my opinion it is a good candidate for recolonisation by the monk seal in the future, because most of its coasts have been spared from mass development (contrary for instance to the heavily built-up coasts of Spain), thanks to the 'loi littoral', the French coastal development law. Some plans exist to extend the reserve of Scandola and create four new ones (see "Corse Matin" 11 August, 2008).

However, a new threat to the coasts of Corsica has emerged with the ' PADDUC' – a plan to enhance mass tourism by converting protected areas into constructible areas. Golf resorts and tourist complexes and even a motorway are planned.

Inhabitants of the island feel cheated, because they have the feeling that this plan, which bets on a non-sustainable development, is of no benefit to them. Ironically the letters DD of the abbreviation PADDUC actually stand for 'Développement Durable' (sustainable development in French)!

Such a plan would, of course, have an strong if indirect negative impact on areas such as Scandola, remaining under protection.

It is without doubt that the efficiency of reserves is intrinsically linked to the preservation of neighbouring coasts.

Friends of the monk seal, I ask you to sign the online petition against the PADDUC (it is in French, but please ask if you need any translation), and also to discuss among your friends and colleagues the ecological threats it poses to the coasts of Corsica: a possible future home of this endangered marine mammal.

– *Thomas d'Eysmond,* PhD student in biotechnology and bioengineering, EPFL, Lausanne, Switzerland, 26 October 2008.

Sad day in the NMPANS

We are sailing in the northwestern Aegean (Northern Sporades). In the bay of Klima on the island of Peristera we discovered a dead monk seal. It drifted with the current into the bay and most likely remained stuck there on the rocks. The animal was about 3 meters long. On the continuation of our trip we encountered no living monk seals, which made us feel quite apprehensive.

We thought that this sad information may interest you.

– *Thomy & Daniela Wyss,* 21 June 2008.

✓ **Editor's note:** TMG immediately alerted MOm (Hellenic Society for the Study & Protection of the Monk Seal), whose Rescue Team responds to strandings of both live and dead animals. Receiving an update from MOm a few days later, we were able to provide the Wyss' with the following information:

Greek experts examined yesterday the dead seal you found. It is a male of advanced age. No signs of violence or of an accident could be found, so it is probable that the animal died of natural causes.

In Greece, all dead monk seals are, if possible, scientifically examined. Sightings information on both live and dead animals is also systematically collected, and MOm appreciates efforts by members of the public to report such incidents to them.

That you haven't seen a live monk seal might seem understandably regrettable from your point of view, but it is normal – not only because the animals are rare, but also because they live very discreetly and can hide very well.

In a follow-up email, the Wyss' stated:

Thank you for the information and the message that the dead seal has already been found and examined. We are pleased that there is an association looking after the seals. It is good that the seals also have "friends" among people, which act for their rights and needs.

We think, though, that it is not sufficient to declare a marine region [the Northern Sporades Marine Park] a nature protection area and still allow private boat traffic there. In no other area have we encountered so many private and chartered boats as in this marine nature reserve of the Sporades. For sure, there are many considerate boatmen, but in a mass these must act as a negative influence on the small population of monk seals, especially those among them who move recklessly in the world of animals and plants. Unfortunately, we are also painfully aware of the mountain of waste on the beach of Klima bay; other beaches on other islands were cleaner, probably cleaned.

– *Thomy & Daniela Wyss,* 30 June 2008

A spate of sightings in Cyprus

Whilst sailing off the Akrotiri peninsula (Limassol, Cyprus) yesterday noontime (15th June), we spotted a seal twice in the waters about 200 metres off the coastline.

It was a silvery grey colour, and a guesstimate puts it at between 1.5 to 2 metres long.

We have never heard of any sightings in Cyprus, hence my search on the web and how I came across your site.

I thought you might be interest to know about it.

– *Vivian Nagel,* Limassol, Cyprus, 18 June 2008

✓**Editor's reply:** Many thanks for your reported sighting. These are always useful for field researchers and conservationists, and we have passed your observation record on to the relevant authorities in Cyprus. By coincidence, in our June issue we published reports of two other sightings around Cyprus in the Letters page of our journal. We hope to provide an updated Cyprus monk seal status report in the not-too-distant future. In the meantime:

Further information on the last seals of Cyprus

RAC/SPA. 2005. Information report on the status of the monk seal in the Mediterranean. Seventh Meeting of National Focal Points for SPAs, Seville, 31 May - 3 June 2005. UNEP/MAP, UNEP(DEC)/MED WG.268/Inf.3: 1-45. [PDF 213KB]

The editor reserves the right to edit letters for the sake of clarity and space

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Recent Publications

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In Print

Baker, J.D. 2008. Variation in the relationship between offspring size and survival provides insight into causes of mortality in Hawaiian monk seals. Endangered Species Research 5: 55-64. [PDF 496KB]

Brillinger, D.R., B.S. Stewart and C.L. Littnan. 2008. Three months journeying of a Hawaiian monk seal. IMS Collections, Probability and Statistics: Essays in Honor of David A. Freedman 2 (2008): 246–264. [PDF available here]

Dendrinos, P., A.A. Karamanlidis, S. Kotomatas, V. Paravas and S. Adamantopoulou. 2008. Report of a new Mediterranean monk seal (*Monachus monachus*) breeding colony in the Aegean Sea, Greece. Aquatic Mammals 34(3): 355-361.

Karamanlidis, A.A., E. Androukaki, S. Adamantopoulou, A. Chatzispyrou, W.M. Johnson, S. Kotomatas, A. Papadopoulos, V. Paravas, G. Paximadis, R. Pires, E. Tounta and P. Dendrinos. 2008. Assessing accidental entanglement as a threat to the Mediterranean monk seal. Endangered Species Research 5(2-3): 2008. [PDF 444KB]

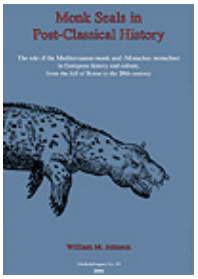
Schultz, J.K., J.D. Baker, R.J. Toonen and B.W. Bowen. 2008. Extremely low genetic diversity in the endangered Hawaiian monk seal (*Monachus schauinslandi*). Journal of Heredity (Advance Access published online on September 23, 2008). [Abstract]

Stringer, C.B., J.C. Finlayson, R.N.E. Barton, Y. Fernández-Jalvo, I. Cáceres, R.C. Sabin, E.J. Rhodes, A.P. Currant, J. Rodriguez-Vidal, F. Giles-Pacheco, and J.A. Riquelme-Cantal. 2008. Neanderthal exploitation of marine mammals in Gibraltar. Proceedings of the National Academy of Sciences of the United States of America PNAS 105(38): 14319-14324. [Abstract]

Oikonomou, Z.S. and A. Dikou. 2008. Integrating conservation and development at the National Marine Park of Alonissos, Northern Sporades, Greece: perception and practice. Environmental Management 42(5): 847-866. [Abstract]

Reprint

Johnson, William M. 2004. Monk seals in post-classical history. The role of the Mediterranean monk seal (*Monachus monachus*) in European history and culture, from the fall of Rome to the 20th century. Mededelingen 39. The Netherlands Commission for International Nature Protection, Leiden: 1-91, 31 figs. [PDF edition 2.0MB]



Johnson, William M. and David M. Lavigne. 1999. Monk seals in antiquity. The Mediterranean monk seal (*Monachus monachus*) in ancient history and literature. Mededelingen 35. The Netherlands Commission for International Nature Protection, Leiden: 1-101., 17 figs. [PDF edition 1.6MB]

Conferences

2008 Hawai'i Conservation Conference. Island Ecosystems: The Year of the Reef. July 29-31, 2008, Hawai'i Convention Center, Honolulu, Hawaii. [Abstracts Book PDF 880KB]

Symposium: Hawaiian Monk Seal:

3-7 Captive feeding programs to increase juvenile monk seal survival: a case study and future applications
Charles Littnan, Tenaya Norris, Frances Gulland, Bob Braun. [Abstract]

3-8 Efforts to reduce male aggression in the endangered Hawaiian monk seal (*Monachus schauinslandi*)
Thea Johanos, Brenda Becker, Jason Baker, Timothy Ragen, William Gilmartin, Tim Gerrodette. [Abstract]

3-9 Galapagos sharks and Hawaiian monk seals: ongoing efforts to mitigate predation on young pups
George Antonelis, Albert Harting, Brenda Becker, Suzanne Canja, Shawn Farry, Robert Dollar, Daniel Luers, Aaron Dietrich. [Abstract]

3-10 Extremely low genetic diversity in the endangered Hawaiian monk seal (*Monachus schauinslandi*)
Jennifer Schultz, Jason Baker, Robert Toonen, Brian Bowen. [Abstract]

3-11 The status of monk seals in the main Hawaiian islands
Tracy Wurth, Albert Harting, Jason Baker. [Abstract]

3-12 Hawaiian monk seal management issues and programs in the main Hawaiian islands
David Schofield. [Abstract]

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