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Hamza, A., G. Mo and K. Tayeb. Results of a preliminary mission carried out in Cyrenaica, Libya, to assess monk seal presence and potential coastal habitat.

Mo, G., M. Gazo, A. Ibrahim, I. Ammar and W. Ghanem. Monk seal presence and habitat assessment results of a preliminary mission carried out in Syria.

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## **Letters to the Editor**

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Guest Editorial and news from Turkey: Will ecotourism be friend or foe to the Mediterranean monk seal?



Cover Story: a basking seal finds *Pu'uuhonua* in the Hawaiian Islands



In Focus and news from Mauritania: how an oil spill in Spain has increased disturbance to Cabo Blanco monk seals by barnacle collectors



Vol. 6 (1): June 2003

## Guest Editorial

### CILICIA ON MY MIND

#### Monk Seal Adventures on Turkey's Southern Shore

Luigi Guarrera



© E. Coppola / Panda Photo

It was quite sad, that early November evening. We had spent 10 days in such a special atmosphere, with incredibly good weather, sweet, fragrant air, calm, transparent sea, reasonably intact shores and landscapes... But now the spectre of going back to our polluted towns was hanging over us... Just one last ride on the local fisherman's sputtering wooden boat, just one last dive in the sea shared with our beloved monk seals – the only reason for us travelling to this remote corner of Cilicia, in south-eastern Turkey. A sort of chimera, being able to see these shy pinnipeds again in their own habitat, like in ancient times, recalling Homer...

Our jet buzzing over the Ionian sea on our way from Rome, a small group of 8 genuine eco-tourists, old WWF members. We were not cherishing vain expectations: no real hopes of observing this rare marine mammal, just the happiness of visiting a remote area where we knew seals were still living under some kind of protection.

A long transfer to Istanbul and Adana, 7 more hours with a nice, raggy little bus, rented from a local company. It was almost early morning the next day when we finally reached our destination, Bozyazi, the centre of the Cilician

Monk Seal Conservation project, built up since 1994 by WWF-Mediterranean Programme, SAD-AFAG and the Middle East Technical University - Institute of Marine Sciences.

Intense and pithy days. The sound of reveille at the crack of dawn, but it's no burden. Crouching down like mimes among the bushes, on the rocks overlooking seal-frequented caves at twilight... Cruising slowly along the coast like local fishermen... Timidly swimming, where allowed... And, suddenly – astonished, unexpected, a joy to see – a few meters distant from our boat, the funny whiskered snout looking up curiously at us, but also vigilantly... Or, watching from our hiding place among the rocks, the emotion of realising that the shining big, black ball, now moving towards us, is really the head of a huge male seal. He lifts his head, looks around with circumspection, then returns his head to the water, still swimming towards the coast. He enters the cave and – surprise! – another seal suddenly swims into view, this one a female, flushed out of the shelter – where perhaps she'd been sleeping – by her mighty companion...

A clear cut from everyday urban life. Overwhelmed by the incredible end-of-October light. Scanning the horizon from the small boats of local fishermen. Munching on tasty Turkish bananas and red savoury tomatoes, bought in the local market. Evenings spent eating *pide* – Turkish pizza – in a simple tavern, just listening to the true but fantastic stories told by Ali and his wife Gul, our thoughtful and competent guides. Enthusiasts for the simple life that is often too hard, devoted to saving one of the rarest species on Earth.

Memory flashes of these unconventional tourists searching for *Monachus monachus* in the most discreet way. Interrupted by green turtles (*Chelonia mydas*) feeding at the sea bed, still rich in *Posidonia*, or peregrine falcons, proud and lonely on the cliff-tops, cliffs where – at a different height – white, young cormorants dry their wings.



© E. Coppola / Panda Photo

On the fisherman's sputtering wooden boat.

Interludes devoted to a long descent to the centre of the Earth, to a mysterious, newly discovered cave hiding a Dantean black-water lake at its end. Or to a walk *au clair de la lune* through pine forests, to reach cliffs hiding caves once used by pirates and, still to this day, by monk seals. Without missing the great, triple-walled castle raised by Crusaders near the turtle nesting beaches, or the ancient Christian church (here Paul of Tarsus is recalled on the mosaic floors, still showing the variety of aquatic birds once living in nearby marshes, recently drained by man's stupidity). And with a final leap, to reach the fresh torrents and forests of the Taurus mountains, or the multi-coloured little markets, dominated by the pungent scent of spices, animated by gentle local people and the curiosity of kids.



"Mamure Kalesi", a few kilometers east of Anamur.



Mosaics at the Paleochristian church of Tisan, Aphrodisias.

It was quite sad, that early November evening. Our fisherman captain with the sunburnt face, the last of the unconventional souls to take part in our adventures, piloting his little wooden ship towards sunset. Taking us on our last sea ride, our last swim. The black-mouthed cave, no longer used by seals, getting closer. Anchoring. The silence of the wind while we prepare masks and fins. Then something moves slowly from inside the cave. A skin-diver swimming out? Now it can better be seen... A skin-diver raising that funny whiskered snout, looking up at us, humans standing astonished on the small wooded boat. Shoot the photo! Take the video! There's a tidy bustle of activity. *Nonchalante* seal! from the so-called abandoned cave. A last glance towards its fans, and it slowly dives out of sight.

The last farewells to the 8 genuine eco-tourists, to the sensible fisherman and the couple that cares. But beyond sadness there is also hope and enthusiasm for heartening signs of a real recovery. At least here in Cilicia, where conservation and rational development are now trying to grow hand in hand.

**Luigi Guarrera**, April 2003

The trip that was to have taken another 8 "genuine eco-tourists" to Cilicia this May was postponed until the end of October in light of recent international events. For more information about this next expedition, the Cilician seal project, or the activities of Gruppo Foca Monaca Italia, please write to [grupfoca@tin.it](mailto:grupfoca@tin.it) or visit the web sites [www.gruppofocamonaca.it](http://www.gruppofocamonaca.it) and [www.afag.org](http://www.afag.org).

For more detailed information on this project, turn to [Ecotourism experiment bears fruit](#), Mediterranean News, this issue.



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## Obituary

### Friend of the Monk Seal

### Prince Sadruddin Aga Khan, 1933 – 2003

It is with great sadness that we report the passing of Prince Sadruddin Aga Khan, who for many years proved a good and faithful friend of the Mediterranean monk seal.

Prince Sadruddin served as UN High Commissioner for Refugees between 1965-1977, and would almost certainly have been appointed UN Secretary General in 1981 had it not been for a Soviet veto. He was appointed coordinator of UN humanitarian assistance in Afghanistan in 1988 and assumed similar responsibilities for Iraq and Kuwait after the Gulf War in 1990. From 1992 until his death he acted as chargé de mission to Kofi Annan.

Outside the UN, the Prince was equally at home campaigning for nuclear disarmament as he was fighting against the exploitation of dolphins in captivity, deforestation, or the cruelties of the fur trade. In 1977, he founded the Geneva-based [Bellerive Foundation](#), which came to reflect his own passionately-held holistic philosophy.

In 1990, Bellerive became alarmed by reports that a marine circus in the south of France, Antibes Marineland, was about to capture monk seals off the coast of Mauritania. There followed an intense international campaign to thwart the capture plan and, throughout it all, the Prince maintained an avid personal interest in unfolding events, frequently calling from his UN office to check on developments and to offer advice.

In March 1992, Prince Sadruddin made his first face-to-face acquaintance with the Mediterranean monk seal, attending the release of orphaned pup *Elstratia* on the Aegean island of Alonissos in the Northern Sporades Marine Park. Accompanied by his wife, Princess Catherine, the Greek Environment Minister and a throng of journalists, the visit helped draw worldwide attention to the plight of the species.

The Prince was visibly touched, both by the bewildered monk seal pup snuffling at his fingers in the Steni Vala rescue station, as by the genuine warmth and hospitality shown to him by the local people of Alonissos.

Of the shy, once trusting seal of the Mediterranean, he remarked that, in many ways it is “a totemic like symbol for the good side of the human species.”

Later on in Athens, the Prince brought his diplomatic skills to bear, championing the monk seal cause in meetings with ministers, the prime minister, and even the president of the republic.



Prince Sadruddin Aga Khan with Theodoros, the orphaned monk seal, Alonissos, June 1992.

“He was vocal on numerous subjects, ranging from the plight of monk seals on the Sporadean island of Alonissos to nuclear disarmament, and from the spectacle of a wretched panda trained to play a trumpet in a circus to the detrimental impact on the planet of mass deforestation.”

– The Times, 16 May 2003



In June the same year, he returned to Alonissos, where he was awarded Honorary Citizenship in a ceremony attended by the wife of the then Prime Minister, Constantine Mitsotakis.



Prince Sadruddin and Princess Catherine (second and third from left) attending the release of orphaned monk seal pup *Efstratia*

For the next few days, Prince Sadruddin held “town hall” meetings with local stakeholders, hiked over the archipelago’s uninhabited islands and made the personal acquaintance of that other famous ambassador of the monk seal species, Theodoros, the orphaned seal that had so endeared himself to the local community.

Later the same year, he donated a new 42-seat community bus to Alonissos in an effort to encourage the island to stake its future on the Marine Park rather than the mass tourism route so common to the Aegean.

At the same time, he spearheaded efforts to establish an Athens-based foundation for the monk seal, encouraging wealthy ship-owners and other industrialists to commit themselves to saving Europe’s most endangered marine

mammal. Although it proved an uphill battle, before winding up its activities the foundation had donated some quarter of a million dollars to monk seal conservation efforts in the Aegean.

In 1994, he had Bellerive join forces with the International Marine Mammal Association to defeat yet another attempt by Antibes Marineland to capture monk seals in Mauritania.

“The question is, *Can anything be done?* Over the years, I have discussed monk seal conservation with numerous people, from government ministers to businessmen and scientists, from conservation activists to school children. Ironically, it is often the young who have the clearest idea of what needs to be done. It is the young who are impatient for answers, intolerant of delay. Where others find themselves wallowing in bureaucratic quicksand, the young often see common sense solutions and cannot understand why establishment figures are reluctant to seize the initiative. Some might call this naïveté, but one wonders whether this is just the cynic’s way of justifying inaction.”

Sadruddin Aga Khan, [A Little Imagination](#), Guest Editorial, TMG 2(2): 1999.

As recently as 2002, Prince Sadruddin stepped in to save The Monachus Guardian from closure, personally urging other organisations to match his funding commitment [[Prince issues appeal](#), TMG 5 (1): May 2002]. Within weeks, WWF International had reacted positively to his appeal, allowing the Guardian to continue publishing for another year [[WWF backs The Monachus Guardian](#), TMG 5 (2): November 2002].

Over time, Prince Sadruddin became increasingly frustrated by the glacial pace of government bureaucracies in tackling ecological and animal welfare abuse, and by the seemingly infinite capacity of officials to evade even the most compelling facts of a logical argument.

He could be equally incensed by conflicts between organisations that supposedly shared the same worthy goals – a conviction that originally inspired Bellerive’s faith, and nurtured its talents, in assembling broad coalitions to tackle pressing issues.

At the same time, the Prince often voiced concern that, in striving to meet the challenges of operating within a new world economic order, NGOs could themselves become corporate entities alienated from the very people they needed to reach and to convince.

Sadruddin Aga Khan will be a sorely missed source of inspiration to conservation, human rights and animal welfare – just some of the key areas that composed his holistic view of the world.

– William M. Johnson

**Further reading:**

[A Little Imagination](#), by Sadruddin Aga Khan, Guest Editorial, The Monachus Guardian 2(2): 1999.

[Preface to The Rose-Tinted Menagerie](#), by Sadruddin Aga Khan. Heretic Books, London.

The [Bellerive Foundation](#), Geneva, Switzerland.

[Prince Sadruddin Aga Khan](#). Mediating between East and West, and bringing an environmental conscience to the affairs of the UN. The Times, May 16, 2003.



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## International News

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### **Funding crisis strikes Turkish, Greek and international efforts**

Funding cutbacks continue to disrupt vital monk seal conservation activities in Greece, Turkey and elsewhere.

In its latest member newsletter, Greek monk seal NGO [MOM](#), announced that its 15th year had been “marked by severe financial constraints”, mainly due to the failure of the government to honour its previously agreed commitments [see also [Government inaction jeopardises marine park](#), TMG 5 (2): November 2002].

The funding crisis disrupted guarding in protected areas, public awareness and education activities. Severe cutbacks, including staff redundancies, were required in order to salvage planned conservation efforts during the year, reported MOM.

Similar problems persist in Turkey, where the lone patrol boat of the flagship Foça Specially Protected Area was out of action for six months between October 2002 and April 2003 – for want of some €4000 (\$4500) to meet repair and maintenance costs.

The economic crisis in Turkey has made an already difficult predicament for grassroots conservationists even worse, reports Harun Güçlüsoy of the [Mediterranean Seal Research Group](#) in Foça, jeopardising efforts to establish a network of marine protected areas that may be the species’ only hope of survival in the area [see [MPA problem-solving](#), TMG 5 (2): November 2002].

“Unfortunately,” writes Harun, “due to the poor state of the economy in Turkey, the relevant government offices are unable to allocate the required funds for monk seal conservation issues, with the result that there are still no management plans or management authorities for our coastal Specially Protected Areas. Even basic guarding against illegal activities along our coasts can hardly be carried out by the government agencies responsible. We are trying our best to fill in the gaps where we can, alerting the authorities whenever we encounter illegal building, fishing or other activities, but without adequate funding it is an uphill battle for us as well.”

On the international front, recent events have also taken their toll upon The Monachus Guardian. With Bellerive’s help, we continue to seek funds for the ongoing publication of TMG, encouraged by the overwhelming show of support we have received from readers and contributors in countries and regions as far afield as Turkey and Hawaii, Greece and Mauritania [see Letters to the Editor, TMGs *passim*].

We, like they, need no convincing that TMG is also an integral part of the international monk seal conservation process. Indeed, it is perhaps a matter of some topical significance that when the delegates of the Rhodes conference drew up their action plan for the species 25 years ago, they specifically recommended the publication of an international newsletter to act as an “Information exchange on the conservation of monk seals...”

Similar recommendations appear in the Action Plan for the Management of the Mediterranean Monk Seal, coordinated by UNEP under the terms of the Barcelona Convention.

That each issue of The Monachus Guardian today reaches at least 10,000 people is a clear indication that such objectives are being fulfilled.

Because of recent events, this, the 11th issue of TMG, has been produced largely on a voluntary basis – an effort that unfortunately cannot be sustained.

Although it will not cease publication entirely, the contents of The Monachus Guardian will have to be drastically curtailed as of the November 2003 issue unless adequate funding can be found.

If you would like to support the continued publication of The Monachus Guardian and/or support monk seal conservation activities in Greece and Turkey, please check out our updated [Seal Appeal](#) page.

## Seal Appeal

**Support monk seal conservation. Help us stay on line. The Monachus Guardian is the only dedicated source of news and information on the world's endangered monk seals. Its publication fulfils explicit recommendations of conservation action plans for the species.**

Through its ongoing collaboration with the Bellerive Foundation, The Monachus Guardian is accepting donations and voluntary subscriptions from its readers.



Please turn to our [Seal Appeal](#) page for further details.

## Rhodes 25th

Perhaps somewhat implausibly for those who were there at the time, 25 years have now passed since the First International Conference on the Mediterranean Monk Seal convened on the Aegean island of Rhodes in May 1978. Although words commemorating this particular anniversary may have been few and far between, Rhodes remains a landmark event in the conservation of Europe's most endangered marine mammal.

The gathering, that attracted some 60 participants from over 20 countries, was sponsored by three Greek government ministries, the United Nations Environment Program, the University of Guelph in Canada, and the World Conservation Union (IUCN).

Arguably, such institutional support was a reflection not only of the tireless efforts of co-convenors Keith Ronald and Raymond Duguy to stage the conference, but of official recognition that something had to be done to halt the seal's precarious slide towards extinction.

By the end of the meeting, the Rhodes delegates had endorsed a detailed and coherent plan of action, listing the priorities required to save *Monachus monachus*. Addressing such issues as legislation, establishment of MPAs, scientific research and education, many of them remain as pertinent today as they did in May 1978.

In this year's November issue, we hope to publish an implementation assessment of various monk seal conservation action plans recommended or officially endorsed since Rhodes. Readers with advice or views to impart are kindly asked to contact Alexandros Karamanlidis [[alkar@bio.auth.gr](mailto:alkar@bio.auth.gr)] and William M. Johnson [[editor@monachus-guardian.org](mailto:editor@monachus-guardian.org)].

### Further reading:

**Ronald, K., and R. Duguy (eds.).** 1979. The Mediterranean monk seal. First international conference on the Mediterranean monk seal, Rhodes, Greece, 2-5 May, 1978. United Nations Environment Programme / Pergamon Press, Oxford, UK: 1-183.

## Golden Web Award for TMG



The Monachus Guardian has received a 2003-2004 Golden Web Award following a review of the site by the International Association of Web Masters & Designers. All candidate sites for the award are voted on by Association members, according to IAWMD rules.



### **EndQuote**

“Historians in the future will remember the end of the 20th century for a revolutionary idea, as important as the Copernican notion 500 years ago that the Earth revolved around the sun. Nature not man is the centre of existence. Everywhere today nature is massively and continuously abused and degraded. Thousands of endangered, vulnerable and threatened species have been recorded and every day species disappear, some before they have even been named. To make this last truth more graphic, the World Conservation Union (IUCN) has chosen 12 species which are most endangered. One of these is the Mediterranean monk seal, in many ways a totemic like symbol for the good side of the human species.”

– Sadruddin Aga Khan. 1992. The Sad Tale of the Monk Seal, Bellerive Network News 1 (2): 1-2.



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## Hawaiian News

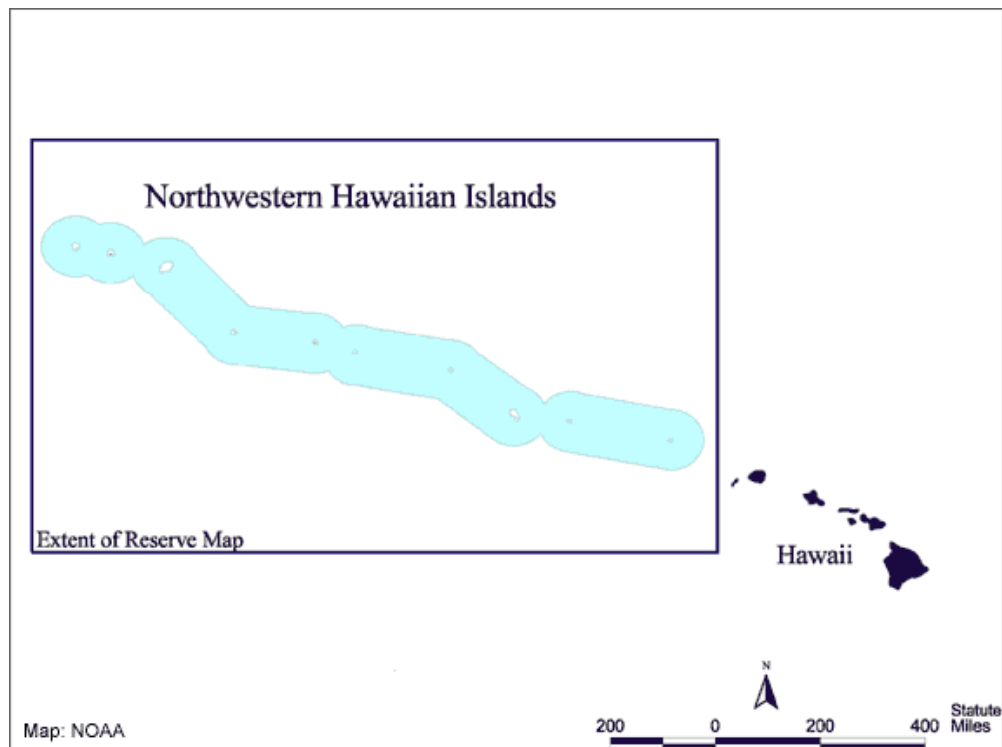
### Marine Mammal Commission reviews recovery plan

The Marine Mammal Commission's Annual Report to Congress for 2002 has recently been published. Following established practice, and by courtesy of the Commission, we are making the relevant chapter available for download from the [Monachus Library](#) [for citation, see below]. Below, we present a summary of the Report's main findings:

In April 2002, the U.S. Marine Mammal Commission (MMC) convened a review panel to reexamine Hawaiian monk seal recovery needs. Members included marine mammal scientists and managers with experience in Hawaiian monk seal conservation. The panel provided a summary of its findings and recommendations to the Commission in August 2002; these were subsequently transmitted to relevant government agencies, including the National Marine Fisheries Service (NMFS), National Ocean Service, Fish and Wildlife Service, Coast Guard and Hawaii Division of Aquatic Resources.

### Population assessment

The Honolulu Laboratory of NMFS is responsible for data collection and also various management actions among the remote Northwestern Hawaiian Islands. These range from beach counts to disentangling seals from marine debris. The review panel, notes the MMC, "was impressed by the laboratory's field program. Funding support for the program [currently \$1.2 million of its \$2 million 2002 monk seal budget] has doubled since the Commission's 1995 program review, the fieldwork is well organized, and the data collected on this species over the past years now constitute perhaps the best long-term dataset for any seal species worldwide." In order to optimize its fieldwork, however, the panel recommended that field work concentrate on determining mortality factors at each of the six breeding colonies under regular study. The panel, in particular, highlighted Lisianski and Laysan Islands "where the colonies have not been increasing and recently may have begun a downward trend."



Blue defines the approximate Reserve boundaries ([click here for more detailed map](#))

At the end of 1992, notes the MMC, NMFS preliminary research indicated that “for the second year in a row, juvenile survival rates were low at all breeding sites. In the past, low juvenile survival had been a problem principally at Laysan and Lisianski Islands, and particularly at French Frigate Shoals.” At the same time, however, the total number of births in the NWHI had marginally increased, from 178 in 2001 to 196 in 2002. Paradoxically, mean beach counts had declined for the second year in a row at the westernmost colonies (Kure, Midway, Pearl and Hermes Reef), reversing recent increases.

### **Fisheries interactions**

Noting that Hawaiian monk seals feed on a variety of prey, including small reef fish, octopuses, lobsters and other crustaceans, the MMC draws attention once again to the suspicion that a reduction in prey availability driven by overfishing, may be responsible for a decline in monk seal numbers at certain colonies, notably French Frigate Shoals [TMGs, *passim*]. Over-exploitation of lobsters and reef fish at FFS was directly implicated in the starvation of pups and juvenile seals in a Federal court case in 2000, when public interest law firm Earthjustice successfully sued NMFS for failing to protect seals from fisheries impacts [see [Judge issues ruling in “monk seal starvation” case](#), TMG 4(1) May 2001]. NMFS subsequently closed the lobster fishery for the 2000 season and, following the designation of the NWHI as a Reserve by President Clinton in December of the same year [[“Living rainbow” may benefit monk seals](#), TMG 4(1): May 2001; [Under review](#), TMG 4(2): November 2001], did not allow a resumption.

The MMC notes, however, that the Western Pacific Regional Fisheries Management Council has questioned the legality of fisheries-related aspects of President Clinton’s Executive Order creating the NWHI Coral Reef Ecosystem Reserve, and observes that NMFS has initiated a study to “resolve questions about the status of the region’s lobster stocks.”

The MMC notes that it has “written more than a dozen letters between 1991 and 1999 to the National Marine Fisheries Service and the Western Pacific Regional Fishery Management Council recommending precautionary management measures to protect monk seals from the effects of lobster fishing.”

### **National Marine Sanctuary**

President Clinton’s Executive Order directed that steps be undertaken to designate the NWHI Coral reef Ecosystem Reserve as a national marine sanctuary, a responsibility that subsequently fell to the National Ocean Service [see [‘Trojan Horse’ may threaten NWHI Reserve](#), 5 (2): November 2002]. The NOS began a canvassing process early in 2000 to solicit public comment and expert advice on the creation and management of the sanctuary. The MMC, citing its own attempts over the previous decade to have the precautionary principle applied to human activities within the NWHI, also seized the opportunity of reminding the NOS that the founding Executive Order itself directs that “the Reserve shall be managed using available science and applying a precautionary approach with resource protection favored when there is a lack of information regarding any activity, to the extent not contrary to law.” Suspicions have been voiced from many quarters that the Bush administration was engaged in a back-door effort to water down the protection promised by the Executive Order during the conversion process from Reserve to Marine Sanctuary.

In reviewing the NOS draft Reserve Operations Plan, the MMC notes that the draft “did not clearly or prominently identify the purpose of the reserve as set forth in the Executive Order or its directive that the reserve be administered using a precautionary management approach.” In an equally damning critique, the Commission observes that the NOS “description of Hawaiian monk seals did not reflect the species’ endangered status or identify any of the major threats, such as entanglement in marine debris, commercial fishing, and human disturbance, potentially affecting its recovery.”

Since the end of 2002, NOS has been engaged in a comprehensive redrafting process of the Operations Plan.

### **Entanglement**

The MMC observes that marine debris continues to pose a serious hazard to monk seals, marine turtles, seabirds and fragile coral formations in the NWHI [see [Catch of the day](#), 5 (1): May 2002]. Species are most at risk from derelict trawl nets and fishing lines that are swept into the islands by ocean currents from unidentified locations around the Pacific Rim states. Some estimates, based on data collected in the 1990s, suggest that tens of thousands of such net fragments may have become lodged in reefs throughout the NWHI. The MMC reports that observed monk seal entanglements averaged 15 per year in the 1990s and “reached a record high of 25 in 1999.” There were only five reported incidents in 2000, eight in 2001, and 10 during 2002. The MMC also notes, however, that because field research seasons are limited in duration, it is likely that more entanglements occur than are ever reported.

The MMC’s review panel recommended that greater efforts be taken to identify the origins of marine debris, so that steps might be taken to lessen its incidence through educational means.

## **Shark attacks**

As reported previously in TMG, shark attacks on monk seal pups at French Frigate Shoals have been a cause of concern both for NMFS researchers and scientists unconvinced by plans to cull the marauding individuals [see [Killing sharks at French Frigate Shoals is unacceptable](#), 5 (1): May 2002; [Scientists continue to target shark cull](#), 5 (2): November 2002].

The MMC reports that, so far, shark predation has been identified as a problem only on FFS, where – at least partly due to limited food resources – monk seal numbers have declined by about two-thirds since the mid-1980s.

In 1999, reports the MMC, “more than 25 per cent of the pups born on the atoll (25 of 92) were thought to have been killed by Galapagos sharks patrolling two main pupping islands as close as a few feet from the beach.”

In an effort to address such serious mortalities, NMFS researchers initiated a shark tagging programme, aimed at identifying individual sharks responsible for the seal attacks. This was at least partly based on the hypothesis that the attacks were motivated by learnt behaviour on the part of a few individuals.

NMFS staff also killed two sharks in 2000 and five in 2001, and subsequently reported that pup mortalities due to shark attacks had been reduced to six and nine animals respectively. During that period, however, some weaned monk seal pups were translocated to other islands within the atoll.

During 2002, NMFS – with backing from the Hawaiian Monk Seal Recovery Team – sought permission to increase the shark cull to 15 per year in 2002-2003. The MMC review panel applauds such efforts, and even goes on to suggest that efforts to eradicate problem sharks and thus reduce pup mortality have proceeded too slowly.

For some researchers however, impacts of shark removal upon the marine ecosystem remain uncertain – perhaps for good reason.

Two sharks were killed during the 2002 field season on Trig Island of FFS, and only three shark-related pup deaths were reported from the island. However, in a possibly alarming indication of things to come, the MMC reports that “efforts to tag and kill sharks patrolling the beach have made them more wary and difficult to tag and catch. Thus, tagging efforts have had limited success. Also, shark-related deaths at atoll islands other than Trig and Whaleskate rose sharply in 2002 to eight pups. Whether these were sharks accustomed to preying on monk seal pups at Trig and Whaleskate or new individuals is not known.”

## **Recovery Team to be reformed**

The Hawaiian Monk Seal Recovery Team was founded in 1980 by NMFS. The MMC reports that NMFS decided to reconstitute the team in 2001 and request that it update its original 1983 recovery plan. Composed of agency officials and marine mammal experts, the new team met for the first time in March 2002. With additional assistance from the MMC, the team expects to provide an updated draft recovery plan by the end of 2003.

## **Monk seals colonise the Main Hawaiian Islands**

As reported in previous issues of TMG, sightings and births of monk seals on the main, inhabited Hawaiian Islands continue to increase, posing something of a dilemma for scientists and conservationists [see [Monk seals in the main Hawaiian Islands](#), TMG 3 (1): May 2000]. Historically, the seal's presence in the 'downtown' islands appears to have been rare. The MMC reports that the total number of seals now inhabiting the main Hawaiian Islands “likely numbers at least 100...” lifting prospects for the species' recovery as well as raising significant conservation challenges.

Predictably, with more seals also comes more human harassment, particularly where the animals are occupying popular bathing and surfing beaches [see [More harassment in islands 'downtown'](#) 5 (1): May 2002]. Stringent regulations in effect to prevent human disturbance of seals – which can result in sections of popular beaches being cordoned-off to preserve the privacy of the sun-loafing animals – has led to increasing public resentment in some quarters. The MMC reports that such protection measures “can have significant impacts on local tourist-based economies and have raised concerns among some residents and local businesses about the presence of seals on beaches.”

The MMC advisory panel concluded that “occupation of the main Hawaiian Islands by seals could significantly enhance the species' recovery and, if properly managed, could provide a valuable economic benefit, given widespread interest in ecotourism and marine mammals” – a comment that scholars of wise or sustainable use will surely find interesting.

Responding to the panel's recommendation, the MMC, NMFS and the Hawaii Division of Aquatic Resources jointly convened a workshop on Kauai in late October 2002 to evaluate the monk seal's presence on the main Hawaiian Islands, and to design management actions that may be required.

Courtesy of the MMC, the Workshop report (including a summary of invited papers and presentations) is also available for download from the [Monachus Library](#):

**Marine Mammal Commission.** 2003. Hawaiian monk seal (*Monachus schauinslandi*). Pages 79-95 in Chapter III, Species of Special Concern, Annual Report to Congress, 2002. Marine Mammal Commission, Bethesda, Maryland.

**MMC/NMFS.** 2003. Workshop on the management of Hawaiian monk seals on beaches in the Main Hawaiian Islands. 29-31 October 2002, Kauai Sheraton Resort Koloa, Kauai, Hawaii. Cosponsored by Marine Mammal Commission, National Marine Fisheries Service, Hawaii Division of Aquatic Resources. Final Report, January 2003: 1-58.

## Other Hawaiian highlights

### Cover Story:

[Northwestern Hawaiian Islands – Creating A Pu'uhonua for Future Generations](#) – by Cha Smith

### In the [Monachus Library](#):

**KAHEA.** The Hawaiian-Environmental Alliance. 2003. The Hawaiian monk seal: On the verge of extinction [Brochure]: 1-2.

**KAHEA.** The Hawaiian-Environmental Alliance. 2003. Northwestern Hawaiian Islands. Spring 2003 Factsheet: 1-4.

### EndQuote

#### 2 tourists investigated in alleged harassment of seal

“Two Colorado tourists who apparently harassed an endangered, possibly pregnant monk seal on the beach of the Big Island’s Pololu Valley on Wednesday are under investigation for violation of a state conservation law... The incident was reported by North Kohala businessman John Flynn, who supplied photos, including one of a man with his arm extended forward five feet from the seal’s face.

Flynn said the man was waving his hand in the seal’s face and shouting at it. The man continued even after Flynn shouted for him to stop, he said.

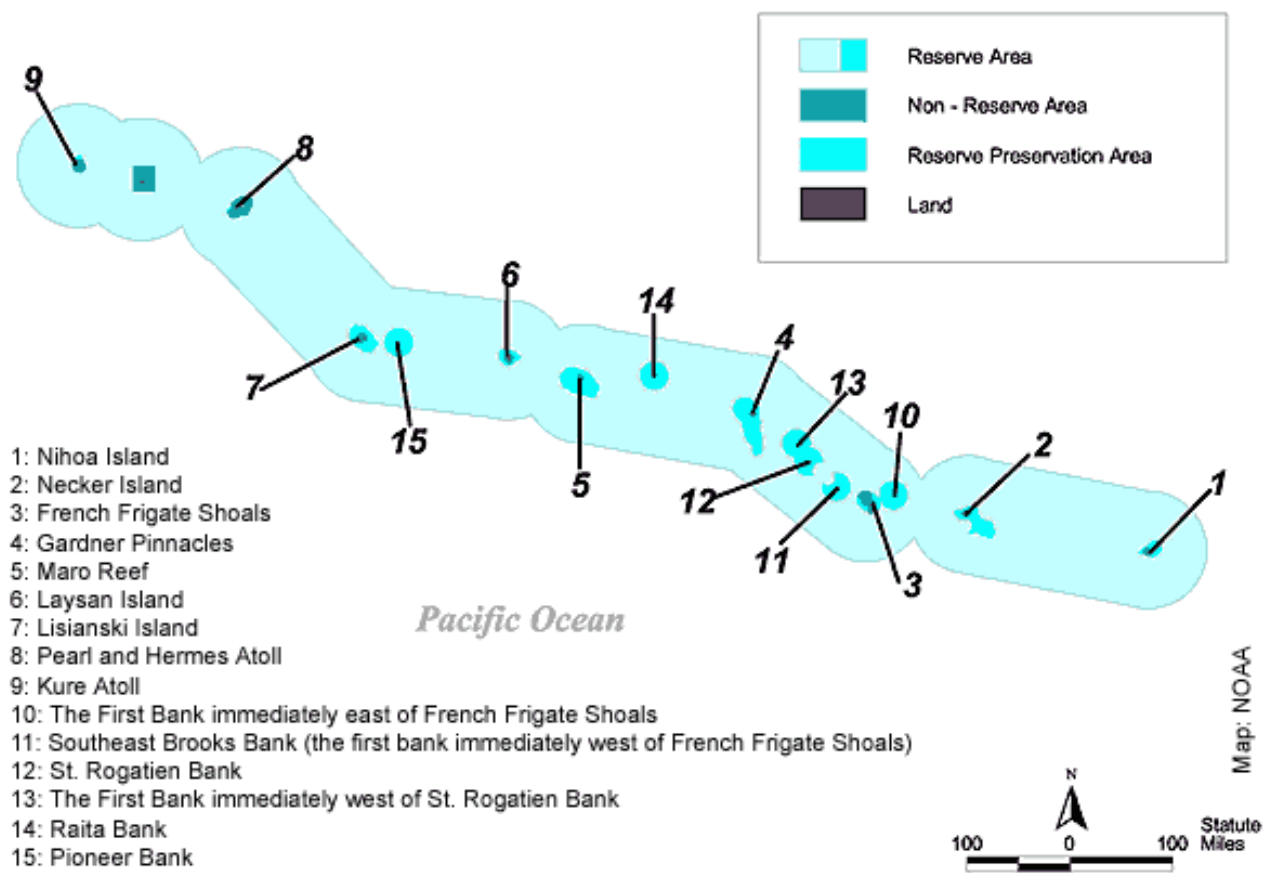
The seal had been half asleep but spun around and barked when the man approached behind the animal, Flynn said. The seal then crawled around the man and swam out to sea, he said.

The men could receive up to a year in jail and a fine of \$250 or more under state law.”

**Source:** Rod Thompson, Honolulu Star-Bulletin, Saturday, March 22, 2003

<http://starbulletin.com/2003/03/22/news/story9.html>

# Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve







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## Mediterranean News

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### Bulgaria

One of the most important former breeding habitats of the Mediterranean monk seal in Bulgaria has recently been declared a Ramsar Site – the famous Zehtin borun (Maslen nos) Cape near the river Ropotamo. The website of the [Ramsar Convention](#) describes it thus:

**Ropotamo Complex** (formerly called 'Arkoutino'). 24/09/1975. Burgas. 5,500 ha. 42°19'N 027°45'E. Partially Reserve, Natural Monument, Maintained Reserve and Protected Area. The site has been extended from 97 ha to 5,500 ha and the name has been changed on 24/09/2002. The site, on the southern Bulgarian Black Sea coast, represents a diverse mosaic of various habitats – river downstream and estuary, seasonally flooded riverine and broad-leaved deciduous forests, small freshwater and brackish lagoons, sand dunes, rocky shores and fjords, a sea bay, sea inlets. The site provides refuge to many nationally and internationally IUCN red-listed species of plants and animals, among which are seven globally threatened species of birds and two plant species, eight invertebrate species and seven mammal species. Rich endemic and relict flora and fauna are recorded in the site. The main human uses are forestry, hunting, and recreational activities, and the site is a very popular destination for nature lovers, offering some facilities as well. Management plans are in preparation, and the Bulgarian-Swiss Biodiversity Conservation Programme is active at the site. Ramsar site no. 65.

The other very important site near Cape Kaliakra and Tjulenovo covers the criteria for Important Birds Area (for *Phalacrocorax aristotelis*) and will be included in the future Bulgarian Natura 2000 network.

Unfortunately, monk seals have already been exterminated in Bulgaria. – Stefan Avramov, Bulgarian Society for the Protection of Birds/BirdLife Bulgaria.

### Cyprus

The Cyprus Mail reports that a Mediterranean monk seal made a rare appearance in Paphos harbour over the weekend of 17-18 May 2003, coming and going over the next three days before vanishing without trace.

The monk seal has become an increasingly rare inhabitant of Cyprus and was even considered extinct until surveys established that small, remnant groups of animals continued to survive on the south and northeast coasts.

The Cyprus Mail reports that 5-6 individuals are thought to inhabit the island's southern shores, while another 5 are thought to frequent Cape Apostolos Andreas.

Of the Paphos sighting, on the west of the island, local ecologist Martin Hellicar was quoted as saying: "It may have been lost or hungry, but it's hard to say why it would swim up to the shore."

The Mail adds that the last recorded sighting of a monk seal on Cyprus took place in August 2001 at Governor's Beach near Limassol.

#### For further information

**Khadder, Tania.** 2003. Rare monk seal makes an appearance in Paphos harbour. Cyprus Mail, Thursday, May 22, 2003. <http://www.cyprus-mail.com/May/22/news6.htm>

**Dendrinos, P. and A. Demetropoulos.** [The Mediterranean monk seal in Cyprus](#). Monachus Science, TMG 3(2): 2000.

## Greece

### Finding a voice in the Sporades Marine Park

Organisations and individuals from Greece and abroad have contacted the Ministry of Environment in Athens, expressing their view that MOm, the country's leading monk seal NGO, be officially appointed a representative of the board of directors of the management authority of the National Marine Park of Alonissos, Northern Sporades (NMPANS) [see [A question of management](#), 5 (2): November 2002].

Despite earlier assurances, there has been some doubt of late as to whether conservation interests will find an adequate voice on the committee which, comprising various government agencies and local stakeholders, is likely to play a pivotal role in shaping the Park's future, both in terms of conservation and alternative economic development.

Environmental organisations and universities, both in Greece and abroad, were among those petitioning the ministry to ensure that monk seal conservation interests are adequately represented on the NMPANS administrative committee.

As some were keen to point out in their appeals to the Ministry, MOm played an instrumental role in the founding of the Marine Park and, even in the absence of an official management authority, has been consistently applying essential management actions in the area for many years, including guarding and monitoring, education and public awareness, rescue and rehabilitation.

Although the formation of the management authority fulfils an earlier public pledge by deputy Minister of Environment, Rodoula Zisi [see [Sporades receives ministerial commitment](#), TMG 5 (1): May 2002], many important issues still await resolution, including appointment of a NMPANS manager and staff, as well as annual operating budgets. The NMPANS was established by Presidential Decree in May 1992.

#### For further information

[The islands at the end of the line](#), TMG 4 (2): November 2001.

[All at sea – adrift in the Northern Sporades Marine Park](#), TMG 4 (2): November 2001.



MOm's Visitor Centre on Alonissos, in the Northern Sporades Marine Park, has recently been reopened after renovation and renewal of exhibits. The Centre is the only source of public information on the monk seal in the NMPANS.

### NGOs join forces for protected areas

Environmental NGOs within Greece, including MOm, have been striving for improved ties and inter-organisational cooperation. Ad hoc meetings held over the last year have attempted to forge a common policy with regard to the management of protected areas, and NGO participation within the process.

The Natura 2000 Committee was subsequently formed at the beginning of 2003, a new institutional instrument with

consultative status towards the Ministry of Environment. The Committee has a mandate to monitor and coordinate actions that are being carried out in all of Greece's Natura 2000 protected areas, and will evaluate the implementation of relevant EU legislation.

Dr. Spyros Kotomatas, MOm's scientific coordinator, represents MOm in the Natura 2000 Committee. – MOm.

## Research confirms international importance of Kimolos and Karpathos

MOm's creation of permanent field teams in Kimolos-Polyaigos in the Cyclades islands and Karpathos-Saria in the eastern Aegean, has allowed the organisation to conduct a more detailed and systematic study of local monk seal populations and their biotopes.



Kimolos seal

The research forms part of MOm's EU-funded LIFE programme to establish marine reserves in the two areas [see [LIFE funding for Natura 2000 areas](#), TMG 4 (2): November 2001].

During 2002, special emphasis was placed on detailed monitoring of the use of caves by the seals, and the recording of births during the reproduction period.

As far as Kimolos-Polyegos is concerned, analysis of the collected data confirms the area's significance for the protection of the species on an international basis. Indeed, the total of 17 newborn seals recorded in the area over the past two years (9 during 2001 and 8 in 2002) represents the second highest number of births recorded during the

same period in any geographical area of the Mediterranean.

As far as Northern Karpathos-Saria is concerned, findings to date suggest that this area is also important for the species, as evidenced by the 8 newborn seals recorded during the past two years (3 during 2001 and 5 in 2002).

– Stella Adamantopoulou and Spiros Kotomatas, MOm.

## Surveillance systems launched

Meanwhile, drawing on its long-running experience within the NMPANS between 1990 and 2002, MOm launched a pilot surveillance system for Kimolos-Polyaigos and Karpathos-Saria, tailored to the particular needs of each area. This involved:

- The selection and training of locally-recruited field crews.
- The construction, registration and delivery of two new monitoring and research boats, the 8.5 meter *Kimolos* and the 9.5 meter *Saria*, both equipped with radar and VHS transmitters, and capable of both day and night operation [see [New research vessels for Kimolos and Karpathos](#), TMG 5 (2): November 2002].
- Devising a surveillance programme to maximise resources and ensure optimum coverage of each area.
- Designing a special data recording system and database for the detailed recording of human activities taking place within the marine zones of each area. Collected data will constitute a significant source of information on the existing state of the marine environment and its exploitation, which is essential for the future management of the areas.
- Ensuring a fruitful and effective cooperation, especially at a local level, with the Port Police authority, the official body responsible for implementing maritime law in Greece.

The pilot surveillance scheme will continue to operate until 2004, hopefully providing invaluable practical experience for the management authorities that will eventually be responsible for guarding activities in each area. – Stella Adamantopoulou and Spiros Kotomatas, MOm.

## For further information

[Uncertainty in Kimolos](#), TMG 5 (2): November 2002

## TV brings monk seal message to millions

For a month leading up to Christmas 2002, MOm's new public service announcement on the plight of the monk seal was broadcast by TV stations across Greece. As far as concept was concerned, the idea behind the 2002 ad was

innovative, focusing on conservation actions undertaken by MOm in the Northern Sporades Marine Park, Kimolos and Karpathos.

The ad was broadcast on E.T. 1, N.E.T., ALPHA TV, ANTENNA TV, MEGA CHANNEL, STAR CHANNEL (Athens), E.T. 3 (Thessaloniki), TV IRIDA, RADIO-TV COSMOS, RHODES CHANNEL (Dodecanese), AEGEAN TV, SYROS TV (Cyclades) and T.R.T. (Thessaly).

Underlining their continuing support for MOm's conservation efforts, Adel Saatchi & Saatchi provided their creative and conceptual advertising skills free-of-charge. Anna Maria Harokopou and the company Filmiki Etairia also made a substantial contribution in terms of studio work. – MOm.

### **Final pup tally for 2002**

MOm's research team has released the final pup tally for monk seal births recorded during the 2002-2003 season in the organisation's three main study areas:

Nine newborn seals were recorded in the core zone of the National Marine Park of Alonissos-Northern Sporades, 8 in the Kimolos-Polyaigos area and 5 in the area of N. Karpathos-Saria. – Panos Dendrinis, MOm.

### **Marine Workshop for Alonissos**

Following the success of the "Forest Workshop" at Evros in 2002, this year WWF Greece and MOm joined forces to host a similar "Marine Workshop" on Alonissos in the Northern Sporades Marine Park. The Workshop took place from 23 – 30 of May, at the Biological Research Station at Gerakas.

The principal aims of the Workshop were to contribute to the sound management of Greece's fragile marine and coastal ecosystems by offering personnel from public and private entities both theoretical and practical knowledge relating to the administration of marine protected areas. Participants benefited from experience gained by WWF Greece in various projects around the country, and from MOm's multi-year experience in the management of Greece's first National Marine Park.



MOm's Panos Dendrinis guiding Workshop participants through the NMPANS

Aside from theoretical lectures by WWF and MOm specialists, individual and group training projects took place both in the field and in class. Topics ranged from legal and institutional aspects of marine protected areas to addressing day-to-day management problems, ecosystem monitoring, the participation of local communities in the conservation process, and the possibilities of developing sustainable ecotourism activities within protected areas. – Vrassidas Zavras, MOm.



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## Mediterranean News

### Italy

#### Another seal sighting in Puglia

An interview with a speargun fisherman has yielded important information about another close encounter with a monk seal in Puglia, a region in southeast Italy bordering on the Adriatic [see [Monk seal returns](#), TMG 5(2): November 2002 and [Sporadic sightings continue in southern Italy](#), TMG 5(1): May 2002]. This firsthand sighting took place at the end of April 2003, when the diver observed a seal swimming out of a cave, to which it returned soon after.



**Map:** Areas characterised by sightings of single monk seals (red dots indicate sightings recorded between 1993-2002, blue dot indicates the present Apulia sighting), nearby Italian areas with known monk seal presence (red Xs) and with hypothetical monk seal presence (red question marks).

Monk seal sightings information in Italy is gathered and analysed through a joint program of the [Gruppo Foca Monaca](#) and [ICRAM](#).

Sporadic sightings of monk seals around southern Italy and Sardinia may indicate seasonal movements from other areas – the Ionian Islands of Greece or the North African coast. Conceivably, they may also suggest that the resident monk seal population in Italy has not been entirely eradicated as previously feared. – Emanuele Coppola, Gruppo Foca Monaca.

### Madeira

#### Sightings collected, advice dispensed on Madeira

As revealed in last November's issue of TMG [see [Sightings – and "accidents" – increase around Madeira](#), TMG 5(2): November 2002], the [Parque Natural da Madeira](#) has launched a public awareness campaign to gather information on the monk seal's apparent re-colonisation of the island, and also to advise people how to behave if they encounter a seal.

Sightings of seals around the main island have shown a marked increase in frequency of late, with over 30 observations being recorded last year. Researchers believe that, as the seal colony at the strictly-protected Desertas Islands Nature Reserve has recovered from near extinction in the 1980s, individual animals may be dispersing towards the main island in search of new habitat [see [Madeira island observations](#), TMG 4(2): November 2001 and [Are monk seals recolonising Madeira island?](#) TMG 4(1): May 2001].

The increased sightings have posed something of a dilemma for conservationists, however, as incautious humans unused to seals have approached the animals in an attempt to pet or play with them. Some injuries were sustained



as a result of these interactions, and although most members of the public took a cautious, commonsense approach when encountering a seal, the PNM felt it necessary to issue a brochure highlighting the potential risks [an English version has been lodged in the [Monachus Library](#) – see below]. At the same time, a sightings observation sheet was also produced. Hopefully, this will encourage members of the public to continue reporting their observations, thereby helping PNM researchers to gain a better understanding of seal's reappearance around Madeira. – Rosa Pires, Parque Natural da Madeira.



Monk seals in the PNM brochure

In the [Monachus Library](#):

**Parque Natural da Madeira.** 2003. Help us to help the monk seal. English brochure and sighting register: 1–2.

### New pups in Desertas

Wardens in the strictly-protected Desertas Islands Nature Reserve detected two new monk seal pups on 2 May. They are no more than a month old. – Rosa Pires, Parque Natural da Madeira.

## Mauritania & Western Sahara

### *Prestige* disaster has consequences for Cabo Blanco

Six months have passed since we all saw on television how the oil tanker “Prestige” was sinking in the Atlantic off the Galician coasts, a Spanish region famous for its sea and excellent shellfish.

The first consequences of the disaster were obvious: kilometres and kilometres of beaches and coastline completely flooded with oil, causing the deaths of thousands of marine birds, and forcing the closure of the area's lucrative fishing and shellfish grounds. One of the most affected marine resources were goose barnacles, suddenly covered by a thick layer of fuel-oil. Almost overnight, the steep prices already commanded in the marketplace for this crustacean rose astronomically.

Sellers looked for alternative sources to feed demand, including Saharan coasts.



Goose barnacle picker on the 'Coast of Seals'.

Although seemingly incredible, this is how the “Prestige” disaster has even had a tangible impact on the surroundings of the Cabo Blanco monk seal colony.

During these last months, the [CBD-Habitat](#) surveillance patrol has had to deal with waves of goose barnacle pickers – many of them new to the trade, but motivated by persistent good prices – and to exert great effort in order to divert them away from monk seal breeding caves.

As explained in last November's TMG [[Conservation actions on the Cabo Blanco peninsula – a new approach](#), TMG 5 (2): November 2002] and in this issue's [In Focus](#) article, the pickers descend from cliff-tops to anywhere goose barnacles can be harvested, including caves.

Land-based surveillance is therefore proving essential to prevent disturbance and to ensure peace and safety for the Cabo Blanco monk seal colony. – Pablo Fernández de Larrinoa & Hamdi M'Barek, CBD-Habitat.

### Improving surveillance of the Cabo Blanco monk seal colony

In May 2001, as a consequence of a no-fishing agreement with local artisanal fishermen, [[Conservation actions on the Cabo Blanco peninsula – a new approach](#), TMG 5 (2): November 2002] CBD-Habitat technicians were able to mark as protected, six kilometres of coast incorporating the seal colony's breeding caves. Surveillance teams



immediately began to patrol the area.

Since then, surveillance of the marine area has been performed both from land and on sea. On land, surveillance relies on observations with binoculars. When a pirogue is observed placing nets within the marked area, for example, the vessel or the harbour where it originated will be identified. Technicians will then go to the harbour and ask the fishermen to remove the fishing gear as soon as possible. After some discussion and explanation, fishermen will normally agree to comply, largely because of the cordial atmosphere that exists between them and the CBD-Habitat technicians. Such violations of the protected zone were more common when the area was first marked, and before word spread among of the fishermen of its establishment.



Preparing for a surveillance patrol within the red-flagged protection zone.

Since December last year, surveillance is also being conducted on the sea, using a new inflatable vessel. This boat allows wardens to monitor the surroundings of the breeding caves, but more importantly, to make their presence known to fishermen, thereby deterring them from laying fishing gear in the area. Positive results have come quickly, with even the most crafty fishermen being deterred by the presence of the surveillance boat.

Infractions during the summer season – when fishing activity normally peaks because of better sea conditions – are also expected to diminish this year. – Mulay Haya and Pablo Fernández de Larrinoa, CBD-Habitat.

### Rehabilitation facilities upgraded

During May, work is expected to be completed on upgrading monk seal rehabilitation facilities at the Mauritanian Institute for Oceanographic and Fisheries Research (IMROP, formerly CNROP) in the city of Cansado.

Alteration works are being performed jointly by [CBD-Habitat](#) and the IMROP staff with funds from the Spanish Cooperation Agency and the Spanish Ministry of Environment.

The facilities are being optimised to rehabilitate pups rescued from the nearby monk seal colony at Cabo Blanco. When still only a few weeks old, the pups are sometimes at severe risk from storm surges, that can enter the breeding cave and sweep them out to sea.

So far, 7 pups have been rehabilitated at these facilities (once, four at the same time), of which 6 have been reintroduced to the wild, and 1 has died.

Although originally constructed as an aquarium rather than a rescue centre, the facilities have been progressively adapted and improved to meet monk seal rehabilitation needs since the Spanish team first began to work at Cabo Blanco and the need for rehabilitation became apparent.

Following alteration works, the facilities are now able to house seals in improved conditions during their rehabilitation at the centre. – Hamdi M'barek & Miguel Angel Cedenilla, CBD-Habitat.

### Pupping season 2002/2003

Between June 2002 and the end of May 2003, 25 newborn pups were detected in the Cabo Blanco colony. Most births took place during the September-December period, with October being the month with the highest number of pups. Of these 25 newborn monk seals, 12 have died, resulting in a 48% pup mortality rate for this period.

During the period from October to January, most of the pups born subsequently died, a phenomenon that coincides with seasonal stormy weather conditions at sea.

All the pups that died did so before reaching the first two weeks of life. 75% of them died in the first three days of life, while none of the remainder survived to 10 days. Therefore, the critical period for pup survival remains two weeks.

Following the 1997 mass die-off, productivity seems to remain stable at around 25 annual births. Also, mortality rates remain stable around 50%, a too high a rate for an endangered species. – Miguel Angel Cedenilla & Mulay Haya, CBD-Habitat.



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The **Monachus Guardian**  
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## Mediterranean News

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### Turkey

#### Illegal diving around Karaburun

According to our research and the information gathered from artisanal fishermen, illegal diving activities are taking place along the Karaburun peninsula in the Bay of Izmir region.

These divers appear to be taking advantage of fish migrations starting in October and extending throughout the winter. Some have also been accused of using chemicals to increase their catch. Reasoning that the divers pose a serious threat to marine life in the area, AFAG communicated its concerns in a formal letter to the Ministry of Agriculture and Rural Affairs, requesting that action be taken to clamp down on their activities. In March 2003, the Ministry replied to our appeal, requesting that AFAG appoint personnel to draw up a schedule for collaborative guarding efforts with the Ministry's civil servants based in Izmir. – N. Ozan Veryeri, SAD-AFAG.

#### “Tarçin” the pup is growing up

AFAG Mediterranean Project staff discovered a newborn pup during a routine cave check on 6 October 2002. The pup, a male, was later named “Tarçin” (Cinnamon) because of his colour. Subsequent checks determined that the pup appears to be in good health and continues to grow.

Tarçin is now approximately 7 months old. – Ahmet Bolat, SAD-AFAG.

#### KOM chooses monk seals this year

KOM, one of the world's famous swimwear companies, has this year chosen the Mediterranean monk seal as a focus for its annual design competition. The three best designs will be used in KOM's 2004 summer collection.

KOM will also donate a proportion of the income derived from subsequent sales to SAD-AFAG.

AFAG gratefully acknowledges KOM's contribution to the conservation of the monk seals and their habitats. – Çağrı Oner, SAD-AFAG.

#### AFAG begins new UNDP-GEF/SGP-funded projects

In April 2003, AFAG began implementing two United Nations Development Program – Global Environmental Facility/Small Grants Program (UNDP-GEF/SGP) projects.

One is the joint “SGP Networking Project” which runs in cooperation with the Bird Research Society (KAD) and Bugday Ecological Life Services. The main objectives of this initiative are to organise exchange visits between projects, to document the programme and project news and stories both through digital and print media, and to disseminate the lessons learned on a “best practice” basis.

This project will last for 18 months and is eligible for renewal if project performance warrants it.

The second project focuses on the production of educational and public awareness material for the Foça and Karaburun areas, which is to be distributed among local people, including fishermen and children.

Among some of the materials to be produced are posters on marine and coastal life in the Foça Specially Protected Area and the adjacent Karaburun Peninsula, a monk seal information brochure, monk seal stickers, a cartoon game and a children's drawing book. – Yesim Caglayan, SAD-AFAG.

## Seal Watch 4 update

AFAG received the financial support of the Netherlands-based Prince Bernhard Nature Conservation Foundation to implement its Seal Watch 4 project.

Since the last update, provided in November's issue of TMG [see [Seal Watch commences on Karaburun](#), TMG 5 (2): November 2002], we have recorded some 4000 hours of video footage from the cave on the Karaburun peninsula but, unfortunately, no new seal images.

The principal reason for this was a technical glitch with the main camera, which focuses on the most often used part of the cave. The potential for disturbance during the seal breeding season prevented us from entering the cave in an attempt to fix this technical problem.

The entire system was removed from the cave in March. We plan to re-install it in May following necessary repairs.  
– Harun Güçlüsoy, SAD-AFAG.

## AFAG outreach to schools

AFAG's educational activities continue to bring the monk seal conservation message to schools, universities and other establishments.

Between December 2002 and March 2003, 23 presentations on the monk seal and on marine conservation were given to 6 schools, 2 universities and 2 organizations in Ankara and in Izmir – mainly on the Karaburun peninsula.

The presentations reached approximately 1,500 pupils, students and other people. – Nuray Veryeri & Yesim Caglayan.

## AFAG 2003 media sponsor – The Gate magazine

The Gate magazine, distributed through major airports, prestigious hotels and some airlines in Turkey, has become AFAG's media sponsor for 2003, and has also adopted a monk seal through the organisation's foster programme [see ["Adopt a Seal"](#), TMG 5 (2): November 2002].

The Gate, which won the "Skalite 2002" award – known as the Oscars of Tourism – will publish the AFAG logo and an appeal to "Save the Mediterranean seal" on its cover page this year as part of the sponsorship deal.

In Boat Show 2003, held between 14-23 February, The Gate also displayed a large seal photograph on their stand which attracted considerable public attention. – Yesim Caglayan, SAD-AFAG.

## Turkey's second marine patrolling system launched



The new, purpose-built patrol boat for Aydinlik.

Drawing on experience gained from guarding activities within the Foça Specially Protected Area, a new patrol boat has been built for the important monk seal coasts of Aydinlik in the Cilician Basin.

Purchased through the AFAG-WWF SMAP initiative, [see [Coastal zone management project commences](#), TMG 5 (1): May 2002], the patrol boat will be operated in cooperation with the Local Governorship, Fisheries Cooperative and SAD-AFAG.

The boat, named "Deniz Koruma 01" (Marine Conservation 01) will be operational within a few months, manned by local guards who have previously undergone training in the Foça SPA. – Harun Güçlüsoy, SAD-AFAG.

## Fishery banned along Mersin coasts

On 6 February 2003, SAD-AFAG participated in the Mediterranean Region Fishery Consultancy Committee Meeting – held in Antalya and organised by the Ministry of Agriculture and Rural Affairs – where many issues were discussed that have an important bearing on the survival of the monk seal and its marine ecosystem. The most important result of the meeting was the banning of the Turkish *lampara* fishery (a form of night purse-seine fishing – *girgir* in Turkish, *gri-gri* in Greek – utilising powerful lights) along the Cilician Basin coasts, from Anamur (Mersin) to the Syrian border. – Ahmet Bolat, SAD-AFAG.



Trawlers condemned in Mersin.

## Monk seal deaths

Last November we received distressing reports of monk seal deaths on two occasions. The first incident occurred at Çesme's Altinyunus Marina, on Turkey's northern Aegean coast. A subsequent autopsy on site indicated that the animal – a pup born during the same year – had drowned [see [Snared and drowned](#), TMG 4 (1): May 2001].

Before even recovering from the shock of this incident, we received word that a dead adult female seal had been found by wardens within the Aydin (Dilek Peninsula) National Park. The mammary glands of the seal were still full, leading us to believe that an orphaned seal might still be in the area. Despite strenuous efforts, however, the pup could not be found.

As the Park lies adjacent to the Greek islands we also contacted MOm rescue staff in Athens, in the hope that the organisation's Rescue Network might find the animal. Sadly, no news of the pup was ever received, possibly suggesting that it, too, had died.

Another sad event occurred in January 2003, when a dead adult seal was found in Karapinar on the Karaburun Peninsula, adjacent to the Foça Specially Protected Area. A subsequent necropsy revealed that she had been killed. Immediately after the incident, an investigation was mounted by AFAG staff, Gendarmerie officers and Urla public prosecutors in an effort to trace the culprits.



The adult monk seal killed on the Karaburun Peninsula.

Sufficient evidence was gathered to implicate 4 fish farm operators in the crime. The men were accused (file no. 2003/175) by prosecutors and were requested to pay the set penalty within 10 days (€200 from each of the accused). Since the accused reject the charges against them, however, and have failed to meet the fine, they will now face trial in public court. If found guilty, the penalty for each will rise to €400, plus a €4000 administration fine. AFAG's staff are following the case. – Harun Güçlüsoy & N. Ozan Veryeri, SAD-AFAG.

## Further progress for coastal zones project

The following progress has been made within our EU-funded project, "Conservation and Management of Biological Hot Spots – Forming a Mediterranean Network":

**Management plans:** As detailed in the previous issue of TMG [see [Progress reported in coastal zones project](#), TMG 5 (2): November 2002], detailed coastal zone management (CZM) plans have been prepared for Foça-Yeni Foça-Karaburun in the Aegean and Aydıncık in the Cilician Basin, and were submitted to the Ministry of Environment in December 2002 (2 of 5 "Important Monk Seal Sites" selected by the National Monk Seal Committee).

However, since the new government in Turkey plans to combine the two current ministries of Forestry and Environment, the meeting scheduled in March 2003 in Ankara – a meeting that had been expected to advance the conservation process considerably – has been postponed indefinitely.

**Third NFZ in the Cilician to be proposed:** Prior to the Aydıncık Fishing Cooperative Meeting on 11 March 2003, bilateral talks and discussions on the importance of No-Fishing Zones (NFZs) for the recovery of depleted local fish stocks were held with a majority of the artisanal fishermen in Aydıncık.

At the meeting, organised in the Cooperative's office, two provisional NFZs were identified by consensus at Kucuk Island and Sapli Island off Aydinlik. The former is an important breeding site for Audouin's gull while the latter also incorporates an important monk seal cave. The creation of NFZs at these sites will soon be officially recommended by AFAG and the Aydinlik Fishing Cooperative to the Advisory Group of the Ministry of Agriculture and Rural Affairs.

**Aydinlik Fishing Cooperative is now active:** As an integral part of the AFAG project, which seeks to bring local fishermen into the conservation process, aid was provided to the Aydinlik Fishing Cooperative. A 500 litre deep freeze and office equipment was provided through AFAG, while the premises are being made available rent-free by Aydinlik Municipality. The Cooperative office, which officially opened its doors on 11 March, is already acting as a much-needed meeting place and interactive focal point for the local fishermen. – Harun Güçlüsoy, SAD-AFAG.



Fishermen in the new Aydinlik Fishing Cooperative.

### Patrol boat resumes guarding duty

The Foça SPA patrol boat *Cevre* was "beached" between October 2002 and April 2003 because funds to cover engine maintenance and repair costs could not be found.

As a result of considerable effort by AFAG, involving bilateral talks and correspondence with the relevant government offices, the required funds were finally obtained from the Izmir Environment Foundation (4 billion TL, approximately €2,250), the Municipality of Foca (1 billion TL), the Local Council of Foça (0.5 billion TL) and the Foça Fishing Cooperative (0.5 billion TL).

It is especially noteworthy that this is the first time that the Fishing Cooperative has contributed to *Cevre*'s service costs.

The ultimate goal, if possible, is to cover all these expenses through the Cooperative.

For further repair of the boat, AFAG also contributed 1 billion TL, renewing the vessel's seats and electrical system.

A windscreen, a new battery and oil tank will also be added. – Harun Güçlüsoy, SAD-AFAG.

### Club Salima sponsors bulletin

Club Salima, Antalya, has become an official sponsor of AFAG's bulletin *Akdeniz Gezgin* (Mediterranean Voyager).

Now in its 15th issue, the quarterly bulletin is distributed to around 1500 stakeholders in Turkey and abroad. AFAG gratefully acknowledges Club Salima's contribution. – Yesim Caglayan, SAD-AFAG.

### Ecotourism experiment bears fruit

The first phase of an ecotourism experiment, designed to test the suitability of a sustainable Mediterranean monk seal conservation model in the Cilician Basin, Turkey, has been successfully accomplished [see [Cilicia on my Mind](#), this issue].

Our team in the Cilician Basin (Mersin) is running a conservation project that focuses on the ecological and socio-economic importance of a Marine Protected Area created for the conservation of the Mediterranean monk seal.

The Kizilliman MPA covers a very large area (16x12 nautical miles) that is off-limits to large-scale fisheries, and also incorporates a network of small, no-take-zones established in front of the monk seal breeding caves. On land, a 75 km coastal band has also been set aside by the Ministry of Culture as a 1st degree natural asset, offering effective terrestrial habitat protection [see [Cilician Basin responding to treatment](#), TMG 3(2): 2000]. One of the major aims of the ongoing conservation project, sponsored by the United Nations Development Program GEF/SGF, is to create a sense of ownership for the MPA, especially among local artisanal fishermen.

Anticipating the potentially negative consequences that might arise by imposing restrictions upon the activities of local people living around the MPA, we consider it of utmost importance to address economic losses created by such regulations, and to investigate supplementary or alternative sustainable economic solutions that will compensate for their losses and thus avoid future pressure on the recovering ecosystem.



Many examples from around the globe indicate that, if local people can gain sufficiently from the sustainable use of such MPAs, they would be less likely to exploit the already over-fished ecosystem, and would be more likely to protect their asset for the future. In monk seal conservation, there are only very few alternatives available that could involve local people as constructive partners in protection practices, while also generating sufficient revenues to be economically viable.

One is ecotourism, in which local communities benefit from nature conservation in many areas around the world.



Cilician seal sighting.

In this context, and by carefully researching the available natural, scenic, historical and accommodation resources in and near the critically endangered Mediterranean monk seal habitat, a trial ecotourism initiative was launched last year. The ecotourists who took part in the trial were a special group organised by our partners in this initiative, the Italian [Gruppo Foca Monaca](#), and whose primary incentive was to support the conservation of the monk seal as implemented in the Kizilliman marine protected area.

The main aims of the trial were:

- to examine ecotourism as a viable sustainable income option for the local community, and thereby, to enhance a sense of ownership for the marine protected area as an asset, and
- to determine its applicability to the area as a potential conservation tool with minimum impacts and manageability.

Bearing in mind that the ultimate aim of the programme is to secure the survival of the critically endangered monk seal and its habitat, and in order not to increase the existing human pressure on the species, more diverse ecotourism resources were investigated and an inventory of alternative ecotourism products was prepared. As such, the species was used more as a symbol rather than as the “product” itself, with natural landscapes, other wildlife, people, archaeology and the protected area as a whole forming the entire ecotourism package.

The experimental trip took place between 25 October and 3 November 2002.

In total, eight enthusiasts joined the tour, led by the Gruppo Foca Monaca’s Dr. Luigi Guarrera, who is also one of the initiators of the ongoing Cilician seal conservation project.



Participants of the first phase.



Cilician coastline.

Our first impression after the experimental trip is that, if small groups of up to ten people continue to visit the Kizilliman MPA area on a regular basis in the off-season months – under the organization and supervision of the conservation project – this might provide a working model for government agencies and the managers of protected areas to undertake the legal adjustments necessary to achieve an effective ecotourism infrastructure.

Legal definitions and the status of Marine Protected Areas, as well as pertinent ecotourism legislation could be developed simultaneously, and the process hastened by the availability of a working model. To start the ball rolling, following the completion of the trial tour in the Cilician MPA, a letter highlighting the need for such ecotourism legal definitions was sent to the relevant Ministries, and the Coast Guard Headquarters.

The next step of the experiment is to involve local guides during the forthcoming tour, planned for 24 October to 2 November 2003. The aim is to encourage community involvement and a sense of ownership for the MPA. The training will focus on managing and minimizing visitor impacts on wildlife, environment and culture; with education focusing on the concepts of ecotourism, as well as drawing on lessons learnt during the first experimental trip. We



hope that ecotourism will prove an effective tool in ultimately reaching that point where the habitat will accommodate both the monk seal and its human populace in peace. – Ali Cemal Gucu and Gul Gucu, IMS/METU.

*For information about the next ecotourism expedition to the Cilician Basin, please write to [Gruppo Foca Monaca](mailto:Gruppo Foca Monaca) at [grupfoca@tin.it](mailto:grupfoca@tin.it) or visit the web site [www.gruppofocamonaca.it](http://www.gruppofocamonaca.it).*

#### Further reading

**Gucu, G. and A. C. Gucu.** 2003. Is ecotourism an appropriate tool to ensure sustainable Mediterranean monk seal conservation in the Cilician Basin, Turkey? Evaluation report of the experimental Eco-tourism application in Bozyazi – Mersin. Middle East Technical University Institute of Marine Sciences: 1-33. [Available in the [Monachus Library](#)]

**Guarrera, L.** 2003. [Cilicia on my Mind](#). TMG Guest Editorial, this issue.

#### NET WATCH

##### Mass tourism versus monk seals...

"Tourist development also poses a major threat, as was the case at the Asprokremnos coast on the Akamas, where monk seals had bred in caves until they were driven away by explosions. The blasts were carried out, illegally, to make space for a massive hotel complex, the Ecological Movement said.

Along with turtles and dolphins, the monk seal has been a protected species since 1971, and anyone found trying to kill or catch one can be fined £5,000 and/or spend six months in jail."

**Source:** Rare monk seal makes an appearance in Paphos harbour. Cyprus Mail, Thursday, May 22, 2003. <http://www.cyprus-mail.com/May/22/news6.htm>.



Vol. 6 (1): June 2003

## Cover Story

### NORTHWESTERN HAWAIIAN ISLANDS Creating a Pu‘uhonua for Future Generations

Cha Smith

#### Ka Pae ‘Aina o Hawai‘i

Beyond the Island of Kaua‘i, is a network of islands, coral reefs, atolls and shoals extending for 1,200 nautical miles to the northwest of the Main Hawaiian Islands – known collectively today as the Northwestern Hawaiian Islands (NWHI). With 25 million years of volcanic activity, subsidence and erosion, they comprise the oldest two-thirds of Ka Pae ‘Aina O Hawai‘i (the Hawaiian Archipelago), and are referred to as the “Kupuna Islands” (elders or ancestors) of the Main Islands.

Immortalized in ancient Hawaiian chants and legends, these remote and phenomenal islands have held deep historical and cultural significance for the Native Hawaiian people since their arrival from Polynesia 2000 years ago. The first people of Hawai‘i explored and utilized the entire Hawaiian Archipelago, with the majority of the population settling the lower eight Islands.

On the lower two islands, Nihoa and Mokumanamana (Necker), monuments to Native Hawaiian ancient civilization and lore lie undisturbed, with scores of sites and artifacts that attest to permanent settlements and extensive agriculture. On Mokumanamana, known as an island of great spiritual power, 33 of the 52 archeological sites are religious shrines and are similar in form to the *marae* (temples) of Tahiti and to the *heiau* (sacred sites) found on Mauna Loa, Mauna Kea, and Haleakala.

Over the course of millennia, the Native Hawaiian people formed a distinct, highly advanced culture based on a reverence for the *aina* and *moana* (land and ocean), sharing and a deep knowledge of natural systems. A sophisticated approach to resource management was developed from generations of impeccable observation coupled with respect for the earth. Native people who hold this core knowledge are important teachers of environmental stewardship who can provide invaluable guidance and help to restore compromised natural resources. Indigenous knowledge is substantiated by Western science in recent research regarding the currents between the Northwestern and Main Hawaiian Islands. For example, studies now confirm that bottomfish larvae from the Northwestern Hawaiian Islands replenish the depleted Main Hawaiian Islands. Indigenous knowledge should be integrated into the baseline of scientific data and utilized to develop criteria for research and protection needs for all resource protection.

The Hawaiian Kingdom claimed the Kupuna Islands as part of Ka Pae ‘Aina o Hawai‘i. As part of the “ceded” lands, these lands rightfully belong to the Native Hawaiian people. Ceded lands are former Hawaiian crown and government lands that were transferred at “annexation” to the U.S. and in 1959, to the State.

The long process of securing protection for the Northwestern Hawaiian Islands is proving to be an exciting means of re-discovery for the people of Hawai‘i, particularly for Native Hawaiians who are uncovering and reclaiming a trove of ancient knowledge and history that deepens and strengthens this vibrant and vital culture.



French Frigate Shoals



Ki'i (Stone images) found on Mokumanamana resemble images from the Marquesas

## A World Treasure: There's No Place Like It

Stretching northwest of Kaua'i, the Northwestern Hawaiian Islands form the most isolated archipelago in the world. These fragile islands, atolls and shoals contain some of the oldest, healthiest and most extensive coral reefs on the planet and represent 70% of the reefs in U.S. waters. These islands, which encompass tremendous biodiversity, include some of Earth's oldest living coral colonies. Kure Atoll is the northernmost atoll in the world with living coral colonies well over 1,000 years old and up to 30 feet tall.

People who have researched coral reefs throughout the world agree with Ocean Institute fish ecologist Alan Friedlander's assessment of the Northwestern Hawaiian Islands: "There's no place left like it on Earth. The whole system is alive. The ecosystem is thriving and intact." This vast area sustains a dynamic reef ecosystem, which in turn supports more than 7,000 marine species, with up to half of these species unique to the Hawaiian Archipelago.



This remote and incredibly diverse ecosystem serves as a *Pu'u honua* (Place of Refuge) to many species of coral, fish, birds, and marine mammals, including the highly endangered Hawaiian monk seal, threatened green sea turtle, and the endangered leatherback and hawksbill sea turtles. An estimated 14 million seabirds thrive in these islands, including 99% of the world's Laysan albatrosses and 98% of the black-footed albatross population. Common thinking among researchers suggests that the Northwestern Hawaiian Islands may be the last predator-dominated ecosystem left on the planet.

## A Long History of Exploitation

The long history of abuse of Northwestern Hawaiian Islands resources includes a massive guano extraction industry, the near annihilation of Hawaiian monk seals by hunters, and whaling ships that ran aground with regularity. Seabird populations sustained severe impacts (for example, from 10 million to 1 million albatrosses on Laysan alone) in order to supply the enormous feather market for hats. This plunder prompted President Theodore Roosevelt in 1909 to set aside the Northwestern Hawaiian Islands as a bird reservation. In the early 1920s black-lipped pearl oysters were wiped out on Pearl and Hermes Atoll to furnish button factories. That species has never recovered.

More recent forms of resource exploitation include the longline fishery overseen by Western Pacific Fishery Management Council (Wespac). In 1999, commercial longliners were prevented access to the Northwestern Hawaiian Islands by court order as a result of repeated "interactions" with the Hawaiian monk seal and threatened and endangered sea turtles, in violation of the Endangered Species Act.

After astonishing and prolonged mismanagement, Wespac was forced to close the severely diminished commercial lobster fishery, as well. After years of effort by the Marine Mammal Commission, Monk Seal Recovery team and environmental community, a lawsuit was filed by Earthjustice, which finally forced the National Marine Fisheries Service (NMFS) to shut down this destructive fishery. The closure was linked to the direct impacts of the lobster fishery on the survival of the monk seal, which is dependant on lobster and several species of by-catch, such as octopus, squid, and eel. (For details on the history of Wespac mismanagement of the lobster fishery, visit [www.kahea.org](http://www.kahea.org))



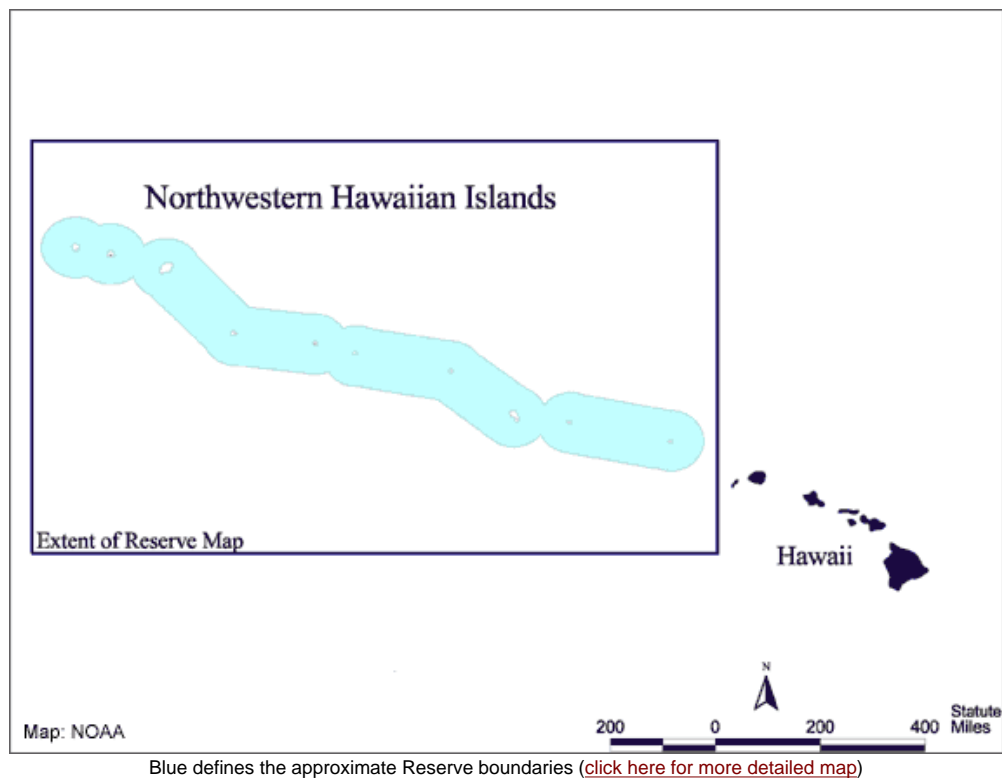
Over the past several decades, a range of military activities has left a legacy of toxic pollution on numerous islands, particularly Midway Atoll, Tern Island and Kure Atoll. A full assessment of this problem has not been made. Rusty drums of PCBs (a persistent and potent endocrine disrupter) and other hazardous compounds that are steadily leaking on to the reef may be altering the web of life in ways we do not yet understand, perhaps even contributing to the low survival rates of monk seals.

## The NWHI Coral Reef Ecosystem Reserve

Presidential Executive Order established the Northwestern Hawaiian Island Coral Reef Ecosystem Reserve in December 2000 after extensive input and support from the public. In fact, this issue has experienced more public participation than any other resource protection issue in recent history.

The NWHI Executive Order represents the strongest level of protection for oceans ever enacted and sets a new standard for comprehensive marine protection. This standard is still being defended as a public process moves forward to determine whether the NWHI Coral Reef Ecosystem Reserve will become a National Marine Sanctuary. The intent of the Executive Order is clear—to preserve and protect the Northwestern Hawaiian Islands in their natural state and to uphold Hawaiian cultural access rights.

At 84 million acres, the NWHI Reserve is the second largest marine protected area in the world, second only to the Great Barrier Reef. The Reserve extends seaward for 50 miles and surrounds, but does not include Midway or Hawaiian Islands National Wildlife Refuges—established in 1997 and 1909 respectively. The Refuges, under the jurisdiction of the U.S. Fish and Wildlife Service, encompass the islands (except for Kure) and protect waters out to 10 fathoms. The Reserve does not include state waters, which extend from the Refuge boundaries 3 miles seaward. (For additional NWHI maps, visit: <http://www.hawaiianatolls.org/maps>)



This ecosystem-based Reserve recognizes Native Hawaiian gathering and fishing rights and grandfathers the existing small commercial and recreational fisheries. The Reserve prevents additional or new types of fishing activities, including coral harvesting. The lobster fishery remains closed under the Executive Order. Fifteen Reserve Preservation Areas totaling 4 million acres are closed to fishing. The vast majority of the closed areas are in shallow waters and therefore, *do not* impact the bottomfish fishery. The Executive Order stipulates the following:

1. The Northwestern Hawaiian Islands shall be managed to ensure comprehensive, strong and long-term conservation and protection of the Northwestern Hawaiian Island ecosystem in its wild and natural state.
2. The Precautionary Principle shall guide decision making, with resource protection favored when there is a lack of information regarding any given activity. Activities must support the primary goal of protection, preservation and the prevention of further degradation.
3. All new protection measures must *supplement or complement* (build on or add to) the existing protections outlined in the current law, the Executive Order.

Specific protections in the Executive Orders include:

- Existing commercial fisheries, including 4-8 active bottomfish fishers and a small number of recreational fishers are grandfathered at current levels of effort and catch.
- No new fisheries shall be established in the NWHI, including coral harvesting, an aquarium fishery, or coral reef fisheries. Inactive fisheries, such as the coral and lobster, remain closed.
- Mining and drilling is banned, as is the removal of live or dead coral and anchoring on reefs.
- Research and other activities in the NWHI Reserve must support conservation management goals.

## The Saga Continues

The challenge facing advocates for safeguarding the NWHI resources is to ensure that protections established by the Executive Order are preserved in upcoming protection processes. Since the creation of the Reserve, there have been ongoing and relentless efforts by industry and by the Bush Administration to weaken and eliminate these protections.

Wespac has blatantly ignored the Executive Order and continues attempts to expand commercial bottomfishing, re-establish the lobster fishery and develop a commercial coral harvest in the NWHI. For example, Wespac drafted a Coral Reef Ecosystem Fishery Management Plan that called for expanded activities in the NWHI. This move prompted NMFS to exclude Wespac's plan relating to the NWHI. In addition, the Executive Order was placed under "legal review," seriously delaying the work of the NWHI Reserve Advisory Council for over a year. However, immense public response helped the Executive Order emerge from the review intact.



The saga for adequate protection continues at the federal and state levels. Two separate public processes are underway that will determine the level of longterm protection for the Northwestern Hawaiian Islands: a Sanctuary designation process, headed by National Oceanic and Atmospheric Administration (NOAA), and a process to establish regulations for state waters led by the Hawai'i Department of Land and Natural Resources (DLNR).

Pursuant to an amendment to the Magnuson-Stevens Act, a course of action is now underway to determine whether the NWHI Coral Reef Ecosystem Reserve will become a National Marine Sanctuary. Activists have voiced concern about this designation

because the Sanctuary Program is based on a "multiple use" approach, not on preservation. Over the years, the Sanctuary Program has demonstrated a limited ability to protect marine resources.

NOAA is developing a Draft Environmental Impact Statement (DEIS) with public scoping meetings held spring 2002 to assess issues of community importance. Even though that was the eighth time the public had been called on to provide comments on protecting the Northwestern Hawaiian Islands, over 1,000 people attended these meetings. In addition, NOAA received well over 11,500 comments supporting strong protections and stressing the need to uphold the Executive Order.

The current challenge is to convince NOAA that the Executive Order serves as the *foundation* for future protection efforts and that all new protections must—as stipulated in the Order—*supplement and complement* the current law.

NOAA has stated it will not allow the NWHI Reserve Advisory Council to develop regulations to implement the Executive Order, such as enforcement, permitting, etc. In spite of the fact that the average Sanctuary process is 7 years, NOAA is pushing for the Reserve to become a Sanctuary in less than 2 years. NOAA has agreed to allow the Reserve Advisory Council to revise the NWHI Reserve Operations Plan to better reflect the Executive Order. This plan is currently being prepared by the Reserve Staff and the Reserve Advisory Council and will be sent to Washington, D.C. for final approval. The plan will guide management decisions indefinitely and—if the public agrees—could form the basis for Sanctuary management. It is clear that the public must remain vigilant in order to defend the critical hard-won protections.

## State Waters: Heart of the Coral Reef Ecosystem

The NWHI Reserve boundaries surround, but do not include state waters. These inner state waters comprise the heart of the coral reef ecosystem and hold the majority of biodiversity. The most sensitive ecologically, these waters are also the most vulnerable to human impacts.

DLNR's proposed regulations for state waters in the NWHI reflect the public's repeated insistence for strong protection for these fragile waters. The draft regulation would provide protection for sensitive reefs, shallow waters and lagoons, all of which are critical habitat for the highly endangered Hawaiian monk seal and essential habitat for threatened and endangered sea turtles. DLNR is expected to hold public hearings on the draft regulations for state waters in summer 2003.





## Public Involvement is the Key

We can attribute the success of securing the current protections for the NWHI to a sustained high level of public involvement (both local and national), strategically timed assistance from national marine protection organizations and vigilant participation by a small group of committed individuals. Since the beginning of this process in mid-2000, KAHEA has worked closely with a core group of people on all aspects of this issue. Together they advocated rigorous protections, lobbied the Secretary of Commerce and Congress, met with the heads of NMFS, NOAA, White House staff and others on their journey to safeguard the Northwestern Hawaiian Islands' phenomenal cultural and ecological resources.

Their task now is to continue the vigilant involvement and to broaden public outreach.

KAHEA has generated widespread support, kept the public informed and facilitated public response and involvement in the numerous public participation opportunities. Recently, KAHEA launched an educational campaign to protect the highly endangered Hawaiian monk seal.



Currently, KAHEA is working with state and federal agencies to heighten awareness about the plight of the Hawaiian monk seal. We support efforts of the Marine Mammal Commission in this endeavor and we are invited participants in the current review of the Hawaiian Monk Seal Recovery Plan.

If public support is successful in preserving the protection measures outlined in the Executive Order, the NWHI will reflect the highest level of protection of any Marine Protected Area in the U.S. This Reserve (or Sanctuary) will serve as a model for an ecosystem-based approach to resource management that draws on indigenous knowledge and is supported by the Precautionary Principle. The Northwestern Hawaiian Islands hold tremendous promise for the protection and enhancement of our global marine environment.



KAHEA: The Hawaiian-Environmental Alliance is a non-profit grassroots organization working on environmental justice issues throughout Hawai'i. KAHEA is led by Native Hawaiians, including cultural practitioners and kumu hula (master teachers of dance and chant), and involves environmental activists and others concerned with the need to protect Native Hawaiian traditional and customary rights and our fragile island environment. KAHEA works on issues that are at the intersection of cultural rights and the environment—by protecting the *‘āina* and *moana*, traditional rights are also protected. The 'kahea' is the beckoning call from the *pū* (conch), and translates as "the call," as in *the call to action*.

To stay informed about upcoming public involvement opportunities, sign up with KAHEA's Action Alert Network on our website: [www.kahea.org/](http://www.kahea.org/). You will be able to fax appropriate decisionmakers free of charge and stay informed about efforts to protect this phenomenal world treasure.

*Mahalo* to the following individuals for contributing in a variety of ways to this article: Louis "Buzzy" Agard, Bette Daniels, Beth Flint, Stephanie Fried, Alan Friedlander, Bill Gilmartin, Dave Gulko, Isaac Harp, Marion Anderson Kelly, Colleen Kelly, Lloyd Lowry, Jim Maragos, Shane Pale, Dave Raney, Mark Rauzon, Vicky Holt Takamine, Laura Thompson and Marjorie Ziegler.

### For further reading, resources and links regarding NWHI:

<http://www.kahea.org/nwhi/index.html>

<http://www.hawaiireef.noaa.gov/>

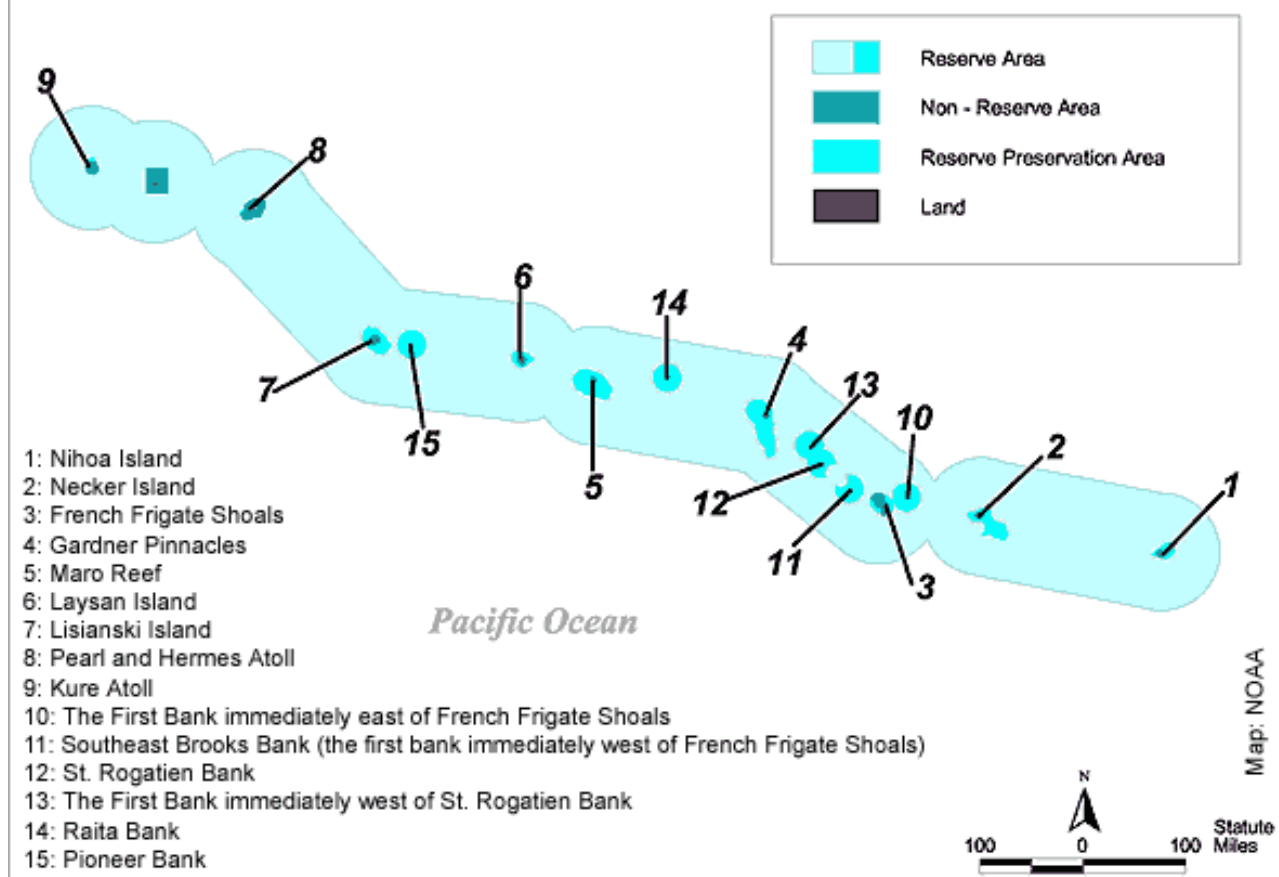
New: NOAA's Draft Atlas of the Shallow-Water Benthic Habitats of the NWHI

<http://biogeo.nos.noaa.gov/projects/pacific/nwhi/data>

KAHEA brochure: [‘Ilioholo ika uaua On the Verge of Extinction brochure](#) (  215KB)



# Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve





Vol. 6 (1): June 2003

## In Focus

### HUMAN DISTURBANCE AT THE CABO BLANCO MONK SEAL COLONY

Pablo Fernández de Larrinoa and Miguel Ángel Cedenilla

Fundación CBD-Habitat

The location of the Cabo Blanco peninsula monk seal colony in a desert environment might make one believe that the colony has always been safe from human disturbance and persecution. The reality is quite different, however. Two nearby cities and an increasing population on the peninsula has meant that human activity has also been on the rise, and is today one of the main pressures affecting the colony. Its foreseeable increase in the future is likely to make human disturbance one of the greatest threats to the seals in recent times.



Goose barnacle pickers descending from cliff-tops on the 'Coast of Seals'.

Following the discovery and commercial exploitation of the large West African "sea wolf" herds in the 15th century, the Cabo Blanco monk seal colony remained relatively undisturbed from land until the 20th century. During that century, the foundation and subsequent growth of the nearby cities of La Güera and Nouadhibou (ancient Port-Etienne), both closer than 30 km to the monk seal colony, led inevitably to an increase of human pressures upon it...

Disturbance to the animals increased over the years, while at the same time people became more aware of the seals' presence nearby. Western inhabitants of both La Güera and Nouadhibou even acquired the habit of spending the weekend visiting the "Coast of the Seals" and, as a matter of fact, that place eventually became marked by a big stone monolith signposting the exact location of the animals.

When Eugenio Morales Agacino first described the Cabo Blanco colony in 1945, he already noted that the Spanish military posted at La Güera (at that time this area was still part of the Spanish Sahara) knew about the colony because of its "hunting trips".

Subsequently, in the 1970s, Maigret, Duguy and Trotignon became alarmed about the effects of human disturbance upon the seal's breeding and resting habitat. In referring to the seal's dwindling numbers and dispersion, they wrote that, "certainly, this last factor [human disturbance] has played the primary role, either disturbances caused by excessive visitors, or by the bullet shots to the seals".

In 1975, Ramón Soriguer visited the coasts of the Spanish Sahara in order to verify rumours of a mass mortality among the seals at the Cabo Blanco colony. Rather than finding evidence of a sudden die-off, however, Soriguer attributed the body count at Cabo Blanco to a progressive decrease in the seal population. Thanks to the pictures he took then, we can identify even today the exact place where he saw his seals. It is a cave allowing easy access, where curious visitors could reach even the inner beach without too much difficulty. He penned some sentences that reflect the human pressure that the colony was suffering at that time. The author writes: "The cave is continuously disturbed by tourists and shellfish collectors from nearby Nouadhibou. These visits, which frighten away seals, take place practically every weekend." He also warns of another source of disturbance, reporting that, "according to our news, in the last two years at least six young seals have been collected from the colony" – a reference to live captures.

Of these various forms of disturbance, visits by the curious had a significant impact upon the colony between 1950 and 1975, when the Sahara war began. It is difficult to know what really happened on this coast during the war years. What is certain is that, as far as the sea is concerned, war brought a paradoxically more peaceful environment for the seals, making the fishing boats that had combed the area up until then, quickly disappear. In contrast, consequences brought about by the conflict on land for the breeding and hauling-out areas of the seal are far more uncertain. After the end of the war, the presence of land mines in the area notably limited the presence of curious onlookers and tourists, but with basic human needs as the driving force in a poor country, they did not deter goose

barnacle pickers for very long.

The fact that, in 1975, Ramón Soriguer already made reference to these men – whom he referred to as “shellfish harvesters” – made us wonder about the intensity and impact of such disturbances, which still persist to this day.

Shellfish pickers descend from the cliff-tops to harvest goose barnacles in the intertidal area, and although they don’t interact negatively with seals – neither attacking nor showing any hostility towards them – they do cause disturbance in the locations occupied by the animals and possibly also deter the seals from re-colonising historically-occupied habitats.



Inner beach of the Soriguer cave, which in 1975 was occupied by seals.

When the first expedition of the Spanish team arrived on this coast in 1992, the presence of shellfish fishermen was already established. As a matter of fact, one of them assisted the team to minimize the dangers of the mine fields.

In 2001, the Fundación CBD-Habitat team mapped the entire coastline in the vicinity of the breeding caves, recording not only types of geomorphologic formations (cliffs, beaches, beaches with cliffs, caves with sea entrances, accessible caves, rock falls, cave collapses, etc) but also traces of shellfish collector activity (like discarded shell accumulations, rope and ladder fixation points, ropes and ladders abandoned, etc).



A CBD-Habitat technician among an accumulation of discarded shell fragments on the Coast of Seals.

Along this entire stretch of coastline, intense goose barnacle exploitation was detected. Practically 100% of beaches protected by cliffs, as well as accessible caves, rock falls, and rock entrances where there existed a possibility of harvesting goose barnacles, bore signs at the cliff-top of collector activity. Only over caves with marine entrances, completely inaccessible to shellfish pickers (such as breeding caves 1 and 3, today occupied by seals), were there no signs of activity.

In an excursion to the interior of the Soriguer cave, we found what appeared to be remnants of a discarded net. Closer observation, however, revealed that this was actually a sack tightly secured to a rock inside an intertidal pool. There was no doubt that this was a place used by shellfish fishermen to

store goose barnacles and keep them wet and alive until they could be transported to the city (today they perform this same activity in a rocky area south of the protected zone controlled by the CBD-Habitat surveillance patrol). Monk seals do not actually occupy this cave at present, although apparently it is identical in condition to when visited by Soriguer in 1975. Undoubtedly, disturbance by tourists and fishermen might have caused the animals to abandon it.

When interviewed, two of the most experienced shellfish harvesters on the Coast of the Seals both indicated that this kind of activity was habitual before 1975 and originated at a time when the territory was still a Spanish colony (very believable due to the Spanish love of this shellfish). Unwittingly, they confirmed Soriguer’s observations.

From the city of Nouadhibou (now with over 100,000 inhabitants) shellfish fishermen regularly arrive at the Coast of the Seals, where CBD-Habitat has been performing continuous patrols since 2000. The proximity of the city, its great expansion in recent years and the strong basic needs of its inhabitants, has led to intensifying human pressures on the monk seal colony, often manifesting itself in waves of goose barnacle fishermen [see [Prestige disaster has consequences for Cabo Blanco](#), this issue].

Land surveillance is currently of fundamental importance, if there is to be any hope of maintaining tranquillity essential to the viability of the breeding colony and to the conservation of the species on the Coast of Seals.

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Vol. 6 (1): June 2003

## Perspectives

### LEGAL ASPECTS OF MEDITERRANEAN MONK SEAL (*MONACHUS MONACHUS*) CONSERVATION IN GREECE

Katerina Moisiadou and Alexandros A. Karamanlidis

In contrast to other rights that our legal system deems worthy of protection (such as personal property, physical integrity, copyrights etc), the right to a healthy and functional environment presents a peculiarity. It is not directly actionable in the way the other values mentioned above are. If your neighbour, for instance, has a special weakness for listening continuously to "Methods of Mayhem", thus not permitting you to work, relax or sleep, there is a way to protect yourself: the legal system gives you the right to take legal actions against him in order to stop this behaviour. If somebody, however, kills an endangered species or if the state does not take measures to protect a habitat of outstanding beauty, what can a citizen do to protect his given right to a healthy and functional environment?

From the end of the 1970s, when the plight of the Mediterranean monk seal (*Monachus monachus*) became a focal point of interest for conservationists around the world, it was evident that a strong legal framework was urgently needed in order to save the remaining populations of this elusive species. Most important was a legal framework that would not only ensure the survival of the monk seal within national boundaries, but also one that would promote international cooperation and guarantee the survival of the species within its entire distribution range.

Since then, Greece, like most other countries with Mediterranean monk seal populations, has signed several conventions that include protection measures for the species. Considering, however, the number of pages devoted to describing the ways our natural heritage in general and the Mediterranean monk seal in particular is protected, and the fact that monk seal populations in Greece continue to decline, one tends to wonder if all these laws are worth the paper they are printed on. Bearing in mind, furthermore, the fact that most people usually have difficulties in understanding legal jargon and generally feel alienated from our legal system, it seems highly appropriate to give a simplified picture of the legal framework that defines monk seal conservation in Greece. A framework that, if implemented and enforced properly, could become a cornerstone in the survival of the species in our country.



Scales of Justice (© Angelos Sanopoulos)

The Mediterranean monk seal is protected in Greece on three different levels: the international, the European Union and the national level.

#### Protection conferred by international law

In international law, conventions are the equivalent of national laws: since there is no international parliament, where laws could be issued, binding rules that govern international relationships take the form of an international convention. The Vienna convention on the "Law of Treaties", which was signed on the 23rd of May 1969 and ratified by Greece through the PD 402/1974 regulates all matters relating to the relationships between the contracting parties, unless explicitly agreed otherwise. On the level of international legislation, Greece has signed and ratified a number of international conventions regarding the protection of endangered wildlife and the natural heritage. Of particular importance for the protection of the endangered Mediterranean monk seal are the following:

1. **The Convention on International Trade in Endangered Species of Wild Fauna and Flora – CITES** (Washington, 3/3/1973, put into force 1/7/1975, ratified by law 2055/1992, OG A 105). According to the regulations of CITES, trade in "Appendix I" endangered species, such as the Mediterranean monk seal, is strictly forbidden.
2. **The Berne Convention on the Conservation of European Wildlife and Natural Habitats.** The

Convention, which was signed in 1979 and ratified by Greece in 1983 (Law 1335/83, OG A 32), places the Mediterranean monk seal under strict protection from intentional killing and disturbance, and requires the establishment of special conservation areas.

3. **The Convention on Conservation of Migratory species of Wildlife** (Bonn 1979, ratified by Greece through Law 2719/1999, OG A 106f). Contracting parties to this Convention agree to conserve critical habitats and promote international cooperation in order to reduce the risk of extinction of the Mediterranean monk seal.
4. **The 1992 United Nations Convention on Biological Diversity**. Although this Convention does not explicitly refer to the Mediterranean monk seal it urges contracting parties to develop national programmes that will safeguard the natural heritage and the biological diversity of each contracting country (Wilson et al. 2001).
5. **The Convention for the Protection of the Mediterranean Sea against Pollution**. On the initiative of the United Nations Environmental Programme (UNEP), countries from around the Mediterranean met in 1975 in Barcelona in order to create a framework known as the Mediterranean Action Plan, whose goal was to halt the rapid degradation of this enclosed sea. The legal framework was formalised a year later with the establishment of the Barcelona Convention, and entered into force on 12 February 1978.

Article 10 of the Barcelona Convention states that “the contracting parties shall, individually or jointly, take all appropriate measures to protect and preserve biological diversity, rare or fragile ecosystems, as well as species of wild fauna and flora which are rare, depleted, threatened or endangered and their habitats in the area to which the Convention applies” (UNEP 2003).

However, by 1985, when the contracting parties met in Genoa in order to assess progress made during the first decade of the Plan, it was already clear that nothing had been done to ensure that the ratifying parties had started to implement the measures expected of them. It was here that the contracting Parties included among their priority targets (to be achieved within the following decade) protection of the Mediterranean monk seal. The Action Plan adopted, foresaw the commitment to:

1. Reduce adult mortality
2. Establish a network of marine reserves
3. Promote the additional, urgently needed research, data collection and rehabilitation of the species
4. Initiate information programmes
5. Coordinate, review and finance the management of this endangered species (RAC/SPA 2003)

Keeping in mind the number of international conventions signed and ratified by Greece, two issues are important; firstly the position of international legislation in the Greek legal framework and secondly, the policing of these rules.

According to the Greek constitution (Article 28 § 2, 3) regulations of international conventions are not automatically incorporated into national legal statutes, but require a certain procedure to achieve integration. This procedure includes ratification by law and consequent publication, followed by the official declaration by the Head of State of the consent to be bound by the respective treaty (Roukounas 1982, Venizelos 1991). If one imagines the Greek legal framework as a pyramid, with the constitution at the top and the national (typical) laws at its base, then the regulations of international conventions are located somewhere between the two. Consequently, regulations of international conventions have hyper-legislative power which in “plain Greek” means that, in the case of contradiction, differentiation or deviation between a national law and convention regulation, the latter shall apply.

Article 26 of the Vienna Convention refers to the principle of “pacta sunt servanda”, according to which the binding rules of an international convention have to be followed from the moment the convention goes into force and has been ratified by law. If, for instance, Greece has taken up the commitment to protect the Mediterranean monk seal, it has to do so from the moment it ratifies the relevant convention. Bearing in mind, however, the number of conventions Greece has ratified already in this respect, the question that automatically arises is why Greece has not been held accountable for its non-compliance to international regulations. Is there anything one can do to force a country to abide by the rules it has agreed upon?

The utterly discouraging answer is that it is extremely difficult to compel a nation state to do anything. The reason for this is that international rights, unlike national rights which can be immediately enforced in court, are usually perceived as aspirations, instruments of general supervision and ultimate safety nets (Anderson 1996). Non-compliance of a citizen to national laws, allows the state to exercise its own enforcement mechanisms – police, judicial bodies – thereby enforcing compliance.

If a state, however, does not comply with the international laws it has agreed upon, there is no legal recourse or mechanism – international police, for example – that can force it to do so. From this point of view, international law is, therefore, woefully incomplete, and is the reason why it is so often abused.

The only way to oblige a state to act in one or the other direction is through diplomatic consultations, and lobbying by other governments and ecological organisations. These actions, however, can by no means be regarded as legal in nature, which leaves the private citizen with an extremely limited field of options on this level.



## Protection conferred upon by laws of the European Union

In regard to its juridical power, community law is directly applicable and does not require, therefore, the equivalent procedure of ratification. As with international law, it is located within the pyramid of the Greek legal framework above national laws. The most powerful tool in the protection of the natural environment and of endangered species, in particular, is Council Directive 92/43, the so-called "Habitats Directive". Its main aim is to create a coherent network of protected areas (Special Areas of Conservation – SAC) for species listed on Annex II of the Directive. The establishment of this network, which is collectively known as the "Natura 2000" Network, has created a powerful momentum for the establishment of protected areas for the Mediterranean monk seal in Greece. Based on extensive research in the 90s, three strategically located island complexes (Fournoi, Kimolos, Karpathos) have been selected for inclusion in the Network (Adamantopoulou et al. 2000). The recent initiation of a LIFE project in the latter two areas for the protection of the Mediterranean monk seal, emphasizes the potential of this legal tool for the conservation of endangered species in our country [see [LIFE funding for Natura 2000 areas](#), TMG 4 (2): November 2001 and see [Natura 2000 areas continue to attract support](#), TMG 3 (1): May 2000].

The significance placed by the European Union upon including environmental protection in community policy is evident through the considerable scope of action provided to its citizens in regard to the environment. Within the framework of community law a citizen has, according to Council Directive 90/313 on the Freedom of Access to Information, the right to information held by public authorities on issues relating to the environment. This Directive was embodied in the Greek legal system through MD 77921/1440 and foresees the possibility of a citizen requesting information (even without providing proof of a legal interest) from public authorities on such matters. At the same time it also constitutes the obligation of the latter to respond to such requests. In cases where public authorities fail to respond, the citizen has the right to take legal action against them. The main aim of this Directive has been the more direct involvement of community citizens and public interest groups in the protection of the environment.

Although it is still difficult for European citizens to participate effectively in the decision-making of the EU, certain efforts have been made to increase the level of participation. As a result, the European Parliament, which maintains a large and active environmental committee, often organizes public hearings on environmental matters to which environmental organizations are regularly invited. However, despite the possibilities provided to access information and participate in policy-making, our main focus remains the potential of legally challenging the state through the provisions of community law (Douglas-Scott 1996).

As with international law, such action is undeniably difficult both for individuals and organisations. The main reason for this is that most Community environmental legislation takes the form of Directives, which are addressed to Member States (1) and not individuals. As a result, it is impossible for private citizens or environmental groups to bring a legal challenge to the European Court.

The EU Convention foresees in Article 173 the possibility of appealing to the EU Court of First Instance against actions of community authorities, but only after certain requirements have been met. The strict interpretation of the fulfilment of these criteria by the European Court has so far impeded law suits focusing on the protection of the natural environment in general (e.g. C-321/1995, Greenpeace).



Failure to protect loggerhead turtles and their breeding habitat on Zakynthos has resulted in summary judgements against Greece in the European Court.

A final measure which, however, again does not fall within the scope of civil legal action, is the right to make formal complaints in writing to the Commission, when Community environmental law is violated (Article 226 (ex 169) of EC Treaty). It is, however, at the discretion of the Commission if it will commence legal action against a Member State. Nevertheless, sometimes, particularly when the complaints are numerous, this procedure can be quite effective.

One case, of particular importance for the conservation of the Mediterranean monk seal, involved the establishment of a protected area for the loggerhead turtle on the Greek island of Zakynthos. Following numerous complaints by environmental organizations that the habitat of the endangered loggerhead turtle (*Caretta caretta*) at Laganas Bay was not being adequately protected, the European

Commission commenced legal action against the Hellenic Republic and condemned Greece for failing to fulfil its obligations to protect the species. In the wake of this legal action, the Greek government set up, in record-breaking time, the National Marine Park of Zakynthos, and created its management body [see [Challenge in the Ionian](#), TMG 5 (1): May 2002].

## Protection conferred under the Greek legal framework

On the national level, a discussion has commenced lately in our country regarding the nature of the right to a healthy environment; a right that is considered at a constitutional level as a third generation right. One of its most solid foundations is Article 24 of the Greek Constitution, which is regarded as one of the most innovative and forward-looking European constitutional provisions. This law defines the protection of the Greek natural heritage as a basic and indispensable parameter within the execution of every public/private activity, plan or project. Moreover, it is regarded as the supreme constitutional obligation of the State, which must concur with the relevant principles and requirements being set out both by the international and community sector (Kritikos 2002a).

Based on this right and strengthening its position within the Greek legal framework, the Council of State of Greece has repeatedly found that, even when there is no specific rule, the administration has the obligation to take into account the need to protect the environment, to take appropriate measures towards that aim and even to distance itself from issuing decisions that might have a negative impact upon it (i.e. Decisions 2006/1981, 412/193, 2282/1992) (Tachos 1995).

As with legal actions on the international and community level, challenging decisions and actions of the state on the basis of national legislation is not easy. Greek citizens have the right to challenge the state and request the annulment of administrative acts that could have a negative impact on our natural environment. In several of such decisions, the Greek Council of State has given environment rights the character of a “relative” *actio popularis*. Usually, in order for a citizen to file a lawsuit in court, he must prove his direct and personal connection to the action he is attempting to stop or influence, thus making it impossible for a resident of Athens, for example, to take legal action against the construction of a large infrastructure project at the island of Crete.

According, however, to the aforementioned interpretation of the *actio popularis*, the Supreme Court has accepted that the right to take legal action is possessed also by every individual or public body as long as there is a defined connection between them and the place where the degradation of nature is taking, or is bound to take, place in the future. This interpretation of the law allows an NGO based in Athens and which has, according to its founding declaration the aim of protecting the environment, to take legal steps against the planned construction of an infrastructure project that will negatively affect the environment throughout Greece.

Making use of the abovementioned rights, the Supreme Court overruled actions of the administration which were causing degradation of wetlands protected by the Ramsar convention (2343/1987, 1342/192, 3953/1995). In this respect, regulations of international conventions are particularly important, since judges always take them into account when issuing a decision.

Finally, one also has to investigate the opportunities available to a citizen when the state neglects to act in the ways legally required of it. Unfortunately, whether or not the Greek state implements certain laws is again up to its own discretion, and will largely depend on the economic, political and social circumstances prevailing at any given moment in time.

A “classic” example of this is the National Marine Park of Alonissos - Northern Sporades, which was created by a Presidential Decree in 1992, in order to protect one of the largest Mediterranean monk seal colonies in Greece. More than a decade after its creation, the Park still awaits the formation of a management body in order to function as intended, a delay that has only exacerbated uncertainty and local political and economic differences.

In contrast, and due to external legal “pressure” from the European Union, the management body of the newly founded National Marine Park of Zakynthos was created almost “overnight”.

As a legal action of last resort or “despair”, a citizen or an NGO might request from the civil courts an injunction to prevent the state from issuing these administrative decisions that are dictated by the international, European and national legislation for the protection of the species.

Such an undertaking would, however, be an extremely challenging legal action, primarily because it would constitute a very radical interpretation of Greek laws. This kind of legal procedure is not clearly provided at present, as for example, are lawsuits against someone who causes an accident by careless driving. Furthermore, the success of such a legal action would very much depend on the interpretation of the law by the judge, his attitude towards environmental issues and his willingness to promote legal thinking.



Although established way back in 1992, the National Marine Park of Alonissos - Northern Sporades still awaits the formation of an active management body, as well as the design and implementation of a coherent management plan.



## **From the courtroom to the classroom: a course of action for environment-friendly citizens**

Challenging the state on the international, community and national level for actions (or inactions) against the environment is obviously more complicated than one would like. Without wanting to discard the possibility that an expert team of lawyers might find a loophole in the legal system that would force the Greek state to take action to meet its perceived obligations (a highly costly and time-consuming procedure), we believe that the manoeuvring space available for private citizens and NGOs is rather limited.

It seems, therefore, far more appropriate that the cause of the Mediterranean monk seal be fought on a different battleground. Namely, the one of environmental education and public awareness. As ecological sensitivity grows around the world, different aspects of environmental law manifest themselves in our legal framework. After all, it is the legal framework that follows social development and not the other way around.

The few legal cases won until now perhaps indicate that a shy move in the right direction is underway in our country. It remains to be seen, however, if we can act quickly enough in order to provide the Mediterranean monk seal with a legal framework that will ensure the survival of the species in Greece.

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1) Although binding on the Member State to which it is addressed, national authorities have the choice of determining how and in what form to implement the Directive (Boyle & Anderson 1996).



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## Monachus Science

### RESULTS OF A FIRST FIELD MISSION IN THE NATIONAL PARK OF AL HOCEIMA, MOROCCO: MONK SEAL HABITAT SUITABILITY AND PRESENCE

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#### Introduction

Mediterranean monk seal distribution is, at present, mostly limited to the eastern part of the basin. Monk seals inhabiting the Turkish and Greek archipelagos are estimated at 150 to 250 individuals (Reijnders 1998a). There is, on the other hand, a significant information gap on the conservation status of the species along extensive stretches of north African coast in Mediterranean countries such as Morocco, Algeria, Tunisia and Libya (Aguilar 1998). Consideration of these small groups is most important for a correct global conservation strategy of the species in the Mediterranean (Reijnders 1998b). To this end, identification of the distribution of such individuals and scattered groups, as well as conservation measures for their recovery, should be undertaken in an effort to ensure survival of these nuclei.

Information on the historical distribution of the species along the Mediterranean Moroccan coast is not abundant. According to several authors, monk seal presence during these last decades has been limited to the area of coast extending from Al Hoceima to Cap des Trois Fourches (Avella & Gonzalez 1984, Bayed & Beaubrun 1987). According to Aguilar (1998), the recent monk seal population in this area may consist of approximately 10 individuals. During the last several years, there have been few initiatives aimed at obtaining a better estimate of the size of the population, and there is currently no monitoring effort focusing on the individuals which may inhabit this region.

The National Park of Al Hoceima is a terrestrial park, situated about 50 km from the Straits of Gibraltar and extends over approximately 40 km of coast. The park encompasses a marine zone extending 3 miles from the coast in which trawling is prohibited. A fieldwork mission was conducted in September 2002 in order to collect information on the presence of suitable monk seal coastal habitat within the park and also to collect information on any monk seal sightings made by the local communities present in the area. The mission was undertaken within the scope of a wider project involving the National Park of Al Hoceima which in turn is part of a Mediterranean project, called MedMPA (1), whose objective is the elaboration and, where possible, the implementation of management plans for several future Mediterranean marine protected areas. The creation of marine protected areas capable of guaranteeing the conservation of the monk seal, is a priority indicated by the various international action plans (e.g. 1979 Rhodes Action Plan, UNEP Mediterranean Action Plan). However, marine protected areas specifically designed to protect the monk seal are limited within the Mediterranean. The establishment of a marine protected area with a zonation and management plan, reflecting the conservation requirements of the natural components of the area within the National Park of Al Hoceima, could therefore represent a positive advance for the protection and management of *Monachus monachus* in the western Mediterranean area, where until now no protected areas have been established to counteract the decline of the species.

#### Methods

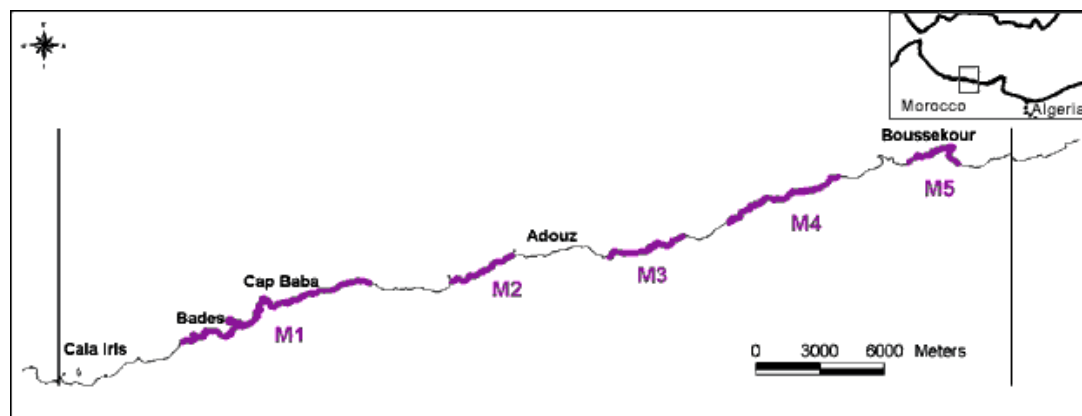
The coastal stretch of the National Park of Al Hoceima, which extends from Pointe Boussekour until Cala Iris (Fig. 1), was visually inspected with the aid of a small wooden boat and areas of the coast characterised by medium-high rocky cliffs were recorded in detail on a map. Details of the type of fractures observed in each area were recorded. Aquatic inspection of the coast was conducted so as to verify the presence of underwater entrances leading to caves with haul-out areas. The identified caves were positioned on the map, measured, photographed and drawn so as to

yield a horizontal cross-section drawing of each cave with details on the respective dimensions and exposure of the cave to the sea.

A fishermen survey was conducted to collect information on Mediterranean monk seal sightings witnessed by fishermen operating throughout the area, based on a questionnaire prototype already used by other working groups in other parts of the Mediterranean (see corresponding Syria and Libya survey reports, *Monachus Science*, this issue) and which in turn is based on a methodology proposed by Boyd and Stanfield in 1998. The strong points of the questionnaire are linked to its strict application to fishermen as well as to the use of figurative images of marine species that the fishermen are most likely to have encountered. In such a way, the interviewees do not know the purpose of the questionnaire in advance and are less inclined to intentionally deceive the questioner. The species cards which were shown to the fishermen are as follows: *Caretta caretta*, *Dermochelys coriacea*, *Cetorhinus maximus*, *Monachus monachus* adult and subadult, *Larus audouinii*, *Pandion haliaetus* and *Mullus surmuletus*.

## Results

The coastal stretch of the National Park of Al Hoceima is characterised by rocky calcareous cliffs forming steep overhangs alternated to rock slides and small pebble beaches. The area is characterised by five sectors of rocky coast presenting medium-large fractures which could represent openings leading to possible monk seal shelters. The sectors identified as M1-M5 are identified in figure 1. Sectors M1, M2 and M3 are composed of compact dolomitic limestone rock while sectors M4 and M5 are of limestone rock which appears composed of bent strata of limestone. Visual external inspection of the coast suggests that sectors M4 and M5, which lie in the less compact and pleated calcareous rock, present larger fractures which could be related to the effects of marine erosion on the less compact substrate as opposed to a lower erosion effect in the harder substrate found in sectors M1-M3.



**Figure 1.** Localisation of rocky sectors with hypothetical caves (M1 to M5) identified in the National Park of Al Hoceima.

Due to logistical difficulties and weather conditions only 75% of coastal sectors M1 and M5 were aquatically inspected. No coastal cavity was observed in sector M1, while one cave was observed in sector M5 and another one was identified in the easternmost portion of the park's boundary (see Fig. 1). The details of the caves are as follows:

Cave 1 has an almost invisible external opening characterised by a 1m wide fracture appearing at the watermark level. A 50 meter long corridor, narrowing in at the innermost portion of the cave, leads into a small pebble beach which appears well protected from the external force of the waves.

Cave 2 has a visible external opening. A long corridor extends for almost 30 meters then bends at a 45 degree angle and leads into a large pebble beach. The latter is well elevated with respect to the watermark and a large stone at its entrance provides good protection from the sea waves.

Interviews were conducted with 30 fishermen operating out of the following ports and landing sites located within the park : 7 fishermen in Cala Iris, 3 in Bades, 2 in Tikkit, and 18 operating out of the port of Al Hoceima. The total frequency of chosen species indicates that the most frequently chosen was *Mullus surmuletus*, followed by *Caretta caretta*, *Larus audouinii*, *Pandion haliaetus*, *Monachus monachus* subadult, *Monachus monachus* adult male, *Dermochelys coriacea* and *Cetorhinus maximus*. The monk seal was recognized by 19 of the 30 interviewed fishermen and of these observations, only 4 had occurred within the last five years and specifically in the period 2001-2002. Table 1 indicates the areas in which monk seals were reported as having been observed by the interviewees. The locations are specified in greater detail in Figure 2 [note: the observation reported for Cap des Trois Fourches is recent (July 2002) and concerns an adult individual (Zine 2003)].

Date	N. of animals reported	Location of the sighting	
		Within the park	External to the park
1968-1986	1		Mestassa
1970	1		Al Hoceima port
1970	1		Al Hoceima port
1970s	3-4	Bades	
1975	1		Al Hoceima port
1981-2	1	Boussekour	
1983	1		Al Hoceima port
1983-4	1	Tala Youssef	
1985	1		Cap de l'Eau
1987	1	Cala Iris	
1987	2		Al Hoceima - Al Mahal
1990	1		Al Hoceima - Al Mahal
1992-3	1	Boussekour & Sidi Abed	
1994	1	Boussekour	
1997	1	Boussekour & Sidi Abed	
2001	1	Topos	
2002	1		Al Hoceima
2002	1		Tofino
2002	1		Sidi Fateh & Mestassa

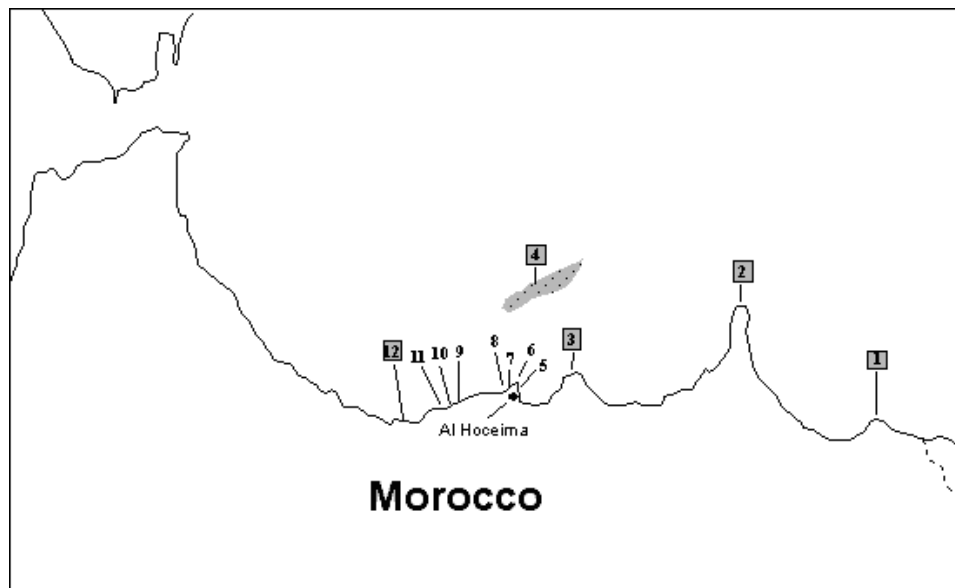
**Table 1.** Monk seal sightings as reported by the fishermen interviewed in the study

## Discussion

The study area seems particularly interesting in terms of the physical coastal habitat availability for *Monachus monachus*. The present work identified 5 sectors potentially characterised by the presence of coastal caves which could be used by the species. Due to logistical difficulties only two sectors were partially inspected. Two caves were found in sector M5 and its adjacent area. Each cave is characterised by an emerged internal pebble beach that is relatively well protected from sea waves. These caves are located in the sector characterised by siliceous limestone substrate which appears highly fractured. Considering the two main geological substrate typologies present in the area (western sectors characterised by compact dolomitic limestone as opposed to the eastern sectors composed of silicic limestone), and the presence of caves identified in the easternmost sector, it seems probable that the less compact limestone sectors are more likely to be characterised by the presence of coastal cavities which could be

used by monk seal individuals. This is, however, a hypothesis which would need confirmation based on further field investigations involving the remaining sectors: M2, M3 and M4.

The observations recorded during the fishermen interviews indicate the historical presence of *Monachus monachus* in the coastal stretch of the National Park of Al Hoceima. The frequency of species indicated in the fishermen's replies indicates that, overall, the monk seal subadult and the adult male were chosen from provided images less times than other species such as *Mullus surmuletus*, *Caretta caretta*, *Larus audouinii* and *Pandion haliaetus*, whose presence in the study area and along the Mediterranean Moroccan coast is widely documented. However, while the sum of the number of choices involving the monk seal subadult and the monk seal adult male is lower than the choice of *Mullus surmuletus* and *Caretta caretta*, it is higher than the total number of times that *Larus audouinii* and *Pandion haliaetus* are chosen. Both *Larus audouinii* and *Pandion haliaetus* are species which breed along the coasts of the study area but the degree of recognition of these species on the part of the fishermen may be low because fishermen may be less inclined to recognize marine avifauna than other, strictly marine, organisms. In view of the low sample size of interviewed fishermen (n=30) such considerations are, however, difficult to reinforce. Since the interview form aimed at collecting information on *Monachus monachus* is included in a more detailed interview format regarding the socio-economic aspects of the fishing community, the future planned application of this interview form to a wider sample size of fishermen operating within the study area will yield a more significant collection of information on monk seal sightings and the relative recognition rate of the species on the part of fishermen.



**Figure 2.** Monk seal sightings indicated by the interviewees. Shaded numbers indicate the areas for which sightings are reported but which lie outside the boundaries of the National Park of Al Hoceima.  
1. Cap de l'eau; 2. Cap des trois fourches; 3. Cap Chelate; 4. Banc Tofino; 5. Port of Al Hoceima; 6. Sidi Abed; 7. Tala Youssef; 8. Boussekour; 9. Topos; 10. Bades; 11. Cala Iris; 12. Mestassa.  
[Note: the Cap Chelate sighting does not appear in Table 1 as it was reported secondhand and not directly witnessed by the interviewee.]

The two monk seal observations recorded within the park during the last years indicate that some individuals transit and may utilise part of the coastal stretch of the study area. As such, future management plans of the marine component should contemplate conservation initiatives for the species such as monitoring, environmental awareness and protection of specific sites. Such aspects can better be defined on the basis of data to be collected during future field work, which is planned to be completed by the end of 2003. Preliminary observations collected during the field mission also indicate the presence of potential threats for the species, such as the use of illegal fishing methods such as dynamite and a rather widespread distribution of coastal fishing throughout the entire zone of the park. Such threats should be taken in consideration in the management plan of the future marine protected area, since they also indicate a possible explanation for the reduced number of recent monk seal sightings reported by the fishermen during interviews.

Several sightings were reported in areas external to the park, as east as Cap des Trois Fourches and even as far as Tofino, which is a bank located approximately 18 nautical miles to the north of Al Hoceima. This is not surprising, however, considering the observations recorded by other authors in terms of the species' movement (Adamantopolou et al. 1999) and observations of sightings in open sea (Marchessaux 1987). The localisation of sightings in areas outside the park's boundaries also highlights the need to conduct further investigations and conservation initiatives in a wider geographical scope, extending from Mestassa to Cap des Trois Fourches.

Considering the high value of the establishment of marine protected areas for the conservation of the remaining nuclei of *Monachus monachus*, and in light of the preliminary information collected during the present field campaign,

it appears very important to collect additional data on the location of the marine coastal caves present within the study area, as well as a more extensive amount of interviews aimed at the local fishing community. Such data would provide a good start towards the identification of a management and monitoring plan adequate for the species in the future marine protected area of Al Hoceima. Considering the species' movement capacity, such an approach should be extended to the wider geographic area which extends from Mestassa eastwards until the border with Algeria, a geographic area which still appears to host monk seal individuals.

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1) The MedMPA project is a European Community-funded initiative, coordinated by UNEP-MAP's RAC/SPA, whose purpose is to collect scientific information for the establishment of marine protected areas and to elaborate management and zoning plans suitable for specific contexts. The project encompasses 7 Mediterranean areas and involves collaboration schemes among different Mediterranean scientific institutions and environmental public administrations.





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## Monachus Science

### RESULTS OF A PRELIMINARY MISSION CARRIED OUT IN CYRENAICA, LIBYA, TO ASSESS MONK SEAL PRESENCE AND POTENTIAL COASTAL HABITAT

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#### Introduction

The Mediterranean monk seal population has declined almost to extinction throughout most of its historical range, with the exception of the Turkish and Greek archipelagos which at present represent the species' most conspicuous yet, overall, meagre foothold in the Mediterranean basin. Monk seal presence throughout the Mediterranean African coast is hypothesised as being low with respect to historical times but remains largely unassessed due to the absence of recent and continuous monitoring efforts. The most recent monk seal data along Libyan coasts dates back to 1972 (Norris) and indicates that reported sightings were in the Al Jabal Al Akhdar region where a small population was hypothesised to survive. Sergeant et al. (1978) indicated that this population at the time could have ranged around 20 individuals. Considering the significant extent of the Libyan coastline, the relatively low/nil impact of tourist activities and preliminary data indicating the high marine biodiversity of the Libyan Cyrenaican coast, it is hypothesised that monk seal individuals may still survive in this region and should this be the case, immediate action should be taken to assess their presence and draw up conservation measures. Such measures should lie within the greater scope of marine biodiversity protection and marine protected area establishment in Libya.

A field mission was carried out in the late spring of 2002 with the purpose of identifying potential "hotspots" for the presence of the Mediterranean monk seal in the Cyrenaica coastal region. The fieldwork was conducted under a Memorandum of Understanding coordinated by UNEP's Regional Activity Center for Special Protected Areas (RAC/SPA) and involving the collaboration between the Environment General Authority (EGA) of Libya and the Istituto Centrale per la Ricerca Applicata al Mare (ICRAM) of Italy. The objectives of the field mission were to:

- collect information on past and recent monk seal sightings in Cyrenaica through a specific interview campaign directed at the fishermen operating out of the Cyrenaican landing sites and ports with a view to identifying "hotspots" characterised by the presence of monk seal individuals
- collect preliminary information on the coastal characteristics and habitat suitability for the species in Cyrenaica so as to identify sectors needing investigation from sea to be carried out in a later phase of work
- collect information on other marine species of secondary interest (with respect to the purpose of the present study) but which are nevertheless important from the point of view of marine biodiversity (i.e. other protected and rare species, invasive species).

#### Methods

The survey was conducted during May 21-June 4, 2002. All possible landing sites situated between Benghazi and the port of Bardiye (furthest eastern port on the Libyan coastline) were visited, covering over 500 km of coast. The fishermen were interviewed through a systematic survey form similar to that used to interview Caribbean fishermen by Boyd and Stanfield (1998) for the collection of information on the presence of Caribbean monk seal individuals. The authors believed that the high positive response result of this type of survey was linked to its strict application to fishermen as well as to the use of figurative images of marine species that the fishermen were most likely to have encountered. In such a way, the interviewees did not know the purpose of the questionnaire in advance and were less inclined to intentionally deceive the questioner. The fishermen were interviewed singly so as to avoid being influenced by each other's answers. Each fisherman was presented with a series of cardboard-mounted cards, measuring 15 x 21 cm, depicting coloured drawings of the following species: *Cetorhinus maximus*, basking shark;

*Caretta caretta*, the loggerhead turtle; *Chelonia mydas*, the green turtle; *Monachus monachus*, Mediterranean monk seal (adult male and a subadult); *Siganus luridus*; *Sargocentron rubrum*, squirrelfish; *Mullus surmuletus*, red mullet; *Tursiops truncatus*, bottlenose dolphin; *Delphinus delphis*, common dolphin; *Ziphius cavirostris*, Cuvier's beaked whale; *Phocoena phocoena*, harbour porpoise; *Physeter catodon*, sperm whale; and *Balaenoptera physalus*, common fin whale.

Each fisherman was asked to indicate which species he encountered and knew of from his fishing activities. A drawing depicting an adult male and one depicting a sub-adult monk seal were both specifically included in the present survey method because of the distinct morphological traits which characterise adult male monk seals (large, black and with a distinct white abdominal patch) from sub-adult individuals (lighter greyish pelage and no distinct white ventral patch). Once this was ascertained the fisherman was asked qualitative questions concerning the monk seal sightings so as to collect more detailed information on each sighting (i.e. the location, the time of year, and the behaviour of the observed animal(s)). Fishermen were subsequently asked analogous information concerning sightings or the presence of some of the other protected species which they had chosen amongst the cards.

Attention was paid to collect as much information as possible on the physical conformation of the coastline as well as information on the accessibility of the coastline (presence of roads leading to the coast, presence of ports etc.). Details on the presence of fractures and apparent caves were recorded. If the accessibility to a particular stretch of coast was not feasible due to the absence of roads and the presence of rough terrain, information was gathered from locals on the coastal typology (cliffs, presence of caves) of the particular stretch of coast in question. Coastal sectors were identified based on the following coastline typology: sandy coast, low rocky coast with intermittent sand, medium-high coast, high coast.

## Results

100 fishermen were interviewed throughout the entire study area out of 18 ports/landing sites. 41% of the fishermen recognised one of the two monk seal cards that were demonstrated and of these, 25% chose the card depicting a subadult animal while 16% chose the picture depicting the adult male. Almost 50% of the Libyan sightings reported by the fishermen had occurred between 1998-2002 while the remaining reported sightings had taken place between the period 1952-1997. The sighting information indicates that the species was historically observed throughout most of the study area while sightings occurring during the last five years occurred mostly in the area north-eastwards of Tolmeitha, eastward of Susah, eastward of Dernah, Barda island and on the western coast of Tobruk. A noticeable number of sightings reported the presence of a monk seal individual which had entered into the port of Benghazi during spring 2002. Two of the reported sightings involved Egyptian locations.

The fishermen's attitude towards the monk seal individuals which they would talk about did not seem to imply a negative attitude towards the animal, although no specific question was posed to them on whether the animal was, in general, viewed as being in conflict with their fishing activities or not. The reaction of the fishermen upon beginning each questionnaire appeared, in general, quite diffident but this behaviour tended to noticeably change once the species cards were presented. At this point, fishermen seemed to be eagerly inclined to give information on all the species that they had chosen, regardless of whether questions were posed to them regarding specific species. Reports of dead monk seals amount to 8; 4 of which occurred between 1957 and the late 70s and 4 recorded between 1992 and 1998. The first 4 reports are of animals which were intentionally killed while the remaining 4 concern 3 dead stranded animals and 1 animal found entrapped in a trammel net. The intentional kills of the 1950-70s were, according to interviewees, a common phenomenon and the animals were usually killed for the use of their skin and oil. According to most fishermen, the monk seal was more abundant in the past and was often observed even in groups of 3-4, and hauled out on protected small gravel beaches and coastal overhangs.

## Discussion

The present study aimed at identifying whether monk seal individuals still survive along the Libyan Cyrenaican coast and, if so, how frequent were the sightings and where they occurred. The objective was also to identify sectors of the Cyrenaican coast worthy of further investigations regarding monk seal coastal habitat availability and monk seal coastal use. Such sites should in future be monitored for monk seal presence and conservation measures should be established to guarantee protection and recovery of the surviving monk seal nuclei.

The distribution of the reported sightings over time and in different sectors of the coast indicates how the species was historically observed along most of the Cyrenaican coast (with the exception of those sectors which are predominantly composed of sandy stretches of coast and which consequently explain the absence of reported sightings in such areas). The study also provides substantial evidence on the present distribution of monk seal sightings in Cyrenaica as reported by the fishing communities operating out of the major active landing sites of Cyrenaica. The survey demonstrated a strong recognition rate on the part of fishermen where this species was concerned, although it appears that the species is not recognised as frequently as more common species, such as red mullet, the loggerhead turtle and the bottlenose dolphin. Nevertheless, the fact that almost 50% of 46 reported sightings occurred during the last five years provides strong indications as to the species' actual presence along Libyan coasts, and also emphasises the importance of conservation efforts for the species in this Mediterranean region. The area is characterised by varying topography, offering apparently suitable habitat characteristics; that

could act as an advantage to the species in allowing a wide distribution throughout Libyan coastal territory. Further investigations should be conducted to verify the coastal presence of caves suitable for monk seal haul-out, and a careful analysis of their characteristics and their distribution throughout the different sectors should lay the groundwork for a sound program of future monk seal monitoring and conservation activities. Considering the vast extent of the Libyan coastline and the high number of sightings reported during the two-week study period, the study represents an encouraging starting point towards a sound monk seal conservation strategy for the area.

### **Acknowledgements**

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## Monachus Science

### **MONK SEAL PRESENCE AND HABITAT ASSESSMENT RESULTS OF A PRELIMINARY MISSION CARRIED OUT IN SYRIA**

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#### **Introduction**

Mediterranean monk seal presence has never been verified along Syrian shores and there is a large information gap both as to the species' historical and more recent occurrence. Aguilar (1998) states that it is unclear whether this lack of information is due to deficiency of appropriate habitat, early extinction of the species or simply lack of adequate surveys. However, proximity to areas characterized by regular monk seal presence, such as Turkey or Cyprus (Aguilar 1998) allows us to hypothesize that a geomorphologic continuity providing some monk seal habitat should be available at least along the stretches of Syrian coast closest to Turkey, and this could account for past records of monk seal presence. Moreover, even if human disturbance along the Syrian coasts were such that monk seal presence were to have become irregular, the proximity to the Cilician coasts where 25 monk seal individuals have been photo-identified (Gucu et al., in press) and the undisturbed coastline of the southern Turkish border and north-eastern Cyprus, where monk seals are hypothesized to exist, could encourage a movement of the very same animals into Syrian waters. If this were to be the case, the presence of protection and conservation measures, such as the establishment of marine protected areas, would surely benefit the survival of those individuals in Syrian waters and would increase the chances of the animals transiting for a longer time along its coasts.

Preliminary information collected from the High Institute of Marine Research of Tishreen University has shown that some monk seal observations are reported by local communities along the country's most northern shores and as far south as Lattakia and Banyas. A preliminary mission was carried out within the framework of UNEP-MAP's MedMPA (1) project between 3-6 October 2002 to begin assessing monk seal presence in Syria, both in terms of coastal habitat availability (2) as well as monk seal sightings. Given the limited amount of time, activities were carried out along the following fronts:

1. Preliminary assessment of the coastline morphology from Lattakia to the border with Turkey.
2. Aquatic inspection of a sample of the coastline so as to verify and document the presence of possible caves suitable as potential monk seal shelters.
3. Interviews with fishermen aimed at collecting information on the species' presence.
4. Capacity building of local marine biological researchers so as to strengthen their capacity to conduct long-term studies on the species or to start monitoring studies on the species' presence in Syria.

#### **Methods**

##### **1. Preliminary assessment of the coastline morphology**

The coastline was visually inspected by boat during a two-day period. Photographic documentation was obtained along all stretches of coastline for a total of approx. 50 km of coast extending from the landing site of Ibn Hani (just to the north of Lattakia) until the border with Turkey.

##### **2. Aquatic inspection of a sample of the coastline**

A portion of the coastline of sector 9 and 7 (see Fig. 1) was aquatically inspected for the presence of caves and possible monk seal haul-out sites. Haul-out areas were photographed and measured and diagrams depicting the horizontal section of each cave were drawn.

### 3. Fishermen interviews aimed at collecting information on the species' presence

A fishermen survey was conducted to collect information on Mediterranean monk seal sightings along the Syrian northern coasts based on a questionnaire prototype already used by working groups in other parts of the Mediterranean and which in turn is based on a methodology proposed by Boyd and Stanfield in 1998. The strong points of the questionnaire are linked to its strict application to fishermen as well as to the use of figurative images of marine species that the fishermen are most likely to have encountered. In such a way, the interviewees do not know the purpose of the questionnaire in advance and are less inclined to intentionally deceive the questioner. The species cards which were shown to the fishermen are as follows: *Cetorhinus maximus*, *Caretta caretta*, *Monachus monachus* (adult male), *Monachus monachus* (subadult), *Dermochelys coriacea*, *Siganus luridus*, *Sargocentrum rubrum*, *Mullus surmuletus*, *Tursiops truncatus*.

### 4. Capacity building of local marine biological researchers

Dr. Izdihar Ammar and Dr. Wassem Ghanem, of the Lattakia High Institute of Marine Research, participated in the field research and were trained to carry out the above mentioned interviews so as to obtain a larger sample size of interviewed fishermen, and so that the results gathered for the Syrian coastline may be interpreted in a comparative manner, with respect to similar questionnaire initiatives being gathered in other areas of the Mediterranean where monk seal presence is under study. A 2-hour seminar was also conducted aimed at updating the research personnel associated with the Lattakia High Institute of Marine Research on issues concerning monk seal biology and ecology.

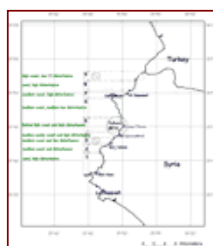
## Results and Conclusion

### 1. Preliminary assessment of the coastline morphology

The landing sites observed during the field mission were as follows:

Name	Characteristics of site
Ibn Hani	sandy small bay
Birj Islam	not verified
Al Quandeel	sandy beach
Oum' Tiour	small tide pools, protected by rocks
Al Basseet	sandy beach

A preliminary assessment of the coast allowed us to subdivide it into 9 sectors (see Fig.1), characterized by typology of coastline as well as the presence of human pressures of various types. Sectors were then subdivided into high, medium, low and null ranking, in terms of habitat suitability, on the basis of the degree of human encroachment and the typology of coast (3). Fig. 1 graphically summarizes the sector subdivision obtained from the field observations. Sector 9 appears the most suitable in terms of hypothesizing an optimal ranking of physical coastal habitat availability because of its coastal conformation, the medium-low human encroachment and the proximity to the Turkish border. Sectors 3 and 6 appear to have a medium ranking for coastal habitat suitability while sector 5 has a low ranking since the only feasible yet limited area of the sector is that characterized by Oum' Tiour mountain. The remaining sectors are given a null ranking in terms of habitat suitability.



(click to enlarge)

**Fig. 1.** Map of the study area and the 9 identified sectors. A summary of the coastal conformation and degree of encroachment is highlighted in green bold type whereas the red circles indicate areas with partial protection zones.

### 2. Aquatic inspection of a sample of the coastline

Two coastal caves were identified in Sector 9, which could be of interest as eventual haul out areas: Sy1 and Sy2. In particular:

- Sy1 is located in a small bay inlet with a pebble beach and its entrance lies in the southernmost part of this beach. Direct access to the cave from the beach contributes in making this cave easily disturbed by human presence.
- Sy2, in contrast, lies more protected behind a rocky ledge so that its entrance is not clearly visible to boats navigating the area. However, it is proximate to a rather large and clearly visible cave that leads into a long water corridor which could draw attention from pleasure boaters and hence cause disturbance to the site next to it .

Both cave Sy1 and Sy2 are characterized by open vaulted entrances which make them clearly visible to the human eye from the waterfront, and as such they do not seem to hold the most optimal characteristics in terms of a protected seal shelter. However, such potential drawbacks might be remedied should appropriate protection measures be enacted for this area.

Sector 9 appears to be the most suitable as monk seal habitat both in terms of geologic formation, closeness to the Turkish colony of monk seals, and the relative isolation of the coastline from human disturbance. A more detailed and thorough inspection of the stretch of coast from Pigeon island until the border with Turkey might indicate the presence of additional caves and confirm this hypothesis. Despite the fact that the area is off-limits to fishing boats due to the closeness of the border, and that local villages lie far into the mountains, the coast appears to be used intensively for recreational purposes by the local community during holidays. Preliminary observations conducted during the aquatic inspection seem to indicate a noticeable amount of fishing pressure in the area as well. During the inspection of the submerged coastal environment, in fact, the fish fauna inhabiting the rocky boulder seabed was composed predominantly of juvenile classes of fish (Sparidae and a conspicuous amount of *Epinephelus* spp.) and virtually no individuals of large class sizes. No demersal cephalopods were observed. Such observations might be linked to a possible overfishing problem in the area. Most of the fishing practices observed in the overall study area are related to artisanal fisheries mainly using trammel nets set close to the coast. Moreover, during the aquatic inspection of sector 7, several observations were made of dead young fry lying a few metres from the coast on the seafloor, which could imply the use of dynamite or other types of illegal fishing methods. Further campaigns should be carried out to determine the occurrence and distribution of the coastal marine fauna and of the possible human pressures exerted on these.

### 3. Fishermen interviews aimed at collecting information on the species' presence

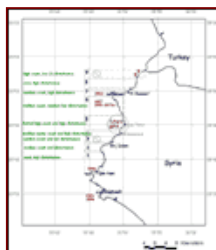
During the preliminary mission, special efforts were made to conduct the survey with marine researchers from the High Institute of Marine Research so as to train the personnel to carry out survey work in a more extensive fashion amongst the fishing community operating from Lattakia to the north. The fishing community of this area amounts to approximately 600 fishermen and the researchers were asked to conduct the interview during the months of October-November amongst at least 300 fishermen. Analysis of the final dataset gathered during these two months still needs to be conducted but preliminary information based on the 15 interviews conducted between 3-6 October at the landing sites of Ras Basseet and Ibn Hani indicates the following sighting information.

Date	Location of monk seal sighting	Notes
1955-1980	Singar mtn., Ras n Nouras, Sim Laka	1-2 animals
1979	Fenar (south of Ras Basseet)	
1979	Ras Basseet	
1996	Afamia	
1997-2002	Kordoban (1 km from Ras Basseet)	
1998	Abn Hani	
1998	Ras Basseet	One animal is killed by gunshot while it is hauled out on the rocks
2001	Abn Hani (Afamia)	
2002, September	Ras Basseet	



From the preliminary interviews carried out during the survey, the monk seal is chosen by 8 fishermen out of 16 and tends to be chosen in 4-6th position out of 8 possible choices. It is amongst the species being chosen last, which would appear to indicate a lower frequency of encounter with respect to other more common species such as *Mullus surmuletus*, *Sargocentrum rubrum*, *Caretta caretta* and *Tursiops truncatus*. However, it appears to be chosen more than other species such as *Dermochelys coriacea* and *Cetorhinus maximus*, which are known to be only rarely encountered along southern Mediterranean shores.

Fig. 2 indicates the sectors in which the reported monk seal sightings occurred. Based on the presumption that monk seals observed along a stretch of coast would be likely to utilize those sites with the most optimal cave characteristics, providing some resting or haul-out areas, it would appear feasible to hypothesize that most sightings should occur along Sector 9. However, no monk seal observations were reported during fishermen interviews for Sector 9 (see Fig. 2). Conceivably, this might be attributable to the fact that interviews were limited to a sample of 16 interviewees and that these were sampled from the landing sites of Ibn Hani and Al Basseet. Considering that fishing by boat is not permitted in Sector 9, it is highly improbable that fishermen would have encountered a seal along this particular coastal strip. It is more likely that some observations may have been made by the recreational seafarers utilizing this coast who reside in the foothills of the mountains behind Sector 9. To this end, a more detailed study of the phenomenon should be conducted in the future. Some sightings are reported as far south as Sectors 7, 6, 1 and even outside the port of Lattakia. Such observations might be explained by the fact that such sectors are more densely inhabited, leading to a higher probability of monk seal observations by fishermen, and that the animals sighted in the area might be in transit or on feeding bouts. However, the above hypotheses require further research as the sample size of fishermen is too small to confirm such a deduction with any degree of certainty.



(click to enlarge)

**Fig. 2.** Map of the study area, its sectors, the position of the two identified caves (red stars) and monk seal sightings reported by fishermen (dates appearing in red in each relevant sector).

## Conclusion

- Sector 9 appears the most suitable sector in terms of physical coastal characteristics providing the best type of available habitat for the species. Moreover, preliminary information reported by researchers concerning the Turkish border with Syria indicates a strong possibility of monk seal presence on and around the Turkish side of the border. The remaining portion of Sector 9 should therefore be aquatically inspected, and threats due to human presence should be evaluated so as to better formulate a plan to minimize them in future conservation and protection initiatives.
- Aquatic investigations of Sectors 6 and 3 could be considered on a second priority basis.
- Fishermen interviews should be conducted on a wider scale amongst the fishing community in order to produce solid data regarding monk seal sightings in the area.
- Interviews should be conducted amongst other categories of sea users (i.e. tourist boat skippers, etc. ) so as to collect more information on seal sightings

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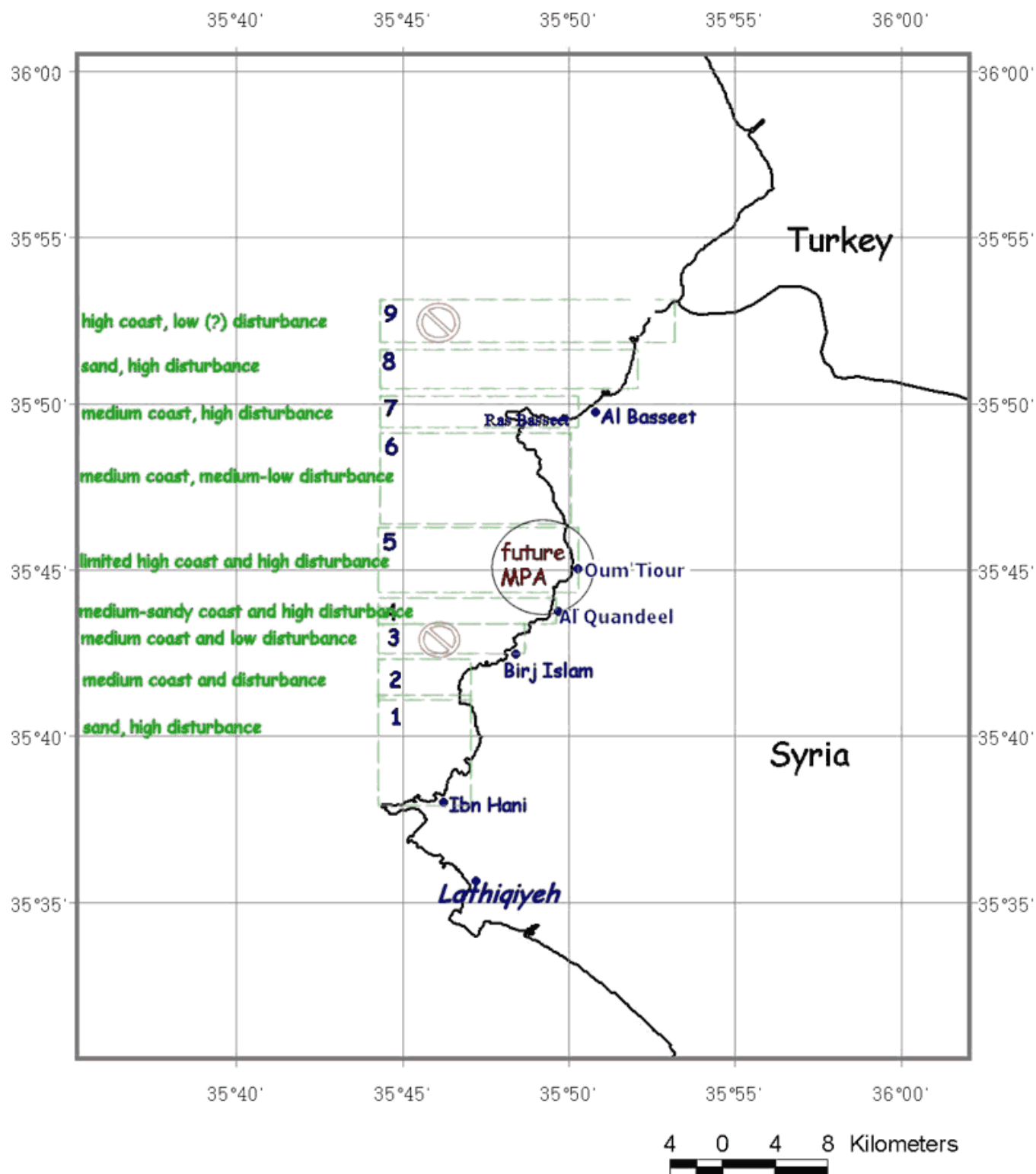
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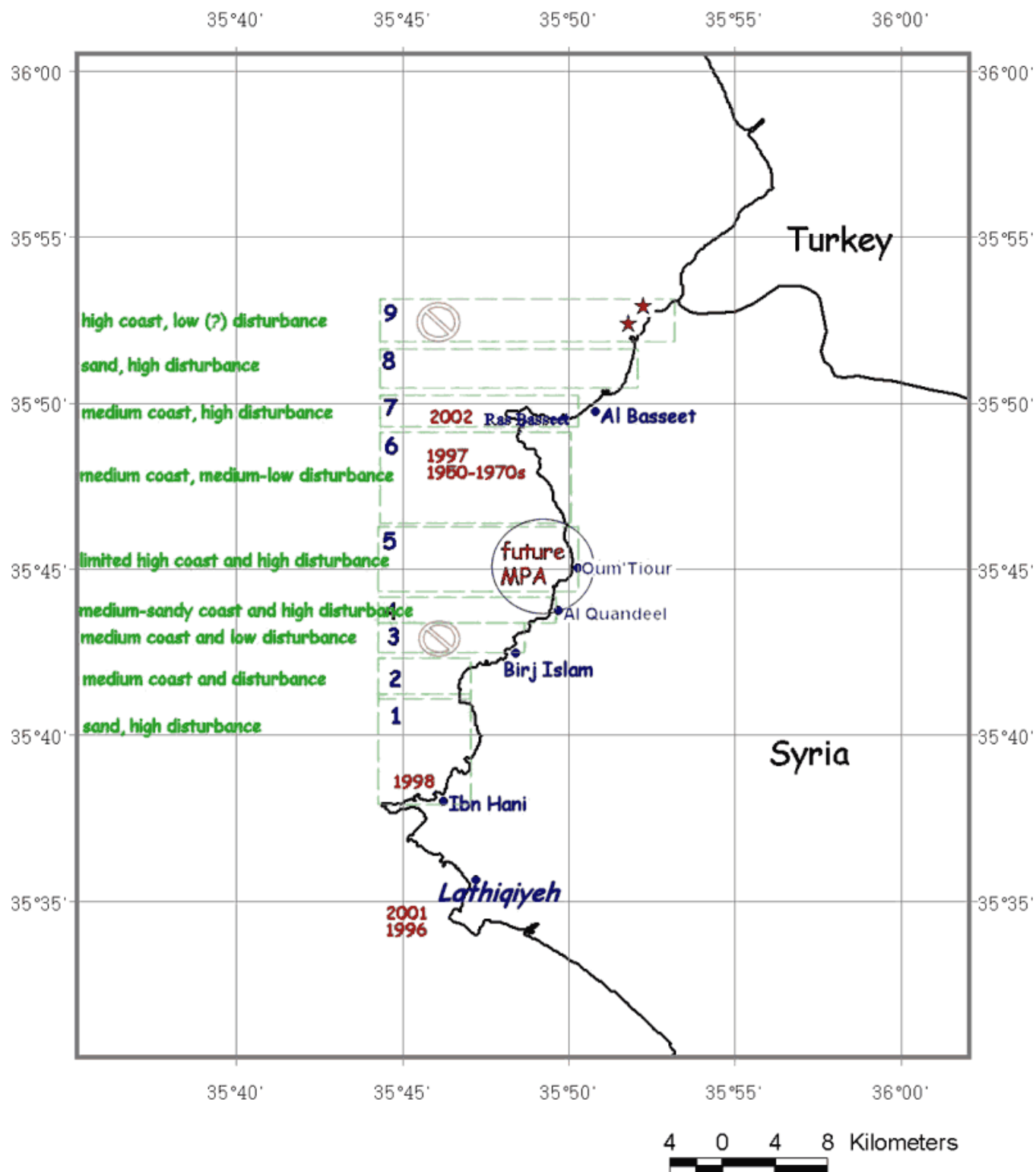
**1)** The MedMPA project is a European Community-funded initiative, coordinated by UNEP-MAP's RAC/SPA, whose purpose is to collect scientific information for the establishment of marine protected areas and to elaborate management and zoning plans suitable for specific contexts. The project is based in 7 Mediterranean countries and involves collaboration schemes amongst different scientific Mediterranean institutes.

**2)** Mediterranean monk seal coastal habitat is currently associated with isolated stretches of rocky coastline characterized by caves and haul-out areas providing protection from human disturbance, such as caves with underwater or hidden entrances. To this end, habitat availability generally implies a presence of the abovementioned coastal characteristics, as well as adequate prey sources.

**3)** Sectors characterized by low human pressure and a medium-high possibility of coastal cave presence were given a high priority ranking in terms of possible coastal habitat suitability; sectors characterized by medium human pressure and medium possibility of coastal caves were given a medium ranking; areas characterized by high human pressure and low possibility of coastal caves were given a low ranking, while areas characterized by high human pressure and no presence of coastal habitat were given a null ranking.



**Fig. 1.** Map of the study area and the 9 identified sectors. A summary of the coastal conformation and degree of encroachment is highlighted in green bold type whereas the red circles indicate areas with partial protection zones.



**Fig. 2.** Map of the study area, its sectors, the position of the two identified caves (red stars) and monk seal sightings reported by fishermen (dates appearing in red in each relevant sector).



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### IS THE REHABILITATION OF THE MEDITERRANEAN MONK SEAL *MONACHUS MONACHUS* (HERMANN 1779) IN TURKEY NECESSARY?

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Underwater Research Society – Mediterranean Seal Research Group (SAD-AFAG)

#### Abstract

The aim of this study is to determine whether the rehabilitation of the critically endangered Mediterranean monk seal *Monachus monachus* in Turkey is necessary and, if so, to identify basic requirements for the establishment of a rehabilitation centre. A literature search, including grey publications on the species and its rehabilitation, was conducted for the purposes of the study. In addition, data obtained through the field research of SAD-AFAG, of which the authors are members, and basic experience gained by the authors during a brief course at the Seal Rehabilitation and Research Centre in the Netherlands, were taken into consideration. So far, rehabilitation of Mediterranean monk seals has been carried out in Greece, Mauritania and Madeira, thereby covering most of the current distribution range of the species. Two monk seals which were reported to have been in need of rehabilitation during the last decade along Turkish coasts died. A third animal was found stranded, but disappeared after a few days. While it is impossible to conclude that these animals would have survived as a result of rehabilitation and veterinary treatment, experience elsewhere has shown that they would have enjoyed a better chance of survival had rehabilitation facilities existed in Turkey. Taking all known factors into consideration, including the low population numbers along Turkish coasts, this study recommends the deployment of a mobile rehabilitation unit rather than the creation of a permanent rehabilitation centre. On a national scale, the authors also recommend the preparation of rehabilitation protocols, the establishment of a rescue and information network to provide timely alerts on strandings and the discovery of orphaned seals, and the involvement of experienced staff. Should rehabilitation take place, the authors propose that seals be released along the Cilician coasts or the Karaburun Peninsula, where conservation projects have been conducted since the mid-1990s.

#### Introduction

The Mediterranean monk seal *Monachus monachus* is an indicator species residing at the top of the food chain in the Mediterranean marine ecosystem. An estimated total population of 379-530 monk seals survive within its distribution range (Johnson 2001).

The Mediterranean monk seal has, since 1966, been classified by the World Conservation Union (IUCN) as a species in danger of extinction (IUCN/UNEP 1988). Threats against the species were clearly defined at the First International Conference on the Mediterranean Monk Seal in Rhodes, Greece in 1978 (Ronald & Duguy 1979 in Johnson and Lavigne 1998). They include:

1. "Increased adult and juvenile mortality because of deliberate killing (mostly by fishers).
2. Increased adult and juvenile mortality caused by incidental entanglement in fishing gear.
3. Increased adult and juvenile mortality due to human disturbance (activities such as tourism, fisheries and shipping).
4. Increased pup mortality caused by pupping in unsuitable locations, due to loss of preferred habitat.
5. Poor condition due to lack of food as a result of overfishing.
6. Reduced fecundity and pup survival [possibly] caused by inbreeding depression".

With the purpose of determining the means by which such threats could be minimised, Johnson and Lavigne (1998) gathered expert recommendations from scientific studies, action plans and conference resolutions covering the years 1978-1994. In this work, entitled *The Mediterranean Monk Seal – Conservation Guidelines*, the authors identify measures and precautions that, according to a consensus of scientific opinion, should be applied to the conservation of the species, under the following categories:

1. International coordination
2. Scientific research
3. Habitat protection
4. Legislation and enforcement
5. Education and public awareness
6. **Rescue and rehabilitation**
7. Translocation
8. Captive breeding

The Conservation Guidelines were subsequently endorsed by 78 marine mammalogists and other professionals involved in the study and conservation of the monk seal.

The purpose of the authors in the present study is to discuss whether a permanent rehabilitation centre for the Mediterranean monk seal is required in Turkey, and to determine the measures, precautions and organisation that would be required to handle effectively potential cases of rehabilitation.



**Fig. 1.** A stranded and ailing monk seal on the Turkish coast in 1999. The individual subsequently died.

## Methods

This study was based on information gathered from scientific papers and grey publications on the rehabilitation of the Mediterranean monk seal, and on experience gained by the authors while working at the Seal Rescue and Rehabilitation Centre (SRRC) in the Netherlands.

## Results

In the Mediterranean Monk Seal – Conservation Guidelines (Johnson and Lavigne 1998), measures and precautions to be considered for the rescue and rehabilitation of the species were listed as follows:

1. Rescue and rehabilitation of wounded, stranded or orphaned monk seals should be subject to strict scientific and ethical protocols to prevent collection of individuals that do not require treatment. Protocols, reviewed and approved by the wider conservation community, should also cover handling, transport, feeding, veterinary care, and release.
2. A mobile intensive care station, acting as a rescue and rehabilitation facility, is currently situated on the island of Alonissos in the Northern Sporades Marine Park, Greece. A similar facility has been proposed for Mauritania/Western Sahara near the Côte des Phoques seal colony. Should any additional rescue and rehabilitation facilities be deemed necessary, they should initially be established only within the current range of surviving monk seal populations to reduce stress associated with long-distance transport.
3. Rescue or observer networks should be established or improved to increase the likelihood that wounded, stranded or orphaned seals will be located. Great care must be taken, however, to ensure that healthy seals do not fall victim to overzealous volunteers or members of the general public.
4. Following rehabilitation, seals should be released in protected areas, preferably in the region where they were originally found.
5. Rescue and rehabilitation facilities should provide training opportunities in the care and handling of captive monk seals, generating knowledge and expertise useful in any future translocation and captive breeding programmes.
6. Recognising the potentially substantial risks of disease transmission associated with the transport of animals to and from rescue centres, and with reintroduction to the wild, comprehensive quarantine and assessment procedures should be implemented throughout any rescue, rehabilitation and release programme. Such programmes should only be initiated after consultation with the wider scientific community and the IUCN Specialist Groups on Seals, Reintroduction and Veterinary Care.

Rehabilitation of Mediterranean monk seals began in 1987 when 2 orphaned pups were found in Greece (Hart and Vedder 1990). Rehabilitation efforts have subsequently continued in Greece, Mauritania and in Madeira, Portugal (Table 1).



State	Population Estimate	Rehabilitation	Released	Source
Greece	200 – 250*	11+2	6+?	Androukaki et al., 1999
Mauritania / western Sahara	77-148*	6	5	Rehabilitation in theory and practice: protocols, techniques, cases, 2002; Androukaki 2002
Madeira – Portugal	21*	2	1	Neves and Pires, 1999
Turkey	50-55*	-	-	-

\*Johnson, 2001

**Table 1.** Cases of Mediterranean monk seal rehabilitation in Greece, Mauritania/western Sahara, Madeira and Turkey.

In Turkey, information on monk seal individuals requiring rehabilitation is exceedingly difficult to obtain, not only because of the much-diminished population in the country, but also because of the lack of a rescue and information network. A network of this type has operated in Greece since 1991 (Adamantopoulou et al., 1999) and has played an indispensable role in providing its organisational administrator, MOM, with information on marine mammal strandings nationwide. Where weak and dehydrated orphaned monk seals are concerned, early warning is a vital component in the rehabilitation process.

Only 3 monk seal individuals deemed in need of rehabilitation were recorded by the authors between 1987 and 2002, during studies to collect monk seal sightings data (Table 2).

Year	Location	Age Class	Status
1990	Gümüldür Izmir	Pup	Died
1998	Çesme Peninsula – Izmir	Pup	Disappeared
1999	Çesme Peninsula – Izmir	Young adult	Died

**Table 2.** Cases of monk seals deemed in need of rehabilitation in Turkey.

The first incident took place in 1990, when an orphaned seal pup was found by locals in Gümüldür, Izmir. The seal was placed in a pool and for one week attempts were made to feed it and help it swim, but the pup eventually died despite – and perhaps partly because of – such good-willed (yet inexperienced) efforts.

The second case was that of a single pup found by locals of Çesme in 1998, a town at the north of the Çesme peninsula in Izmir. The seal was reported to have been vocalising constantly (“crying”) from the beach where it was hauled out for less than a week, until it eventually disappeared.

The third incident took place in 1999, in the same area. Locals of Çesme attempted to force the young adult seal (Fig. 2) back into the sea and feed it with fish. Although our team subsequently intervened in an effort to assist the seal, the young female died of an undetermined illness on 7th March 1999 (Güçlüsoy and Savas 2000).



**Fig. 2.** The young female seal from Çesme, 1999

## Discussion and Recommendations

Considering the much-diminished state of the Mediterranean monk seal population in Turkey and the small number of incidents hitherto recorded of seals requiring rehabilitation, the authors do not deem the establishment of a permanent rehabilitation centre to be necessary at present. However, since every single individual counts when the survival of a critically endangered species is at stake, we believe it prudent to consider the deployment of a mobile rehabilitation unit, to be ready and available should rehabilitation be required.

Given the general scarcity of funds available for monk seal conservation, as well as the need to focus on first-priority *in situ* initiatives, we believe that a small mobile rehabilitation unit would best serve Turkish needs at the present time. This single-piece unit would be adequate for one seal, incorporating both a pool and shelter (a small cave-like construction). The unit would be sufficiently small to allow easy transport by truck within Turkey.



**Fig. 3.** A compact, single seal rehabilitation unit, as found at the SRRC in the Netherlands.

Although government funding is difficult to obtain for long-term conservation actions, there is some reason to believe that support would be forthcoming if an orphaned monk seal was rescued in Turkey and entered rehabilitation.

Indeed, significant interest in monk seal rehabilitation has most recently been expressed by the Ministry of Environment (Izmir Directorate) during the meeting on "Marine Turtle and Monk Seal Action Plan for Izmir Coasts" (Güçlüsoy 2002) organised in May 2002.

A possible alternative to establishing a mobile unit in Turkey would be the transfer of seals in need of rehabilitation to already-existing facilities on Alonissos, in the Northern Sporades Marine Park in Greece. Political

support from both Turkey and Greece would, however, be required to realise such a plan of action. Should such support be forthcoming, equipment and expertise would be required on the Turkish side to ensure the safe transfer of the seal under the least stressful and most aseptic conditions possible.

The establishment of a permanent rehabilitation centre in Turkey, capable of treating not only seals, but other marine mammals and also sea turtles, might also be considered, but would require a detailed feasibility study.

Although the ability to conduct monk seal rehabilitation projects was reflected in the National Action Plan for the protection of the monk seal – to which the Turkish Environment Ministry acted as Secretariat – and although the Plan was endorsed by the National Monk Seal Committee, protocols have yet to be prepared dealing with nutrition, veterinary care, potential disease transmission, transportation and release. It is urgent that such protocols be drawn up in the light of information hitherto obtained.

Following the preparation of such protocols, a rescue and observation network should be established in order to increase the probability of locating wounded, sick and orphaned monk seals. Members of this network should receive basic instruction on how to react swiftly, safely and efficiently whenever a seal requiring care is found. Training of rehabilitation staff and volunteers, who can effectively administer first aid, must also be completed.

As has been seen in Greece, the creation of such a network can also provide important secondary benefits to the conservation of the monk seal, providing valuable information on the status, distribution and threats to the species.

Such a network would also increase public awareness among the local inhabitants and officials of coastal towns and villages.

The network would be based on both direct and indirect communication with its members. Direct communication is likely to be indispensable during the establishment of the network, but face-to-face meetings would probably continue to occur on a regular basis in sensitive seal areas.

Indirect communication would rely on mailing, e-mailing, fax and phone, and would be used to encourage the participation of relevant local authorities, such as the coast guard, gendarmerie, port police, fishery and veterinary services, harbour directors and coastal municipalities. Fishing cooperatives, local NGOs and others would also be approached.

Following any successful rehabilitation process, seals should be released in areas frequented by known populations, such as the Cilician coasts of Turkey or in areas that would facilitate post-release monitoring, such as Izmir's Karaburun Peninsula, where research is conducted on a regular basis.

## Acknowledgements

We are most grateful to Ms. Lenie Hart, director of the SRRC, and Dr. Lies Vedder, former veterinarian at the SSRC, for assisting us in the training of our team members in seal rehabilitation. We also thank Dr. Peter J.H. van Bree and MOm – the Hellenic Society for the Study & Protection of the Monk Seal, for providing us with additional literature for this article. We are also grateful to Ms. Arda Okur for the translation of the early draft of the document, and to W.M. Johnson for his constructive criticism.

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## Letters to the Editor

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### Monk seal parasite

I am wondering if you have heard that *Toxoplasma gondii*, a parasite carried by domestic cats, has been found in Hawaiian monk seals. Toxoplasmosis has been implicated in the decline of southern sea otters off California, but I have not heard of it in relation to Hawaiian monk seals. However, I have received an inquiry – I was hoping you could clarify the situation.

Naomi A. Rose, Ph.D., Marine Mammal Scientist, Wildlife and Habitat Protection, The Humane Society of the United States.

✓ Bud Antonelis, Chief, Protected Species Investigation at the NMFS Honolulu Laboratory, replies:

*Toxoplasma gondii* is a single-celled protozoan that can infect many if not most mammals. The work by Melissa Miller with *Toxoplasma* and sea otters in California is well known to us. We also understand that the disease has been found in several free ranging wild dolphin species as well as many terrestrial mammals. It is also well known that *Toxoplasma* can be transmitted by a number of known and unknown vectors including cats, rodents, and birds.

In regard to wild Hawaiian monk seals, we have had an ongoing epidemiological survey for a number of potential diseases (including *Toxoplasma*) since 1998. We have also done necropsies and histopathology on almost every monk seal carcass recovered since the early 1980s. Thus, *Toxoplasma* has been evaluated as a potential pathogen as part of our routine epidemiological investigations. Serological testing, using the modified agglutination test (MAT) at the National Veterinary Disease Laboratory in Ames, Iowa; has only resulted in two positives from a sample size of more than ten percent of the population. Both were low titers, indicating possible exposure to *Toxoplasma gondii* or other cross reacting antigen(s). The samples were collected from two females that have been observed for five years subsequent to sampling and no apparent clinical or reproductive signs of abnormality have been detected. One female has given birth each year since 1990 and the other has given birth each year except one since 1998. Both females were observed during the 2002 field season and appeared to be normal and healthy. Judging from the condition and reproductive success of these females, we do not consider the low titer values to be indicative of disease. Both females will be carefully observed again during this field season.

Finally, our ongoing histological and necropsy evaluations have on a few occasions identified another protozoan called *Sarcocystis*, but we have not found *Toxoplasma* or pathology associated with it. We have considered the threat of toxoplasmosis to the monk seal population and we will continue to survey Hawaiian monk seals for this potential pathogen. Fortunately, we have found no significant evidence of disease from this potential pathogen in any of the subpopulations.

### Congrats for Cabo Blanco

In the last issue of TMG, I was very pleased to read about the metamorphosis underway on the Cabo Blanco peninsula [Conservation Actions on the Cabo Blanco Peninsula – A New Approach, TMG 5(2): November 2002], with conservation and management now taking precedence over pure scientific research and monitoring of the monk seal population.

Monk seal conservation cannot succeed without local participation and support. It is also important for locals to understand that conservation of monk seals is not an exclusive issue but involves many other ecological or environmental problems that face them on a daily basis.

At least in areas where habitat destruction is not a major force, the main problem issue facing both seals and humans is fisheries-related – as seen on the Cabo Blanco Peninsula, Mauritania and the Cilician Basin, Turkey.

With better management of local fish stocks – such as the establishment of No-Fishing Zones and proper guarding – and capacity building among local groups or cooperatives of artisanal fishermen, conservation of monk seals is inevitably given a better chance of success.

In this context, I am very happy to see the positive conservation results achieved by [Fundación CBD-Habitat](#) on the Cabo Blanco Peninsula, Mauritania. I would like to congratulate all their staff for their hard work.

*Harun Güçlüsoy, [SAD-AFAG](#), Foça, Turkey.*

### Where are our hard copies of TMG?

Are the hard copies of The Monachus Guardian 2001 and 2002 available? You already kindly sent me the 1998, 1999 and 2000 editions; I'd like to receive the subsequent issues as well. Let me know if any subscription must be paid.

*Claudio Groff, Italy*

✓ **Editor's reply:** Unfortunately, budget cutbacks have prevented us from publishing the annual TMG compendium (hardcopy) which used to include each year's May and November issues (the last compendium was Vol. 3, 2000).

Although hardcopy publication has been suspended, readers of TMG may be interested to know that each issue can be downloaded either from its Contents page or from the [Monachus Library](#) as a single (Acrobat PDF) file, making it easier to print-out at home or in the office.

### Keep on publishing (3)

I'm working at the Permanent Secretariat of the Commission on the Protection of the Black Sea Against Pollution as an in-kind support from the Turkish Ministry of Environment.

While reading the Mediterranean Seal Research Group [\[AFAG\]](#) Bulletin, I saw an article written by Mr. Cem Kirac [concerning TMG]. In this respect, I would like to voice my support for the continuation of your publication. I think that it is so important to protect marine and coastal zones and the Mediterranean seal.

*Suna Gurler, Expert, Ministry of Environment, Ankara, Turkey.*  
web: [www.blacksea-environment.org/](http://www.blacksea-environment.org/)

### What about pollution?

Do you look systematically at factors that may afflict the endocrinological system of the seals (levels of pesticides and hormone disruptors etc.) and make them more vulnerable to secondary disease? When reading "Our stolen future" it occurred to me that there may be more connections than meets the – more focused disciplinary – eye...

*Cornelia Nauen, Senior Scientific Officer, Research Directorate General, European Commission, Brussels, Belgium.*

✓ **Editor's reply:** Scientific studies on the effects of pollution on the physical well being and reproduction of the Mediterranean monk seal are few and far between, even though pollution (mainly in the form of petrochemicals and heavy metals) has long been cited as a possible factor in the decline of the species. A thesis by Angeliki Dosi in 2000 [Available in the [Monachus Library](#)] looked at the incidence, from limited samples, of heavy metal contamination in the blubber and skin of monk seals originating from Greece, but found little cause for alarm – possibly because the Aegean is reputed to be one of the cleanest areas of the Mediterranean. On the other hand, we know of no study that has ever sought to identify the possible effects of hormone disrupters on the endocrinological system of the seals. Although such studies would probably be welcome, experience shows that human disturbance, habitat destruction and direct killing are likely to remain the single most important factors governing the decline of the monk seal.

## Lefkada sighting



We have just had a very good sighting of a monk seal here in our area. We sighted the seal at 15.45 on 8th of May. The location was close to Nidri on the Island of Levkas [Lefkada, Ionian Sea], Greece. I wish to log the sighting and attach two photos taken by one of our clients. Our company is [Unique Excursions](#) and we run marine tours teaching people about the local marine life in the area.

I hope you can use the sighting for your records.

Steve Clarke-lens, Unique Excursions, Lefkas, Greece.

## Aristotle right or wrong?

I am a professor of Classics at Freiburg in Germany and I am working on a commentary on Aristotle's book *De partibus animalium*. Aristotle gives very good information about *Monachus monachus*, but also makes one observation which is doubtful. He claims that this seal does not possess a gall-bladder.

Could you tell me whether this is correct or not?

Prof. Dr. Wolfgang Kullmann, Freiburg, Germany.

✓ **Editor's reply:** Aristotle's observations of monk seal behaviour and anatomy were generally accurate. However, he erred in describing the monk seal as having 2 rather than 4 teats, and in reporting that the seal does not possess a gall bladder.\* The latter error is somewhat mystifying, particularly since there is reason to believe that Aristotle studied monk seal anatomy on the dissection table, and that (at least according to later writers), seal gall was a valued commodity in medicine.\*\*

For a reference on the presence of a gall bladder in the seal, consult (page 171, under "Liver"): King, Judith. 1983. *Seals of the World*. British Museum (Natural History) & Oxford University Press, London & Oxford: 1-240.

For further information on monk seals and their role in the history, culture and economy of the ancient world:



Johnson, W.M., & D.M. Lavigne. 1999. Monk seals in Antiquity. The Mediterranean monk seal (*Monachus monachus*) in ancient history and literature. Mededelingen 35: 1-101. The Netherlands Commission for International Nature Protection.

Publisher's information on the title is available at: <http://www.euronet.nl/users/backhuys/boekmonk.htm>.

View [abstract](#).

\* "There is no gall-bladder in the seal, nor (among sea-animals) in the dolphin" (*On the Parts of Animals*, 676b, 28-29).



\* "Some animals have, and some have not, a gall-bladder up against the liver. The deer is an example of a viviparous quadruped which has none: other examples are the roe, the horse, the mule, the ass, the seal, and some kinds of pig" (*Historia Animalium*, 506a, 21-25).

\*\* "The seal... gets rid of its gall, which is useful for many drugs, by vomiting it up, and also its rennet, a cure for epileptic attacks; it does this because it knows that it is hunted for the sake of these products" (Pliny, *Natural History*, VIII.111).

**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

- **Adam, P.J. and G.G. Garcia.** 2003. New information on the natural history, distribution, and skull size of the extinct (?) West Indian monk seal, *Monachus tropicalis*. 2003. Marine Mammal Science 19 (2): 297-317.
- **Marine Mammal Commission.** 2003. Hawaiian monk seal (*Monachus schauinslandi*). Pages 79-95 in Chapter III, Species of Special Concern, Annual Report to Congress, 2002. Marine Mammal Commission, Bethesda, Maryland. [Available in the [Monachus Library](#)]
- **Pastor, T. and A. Aguilar.** 2003. Reproductive cycle of the female Mediterranean monk seal in the western Sahara. Marine Mammal Science 19 (2): 318-330.
- **Wallace, R. L.** 2003. Social Influences on Conservation: Lessons from U.S. Recovery Programs for Marine Mammals. Conservation Biology 17 (1): 104-115.

### Web publications, presentations & reports

- **Gucu, G. and A. C. Gucu.** 2003. Is ecotourism an appropriate tool to ensure sustainable Mediterranean monk seal conservation in the Cilician Basin, Turkey? Evaluation report of the experimental Eco-tourism application in Bozyazi – Mersin. Middle East Technical University Institute of Marine Sciences: 1-33. [Available in the [Monachus Library](#)]
- **KAHEA.** The Hawaiian-Environmental Alliance. 2003. The Hawaiian monk seal: On the verge of extinction [Brochure]: 1-2. [Available in the [Monachus Library](#)]
- **KAHEA.** The Hawaiian-Environmental Alliance. 2003. Northwestern Hawaiian Islands. Spring 2003 Factsheet: 1-4. [Available in the [Monachus Library](#)]
- **MMC/NMFS.** 2003. Workshop on the management of Hawaiian monk seals on beaches in the Main Hawaiian Islands. 29-31 October 2002, Kauai Sheraton Resort Koloa, Kauai, Hawaii. Cosponsored by Marine Mammal Commission, National Marine Fisheries Service, Hawaii Division of Aquatic Resources. Final Report, January 2003: 1-58. [Available in the [Monachus Library](#)]
- **Parque Natural da Madeira.** 2003. Help us to help the monk seal. English brochure and sighting register: 1-2. [Available in the [Monachus Library](#)]
- **Salman, A., M. Bilecenoglu, and H. Güçlüsoy.** 2001. Stomach contents of two Mediterranean monk seals (*Monachus monachus*) from the Aegean Sea, Turkey. Journal of the Marine Biological Association of the United Kingdom, 81 (4): 719 - 720. [Now available in the [Monachus Library](#)]

### In press

- **Güçlüsoy, H. and Y. Savas.** Status of the Mediterranean monk seal (*Monachus monachus*) in the Foça Pilot Monk Seal Conservation Area, Turkey. Zoology in the Middle East.
- **Güçlüsoy, H. and Y. Savas.** Interaction between monk seals (*Monachus monachus* Hermann, 1779) and marine fish farms in the Turkish Aegean and the management of the problem. Aquaculture Research.

TMG thanks Alexandros Karamanlidis for his help in compiling this listing



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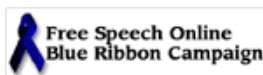
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