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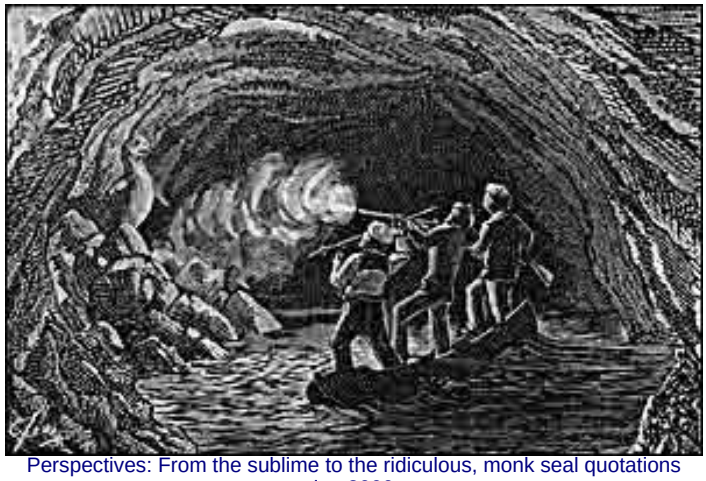
Guest Editorial: Thoughts from Las Cuevecillas – science & conservation at the legendary monk seal colony at Cap Blanc

Cover Story: Protected areas, or death traps? Monk seal pups become entanglement victims in Turkey


Perspectives: From the sublime to the ridiculous, monk seal quotations spanning 3000 years

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Guest Editorial

Vol. 4 (1): May 2001

THOUGHTS FROM *LAS CUEVECILLAS*

Luis Mariano González

I'm starting to write these lines sitting on the edge of a cliff, from where I can see a small group of seals playing placidly in the water below. I'm in the spot known as *"Las Cuevecillas"* in the legendary Mediterranean monk seal colony on the *Cabo Blanco Peninsula*. This remote and isolated location in Africa, where the sea and the Sahara desert merge, is the only place in the world where you can watch herds of monk seals and swim alongside them without their getting alarmed. Despite the ten years I have been coming to this spot, I still marvel at and enjoy this spectacle just as I did on the very first day. It is a paradise for those of us who work with monk seals. Nevertheless, it is a paradise with a dark side, as life here is hard, without Western comforts, and the desert, sea and surroundings are particularly dangerous.

As I reflect on all these years of work with the seals and, above all, on how far we have come, some recollections and impressions come to mind. Committing them to paper may, perhaps, help to save this species from its dismal destiny.

It is moving to recall my first sightings of monk seals around 1981 on the north African coast, the *Chafarinas* islands and *Alhucemas*. At that time, I used to cover the Spanish and Moroccan Mediterranean coastline, investigating the monk seal's status in the region and logging the process of its extinction in Spain. I was fortunate enough to see the last remaining specimen in Spanish waters. After interviewing almost a thousand people who live from the sea, mostly fishermen, we got the impression that the monk seal was greatly hated and much persecuted, and that the public at large knew little about it and cared even less. We also confirmed that the scientific world had very little information on its biology. Shortly afterwards, with the aim of improving the conservation status of the species in the region, we started working with the surviving population on the Mediterranean coast of Morocco, setting ourselves the dual aim of advancing knowledge of its biology and trying to change people's hostile attitudes towards it. Although they helped somewhat, the publicity and awareness-raising campaigns did not manage to improve its status. And so, after several years, things were just as they had been at the beginning, and the species was going from bad to worse. Given the seals' elusive behaviour and their low numbers, any chances of meeting our first objective were soon frustrated. Most sightings were sporadic and fleeting, and the information we did manage to obtain came from cases of seal deaths and from legends and stories.

Local fishermen pointed us in the direction of the large colony in the Sahara, insisting that there was nothing to be

done in the Mediterranean. Although we had occasionally toyed with the idea, the news that had been reaching us from there since the seventies was worrying; the colony had been going through really bad times. The lack of protection on land was evidenced by the case of a Frenchman who boasted of having shot no less than twelve seals from the cliffs, and by the continued trade in pups that ended up in some godforsaken aquarium or circus. What's more, the colony continued to suffer disturbance from tourists and the merely curious, who arrived frequently there from the nearby town of *Nouadhibou*.

The situation at sea was similar. Both deep-sea and inshore fishing were intensive and carried out abusively and uncontrollably, using all kinds of fishing gear. There was often news of accidents, with seals getting entangled in nets and lines.

When war hit the region at the beginning of the eighties, the situation changed radically. The colony and its terrestrial surroundings became inaccessible by land, fishing came to an almost complete standstill and, enjoying a period of calm and plentiful food, the seals slowly began to recover. After 1988, however, the flow of news from the colony was interrupted when the only research team able to reach it and occasionally report on its status, perished in a land mine explosion. That incident, bringing about the death of Didier Marchessaux and his colleagues, resulted in the entire area being put strictly off-limits. The entry ban was a cause for concern since no one was keeping an eye on the colony; nor was there any information about what was happening to it.

In May 1992, I finally made it to the Saharan colony. We managed to land and observe the first seals at the *Cabo Blanco Peninsula*. A large adult was resting, unconcerned, on one of the beaches below the cliffs. Then, in March 1993, we reached the cliffs of the breeding caves of *"las Cuevecillas"* to the north, and within the war zone. No one had been back there since the accident involving the French researchers. That day, the world of the monk seal changed radically for me. I do not remember the exact number of seals we saw that day, but there must have been over a hundred. Everything we set eyes on – the seals, the force of the waves breaking against the coast, the desert merging with the sea and the shapes of the imposing caves – made an impression on us. We could hardly believe what we were seeing, and of course none of us who were there on that memorable day was able to sleep that night. Past frustrations suddenly evaporated.

But it was not the paradise we had dreamed of. Although we had many seals in our sights – an idyllic vision for any "seal-watcher" – the barriers that had kept this colony "safe" soon started to present themselves to us. Some, such as the presence of mines left over from the war, were to be taken very seriously. Working in that area not only alarmed us, it also involved enormous restrictions on our movements and our capacity to explore. After several years we set up a base camp and managed to "clean up" a nearby strip of land located on the cliff top above the breeding caves to enable us to work; to go any further, however, is still too risky. News occasionally reaches us of fishermen who have seen a seal in a cave north of our camp (in fact, in the seventies and eighties, two caves were occupied by seals in that northern zone) and we have made exploratory expeditions. But the tension of walking several kilometres at an agonisingly slow pace, carefully placing one foot in front of the other in the tracks of a donkey specially kept for that purpose, leads to mental exhaustion, especially when we pass-by the graves of the French team and the remains of their four-wheel drive vehicle, or when we come across a mine. The tension is so unbearable that we seldom do it. The feeling of being trapped in such an "open" place as the desert is not at all a pleasant one.

The caves and the sea present other barriers. The seals pup and rear their young on beaches inside spectacular caves that have been gradually hollowed out by the sea. Not for nothing is the force and impressive height of the waves that pound the coast so well known among local people. Once we had overcome the most difficult part of getting *to* the colony, we then had to find out, from the cliff, what was going on *inside* the caves. After a lot of arduous work, we set up an observation post consisting of a climbing chair, known in jargon as a *"guindola"*, suspended from the cliff face opposite the cave. From there, the seated observer can see inside the adjacent caves without disturbing the seals. You can imagine how difficult it was to make observations in those conditions. We also decided to install remote-controlled cameras. One thing being theory and another practice, you can imagine the fuss we had to go through to set it all up. We finally managed it, although it took us almost a year. It was necessary to open up special paths on the cliff, insulate and prepare the cameras well, and find a special rustproof material for the anchoring equipment, similar to that used in ship building, and many other things besides. The experience brought home to me the importance of logistics as most of our time, effort and money went into it. In the end, on a memorable day in March 1994, comfortably seated in camp, we pressed the button on the monitor and, lo and behold, there were the seals, asleep on the beach and pups, playing before our very eyes. Handling the zoom and direction controls, we never tired of watching and recording them. We finally felt we were penetrating the secret and mysterious world of the monk seal.

In the years that followed, the camp witnessed intense and frenetic activity. We studied everything; as there was so little information available on the species to start with, working was a pleasure. Almost everything we studied yielded surprises and new data. Apart from being the first to witness a birth, we discovered, contrary to what had previously been thought, that males and females, both adults and pups, differ in their external appearance. We also ascertained the duration of sexual maturity and gestation in the species and discovered that mothers feed during lactation and that the young suckle from several mothers. And there were many other discoveries besides.

But this whole glorious period of a flood of discoveries was cut short with the now notorious mass die-off that ravaged the colony in 1997. In less than a month, a massive proliferation of toxin-producing microalgae killed off two thirds of the colony. The toxins probably reached the seals through the fish they ate. It went on for two long, hard months. Imagine what it is like to have to count, day after day, the corpses of the seals washed up in the caves and on the beaches – as many as one hundred and ten. Some of these individuals were well known to us as we had been observing them for years.

After the die-off things changed. With our rucksacks full of data on the species' biology, we had met our goal of dispelling the scientific ignorance surrounding the monk seal. But, although hard to believe, the colony is currently in an even more dramatic and worrying predicament than it was before. With the return of peace to the region, fishing has slowly started to intensify and local people in Nouadhibou, which has grown spectacularly in recent years, are beginning to colonise what has, until now, been the seals' own wild coast. In other words, the tranquillity and abundant food resources that once allowed the colony to recover are disappearing.

To make matters worse, the seal is also confronted now with enemies in its natural environment. Fishermen who come into contact with the seal will often try to kill the animal given the chance; most would probably be glad if it disappeared forever, and others are at best indifferent to its fate. The few friends that the seals do have are not generally local people – they are people like us, town- and city-dwellers. Those who encounter the seals on a daily basis, on the other hand, are unwilling to make sacrifices that would cut into their profits, such as giving up fishing in certain areas, abandoning the use of specific types of fishing gear or keeping their distance from the colony, all for the benefit of an animal they often regard as an annoying competitor. They have made their opinions abundantly clear to us.

So, with all this in mind, we set to work trying to find a solution that would ultimately assist both locals and seals. In so doing, perceptions of the species might begin to change for the better. One promising avenue is to associate the monk seal and its conservation with specific and tangible benefits, for example, by investing some conservation project funds in improving the poor living standards of artisanal fishermen and their families. In exchange for such support, the fishermen would agree to comply with certain ground rules, such as no-fishing exclusion zones around the colony, restrictions on the types of fishing gear deployed, and agreement to provide information on accidental entanglements etc.

The first phase of this social assistance programme is now already underway, and includes the provision of basic marine safety equipment for the fishermen's boats, training them in safety at sea, and building a market where they can sell their catch in the city. These measures are, of course, accompanied by an environmental education and awareness-raising campaign that seeks to relate them to the world of the monk seal.

This new programme, devised and executed by the *Fundación CBD-Hábitat*, is sponsored by Spain's Ministry of the Environment, the *Fundació Territori i Paisatge* and *Euronatur*. If all goes well, it may represent an important turning point in conservation strategies to save the monk seal.

I have the impression that the seals of *Las Cuevecillas* are starting to make more friends than before (interested parties, admittedly, but when all is said and done, still friends). More important still, they are also beginning to have fewer enemies. The colony may recover again, as happened during the war years, but this time because of a heartfelt change in people's attitudes towards the species – a profound shift in opinion that is likely to prove far more enduring.

Luis Mariano González, April 2001

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International News
Vol. 4 (1): May 2001

Obituary: Théodore Monod

Respected French biologist, geographer and environmentalist Théodore Monod died at a nursing home in Versailles on Wednesday 22 November 2000 at the age of 98.

From 1939 to 1965 he directed the Institut Francais d'Afrique Noire in Dakar, Senegal, from where he undertook long expeditions into the Sahara, studying the desert's fauna and flora. In the former Spanish Sahara (now the disputed western Sahara), he was the first scientist to undertake a detailed study of the Coast of Seals (Côte des Phoques). Between 1923 and 1948 he produced several monographs on the monk seal colony's status, history and exploitation.

Associated Press portrayed him as a "tireless traveler who found spiritual and psychological strength from the desert… a vegetarian [who] once trekked 1,000 kilometers (600 miles) in the Sahara without a single watering hole to prove he could exert himself physically without eating meat."

He was appointed to France's Academy of Sciences in 1963.

Aside from gaining international renown for his knowledge of the desert, Monod will also be remembered as one of the most outspoken advocates of his day for conservation and animals. In his 1932 monograph on the monk seal, he wrote: "One has to hope that the necessary actions will be undertaken to prevent the total disappearance of these fascinating mammals, threatened, like so many other species, by the harmful stupidity of man."

Despite advancing years and failing health, he nevertheless lent his support to the ultimately successful 1994 campaign spearheaded by the International Marine Mammal Association and the Bellerive Foundation to prevent Mediterranean monk seals being captured in the western Sahara by Antibes Marineland, a French marine circus.

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France peddles lost cause

Following a long tradition in peddling the lost cause of Mediterranean monk seal captive breeding, France raised that controversial issue yet again at a recent RAC/SPA meeting in Valencia, Spain.

Under the auspices of the United Nations Environment Programme, and as one of those multiple, hydra-like appendages of the Mediterranean Action Plan, RAC/SPA (Regional Activity Centre for Specially Protected Areas) was convening its Fifth Meeting of National Focal Points for SPAs (Valencia, 23-26 April 2001).

Agenda item 8b was to focus on the UNEP "Action Plan for the Management of the Mediterranean Monk Seal" [see Further Reading, below], as part of an assessment of RAC/SPA's progress in implementing its objectives.

When the French spectre of captive breeding re-materialised, to the shock of all those who had considered it long dead and buried, the RAC/SPA secretariat insisted that a working group be established to debate its merits.

Animated discussions dominated the subsequent conclave. To most observers, it will come as no great surprise that the ghost of captive-breeding-past came in the guise of Port Cros. The French marine park has been angling for captive bred monk seals since at least 1986, usually in partnership with Antibes Marineland, a French marine circus.

Developments at Valencia suggest that few lessons have been learnt from the captive breeding fiascos that engulfed Antibes Marineland and the French authorities in 1990 and 1994. Indeed, the apparent resurrection of the Port Cros plan was enough for the representatives of Greece and Turkey to express alarm and to contact their respective advisors at home for consultations.

The proponents of captive breeding are reported to have justified their views with the same tired clichés used in their previous campaigns, apparently oblivious to recent history or current events. Central to the pro-capture argument is that monk seals continue to decline despite the great efforts expended to save them in their natural habitat. It is here that inaccuracy and selective interpretation creates the myth. There are, however, several indisputable facts that are unflattering to the captive breeding cause, among them: (1) In areas where properly-managed reserves have been established, monk seals *are* staging a recovery. (2) While the vulnerability of the Mauritania/Western Sahara colony has always played into the hands of the pro-captive camp – not least of all because of political instability – a comprehensive Regional Recovery Plan enlisting the range states is now almost ready for implementation. (3) Those captive breeding fans who claim that *in situ* efforts are failing are, virtually without exception, the same people who have never lifted a finger to help *Monachus monachus* survive in the wild.

According to reports received before we went to press, the RAC/SPA-appointed working group eventually concluded that it had insufficient information at its disposal to render judgement on the complex issues of captive breeding and translocation. Although it was agreed that the species continues to decline, the majority view was that *in situ* protection still holds the best chance of preventing the monk seal's extinction. Greece and Turkey, in particular, expressed their strong opposition to captive breeding. Other countries – Tunisia, Morocco, Albania and Italy – while voicing opposition for now, also expressed the view that scientific research is required to further the aims of artificial recolonisation of the species – most notably through translocation. According to some reports, Croatia indicated its support for the French argument. At the plenary session, Monaco called for the establishment of an expert group that would design a programme of emergency measures, with a fixed timetable and assigned responsibilities – a potentially ominous development.

The RAC/SPA secretariat's bias towards captive breeding has never been much of a secret. More difficult to explain, however, is why a supposedly neutral institution should behave like a dog with a bone when it comes to such a controversial issue.

While captive breeding is listed as a possible measure in the UNEP Action Plan, it is explicitly cited as an option *only* if "all other attempts to reverse the species' decline fail." This may offer some explanation for the habit of pro-captive breeders to paint routinely *in situ* conservation efforts in a negative light.

More recently, captive breeding and other invasive procedures have played a far more prominent role in RAC/SPA documents, a development that probably owes more to the self-serving interests of individual bureaucrats than well-reasoned scientific debate. Indeed, throughout the rather sordid history of monk seal captive breeding, proponents have consistently treated open debate and scientific review with a mixture of apprehension and suspicion.

The historical record also suggests that the breeders appear to be suffering from a bout of collective amnesia:

- During November 1990, over forty prominent marine mammal scientists signed a 'Statement of Concern' calling for the first captive breeding attempt by Marineland/Port Cros to be postponed pending comprehensive review by the IUCN Seal Specialist Group and the wider scientific community.

- During September 1994, over forty prominent marine mammal scientists signed a 'Statement of Concern' calling for the second Marineland/Port Cros captive breeding attempt to be postponed pending review.

- During 1995, over 70 key scientists and conservationists endorsed the Mediterranean Monk Seal Conservation Guidelines (based on conference resolutions spanning some 20 years of informed debate), an entire section of which is devoted to captive breeding.

Captive breeding aside, it remains unclear what progress, if any, RAC/SPA has made in fulfilling the legitimate objectives required of it under the terms of the Action Plan. Among other priorities, the Plan calls for the creation of a network of reserves, non-disturbing scientific research, an international information campaign, and fund-raising initiatives.

We hope to provide further details of the RAC/SPA assessment in our next issue.

Meanwhile, a free copy of the book Monk Seals in Antiquity and a free Monachus.org bookmark will be sent to the first 20 readers who can identify tangible RAC/SPA progress in implementing the 1987 monk seal Action Plan.

Further reading

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✔ **Editor's note:** Limited numbers of the Johnson & Lavinge publications cited above are still available in hardcopy form. Please write to the librarian@monachus.org if you wish to obtain a copy.

Rampant tourism will destroy Mediterranean, warns WWF

As representatives of the travel and leisure business gathered in Berlin on 1 March for the world's leading trade fair on global tourism, the World Wide Fund for Nature (WWF) issued a stark warning on the industry's negative impact on Mediterranean ecology and culture.

Of particular concern are industry projections that tourism in the Mediterranean basin is set to rise from its current level of 220 million annual visitors, to 350 million in 20 years. Believing that this will spur uncontrolled development and ecological and cultural degradation, WWF has appealed for the industry to commit itself to "responsible tourism development" and to accept that key areas should be set aside for the conservation of biodiversity.

There is little sign as yet, however, that the industry will pay much heed to such appeals. Although cognisant of its role in the decline and regional extinction of the monk seal, the industry has so far conspicuously refused either to acknowledge its responsibility or to become a constructive partner in the conservation process. Mass tourism remains a clear and present danger to the monk seal, particularly in the last strongholds of the species in the eastern Mediterranean, destroying habitat through haphazard coastal construction and driving the animals away from even remote refuges through harassment and disturbance.

Analysing WTO (World Tourism Organization) statistics in a separate briefing document, WWF warns that, of the Mediterranean's total 46,000 km of coastline, 25,000 km is already urbanised and has "exceeded a critical limit." [WWF projection maps of the Mediterranean, comparing the impact of tourism activity in 1995 with anticipated impact in 2005, are available online at: www.panda.org/resources/publications/water/mediterranean/medpo_down.htm.]

International tourist arrivals in 1999 (excluding domestic arrivals) totalled 219.6 million, a 4.7% increase over 1998 figures. Projections indicate that arrivals may swell to 350 million by 2020. Receiving almost one third of all international income derived from tourism, Mediterranean tourism receipts totalled 131.8 billion U.S. dollars in 1999. "Over the last three years," declares WWF, "two thirds of the income returned to the hands of less than 10 tour operators from northern Europe."

The cost of setting up and maintaining a network of monk seal protected areas would be a drop in the ocean compared to such annual mega profits, but the industry has yet to demonstrate that it is willing to play any role at all in the conservation of the species.

Appeals from former UN envoy Prince Sadruddin Aga Khan and others, for the industry to become a constructive partner in the conservation process, have so far fallen on deaf ears. The World Travel and Tourism Council – the industry's business leaders forum – continues to project a green image for the public while conspicuously ignoring the plight of the Mediterranean's emblematic endangered species.

For further information:

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Source

WWF. 2001. Destruction of the Mediterranean by mass tourism poses a challenge for industry, warns WWF. Press Release, 1 March 2001. www.panda.org/news/press/news.cfm?id=221

'Ecotax' to sting tourists in Spain

Meanwhile, the Associated Press reports that the regional parliament of the Balearic Islands has approved a new 'ecotax' to be levied against visiting holidaymakers. According to lawmakers, the money raised will be reinvested in environmental protection and tourism infrastructure on Mallorca, Menorca and Ibiza, three of the Mediterranean's most popular destinations.

All visitors to hotels, hostels, guesthouses and campsites will be required to pay the daily tax (excluding children under 12), which will range from 0.5 – 2 Euros (40 cents to $1.80) depending on the category of accommodation. An initial plan to levy the tax at the airport was defeated when the Spanish airport authority refused to cooperate.

The local government hopes the tax will raise $60 million a year, to be invested in "infrastructure maintenance and environmental projects on the islands."

Mediterranean communities keen to fund alternative development projects and the management of marine protected areas are likely to be watching events closely, believing that the so-called ecotax might be an idea whose time has come.

Source

Associated Press. 2001. Spanish tourist site OKs 'ecotax'. Thursday, April 12, 2001. Environmental News Network (ENN): www.enn.com/enn-subsciber-news-archive/2001/04/04122001/ap_ecotax_43008.asp

New at the newsstands

Volume 3 of The Monachus Guardian (including Monachus Science) is now hot off the presses, with wide-ranging articles and news reports from as far afield as the eastern Aegean, the Florida Keys and Midway Atoll in the Pacific. For the first time, TMG is now in full colour, and has been printed in Switzerland using a new, filmless digital offset process. This hard copy version, intended primarily for decision makers, libraries and those unable to access the Internet, incorporates both the May and November 2000 issues. The publication is made possible by the generous financial support of the International Fund for Animal Welfare (IFAW) and the IFAW Charitable Trust (ICT).

Those wishing to be added to the mailing list should write to IMMA Inc. or contact the Librarian: librarian@monachus.org.

At your convenience

It may come as news to some readers, but this entire issue of The Monachus Guardian can be downloaded into your computer at the click of a mouse for easy off-line browsing or hard copy printing. Thanks to upgraded software, the Acrobat download file even maintains its internal hotlinks, ensuring ease of navigation.

If this makes more sense to you than staying on line or saving each page separately (yes, some people are known to do that…) then click on the link below.

All you need to view the file is the Adobe Acrobat Reader. If you do not have it installed on your system, it can even be downloaded free of charge…

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EndQuote

"Tourism infrastructure should be designed and tourism activities programmed in such a way as to protect the natural heritage composed of ecosystems and biodiversity and to preserve endangered species of wildlife…"

– World Tourism Organisation, Global Code of Ethics for Tourism

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Hawaiian News

Vol. 4 (1): May 2001

Judge issues ruling in “monk seal starvation” case

The critically-endangered Hawaiian monk seal won protection from a Federal court on 20 November, following a judge’s ruling that the National Marine Fisheries Service is violating the Endangered Species Act and National Environmental Policy Act.

In issuing a ruling in a case brought by the Earthjustice Legal Defense Fund on behalf of three environmental groups, Federal District Court Judge Samuel King found that NMFS is illegally failing to protect the Hawaiian monk seal from the impacts of two local fisheries.

The ruling was handed down despite NMFS’ efforts to avoid a preliminary injunction, and legal condemnation of a policy that has long been implicated in the starvation of Hawaiian monk seals in the Hawaiian Islands National Wildlife Refuge [see NMFS ducks judgement, TMG 3(2): November 2000]. NMFS’ earlier commitment to impose a moratorium on lobster fishing in the Northwest Hawaiian Islands was apparently deemed inadequate by Judge King.

In his ruling, Judge King found both the lobster fishery and a segment of the bottomfish fishery to be in violation of the Endangered Species Act and National Environmental Policy Act. He issued an injunction halting the lobster fishery until NMFS completes an analysis of its impact on the monk seals under the Endangered Species Act. NMFS was also ordered to complete an environmental impact statement.

The largest monk seal breeding colony at French Frigate Shoals, the court heard, declined by 55 percent during the 1990s, with juvenile seals starving because of lack of available prey.

Foraging Hawaiian monk seal

Judge King also ruled that NMFS had been violating the Endangered Species Act by permitting the bottomfish fishery to operate regardless of its impact on the Hawaiian monk seal. Evidence was presented implicating the industry in hooking seals, feeding seals unwanted fish containing ciguatera toxin, and even bludgeoning monk seals. Despite such evidence, NMFS had made no effort to station observers on bottomfish fishing boats.

The plaintiffs in the case – Greenpeace, the Center for Biological Diversity and the Turtle Island Restoration Network – expressed satisfaction with the ruling. Finding particular praise among the plaintiffs was Judge King’s implicit insistence that the precautionary principle be applied by NMFS in justifying fishing activity in the area. With detailed impact assessments now required by the court, plaintiffs expressed the view that NMFS would no longer be able to profess ignorance of environmental impacts for the sake of economic interests.

The full text of the Court’s finding is available for download in the Monachus Library:
United States District Court. 2000. Order granting in part and denying in part plaintiffs’ motion for summary judgement, granting in part and denying in part defendants’ cross-motion for summary judgement, and granting in part plaintiffs’ motion for a permanent injunction. 15 November 2000: 1-43.

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“Living rainbow” may benefit monk seals

Seeking to bolster his shaky environmental legacy, outgoing U.S. President Bill Clinton set aside a huge swathe of Hawaiian ocean by executive decree on 7 December, effectively creating a marine preserve half the size of Texas. The Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve, as it is officially known, is the single largest protected area ever created in the U.S., and is designed to safeguard fragile coral reef habitat along the 1,930 km (1,200 miles) Leeward chain formed by the remote Northwestern Hawaiian islands. The area, which encompasses the Hawaiian Islands National Wildlife Refuge, is the principal habitat of the endangered Hawaiian monk seal (*Monachus schauinslandi*), which is thought to be declining by about 5% a year.

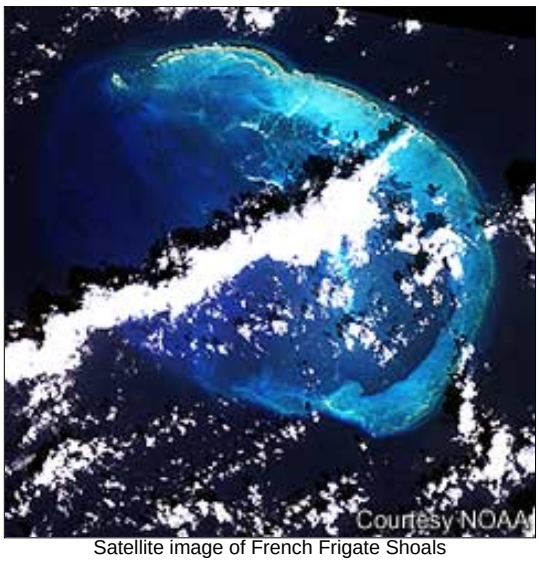
“This area is a special place where the sea is a living rainbow,” Clinton declared in his announcement, claiming that the reserve would establish a new global standard for the protection of coral reefs and marine wildlife.

According to the U.S. National Oceanographic and Atmospheric Administration (NOAA), the reserve officially came into being on 18 January 2001, following the required 30-day public comment period.

NOAA’s priority is now to develop the reserve’s complex operations (management) plan, and to prepare the legislative framework that will eventually designate the area as a National Marine Sanctuary.

Although the reserve surrounds Midway Atoll, it does not incorporate it. Midway is a National Wildlife Refuge, and the only island in the archipelago that permits public access. While geographically a part of the state of Hawaii, its jurisdiction falls under the auspices of the US Navy. It is currently administered in a public-private partnership involving Midway Phoenix Corp. and the U.S. Fish and Wildlife Service.

In recognition, perhaps, of administrative problems posed by the multi-layered bureaucracy, President Clinton’s Executive Order calls for “coordinated management” between the new Reserve, the Hawaiian Islands National Wildlife Refuge, the Midway Atoll National Wildlife Refuge, and the State of Hawaii.



Satellite image of French Frigate Shoals

Although it is too early to judge whether the new Coral Reef Ecosystem Reserve will have any tangible effect upon the conservation of the monk seal, it will spell stricter environmental controls:

- Oil, gas and mineral exploitation will be banned.
- While native Hawaiian subsistence fishing and cultural pursuits will be allowed to continue, commercial and recreational fishing will be restricted.
- Removal of coral will be prohibited.
- Dumping, dredging and anchoring over living or dead coral will be banned.
- Stricter regulations will apply in 15 special Reserve Preservation Areas.

In what might be interpreted as a rebuke to controversial National Marine Fisheries Service actions in the area – most notably the agency's decision to maintain fishing pressure despite monk seals dying of starvation – the Presidential Executive Order clearly emphasises a commitment to the precautionary principle:

> "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 given activity, to the extent not contrary to law."

Reserve Preservation Areas, which account for some 4.8% of the entire sanctuary, are to impose stricter regulations than in other sectors. They incorporate most Hawaiian monk seal habitat in the NWHI, including Nihoa Island, Necker, French Frigate Shoals, Laysan, Lisianski, Pearl and Hermes Atoll and Kure.

However, while the Executive Order states that no commercial or recreational fishing will be permitted in the 15 Reserve Preservation Areas, there are eight exceptions. At Nihoa Island, Necker, Gardner Pinnacles, Maro Reef, Laysan, and Lisianski, it is stipulated that the controversial bottomfish fishery may continue at current levels under specific depth restrictions, pending review and comment.

Following consultations within the Reserve Council – an advisory body established to reflect diverse opinions on the conservation and management of the area – commercial and recreational fishers were reported to have gained some relief from restrictions which originally sought to cap fishing activity at current levels. As implied earlier, it remains to be seen whether the precautionary principle will be applied with the no-nonsense rigour with which it was originally intended, or whether managers will spend years fudging and redefining its meaning.

Further reading

The **NOAA** web site dedicated to the new reserve: Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve.

In the Monachus Library:

Federal Register. 2000. Vol. 65, No. 236. Executive Order 13178 – Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve. Thursday, December 7, 2000: 1-9.
NOAA. 2001. Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve. Overview.
NOAA. 2001. Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve. Questions and Answers.
NOAA. 2001. Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve Executive Order. Summary.

Open for comment

In a related development, on 5 January 2001 the Western Pacific Regional Fishery Management Council released for public comment a Draft Fishery Plan (DFP) and a Draft Environmental Impact Statement (DEIS) for Coral Ecosystems of the Western Pacific Region. According to an accompanying memo signed by Executive Director Kitty Simonds, the FMP proposes, among other measures, to "designate marine protected areas, including no-take reserves and areas zoned for specific fishing activities with a special permit" and to "specify the use of selective, non-destructive gears and methods for harvesting."

The DFP, which comes in the wake of harsh judicial criticism of NMFS fisheries policy in the NWHI [see Judge issues ruling in "monk seal starvation" case, above] purports to be the first ever ecosystem-based fisheries plan developed in the United States, aiming at "sustainable use" of fragile coral ecosystems.

Implementation of the Plan is envisaged for the Western Pacific Exclusive Economic Zone, including the NWHI. It is not known, as yet, how any of the possible Marine Protected Areas discussed in the DFP would dovetail with Reserve Preservation Areas stipulated under the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve. In December, according to the Honolulu Star-Bulletin, Clinton's plans to establish the Reserve were being "viewed with apprehension by the Western Pacific Regional Fishery Management Council."

Executive Director Simonds was quoted as saying that if the reserve "impacts fisheries in any way, the Council probably won't be able to support it."

Further reading

Honolulu Star-Bulletin. 2000. NW Hawaii preserve brings mixed reactions. Tuesday, December 5, 2000. http://starbulletin.com/2000/12/05/news/story6.html.
Western Pacific Regional Fishery Management Council. Summary. 2001. Draft Environmental Impact Statement, Draft Fishery Plan for Coral Ecosystems of the Western Pacific Region. http://www.wpcouncil.org.

Q39 returns to "Harassment Beach"

David Jordan reports from the Keanae peninsula, Maui

Q39

Monk seal RQ39 returned today (11 February 2001) to the same beach on the Keanae peninsula where she was attacked in August '98 [see The Life & Times of Q39,TMG 1(2): December 1998 and "He didn't eat the seal, did he?",TMG 2(1): May 1999]. This was her first return to that particular cove since April '99 as far as I know, and I live across the street so I check it frequently.

She looks very good, quite a bit bulkier than when I saw her last. My estimate would be 400 lbs. and 6.5 to 7 feet in length. She still has both tags. I don't think there are any new scars to report, though I did note a small (3 inch long) patch of black fur on her creamy-yellow underside, just in front of her left front flipper. [Note: Photos suggest that this is indeed a V-shaped new scar probably from a shark encounter. NMFS, meanwhile, reports that "Q39 looks healthy, like she's been finding plenty to eat, and is larger than most seals her age in the Northwestern Hawaiian Islands."]

I watched her for 4-5 hours before she returned to the water. During that time, 2 groups of visitors stopped, and I told them the Hawaiian monk seal story. They watched respectfully and left when they had had their fill. Another group of local residents also stopped and observed the seal from their car.

Three other groups of Maui residents also stopped. The first group consisted of 3 men in their late 20s, early 30s. Two of them stayed in the pull-off area (5-10 feet from the seal), while the third crawled down onto the rocks with a disposable camera until his face was probably 12 inches from the seal's face. Luckily for him, she didn't wake up.

Next was an older local man, in his 50s or 60s. He whacked on the coconut tree 5 feet from her with a stick, whistled and yelled in an effort to get her to look up for his pictures.

He was quickly joined by a possibly drunk but definitely hostile man in his mid-late 20s, driving a pickup truck disguised as a boom box with the volume on 9. He parked 10 feet from the seal and opened his door so she could hear the Rap music better. Then he got belligerent with me, ordering me to put my camera away, "where do you live?" etc…

After 5-10 minutes of Gangsta Rap, Q39 had had enough, and she and then I departed.

Q39 was still hanging about the area two days later, and someone (possibly DOCARE – the Department of Conservation and Resources Enforcement) had put Police barrier tape around her immediate vicinity. I was relieved that officialdom had noted her presence and had taken this small step to provide her with a little space to rest.

Q39 returned to her favourite Keanae beach on 11 March just in time to suffer another round of encroachment from the humans. Highlights included large groups of visitors standing next to her posing for pictures and a teenage girl attempting to pet the seal.

This harassment appeared to cause the animal to abandon the beach for the relative safety of lolling in the shore-break (a short-lived solution due to the rising tide and surf conditions) and came at a time when beach rest seemed to be critically needed: Q39 was bleeding from two puncture wounds centrally located on her ventral posterior.

Between the stories I have heard and my own observations of some of the treatment this particular animal has received from humans, gunshot wound or spear stabbing immediately came to mind, but further inspection also revealed what appeared to be a crescent shaped wound, possibly bleeding, on her left dorsal posterior. I will have to wait for the photo evidence, but at this point I surmise that a rather large shark hit from the left and behind, with the upper right jaw leaving the crescent wound just in front of the tail flippers and two lower teeth causing the ventral punctures.

If that scenario is correct, Q39 is fortunate to have escaped far more serious injuries in her latest shark encounter. She was less fortunate that her latest encounter with humans caused her to re-enter the water while still bleeding.

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Croatia

Art kids

Croatia's Mediterranean Monk Seal Group (Grupa Sredozemna Medvjedica) broadcast the conservation message far and wide during the Christmas period, distributing greeting cards that reflect the concern of children for the survival of the species. The striking and imaginative drawings were made during an art workshop for children aged 3-10 years, organized by the MMS Group to coincide with UN World Environment Day on 5th June 2000.

Several similar workshops were held as part of the Group's Education and Monitoring of the Mediterranean Monk Seal (*Monachus monachus*) project that was funded by the Croatian Ministry of Environment. – Jasna Antalovic, MMS Group.

Greece

Ten years and counting…

MOm, increasingly vexed by government foot-dragging over the administration of the National Marine Park of Alonissos-North Sporades (NMPANS) [see MOm scolds government inaction, TMG 3(2): November 2000], took the opportunity of submitting its own management proposals during a presentation to key officials of the Ministry of the Environment on 25 January 2001.

Although the NMPANS is regarded as harbouring the most significant surviving *Monachus monachus* population within the Mediterranean, MOm complains that – even though 10 years have elapsed since the establishment of the Park – the State has done little to fulfil its obligations in setting up the area's official management body.

According to MOm's proposal:

- The NMPANS Management Body (MB), established in accordance with National Law 2742/99 (which defines the legal framework of such institutions) should be based on the island of Alonissos.
- The MB's Managing Committee should be composed of 9 members with knowledge of and experience in the protection and management of the natural environment. The Managing Committee should include representation from the following central and local government sectors, and organizations: The Ministry of Environment, the Ministry of Agriculture, the Ministry of Culture, the Ministry of Merchant Marine, the District of Thessaly, the Prefecture of Magnesia, the Municipality of Alonissos, and MOm.

- A Scientific Advisory Committee (provided for in National Law 2742/99) should be established since the MB will often have to take decisions on specialised issues. It should be composed of teaching and scientific staff drawn from institutions of higher learning and research centres, as well as specialists distinguished for their work in relevant fields both in Greece and abroad.
- An estimated 16 persons are required to manage the Park on a day-to-day basis: a Managing Director, scientists specialised in the fields of biology, zoology and other relevant environmental sciences, environmental education specialists, guards, administrative support personnel and emergency/auxiliary personnel.
- While the MB should be partly self-financing – through the provision of services such as guided tours, the production and sale of merchandise etc. – state aid will be indispensable to the efficient management and operation of the Park.

The creation of the NMPANS Management Body was a key objective of a Ministry of Environment programme in 1996, that was supposed to have a duration of 14 months. Today, however, in spring 2001, the required procedures have still not been completed, and local people are inevitably beginning to lose their faith. During MOm's presentation to the Environment Ministry, both the minister and deputy minister voiced their commitment to completing the legal process that would finally confer upon the NMPANS a functioning management authority. The deputy minister was even heard to say that the creation of the Management Body is expected within 2001. MOm echoes the views of many in saying: "We are all waiting." – Vrassidas Zavras, MOm.

Guarding continues in the Sporades

Following emergency financial aid by its long-time supporter, the International Fund for Animal Welfare, MOm has been able to continue vital guarding activities in the NMPANS.

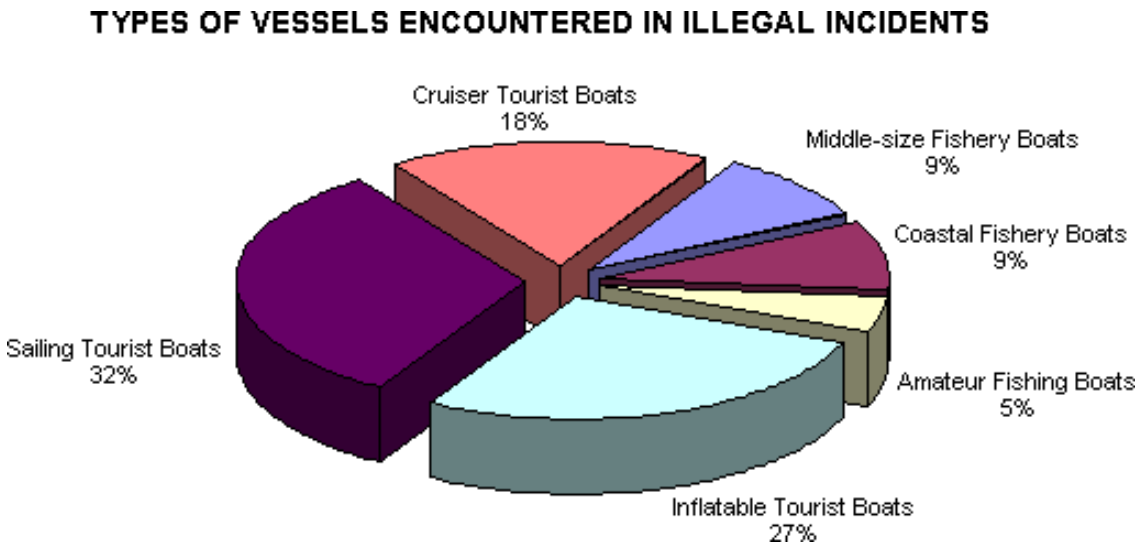
Greece's first Marine Park was established in 1992 and MOm has played an instrumental role not only in its planning and founding, but also in its organisation and operation. It has been involved in guarding activities in the area since 1990.

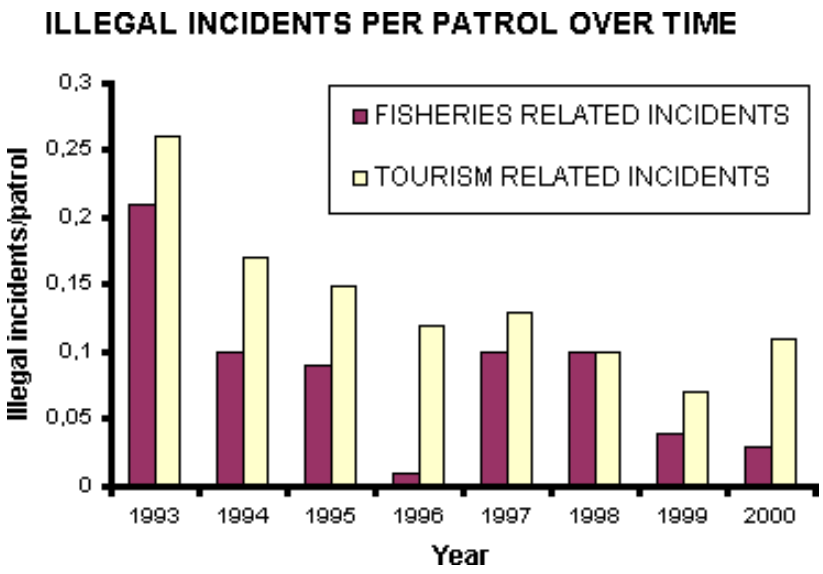
Its aims in the Park are to:

- Assist the authorities in implementing the NMPANS regulations.
- Safeguard the Park against violators, in collaboration with the Port Police.
- Monitor human activities.
- Spread the conservation message among visitors…

Taking into account that the NMPANS covers an area of about 2200 km2 and has a periphery of 180 km (with a 70 km2 core zone, where no human activity is permitted), the guarding project's operational plan is based on:

- Experienced, locally-recruited personnel, with sound knowledge of the area.
- The use of the patrol boat *Alonissos*, a 9 m fibreglass speed-boat that can reach a maximum speed of 25 knots and is equipped for both day and night operations.
- The collaboration of the Port Police authorities, responsible for taking the necessary legal action against violators.





The crew performs daily patrols throughout the NMPANS and is ready to respond to any report of a violation on a 24 hour basis. When sworn statements against violators are obtained, the team follows up the required legal procedures in court. In cases not involving illegal activities, the team approaches the boats and informs their crews about the regulations of the NMPANS.

There have been several notable achievements during the project's eight years of operation:

- Overfishing, caused by purse-seiners and trawlers, has decreased. The halting of these destructive practices directly supports the local, traditional coastal fisheries and conserves the fish stocks in the area. Other illegal activities (dynamite, night speargun fishing, etc.) have also decreased significantly.
- Deliberate killing of monk seals has not been recorded within the NMPANS since the launch of the guarding project in 1990. Furthermore, the NMPANS' critical Core Zone has been strictly protected by controlling boat traffic. Research has shown that a high percentage of the population breeds within this zone and that seal observations on open beaches have increased.
- The continuous effort to inform the public has contributed to a greater awareness and respect of the Park regulations, while the punishment of violators continues to act as a deterrent against future violations.
- MOm's guarding data recording system allows adjustment of the guarding effort to suit varying conditions, such as increasing guarding patrols during the summer, which coincides with the monk seal breeding season. This database provides essential baseline information for the effective management of the Park. – Eleni Tounta, MOm.

Record births in the NMPANS

During the winter pupping season, the crew of MOm's research vessel IFAW-Odyssia recorded twelve new seal births within the Northern Sporades Marine Park (NMPANS) area, the highest annual recording to date. The behaviour of the newborn seals was closely monitored during four follow-up visits. The health and progress of the pups has been generally encouraging and many of the newborn seals have already shed their first woolly coats (lanugo). Sadly, two of the newborn seals did not manage to survive. The first, a two-month old female seal, was sighted on the island of Piperi on 4 December 2000 and was found to be undernourished, dehydrated, hypothermic and displaying passive behaviour. Mom's Rescue Team provided it with on-the-spot first aid, mainly to deal with its dehydration. The seal's condition, however, proved irreversible and after 8 hours it died. The following day the dead animal was transferred to the Medical School of Erasmus University in Rotterdam, the Netherlands, where an autopsy was performed by Dr. Thijs Keuiken and E. Androukaki, head of the MOm Rehabilitation Unit. According to the results of the autopsy, the main cause of death was malnutrition. Pneumonia was also diagnosed, apparently induced by the inhalation of water during the seal's passive behaviour. There was no sign of any virus infection that might have endangered the remaining seal population of the Northern Sporades. The second dead seal, a male of the same age, was found in a state of decomposition on 10/12/2000 in the same area. Mom's Rescue Team diagnosed malnutrition as the most likely cause of death. According to the Scientific Coordinator of Mom, Dr. Spyros Kotomatas, these incidents, though distressing, should not be viewed with undue concern since they fall within the anticipated percentage of natural mortality. – Panos Dendrinos, MOm.

Injured seal found in Evia

An injured seal was found on the coastline of northeastern Evia in early November 2000 after completing a 27-mile journey in 48 hours. Mom's Rescue team closely monitored the large male seal for several days and was able to verify its otherwise healthy nutritional condition. It exhibited lively behaviour and, after a short break to rest, it continued on its journey. An ugly injury to its left eye, most likely caused by human violence, had resulted in the partial loss of the seal's eyesight. The MOm Rescue team remained on a heightened state of alert, ready to

administer antibiotic injections in case of serious infection to the wound. – Jeny Androukaki, MOm.

Aqueduct seal needs to relocate

A monk seal sighted in a rainfall aqueduct in the busy harbour of Skiathos returned to its natural habitat in healthy condition on 13 December. MOm's Rescue team arrived on the island after being alerted by the local municipal authorities. The adult male's physical and nutritional condition were judged satisfactory. Superficial wounds on its flippers were most probably the result of rivalry with other males – a common phenomenon among Mediterranean seals. The Rescue team, working with the local authorities, temporarily covered holes admitting light to the aqueduct – a possible source of anxiety and distraction for the seal – and then successfully encouraged the animal to return to the sea. Onlookers were asked to keep their distance during the rescue operation to avoid additional distress to the frightened animal. Following its departure from the harbour, municipal authorities placed netting across the entrance of the pipeline to discourage the seal from returning. – Jeny Androukaki, MOm.

Heavy metal threat not established in the Aegean

A recently completed postgraduate thesis has concluded that heavy metal contamination of monk seals in Greece is generally low compared to that found in other seal species. The author, Aggeliki Dosi, a MOm volunteer since 1993, analysed tissue samples held in the organisation's Specimens Bank, collected in the Aegean during 1994-1999. Samples were tested for the presence and concentration of 14 heavy metals – toxic substances that in certain accumulations can have severe impacts on breeding as well as on overall health. The results of the study, however, suggest that concentrations may be too low in the Aegean to adversely affect resident monk seal populations – most of which have only managed to survive far away from urban industrial centres.

The thesis, entitled "Heavy metals in the skin and fat of the Mediterranean seals *Monachus monachus* in Greece" formed part of Dosi's postgraduate studies at the School of Marine Sciences in Bangor, Wales. The study was the first of its kind involving the Mediterranean monk seal. Aggeliki Dosi joined MOm's research team on a full-time basis in October. – Spyros Kotomatas, MOm.

Sea Alarm to prepare for oil spill

A meeting entitled "Sea Alarm" took place in Pieterburen, the Netherlands on 4-5 November 2000. Its aim: to create a European network of organizations involved in the rehabilitation of wild animals, that can take timely and effective action to counter marine environmental catastrophes caused by oil spills.

Representatives of the Seal Rehabilitation & Research Centre (SRRC), the International Fund for Animal Welfare (IFAW), MOm and other national and local European organizations appointed an Action Group to pursue detailed planning of the initiative. At a subsequent meeting in Brussels in March 2001, the Action Group proceeded to define the operational framework and logistics of the Sea Alarm network. Activities for the remainder of the year include the listing of stockpiled clean-up equipment available in Europe, establishing lines of communication with specialists and government departments responsible for countering incidents of marine pollution, the organization of "hands on" training seminars, and the formulation of a European Action Plan.

Members of the Action Group were also asked to nominate other candidate rehabilitation centres from their own countries, in order to encompass the greatest range of marine fauna possible. These centres should be capable of acting either individually at a local level or in concert with Sea Alarm in the case of serious emergencies. – Jeny Androukaki, MOm.

Media blitz

"Ten important deaths never mentioned in the news reports…"

A new promotional campaign was launched by MOm in November 2000, targeting the print and broadcast media. The campaign was made possible by newspapers, magazines, TV and radio stations donating advertising space and

air time. Thanks to Diners Club, which included a MOm flyer in its regular mail shot, the message reached an even wider audience. The prominent advertising agency Adel Saatchi & Saatchi designed MOm's live broadcast message and also provided other valuable insights and advice.

The campaign employed three separate slogans in its approach:

- "Ten important deaths never mentioned in the news reports: during the past year, 10 seals from the 350 remaining survivors were found dead on Greek coasts."
- "To be or not to be? Define your position."
- "May they live long! Six young seals found on Greek coasts were rescued and managed to survive."

By the new year, eight television channels were broadcasting, as a gratis public service, MOm's monk seal conservation message to the public. – Maria Dimitropoulou, MOm.

Endemic sea lion discovered

The discovery of a new pinniped species was announced on a Greek Internet site recently. Kefalonia Links, Adventure and Information describes the existence of the Ionian island's very own "Kefalonian Sea Lion". Rather more confusing is the site's insistence on christening the exotic otarid *Monachus monachus*. Readers may also find it puzzling that the repository of all knowledge relating to the new species is none other than www.monachus.org.

Virtual Marine Park

The Ecological and Cultural Movement of Alonissos, in association with the German conservation charity Euronatur and the Hellenic Foreign Trade Board, has released an educational CD in Greek and English focusing on the National Marine Park of Alonissos, Northern Sporades (NMPANS).

Entitled *Alonnisos – An Ecological Paradise*, the CD guides potential visitors through the Marine Park, providing information on the archipelago's history and culture, ecological tours, hiking trails and beaches. In a separate section, the CD focuses on the area's resident monk seals, the most significant surviving population in the Mediterranean.

While the CD is a step in the right direction, encouraging a more ecological approach to tourism in the NMPANS, the written information provided is limited and sometimes of dubious accuracy. The CD, for example, claims that Port Police patrol boats are responsible for guarding the NMPANS, even though these gas-guzzling inflatables have persistently languished in harbour – apparently because of overstretched fuel budgets – since they were donated to the authorities by prominent Greek shipowner, the late George P. Livanos in 1993. The CD also makes no reference to the long-term activities of MOm, the Hellenic Society for the Study & Protection of the Monk Seal, in monitoring and guarding the Park and in the rescue and rehabilitation of orphaned monk seal pups.

Despite these imperfections, the CD provides an interesting virtual tour of the Park. It also presents some outstanding historical film footage of monk seals, shot in years past by German wildlife filmmaker Dr. Thomas Schultze-Westrum at the uninhabited island of Piperi, now in the Core Zone of the Park and strictly off-limits to visitors.

To obtain a copy of the CD, write to: Pakis Athanasiou, Ikos Travel, GR-37005 Alonissos, Greece. Email: ikostravel@hol.gr

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Italy

Sporadic sightings continue in southern Italy

Following the photographically documented monk seal sighting in southern Sardinia in August 2000 [see Sighting spurs government action, TMG 3(2): November 2000], three other observations were subsequently reported from the same region and from southern Puglia. A summary of each sighting record is described below:

Date	Hour	Area of sighting	No. of animals	Comments
28.08.2000	15:30	A few miles off Bari, southeastern Italy	1	A single monk seal is observed emerging at the prow of a boat; the duration of the sighting continues for a few minutes as the animal lingers on the sea surface.
Third week, September 2000	9:00	Southeastern Sardinia	2	Two monk seals are observed from a 50 metre high cliff at about 20 meters distance from the coast.
29.01.2001	12:00	Southwestern Sardinia	1	A single animal is observed at a 50 metre distance from the coast.

Note: This information is part of a database on monk seal sightings shared between ICRAM and Gruppo Foca Monaca.

A survey to identify monk seal cave habitats, an awareness building programme directed at the local elementary and middle school, an information campaign aimed at tourists visiting the Marine Protected Area of Capo Carbonara (southeastern Sardinia) and a medium term monitoring project is expected to start after the second week of May 2001. It will form a collaborative effort between the MPA of Capo Carbonara and ICRAM, and will involve the participation of the local cooperatives in charge of the educational awareness and monitoring activities planned within the Marine Protected Area's 2001-2002 management programme. – Giulia Mo, ICRAM.

Net Watch

Genova's Aquarium is the largest in Europe and an ideal change of pace, especially if you're traveling with people who swear they'll scream if they see another Venus reclining or Botticelli… The major attractions are:

The Seal Tank: A sizeable tank that reproduces the bottom morphology of the Sardinian reefs where Italy's only surviving seal populations live – since the monk seals are a protected species, what one sees are Atlantic seals instead, darting and swimming among the rocks.

– A Tu Per Tu con il Grande Blu, Go Tuscany, L'Acquario di Genova: http://www.firenze.net/events/trails/acq.htm

Madeira

Researchers for the Parque Natural da Madeira continue their monitoring activities in the strictly protected Desertas Islands and the Ponta de São Lourenço on the easternmost tip of Madeira. During the winter breeding season, two newborn pups were counted, one of which was found dead after particularly harsh weather conditions. An autopsy indicated that the most likely cause of death was drowning. The pup had also sustained injuries to its limbs consistent with being tossed about in heavy seas.

A third young seal was also observed, although it was not possible to determine whether it was born during this or the previous breeding season.

Sightings data suggest that monk seals may be recolonising the main island of Madeira as the recovering population on the Desertas Islands begins to disperse in search of new habitat. [For an in-depth look at this promising development, turn to this issue's In Focus].

Two protected areas on Madeira have been established to help encourage this recolonisation, the Rocha do Navio Natural Reserve on the north coast and the Ponta de São Lourenço Natural Reserve in the east [see News from Madeira's Newest Reserves, 2(1): May 1999]. The latter is, at present, only a terrestrial reserve, although a marine protection zone is planned as the area is incorporated into the Natura 2000 Network. A biological station has already been established in the Rocha do Navio and wardens currently patrol this remote area several times a week. A permanent warden presence is planned for the future. – Rosa Pires, Parque Natural da Madeira.

Mauritania & Western Sahara

Recovery Plan outlines objectives

The Regional Recovery Plan for the Atlantic, coordinated by Dr. Luis Mariano González of Spain's Ministry of the Environment, continues to move towards official ratification, according to the most recent reports (see Mauritania & Western Sahara news, TMGs *passim*).

Operated under the auspices of the Convention on Migratory Species (CMS, or Bonn Convention) the Plan links the range states – Madeira (Portugal), the Canary Islands (Spain), Morocco and Mauritania – in an ambitious conservation effort aimed at encouraging the recovery of existing monk seal colonies and the natural recolonisation of the species' former habitat.

Key components of the Plan include:

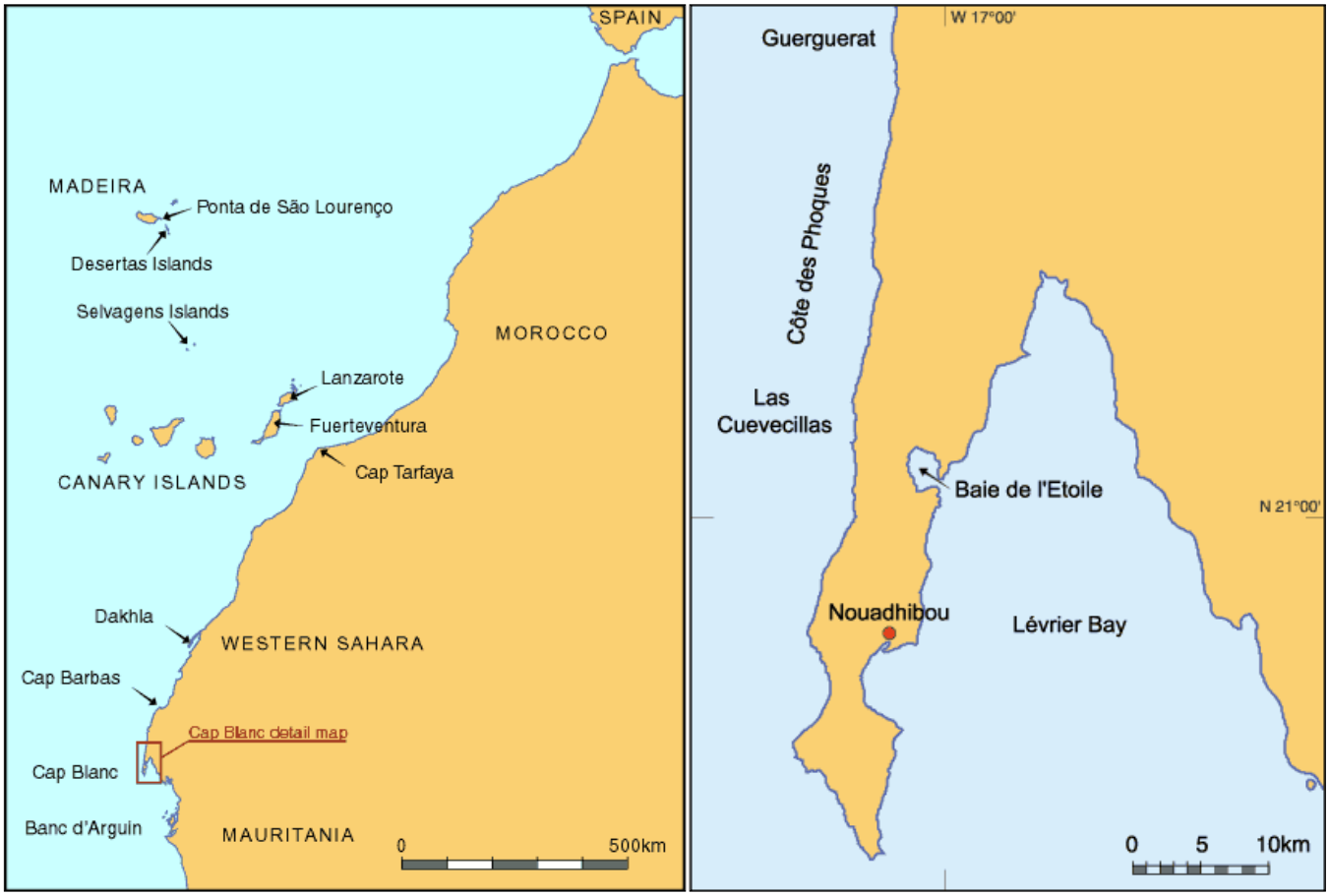
- Creating a network of new and existing marine protected areas.
- Regulating fishing activities that affect seals or their food sources, including the legal requirement that fishing techniques employed must reduce the risk of incidental capture in fishing gear.
- Rescue, rehabilitation and reintroduction of "at-risk pups".
- Encouraging the monk seal's return to historical habitat more favourable for pup survival – mainly open beaches sheltered from waves and terrestrial predators.
- Ensuring tranquillity in breeding and resting areas by restricting access to monk seal caves, including regulation of research activities.
- Social assistance schemes to help local, artisanal fishermen.
- Non-invasive research that will step up data gathering and continue to monitor monk seal populations and habitat.
- Environmental education and public awareness to bring the conservation message to local people.

Plan envisages network of protected areas

A central objective of the Plan is the creation of a Network of Special Areas of Conservation for the Monk Seal (SACMS), with each contracting state proposing "priority" or "of interest" monk seal habitat for inclusion in the Network.

A preliminary list includes the following areas:

- Ponta de São Lourenço at the easternmost tip of Madeira.
- The Desertas Islands and Selvagens Islands (Madeira).
- Islets to the north of Lanzarote and the west coast of Fuerteventura (Canary Islands).
- Cap Tarfaya, Cap Barbas-Guerguerat and the Côte des Phoques of the northern Cap Blanc Peninsula (western Sahara, under Moroccan control).
- Cap Blanc Peninsula, L'Etoile-Levrier Bay and Banc d'Arguin (Mauritania).



The Plan calls for the participating states to institute a series of conservation measures in support of these SACMS, including management plans, regulatory measures to minimise the impact of fishing, and action to avoid potential habitat deterioration. States are also asked to commit themselves to conducting environmental impact assessments on any development project that might prove injurious to monk seals or their habitat.

The Desertas Islands colony has been a strictly protected reserve area since 1988.

By creating additional protected areas within the seal's historical distribution range in the Atlantic, the Recovery Plan aims to ensure "that once the seals start to recover, they will have enough well-conserved habitat for recolonization to occur naturally."

This marks a significant departure from previous initiatives in the region which sought, ultimately unsuccessfully, to capture and translocate monk seals from the Côte des Phoques to the Canary Islands.

The establishment of an international protected area is envisaged for the Cap Blanc Peninsula north of the Mauritanian border, which holds the single largest colony of Mediterranean monk seals on the so-called Côte des Phoques (Coast of Seals). Politically, the area is still viewed as disputed territory although Morocco remains the de facto controlling power.

The Recovery Plan, while making no direct reference to long-running political disputes in the region, expresses the hope that an international protection area will safeguard the seal colony from disturbance and fishing pressures, thereby encouraging the animals to make use of wider habitat options, including open beaches (see Encouraging wider habitat use, below).

According to a recent progress report provided by Luis Mariano González, Morocco has already established a marine protection area at the Côte des Phoques, thus necessitating the creation only of an exclusively terrestrial protection zone in order to complete the international reserve.

Enforcing strict regulations against illegal fishing is seen as essential to the success of the reserve, particularly as fishing by foreign industrial fleets is intense in the region.

Encouraging wider habitat use

Advocates of the Recovery Plan believe that the Côte des Phoques colony will always be vulnerable to potential catastrophic events – an epidemic, a toxic algae bloom, a cave collapse – unless it can be encouraged to lessen its dependence on the excessively narrow habitat it now occupies.

Although its cause was never pinpointed definitively, in 1997 the colony was struck by a mass mortality event that wiped out two thirds of the population. Rival theories implicated both a morbillivirus and a 'red tide' toxic algae.

Widening monk seal habitat preference, researchers believe, can only be accomplished by drastically reducing disturbance, thereby encouraging seals to re-occupy open sandy beaches which were once historically used by the species. Recent experiences at the Desertas Islands and on the Côte des Phoques suggest that monk seals will return to beaches if they feel confident enough to do so (see Monk seal sightings on open beaches in the Desertas Islands – Madeira archipelago and Disturbance levels cut, Mauritania & Western Sahara News TMG 3(2): November 2000).

It is also hoped that a habitat transition of this kind will help cut high infant mortality rates at the colony by providing pups greater protection from winter storms. Because of their relative position, storm waves can surge into the caves, dashing weaning pups against the rocks or washing them out into the ocean to drown.

High infant mortality continues to plague the Côte des Phoques

A researcher examines a dead pup at Cap Blanc

Researchers for the Madrid-based Fundación CBD-Hábitat, monitoring the Cap Blanc breeding colony at the behest of the Spanish Ministry of the Environment (see Mauritania & Western Sahara, TMG 3(2): November 2000), believe that high pup mortality rates are seriously jeopardising the recovery of the population.

Indeed, the latest Recovery Plan update paints a bleak picture of pup survival at the colony, stating:

> "…since June 2000 to the present, 10 pups, 1 juvenile and 3 adults have been found dead on the beaches south of the colony. As regards productivity, since July 2000 to the present, the births of 25 pups have been recorded, 14 of which survived. However, of the 10 pups born in the autumn-winter season 2000-2001, only one survived; in other words, 90% of pups born in the storm season perished, keeping up the colony's high neonate mortality rates."

It is here that rescue and rehabilitation may end up playing a particularly controversial role. Despite drawing fire from certain quarters, the latest draft of the Plan continues to recommend the pre-emptive removal of pups from the caves as storm forecasts are received.

Those favouring the measure, however, believe that such action is essential to cut infant mortality and to save the lives of pups that would otherwise perish.

Workshop expected to convene in October

Further refinement of the Plan (including its technical support document drafted by Fundación CBD-Hábitat) is expected to take place during a *Population and Habitat Viability Assessment (PHVA) Workshop*, scheduled to take place this autumn in Spain. Controversial aspects, most notably the issue of pre-emptive storm rehabilitation of pups, promises some lively debates.

The Workshop is being organised in collaboration with the IUCN Conservation Breeding Specialist Group (CBSG), led by Ulysses Seal.

Source

González, Luis Mariano. 2001. Report on the Action Plan for the Mediterranean Monk Seal in the Eastern Atlantic. Ministerio de Medio Ambiente, Spain, April 2001: 1-5.

Ban on fishing aids Banc d'Arguin

The World Wide Fund for Nature (WWF) announced on 3 March that Mauritania would take action to safeguard the Banc d'Arguin National Park from exploitation by European Union and other industrial fishing fleets. The new restrictions may offer some help to Mediterranean monk seals. Although this World Heritage Site has no resident *Monachus* population, there are sporadic sightings, probably of juvenile stragglers from the Côte des Phoques to the

north.

According to WWF, Mauritania is to ban all fishing, except artisanal, non-motorised fishing by local communities, in the 12,000 km2 coastal wetland covered by the Park's boundaries.

Meanwhile, renegotiation of fisheries agreements in the region are likely to pose continuing threats to the marine environment, according to the CFFA, the Coalition for Fair Fisheries Agreements based in Brussels. Both EU-Mauritania and EU-Senegal fisheries pacts are currently subject to intense economic bargaining, yet it is the apparent non-renewal of the EU-Morocco agreement that may ultimately have the greatest impact. In recent years the EU has been deploying an armada of some 500, mainly Spanish, fishing vessels in Moroccan-controlled waters, but with the termination of the agreement, these are now searching for new marine pastures.

According to the CFFA, this fishery – largely targeting cephalopods – is crucial in Spain, being a labour intensive activity involving regions highly dependant on fishing. As such, says a CFFA spokesperson, "political pressure will be huge on the EU to force states like Sénégal and Mauritania to open their waters to these "homeless" Spanish boats – despite decreasing resources (well documented in both Mauritania and Senegal) and booming local artisanal fisheries."

For further information, consult our CFFA downloads in the Monachus Library.

Spain

Pew award to fund tissue bank

Alex Aguilar, professor of Animal Biology at the University of Barcelona, has been named a recipient of the Pew Marine Conservation 2001 Fellowship prize. The award was conferred in recognition of various achievements, according to an accompanying announcement. These included pioneering "innovative methods to address species conservation including development of the first biopsy darts to obtain skin and blubber tissues from free-ranging cetaceans at a distance and practical application of chemical profiles to identify populations of animals." Aguilar, the statement continued, has also been at the forefront of international rescue initiatives, leading "United Nations emergency efforts to save the endangered monk seal colony affected by a mass mortality event in Mauritania in 1997."

Aguilar has stated that he will apply his fellowship award – worth $150,000 – to establish a genetic and ecotoxicological tissue bank on endangered cetaceans and monk seals in the Mediterranean, relying on both existing collections and new field sampling.

Tunisia

Surveys planned for La Galite

Shortly before we went to press, it was announced that a cooperative venture between RAC/SPA (Regional Activity Center for Specially Protected Areas, Tunis) and ICRAM (Istituto Centrale per la Ricerca scientifica e tecnologica Applicata al Mare, Rome) had been established to determine whether the Mediterranean monk seal continues to survive in northern Tunisia. Research efforts are to focus on the former stronghold of the species in the region, La Galite archipelago, now a popular tourist haunt.

A 15-day survey conducted during July 2000 failed to locate any survivors, although it is thought possible that a monk seal presence in the archipelago may have eluded detection.

Italian researchers suspect that sporadic sightings of seals in southern Italy and Sardinia may, in fact, be of individual stragglers undertaking seasonal movements between that region and the north African coast.

Aside from research, the project also plans a public awareness campaign aimed at tourists, in the hope of reducing high disturbance levels in monk seal habitat. The partnership also plans to advance conservation objectives in the region by encouraging the Tunisian authorities to protect La Galite.

Despite promises spanning a decade or more, La Galite has yet to be established as a national marine park with an effective management plan.

The full text of the survey and conservation plan is available in the Monachus Library:

Ouerghi, A., G. Mo, F. Di Domenico, H. Majhoub. Assessment of Mediterranean monk seal (*Monachus monachus*) habitat at La Galite, Tunisia: towards a monk seal conservation strategy in northern Tunisia and nearby waters. RAC/SPA, Tunis; ICRAM, Rome; ANPE, Tunisia: 1-3.

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Turkey

Protected areas or death traps?

Rather than protecting and nurturing its vulnerable monk seal population, Turkey's flagship protected area in Foça has instead been presiding over the death of an entire generation of animals – individuals whose survival might otherwise have spurred the recovery of the species.

According to findings published in this issue's Cover Story, of 4 pups born in the Gulf of Izmir region (incorporating the Foça SPA and the adjacent Karaburun peninsula, also a prospective protection zone) since 1993, all have been entangled in nets and only one has survived. The revelation is likely to bring strong pressure to bear on the authorities to reform fisheries management practices in protected areas.

Circus time at Küdür

The Ministry of Culture appears to have repulsed a rearguard action by a German tourist conglomerate to rezone Bodrum's Küdür peninsula, temporarily scuttling attempts to construct a sprawling 'eco' holiday village in the area [see Cover Story, TMG 2(2): November 1999 & Küdür under renewed threat, TMG 3(2): November 2000].

The Küdür peninsula is one of the last surviving habitats of *Monachus monachus* around Turkey's heavily touristic Bodrum peninsula, and was declared a 1st degree natural SIT area by the Cultural and Natural Assets Protection Council (Izmir division) of the Ministry of Culture in November 1998.

Developers unhappy with that decision have since been attempting to have Küdür downgraded to 2nd degree status, thereby opening up the peninsula to coastal development. Leading the charge has been Öger Tours, a well-known tour operator based in Germany whose sister company in Turkey owns prime real estate along Küdür's largely unspoilt coasts. In an effort to rescue some profits from its endangered Küdür holdings, Öger has been floating the idea of converting the entire peninsula into a "monk seal-oriented ecotourism region…" In September 2000, the company commissioned Professor Tuncay Neyisci, Director of the Environmental Issues Research and Application Centre of Akdeniz University in Antalya to conduct an environmental reassessment of Küdür, apparently seeking support for the view that monk seals and tourism can and must learn to coexist.

Despite his academic credentials, Prof. Neyisci's recently-released 11-page report – which unhesitatingly embraces Öger's dream of putting Küdür under eco-concrete – provides little tangible evidence for its conclusions, few relevant references, and no indication that the author has consulted the international monk seal scientific and conservation community. Local conservation views are also given short shrift, particularly SAD-AFAG's submission that monk seals in the area cannot survive in a world of unremitting tourism disturbance and development pressures.

In his findings, Neyisci charges that Küdür's first degree status was conferred improperly because the Ministry of Culture allegedly relied exclusively on SAD-AFAG surveys, reports and testimony, thereby failing to canvas a broader range of views as legally required. SAD-AFAG disputes that claim, noting that the monk seal protection zone originally established on Küdür in 1991 came as a result of a local initiative, subsequently accepted by the municipality of Yalikavak.

Relying on the persuasive powers of human self-interest to advance the Öger cause, Neyisci argues that it is folly to exclude leisure and fishing activities from the monk seal conservation process.

"Local fishermen who share the same limited [fish] stocks," he writes, "the Mediterranean yachters, tourism investors, octopuses, seaweed, secondary house owners, tourists, monk seals, environmental groups, local governors and the other relevant stakeholders have to find ways of reconciliation and fair sharing while respecting each other."

While most monk seal conservationists share the view that local community involvement is central to the creation

and management of marine protected areas, Neyisci's reasoning in applying this golden rule to Küdür is more than a little disingenuous. Among other essential design characteristics, monk seal MPAs should incorporate core zones where all human activity is prohibited, and buffer zones that allow some ecologically compatible human pursuits. The stark problem facing Küdür is that this little finger of land is already besieged by high-capacity tourism, in an area that attracts a million tourists per year. In other words, Küdür is already the MPA core zone and there is precious little in the way of intermediate zoning to buffer it from Bodrum's relentless tourism onslaughts. It is, in fact, precisely in the issue of size that the industry's bullyboy tactics become most apparent: Küdür's coasts are just 15 km long compared to Bodrum's 115 km.

Neyisci goes on to downplay the Mediterranean monk seal's shy and retiring nature, and its well-known sensitivity to human disturbance. While acknowledging that habitat destruction and harassment is an important factor in the species' decline, he argues that the solution is not to give seals reserves from which humans are chased away, but ecotourism parks where tourists, fishers, yachters and seals can all frolic together in peace and harmony.

Realising that most monk seal conservationists would consider such reasoning dubious at best, the bitter pill is sweetened by implied investments by Öger. In his report, Neyisci envisages an education centre, a monk seal rescue and rehabilitation unit, construction of artificial monk seal shelters and "sunbathing" areas. Having monk seals within arm's reach would also facilitate various scientific procedures indispensable to the conservation of the species, claims Neyisci, such as population, feeding and genetic studies. Without these, he ponders, how will wildlife managers be able to pinpoint the precise threats to *Monachus* and design effective remedial measures?

Neyisci goes on to suggest that, if push comes to shove, the Mediterranean monk seal will soon lose its tiresome shyness and frolic about with the tourists. He bases his evidence on the anecdotal reports of a local man who, according to legend, established friendship with a monk seal by feeding it bread.

Experiences such as these, he writes, "together with the more extreme example of the seals used in circuses [sic], allow us to consider the possibility of establishing friendly relations between human and seal."

All of which just goes to show that, where the tourism industry is concerned, it may not be *Monachus* that is most in need of a personality transplant. – William M. Johnson.

Further reading:

Johnson, W.M. & D.M. Lavigne. 1999. Mass tourism and the Mediterranean monk seal. The role of mass tourism in the decline and possible future extinction of Europe's most endangered marine mammal, *Monachus monachus*. Monachus Science. The Monachus Guardian 2(2): November 1999.
Kiraç, C.O. 1988. Oil spill at Çavus Island. The Monachus Guardian 1(1): May 1998.
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Moran, G. 1997. The Potential of ecotourism on the Bodrum peninsula, Turkey. The Durrell Institute of Conservation and Ecology (DICE), University of Kent at Canterbury. Thesis submitted in partial fulfilment for the degree of Master of Science in conservation biology, March 1997.
Savas, Y. 1999. How tourism has ruined the coastal habitats of the monk seal on the Bodrum peninsula, Turkey. The Monachus Guardian 2(2): November 1999.

Video monitoring on Karaburun

Phase 3 of SAD-AFAG's Project Seal Watch set its sights on a key monk seal breeding cave near Mordogan in the Gulf of Izmir, Turkey, from October 2000 to February 2001. The Project involves the use of remote-controlled video cameras, allowing researchers to monitor monk seal in-cave activity without disturbance.

Monitoring seals at Bozyazi

The first phase of the project was implemented in Foça in 1997 in collaboration with the Italian NGO *Gruppo Foca Monaca* and lasted for about a month. In its second phase, SAD-AFAG installed a video system with a broadcast link in Bozyazi in the Cilician Basin [see Monk seal behaviour under surveillance, TMG 3(1): May 2000]. This system, funded by WWF Belgium, continues to transmit images from the cave.

During the last pupping season on Karaburun, it was decided to mount cameras in the most important seal breeding cave at Mordogan in the Gulf of Izmir. Using the system, two mature females, a juvenile and a seal pup could be monitored intermittently for a period of about three months. Unfortunately, the pup born in the Mordogan cave was killed in fishing nets when three months old [see Cover Story, this issue].

The cave, although situated on government land, is surrounded by secondary summer houses that are deserted through the fall and winter months when the monk seals give birth and the pups are cave-dependent. In contrast, during the summertime the area becomes a hot spot for people living in their holiday houses. Young people swarm around the cave and the nearby café-disco.

Now, a monitoring project, with a planned duration of one and a half years, has been proposed to the Scientific and Technical Research Council of Turkey (TUBITAK). If approved, a state-of-the-art infrared-sensitive TV surveillance system will be installed and seal activities in and around the cave will be monitored over a period of two summers and a winter. During the second summer, as a result of an agreement reached with the Mayor of Mordogan, all human activities will be prohibited around the cave. – Yalçin Savas, SAD-AFAG.

Film festival for Foça

The Aegean town of Foça, a pioneer in marine conservation in Turkey, will host a documentary film festival focusing on fishermen, the sea and marine conservation, 29 August – 2 September 2001.

The “Fishermen and Sea Documentaries Festival”, as it is known, is expected to attract film producers, fishermen, fisheries scientists and marine conservation charities both from home and abroad.

One of the principal aims of the gathering is to provide local artisanal fishermen with a national platform from which to air their views and grievances, thus obliging government to regard them as essential stakeholders in the quest for sustainable fisheries and the conservation of coastal ecosystems.

Festival organisers include SAD (Underwater Research Society), BSB (Union of Documentary Cinematographers) and Foça Agenda 21. The Foça Fishing Cooperative, the Municipality of Foça and the Local Governorship are supporting the event.

The Festival programme will feature documentaries on fishing and the life of fishermen from various countries. Filmmakers are also due to take part in panel discussions, examining the cultural, social and environmental influences of this ancient human pursuit. Above all, during the last two days of the Festival fishermen, scientists and NGOs will discuss the concept of sustainable fishing and the instruments available in Turkey to achieve it.

There are also likely to be lighter moments, with fishermen taking part in competitions in net-mending or hooking long lines.

If you have any interest in attending or participating in the Festival, please contact: SAD-AFAG – Aegean Programme Office, Foça. – Yalçin Savas, SAD-AFAG.

Liberated scuba divers may endanger monk seals

In 1989, scuba diving was prohibited by government decree along extensive stretches of Turkish Aegean and Mediterranean coastline in an effort to protect archaeological treasures. By happy coincidence, monk seal habitat could also be found along many of these rugged shores. The restrictions on diving therefore helped to limit serious intrusions into monk seal caves.

In recent years, however, an ever-increasing demand for recreational and touristic scuba diving in Turkey has resulted in diving clubs and dive centres exerting sustained pressure on government to reform the decree and weaken its powers.

In the first signs that it may be buckling under such pressure, the Ministry of Culture recently organized a series of workshops for concerned parties, hosted by Bodrum Underwater Museum, long recognised as the centre of submarine archaeology in Turkey. As anticipated, the meetings decided to shrink banned dive areas in zones deemed archaeologically secure and well-surveyed. Realising the potential impact of the decision upon the monk seal, the Underwater Research Society (SAD), has proposed that several known caves used by the species be incorporated into areas that will continue to be off-limits to divers.

Pressure on monk seal habitat by dive-tourism still poses a serious problem for the survival of the species in some coastal areas in Turkey, such as Çesme, Bodrum and Alanya. – Yalçin Savas, SAD-AFAG.

Coastal seine fishery banned

Trata fishing in Bodrum

From 1 April 2001, the use of every type of coastal seine gear in fishing (*trata, manyat, tarlakoz, igrip*) was prohibited along Turkish coasts, the only exceptions being a limited area in the north Aegean and shrimp seines in the Sea of Marmara.

Coastal seines, often deployed over Posidonia sea grass beds, have inflicted great damage upon fish stocks and coastal ecosystems, exacerbating the overfishing crisis in Turkey. They were first banned in 1993 in Foça, the Pilot Area for conservation of the monk seal in Turkey. Since then, SAD-AFAG, in cooperation with fishing cooperatives and fisheries scientists, has waged a sustained campaign to have the same regulation applied along all Turkish coasts.

Artisanal fishermen in Turkey, who have signalled their approval of the government action, are likely to gain significantly in the long-term as fishing grounds begin to recover. It is hoped that monk seals – whose decline in the eastern Mediterranean has sometimes been partially attributed to lack of food – will also benefit.

There are fears, however, that some coastal seiners may switch to illegal trawling methods in an effort to dodge the new restrictions. The authorities have therefore been warned that the new law must be strictly enforced if it is to be effective. – Yalçin Savas, SAD-AFAG.

Conservation grant for the Cilician Basin

SAD-AFAG has been awarded a grant by United Nations Development Program – Global Environmental Fund (UNDP–GEF) for monitoring marine conservation areas in the Cilician Basin. In recognition of its objectives and achievements in the region, the UNDP-GEF jury voted to increase the allocated award from $25,000 to $35,000.

The project, which commenced in December 2000, is being implemented in the vicinity of Bozyazi, where a no-fishing zone has been established by the AFAG Mediterranean Programme team, supervised by Dr. Ali Cemal Gücü.

The Cilician Basin lies in the northeastern reaches of the Mediterranean, between Cyprus and the Turkish mainland. Along the most unspoilt coasts, monk seals continue to inhabit some of the last surviving breeding caves in the region. The Cilician coasts are also an important breeding area for two species of endangered sea turtle (*Caretta caretta* and *Chelonia mydas*), and many other rare and threatened marine species.

An examination of fisheries in the region reveals a long, profitable history, since fish – including uncommon species that are particularly appreciated for their flavour – sustain high market prices due to demand. Even so, the eastern Mediterranean is considered relatively ‘unproductive’ in terms of fish because of its geography, climate and current systems. As such, fish stocks can only sustain a small-scale artisanal fishery. However, human greed has led to industrial-scale boats fishing within this sensitive ecosystem, equipped with huge, indiscriminate trawl nets and purse seines. Within the last fifteen years, the area has been heavily exploited by industrial fishing.

Recently, monk seal conservation efforts in the region have succeeded in establishing five protected coastal sites – incorporating key habitat of the species – as well as a no-trawling area, and a smaller no-fishing zone. The aim of the new UNDP-GEF programme is now to determine the effectiveness of protection measures by monitoring the ecosystem and its constituent parts.

SAD-AFAG hopes to be able to demonstrate to decision makers, as well as to fishermen and other local stakeholders, the importance of “No-Take” areas as a fisheries management tool. – SAD-AFAG Mediterranean Programme.

No-Fish-More-Fish

No-Fishing Zone at Kizilliman, Bozyazi, Cilician Basin

Results gathered by the “No-Fish-More-Fish project” in the Cilician Basin – a collaborative effort between SAD-AFAG and METU-IMS (Middle East Technical University - Institute of Marine Sciences) with WWF funding, is now being monitored by another project entitled “Monitoring the Repair Rate of a Worn-out Ecosystem Which is Under Protection”.

The fish stocks of the Cilician Basin have always been meagre compared to other basins where the continental shelf is wide and the rivers nourish the ecosystem with nutrients. However, socio-economic deprivation facing the local community led many people to take up fishing. Surveys have indicated an abrupt decline in the size of the fish stocks, as well as in species diversity.

The new study marks the first step in a research programme aimed at monitoring the recovery rate of a deteriorated ecosystem in the absence of a large-scale fishery.

The research effort focuses on a small, Ministry of Agriculture-designated no-trawl and no-purse seine zone established between Sancak Cape (Aydincik) and Kizilliman Cape (Bozyazi) on 1 April 1999. To determine the possible effects of the zone, catch surveys conducted in 1983-1984 are being compared with 3 surveys conducted in May 1999, November 1999 and May 2000 respectively, using the same trawling method and mesh size to obtain fish samples.

The study is expected to reveal significant benefits in establishing no-fishing zones for the improvement of regional fisheries.

In an indication of the severity of overfishing afflicting the region, survey results show that catches of two commercially valuable fish species, red mullet (*Mullus barbatus*) and common pandora (*Pagellus erythrinus*) declined ten fold in the years 1984-1999.

During the last visit to the site, however, just one year after no-trawl and no-fishing restrictions were applied, it was discovered that fish stocks had increased by 80% more than the same period a year earlier, including economically valuable species. Red mullet, for example, formed 45% of the total catch. For further information: Dr. Ali Cemal Gücü, METU-IMS. – SAD-AFAG Mediterranean Programme.

Commuting monk seals

Mother seal “Emine” at Hayirsiz Island, Foça, 1998

AFAG researchers have recently gathered additional evidence to support the long-held contention that monk seals inhabiting the Gulf of Izmir commute freely between Foça and the Karaburun Peninsula, two of the 12 most Important Monk Seal Sites in Turkey identified by AFAG.

During regularly scheduled observations from lookout points on Karaburun, three distinct sightings were made in March and April 2001 of an adult female monk seal known to researchers as “Emine”, an individual also regularly

observed around Hayirsiz and Orak Islands, Foça. The Foça Specially Protected Area is only about nine nautical miles from the Karaburun Peninsula.

Aside from Ermine, a grey-yellowish adult female and a dark grey juvenile, both observed around Karaburun town in April 2001, were also sighted during the same time period in Foça by artisanal fishermen. The sightings appear to underscore the importance of establishing effective networks of protected areas. – Ozan Veryeri, SAD-AFAG Aegean Programme.

Collectors' items

As part of its public awareness efforts both in Turkey and abroad, AFAG has designed and printed a new postcard that recalls the monk seal's historical and cultural significance. The modern day town of Foça, which takes its name from the seal, can trace its ancestry back to the powerful ancient city of Phocaea which once minted its own seal-emblem coins. – SAD-AFAG Ankara Co-ordination Office.

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Cover Story

Vol. 4 (1): May 2001

SNARED AND DROWNED

Are fishing nets killing off a new generation of monk seals in Turkey's protected areas?

Ozan Veryeri, Harun Güçlüsoy, Yalçin Savas

SAD-AFAG
Underwater Research Society – Mediterranean Seal Research Group

The Mediterranean monk seal, one of the rarest and most threatened mammals in Turkey, has been under legal protection since 1977. Practical conservation efforts, however, only assumed real significance in 1991 following adoption of the Turkish National Strategy for the Conservation of the Monk Seal and the formation of a National Monk Seal Committee.

A year later, local inhabitants of the Turkish Aegean town of Foça, led by the Municipality and guided by the Mediterranean Seal Research Group (AFAG), established a Local Monk Seal Committee to further grassroots conservation aims. As a first step towards safeguarding monk seal habitat, Foça and its small archipelago were declared a "pilot conservation area". Among other restrictions, purse-seiners and trawlers were banned from the area in order to encourage recovery of depleted fish stocks, and to protect the *Posidonia* sea grass meadows and submerged rocky shoals as monk seal feeding grounds. Continuing a tradition already thousands of years old, artisanal fishermen were permitted to continue setting their long lines and laying their stationary nets. With industrial fishing boats no longer encroaching upon the area, both local fishermen and monk seals became the beneficiaries of increasing fish stocks.

Starting in 1993, a considerable increase in monk seal sightings and cave usage were recorded during WWF-funded scientific monitoring of the area.

The first pup born in the Foça Pilot Area was discovered by AFAG team members on 13 October 1995 during regular cave checks on Hayirsiz Island, the remotest island in the archipelago. Two days old, the female pup was named "Derya", and her mother, "Emine". Both were seen as symbols of great hope for the future of the Foça conservation project, now more than two years old.

A dedicated monitoring effort, spearheaded by AFAG team members and carefully-chosen local volunteers, was put into force to gather information on the mother-pup relationship and the young animal's development. Every effort was made to avoid disturbing the seal family. Conscious of the rarity of the species and the event, witnessing these hidden facets of life were a source of joy and fascination for everyone concerned.

Local artisanal fishermen, already aware of the birth, were warned that the mother might desert the pup if they either entered the cave or ventured too close.

Then, during the late morning of 23 January 1996, a fisherman hurried into the bookstore of Soner Çinar, a member of the Local Monk Seal Committee, and shouted with excitement: "There is a seal entangled in my net; it's alive!"

Soner and a handful of other locals rushed to the scene, taking the time to alert the pilot project team leader along the way. Upon reaching the coast they found a juvenile seal in obvious distress, ensnared in a stationary net of the type typically deployed by local fishermen. There followed a desperate effort to rescue the animal, with members of the local committee, the AFAG team leader and the fisherman who owned the nets all pitching in to free her. The seal was Derya – the pup born on Hayirsiz Island.

In autumn of the same year the research team discovered another pup in one of the caves of the impressive Siren Rocks of Orak, the largest of Foça's islands. Born on 16 October 1996, he was named "Bahtiye" in honour of Prof.

Bahtiye Musaloglu who pioneered groundbreaking monk seal studies in Turkey in 1964. To the surprise of the project team, it was discovered that Bahtiye's mother was Emine, who had given birth to Derya the previous year. A monitoring programme was again promptly implemented, with great care being taken to eliminate potential disturbance.

While he was growing, it was noticed that Bahtiye was more 'active' than Derya. He was using all the caves and caverns within the small bay in which he had been born, regardless of whether his mother Emine was with him or not. As with Derya's birth a year earlier, fishermen were asked to stay out of the area to avoid disturbing mother and pup.

The sad and shocking news reached AFAG's project office in Foça on 10 February 1997. A family, while sailing along the coast of Fener Island, noticed a dead seal lying on a pebble beach. They carried the body with them back to port and alerted officials. When AFAG's team leader got to the harbour, he was faced with Bahtiye's lifeless body lying on the quay.

Bahtiye's lifeless body on the Foça quay

Then on 4 December 1999, project staff encountered signs of another mother and pup while surveying habitat on the Karaburun Peninsula, adjacent to Foça on the west coast of the Gulf of Izmir. Karaburun's importance to the monk seal, particularly the role it plays in terms of feeding and breeding movements between the two sites, has earned it provisional government acceptance as a new monk seal protected area.

The project leader at the time, Harun Güçlüsoy, and AFAG assistant Serdar Akinci, were stationed on a lookout point over a known seal cave, close to the town of Mordogan, when they heard mother-pup vocalisations. Concerned about disturbance, they refrained from entering the cave.

The same team returned to the area three weeks later to gather information about the development of the seal pup that had been named "Çevik". Instead of observation data, however, they brought back its dead body, found washed up on a pebble beach near the cave.

Team members of SAD-AFAG's Foça and Karaburun branch offices installed a closed-circuit, infrared-illuminated TV monitoring system in the same seal cave in November 2000. A single researcher, checking for seal presence before giving the green light to proceed, sighted a sub-adult who fled the cave as he entered. With the resident seal now temporarily absent, it was decided to install the two cameras and the infrared illuminator as quickly as possible. While the three-man team was fixing the second camera to the walls of the cave, however, they noticed a pup staring at them. Hidden in the shadows, the animal – estimated to be 7-10 days old – had escaped the attentions of the first diver sent in to reconnoitre the cave. The pup left the cave a few minutes later, while the diving crew hastily completed the camera installation.

Aided by the new system, as well as cliff-top lookout observations, a monitoring programme was started without delay. During the next three months two mature females, a sub-adult and the pup were all observed using the cave a few days every other week. When just a few weeks old, the pup – named "Melih" – was even seen in the small harbour of Mordogan, about 0.9 km south of the birth cave.

Then on 1 February 2001, SAD-AFAG's Karaburun office received a phone call from a Gendarme officer who reported that a stranded seal had been seen a couple of kilometres south of Mordogan.

When a joint Foça and Karaburun team arrived at the scene they discovered a dead seal about 3-4 months old. The Mordogan pup Melih had last been seen 10 days earlier on the TV surveillance monitor and also from hilltop observation points. A search of the area proved fruitless. There was no sign of Melih and the Mordogan cave was deserted. The only seal to be seen occupying the cave during the following week was the subadult. There was no other choice but to conclude that the dead pup was indeed Melih.

Melih's body on Karaburun

Three other cases can be added to these stories of unlucky seals. In 1991 in Foça, two years before the commencement of the pilot project, the body of a heavily decayed juvenile seal was found stranded on the mainland coast. In April 1997, turtle conservationists in Çirali, Antalya, in the south of Turkey, found the body of a 1.60m long seal stranded on the beach, some net fragments still entwined about its mouth. And, in November 2000 during the last pupping season in Bozyazi – where SAD-AFAG's Mediterranean Programme Office is monitoring a planned monk seal protection area – a fisherman found a drowned pup with "long black fur" in his nets.

Of these six mortalities, in the four cases where necropsies were performed (Bahtiye, Çevik, Melih, and the pup found in Çirali, Antalya), deaths were all attributed to drowning. In three cases (Bahtiye, the unnamed pup from Bozyazi, and Derya, the seal successfully rescued from nets in Foça), clear documentary evidence exists that the animals were caught in stationary nets. In the case of Melih, a 5mm deep narrow depression could be distinguished on the neck of the corpse, suggesting that rope had played a role in the animal's death. The ages of these seals were between 10/30 – 117 days when they were found entangled or stranded.

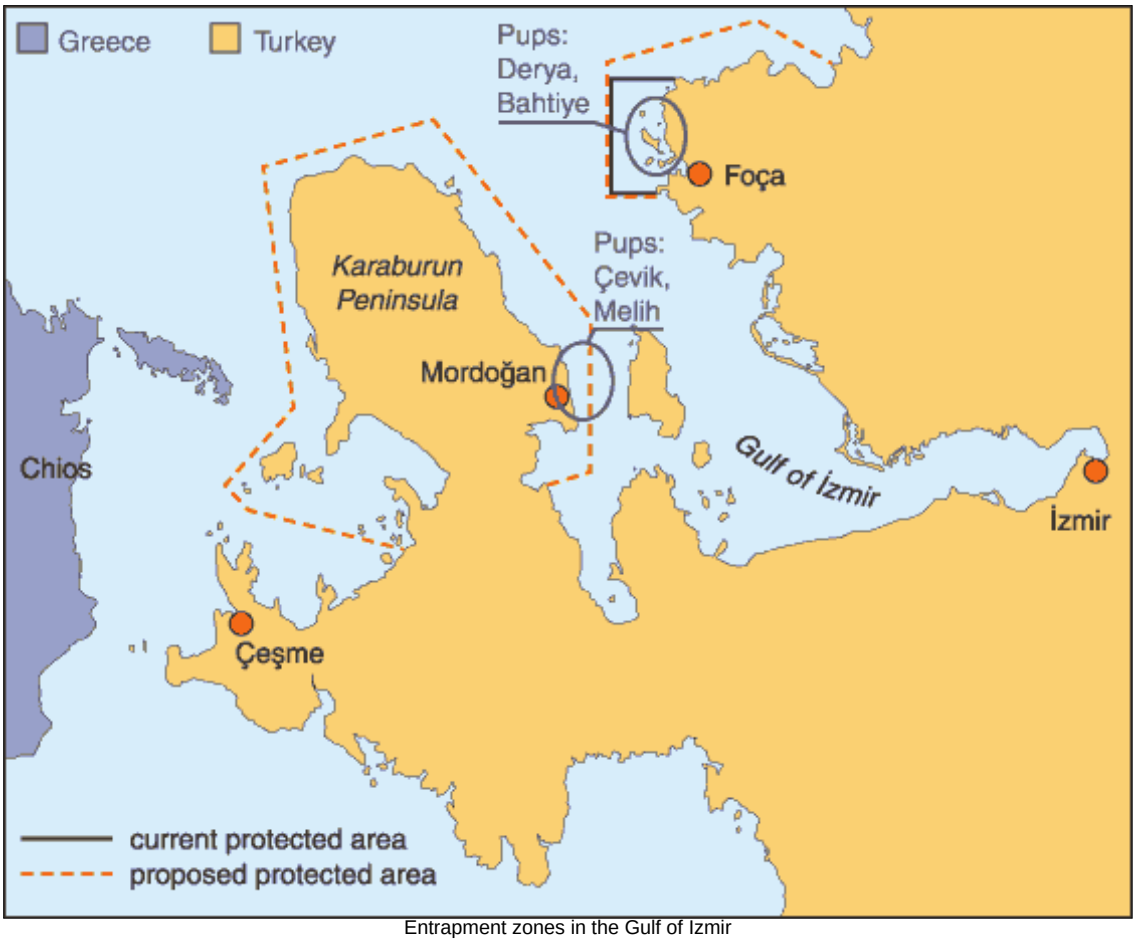
Bahtiye's necropsy

The precise locations of where the entanglements occurred are known for Derya, Bahtiye and the unnamed pup of Bozyazi. These individuals were caught 3.7 km (2.0 nm), 5 km (2.7 nm), and 6.3 km (3.4 nm) away from the caves where they were born. In the cases of Melih and Çevik, the distance between the stranding point and the known birth caves were 5 km (2.7 nm) and 0.37 km (0.2 nm). In the remaining two cases, the breeding caves were not known.

Except in two cases, all these incidents occurred on the coasts and islands of the Gulf of Izmir, one of the most important fishing grounds in Turkey and home to the largest fishing fleet in the Turkish Aegean. Along with every kind of trawler and seiner, the number of artisanal, small-scale fishing boats are much greater in this area compared to many other coastal regions of Turkey. Within the Gulf, stationary nets are set on almost every coast and only forbidden in restricted naval zones.

Only two areas within the Gulf have so far been identified as monk seal breeding habitat: the small archipelago of Foça and the cave close to Mordogan on the Karaburun Peninsula. Since juvenile seals are sighted almost every

year whose birth caves are unknown, we can only assume that other breeding habitat does exist somewhere in the vicinity.



Entrapment zones in the Gulf of Izmir

In Foça, all the identified birth caves are situated on islands, of which the farthest is just 1.85 km (1.0 nm) away from the mainland. Since 1993, two pups born in two different caves were both caught in stationary nets. The distances of these caves to Foça's town centre are 5.2 km (2.8 nm) and 6.5 km (3.5 nm) respectively.

The Karaburun cave near Mordogan is 0.9 km (0.5 nm) away from the town centre. Located within a small patch of undeveloped state land, the cave is engulfed by secondary housing all but deserted outside the summer holiday season. While its earlier monk seal breeding history is only known from anecdotal accounts, in 1999 and 2000 two pups were discovered by AFAG to have been born in the cave and both subsequently drowned. In contrast, around Bozyazi-Anamur on the Cilician coast, where two caves are known to be used for breeding, human population figures, coastal developments, and the number of artisanal fishermen are comparatively low. Since SAD-AFAG's conservation efforts in the region started in 1994, ten seal pups have been born in the region and, up until November 2000, no incidental catches were recorded.

The limited data available thus suggest that, of the two areas under study, the Gulf of Izmir poses a far greater threat to monk seal pup survivability in terms of entanglement than the Bozyazi–Anamur coast in the Cilician Basin. According to the evidence collected so far, of 4 pups born in the Gulf of Izmir since 1993, all have been entangled in nets and only one has survived (Derya); in the Cilician study area, on the other hand, 8 out of 10 have survived and only one of these mortalities was due to entanglement. In other words, the entanglement ratio for the Gulf of Izmir is 4/4 with a single survival, while it is only 1/10 on the Cilician Coasts.

The sharp contrast between the two areas appears to be entirely due to fishing pressure and the design of core zone restrictions in protected areas. In the Bozyazi–Anamur area, for example, quite apart from the relatively low intensity of artisanal fishing generally, one of the two breeding caves in question is situated within a no-fishing zone. Although a pup born here became an entanglement victim last year, the animal drowned in nets away from the restricted area.

In the Gulf of Izmir there are no such restrictions around known monk seal breeding caves, even within the stipulated 'core zone' of the Foça Specially Protected Area where all human activities are prohibited except for artisanal fishing. Indeed, local artisanal fishermen can often be seen laying their nets within only a few metres of inhabited caves.

While these fishermen remain key, long-term partners in the conservation process, it is impossible to ignore the fact that, in the Gulf of Izmir at least, the incidental entrapment and drowning of pups and juveniles up to 4 months old in stationary nets is seriously jeopardising the survival and recovery of the species in the region.

Artisanal fisherman in Foça

The question is, what can be done to give these newborn pups every possible chance of survival? The simplest and most effective answer is to declare core zones around known breeding caves, and to ban the laying of stationary nets for at least four or five months during each breeding season, commencing every October or November.

Taking into account the entanglement locations and the proximity of identified breeding caves, it is also reasonable to extend that proposed ban to cover a wider area of the Foça archipelago, effectively extending the current ~5.5 x 3 nm protected area by some 2-3 nm on a seasonal basis. In the case of Karaburun, a stretch of coast about 15 km long, with the Mordogan cave at its mid point, could seasonally be put off limits to fishing with stationary nets.

While logic alone dictates this course of action, one cannot underestimate the potential hurdles in enforcing such restrictions, particularly since Foça is one of the largest fishing harbours in the Turkish Aegean. About 40 artisanal boats, 5-8 metres in size, crewed by 1-2 fishermen using stationary nets, long-lines, lines and baskets, mostly operate around Foça's off-lying islands, within a limited area of around 6 x 2 nautical miles. Although no firm figures are available, it is likely that about 60 families either fully or partially depend on this local industry. Most of the fishermen use stationary nets, some alternate between nets and long-lines depending on the season and the fish species targeted, while the remainder prefer to use only long-lines and lines. Conditions around the Mordogan breeding cave on the west coast are similar, although the numbers of boats and fishermen are virtually half those found in Foça. These boats generally fan out along the coast from north to south, fishing in the 3 nm-wide shallow channel between the mainland and Uzun (Long) Island. Both Foça and Mordogan have their own fishing cooperative that collaborates with SAD-AFAG to prevent illegal fishing and to generally promote sustainable use of fish stocks.

Despite these advances, most artisanal fishermen jealously guard their traditions and are suspicious of regulation – except where it affects their foes, the trawler-men. They also show strong conservative streaks when it comes to their own fishing techniques, which they are reluctant to change or modify. Most view local fishing grounds as their own personal property. Many are poorly educated and remain on the lower rungs of both the social and income ladder. For the most part, they support monk seal conservation only because the conservationists have been prepared to listen to their problems and to carry their message to the higher reaches of government. In the case of Foça, they have succeed in having the trawlers, coastal seiners and purse seiners banished as the price of their commitment to the conservation process. Hearing of fish stock recovery in the area, fishermen from adjacent towns are now eagerly seeking the same advantages.

In view of these stark realities, who will be brave enough to enter the lion's den and ask the fishermen to stop laying their nets during the most profitable season – scientists, conservationists, politicians?

Without offering anything in exchange – direct compensation, an alternative fishing technique or income source, special re-training programmes – the end result could well be more threatening for the seals than the nets themselves.

Some have even raised the possibility of removing pups from their mothers and raising them in special rehabilitation units until they reach 4-5 months and can more safely fend for themselves. Such drastic action is, however, fraught with difficulties, both from an ethical and operational point of view.

The entanglement threat is due to be discussed during the next meeting of the National Monk Seal Committee in a few months' time, along with procedural matters governing the creation of monk seal protection areas. The options are few, but the risks great. Despite significant progress on the monk seal conservation front in many key areas, we cannot escape the fact that entanglement in certain areas is killing off a new generation of monk seal pups.

And to save the next probable victim, we have just six months.

Further reading on monk seal entanglement

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In Focus
Vol. 4 (1): May 2001

ARE MONK SEALS RECOLONISING MADEIRA ISLAND?

Rosa Pires
Parque Natural da Madeira

When the first Portuguese explorers landed on Madeira in 1420, they found in a bay on the south of the island numerous strange sea creatures whose cry was likened to that of the wolf. Since then, the monk seals of Madeira have been known as “lobos-marinhos” – sea-wolves – and the bay as “Câmara de Lobos” – literally “Wolves’ Chamber”.

The chronicler of that time, João de Barros, described how monk seals were abundant there: “...so many there were that they covered the entire ground” (Machado 1979).

Historical accounts of the exploration of Madeira mention seals only at Câmara de Lobos, possibly suggesting that the species was not to be found elsewhere around the island, or that it was present on other coasts only in insignificant numbers.

The discovery of the seals ushered in an intense period of persecution, as illustrated in the reports of João de Barros. The hunting of the animals, he declares was “by no means a small pastime for the people, because they killed many of them, and they took great pleasure in the killing” (Machado 1979, Johnson & Lavigne 1999). A lucrative industry quickly developed in exploiting the animal for its hide and oil.

Fig. 1. “…they killed many of them, and they took great pleasure in the killing” (Machado 1979).

Curiously, some people were known to place a seal flipper under their pillow to encourage restful sleep, an island tradition that appears to have been rooted in ancient superstitions from the Greek and Roman world recorded by Pliny the Elder (Johnson & Lavigne 1999).

Increasingly endangered, the monk seals of Madeira continued to survive only in remote, inaccessible and uninhabited places, such as the Desertas Islands. By the mid-20th century, largely due to fishing pressures and human disturbance, seals were facing extinction here as well but their decline was eventually reversed following implementation of a recovery plan in 1988, which saw the establishment of the Desertas Islands Nature Reserve. From a surviving population of just 6-8 animals, monk seal numbers at the Desertas have since increased to an estimated 23 individuals (Pires & Neves 2000).

While the monk seal population on Madeira had been virtually eradicated by the beginning of the 20th century, records suggest that it was still possible to observe the animals occasionally around Ponta de São Lourenço, a wild

and remote stretch of coast on the easternmost tip of the island, dominated by steep cliffs. Protected by this inaccessible coast, seals continued to cling to survival in small numbers. In 1978, an expedition to this area was even able to confirm the existence of a small colony, comprising 4 adults and 2 pups (Machado 1979).

Sporadically, seals were also sighted in other areas of Madeira. Locals can even recall observing one or two individuals swimming in the bay of Funchal (Madeira's capital) 25 years ago, although such events became exceedingly rare.

Since 1998, however, sightings reports around Madeira have become more frequent. In that particular year, there were eight observations, two allowing identification of a known breeding female from the Desertas Islands. This information was considered particularly significant, allowing us to confirm for the first time that the range of the seals inhabiting the Desertas Islands also includes the main island of Madeira.

Fig. 2. A monk seal under observation near Cabo Girão, south coast of Madeira, 14 June 1998

The following year, 1999, the recorded observations increased to 12; by 2000 they had risen to 19.

Observations mostly consisted of single individuals that remained visible only for a few minutes. In June 2000, however, two seals (probably a female and its juvenile offspring) were observed three times in the same area along the southwest coast.

Essentially, all animals were probably observed while transiting. In some cases, fishermen reported that the seals stayed close to them for prolonged periods in order to snatch the fish from their lines.

Analysing our collected data (see figure 3), it is possible to verify that sightings are increasing around Madeira island. Their occurrence shows a concentration tendency in places with human coastal activities such as diving, fishing and sailing, in other words, in the vicinity of potential observers. As such, we cannot exclude the possibility that monk seal presence may be even more significant in remoter areas largely devoid of human presence.

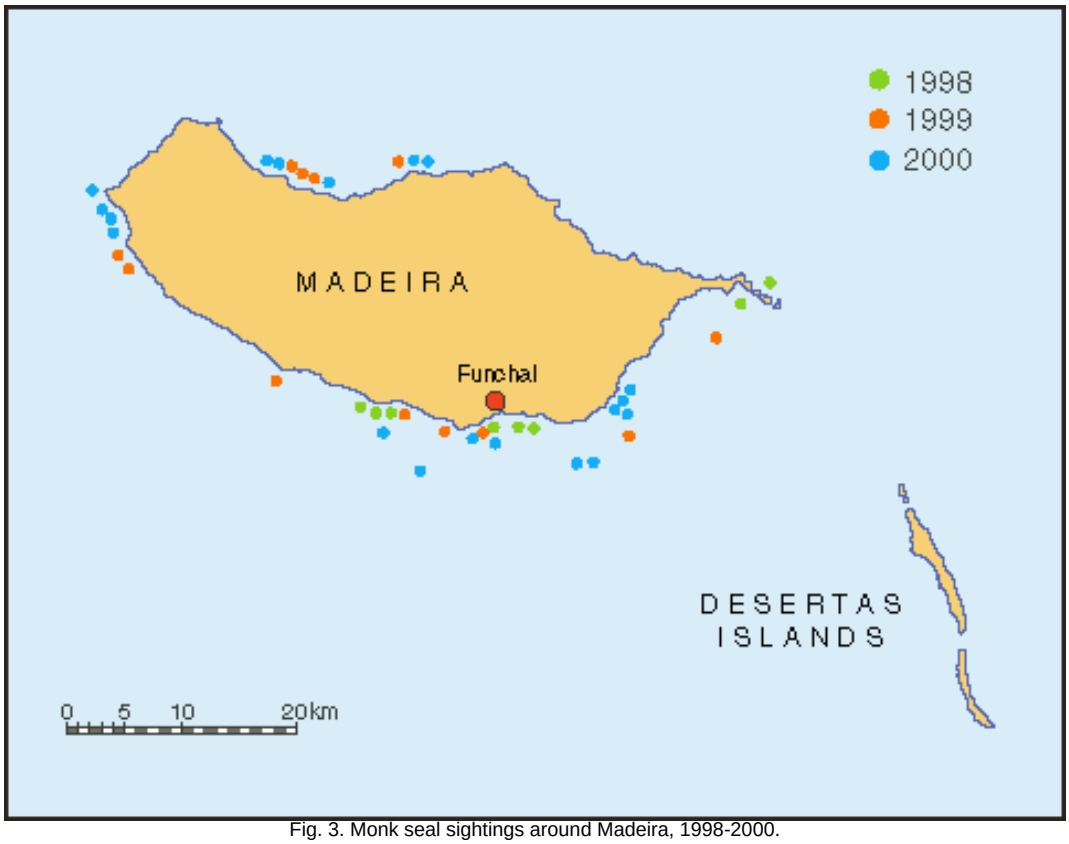

Fig. 3. Monk seal sightings around Madeira, 1998-2000.

By the same token, we cannot ignore the potential impact that increasing public awareness of the seal's ecological importance may have had in encouraging more frequent reporting of observations. If this is indeed the case, increased reports would not necessarily translate into increased monk seal sightings.

Other factors, however, appear to contradict this statistical phenomenon. Of the total sightings around Madeira, for example, only a few were reported by professional fishermen. A possible explanation for this is provided by our experience in field research which shows that some fishermen fail to report seal observations because they fear the creation of new marine reserves and new fishing restrictions.

In our view, the increased sightings around Madeira are likely to be at least partly attributable to the growing monk seal population on the Desertas Islands, encouraging enlargement of the population's dispersion area. The fact that known individuals from the Desertas have been identified around the main island adds additional weight to this hypothesis.

While we believe that these increasing monk seal sightings are probably a result of both factors – increasing reports from informed observers and dispersing seals from an increasing population in the Desertas – both offer positive news for monk seal conservation in the Madeira archipelago.

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The Monachus Guardian
monachus / schauinslandi / tropicalis

Perspectives

Vol. 4 (1): May 2001

Sayings of 3000 Years...

Wherein we furnish the most humorous, insightful and slack-witted comments on the Seale of the Mediterranean Sea and those Seales that may rightly be regarded as its cousins in kind in the vaste Outer Oceans... describing their True and Lively Natures, their Conditions, Kinds and Virtues (both Natural and Medicinal), their Love and Hatred to Mankind, and the wonderful work of God in their Creation, Preservation and Destruction...

Compiled by William M. Johnson
with Contributions from Numerous Correspondents Around the Globe*

Book II
1601 A.D. to 2000 A.D.

	TIMELINE
17th Century A.D. Sometimes sea bears enter the lagoon and cause great loss of fish. As they try to leave there for the open sea, great nets are stretched for them across the straits through which they have to pass. When they see themselves caught by them and attacked by the fishermen, they mount a surprising resistance. While they are trapped within the bay they often go along the shore letting themselves be seen without any fear, showing by certain actions they make that they understand everything that is said to them. And because I have never found myself present to witness such a thing, I scarcely allowed myself to be persuaded that a fish could understand what is said to it. ~ Mauro Orbini, 1601. Il Regno degli Slavi (quoted in Brusina 1889).	1633. Galileo summoned to Rome by the Inquisition to stand trial for "grave suspicion of heresy". For supporting the Copernican notion that the Earth revolves annually around the sun, he is threatened with excommunication and death. After recanting, he is sentenced to life imprisonment – quickly commuted to permanent house arrest.

18th Century A.D.

For some time I was undecided whether I should write down my observations, since the animal has already been on show around Germany for a year. But then I concluded that it could do no harm if there were several descriptions and illustrations of such a beautiful and rare animal.

On this occasion I was astonished, as I have been so many times before, about the impudence of certain people, and how they judge things that they do not understand. One of the spectators announced with great confidence that it is a Sea-pig, another that it is a tuna, and yet another that he had eaten of its flesh and that it tastes like salmon, and that one often catches them in rivers: probably he meant the sturgeon. But what astonished me the most, and probably annoyed me as well, was how so many people who presumably have eyes in their heads were all speaking of the seal as a fish.

~ Johann Hermann, 1779.

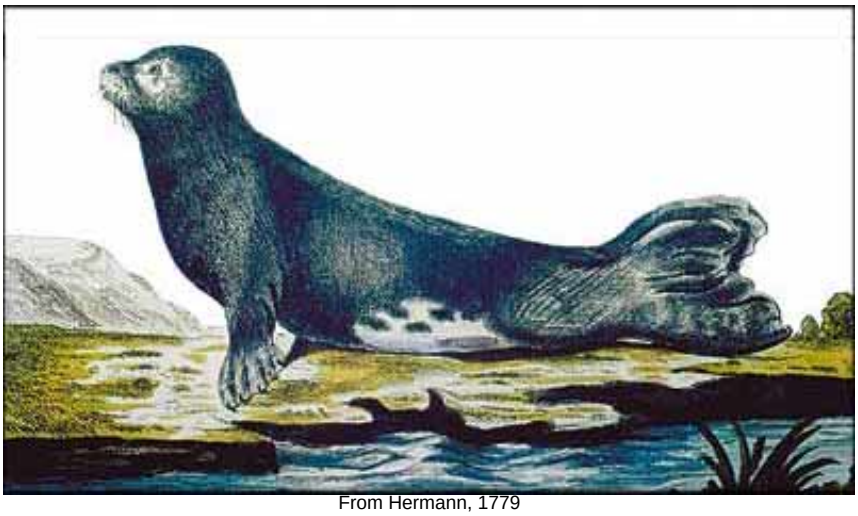
Its aspect is mild, and its disposition not fierce; its eyes are quick and indicate intelligence, or, at any event, they express the sentiments of affection and attachment to its master, whom it obeys with the utmost readiness.

~ Georges-Louis Leclerc de Buffon, 1782.

Europe moves into the Age of Enlightenment – also known as the Age of Reason – propelled by a scientific rationalism that begins to seriously erode and undermine traditional religious beliefs and the power of the Church.

The Swedish naturalist Carolus Linnaeus (1707-1778) develops binomial nomenclature to classify and organize plants and animals.

1778: Captain James Cooke discovers the Sandwich Islands, now known as Hawaii.



From Hermann, 1779

19th Century A.D.

During this month [December 1886] Mr. Henry L. Ward, of Rochester, son of Professor Henry A. Ward, the well-known ‘museum builder,’ visited the three little keys off the northwest coast of Yucatan known as the Triangles, for the express purpose of securing specimens of this rare animal [the Caribbean monk seal]… Forty-nine Seals were killed, forty-two of which were taken away, but one of them was afterward lost…

~ J. A. Allen [American Museum of Natural History, describing how some of the last Caribbean monk seals fell victim to museum collectors], 1890.

19th century: Powered by coal, Europe and America forge ahead in the Industrial Revolution.

Explorer-naturalists scour the world for animal and plant exhibits for zoos and museums.

20th Century A.D.

1910

The pleasant animal quite enjoyed listening to the music of the bells and singing, but the real show started when playing on the harmonica was introduced in the experiment. Mr. Predic played softly and quietly different melodies. The monk seal raised its head from the water and started listening with curiosity and attentiveness. Afterwards, it lowered its head and closed its large and beautiful eyes occasionally, and almost fell asleep. This was repeated several times and all people present were impressed by this and convinced that the monk seal has an affinity for music. The entire experiment lasted 15 minutes. Mr. Predic had the appearance of an animal tamer. This experience was touching and magnificent and I will remember it for the rest of my life.

~ M. Katunaric (quoted in Zupanovic 1966).

1914: With nationalism running rampant throughout Europe, the "war to end all wars" breaks out, eventually claiming some 20 million lives.

1930s

My father must have killed 15-20 sea-bears [monk seals], I suppose. I remember there were plenty of seals around here then [in the 1930s]. First they killed the animal, then removed the skin from the body to let it dry and then cut the skin accordingly to produce "Çarik". It was impossible to find shoes in those times so we had to wear Çarik. Our father used to provide us with Çarik made from ox skin because Çarik made from sea-bear skin was smelling [bad]. But we knew very well that Çarik from sea-bear skin was very strong compared to that from ox skin and also it was very good for rheumatism. My father used to sell or barter the sea-bear Çarik to the mountain villagers…

~ Melahat Ural, interviewed in the Black Sea village of Gideros by Cem O. Kiraç.

1917: The Russian Revolution begins with the arrival of Vladimir Ilich Lenin in Petrograd.

1943

But the best, and the most ludicrous, record is that of an old female Monk Seal whose stuffed skin and skeleton now lie alongside one another in the Fishery Laboratory in Alexandria. She was taken about ten years ago by fishermen in Port Said, who sent her in a box alive to Alexandria, where she quickly died, probably as a result of an extraordinary change of environment. The fishermen were convinced, a proof of the present rareness of the Monk Seal in the region, that this animal was a solitary wanderer from high northern latitudes. She therefore suffered the fate of being crammed alive into a box and sent by train closely packed in ice.

~ G.C.L. Bertram.

1922-1939. Fascism rises in Mussolini's Italy and Hitler's Germany, ushering in World War II.

1950s: The Cold War gathers pace, with both the USA and USSR developing Inter-continental Ballistic Missiles.

1950

In freedom the monks prove to be of a perfectly sociable character. One of my friends, passionate amateur underwater hunter M. Delais, of the l'Office de le Recherche scientifique d'outre-mer, was swimming in their company and was but the object of an astonishing sympathy and a remarkable diving demonstration.

~ E. Postel.

1953: Watson & Crick publish their discovery of the chemical structure of DNA

1960s

The first of these “strange fishes” came out of the sea to a small beach where it was observed to have “whiskers like a man” and heard to “cry like a woman” when poked with a stick. Its eventual fate is not known, but it seems unlikely that it would survive the chastisement to which it was obviously subjected. The second specimen also attracted its crowd of curious onlookers. Fearing that it might be dangerous, it was destroyed by a home-made bomb.

~ W.J.T. Norris, relating how monk seals appeared in the harbour of Tobruk, Libya, in the early 1960s.

The following measures are recommended: …To point out to governments that Monk Seals are an important but now only a potential natural resource. Managed properly the seal could become a permanent source of skins, meat and oil.

~ A. van Wijngaarden, in a report to IUCN.

1962: The Cuban Missile Crisis reaches its climax, with the United States and the Soviet Union on the brink of nuclear war.

1978

Loss of habitat must be the candidate for the main cause of decline… Monk seals may have originally bred on open beaches, and their present habit of breeding in caves may simply be a retreat from the greater and greater encroachment by *Homo sapiens*. Several speakers at Rhodes questioned the suitability of caves as a monk seal habitat. It seems that grey seals that breed in caves produce fewer pups than those which use open beaches. For them, caves are a marginal habitat, mainly because they are flooded during storms and pups are easily drowned or separated from their mothers.

~ S. Anderson.

1974: Following the overthrow of Cyprus’ President, an act engineered by the military junta in Greece, Turkey invades and gains control of the northern third of the island.

1979

The tameness of unmolested seals to man could become a hazard if reserves are set up in close proximity to intensively exploited fishing grounds. A system of buffer zones is envisaged, possibly with compensation to fishers for damage to their nets in such areas as the price of allowing the seals to be unhunted. In such buffer areas, it is possible that some income could be obtained by fishermen serving as guides to visitors, which would offset to some extent the cost of payments to fishermen. Where unmolested the species should achieve its very remarkable degree of tameness and give pleasure to many people.

~ David Sergeant, Keith Ronald, Jean Boulva, & Fikret Berkes.

1979: At the instigation of World Wildlife Fund International (WWF), the International Union for Conservation of Nature and Natural Resources (IUCN), the Council of Europe and the Greek government, the First Biogenetic Reserve of Europe is approved for monk seals on the eastern Aegean island of Samos. Within a few months, the reserve is invaded by military and development interests.

1980

"[They] trained the seals with the purpose of using them to spy for the Turks."

~ Police Chief Theophilus Drumpis, Samos, Greece, referring to IUCN/WWF Project 1697 and quoted in the German news magazine *Der Spiegel*.

The owners of the [Seitani, Samos] bungalows paid one and a half million drachmas in fines but the buildings were never demolished. And, as if this were not enough, the construction of a new road consummated the ecological disaster: rocks and sand fell into the sea, destroying the eggs of the seal, while the continuous dynamite explosions chased the seals away from their refuges.

~ Greek illustrated magazine, *Tachydromos*, 1980.

In modern times the Caribbean monk seal has shown, and the Mediterranean and Hawaiian monk seals are showing, that inability to adapt leads to extinction. Mankind need not feel responsible for something that began 8 million years ago, but along the western coast of Africa from Casablanca nearly to Dakar and in the Leeward Islands of Hawaii, because they were unable to adapt, are living fossils comparable to the last of the dinosaurs surviving in the remains of a forgotten environment.

~ C.A. Repenning.

1980: Amid great fanfare, WWF/IUCN and the United Nations Environment Programme launch the World Conservation Strategy, advocating a policy of sustainable development and sustainable use of natural resources.

1980: A military junta assumes power again in Turkey, declaring martial law and dissolving all political parties.

1982

Coastal grapevine owners in Algeria claim that the seal will climb to the grapevines at night to eat the grapes, where grapevines are often grown close to the seashore.

~ J. Boulva.

1984: Morocco quits the Organization of African Unity to protest the seating of the Polisario movement, campaigning for independence of the western Sahara.

1985

The parties to the Barcelona Convention included among their priority targets to be achieved by 1995 the protection of the Mediterranean monk seal.

~ UNEP/MAP, Action Plan for the Management of the Mediterranean Monk Seal.

1984: Scientists discover the Ozone Hole over Antarctica, leading to fears over increases of ultraviolet radiation.

1986

[In these] six years of monk seal conservation we have had some interesting cases of interplay between man and seal, although we had not provoked the situations. On the 19th January 1990, when returning to the station in kayaks after a seal survey, we were surprised by loud roarings inside one cave at Furadinho [the Desertas Islands, Madeira], and suddenly a seal pup came to us swimming and barking, followed by the angry mother, that, holding the pup by the neck, took it inside the cave while roaring. A minute later the pup repeated the scene, and this time even tried to climb onto one kayak, which got the mother still more upset; in fact the adult came to us and [snarled] aggressively and took the pup again to the cave. The situation was repeated again and we decided to leave the area, noticing that the pup always came to the yellow kayak and not to the blue ones.

~ Henrique Costa Neves.

1988: Monk seal researcher Didier Marchessaux and several colleagues are killed in a landmine explosion in the western Sahara.

1988

"If we don't get the seals it will be the end of this species. Let's take advantage of the facilities at Antibes [Marineland]. Negative results could give us more valuable results than positive ones."

~ A. Manche, quoted in Johnson, W.M. 1988.

Today, the enemy of monk seals is not only the fishermen, but all those who invade and ruin their habitats… Finally, I wonder where we should put the monk seals that have been removed from their natural habitat, and are being kept in some aquarium, if they happen to have success in reproduction – what shall we do with these poor creatures whose habitats have already been almost completely ruined? Why are we trying to breed them in captivity instead of trying to help them to breed in their own natural, undisturbed habitats, where they are still leading a natural life today?

~ Bahtiye Mursaloglu.

1988: A U.N.-brokered cease-fire takes hold in the disputed territory of the western Sahara. Polisario guerrillas, however, resume attacks 14 months later, doubtful over Morocco's commitment to achieving a lasting peace.

1989: People of East and West Germany dismantle the Berlin Wall.

1990

On 19 November, the Bellerive Foundation and the World Society for the Protection of Animals (WSPA), in association with the French environmental group *Robin des Bois*, took court action against the French Ministry of Environment and its decision to allow the importation of up to 7 monk seals by Antibes Marineland. The animals were to have been caught in caves just north of the Mauritanian border, in an operation spearheaded by British celebrity vet David Taylor. According to Marineland and the French Ministry of Environment, the seals would be used in an experimental captive breeding project. But the Bellerive/WSPA application for an injunction against the import asserts that there is no scientific support for Marineland's plan, and that the transaction is motivated by commercial interests.

~ William M. Johnson, Bellerive Foundation Action Alert Newsflash, 6 December 1990.

1991–1992: Slovenia, Croatia, Macedonia and Bosnia secede from Yugoslavia, igniting a vicious civil war in the Balkans.

1992: The Earth Summit convenes in Rio de Janeiro, Brazil. It is the largest gathering of world leaders in history, with 117 heads of state and representatives of 178 nations attending.

1992: Algeria erupts in civil war following military intervention to suspend a probable election victory by the Islamic Salvation Front. By 1995, the death toll reaches over 40,000 people.

1996 In terms of behaviour, contrary to past reports, pups were observed to enter the sea within the shelters during the first week of life, even in the absence of their mother, while pups were observed to leave their shelter and swim in the vicinity alone in the second week of life… During the study, 11 pups were found to have changed shelters during their development and travel distances of several hundred meters at the age of two or three months old. On one occasion, a 10 day old pup was observed to have moved into a adjacent shelter covering a distance of at least 1500 meters. ~ P. Dendrinos, S. Kotomatas & E. Tounta.	1996: Greece and Turkey come to the brink of war over the disputed islet of Imia/Kardak in the eastern Aegean. An armada of warships confront each other in a tense stand-off in the disputed zone. Feverish international diplomacy finally persuades the potential combatants to withdraw.
1997 The largest population of the rare Mediterranean monk seal is in the western Sahara colony at Cap Blanc. The mean numbers in the period 1993-1996 were estimated as 317 individuals and the population was thought to be stationary or changing at a very low rate. In the spring of 1997 a severe mass mortality reduced the numbers by 70%, compromising the recovery of the species in the Atlantic. ~ Jaume Forcada, Roger Pradel, Manel Gazo & Alex Aguilar, 1999.	1997: The world's largest surviving monk seal colony, on the disputed Côte des Phoques of the western Sahara, is struck by a mass mortality event. Scientists are unable to determine whether the deaths are due to a morbillivirus or a toxic algae.
1999 Having read the earlier section on the management bureaucracy, one anonymous reviewer was moved to comment specifically on the "ponderous Byzantine, complicated bureaucracy that oversees actions relating to the Hawaiian monk seal… This specter," the reviewer continued, "left me with the feeling that there was no hope for saving the monk seal from extinction… [a] conclusion [that] should be obvious to all readers." ~ David M. Lavigne,1999. … tourism continues to play a fundamental role in the final eradication of the monk seal, and even poses a serious threat in the protected areas that are at last being established for the species. Monk seals are still being harassed in their caves by tourists and speed boats. Elsewhere, monk seal habitat is being turned into coastal development strips dominated by resort complexes. As far as anyone can see, the beaches of the Mediterranean are still littered with plastic, and polluted with oil and tar. Incredibly, seals have even been speargunned by snorkelling tourists – no doubt a magnificent trophy to human stupidity. ~ Prince Sadruddin Aga Khan.	1999: 219 million tourists visit the Mediterranean, generating some 131 billion U.S. dollars. "Since the Rio Earth Summit there has been a steady increase in awareness of the importance of environmental issues for Travel & Tourism. Around the world governments, industry and academia have undertaken research and implemented actions to ensure that travel does not impact adversely on the natural, human or built environment." – World Travel & Tourism Council, 1999.
2000 The rate at which the monk seal populations are declining now precludes any notion of priority in the choice of protection measures. The only hope of saving the species resides in a strategy of an "attack on all fronts," involving simultaneous use of all possible means. ~ Regional Activity Centre for Specially Protected Areas (RAC/SPA), insisting that captive breeding programmes be pursued despite overwhelming scientific opposition.	2000: Beset by bureaucratic problems, the European Union cuts/delays essential funding to Greece and Turkey for frontline monk seal conservation projects.

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FURTHER OBSERVATIONS OF MEDITERRANEAN MONK SEALS ON THE NORTH ATLANTIC COASTS OF MOROCCO

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The Mediterranean monk seal *Monachus monachus* is known from the Black Sea, the Mediterranean, and the northwest coast of Africa as far south as Gambia. In the Atlantic, the most important populations are in Madeira and along the Cap Blanc peninsula, in the south of Morocco.

On the Atlantic Moroccan coast, between the Straits of Gibraltar and Agadir, recorded observations of Mediterranean monk seals are few and relatively old (Bayed & Beaubrun 1987). In spite of the research efforts undertaken by a network of observers coordinated by the *Groupe d'Etude des Cétacés et Pinnipèdes du Maroc* (GECPM) based at the *Institut Scientifique* of Rabat, only three reliable sightings of Mediterranean monk seals have been added to the GECPM database. These sightings are described below.

The first confirmed sighting was reported from Plage Blanche (28°55N - 10°30W), 200 km south of Agadir (Figure 1, Arrow C). The individual was seen in 1988-1989 and remained for several days, moving between the sea and the beach, where it rested. It left the area when approached by a fisherman. No precise indication was provided either on the coloration of the animal or its size. No previous sightings of Mediterranean monk seals have been recorded from this region. The fact that this individual remained on this immense beach (40 km in length) for several successive days was probably due to the very low level of human activities and the abundance of fish for which this area is known.

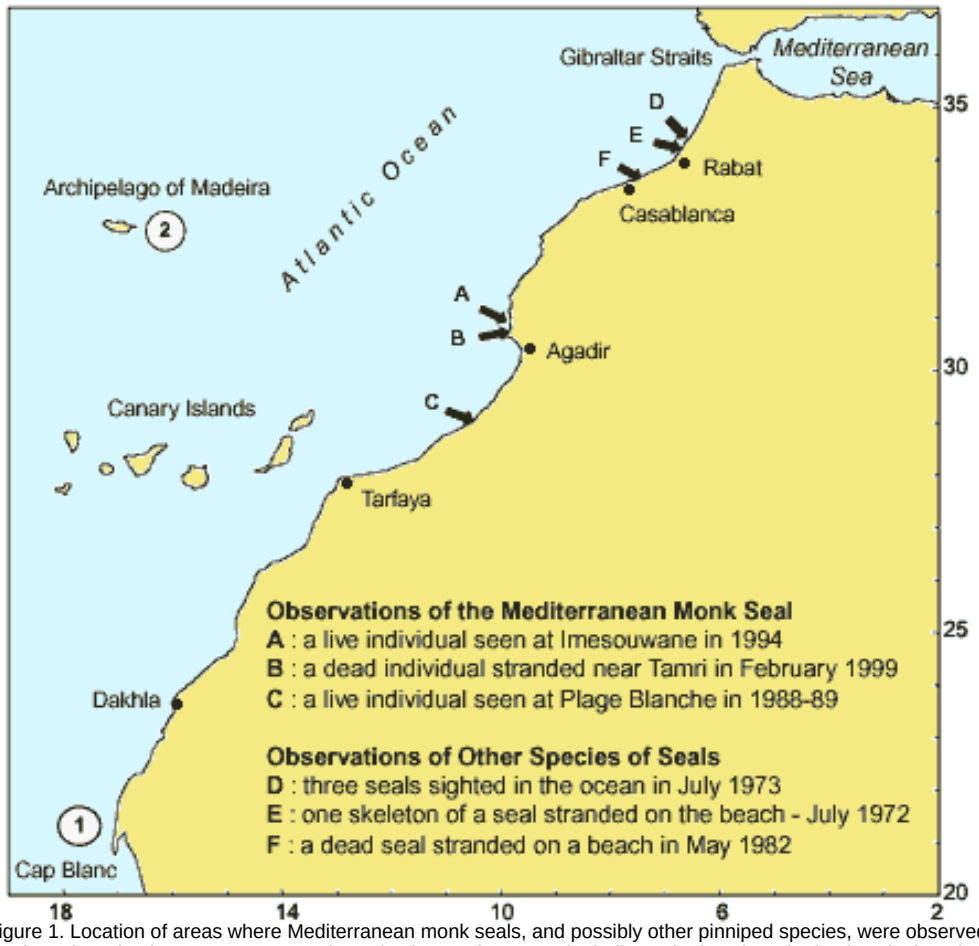

Figure 1. Location of areas where Mediterranean monk seals, and possibly other pinniped species, were observed along the Atlantic Moroccan coasts (arrow). The numbers 1 and 2 indicate the location of Atlantic colonies of *Monachus monachus*: (1) The Cap Blanc colony (Côte des Phoques) south of Morocco and (2) The Desertas Islands colony in the Madeiran Archipelago.

The second confirmed sighting of a live *Monachus monachus* was from the Bay of Imesouwane (30°50N - 9°50W), situated 60 km north of Agadir (30°25N - 9°38W; Figure.1), in January 1994. The bay, which is surrounded by the mountainous High Atlas, is open toward the ocean and sheltered by a cape located to the north. There is one village, where fishermen keep their boats and undertake local fishing activities (Figure 1, Arrow A).

The seal was observed lying on a sand beach in the middle of the afternoon at low tide (Figure 2). When the animal was approached, it immediately escaped towards the ocean. It then disappeared beneath the surface and was not observed again. This individual had been on the beach for less than one hour. According to the morphological categories of the Mediterranean monk seal established for the Cap Blanc colony to the south (Samaranch & Gonzales 1996), we estimate that this individual was a juvenile less than 2 m in length and aged between 8 and 22 months.

The third observation involved a dead animal. It was lying at the mouth of Oued Tinkert at Tamri (20 km north of Agadir and 40 km south of Imesouwane) in February 1999 (Figure 1, Arrow B). According to Hansen (in litt.), "It had a greyish-brown or light brown ground colour. As it lay a bit on the side the belly seemed somewhat brighter in colour." It was less than 2 m long. Given its colour and size, it too was probably a juvenile or a medium grey seal (see Samaranch & Gonzales 1996). The animal had been stranded on the beach for several days.

Figure 2. The second confirmed monk seal sighting at the Bay of Imesouwane in 1994.

There are a number of other reports of Mediterranean monk seals along the Moroccan coast north of Agadir. These include: an individual observed in 1947 (Panouse 1957) at the mouth of the Oued Yquem (15 km south of Rabat), and two individuals between 1955-60 and another in 1977, from the region of Agadir (Avella & Gonzales 1984).

There is no known resident group of individuals or a population of Mediterranean monk seals on the Moroccan Atlantic coasts north of Tarfaya. It is likely, therefore, that the monk seals observed at Plage Blanche and Imesouwane originated from the Madeiran archipelago or from Cap Blanc peninsula. Plage Blanche and Imesouwane are respectively located 750 km and 700 km to the east of the colony of the Desertas Islands of Madeira, and 1,450 km and 1,700 km to the north of the Côte des Phoques on the Cap Blanc Peninsula (Figure 1). The dead animal observed on the beach near Agadir may have had a similar origin.

At present, it is difficult to imagine that these individuals originated from currently unknown groups existing north of the Côte des Phoques colony. Apart from the fact that no monk seals have been reported along this stretch of coast, the area is also characterised by growing human activity and disturbance. Proximity alone would suggest that the monk seals observed along the Moroccan coast originated in Madeira, where the dominance of southerly marine currents would facilitate the dispersal of juvenile animals. The fact that Mediterranean monk seals – usually young animals (e.g. Aguilar 1998) – also are occasionally reported in the Canary Islands supports this suggestion. The Canary Islands are situated 500 km to the south of Madeira and 880 km to the north of Cap Blanc.

Other observations of seals have been reported from Atlantic Moroccan coasts and, although some of these have been identified as *Monachus monachus*, they could not be confirmed. These include: (a) one skeleton of a seal stranded on a beach 12 km north of Rabat in July 1972 (Figure 1); (b) three seals sighted in July 1973 in the sea 12 km northwest of Rabat; and (c) one seal stranded on a beach 30 km north of Casablanca in May 1982. Without confirmation it is impossible to know if these seals were really Mediterranean monk seals or some other pinniped. Other North Atlantic pinnipeds recorded south of their normal range include the hooded seal, *Cystophora cristata*, the ringed seal, *Pusa hispida* (recorded in southern Spain, Van Bree 1997), and the harbour seal, *Phoca vitulina*, which has been known to penetrate the Mediterranean through the Straits of Gibraltar (Raga 1996).

Do these observations of *Monachus monachus* correspond to regular displacements, with individual animals making “round-trips” to and from the original colony? Or do they correspond to erratic displacements of young individuals, which are unlikely to find their way back to their original colonies? Some seals from Cap Blanc have been reported to travel a hundred kilometres in search of food when it becomes scarce (Marchessaux 1989). In other cases, displacements could be induced by social interactions between individual seals. In such instances, non-reproductive individuals may leave a colony and travel several hundreds of kilometres. It is also conceivable that displaced individuals may remain in an area for an extended period if they find adequate food and suitable, undisturbed haul-out sites. The latter circumstances may apply in the case of the Plage Blanche seal, which only left the area after it was disturbed.

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Letters to the Editor

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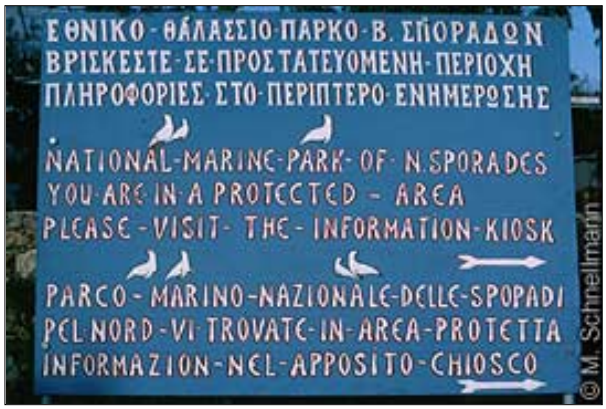
Off Course in the Aegean?

The November 2000 article by Dendrinos et al. [A Field Method for Age Estimation of Mediterranean Monk Seal Pups, Monachus Science Posters, TMG 3(2): November 2000] underscores some of the serious and enduring problems that affect Mediterranean monk seal conservation in Greece.

While readers of TMG are no doubt fully aware of the critical status of *Monachus monachus*, there is little opportunity, even for insiders, to assess the effectiveness of current conservation activities. These are conducted in remote areas, where the last remaining individuals still manage to survive, and where usually there are no means to check what is actually happening.

The article by Dendrinos et al. opens a window on the National Marine Park of Alonissos, Northern Sporades (NMPANS), which is said to be one of the most important retreats of the species in the Aegean.



This “Study Area” became the exclusive territory of one organisation, the MOm (Hellenic Society for the Study and Protection of the Monk Seal) based in Athens. MOm, according to TMG, has taken up “the burden” of guarding the Park and of running the marine biological station at Gerakas on Alonissos. Its field team carries out surveys anywhere within the Park’s boundaries, even in the core zone – the island of Piperi – which is strictly protected by Presidential Decree. Nobody has access to Piperi except by official authorisation.

Yet I have a letter in my possession issued by the Ministry of Environment which states that the Ministry has no legal authority to grant permission for entering restricted zones in the Park. But then who **is** responsible? Only the management body of the Marine Park, presumably. However, the management body has never been established, despite our numerous appeals to the Ministry. Therefore, based on the only evidence available, there was and there is no authority that can issue a permit for entering the core zone of Piperi and other restricted areas! Consequently, one has to assume that MOm, through its semi-official status as the NGO with the paid privilege of guarding the Park (by whom and by which authority, however, one should ask!), has awarded its own researchers exclusive access to Piperi and other restricted areas without any authorisation by any official body.

One might say that if the main objective was to protect seals, then MOm’s intervention was necessary. However, it must be said that the presence of MOm has done little to encourage the Ministry to fulfil its obligations in setting up the management authority. One has to wonder if MOm really regards such an authority as being in its own best interests. Clearly, a supervising body – even if it was appointed a member – would result in the organisation losing the operational freedom that it currently enjoys in the Park.

To avoid potential conflict of interest, a clear distinction should exist between guarding the NMPANS and research activities in areas of restricted access within the Park’s boundaries. Yet for more than 10 years, the research crew of MOm has been able to handle the seals as they wished... almost as if the individuals of this endangered species were their own personal possessions. Furthermore, during all this time, research has been the **main** factor of disturbance for the seals, at least at Piperi – more so than by fishermen, tourists or any other cause. This is in spite of repeated warnings (echoed in TMG) that disturbance of seals in their

shelters must be avoided.

According to the article on age identification, MOm's researchers invaded "all 35 seal-shelters found within the study area" as a routine exercise. "Especially during the breeding season (July-December), the frequency of the surveys and the ability to exhaustively cover all shelters within a 24 hour period, provided the opportunity to estimate the date of birth (+/- 5 days) of each newborn pup encountered… During the study period (1990-1998), 243 different encounters with monk seal pups were recorded."

One has to read these quotes at least twice in order to fully comprehend the extent of disturbance they represent. Entering the narrow space of a seal shelter **always** poses a high risk, even if the people who do it are "experienced" (experienced because of earlier such invasions!). That this risk to monk seals and their habitat was occurring in the core zone of the Park I regard as totally irresponsible.

Even if the seals somehow got used to the intrusions, what benefit do these research projects have in ensuring a better and safer future for the species? In the end it is only that which counts. I have tried in vain to discover any such advantage from the results in MOm's article on age identification of pups. Firstly, the age classes described are very vague. Secondly, who is supposed to see these infants anyway apart from the cave intruders themselves?

Considerable numbers of concerned people, including myself, are still waiting for the results of research which might actually **help** the monk seal's survival. Such research (referred to in MOm's joint publication with Archipelagos) [**MOm /Archipelagos**. 1995. National Strategy for the Conservation of the Monk Seal in Greece, available in the Monachus Library] includes investigations into the home range of the species, migrations, epidemiology and food preference.

I can add a few additional research priorities to that list: communal behaviour (how adult seals interact, and to what extent they establish bonds with other individuals within their home range); movement patterns (do juvenile seals travel between locations more frequently compared with older ones?); seal-human interactions (outside of shelters, of course); mother-pup behaviour (do mothers adopt orphan pups?); habitat (to what extent do seals use open beaches for resting and what are the characteristic features of those beaches?). Unfortunately, instead of pursuing these objectives, research appears to be weighted towards theoretical concepts that have no immediate or practical conservation significance: studies of reproduction rates, for instance, mortality (if that means life-span), and age structure.

The major threats that endanger the species have been common knowledge for two decades already. In this context, it does not matter to what precise percentage direct killing or drowning in nets are lethal threats [see When fishermen save seals, Letters to the Editor, TMG 3(2): November 2000]. We know that **both** are serious enough to warrant remedial action.

It is this kind of pseudo-activity that absorbs the scarce financial resources that are so urgently needed for actual protection measures on the ground. That should not only be a focus of concern for those who have provided significant amounts of cash to monk seal conservation efforts over the years. It should be the **obligation** of the monk seal community to ask whether there might have been more efficient ways of spending these funds.

MOm has gained impressive experience in mapping coastal caves, and most of their reports deal with surveys of such potential or actually used shelters. But we are still waiting for the essence of all that material, an analysis that would point to the peculiar and common characteristics of caves that are preferred or avoided by seals.

When Yannis Florous and myself found the first breeding cave of *Monachus* at Piperi in 1976, it was just before a very strong storm from the north blew up, running straight against that cave. So when we returned after several days we were afraid that all three pups might have been killed by the waves. But no, the mother seals knew exactly where to give birth, and which cave was safe: the big waves broke at the cliff on top of the entrance, so almost no swell reached inside towards the pebbles on which the pups rested. These are the kinds of research priorities that might have some practical application in saving the species.

More criticism is called for where rescue and rehabilitation is concerned. A typical example is the recent sad story about a little pup found on a beach on Ikaria. I am not saying that this pup could have been saved by different treatment. It apparently was in a bad state. But why do we have to hear about what kind of important people were involved, about the "Rescue and Rehabilitation Coordinator" of MOm, about its "Rescue and Rehabilitation Team"… the specialist-specialists and so on? Compared to this, far too little was reported about the location of the stranding, whether any seals are known to live nearby, and – considering the amount of attention and examination – the specifics of the parasite infection diagnosed.

The Monachus Guardian is **the** monk seal forum on the Internet. So one should be able to expect an adequate presentation of facts! Didn't it occur to you, the Editor, being an observer of the monk seal scene for so many years, that MOm's self-presentation of being **the** specialist in "rehabilitation" is totally groundless? There was not one rehabilitation so far of any monk seal to the wild, unless you accept that a simple release falls under that criterion.

Rehabilitation means reintroduction, with external help, to the normal ways of life of the species – a return to

the population. I do not know of one single case where that objective was achieved. After having been kept in human custody, the seals were simply released to fend for themselves or became so imprinted on humans that they continued to cling to human contact. “Theodoros” is the most popular example. There is no evidence that **any** of the rescued and eventually released seals actually joined wild seals and contributed to the population by mating. Not one.

I cannot even begin to guess what huge amounts of money were spent on financing the rescue operations. But I can say that the efforts were in no relation to the results achieved. It is perfectly clear that one does **whatever** is possible to save the life of an orphaned pup. But that operation falls under “animal welfare”, not under species preservation! IFAW [the International Fund for Animal Welfare] is the most fitting organisation for such a task, because its mandate is animal welfare. But it is misleading to make propaganda from such rescues by claiming that they add to the reproductive population of the species. That is totally wrong and I cannot hold back the suspicion that these poor little seals have been largely used for image-building for those involved. Pups always raise emotions, and seal pups even more than others; they are – as everybody knows – extremely appealing. Bearing in mind my previous references to scientific research priorities, I also wonder why there was never any attempt made to find a foster mother in the wild? Isn’t there some scientific evidence that Hawaiian monk seal mothers adopt orphan pups? I have also heard similar reports from the western Sahara.

Unfortunately, the forces that control monk seal conservation in Greece today will not enter any reasonable or constructive dialogue. People who once contributed to the preservation of the islands have, in recent years, been pushed to the sidelines. Even myself, the very person who first brought the seals at Piperi to the world’s attention, who made the initial, detailed proposals for the Marine Park, and who has enjoyed very close relations with the people of the Northern Sporades since 1957, has since been prevented from visiting Piperi, and from contributing to the conservation process.

In September 2000 I heard from the fishermen of Alonissos that conditions are “worse than ever” around Piperi. Watching day by day – and I can imagine they do check from a distance what is going on in their traditional, but now off-limits fishing grounds – they notice trawlers and other foreign boats, they talk about speargun-fishing by tourists, and other illegal activities.

Sadly, the Northern Sporades remain the only example, at least in Greece, where a balance was achieved and a peaceful relationship established between fishermen and seals in practical terms. Now even that relationship is being put in jeopardy after a very promising start. It is essential that the fishermen – in fact all the human population in seal areas – be at the forefront of controlling the protected area. If we cannot re-establish the ancient awareness of unity with nature, a sustainable co-existence, then all our future attempts will be fruitless.

I fear that the encouraging initiative of local people on Karpathos (supposedly MOm-coordinated!) to set up their own locally managed conservation area for monk seals and other wildlife, cultural monuments etc., may suffer that same fate [Mediterranean News, TMG 3(1): May 2000]. Despite its promise, there is the real danger that this genuine and straightforward approach will be turned by outside directives into a lethal system of “Nature Protection Areas”, “Areas of Low Impact Development”, “Protected Landscapes” and “Coastal Protected Areas “ – in other words, strangled by petty regulations.

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✓ **Editor’s note:** At the writer’s request, a selected bibliography has been lodged in the Monachus Library.

RIGHT OF REPLY

On Course in the Aegean

The contribution of Dr. Thomas Schultze-Westrum in 1976, to identify the important monk seal colony at Piperi and to call for its protection, was indeed significant in the initial steps of establishing the National Marine Park of Alonissos-Northern Sporades (NMPANS). However, many things have changed since then and numerous people have worked hard during the last 25 years to achieve the effective protection of the monk seal population and the promotion of sustainable development in the area.

In reading Dr. Schultze-Westrum’s letter, it is obvious that he is not familiar with the current situation in the Park. In fact, the numerous contradictions contained in his communication, that in some cases present a wholly distorted view of reality, make it clear that he is at best ill-informed and that his ideas for the management of the Park and for the conservation of the species are both muddled and questionable. In this he can blame nobody but himself since, during the last twelve years while MOm has been actively involved in the NMPANS, he has not once bothered to communicate directly with us, either to request information or to express his thoughts or concerns. On the contrary, on several occasions it has come to our attention that he addressed “open letters” to key institutions and individuals (e.g. national and European policy officials, potential contributors of funds) in which he criticised with tenacity each and every one of our monk seal conservation efforts in Greece.

We indeed wonder if this is the “reasonable or constructive dialogue” that Dr. Schultze-Westrum is seeking? Despite the fact that we view this new “open letter” as a continuation of the same old ritual, we would like to express our views on several key issues in order to provide some objective information to TMG readers.

In considering the effectiveness of conservation activities within the NMPANS – an issue of quite legitimate concern for all those interested in the fate of the species – it is a wonder that Dr. Schultze-Westrum can disregard the fact that, during the last reproductive period of the species, 12 monk seal pups were recorded within the Park [Baby boom in the Sporades, TMG 3(2): November 2000]. By comparing this to the average of 5 pups recorded in the 1990-93 period, and to 8.75 for the years 1997-2000, it becomes abundantly clear that monk seal conservation here is well “on course.” Indeed, the fact that 9 of the 12 pups recorded in autumn 2000 were born on the island of Piperi provides compelling evidence of the effective enforcement of the strictly protected core zone of the Park.

Dr. Schultze-Westrum, looking through the “window opened by Dendrinos et al.” – an article presented at the World Marine Mammal Science Conference that also appeared in the last issue of TMG – appears to be suffering from the same kind of factual confusion in criticising the research methodology applied by MOm for over a decade now. In fact, the same methodology has been employed since the mid-1980s by numerous monk seal researchers in different parts of the eastern Mediterranean, including the Ionian islands and Turkey.

The potential effects of any research activity on a critically endangered seal species are, and should be, an issue of concern. This was one of the main reasons that MOm undertook the initiative, almost nine years ago, to form its own international scientific advisory committee, composed of leading scientists active in different fields of pinniped biology and ecology. The direct result of this continuous process of evaluating our work in terms of its scientific and conservation merit is the research methodology that we have been applying for several years, based on a combination of direct cave visits and the use of pre-programmed automatic cameras.

MOm’s cautious approach to research and its decision not to use highly invasive techniques (capture of animals, radio or satellite transmitters or TDRs) – methods widely used in studying other seal species – was decided upon after considering all the implications, fully cognisant of the fact that we were excluding potentially powerful tools in the study of the species’ ecology (e.g. movements of animals).

The increasing numbers of seals using these so-called “disturbed” shelters, together with increasing births, especially in the core zone of the Park, suggests that the animals are not being adversely affected by researchers. Despite the fact, however, that there is currently no evidence of negative impact upon the seals, MOm will continue to actively seek constructive criticism and advice on this issue.

In terms of the writer’s criticism of MOm’s Rescue and Rehabilitation Programme, we would simply like to draw attention to its key operating principles. The Programme has, since its inception, been based on internationally established operating protocols that were adapted to meet the specific needs of *Monachus monachus* during 10 years of practical experience. All procedures – rescue-treatment-release-necropsies – follow these protocols, that are constantly revised according to new scientific findings originating both from field research work and from the rehabilitation programme itself.

MOm’s Rescue and Rehabilitation Centre cooperates closely with the Veterinary School of Thessalonika and, at an international level, with the Seal Rehabilitation & Research Centre of Pieterburen, the Netherlands. When expert opinion on specialised issues is required, MOm relies on its scientific ad hoc advisors. These procedures ensure the quality and effectiveness of the work conducted.

The programme is indeed costly, as Dr. Schultze-Westrum has seen fit to criticise, and yet it has been almost exclusively financed through MOm’s own resources. Furthermore, its objectives and accomplishments, contrary to the writer’s claims, go far beyond the rescue and subsequent release of individual seals. Among other things, the programme has allowed collection of valuable data from all over coastal Greece on current threats to the species, enabling us to formulate appropriate conservation measures. Information gathered via the rescue network, for example, allowed us to complete a quantitative analysis of causes of monk seal mortality in Greece [see **Androukaki et al.** 1999. Causes of mortality in the Mediterranean monk seal (*Monachus monachus*) in Greece. Available in the Monachus Library], to gather information on the genetic variability of the Greek population in relation to the Western Atlantic one, and to determine the pollutants present in seal tissue, etc. Last, but not least, the programme provides a naturally effective way of raising public awareness, and of promoting further involvement of key stakeholders in the conservation of the species.

Being a complex issue, Dr. Schultze-Westrum’s comments regarding the management of the NMPANS merit special consideration.

First, the non-establishment of a management body responsible to plan, coordinate and promote all conservation activities within the Park remains a major drawback. Unfortunately, all those involved – central and local government, environmental organisations, scientists, local stakeholders, and others – have so far failed to accomplish this key task and MOm, despite its continuous efforts, is the first to acknowledge its due share of responsibility.

However, in the final analysis, the establishment of such a body remains in the hands of the Greek state. Unfortunately, although voicing a legitimate frustration, Dr. Schultze-Westrum does not offer any constructive criticism, relying instead on his customary habit of negating everything in sight.

At least some of his more spurious observations require clarification:

a) Based on the Presidential Decree governing the NMPANS, the official authority responsible for the management of the Park is the Hellenic Ministry of Environment. This government authority is solely responsible for all activities conducted within the Park (including the issue of access permits).

b) We are not aware of any letter issued by the Ministry of Environment that denies its assigned responsibility in issuing access permits to the protected zones of the Park. Indeed, in September 1996 MOm's guarding team and the Alonissos Port Police authority received a copy of a permit (Protocol Num. 20155/2995, 27/9/1996) issued by the Ministry to Dr. Schultze-Westrum, allowing him and his film crew access for filming within the Park's zones excluding only the strictly protected ones. It should be noted that in these zones only research and management activities are allowed upon permission issued by the Ministry, based on detailed description of the foreseen activities. Unfortunately, it seems that adherence to the NMPANS regulations was not viewed with much importance, since the Park's guarding team, at 13:00 on 02/10/1996 encountered Dr. Schultze-Westrum and his companions travelling towards the core zone, the island of Piperi, and were obliged to request them not to enter the exclusion zone. It is hard to understand how the originator of the idea to protect the Sporades monk seal population can be resentful of the legitimate actions of guards patrolling the area 20 years later.

Based on rumours that "conditions are worse than ever" around Piperi, the writer concludes that if the current situation does not change, "all future attempts will be fruitless." In this, Dr. Schultze-Westrum follows the same, hopelessly contradictory rationale pursued throughout his letter. While criticising guarding efforts for their alleged inefficiency in controlling illegal activities, such as speargun fishing and trawling, he complains that implementation of the Park's regulations has brought despair to the local coastal fishermen.

According to Dr. Schultze-Westrum's logic, research results must lead us to the unique conclusion that increased disturbance (by researchers, tourists, speargun fishermen, trawlers etc.) is directly responsible for increasing the monk seal birth rate in the NMPANS.

Coming back to the real world, it is useful to remember what the situation was really like on Piperi about fifteen years ago. Reviewing reports of early research missions in the present core zone of the Park, we read that at the beginning of the reproductive season of 1985 "…numerous speedboats travelling day and night with amateur fishermen, 2-3 purse-seine boats fishing close to the southern coast of the island, dozens of *Falco eleonorae* shot by fishermen… divers, tourists and photographers exploring every corner of the island… after 12 days of extensive research in the shelters on Piperi, the presence of no more than 2 adult seals was recorded…" (University of Athens 1985). The photograph of the six newborn pups, sleeping in a single cave on Piperi in October 2000, published in the last issue of The Monachus Guardian [Baby boom in the Sporades, TMG 3(2): November 2000], leaves little to add in terms of comparison.

In conclusion – and going beyond this kind of "reasonable and constructive dialogue" – we believe that all conservation work should be judged according to results achieved and not on rumour and innuendo. This is how we evaluate our own work and how we would like it to be evaluated by others in the future.

Dr. Spyros Kotomatas, Scientific Coordinator, MOm, Athens

Reference

University of Athens. 1985. Research Program in the Northern Sporades. Report of research team of the Department of Biology, University of Athens, December 1985: 1-77.

✓ **Editor's note:** TMG plans to publish its special assignment report from the Northern Sporades Marine Park in our November issue.

Sightings in Italy

I have just visited your interesting web site. A nice initiative! The Maltese Islands, where I live, lost their monk seals a long time ago although there are several coastal and marine caves whose names indicate that there used to be a resident population.

I just wanted to say something on recent sightings of the Mediterranean monk seal in Italy. I have heard of sightings off the island of Pantelleria (SW of Sicily) and a more recent one where a fisherman encountered a seal off the coast of the Aeolian island of Salina (Sicily). The monk seal had not been sighted at Salina for more than 60 years! In Sardinia, there still seem to be a few individuals and there are several initiatives aimed at creating marine conservation areas to protect the seal's habitat. I was wondering whether your organisation collects data on such sightings.

Annalise Falzon, Activities Secretary, Nature Trust (Malta), PO Box 9, Valletta CMR 01, Malta.

✓ **Editor's note:** The Monachus Guardian reports sightings of monk seals from any area where a population is thought to be extinct, on the threshold of extinction, or where individuals may be transiting between groups through former territory in the species' range. In the last issue of TMG, we carried an extensive report from Sardinia following a confirmed sighting there [Sighting spurs government action, TMG 3(2): November 2000]. In Italy, both the governmental Istituto Centrale per la Ricerca Applicata al Mare (ICRAM) and the NGO Gruppo Foca Monaca collect, track and evaluate monk seal sightings on a national level.

Mysteries persist in Libya

I recently had postal contact with travellers visiting Libya. Before they set off on their journey, I asked them to enquire about the monk seal. Along the shores of Cyrenaica, up to Tobruk and Bir Hakeim, the response they received was "Seals? No. Oh! yes, but 30 years ago…"

This was, of course, not a scientific survey, but even so, the results were not very encouraging.

Dr. François Moutou, Maisons-Alfort, France.

✓ **Editor's note:** Libya remains a great puzzle on the monk seal distribution map. There have never been any comprehensive or systematic surveys that we are aware of. Historically, virtually nothing was known of the monk seal in Libya until an English resident, Mr. W.J.T. Norris, set about questioning fishers and other coastal dwellers during 1966-68. In his subsequent paper (Norris, W.J.T. 1972. Monk Seals in Libya. Oryx 16: 328-330) he reported the existence of an established breeding colony in Western Cyrenaica, near the fishing settlement of Tolmeitha (Ad Dirisiyah). Here, a colony was said to live in submarine offshore caves, long known to local fishers. Norris wrote that the colony "is rarely disturbed, being regarded with a respect that borders upon superstition…" He continued: "The indifference which stems from such a peaceful coexistence makes it difficult to form an assessment of the size of the colony, but the impression given is of a fairly constant population of about 20 to 30 individuals." More recent status reports, relying on educated guesses rather than empirical research or the reports of local correspondents [see The Numbers Game, TMG 3(1): May 2000], have put the Libyan monk seal survivors at 5-10 individuals. The Monachus Guardian would like to hear from anyone who might have more information.

How can I help monk seals?

I was wondering if there is any foundation where I could send any money I raise to help keep the Mediterranean and Hawaiian monk seals alive. I don't know if I can send a lot of money as I am only 13 but any money is better than no money.

Hannah Stanley, USA

✓ **Editor's reply:** Where conservation of monk seals and their habitats is concerned, any donation, whatever the amount, is of great importance. This is especially so in the Mediterranean, where most active protection work is carried out by grassroots conservation organizations that don't have significant financial resources.

International organizations that support monk seal conservation initiatives (including the publication of The Monachus Guardian, and guarding activities in the Northern Sporades Marine Park in Greece) include the International Fund for Animal Welfare (IFAW) and the IFAW Charitable Trust (ICT).

If you wish to contribute money to either of these organisations, please be sure to specify the monk seal account code **"Monk Seals 031-020015015"**. Send your donations to:

IFAW - International Fund for Animal Welfare
411 Main Street Yarmouth Port
MA 02638
USA

Email: info@ifaw.org
Web: www.ifaw.org
Atten: Ronnie O'Connor, US Supporter Services
(Quote: Monk Seals 031-020015015)

or:

IFAW Charitable Trust
89 Albert Embankment
London SE1 7UD
UK

Email: info@ifawct.org
Web: www.ifawct.org
Attn: Clare Jeffrey
(Quote: Monk Seals 031-020015015)

The following organizations also attempt to raise funds for their monk seal conservation and research through donations, membership, or the sale of merchandise:

The Hellenic Society for the Study & Protection of the Monk Seal (MOm), Solomou 18, GR-106 82 Athens, Greece. Email: info@mom.gr. Offers membership and merchandise, and also organises an annual volunteer programme. For further donations information, check out the following web page: www.monachus.org/break00/momapp01.htm.

Underwater Research Society – Mediterranean Seal Research Group (SAD-AFAG), P.K 420, Yenisehir, TR-06444 Ankara, Turkey. Credit card payments accepted for donations and membership. Email: sadafag@ttnet.net.tr.

Hawaii Wildlife Fund, Maui, Hawaii. Offers adoptions, guided tours etc. Check out donations information on their web site: www.wildhawaii.org/yourhelp.html.

Also, refer to our Network page for additional organisational contact details: www.monachus.org/network.htm.

Finally, thanks for writing – and for caring about the monk seals. They can definitely use all the friends they can get…

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

Recent Publications

Vol. 4 (1): May 2001

- **Johnson, W.M.** (ed.). 2000. The Monachus Guardian, International Marine Mammal Association (IMMA Inc.), Guelph, Canada 3 (1-2): 1-80.
- **Mignucci-Giannoni, A.A., & D.K. Odell**. 2001. Tropical and subtropical records of hooded seals (*Cystophora cristata*) dispel the myth of extant Caribbean monk seals (*Monachus tropicalis*). Bulletin of Marine Science 68 (1): 47-58.
- **Reyero, M., E. Cacho, A. Martinez, J. Vázquez, A. Marina, S. Fraga, J. M. Franco**. 2000. Evidence of Saxitoxin derivates as causative agents in the 1997 mass-mortality of Mediterranean monk seals in the Cape Blanc Peninsula. Natural Toxins 8: 1-5. [Abstract]
- **Schmelzer, I.** 2000. Seals and Seascapes: Covariation in Hawaiian monk seal subpopulations and the oceanic landscape of the Hawaiian Archipelago. Journal of Biogeography 27(4): 901-914. [Abstract]

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