The Monachus Guardian

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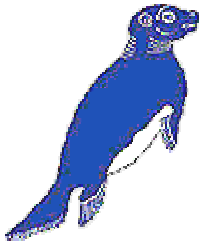

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Editorial

Rhodes, 20 Years On

Two decades have now elapsed since the landmark *First International Conference on the Mediterranean Monk Seal*, held on the Greek island of Rhodes in May 1978. As we edge towards the millennium, it is perhaps time to take stock of some of the achievements and failures in our efforts to conserve this critically-endangered species.

Happily, those who were predicting the extinction of *Monachus monachus* by the year 2000 – including me – have been proved wrong. Graphs charting the inexorable decline of the species, based on known and assumed mortalities, appeared compelling in the late 1970's, yet the conclusions drawn from them have not withstood the test of time. There are several possible reasons for this, including the unreliability of survey methods, and a tendency to underestimate individual numbers of this shy, elusive species that continues to survive along remote coastlines. It is equally possible that, as population numbers declined, seals became that much harder to find and to kill. To some extent, it is also conceivable that human observers have underestimated the resilience of a species long renowned for its intelligence and cunning. There is also the unquantifiable influence of ecological awareness, which, although painfully slow in its ability to effect any meaningful change, has undeniably begun to seep into isolated communities.

Population estimates are, of course, subject to reassessment as new data become available. In the case of the monk seal, this had led to a particularly quirky side-effect, in that today's population estimates (400-600 individuals) are virtually identical to the numbers presented at Rhodes 20 years ago. For many of the reasons outlined above, however, this gives little cause for celebration. Indeed, monk seals have been effectively extirpated from several important regions during the two decades since Rhodes, including the Adriatic coasts of Croatia, the Galite archipelago of Tunisia, the Black Sea and Marmara.

Furthermore, there has been little progress in establishing the network of inter-connecting marine parks and reserves that were identified as the overriding priority at Rhodes (and at almost every successive conference). Greece may have chosen four important seal habitat areas as Natura 2000 reserves (see Regional News, this issue), yet it remains to be seen when these will have effective management authorities, guards and patrol boats. Virtually the same can be said for Turkey, whose government has, during past international conferences, spared little effort in praising itself for its commitment to *Monachus*, and broadcasting its achievements in creating reserves for the species. Yet realities at ground-zero require a rather more sober assessment than those offered from the conference hall podium.

In September-October last year, we visited 7 protected areas that, at one time or another, have been portrayed as offering refuge to the monk seal. These included Specially-Protected Areas (SPAs) at Foça, Gökova, Fethiye-Göcek and Datça-Bozburun, the monk seal protection zone

at Bodrum, the Dilek National Park opposite the Greek island of Samos, and finally, the Olimpos Bey Daglari National Park. While the list may seem impressive enough on paper, it must be said that not one of these reserves could boast even so much as a functioning patrol boat, much less an efficient management plan. As a result, illegal fishing, a boom in pleasure boating and cave-exploring tourism have all cast serious doubt on the conservation viability of these areas for monk seals.

Although the pathway from Rhodes is littered with unfulfilled promises, it should not be assumed that the conservation of the monk seal is a lost cause. In at least two areas where protected zones have been established – Madeira and the Northern Sporades islands in Greece – monk seal populations appear to be either stable or showing encouraging signs of increase. Some four years ago, the Foça SPA was reporting similar results, although it is not entirely clear whether the loss of its patrol boat to mechanical failure and government indifference has adversely affected the local recovery of the species.

A less prominent failure in implementing conference resolutions surrounds international coordination and information exchange. Although this may seem somewhat insignificant compared to other priorities, weakness in these two key areas can have profoundly negative repercussions.

This is particularly true of the ambitious, 'big-ticket' projects that have been approved, funded and pursued without adequate consultation or review by the wider scientific and conservation community. Few will need reminding of the substantial resources and human effort required to force cancellation of captive breeding schemes by Antibes Marineland in 1990 and 1994. Despite serious doubts about the wisdom of a Spanish-led initiative to translocate monk seals from the Sahara Occidental to the Canary Islands, it still remains to be seen whether this EC–funded 2 million ECU project will proceed – with or without the approval of its belatedly-appointed Scientific Steering Committee. Hawaiian scientists sprung a similar surprise on the conservation community at the January 1997 Monaco Workshop [see *Monachus* in Monaco, this issue], and appeared to suggest that captive breeding of *Monachus schauinslandi* was now virtually inevitable. At least, that was the distinct impression conveyed – particularly when business cards were handed out bearing the name and corporate logo of the new captive breeding facility.

There can be little doubt that such high-stakes, high-tech projects have pushed monk seal conservation to the brink of crisis in recent years, effectively diverting attention and scarce resources from the most urgent priorities. Despite appearances, there is actually little disagreement on what those priorities might be. Indeed, a majority of scientists and conservationists involved in the study and protection of *Monachus monachus* have endorsed a set of specific guidelines that advocate a precautionary, sequential approach to monk seal conservation. These unambiguously reflect the first priority of action: *in situ* protection, including a network of protected areas, guards and patrol boats.

To a great extent, the invasive, *ex situ* projects that have dominated monk seal conservation in recent years have thrived behind closed doors. Public scrutiny and open debate were discouraged. Outsiders were often regarded – perhaps with sound rationale given the nature of some of these schemes – with suspicion and distrust. It was for this reason – and to fulfil one of the recommendations contained in the aforementioned *Conservation Guidelines* – that we decided to launch The Monachus Guardian.

We hope that this will provide a lively forum for international debate on all matters relating to monk seals, however controversial or contentious. In the spirit of open discussion, we

encourage a wide-ranging exchange of views – even if they are at variance to The Monachus Guardian's fundamental policy towards monk seal conservation.

If there is any remaining doubt as to what that policy might be, it can best be summed up by paraphrasing Bill Clinton's legendary mantra on the economy: "It's *in situ* protection, Stupid."

William M. Johnson, 20 May 1998

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International News

Conservation Guidelines Re-Issued

A new, multilingual edition of *The Mediterranean Monk Seal – Conservation Guidelines* is now available from IMMA Inc. The original English-language version, published in 1995, has now been complemented by translations in French, Greek, Spanish and Turkish. The new edition also lists individual and organisational endorsements of the *Guidelines*, of which 78 have been received to date. Click here if you wish to download a copy of the publication.

Captive Breeding on the Hawaiian Horizon

Having exhausted every other single option – except, perhaps, for total, hands-off, *in situ* protection – Hawaiian scientists and bureaucrats appear to be moving inexorably towards captive breeding of *Monachus schauinslandi*. European observers, who were treated to two attempts by Antibes Marineland to capture Mediterranean monk seals at the Côte des Phoques, ostensibly for the same purpose, will be no strangers to the controversies, myths and scientific rationalisations that pervade the captive breeding issue. An oral presentation at the January 1998 *Workshop on the Biology and Conservation of the World's Endangered Monk Seals* in Monaco noted that the Hawaiian monk seal population "continues to decline at an overall rate of 5-6% per annum," despite largely "successful" conservation efforts mounted by the National Marine Fisheries Service and other agencies. As such, "more aggressive strategies" were called for, including "captive breeding programs." An abstract of the presentation, by Shannon Atkinson of the Hawaii Institute of Marine Biology, University of Hawaii, goes to state that: "With the Hawaiian monk seal we are currently proposing the establishment of a captive colony at a facility that is dedicated to the scientific study of monk seals." While the continuing decline in the species undoubtedly gives cause for concern, Hawaiian participants at the Workshop failed to provide a convincing argument that all avenues of *in situ* conservation had been exhausted. This is the commonly accepted criterion for instituting captive breeding of monk seals, long considered a measure of last resort.

EC Evaluation Report

The long-awaited review of EC conservation policy towards the Mediterranean monk seal was submitted to the Environment, Nuclear Safety and Civil Protection Directorate (DG XI) of the European Commission on 28 June 1997. John P. Watson of the Evaluation Partnership and Chris Huxley of Fauna and Flora International were commissioned by DGXI to initiate the study, following long-running controversy over the effectiveness of some EC-funded monk seal conservation projects. While the full text of the Final Report remains confidential, an Executive Summary has been circulated within the monk seal conservation community. The report, entitled *Evaluation of Actions Taken to Protect the Mediterranean Monk Seal*,

provides comprehensive scientific, financial and procedural evaluations of relevant EC-funded projects, as well as specific recommendations to remedy perceived faults in policy and implementation. The Monachus Guardian has so far failed to obtain a copy of the full report.

Seal Foundation Still in Limbo

When the *Save the Mediterranean Monk Seal Foundation* (SMMSF) was first established in 1993, it appeared to herald a major advance in funding needy grassroots conservation projects. Bellerive Foundation President, Sadruddin Aga Khan, took the lead role in setting-up the Athens-based charity, and was joined by several wealthy and influential Greek industrialists. These included ship-owners Andreas Potamianos and the late George P. Livanos, and brandy heir Spyros Metaxas. Founding members each contributed substantial donations to establish the Foundation. It was hoped that this would encourage the support of other wealthy patrons and also provide a mechanism by which influence could be brought to bear upon the Greek government to enhance conservation measures necessary to safeguard the monk seal.

Since then, however, a cloud of uncertainty has hung over both the operation and existence of the Foundation. Despite strenuous efforts, notably by Bellerive, the SMMSF remains in limbo. It has no functioning secretariat, and funds have yet to be disbursed. The proponents of the Foundation remain optimistic, however, that the various legal and administrative impediments delaying operations will shortly be overcome. Certainly, a species with so many enemies could use some real friends in high places.

Monaco Workshop Expresses… Silence

The January 1998 *Workshop on the Biology & Conservation of the World's Endangered Monk Seals* may go down in history as the only gathering of its kind that ever failed to produce a set of recommendations for the conservation of the species.

The Workshop, held in Monaco as an adjunct to the *World Marine Mammal Science Conference,* was dominated by controversy over the cause and subsequent handling of the 1997 mass die-off of Mediterranean monk seals at the *Côte des Phoques* in the Sahara Occidental (see Harwood *et al.*, 1998). Indeed, opinions proved so divisive during the meeting that only a vague verbal summary could be provided to the WMMSC Conference.

For other highlights, turn to *Monachus in Monaco* by William M. Johnson.

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Greece

Research Continues for Natura 2000 Reserves

MOm's IFAW-donated research vessel in the Sporades Marine Park

As part of the LIFE-NATURE programme of the European Commission, MOm – the Hellenic Society for the Study & Protection of the Monk Seal – has continued its research in four key target areas in Greece. These include the Cyclades islands of Milos, Kimolos and Polyaigos, the Dodecanese islands of Kasos and Karpathos, the Eastern Aegean Islands of Samos, Ikaria and Fourni, and the Ionian island of Zakynthos (specifically, its north-western coasts).

The creation of monk seal sanctuaries within these geographical areas has already received Greek government approval. Once finalised, they will become *Natura 2000* reserves, a European Union initiative (Directive 92/43) to create a network of protected areas to preserve endangered habitats and species.

One of MOm's main objectives during field work was to confirm the existence of reproducing monk seal populations within the target areas, thus enabling the organisation's researchers to evaluate the importance of specific habitats and the status of monk seal populations.

Detailed studies carried out for a number of years by MOm's research team within the wider region of the National Marine Park of Alonnisos-Northern Sporades (NMPANS) have provided evidence that the monk seal's reproductive period exhibits a clear seasonal pattern. This period extends from August to November, while most births occur in the months of September and October. Therefore, additional emphasis was given to field activities during

this period. Similarly, methodologies applied successfully in monitoring the monk seal population of the NMPANS, were also used in the LIFE Project's target areas in order to survey seal shelters, identify individual animals, determine the age of newborn pups, and gather other relevant data.

Results obtained during the first year of field research proved substantial, particularly with regard to breeding. In total, nine births were recorded in the target areas, with indications for the existence of two additional pups. Specifically, seven newborn pups were recorded within the island complex of Milos, Kimolos and Polyaigos (a wider geographical area of the NATURA 2000 areas identified as GR 4220005 and GR 420006). One of these pups was found dead. A necropsy conducted on site indicated that the death was due to natural causes. The pups and their mothers were observed using seven different shelters within the target area. In addition, one newborn pup was observed within the island complex of Kasos and Karpathos (area GR 4210003), while there is also evidence for the existence of two more pups within the island complex of Samos, Ikaria and Fourni (areas GR 4120003 and GR 4120004). Furthermore, WWF-Greece's research team, based on the Ionian island of Zakynthos (area GR 2210001), recorded the existence of a newborn pup in the end of August 1997.

To build upon accumulated knowledge, research in all target areas will continue for a second year.

MOm anticipates that these results will prove valuable during the design of management plans for the Natura 2000 reserves. A team of experts will be assembled to design specific management plans for each of the areas concerned. Developed in collaboration with local communities, these will include conservation measures tailored to the specific needs of each area, and also proposals for sustainable development opportunities.

Geographical Snapshot

Samos – Ikaria – Fourni

The island of **Samos**, with a surface area of 480 km^2 and 32,000 inhabitants, lies in the central Eastern Aegean, very close to the Turkish coast. Due to its geomorphology, the island has a great variety of habitats, with a respective high diversity of plant and animal species. Three sites, Mount Kerkis, Mount Ampelos and the Aliki wetland, have been included in the Natura 2000 Network, as they host endemic, rare and endangered species.

Ikaria is located west of Samos with an area of 255 km^2 and 7,500 inhabitants. The mountainous terrain of the island is cut by numerous gullies, while its coastline is characterised by steep shores. The natural environment is distinctive not only for its high biodiversity, but also for the presence of endemic and rare plants and invertebrates. Three biotopes, the river Chalaris, Mount Atheras and Fanari, are included in the Natura 2000 Network.

Fourni, situated between Ikaria and Samos, is formed by a group of 3 islands and numerous islets, with a total surface of 44 km^2 and an extremely indented coastline 126 km long. Apart from the presence of monk seals, the area is considered an important biotope for the endangered Aegean seagull, *Larus audouini*. The whole group of islands and the marine area surrounding them is included in the Natura 2000 Network. With 300 registered fishing boats – 135 of which are active – fishing is an important industry in Fourni.

Karpathos – Kasos

Karpathos, the second largest island of the Dodecanese, covers 300 km^2 and has 4,500 inhabitants. Two Natura 2000 sites have been designated on the island, one in central Karpathos and the other in the north, including the island of Saria. Apart from the existence of monk seal biotopes, the selection of these sites has been based on the presence of endemic and rare plants, reptiles, amphibians and invertebrates.

South-west of Karpathos lies the island of **Kasos,** with an area of 66 km^2 and 1200 inhabitants. The whole island and the neighbouring islets of Kasonisia are included in the Natura 2000 Network, as the site is deemed important both for birds and monk seals. It should be mentioned, however, that extensive livestock raising, a major source of income for the local community, continues to cause severe degradation to the vegetation of the island.

Milos – Antimilos – Polyaigos

Owing to intense volcanic activity in the past, these islands have an extremely rich geological substrate, giving them great ecological, aesthetic and economic value. The only inhabited island, **Milos**, has a surface of 153 km^2 and 4320 inhabitants. A major part of western Milos, **Antimilos** and **Polyaigos** are included in the Natura 2000 Network, since they fulfil many of the selection criteria, such as the presence of the Mediterranean monk seal, the endemic viper *Vipera lebetina schweizeri*, and the endemic wild goat *Capra aegagrus pictus*.

Zakynthos

Zakynthos, one of the major islands of the Ionian Sea, covers an area of about 406 km^2, with a coastline stretching about 110 km. WWF Greece has been conducting monk seal conservation projects on the island since 1989. Detailed monitoring activities have revealed that the western coast of the island represents one of the most important habitats for the monk seal in Greece, with a population of at least 10 individuals. These appear to be reproducing on a annual basis, with an average birth rate of two pups per year.

WWF Greece has concluded that one of the most effective means of achieving *in situ* conservation of this species, would be the establishment of a protected area. As such, a section of the western coast of Zakynthos has been included in the Natura 2000 Network. The spatial pattern of cave use by monk seals, observed along this coast, provides important information on the location and geographical extent that such an area should occupy. ~ *Vrassidas Zavras, MOm* ~

Orphaned Pup Dies Despite Rescue Efforts

On Friday 19 December 1997, MOm was informed of the presence of a seal pup on Armenistis beach on the island of Ikaria. Local inhabitants reported the finding to the Port Police Authority of Evdilos, who then alerted MOm in Athens. MOm's Rescue Team arrived in Ikaria at 4:00 am the following morning, and found the animal in a weak and emaciated physical condition. Although approximately two months old, it had only one third of the normal weight for its age. It was found to be suffering from malnutrition, dehydration and hypothermia. After providing first aid, the pup was transported to MOm's Seal Treatment and Rehabilitation Centre in Alonissos, where it was treated by the organisation's specialised

staff, in collaboration with the Seal Rehabilitation and Research Centre of Pieterburen, and the Veterinary School of the University of Thessalonika. Unfortunately, despite great efforts to save its life, the pup died one week after admission due to an acute intestinal infection, aggravated by its extremely poor overall health, and its severe malnutrition. Following necropsy, samples were sent for analysis in order to determine the exact cause of the infection. ~ *Vrassidas Zavras, MOm* ~

Sporades Biological Station Finds New Lease on Life

The Biological Station at Gerakas Bay, on the Aegean island of Alonissos, has been regarded as an embarrassing white elephant almost since the day it was built with a generous helping of EC funds. Although designed ostensibly to serve scientific interests in the Sporades Marine Park, observers have always pondered why the architecture, both inside and out, seemed more reminiscent of a holiday villa than a working laboratory.

Since its completion in 1985, the Station has remained virtually unused, hosting only four official functions in 12 years, including its own opening ceremony. Now, at long last, the much-maligned building may be getting a new lease on life. Under a contract negotiated with the Hellenic Ministry of Environment, MOm has leased a sizeable portion of the Station for 10 years. The organisation will use the Station as a forward base for research and guarding activities in the core zone of the Park, and also plans to open a Marine Park exhibition centre at Gerakas.

Seitani Still in Doubt

Meanwhile, uncertainty still clouds the future of Seitani, the once-pristine stretch of coast on the Eastern Aegean island of Samos, that embroiled WWF International in a tense espionage controversy in 1979 (*see* William M. Johnson's *The Monk Seal Conspiracy*, Heretic Books, London 1988, ISBN 0-946097-23-2). Although bulldozers, dynamite and bungalow-builders have all taken their toll on Seitani since its listing as a 'Strictly-Protected' area in 1980, a Presidential Decree issued in 1995 reinforced its legal status. As a result, all human activities in the core zone of the reserve became 'strictly prohibited'. There are, however, several drawbacks to regulations governing the area. At present, the borders of the reserve reach only as far as the seashore, and therefore do not incorporate any marine areas. In addition, planning and construction permissions governing existing buildings cannot be revoked, thus placing the use of bungalows in the Seitani core zone in a kind of legal twilight zone. More recently, local authorities commissioned a management plan for the area, a study whose completion is expected in the next few months.

Portugal

Monk Seal Coin Minted for Expo 98

A 100 escudos coin bearing the image of the Mediterranean monk seal has been issued by the Bank of Portugal to commemorate the international exhibition *Expo 98*. Worth approximately 50 cents in U.S. currency, the coin is legal tender in Portugal and is now in widespread circulation. With oceans and exploration as its central theme, Expo 98 is due to be held in Lisbon from May to September.

Turkey

More *Monachus* Money

As part of a series on endangered wildlife, the Turkish mint issued a limited edition monk seal coin in 1996. In the forefront of the design, a single monk seal is pictured on a pebble shore, while two swimming seals look on from the background. Entitled *Akdeniz Foku (Mediterranean seal) Monachus monachus*, 5000 examples of the coin were minted, valued at one million Turkish liras each (approximately $6). The coin is still available from the Turkish Central Bank.

Henry Ford European Conservation Awards 98

The *Foça Pilot Project*, on Turkey's central Aegean coast, was recently awarded first prize by a national jury for the 1998 Henry Ford European Conservation Awards. Although initially chosen as one of ten finalists from 200 Turkish applicants, the Underwater Research Society – Mediterranean Monk Seal Research Group (SAD-AFAG) project went on to clinch the top

award, the organisation collecting a cheque for $10,000 in a prize-giving ceremony in Istanbul on 31 March.

The awards process now moves on to the international stage and final selection of award-winners from among 31 finalists from various countries. The Henry Ford European Conservation Awards will be announced in a ceremony held in Istanbul on 5 May. ~ *Cem Kiraç, SAD-AFAG* ~

STOP PRESS…The SAD-AFAG Foça Pilot Project has scooped first prize in the Henry Ford European Conservation Awards. The prestigious award, worth $50,000, was made in recognition of the Project's various achievements. These included the closing-off the Foça SPA to industrial-scale fisheries, efficient guarding and surveillance activities over a three-year period, the involvement of the local authorities and artisanal fishers in the conservation process, a five-fold increase in seal sightings reported within the first four years of the project and, finally, plans to apply the lessons learnt in the Pilot Project to other monk seal habitats in the Aegean.

Decision-Makers Targeted

The WWF *Across the Waters* programme has announced funding support for the *Seal-Info* campaign of Turkey's Mediterranean Monk Seal Research Group (AFAG). A booklet, currently under preparation, aims to help the governors and mayors of Turkey's coastal states, towns and cities become better acquainted with the monk seal and its conservation. The publication will also highlight existing regulations governing the protection of the species and the marine environment – regulations that are often unenforced. Depending on the date of forthcoming elections, the project is slated for completion later this year or in spring 1999.

Seal Cave Search Underway

As a subsidiary of the Underwater Research Society (SAD), the Cave Diving Research Group (SAD-MADAG) has initiated a research programme along the Turkish coastline called Project DEMA. MADAG aims to help researchers of the Mediterranean Monk Seal Research Group (AFAG) locate seal caves whose access requires specialised diving skills and equipment. During the third phase of Project DEMA, SAD-MADAG worked in association with Dr. Ali Cemal Gücü of the Middle East Technical University's Institute of Marine Science (METU-IMS) in the Cilician Basin, where Dr. Gücü and his team has been working for the conservation of monk seals since 1994. In the interests of monk seal welfare, cave entries will be kept to the minimum required to collect data and precise cave co-ordinates will remain confidential.

Risks to Foça Protected Area

Although hailed as a blueprint for the conservation of the monk seal in Turkey (see Henry Ford Conservation Awards 98, above), of late, the Foça Pilot Project appears to have stirred little interest among the national and municipal authorities. As a result, the Specially-Protected Area (SPA) has – despite vigorous lobbying efforts by SAD-AFAG – remained

without a functioning patrol boat for almost two years now. Exploiting this legal vacuum, some fishers and tourist entrepreneurs have been able to flout the SPA regulations with apparent impunity.

At the Siren Rocks, in the core zone of the SPA, tour boats have frequently been observed sailing only a few metres from shore and important monk seal caves. Several fishers interviewed in Foça have indicated that infringements of the SPA regulations have increased dramatically since the patrol boat has been out of action. Adding insult to injury, in October last year, metal signs marking the entrance to the SPA and detailing restrictions, were found to have collapsed – one of them lying submerged in the sea close to a nearby beach.

Underlining the importance of enforcement, around the Mediterranean, monk seals have been extirpated from several reserve areas because of inadequate or non-existent guarding. So far, however, efforts to persuade the Turkish authorities that enforcement of SPA regulations might be a matter of life or death for the monk seal in Foça, have elicited no tangible response. This is despite the fact that the future survival of the species in the area is probably worth more to Foça – a town that was named after the seal more than 2000 years ago – than the relatively minor funding allocation required to repair or replace the patrol boat.

The SAD-AFAG Foça Pilot Project, the WWF-supported organisation leading conservation efforts in the area, had hoped to find sufficient resources to repair the patrol boat's petrol engine, at a cost estimated at almost $10,000. A new replacement diesel engine – far more economical to run and maintain – would cost $22,000. The Foça Municipality has expressed a willingness to meet some of the costs, but an infusion of cash from the Ministry of Environment is regarded as vital if the patrol boat is ever to be reunited with the Aegean.

STOP PRESS… A recent turn of events at Foça may serve to illustrate how, given the right set of circumstances, an apparently insurmountable problem can be solved within a matter of minutes. No sooner had the Prime Minister of Turkey expressed his wish to visit Foça in May, than Ministry of Environment officials accepted the need to supply Foça with its new diesel patrol boat. This followed urgent appeals by SAD-AFAG and the Foça Municipality. Nothing, it seems, can quite focus the mind as much as a visiting dignitary.

Monk Seal Death in Foça

An adult female seal known to researchers as *Disi Korsan* was found dead near the Siren Rocks of Orak Island in the Foça SPA on 4th April. The health and welfare of the animal had been a subject of concern for several years, due to the rope that was observed cutting deep into her head – most probably the result of entanglement in fishing gear. Illness in the seal had been observed by researchers since the middle of January. Upon retrieving the body, the animal was found to be so emaciated that the vertebrae were clearly visible.

Possibly due to partial decomposition, the rope that had once entangled the seal was no longer attached to the body. Despite heavy indentation, there was no obvious wound or infection. It is hoped that a cleaning of the skull will ascertain whether the rope caused a cranial deformation as the seal grew.

A locally-performed necropsy revealed severe loosening of teeth in the lower jaw and also some evidence of infection in certain tissues. Tissue samples are currently under viral, heavy metal and PCB analysis at Erasmus University, Holland, and the Marine Sciences Institute of the Middle East Technical University in Turkey. Although no specific external wounds were discovered, four shotgun pellets were found lodged in the head. ~ *Yalçin Savas, SAD-AFAG Foça Pilot Project* ~

Fishers Request Protected Areas

The Local Seal Committee of Foça has been enlarged in order to include representatives of the Municipality and Fisheries Cooperative of the neighbouring town of Yenifoça. Impressed by fisheries regulations that have banned industrial trawlers from traditional fishing grounds in the Foça SPA, the mayor and fishers of Yenifoça are now requesting that their region be incorporated into the protected area. Artisanal fishers in Foça believe that their catches have increased substantially since the creation of the monk seal sanctuary and a prohibition on industrial fishing methods.

Looming Extinction in the Black Sea

SAD-AFAG's monk seal survey along the Turkish Black Sea coast, sponsored by UNDP-GEF (United Nations Development Program - Global Environment Facility), was completed in December 1997. The final report, currently under preparation, concludes that monk seals are nearing extinction in the region, with only 2-3 individuals continuing to survive between Yakakent and Bartin.

Research was conducted along a 900 km stretch of coast between the town of Besikduzu (Trabzon) in the east and Akcakoca (Bolu) in the west using a four-wheel-drive vehicle. In addition, 14 volunteer observers (including 6 SAD members) were posted in three potentially promising locations along the coast, but yielded no monk seal sightings over a 7-day period. Cave diving expeditions between Sinop (in the east) and Eregli (in the west) resulted in the discovery of 49 sea caves or caverns, of which around 20 were judged suitable as seal shelters and for breeding. Additional information was gathered through public awareness activities among fishers and other coastal inhabitants.

Results of the survey tend to match the findings of a 1996 AFAG study focusing on the status of the monk seal in the Eregli region, in the Western Black Sea of Turkey (Kiraç, C., and Y.

Savas. 1996. Status of the Monk Seal (*Monachus monachus*) in the neighbourhood of Eregli, Black Sea Coast of Turkey. Zoology in the Middle East. 12. pp. 5-12.)

Factors implicated in the historical decline of the 'sea bear' or 'bear fish' – as the species is known locally in the Turkish Black Sea – include: **1)** Exploitation for blubber and skins by dolphin hunters **2)** Live capture for fairs and zoos, and **3)** deliberate killing by artisanal fishers due to net damage.

In contrast to other coastal areas of Turkey, habitat destruction and tourism appears to have played no significant role in the extinction of the monk seal in the Turkish Black Sea. ~ *Cem Kiraç, SAD/AFAG* ~

Western Sahara

Report Apportions Blame for Western Sahara Controversy

Chris Huxley, co-author of the EC evaluation study (see International News), received another monk seal commission in October 1997, when the Seal Rehabilitation and Research Centre (SRRC) in the Netherlands requested him to investigate the controversy surrounding the mass die-off in the Western Sahara. Although doubts have been expressed in some quarters about the impartiality of the report – in view of the organisation commissioning it – Huxley generally succeeds in taking a dispassionate and even-handed approach to the problem, recording a specific timetable of events, analysing the motives and actions of the parties concerned, and producing a set of recommendations to improve the management and effectiveness of SRRC operations in Mauritania. While many serious allegations against the SRRC were criticised as being profoundly negative and contrary to observable facts (including deliberate and belligerent obstruction of the emergency action plan, manipulation of the Mauritanian fisheries research centre, the CNROP, and technical incompetence in monk seal rescue and rehabilitation efforts), the organisation was presented with a list of its own perceived shortcomings.

The SRRC was encouraged to accept that the primary cause of the mass mortality could not be conclusively attributed to a virus (as it has so adamantly maintained). Addressing criticism of its technical expertise, the organisation was advised to "urgently pursue the completion and publication of a technical manual on seal rehabilitation. The current lack in this respect is a major handicap…" Realising that conservation efforts in the already-difficult Mauritanian environment demand cooperation between all parties concerned, the SRRC was also encouraged to seek some form of arbitration in an effort to achieve reconciliation between the agencies and individuals concerned.

Publication: *Huxley C. 1997.* Evaluation of the Role, Activities and Performance of the Seal Rehabilitation and Research Centre (Pieterburen) in Relation to the 1997 Monk Seal Mortality.

To obtain a full copy of the report, write to: Seal Rehabilitation & Research Centre, Hoofdstraat 94a, NL-9968 AG Pieterburen. E-mail: srrcnl@pi.net.

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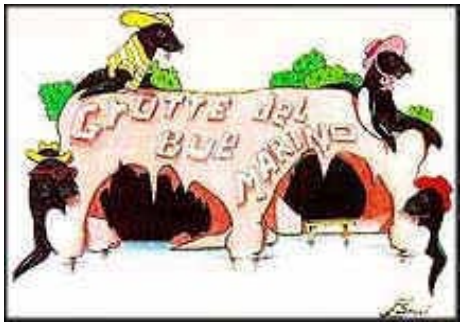
Cover Story

MONK SEAL MYTHS IN SARDINIA

William M. Johnson



Picture Postcard ~ Welcome to the Grotto of the Sea Ox

Myths and legends have coloured the history of the Mediterranean monk seal since ancient times, but it's in the late 20th century that they assume a peculiar new twist. While potent superstitions once tested the credulity of village folk, it's in these allegedly more rational times that gullibility meets free enterprise in a mass marketplace.

Welcome to Sardinia. As factories and businesses across Italy close down for the traditional August break, the ranks of the foreign tourist contingent are suddenly swelled by battalions of Italian holidaymakers, all heading for the beach. It's an invasion of unparalleled proportions, with convoys of planes, ships, buses and cars delivering them to the front. Within days, coastal resorts are bursting at the seams, and tourists are skirmishing over the few empty slots on the beach or a table that suddenly becomes vacant in a jam-packed restaurant.

Many will head for the Costa Smeralda, north of Olbia, whose rugged natural features were given a concrete facelift by the Aga Khan. Legend has it that the spiritual leader of the Ismaili Muslims was caught in a violent storm hereabouts, and sought shelter in a nearby cove. Surveying the coast from his luxury yacht, he was reputedly so impressed by the area's pristine beauty that he was struck by a sudden vision, mainly consisting of luxury villas for the rich and famous, hotels and nightclubs (Owen 1997). And the rest, as they say, is history.

The once-lonely eastern shores of the island were also ripe for the picking by other speculators. Many set their sights on the Gulf of Orosei, with its turquoise waters and white sands. South of the thriving resort town that bears the same name, the landscape becomes more dramatic, the coast dominated by limestone cliffs, sandy coves, and maquis slopes of stunted pines, juniper, laurel and aromatic herbs. Here and there, watery ravines cut down to the sea from the bare-backed mountains beyond, the river beds engulfed by red oleander. Along the craggy coastline, great arching caves, once home to families of seals, tunnel their way into the cliff-face. For all its wild beauty, the area is afflicted by a kind of split

personality, inundated by tourists during the high season summer months, and reverting to its innate loneliness for the rest of the year.

From the Sardinian hinterland, a single road tunnels through the grey mountains and then serpentines its way down to the bustling resort of Cala Gonone. In tourist brochures, it's touted as a quaint little fishing village, and if that was the extent of the deception, one might be tempted to pass it off as one of those less endearing traits of the modern world, where image has become a far more valuable commodity than substance. Faded black and white photos from the 1920's provide a mute testament to the community's former reclusive self, when only twenty or so houses were nestled on a single bluff overlooking the sea.

Today, aside from a couple of trawlers and a few small purse-seiners, fishing scarcely plays a role at all in the life of this village that has grown into a town. Instead, hotels, apartments and summer houses have claimed the hillside in an urban sprawl, complemented by bars, pizzerias and the inevitable gimcrack souvenir shops. Down at the waterfront, the harbour is so jammed with speedboats, inflatables, dinghies and sailing skiffs, that owners must employ hooks, hands and feet if they are to have any hope of ever reaching the open sea.

Cala Gonone's main claim to fame is the *Grotta del Bue Marino*, the grotto of the sea ox, lying about three kilometres south of the town.

Monk seals have long played a role in the life of the community and continue to do so to this very day. Even as late as the 1950's, hunters and shepherds were still shooting seals, mostly to turn their pelts into leather shoes and belts. Fishers also waged war against the species, driven by an age-old hostility. Even so, as many as 30 seals still clung tenaciously to survival in the Gulf of Orosei during this period (Ardizzone *et al*. 1991). Colonies inhabited the Grotto of the Sea Ox, whose waterways, tunnels and inner caverns burrow into the limestone cliffs for several kilometres, and also similarly impressive caves further south, that can only be accessed by skilled divers and potholers.

To the tourist hordes that swell the town during summer, there would seem to be more seals here than anywhere else. Seals can be found in the souvenir shops, staring out at you from postcards, posters, T-shirts and baseball caps. Seals appear in promotional leaflets and guidebooks, most quite shamelessly raising hopes of a chance encounter with the species at the famous Bue Marino. Plush seal toys lie appealingly in wicker baskets, awaiting new owners. Seals are embossed on the ceramic tiles that mark the village's roads, and are painted onto the huge metal signs marking the camp site. Last, but not least, even official recognition has been bestowed upon the seal, its image forming the community's emblem, the civic equivalent of a corporate logo. In short, Cala Gonone boasts a veritable plethora of seals. Appearances, of course, can be deceptive, and the first clue that something might be amiss lies precisely in these multiple seal images dotted about the town. Few, if any, bear any resemblance to the monk seal at all. Most, in fact, appear to be the works of caricaturists who could not even be bothered to acquaint themselves with *Monachus*. Predictably, the inevitable result is a kind of Disneyesque circus sea lion.

Not to be left out of the seal-selling stampede, the World Wide Fund for Nature (WWF) has marked its presence with a small kiosk among the ticket booths at the harbour and, in the upper reaches of the town, has opened up a conservation centre, inevitably christened *Centro Bue Marino*. Here, volunteers sell merchandise, hand out leaflets and solicit donations for the monk seal's conservation. Visitors are also treated to video screenings of the seal's life in the wild. While the accompanying narration might be explicit enough, it must be open to question whether the tourists, wilting from the sun, and traipsing in and out in the middle of shows, even register the fact that these seals are not from the Grotto of the Sea Ox or anywhere else in Italy. Further cultivating the myth of Orosei seals are WWF bumper stickers, bearing an improbably smiling *Monachus*. These hail the organisation's *Operazione Bue Marino*, a last-ditch effort to save an animal that even the WWF volunteers reluctantly admit no longer inhabits the area.

Faded black and white prints, pinned to exhibition panels, offer a truer picture of the monk seal's fate at Orosei, and of the harsh reality that lurks behind well-cultivated myths of its continuing survival here. In one image, a hunter, rifle in hand, bandoleer slung across chest, poses proudly beside his catch, a huge adult seal slung vertically from a winch. In another print, a helmeted potholer wades through a waist-deep pool towards a startled pup.

Nearby, a series of grainy images records the unlucky adventures of another infant seal, captured by fishers at the *Grotta del Bue Marino* in December 1951. In the first picture, we see it struggling to emerge from the thick twine fishing net in which it was caught, its large round eyes seeming to convey astonishment rather than fear. Several curious faces pore over the little creature, among them, two strangers from Rome who had commissioned the capture. Wrapped up in woollen overcoats against the winter cold, the two men claimed to be journalists, though their reasons for acquiring the pup remain a mystery to this very day. Possibly, they hoped to sell it to a zoo or circus, or, acting on impulse alone, dreamed of causing a sensation in the streets of the capital. The events that followed, recorded for posterity in subsequent shots, rather suggest a preconceived stunt. Surrounded by a battery of press photographers, movie cameramen and curious onlookers, the two men can be seen releasing the pup in Rome's famous Piazza di Trevi fountain. Here, it frolicked about in the water until policemen rushed to the scene.

The prank even caught the attention of the world's press, *The Times* of London declaring:

> "Passers-by in the Piazza di Trevi, the square whose main feature is the great fountain into whose waters every visitor who wishes to return to Rome must throw a coin, were astonished this morning to see a seal swimming in the basin. The animal was the property of two Roman journalists, who had brought it back from Sardinia and who apparently thought it suitable that the seal should have a swim in such famous surroundings. A literal-minded policeman fined them for contravening the by-law which prohibits the throwing of anything but money into the fountain, and they and the seal departed in a motor-car" (Anon. 1951).

Around the harbour in Cala Gonone, numerous signs and promotional displays beckon you to ticket booths touting trips to the famous Bue Marino cave and neighbouring sandy beaches. Each ticket bears a colour photo of this impressive arching cavern, and on the reverse side, a picture of a white-bellied newborn pup.

On the hour, every hour, tourists flock to the boats, tickets in hand, children in tow, packed lunches in knapsacks and coolers, cameras slung from necks. With many loaded down with beach paraphernalia as well, no one would dare accuse them of being ill-equipped for their expedition. Brimming with passengers, the tour boats set off, inflatables and water scooters skimming by, most, it seems, in a dash to stake claim on one of the beaches that will soon congeal with human bodies.

At the mouth of the Bue Marino, the boats await their turn to dock at the landing stage to disgorge or retrieve their passengers. Three at a time, they tie up under the arching roof and lower their gangplanks. The scene erupts in a chaos of roaring engines, billowing diesel fumes, hoarse staccato shouts from guides, deckhands and captains, hundreds of feet clattering over the aluminium gangways. The raw stone path leading deep into the bowels of the earth is crammed with people now, all talking ten to the dozen, and you may be forgiven for believing that you've just stumbled into one of the hellish images of Hieronymus Bosch.

Trooping into a huge, dimly-lit cavern with a vaulted roof, the assembled crowds are assigned a tourist guide according to language and nationality. We find ourselves consigned to a motley group of Germans, under the command of a dour, bespectacled young woman who, in all fairness, can hardly be blamed for concluding that she is herding creatures marginally less intelligent than cattle.

A walk of a kilometre or more now awaits us, the rock-hewn path following the sinuous waterway, passing through one cavern after another, spotlights illuminating numerous dripping stalactites. Our destination, our guide informs us, is the innermost grotto where monk seals used to rest and give birth. *Used* to? Yes, she responds emphatically, a defiant, almost accusing look in her eye. Then comes the punch line: "Monk seals are very shy creatures, and their conservation is incompatible with tourism."

You can see some of the day-trippers eyeing their ticket stubs, the little pup staring back at them forlornly, wondering if they've been duped. An understandable suspicion, given all the

hype. A glossy brochure, issued by the local community and handed out free to hotel guests, states that the famous Grotto "is lived in by the last of the monk seals…" (Associazione Turistica 1997). On the internet, the Italian Touring Club touts excursions to the *Grotta del Bue Marino*, "where seals can sometimes be seen" (Touring Club Italiano 1995). Even a brochure carrying the WWF logo is scarcely less economical with the truth: "In the Gulf of Orosei can sometimes be glimpsed the last exemplars of the Mediterranean monk seal, a species on the brink of extinction…" (ESIT/WWF 1997).

Just as we're about to set off along the narrow walkway, our guide issues a stern warning that photography is strictly forbidden. Of course, everyone wonders why. Could the incessant flashes inflict damage upon the glittering stalactites, perhaps, cause tourist jams as dawdlers pause to take a snap or two, or even scare away the odd seal, venturing home despite the guide's terse denials? But no. It transpires that photography is *verboten* for a reason rather less mundane, banished from the Grotto by mayoral executive order. By all accounts, this was not because of some last ditch effort to preserve habitat, but rather, to preserve global copyright. Not content with knowingly driving monk seals away from their homes and presiding over their extinction, the local community, by copyrighting the sea ox's former habitat, now stood to make a killing of a more lucrative nature, collecting cash from exclusive royalty agreements with professional photographers and syndicates.

Despite the mayoral diktat, from the tail end of our group, flashes continue to strobe through the gloom, forcing our increasingly flustered guide to deliver another strident lecture to the unseen miscreants.

At long last, we file into the monk seal's inner sanctum, still under the smouldering eyes of our guide, who has now cottoned on to the fact that the day-trippers have resorted to taking surreptitious snaps without the aid of their telltale flashes. Their efforts to reason with her fall on stony ground. "Flashes are not the issue," she berates us. "Photography of any kind is strictly forbidden."

As several groups converge, the great vaulted cavern is filled to capacity. An undulating bed of limestone slopes down gently into the inky black water, once home to a family of seals. But no more. Ghostly human figures stumble about aimlessly in the gloom, their tans lost to the pallid limestone, their chattering subdued now to echoing murmurs. It is a scene so effortlessly eerie and absurd that even the fable of Orpheus' descent into the underworld no longer seems all that far-fetched. At any moment, one might expect the Ferryman to punt his way up the Styx. But today, at least, ferries of a rather different kind await us.

Boarding our respective tour boats, we head off to the crescent shores of Cala Luna, lying at the foot of a mountainous ravine, where the river forms a pond bordered by lush reeds and blossoming oleander. Across the sable sand, the crowds are so thick that one almost feels the need to slick oneself down with sun lotion to have any chance of squeezing through. At the northern edge of the beach, several impressive caves burrow into the limestone cliff-face. Seals almost certainly sought refuge from the sun here long ago, but today only herds of tourists loaf about under the yawning arches.

Some may claim that the monk seals of Orosei fell victim to the inevitable march of progress, that they became extinct by default rather than by any deliberate effort to eradicate the animals. While there is some truth to both sides, history is explicit in recording the local community's hostility towards the conservation of the species, and its ultimately successful efforts to sabotage a short-lived marine reserve in the area.

When Cala Gonone was still a village, local people used to say that seals had lived in the *Grotta del Bue Marino* for as long as they could remember. Though persecuted by fishers, hunters and shepherds, the cave continued to harbour a small colony of 5-10 seals during the 1950s. With harassment and intrusion by tourists on the increase, however, numbers continued to dwindle, from four in 1962, to only a single pair in 1970. A year or so later, the sole surviving individual apparently fell victim to a local fisher, who resented his rival's lucrative trade in ferrying tourists to observe the creature. At this time, the Grotto had already become a major tourist landmark, attracting some 15,000 visitors in 1970 alone (Scott 1972). Illustrating the lethal effects of disturbance – possibly combined with inbreeding – on the beach at the mouth of the Grotto, researchers discovered three aborted foetuses in 1965, and one each for the years 1967, 1968 and 1970 (Bareham & Furreddu 1975).

With some 40 grottoes in the Gulf of Orosei, seals continued to survive elsewhere, albeit in declining numbers. Mounting a thorough exploration of the coast, Antonio Furreddu, a Jesuit priest and keen amateur potholer, discovered a group of seals inhabiting another cavern, about two hundred metres south of the *Bue Marino*. This grotto offered far greater protection than its famous neighbour, with a subterranean channel, 10 meters underwater, leading to two inner lagoons surrounded by sandy, pebbly shores. Deterring all but the most adventurous explorers, these inner caverns could only be reached by divers using scuba gear, or by experienced climbers potholing down through a fissure in the cliff. An expedition led by Father Furreddu in October 1970 counted 6 seals around the lagoons, including a pup, and sighted another 1-2 animals swimming offshore (Scott 1972, Bareham & Furreddu 1975).

Local fishers at Cala Gonone, who in summer were supplementing their traditional incomes by ferrying tourists to the Bue Marino, denied any hostile intent towards the animals. Although the seals continued to damage their nets, they insisted that they had come to appreciate their value as a tourist attraction. Although there was some doubt about the veracity of their claims, it was already clear that the hordes of tourists had become a menace to the seal's survival. Hunting also posed unquantifiable risks to the species. Although the killing of monk seals had been prohibited since 1939 (Marini 1994), hunters, mostly after other quarry, had turned the entire Orosei coastline into a shooting gallery (Scott 1972, Bareham & Furreddu 1975).

Reacting to both international and domestic pressure, in July 1987 a coastal zone south of Cala Gonone (between *Foce Codula di Luna* and *Punta Pedra Longa*) was declared a Special Protection Area, in which both fishing and general navigation were prohibited (Anselin & van der Elst 1987, UNEP/MAP 1988). Although Sardinia's regional parliament had given its tacit blessing to the creation of marine reserves a year earlier, this new initiative was delivered by ministerial decree issued from Rome (Council of Europe 1986).

While the decree provided interim protection to the seals and their habitat, scientists and government officials had their eyes set on a more elegant solution, in which the marine sanctuary would be incorporated into the mountainous Gennargentu National Park, whose north-eastern perimeter touches the shores of Orosei (Anselin & van der Elst 1987, ESIT/WWF 1997).

Making hay while the sun continued to shine, the Ministry of Environment forged ahead with other initiatives, commissioning a management plan for the Gulf of Orosei, and funding public awareness campaigns and a sightings information network (UNEP/MAP 1988). In the meantime, however, the local weather had turned increasingly stormy. Claiming that the marine sanctuary would drive them out of business and send Cala Gonone reeling back into the Dark Ages, the tourist industry and local fishers joined forces to scuttle it. Faced with mounting hostility, the authorities in Rome finally caved in, rescinding the decree (Marini 1994).

Seeking clarification, we headed back to the WWF *Centro del Bue Marino*, where a somewhat confused volunteer told us that the monk seal reserve "was only administrative, not geographical." A fine choice of words, it seems, to convey the fact that it was never worth the paper it was written on. On some maps, the ill-fated marine sanctuary is still marked as the *Riserva Naturale della Foca Monaca*. On others, this particular stretch of coast is fancifully labelled the *Costa del Bue Marino*.

By the early 1990s, despite rare sporadic sightings, *Monachus* had been judged effectively extinct not only in the Gulf of Orosei but also elsewhere in Sardinia and Italy in general. As a final epitaph, efforts to conserve these scattered survivors – or vagrants from other areas – were characterised as being "doomed to failure" (Ardizzone *et al*. 1991, Marini 1994).

Unfazed, Cala Gonone continued to flog the proverbial dead horse for all it was worth. Seals, after all, had become the town's main claim to fame, and nothing so inconsequential as the monk seal's local extinction could be permitted to derail the fast track development of the resort.

The monk seal experience at Orosei might act as a cautionary tale to those who are still touting the utilitarian ideal that endangered species can be saved from extinction by according them an economic value in the marketplace. Cala Gonone, it could be said, can now enjoy the best of both worlds. Expediently forgetting its role in the monk seal's demise, the village, much like Loch Ness, can cultivate the myth of the sea ox's elusive, brooding presence, without all the tiresome inconvenience of establishing protected areas or putting lucrative caves and beaches out of bounds to a booming, conveyor-belt tourist industry. Unwittingly perhaps, it has invented the concept of sustainable use of extinct populations.

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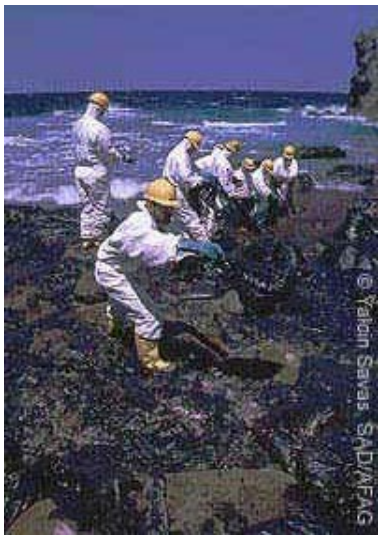
In Focus

OIL SPILL AT ÇAVUS ISLAND

A Clean-up Operation to Save Monk Seal Habitats at Gümüslük, SW Turkey

Cem O. Kiraç



Volunteers struggling with oil sludge at the accident site (© Photo: Yalçin Savas, SAD/AFAG)

Turkish coasts remain one of the last refuges of the endangered Mediterranean seal *Monachus monachus*. An estimated 50 seals are thought to survive, 32 of which have been individually identified by AFAG (Mediterranean Monk Seal Research Group) and METU-IMS (Middle East Technical University, Institute of Marine Science) during several field research programmes in Turkey (Kiraç *et al*., 1998). According to Istanbul University studies, 42 individual seals have been identified in Turkish waters (Öztürk, 1995).

The oil spill on the western coasts of Çavus Island was first discovered by AFAG on 22 September 1996, during its UNDP-GEF supported Bodrum research project (*Status Survey of Monk Seal* Monachus monachus *around the Bodrum Peninsula*). Subsequently, interviews with local fishermen, the operator of a salvage boat, and other inhabitants, revealed that a Turkish-flagged ship had run aground on Çavus Island during the summer (probably July or August) of 1996.

According to witnesses, the name of the ship was Karaköy-1. Efforts were made to refloat the vessel for two days, during which time oil and sludge was released into the surrounding waters.

The ship's captain rejected an offer of assistance by the rescue boat ORCAN-1 and insisted on waiting for the rescue vessel of its company in Istanbul, which arrived at the end of the second day and eventually succeeded in refloating the Karaköy-1. This required lifting the

nose of ship from the rocks on which it had run aground, a process that resulted in hundreds of tons of oil sludge from the ruptured bow section being discharged into the sea. Despite many witnesses to the incident, including fishermen from Gümüslük, tourists, and the crew of the ORCAN-1, no official complaint to court was registered within 48 hours.

As a result, no legal action could be taken against the Karaköy-1. AFAG contacted the owners of the vessel, a shipping company in Istanbul, to request sponsorship of the clean-up operation, to be performed by SAD-AFAG on a voluntary basis. The company, however, declined to provide any financial assistance.

Description of the Area

Çavus Island is 2 nautical miles west of the Bodrum Peninsula. For reasons still unknown, the ship struck the NW tip of the island and pollution occurred along both the western and north-western coasts, where seal caves are known to exist.

Although Çavus is uninhabited, artisanal fishermen from Gümüslük, Yalikavak and Turgutreis frequently use the coastal waters of the island for fishing during winter, and tour boats ferry day-trippers to the area during the summer season. The western coast of Çavus Island is steep and formed by 30-40 m. high cliffs with 3 sea caves, providing a safe and remote refuge for the area's monk seals. In contrast, the eastern side of the island is relatively flat, and includes a small, sheltered bay with pebble beach, where tour boats anchor in summer. Tourists generally avoid the less hospitable west coast, where seal caves have been recorded.

Birds observed on or around the island include the Yellow-legged Gull *Larus cachinnans*, Audouin's Gull *Larus audouinii*, Shag *Phalacrocorax aristotelis desmarestii* and Eleonora's Falcon *Falco eleonorae*.

The Importance of Çavus Island to Monk Seals

Monk Seal near Çavus island (© Photo: Cem Kiraç, SAD/AFAG)

Recent studies in the region conducted by the Mediterranean Seal Research Group, AFAG, and others (Berkes, 1982; Marchessaux, 1987 and Öztürk, 1995) since the 1980's, indicate that the coasts of the Bodrum Peninsula – and particularly its surrounding islands – have long been occupied by monk seals. SAD-AFAG performed cave explorations, observations and information gathering in the region between 1990 and 1997. Seal sightings made directly by AFAG members or recorded during interviews with local fishers were entered into the AFAG FokData database programme. This now incorporates a total of 145 firsthand and reliable seal

sighting data along the coasts of the Bodrum Peninsula between 1990 and 1997. During the same period, AFAG made 20 observations of what are thought likely to be 3 different individuals around B.Kiremit and Çavus Islands. As a result of these studies, the seal population in the area is estimated at between 3 and 7 individuals (Kiraç and Veryeri, 1996). A more recent study puts the minimum size of the regional population at 4 individuals, with the majority of all sightings occurring at the following locations (Savas *et al.*, 1998):

Location	Number of Seal Sightings	% of total observations
Küdür Peninsula	28	19.3
B.Kiremit Island	28	19.3
Çavus Island	25	17.2
Karaada Island	15	10.3
Total	**96**	**66.2**

In addition, research has indicated that only six suitable seal caves are in use around the entire Bodrum Peninsula, 3 of which exist only at Çavus Island. As such, Çavus Island appears to be one of the three most important monk seal sites in the Bodrum Peninsula, with a relatively high number of seal sightings recorded from the island, including instances of seals observed in groups. In addition, two observations were recorded during the oil spill clean-up operation by AFAG members and the ORCAN-1 crew – a possible indication that seals continue to frequent the western coasts of Çavus.

The Clean-up

Realising the potentially-lethal effects of the oil spill, AFAG wasted no time in alerting relevant government departments and other agencies between September and December 1996. Meanwhile, a sample was taken and submitted to the General Directorate of Environmental Pollution Prevention and Control (ÇEKÖG) of the Ministry of Environment (MoE) in Ankara. Analysis results revealed that the sludge was of typical petrochemical origin, composed of aliphatic and aromatic hydrocarbons. In November, AFAG returned to the pollution site in order to determine whether the oil sludge had spread from the small bay in which it had previously been confined. Fortunately, the spill largely remained in its original dimensions.

Although AFAG had alerted several government agencies to the potentially lethal effects of the oil spill to the Çavus Island monk seals – including the Ministry of Agriculture, the Undersecretary of Maritime and Coast Guard – it soon transpired that there would be no swift government action to clean up the oil spill.

It was for this reason that AFAG decided to take matters into its own hands, launching its *Çavus Island Clean-up '97*. In order to fund the operation, we first sought finance both in Turkey and abroad. With the assistance of the Seal Rehabilitation and Research Centre (SRRC), Prince Bernhard of the Netherlands was first to respond, with a vital pledge of financial support.

During the same period, the French company *le Floch* provided supplies of detergents free of charge, most notably the *De-Solv-It 1000* brand, which was used effectively in the aftermath

of the Exxon Valdez accident. CEDRE (France) and Mykall Industries provided valuable information on oil spill clean-up methodology. BP (Turkey) and other Turkish companies pledged the partial provision of clean-up equipment to the operation. A local organisation, Friends of Bodrum, supported the project by providing their 14 m. steel boat, designed specifically for garbage collection. An award from the Henry Ford Foundation, recognising the merits and importance of the operation, provided additional support. Finally, the required official permission for the operation was obtained from the Turkish Ministry of Environment on 2 April, 1997.

The clean-up was then launched without delay, its objectives being to:

- remove the waste oil sludge from the monk seal caverns and nearby coasts of Çavus Island, and to save one of the most important monk seal habitats in the area.
- initiate an organised oil spill clean-up operation, the first of its kind in a wilderness area of Turkey.
- increase public and government awareness of the threats posed to Turkey's environment, and to endangered species such as the monk seal, Eleonora's Falcon and Audouin's Gull.
- guide and encourage governmental organisations to implement and improve current legislation governing pollution and to establish a nation-wide pollution response program.
- encourage the relevant authorities to construct an unmanned lighthouse on Çavus Island, and to require a route change for tankers to prevent a repetition of the oil spill.

Between April 24 and May 1, 1997, a total of 23 SAD volunteers worked on the western coasts of the Island, and collected approximately 7 tons of floating oil waste. Severe weather conditions, financial constraints, and the time limitations of volunteers forced a premature halt to the clean-up – even though tons of oil sludge remained in the area. In the meantime, however, the clean-up received great attention in the Turkish media, with national TV and mass-circulation newspapers all covering the event.

In order to complete the clean-up, AFAG and Friends of Bodrum issued another appeal to government departments, including the Ministry of Environment and the Bodrum Governor.

It was during the intensive lobbying efforts that followed, that we at last convinced Environment Minister Ms. Imren Aykut to visit Çavus Island to assess first hand the severity of the oil spill. As a result of the trip, the Minister agreed to a budget allocation necessary to complete the clean-up operation.

In September 1997, a private company operating a 30 m. professional salvage boat, ORCAN-1, won the MoE tender and started the clean-up the following month. The Provincial Environment Directorate and SAD-AFAG were appointed as official supervisors, and two AFAG divers joined the ORCAN-1 crew to assist in the clean-up. From 10 October until the end of December 1997, a total of 130 tons of oil sludge was collected from the site and transferred to Turgutreis garbage disposal area. During the final stages of the clean-up, rock surfaces covered by a thin layer of oil were washed by high pressure (200 atm.) steam hoses.

The western coasts of Çavus Island, frequented by the monk seals of the region, have now been returned to their former pristine beauty. To our knowledge, this event may provide a rare illustration of the potential hazards posed by marine pollution to the endangered monk seals.

Gümüslük, Blue and Black

A documentary film entitled *Gümüslük, Blue and Black*, directed by Yurdakul Kabasakal has been produced by SAD-AFAG. The 30-minute video includes images of monk seals and other wildlife in Turkey. It has been produced in two versions, Turkish and English. Copies are available from SAD/AFAG at $US 35 each, including postage and packing.

To order, contact SAD-AFAG by letter, fax or e-mail:

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The Monachus Guardian
monachus / schauinslandi / tropicalis

Perspectives

MONACHUS IN MONACO

William M. Johnson

"*Il vit encore, monsieur?*"

In January the monk seal conservation community found itself in strangely opulent surroundings. Greeted by blossoming mimosa, brilliant sunshine and other favourable signs of global warming, some 1300 scientists and students descended upon the principality of Monaco to attend the World Marine Mammal Science Conference. Of these, a 70-strong contingent registered for the *Workshop on the Biology and Conservation of the World's Endangered Monk Seals*.

For frontline conservation projects so accustomed to financial deprivation, the change in scenery was probably more akin to entering a different dimension than entering a different country. Back home, some were begging for patrol boats to guard their fragile *Monachus* reserves, and if Monaco seemed supremely indifferent to their plight, it could hardly be accused of hiding away the latest fashions in ocean-going hardware. Rather like an upmarket version of the London Boat Show, the conference centre offered a tantalising panorama of the Monte-Carlo marina, brimming with the gleaming yachts of the Rich and Famous.

The same projects may have been desperate for a second-hand car or van, a humble enough wish that can't have been helped by the sight of so many blood-red Ferraris, jet-black Porsches and platinum Rolls Royces cruising the streets. Nor, for that matter, could sneaking a curious glance or two into Monte-Carlo's famous Casinos, where the entire worldwide budget for monk seals can be lost within the space of a few minutes on the blackjack tables.

Even the normally demure *Encyclopaedia Britannica* doesn't mince its words about Monaco's obsession with money, stating that its gambling centre has "made Monte-Carlo an international byword for the extravagant display and reckless dispersal of wealth." If anyone

had hoped that the monk seal would benefit from such squandermania, however, they were destined to be disappointed.

Not that the guardians of monk seals were consigned to some shabby conference hall on the outskirts of town. On the contrary, they found themselves ensconced in the seafront Hotel Loews, a deluxe resort of marble floors and burnished gold ceilings, where breakfast can set you back $40, a single cup of coffee, $5, and dinner probably somewhere in the region of the credit limit on a Mastercard.

And so it was that *Monachus* – after being talked about in so many of the world's romantic hotspots, now found itself in the land of bilk and money.

What the Monaco police must have made of so many marine mammalogists thronging the streets is anyone's guess. Presumably they had been forewarned that sartorial elegance would not be the most prominent feature of the sudden invasion. As far as we know, there were no reported incidents of officers accosting those intrepid researchers who looked as if they'd just emerged from the most untamed habitats on Earth. They should count themselves lucky. Under more normal circumstances, those failing to produce cash, credit cards or traveller's cheques for inspection would probably have been judged insolvent and promptly escorted to the border.

A meeting held in May would have offered the entertaining distraction of the Monaco Grand Prix, the Loews itself being ideally situated to watch Formula 1 pilots desperately trying to negotiate the Casino hairpin without ending up in the hotel lobby. But Monaco in January did offer other spectacles.

His Serene Highness Prince Rainier III opened the WMMSC proceedings with a speech that recalled the exploratory adventures of his great-grandfather, Prince Albert I. Albert's passion for oceanography, we were told, had established a tradition and had brought about Monaco's unswerving commitment to the conservation of the marine environment.

Some of those golden traditions could be found on display in the Oceanographic Museum, including Albert's grappling hooks and whaling harpoons, upon whose lethal barbs the Prince's name is still etched. Prince Rainier himself was perhaps too modest to recall his own contributions to marine science, the results of which we stumbled upon in his great-grandfather's Museum.

Here, behind the smudged glass of a display cabinet, lie the stuffed, somewhat moth-eaten remains of two Mediterranean monk seals, an adult female and her pup. In September 1947, Prince Rainier and his hunting party ventured into a narrow cave in Corsica, and encountered the large (allegedly 3.5m) pregnant female sleeping on a rocky beach. Woken by the advancing men, the seal made a threatening movement to defend itself, obliging the Prince to pump two bullets into the animal "in self-defence". Three hours later, after recovering the body and bringing it aboard ship, a caesarean section was performed to remove a full-term foetus. The pup, which may have been only hours away from birth, was found to be still living, but in asphyxia. Prolonged attempts to resuscitate the animal proved in vain, and the two dead trophies were eventually consigned to the Oceanographic Museum (Troitzky 1953).

The snarling, ferocious beast that must have confronted Prince Rainier and his hunting friends was then preserved for posterity, a testament perhaps to the talents of the Royal taxidermist.

As we stared into the display cabinet, a little boy passed by, and paused to ask: "*Il vit encore, monsieur?*" We stumbled for words, not entirely sure whether the child was being sardonic beyond his years or whether he was in for a rude awakening.

As he addressed the conference, the remarkably reinvented Prince Rainier called upon the assembled participants to resist the pressures of government and industry for the sake of science. There is, he reminded his avid listeners, only one scientific truth. If this was the golden rule to which all scientists must aspire, one might be forgiven for failing to detect it in the Monk Seal Workshop, where there appeared to be more opinions posing as unalterable truths than you could shake a stick at.

Arguments raged between population biologists, toxicologists and virologists over the 1997 die-off in the Western Sahara, estimated to have wiped out two-thirds of the monk seal population on the *Côte des Phoques*. An atmosphere charged with suspicion and barely-concealed hostility may have proved illuminating to students embarking on their scientific careers, but was hardly conducive to sifting out those precious grains of scientific truth. More often than not, presentation of supposedly objective data was punctuated with scathing accusations against rival theories and personalities. Rehabilitation of seals orphaned during the die-off, it was alleged, was less than competent; the Mauritanian fisheries research centre (the CNROP) had sided with the virus theory only to prevent a damaging embargo on Mauritanian fish exports. Conversely, those driving the toxic algae theory were accused of arrogant colonialism in their treatment of their Mauritanian counterparts, and of simply not having the intellectual wherewithal to comprehend the unpredictable behaviour of the deadly morbillivirus.

To outsiders sitting in on these sessions, confronted by clashing personalities and ambitions, it must have seemed somewhat ironic that the very people setting out to "manage monk seal populations" were evidently having so much trouble managing their own affairs.

Regrettably, the conclusions of a December 1997 Workshop held in Amsterdam had little effect in encouraging the two sides to take a more dispassionate stance – basically to agree to disagree until further evidence becomes available. The Amsterdam Workshop concluded that, although no firm conclusions could be drawn one way or the other from available data, a preponderance of evidence pointed to toxic algae as being the most likely culprit in the die-off (Harwood *et al*. 1998).

Such glaring schisms allowed the Hawaiian contingent to bask in apparent unanimity, and yet a forthcoming book chapter (Lavigne, *in press*) paints a rather different picture of conservation efforts in the remote Leeward Islands. Attempting to pinpoint reasons for the Hawaiian monk seal's continuing decline, the chapter presents evidence suggesting that the survival of *Monachus schauinslandi* is being jeopardised by a ponderous and Byzantine bureaucracy and by chronic inter-agency rivalry among the plethora of government departments responsible for "management" of the species. It also suggests that scientific candour – particularly where sensitive economic issues are involved – may be compromised by political expedience.

Such explanations may serve to explain why references to entanglement of Hawaiian monk seals in "fishing gear" can be mysteriously replaced under bureaucratic review by the more innocuous-sounding term "marine debris". Indeed, during a notable Workshop Q & A session, one scientist maintained that there was only "anecdotal evidence" of fisheries impacts on *Monachus schauinslandi* – a myth that is destined to suffer some serious debunking in the aforementioned chapter.

While the virus versus algae debate may have taken centre stage at the Workshop, other divisions were also much in evidence, particularly between those advocating *in situ* conservation and those demanding a "more aggressive" intervention in the form of captive breeding and translocation.

In this respect, an eerie sense of déjà vu seemed to infest the proceedings. While rumours of a third attempt by Antibes Marineland to acquire Mediterranean monk seals were being hotly denied, the cause of Hawaiian monk seal captive breeding was being enthusiastically advanced in the auditorium. "We have the technology," one speaker reminded the participants, as though space-age technology could somehow invent that elusive magic bullet that would solve all of the numerous threats confronting the species.

In seeking to justify such *ex situ* schemes, more than one speaker lamented that "despite all of our great efforts, monk seal populations continue to decline…" This too was an echo of the past, a kind of mantra that was used to justify the ill-fated Antibes Marineland captive breeding scheme, and more recently, the monk seal (and possibly morbillivirus) translocation scheme to the Canary Islands. But what "great efforts" might they be referring to? Surely not to the $2 million price tag of translocation research in Mauritania/Western Sahara, where two seals were accidentally killed during capture for satellite tagging in 1996? Not to the Hawaiian translocation project, that ended up leaving eleven animals blinded by another mystery virus at the Waikiki Aquarium? And surely not to the electro-ejaculation experiments at the Kewalo Research Facility of the National Marine Fisheries Service in Honolulu, that killed two adult male seals in the summer of 1995?

Those who are fondest of trotting out the "great effort" cliché neglect to mention that where *in situ* conservation is being implemented effectively – in other words, where there are strictly protected areas, guards and patrol boats – monk seals appear to be staging a recovery.

A case in point is Madeira where nature managers have yet to rule the roost, and where barging into caves with flashlights, cameras, hypodermic syringes, satellite tags, radio transmitters and all the other paraphernalia of the enthusiastic field researcher is strictly prohibited. Instead, monitoring is achieved by purely non-invasive means, mainly by the decidedly low-tech method of posting observers at look-out points along the islands' rugged coasts.

As a consequence of this deliberate hands-off approach, Madeira has seen its monk seal population grow from 5-6 individuals when the Desertas Islands Nature Reserve was established in May 1990, to 19 today. Seals are even beginning to repopulate Madeira itself, particularly the wild and inaccessible São Lorenço peninsula, eleven nautical miles from the Desertas. In what was undoubtedly the most uplifting episode in an otherwise lacklustre meeting, spectacular video footage presented by National Parks Director Henrique Costa Neves, showed mothers and pups returning to open beaches on the Desertas.

It is all the more puzzling then that a recent evaluation report compiled for the Environment, Nuclear Safety and Civil Protection Directorate of the European Commission (DG XI) notes

that "non-invasive [monitoring] techniques… have not provided precise information", and goes on to recommend that this be remedied post-haste (Watson & Huxley 1997). Apparently we are to assume that disturbance in the name of science be viewed somewhat differently to disturbance caused by other factors.

Intriguingly, the same puzzling equation – of less disturbance equalling more seals – appears to hold true in Hawaii as well. David Lavigne, in his aforementioned book chapter (Lavigne, in press), states that despite 20 years' of management under the Marine Mammal Protection Act, "full and permanent protection of the Hawaiian monk seal and its habitats has yet to be secured." Today, he continues, "the only breeding subpopulations that currently are increasing are ones where human impacts are unknown (Pearl and Hermes Reef) or where they have been mitigated and reduced to a minimum (Kure Atoll)."

Meanwhile, back in the auditorium, the Workshop was embarking on its winding-up round-table discussion, made somewhat awkward by the absence of this essential piece of furniture. Up on stage, the chairs of the various sessions had been assigned the daunting task of drawing up their report to the conference, and a set of recommendations. Despite a tangible desperation for answers, little appeared to spring to mind until the issue was opened up to the floor.

One participant ventured that "perhaps we need meetings on a more regular basis." This was enough to send one veteran scientist bounding out of his chair to remind his younger colleagues that if there was anything that the monk seal did *not* need, it was more meetings and conferences. What *was* needed, he continued, was the practical application of resolutions and firm government commitment to their implementation.

Common sense, however, was having a bad day. In the end, largely because of bitter rivalry between opposing camps, the Workshop not only failed to agree on a set of recommendations for the conservation of *Monachus*, but even failed to achieve a consensus summary of what had occurred *during* the meeting. As one participant privately declared, perhaps it would have been easier just to photocopy the resolutions of the 1978 Rhodes Conference.

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Recent Publications

The Mediterranean Monk Seal - Conservation Guidelines: Multilingual Edition

Johnson, William M., and David M. Lavigne. 1998. The Mediterranean Monk Seal. Conservation Guidelines. Multilingual Edition. International Marine Mammal Association Inc., Guelph, Ontario, Canada. pp. 152.

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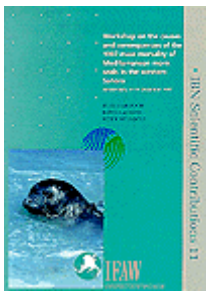

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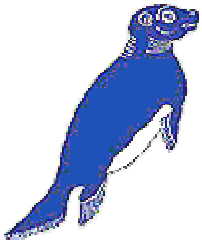

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