

**Captive Breeding
&
The Mediterranean Monk Seal
A Focus on Antibes Marineland**

**By William M. Johnson
With a Foreword by David M. Lavigne**



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Foreword

It was with a sense of *déjà vu* that word was received in the summer of 1994 that the French government was once again planning to capture wild, Mediterranean monk seals off the coast of the Western Sahara for shipment to Antibes Marineland on the French Riviera. The suggestion that a captive breeding programme should be initiated in France has been around since at least 1985, and a similar project was stopped in 1990 by an unlikely coalition of conservation organizations and scientists.

A major difference in the 1994 proposal was that immature monk seals would be captured – the idea being that such removals would have less (some said, no) impact on the wild population. Another difference was that the 1994 plan apparently had the support of some of the same organizations and scientists who had objected to the 1990 initiative.

Nonetheless, these subtle changes did not convince a number of other scientists and conservation organizations. More than forty marine mammal biologists with an interest in monk seal conservation signed another Statement of Concern (Annex 1) and a number of organizations once again wrote letters opposing the plan.

As we talked with colleagues about the Statement of Concern, we heard much about the French plans to construct a captive breeding facility at Antibes Marineland. In one case, we were told that such a facility had already been built at some distance from the public aquarium, the implication being that such knowledge should allay some of our concerns. While this information seemed at odds even with French government documents dealing with the proposed feasibility study, we thought it best to investigate the situation for ourselves. Accordingly, William Johnson, together with photographer Matthias Schnellmann, visited Antibes Marineland in October 1994. By this time, reports had surfaced that the French plan had again been postponed but the visit was particularly timely because it coincided with when the animals should have been arriving at Marineland, had the project been carried out on schedule.

Contrary to some of the claims we had heard, Johnson and Schnellmann found no dedicated facility ready to receive Mediterranean monk seals. This finding raises an important question: had the project gone ahead,

sanctioned by some members of the international scientific community and a number of conservation organizations, where would the captured animals be today? Lacking any other obvious alternatives, it seems most likely that the animals would have been, inevitably – and despite claims to the contrary – on public display in the existing facilities at Antibes Marineland. And they would have had to remain there until such time that the promised facility was constructed. And even then, our evidence suggests, the new facility would have been adjacent to the pool at Antibes Marineland that is best known for its killer whale shows, with their attendant loud music and their appreciative noisy audiences.

While none of this will surprise most of the 40 plus scientists who signed the Statement of Concern, it will – presumably – come as a surprise to some of those who did not, especially those who expressed the view that the involvement of a commercial oceanarium in a captive breeding feasibility study should be the least of our concerns.

Although the French plans have been put on hold, they have not been cancelled. And there are now other proposals on the table for capturing and translocating Mediterranean monk seals that will be discussed and debated in the near future. It is our hope that such discussions will eventually result in an action plan that will truly enhance the probability of survival for the Mediterranean monk seal. But in order to reach that goal, it is essential that all concerned fully understand the implications of any proposal that is advanced. Further discussions, for example, of the French plan for a captive breeding programme, or even of its 1994 feasibility study, would be incomplete without an understanding of the conditions under which any captured animals would be housed. To facilitate such understanding, Johnson and Schnellmann have documented their findings in the accompanying report.

When all the facts are more widely known and understood, then perhaps the international conservation community will be in a better position to recommend the most appropriate actions, which will truly be in the best interests of all Mediterranean monk seals. That surely is the one goal everyone ultimately shares.

David M. Lavigne
19 November 1994

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Introduction

The Mediterranean monk seal is one of the world's most endangered marine mammals. Fewer than 500 individuals manage to survive, in remnant colonies scattered between the Western Sahara and the Eastern Aegean.

The species typically lives along the most remote, inaccessible coastlines, seeking refuge in caves. Although the monk seal is classified as a protected species throughout its range, reports continue to speak of seals being shot, poisoned and even dynamited (Johnson, 1988; Ronald *et. al.*, 1992¹). Such incidents can mainly be attributed to fishers, who regard the animal as a pest that 'steals' fish and damages nets. Entanglement in fishing gear and net debris takes an additional toll. In some areas, it is reported, nursing seals may also be faced with a scarcity of food as fishing grounds are depleted or collapse entirely under fierce commercial exploitation (Reijnders *et. al.*, 1990). The monk seal is also known for its extreme sensitivity to human disturbance – a highly significant factor in its decline as fisheries and tourism expand into once-isolated habitat areas. Human disturbance has been known to break the mother-pup bond, leaving infant seals to perish, unable to fend for themselves (Ronald & Berkes, 1979).

The monk seal's precarious decline has long been attributed to these clearly defined mortality factors. Yet according to many scientists, there is now an additional threat to the species that has nothing to do with the hostility of fishers, or the destruction of habitat. In July 1994, the World

¹ According to Ronald *et. al.* (1992), from 1987 to 1991, a minimum of 30 dead seals were reported in Greece. In the majority of cases, the seals had been shot, speared or dynamited by fishermen. Accidental drowning in gill or trammel nets was the next most common cause of death.

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Conservation Union (IUCN), the United Nations Environment Programme (UNEP), the World Wide Fund for Nature (WWF), the International Fund for Animal Welfare (IFAW) and Greenpeace, warned that this new threat could cause *injury and death to a species already in serious danger of extinction*.²

The focus of this controversy is a French plan to capture monk seals from a reportedly stable population³ in the Western Sahara, ostensibly for an experimental captive breeding project. There is a genuine concern among scientists and others that these seals may die during capture, transport and subsequent confinement.

The government of France, the National Park of Port-Cros and Antibes Marineland, have been championing the cause of monk seal captive breeding for over a decade. The issue, however, has been a contentious one ever since the first operational plans were drawn up in 1985 – perhaps offering some explanation for the apparent veil of secrecy that surrounded subsequent moves to initiate the project. Predictably, such efforts to limit and control information only served to fuel the controversy that peaked dramatically four years later. In October 1990, the conservation world was suddenly alerted to the imminent capture of six adult seals from the *Côte des Phoques* in the Western Sahara (Lavigne, 1990). Though caught off guard by the news, the international scientific and conservation community responded immediately, with numerous scientists, and institutions such as IUCN, WWF, and the CITES Animals Committee, all registering their opposition to the scheme. Mounting international pressure, including a legal challenge in the French courts by Prince Sadruddin Aga Khan's Bellerive Foundation, finally compelled Antibes Marineland/Port-Cros to recall its catching crew from the *Côte des Phoques*. Yet in the lull that followed, the French team did not shelve their plans, but returned to the drawing board.

In July 1993, an 'International Scientific Committee' (ISC) was as-

² 'Statement on Monk Seals', Sixth meeting of the Planning and Co-ordinating Committee of the Marine Mammal Action Plan, U.K., July 1994.

³ While it is often claimed that the *Côte des Phoques* population is indeed 'stable', it is intriguing to note that its reported status during the capture controversy has been known to shift from 'declining' to 'stable' to 'increasing', a phenomenon that seems more dependent upon subjective interpretation and project expedience than on hard scientific evidence.

sembled by France in an effort to provide the project with much-needed credibility. With French government and E.C. financial support, a Technical Working Group (TWG) was also established to formulate guidelines for a revised 'Feasibility Study of Captive Breeding' (Lavigne, 1992). A subsequent meeting of the ISC was convened in Paris in May 1994 to translate the TWG guidelines into an Operational Protocol, which called for the capture of six monk seal pups from the *Côte des Phoques* in October 1994.

Strenuous efforts to spruce up the image of the project, however, did little to prevent another storm of controversy. Objections to the plan were once again lodged by the world's leading conservation and animal welfare organizations, including IUCN, WWF International, IFAW, the Bellerive Foundation, Humane Society International (HSI), the World Society for the Protection of Animals (WSPA), and the Royal Society for the Prevention of Cruelty to Animals (RSPCA).

During September 1994, over forty prominent scientists signed a 'Statement of Concern' calling for the scheme to be postponed pending comprehensive review by the IUCN Seal Specialist Group and the wider scientific community (Annex 1). Signatories included members of the French team's own International Scientific Committee and Technical Working Group, with several scientists noting that the French Operational Protocol did not even conform to the guidelines laid down by the TWG.

Signalling a marked shift in policy, the EC Environment Commission sought to clarify its 1992 funding allocation to the Feasibility Study, explaining that it had been awarded "at a time when it appeared that the seal populations were at risk from an epidemic." The statement, signed by Commissioner Yannis Paleokrassas, went on to say: "At present, the Commission departments are of the opinion that efforts to conserve the monk seal should concentrate primarily on protection of habitats and conservation *in situ*, as provided for in Articles 4 and 12 of Directive 92/43/EEC. They therefore do not currently envisage extending the above contract."

By mid-October 1994, overwhelming opposition had once again forced a postponement to French capture plans. Whether they will be resurrected again in 1995, or at a later date, remains to be seen.

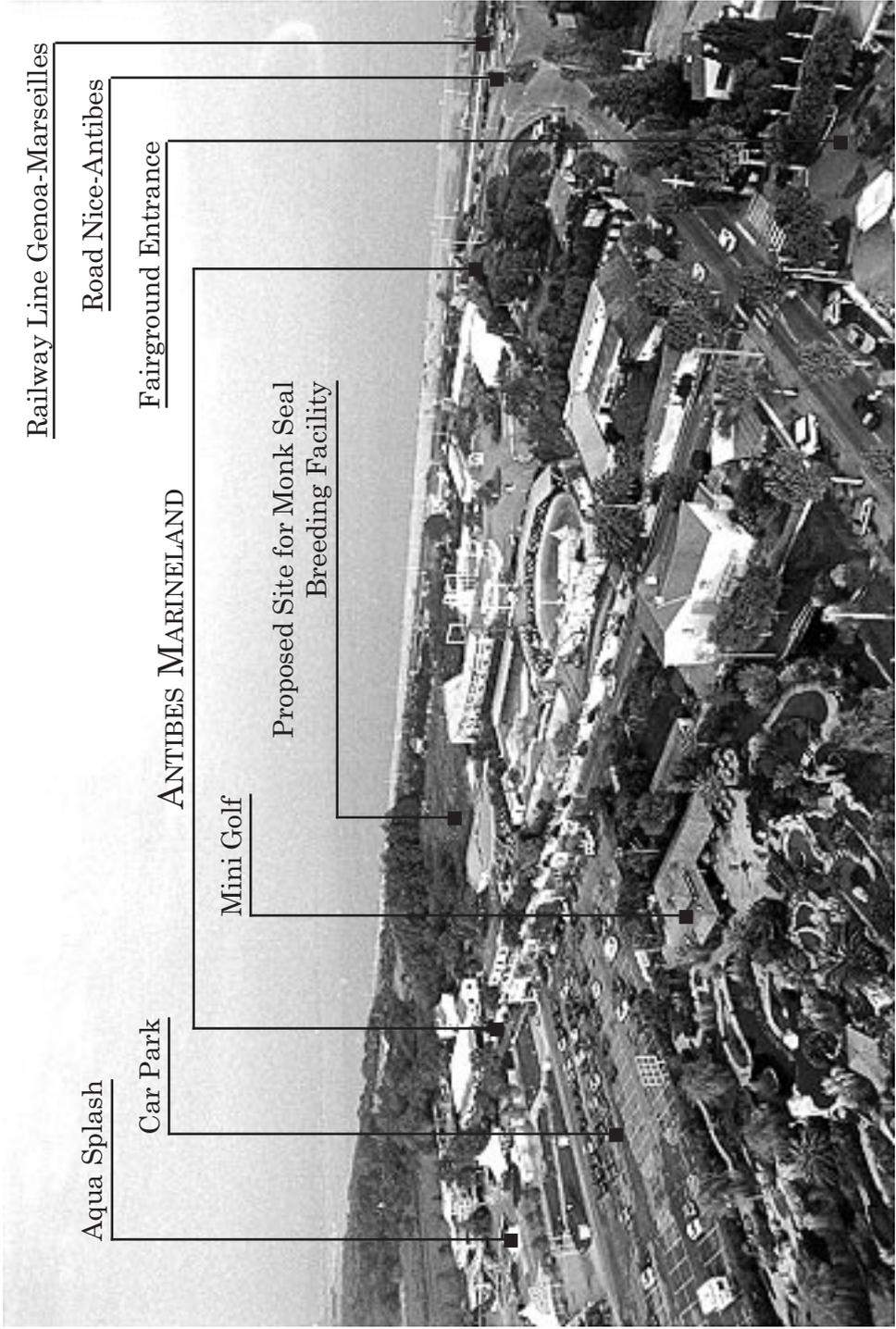


Fig. 1. Antibes Marineland and environs.

Antibes Marineland

Although the French scheme has been subject to numerous revisions since it first surfaced in 1985, one crucial element has always proved immutable to change: monk seals captured on the *Côte des Phoques* would be transported to the project's designated "breeding facility" at Antibes Marineland in France. Yet curiously, little attention has ever been paid to this establishment's viability as a potential site for monk seal captive breeding, either from a technical or ethical point of view. Despite persistent rumours to the contrary, Antibes Marineland is not a marine zoo or a dedicated rescue centre, but a commercial oceanarium whose principal claim to fame is its performing marine mammals.

Disturbance

Marineland is situated on the bustling French Riviera, where the monk seal has been effectively extinct since 1950⁴, its habitat conquered by concrete and asphalt. Ironically, Marineland is a prime example of that urban blight (**Fig. 1**). Though observers may puzzle over the deeper human psychology that would see monk seals return to the very source of their demise, the debate over captive breeding has always been dominated by functional rather than philosophical concerns. Arguably, this is also the scheme's most fundamental design flaw.

Marineland is besieged by road and rail traffic, swamped by hordes of summer tourists, and surrounded by amusement parks and fair grounds. Yet in over ten years of debate, the most important question has remained unanswered. Can Antibes Marineland genuinely be regarded as a suitable environment for a species renowned for its extreme sensitivity to human disturbance? The issue surely demands closer scrutiny, particularly as Marineland, like the captive breeding project itself, is no stranger to controversy.

Over the last ten years, Antibes Marineland has attempted to set itself apart from Europe's other dolphinariums, aggressively portraying itself as "the only scientific marine zoo in Europe" (Johnson, 1990). Yet despite

⁴ *Present Status and Trend of the Mediterranean Monk Seal (Monachus monachus) Populations, UNEP (OCA)/MED/WG.87/3, September 1994.*



Fig. 2. Orca show, Antibes Marineland.

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such public relations embellishments, Marineland actually makes little tangible effort to disguise its true identity as a thriving marine circus.

Over 800,000 visitors a year pass through Marineland's turnstiles, flocking to the sea lion, dolphin and orca shows. Like any commercial enterprise, Marineland is geared for maximum profit. The shows are clearly designed for thrill and sensation, each spectacular stunt in the animals' repertoire of tricks met by thunderous shouts and applause from the audience packing the grandstands.

The orca show, undoubtedly Marineland's main attraction, is accompanied by blasting rock music, still jarringly audible beyond the facility's farthest perimeter. Judging by the crowd's reaction, the highlight of the show is marked by a high flying killer whale delicately plucking a dead herring from a trainer's mouth as he leans out precariously from the towering fish jump (**Fig. 2**). This particular stunt is only rivalled by a pair of killer whales racing each other around the confines of the pool – the audience shrieking as the predicted tidal wave cascades into the grandstand's 'splash zone'.

As a final culmination to the show, the orcas express their fond farewells to the crowd by lying on their backs, waving their flippers. Lest it take an inordinate stretch of imagination to equate these stunts with 'natural behaviour', educational snippets on the hapless whales' former life in the wild are simultaneously piped through the loudspeakers. Predictably, no mention is made of scientific evidence detailing the spatial, temporal and social deprivation that these animals suffer in captivity, the trauma they experienced during capture and transport, or the animal dealers who profited from their misfortune (Pilleri, 1983). The show's scant educational content, however, is evidently deemed sufficient to comply with E.C. legislation on the importation of endangered (E.C. Annex C1) species.

A neighbouring pool houses the combined dolphin and sea lion show. Set against brightly coloured stage scenery depicting a nursery-rhyme village, it is arguably one of the most anthropomorphic in Europe. The mischievous antics of 'Slicky' the sea lion come complete with a piped oratory reminiscent of a Disney cartoon character (**Fig. 3**). Stunts in this pool include dolphins jumping through hoops, dolphins playing football, and trainers surfing on dolphins (**Fig. 4**). Entertaining for the crowds, perhaps. Yet hardly a convincing qualification for Marineland's self-

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Fig. 3. *'Slicky' the sea lion in his 'Scientific Marine Zoo'.*



Fig. 4. *'Dolphin-surfing' at Antibes Marineland.*

proclaimed status as a “scientific marine zoo” (Johnson, 1990).

Maintaining the image of the happy, contented captive animal is a trait common to most circuses and oceanaria, a practice diligently pursued for the most pragmatic of reasons. Physical illness, neurotic behaviour, and the premature death of animals can obviously prove distressing to a public that has been actively encouraged to view them as individuals and even ‘show stars’. In short, the happy illusion is often considered crucial to the financial health of such establishments. As a result, instances of the media and public being deliberately misled over the health and welfare of show animals are simply too numerous to catalogue. One deception that has long been practised by the oceanarium industry is quietly to replace deceased animals with newly acquired individuals, conveniently bearing the same names as their predecessors (Pilleri, 1983; Johnson, 1990)⁵.

Such expedient manipulation of the truth is a cause of major concern to opponents of the monk seal captive breeding scheme. Noting that an air of secrecy has always shrouded French capture plans, some critics fear that Marineland and its supporters might be tempted to suppress any information conceivably damaging to the image of the project. At its most extreme, this might even include concealing accidental deaths of monk seals during capture and transport, or sanitising information on mortalities during subsequent confinement in the interests of ‘damage control’.

Science, Conservation and Animal Welfare

Marineland was established in 1970 by French industrialist Roland de la Poype, who installed his son-in-law, Michael Riddell, as director of the facility. A driving ambition to see Marineland recognized as a fully-fledged marine zoo was pursued by maximizing the animal collection, by claiming involvement in scientific research, and later, by clambering aboard the conservation bandwagon. Such manoeuvres also provided the establishment with a convenient alibi for the continued commercial exploitation of marine mammals.

⁵ *It is interesting to note that when Marineland's star orca 'Kim' died in 1982 of a lung abscess, it was replaced the following year by another 'Kim', denoted as 'Kim II' on the U.S. Marine Mammal Inventory Report (NMFS, 1994).*

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Marineland's flirtation with 'science' began more than a decade ago, when Roland de la Poype became fascinated by research suggesting that the Mediterranean bottlenose dolphin is more sensitive and intelligent than its Gulf of Mexico cousin. But according to press reports (Johnson, 1990), Marineland's subsequent attempts to capture specimens in the straits between Malaga and Gibraltar went disastrously wrong. "It was an experiment," Roland de la Poype was later quoted as saying, "but we presumed that dolphins with higher intelligence would be more docile." Five dolphins were apparently captured without difficulty and were quickly transported to Malaga for an onward flight to Nice. At this point, the sensitive animals went into a state of shock. They struggled in their transportation slings, hit-out violently with their flippers, and gasped for breath. Marineland trainer Martin Padley injected them with sedatives, but for one dolphin it was already too late; it had apparently already succumbed to stress. When the surviving dolphins were at last put into one of Marineland's pools, they were so traumatized and weak from the journey that they could barely stay afloat. Several days later, listlessly circling the pool, the animals had still not adjusted to their new surroundings. After much hesitation, Marineland's management, fearing that they would soon have four dead dolphins on their hands, as well as a major public relations dilemma, decided to return the animals to the sea. Whether they lived or died is not known.

French scientist Prof. René Guy Busnel also worked closely with Antibes Marineland during his 25 year tenure at the *Laboratoire d'Acoustique Animale* in Paris (Johnson, 1990). By his own admission, Busnel sacrificed "about ten dolphins every year" in his ultimately futile quest to learn the secrets of dolphin sonar. Much of his research was conducted under contracts for NATO and the U.S. Navy, which were interested in the military applications of dolphin sonar. In 1980, Busnel became a client of the notorious dolphin dealer Bruno Lienhardt (Johnson, 1990, pp. 284-313), ordering twenty *aduncus* bottlenose dolphins for his research activities. According to comprehensive documentary evidence and the testimony of those involved in the operation, at least sixty dolphins died during or as a result of their capture in Taiwan (Fig. 5).

Prof. Giorgio Pilleri, formerly director of the Brain Anatomy Institute of the University of Berne, Switzerland, has described many of the

French scientist's dolphin experiments as "horrific" (Johnson, 1990). Explaining why he cut short a working visit to Busnel's Paris laboratory, Pilleri explained: "The last straw was when they showed me – evidently with great pride – a dolphin which had been totally mutilated, a huge carving knife sticking out of its back. On top of that, in sending a greeting card to one of their colleagues abroad, this 'research team' all signed their names in dolphin blood" (Fig. 6).

Whether Marineland was ever actually aware of Busnel's abuse of dolphins cannot be independently verified. Yet according to Busnel's own testimony, he worked "for 25 years" on dolphin sonar "at the Institute in Paris and at the dolphinarium and research station in Antibes" (Johnson, 1990).

The commercial exploitation of cetaceans in captivity has generated intense controversy in recent years, and has even forced a complete closure of the industry in the U.K. Perhaps mindful of this threat to its survival, Marineland has indulged rather than shunned the public's concern for animal welfare. To find evidence of this phenomenon, one need look no further than Marineland's own glossy brochure, where it is written: "Our dolphins will not be harpooned and used as pet-food, and our seals will not be turned into expensive fur coats or fluffy toys, but others will. Splash, Kim, Chou-Chou, their brothers and kin, thank you for the interest you have shown towards their problems." Marineland has also offered its facilities and expertise to marine mammal rescue efforts, and has launched an initiative to ban drift nets in the Mediterranean. Though laudable, these initiatives seem strangely at odds with its continued commercial exploitation of marine mammals, and its business dealings involving some of the world's most controversial animal traders.

Animal Supply

Marineland obtained its killer whales from Helgi Jonasson's *Fauna*, an animal dealership based in Reykjavik, Iceland. In fourteen years of operations – prior to being forced into closure by international protests inundating the Icelandic government – Jonasson had built-up a lucrative and exclusive business trading in live orca whales, virtually cornering the world market. Between 1975-1988, permits were issued for the capture of 64 orcas (Sigurjónsson & Leatherwood, 1988). Most are now

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Fig. 5. *Victims of the Lienhardt-Busnel capture operation in Taiwan.*



Fig. 6. *René Guy Busnel's Laboratoire d'Acoustique Animale in Paris.*

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thought to be dead. Jonasson would have the animals captured off the Icelandic coast in trawler nets, and then, waiting for buyers, would store them temporarily at the bankrupt Saedyrasafnid Zoo near Reykjavik. Here, the animals would be show-trained to boost their value on the international animal market – the first trick learnt being to beg for food.

During capture, herring nets were used to separate young whales from their mothers, and they were then hoisted aboard a chartered trawler. After a five hour voyage back to Iceland's east coast, there was an even more gruelling journey awaiting the captured animals – a 20-hour drive by container truck to the dilapidated Saedyrasafnid Zoo. During one capture operation, it is reported, a 5.5m orca was hoisted up from the water by its tail, still wrapped in the catch net. Although its back had apparently been broken, it was nevertheless transported to the Saedyrasafnid Zoo. Three weeks later, it is alleged, the Zoo called in a local dentist who finally put the animal out of its misery with a rifle (Cartlidge, 1988; Johnson, 1990).

When former zoo veterinarian Dr. William Jordan visited the establishment in 1988, he noted that filtration equipment barely seemed to be functioning, with the water so murky with waste that the bottom of the pool was invisible. Jordan, a member of the British delegation to the International Whaling Commission, declared that the pool was a breeding ground for bacteria and disease. "I was shocked at what I saw," he reported. "The pool water is some of the worst I have seen. If the whales are kept there any longer in those conditions, they could die – there is a real danger of an outbreak of disease which would kill them all" (Collins, 1988).

When Antibes Marineland acquired two additional orcas in 1990, it was amid international controversy over the cruelty and cynicism of the Icelandic catching operation. Conservation organizations, appealing for the whales to be set free, also attempted to block the importation of the animals to France, contending that the transaction violated E.C. Council Regulation 3626/82. This stipulates that Annex C1 species (the equivalent of CITES Appendix I, denoting 'endangered' status) may only be imported for legitimate scientific, breeding or educational purposes. Despite these objections, the French government provided its unconditional stamp of approval to the import.

Today, reports indicate that Marineland's orcas are suffering from a

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variety of social and behavioural disorders (D. Cartlidge, pers. comm.). This is a common phenomenon in captive cetaceans, where imbalances in artificially-created social hierarchies are made more pronounced by confinement and stress. According to confidential sources, Marineland's orca problems can be traced to the erratic, unpredictable behaviour of a dominant, aggressive male. Perhaps mindful of the well-publicized accidents that have led to trainers being severely injured or killed by captive orcas in other oceanaria in recent years, the Marineland management has reportedly suspended all swimming or in-pool contact with the killer whales. To prevent conflict between the orcas, Marineland has also been forced to separate incompatible individuals by rotating the animals through a 3-pool complex. As a result, the whales are confined for extended periods to cramped holding pens, scarcely large enough for them to turn around in. Though no explanation is provided to the public, the whales can be seen floating listlessly in the pens, demonstrating stereotypic pool-hanging behaviour, their dorsal fins so limp they are bent double (**Fig. 7**).



Fig. 7. Marineland's orca, 'Kim II', showing limp dorsal fin.

Mortality Rates

In attempting to justify Marineland's involvement in the monk seal captive breeding scheme, the French Ministry of Environment has stated that "the death rate for animals here is virtually zero"⁶. Yet official reports fail to validate that claim.

Under the terms of the U.S. Marine Mammal Protection Act, the National Marine Fisheries Service monitors the long term health and welfare of all American-caught marine mammals, even if they are to be exported to a foreign facility. The NMFS's Marine Mammal Inventory Report on Antibes Marineland of 23.03.94 (Annex 2) indicates that of 22 *Tursiops truncatus* captured for, or supplied to, the facility between 1978 and 1988, at least 14 have died, from such causes as capture shock, difficulties at childbirth, chronic kidney malfunction, pneumonia and peritonitis. Only two dolphins have been born in captivity at Antibes, one dying of peritonitis after eleven months (NMFS, 1994).

Dr. Martin Dinnes, a veteran U.S. dolphin catcher and veterinarian, is cited as the supplier of eleven of Marineland's dolphins (NMFS, 1994). Dinnes is also listed as a director of the International Zoo Veterinary Group led by celebrity vet Dr. David Taylor, whose clients include many of Europe's dolphinaria, including Antibes Marineland. Taylor is a member of the 'International Scientific Committee for the French Save the Monk Seal Programme', and was a member of the seal catching crew in the aborted 1990 operation (Johnson, 1991). In 1990, Taylor's partner, Martin Dinnes, faced prosecution for "unlawful conduct" on 22 counts of Marine Mammal Protection Act permit violations (NOAA, 1990). Charges against Dinnes included the unlawful killing of a California sea lion, illegal transfers of sea lions and dolphins to facilities "which did not comply with regulations and standards for the care and maintenance of marine mammals", and failure to submit necropsy reports on two Californian sea lions and five bottlenose dolphins. As a result of the case, all animals in Dinnes' possession under NMFS permits were confiscated, and all outstanding NMFS permits subject to a "permanent revocation" (NOAA, 1990).

Since there is no regulatory body in Europe that requires the monitor-

⁶ Source: Dossier de Presse, distributed by the French Ministry of Environment and the National Park of Port-Cros in 1990.

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ing of captive marine mammals, records of non-U.S. dolphins that have been held at Antibes Marineland are unavailable. Data contained in *A Review of Dolphinaria*, commissioned by the U.K. Department of Environment (Klinowska and Brown, 1985), however, reveal that an additional six dolphins were obtained by Antibes Marineland from Great Britain between 1970 and 1974. Deaths of four animals are cited as occurring between 1975 and 1982, while the fate of the remaining two dolphins could not be accounted for. In addition, the report indicates that a killer whale named ‘Calypso’ was transported from the U.K. to Nice at some point in 1970, and is reported to have died at Marineland in December of the same year.

Calypso was purchased from Cleethorpes Marineland, owned by dolphinarium tycoon Don Robinson (Klinowska and Brown, 1985). It was here that David Taylor attempted to artificially inseminate the doomed whale with sperm from Cuddles, Robinson’s second killer whale that (according to Klinowska and Brown) had also been earmarked for Antibes. But Taylor’s efforts proved futile. In the end, Calypso died in Antibes and Cuddles – who had already suffered from such serious intestinal ulcers and massive internal bleeding that its pool had been turned blood-red – was packed off to Dudley Zoo where David Taylor attended the last rites (Johnson, 1990).

According to U.S. Marine Mammal Inventory Reports (NMFS, 1994), two additional orcas obtained by Marineland from Iceland in 1976 and 1978 died at the facility after six and nine years respectively, with mortality being attributed to “lung abscess” and “pneumonia”.

In a blaze of publicity in 1988, Marineland obtained two additional dolphins, Limo⁷ and Nemo, who had been abandoned by their owner, Bruno Lienhardt, in a hotel swimming pool in Cairo. After the Egyptian courts issued a ‘place of safety order’ they were flown to Antibes. Though Marineland was widely commended in the press for its mission of mercy, the ill-fated dolphins were destined to spend over a year in the Antibes “hospital pool” – half the size of the hotel swimming pool they were actually rescued from. Marine mammal consultant Doug Cartlidge, who organized the first rescue mission to Cairo, issued the following statement after his visit to Marineland: “Chlorination was carried out by hand.

⁷ *Limo is sometimes referred to as ‘Leo’ in certain documents.*

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I observed staff walking around the pool pouring chlorine from a watering can directly into the water. This is against all recommendations contained in the present standards for keeping cetacea... During my visit I noted and expressed concern over the hanging behaviour which is developing in Nemo, the animal just lying motionless in the water. Prolonged hanging is a sign of depression and boredom. In this concrete tomb, they are worse off than they were in Cairo. If I had known that they were going to spend a year in a 15 metre by 10 metre pool I would never have agreed to them going to Marineland” (**Fig. 8**). Besides ill-health, there may have been another compelling reason for their removal from the show pool to the minuscule hospital tank: performance royalties claimed by Bruno Lienhardt. By 1989, Lienhardt was suing Marineland for £300,000 in damages and lost earnings (Johnson, 1990). While legal battles were fought, Limo and Nemo both died in the hospital tank.

The data provided by the U.S. Marine Mammal Inventory Report (NMFS, 1994) on captive pinnipeds held at Marineland, also fails to substantiate the French government’s claim that “the death rate for



Fig. 8. *'Limo' and 'Nemo', displaying stereotypic pool-hanging behaviour in the Antibes Marineland hospital tank.*

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animals here is virtually zero”⁶. The Report reveals that of sixteen California and South American sea lions supplied to the facility, six have died, from such causes as gastro-enteritis and arteriosclerosis. Similarly, four out of seven harbour seals, and three out of five elephant seals acquired by Marineland have also died. How these figures compare with those from other facilities (or even with expected mortality rates in the wild) has not, to our knowledge, been analysed.

Captive Breeding

Proponents of oceanaria may claim that thirty years of experience has cut cetacean mortality rates and has increased the likelihood of successful captive breeding, yet little data has been provided to support such claims. What is known, however, is that there are large differences in rates of mortality and captive breeding success among species and, clearly, some do better than others in captivity (DeMaster & Drevenak, 1988; Woodley *et. al.*, 1993).

But what of the Mediterranean monk seal?

The statistics are bleak indeed, revealing that the species has never been known to breed successfully in captivity. Out of 34 monk seals known to have been captured for various zoos and aquaria since 1957, the majority have survived no longer than a few weeks or months, and none are alive today (Rigas & Ronald, 1986).

In defending Marineland’s central role in the monk seal scheme, its supporters have consistently praised the establishment’s breeding efforts. While no records have been made available to support this claim, verbal assertions of breeding success have been made on numerous occasions. Marineland’s director, Mike Riddell, has claimed success in hand-rearing sea lions at the facility (PSMS/b, 1994), even though this species is normally known to thrive, and breed well, in captivity (UNEP, 1994⁸).

According to NMFS statistics for both California and South American sea lions, of nineteen specimens listed for the facility, only three were

⁸ *The report states: “In fact, controlling breeding of California sea lions...in captivity has been a management problem faced by most aquaria holding these animals.”*

captive bred at Antibes. Of these, one died twelve hours after birth, and another, eight days after birth (NMFS, 1994).

Though Marineland also holds elephant seals, harbour, and grey seals, there is no evidence even of a stable social grouping among these species, much less of successful captive breeding. Indeed, out of all the specimens of these species listed for the facility in the U.S. Marine Mammal Inventory Report (NMFS, 1994), not one has been born in captivity.

It is perhaps significant that NMFS records have not been made available by Antibes/Port-Cros in any project documents relating to the monk seal captive breeding scheme. Indeed, the paucity of documentary evidence to substantiate Marineland's claim of captive breeding success has evidently left its supporters grasping at straws – even going so far as to single out the facility's thriving king penguin population as proof that the oceanarium possesses the necessary track record to conduct captive breeding experiments on the monk seal (PSMS/b, 1994).

Monk Seal Breeding Centre

Antibes Marineland continues to portray its project as a major contribution to the survival of the Mediterranean monk seal. But curiously, such aspirations are not reflected in the report of its own Technical Working Group, which was established to draw up a set of guidelines for the captive breeding feasibility study. The report states: "It must be recognized that there is a significant probability that some seals will die during the study from natural causes, as a result of stress-related effects during capture and early captivity, or from other problems later in captivity..." (PSMS/d, 1994.)

Similar fears were expressed in the 1994 *Statement of Concerned Scientists*, which also questioned the wisdom of utilizing "a commercial aquarium, far removed from the monk seal's current range", noting that "Mediterranean monk seals seem particularly susceptible to human disturbance."

The objection also echoed similar advice provided at the 'Urgent Action Meeting for Safeguarding the Mediterranean Monk Seal as a Species', held in Texel, the Netherlands, in December 1990. The report of the meeting states: "Therefore, for a range of biological, sociological and

Captive Breeding & the Mediterranean Monk Seal

political reasons, it is important that any captive breeding facilities be constructed as close as possible to the location where seals are obtained.”

Certainly, human disturbance is in no short supply at Antibes Marineland, with its amusement park atmosphere and its circus-style dolphin, orca and sea lion shows. Indeed, ‘human disturbance’ could be described as the economic life blood of the oceanarium, and the French Riviera as a whole. The planned monk seal enclosure at Marineland is surrounded by roads, the main Genoa-Marseilles railway line, an ‘Aqua-Splash’ swimming complex, a fairground, a mini golf centre, a car park and a children’s playground (Figs. 1 & 9).

Yet supporters of the French programme have consistently maintained that the seals would be shielded from disturbance. Minutes of the ISC meeting, held in Paris in May 1994, state that a specially designed monk seal ‘reception centre’ including pools and annexed facilities, separate from the Marineland complex but taking advantage of its technical installations and staff, “will be in working order for the arrival of the animals [in] October 1994.” (PSMS/b, 1994.)

Despite this assurance, a visit to Antibes Marineland in October 1994



Fig. 9. Fairground and car park adjacent to Antibes Marineland.

revealed that no purpose-built installation had been constructed to receive the seals. There was also no evidence of building preparations underway on the site identified for the installation, nor any sign that construction was imminent. This has led to the suspicion that, had monk seals been captured in October as originally planned, they would simply have been consigned to existing pools in the Marineland complex. This was a strategy adopted in the aborted 1990 operation, when strong circumstantial evidence also suggested that Marineland was planning to put the animals on public display.

In this respect, several scientists have voiced concern that monk seals acquired by Marineland could become a circus spectacle rather than the focus of a serious scientific study. Although Marineland has claimed repeatedly that the seals would not be put on public display, its 1994 plans called for a closed-circuit television system to beam to visitors, live images of one of Europe's most endangered marine mammals. That alone could prove a boon to turnstile receipts, but Marineland denies that this amounts to commercial exploitation. Project leaders contend that entrance fees will help offset operating and construction costs (Patel, 1994), estimated to exceed two million dollars.

The Two Million Dollar Question

Critics maintain that such huge sums of money would be better spent on setting up protected areas in the wild, reasoning that captive breeding would be entirely unnecessary if the species can be free from persecution in its natural habitat. While reports indicate that many monk seal populations are still in decline, others remain stable or, in certain protected areas (such as the Northern Sporades and Madeira), are even showing encouraging signs of increase (HSSPMS, 1993; Costa Neves, 1992). Rescue and rehabilitation of stranded or orphaned seal pups has also generally proved successful in recent years (**Fig. 10**). This has given new impetus to demands for the creation of additional marine parks, the implementation of effective guarding, and other *in situ* conservation measures.

At a UNEP/MAP Conference⁹ on the Mediterranean Monk Seal, held in Rabat, in October 1994, the Moroccan government submitted detailed plans for the establishment of a marine park on the *Côte des Phoques*.¹⁰



Fig. 10. *Monk seal rescue and rehabilitation in the Northern Sporades Marine Park, Greece.*

A Focus on Antibes Marineland

If implemented, the marine park could make captive breeding of the monk seal irrelevant – for one very compelling reason. Scientists have calculated that to achieve an equal benefit between captive breeding and *in situ* protection, at least 50 monk seals would have to be taken from the wild. Given the political and financial costs of such a mammoth undertaking, that scenario seems remote. Such sober calculations must also call into question the logic and usefulness of captive breeding feasibility studies. Marineland's strenuous efforts to obtain monk seals may have temporarily obscured the conservation agenda, yet those seeking guidance on recommended policy need look no further than the numerous conference resolutions adopted over the last sixteen years. Without exception, these have consistently identified *in situ* protection as the overriding priority for action (Johnson *et. al.*, 1991). Whether the French government, Marineland and Port-Cros will be willing to commit their two million dollar budget to such essential measures, remains to be seen.



⁹ *United Nations Environment Programme / Mediterranean Action Plan. Meeting of Experts on the evaluation of the implementation of the Action Plan for the Management of the Mediterranean Monk Seal, Rabat, 7-9 October 1994.*

¹⁰ *Parc National de Dakhla. Plan d'Aménagement, Secteur No.2, Côte des Phoques, Ministère de l'Agriculture, Direction des Eaux et Forêts, Royaume du Maroc, 1994.*

Acknowledgements

This report was made possible with funds provided by the International Marine Mammal Association and the International Fund for Animal Welfare.

We also wish to thank the following organizations and individuals for the information and encouragement they provided throughout the 1994 campaign, and also during the preparation of this report.

Bellerive Foundation

Captive Animals Protection Society

Doug Cartlidge

Petra Deimer, GSM/IFAW

Earth Island Institute

Gesellschaft zum Schutz der Meeressäugetiere

Humane Society International

International Fund for Animal Welfare

International Marine Mammal Association

Lesley O'Donnell, IFAW

Michael O'Sullivan, Humane Society of Canada

Vassili Papastavrou, IFAW

Note Added in Proof

As this report was going to press, the NMFS released an updated Marine Mammal Inventory Report. Of relevance to the present study, it records the birth of an additional three bottlenose dolphins and five sea lions at Antibes Marineland. Also recorded are the deaths of two additional harbour seals, with mortality attributed to “heart and renal failure” and “acute pulmonary collapse” (NMFS Marine Mammal Inventory Report, 02.11.94).

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**STATEMENT OF CONCERNED SCIENTISTS
ON THE “FRENCH PROGRAMME TO SAVE THE
[MEDITERRANEAN] MONK SEAL”**

The Mediterranean monk seal is one of the world’s most endangered large mammals. It is listed as *endangered* by the International Union for Conservation of Nature and Natural Resources (IUCN – The World Conservation Union) and is included on Appendix 1 of the Convention on International Trade in Endangered Species (CITES). Its survival continues to be threatened by direct killing, habitat loss, pollution, fisheries interactions and harassment. The remaining monk seals are fragmented into a number of exceedingly small populations. Considerable uncertainty exists about the size of each of these populations, their trends in abundance and mortality rates (including incidental mortality in fishing gear), especially in the Cap Blanc region of the Sahara Occidental.

Currently, there is an initiative by the Government of France (the National Park of Port-Cros) and Antibes Marineland to capture six young Mediterranean monk seals from Cap Blanc and to transport them to Antibes Marineland for a “Feasibility Study of Captive Breeding”. The capture operation is scheduled to begin in mid-September, 1994.

Noting that *in situ* legal protection must be the first priority for saving the Mediterranean monk seal, we, the undersigned, believe that the French proposal – like a similar one in 1990 – poses significant and unwarranted additional threats to Mediterranean monk seals, including possible impact on the demography of population involved, arising from the removal of individuals from that population, and harassment during the capture process. We are also concerned about the fate of the captured individuals, including their injury or death during capture and transport. We also share the concern, expressed in the feasibility study itself, that there is a “significant probability that some seals will die during the study.” Further, we question whether a commercial aquarium, far removed from the monk seal’s current range, is the best place to conduct such a feasibility study, given that Mediterranean monk seals seem particularly susceptible to human disturbance. Noting that the current proposal – like its predecessor – has not had the benefit of review by the wider scientific community, including the entire IUCN Seal Specialist Group, we strongly recommend to all authorities that this initiative be postponed until such a review can be conducted.

The following individuals have signed the “Statement of

Annex 1

Concerned Scientists” on the ‘French Programme to Save the [Mediterranean] Monk Seal’:

Dr. Robert L. Brownell, National Marine Fisheries Service, La Jolla, CA.

Dr. Claudio Campagna, Centro Nacional Patagonico, 9120 Puerto Madryn, Chubut, Argentina; Member, IUCN Seal Specialist Group.

Dr. Kit Kovacs, Associate Professor, Department of Biology, University of Waterloo, Waterloo, Ontario.

Dr. David M. Lavigne, Professor, Department of Zoology, University of Guelph, Guelph, Ontario, Canada N1G 2W1. Member, IUCN Seal Specialist Group; Member, International Scientific Advisory Committee to the Hellenic Society for the Study and Protection of the Monk Seal.

Professor Keith Ronald, Fellow of the University of Guelph, Guelph, Ontario, Canada, formerly a member of IUCN’s Seal Specialist Group.

Dr. Robert E. A. Stewart, Member, IUCN Seal Specialist Group.

Dr. Graham Worthy, Associate Professor, Texas A&M University.

Dr. P. H. van Bree, Member, CITES Scientific Authority, the Netherlands; Curator Emeritus, Mammal Department, Zoological Museum of Amsterdam.

Petra Deimer, Dipl. Biol., Scientific Advisor to the Government of Germany (CITES; Bonn Convention, Bern Convention, IWC, *Bundes-Artenschutzverordnung*).

Dr. Sidney Holt, Member, IUCN/SSC; Member, Planning and Consultative Committee (PCC) of UNEP Marine Mammal Action Plan.

Lenie ’t Hart, Director, Seal Rehabilitation and Research Centre (SRRC), Pieterburen, the Netherlands.

Dr. E. J. Vedder¹, Veterinarian and Assistant Director, Seal Rehabilitation and Research Centre (SRRC), Pieterburen, the Netherlands.

A.D.M.E Osterhaus¹, **DMV, PhD.**, Professor, Medical Virology, Erasmus University, Rotterdam; Professor, Environmental Virology, University of Utrecht; Chair, Scientific Advisory Committee to the Seal Rehabilitation and Research Centre; Chair, International Scientific Advisory Committee to the Hellenic Society for the Study and Protection of the Monk Seal; Member, IUCN/SSC; Member, Hawaiian Monk Seal Recovery Team.

Vrassidas Zavras, Chairman, Hellenic Society for the Study & Protection of the Monk Seal (HSSPMS), Athens, Greece.

Dr. Spyros Kotomatas, Scientific Coordinator, Hellenic Society for the Study

& Protection of the Monk Seal (HSSPMS), Athens, Greece.

Ada Vlachoutsikou, Biologist, Zakynthos Monk Seal Project, Greece.

Dr. Alex Aguilar, Professor, Department of Animal Biology, University of Barcelona, Spain; Member, IUCN/SSC.

Prof. Dr. Josef H. Reichholf, Zoologische Staatssammlung, Abteilung Faunistik & Ökologie, Munich, Germany; Board member, WWF-Deutschland.

Dr. Ian L. Boyd, IUCN Seal Specialist Group.

Dr. Lloyd Lowry, IUCN Seal Specialist Group.

Eugen Draganovic M.Sc., Marine Ecologist, Department for the Conservation of Nature, Ministry of Civil Engineering and Environmental Protection, Croatia.

Dr. Rodolfo Werner, Department of Zoology, University of Guelph, Canada; Centro Nacional Patagonico, 9120 Puerto Madryn, Chubut, Argentina.

Dr. Lex R. Hiby, Sea Mammal Research Unit, Cambridge, England.

Dr. Luigi Boitani, Professor, Department of Human and Animal Biology, University of Rome; Member, SSC/IUCN Steering Committee.

Dr. Paul Thompson, University of Aberdeen, Scotland; Member, IUCN Seal Specialist Group.

Dr. Théodore Monod, Membre de l'Institut (Académie des Sciences); Professeur honoraire, Muséum National d'Histoire Naturelle, Paris; Gold Medalist, Royal Geographical Society.

Dr. Guenter Heidemann², Christian-Albrechts University, Kiel, Germany.

Professor Dr. Gerhard Thielcke, Vice-President, European Natural Heritage Fund (EURONATURE)³.

Dr. Alexi Yablokov, Chair, Interagency Committee of Environmental Security, Russian Federation, Moscow.

Dr. Arne Bjørge, Norwegian Institute for Nature Research, Oslo, Norway; Member, IUCN Seal Specialist Group.

Professor Burney LeBoeuf, Department of Biology, Institute of Marine Sciences, University of California at Santa Cruz, Santa Cruz, USA.

Professor Leo Ortiz, Department of Biology, University of California at Santa Cruz, Santa Cruz, USA.

Professor A. S. Blix, Department of Arctic Biology, University of Tromsø, Norway; Member, IWC Scientific Committee.

Dr. Pierre Beland, St. Lawrence National Institute of Ecotoxicology, Institut national d'écotoxicologie du Saint-Laurent, Montréal, Canada.

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Prof. Michael J. Scoullos², Dept. Marine & Environmental Chemistry, University of Athens; Coordinator, Greek National Programme for the Protection of the Mediterranean Monk Seal; President, *Elliniki Etairia*; Honorary President, European Environmental Bureau; Member, IUCN/SSC.

Dr. Giuseppe Notarbartolo di Sciara, Director, Tethys Research Institute, Milano, Italy; Chairman, European Cetacean Society; Chairman, Marine Mammal Working Group, International Commission for the Scientific Exploration of the Mediterranean Sea (CIESM); Member, IUCN Cetacean Specialist Group.

Dr. Dietmar Todt, Professor, Institut für Verhaltensbiologie, Freie Universität Berlin, Germany.

Dr. Finn O. Kapel, Greenland Fisheries Research Institute; Member, ICES Marine Mammals Committee; Member, IUCN Seal Specialist Group.

Dr. Jonathan Gordon, Wildlife Conservation Research Unit, Department of Zoology, University of Oxford.

Dr. David E. Sergeant, Former Chairman, IUCN Marine Mammal Group.

Dr. William Medway, Emeritus Professor, School of Veterinary Medicine, University of Pennsylvania; Member, U.S. Marine Mammal Commission.

In addition:

The following scientists have endorsed edited versions of the statement, which reiterate the essential point of the complete text of the Statement of Concern, that the French “initiative be postponed until... a review can be conducted.”

Dr. Peter Reijnders¹, Chair, IUCN Seal Specialist Group.

Dr. J. H. M. David, Sea Fisheries Research Institute, Cape Town, South Africa; Member, IUCN Seal Specialist Group.

¹ *Member, International Scientific Committee, French Programme to Save the Monk Seal; Member, Technical Working Group of the Scientific Steering Committee for the French Save the Monk Seal Programme.*

² *Member, International Scientific Committee, French Programme to Save the Monk Seal.*

³ *Organizational member, International Scientific Committee, French Programme to Save the Monk Seal.*

KEY TO U.S. MARINE MAMMAL INVENTORY REPORT

Take Type:

- HP = wild caught in the U.S., permanently held.
- HT = wild caught in the U.S., released or escaped shortly after capture.
- KW = killed in the wild (including accidental deaths).
- EX = exchange or transfer from another facility.
- CB = captive born.
- FT = taken and maintained outside U.S. jurisdiction.

Current Status:

- | | |
|---|---|
| Status | Count |
| G = Animal alive in good health. | N = Not counted against authorized quota, e.g. Pre-Act animals. |
| P = Animal alive in poor health. | C = Counted against NMFS authorized quota. |
| D = Animal died. | |
| R = Animal released or escaped. | |
| T = Animal transferred to another facility. | |

MARINE MAMMAL INVENTORY REPORT
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NAME OF ANIMAL HOLDER: MARINELAND COTE D'AZUR

SPECIES SCIENTIFIC NAME: ORCINUS ORCA
COMMON NAME: KILLER WHALE (code=039)

ASN: 79 LEX:
ANREP: YES FNUM: P201

ANIMAL NAME / IDENTIFICATION	SEX	BIRTH YEAR	AUTHOR	DATE		LOCATION OF TAKE	COLLECTOR OR SOURCE	CURR STAT	DEATH OR DISPOSITION		NECRP FILED
				TAKEN OR ACQUIRED	TAKE TYPE				PLACE NAME AND LATITUDE-LONGITUDE	DATE	
KIM	M	1968	N/A	06/01/76	FT	ICELAND	MARINELAND COTE D'AZUR	D-N	07/24/82	LUNG ABSCESS	YES
BETTY	F	1974	N/A	11/13/78	FT	ICELAND	MARINELAND COTE D'AZUR	D-N	09/08/87	PNEUMONIA	YES
KIM II	M	1978	N/A	03/06/83	FT	ICELAND		G-N			
FREYA	F	1975	N/A	03/06/83	FT	ICELAND		G-N			
TANOUK	M	1986	N/A	01/12/90	FT	ICELAND		G-N			
SHARKAN	F	1986	N/A	01/12/90	FT	ICELAND		G-N			
SHOUKA	F	1993	N/A	02/25/93	CB	MARINELAND COTE D'AZUR (TO SHARKAN & KIM II)	N/A	G-N			

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NAME OF ANIMAL HOLDER: MARINELAND COTE D'AZUR

SPECIES SCIENTIFIC NAME: TURSIOPS TRUNCATUS
COMMON NAME: ATLANTIC BOTTLENOSE DOLPHIN (code=054)ASN: 79 LEX:
ANREP: YES FNUM: P201

ANIMAL NAME / IDENTIFICATION	SEX	BIRTH YEAR	AUTHOR DOCUMENT	DATE TAKEN OR ACQUIRED	TYPE OF TAKE	LOCATION OF TAKE PLACE NAME AND LATITUDE-LONGITUDE	COLLECTOR OR SOURCE	CURRENT STATUS	DEATH OR DISPOSITION		NECRP FILED NMFS
									DATE	EXPLANATION	
X	M		P/A		HP			T-N		TRANSFERRED	N/A
X	M		P/A		HP			T-N		TRANSFERRED	N/A
X	M		P/A		HP			T-N		RETURNED TO OWNER	N/A
OUM	M		P/A		HP			D-N	04/12/93	BRONCHOPNEUMONIA	YES
EVELYNE	F		P/A		HP			D-N		DURING CHILDBIRTH	NO
BRIGITTE	F		P/A		HP			D-N			NO
ANDRE	M		P/A		HP			D-N			NO
LUCKY	M	1965	P/A		HP			D-N	01/29/78	PNEUMONIA	YES
CALF	M		#253	03/06/79	KW	TEX, ROCKPORT	DINNES	D-N	03/06/79	CAPTURE SHOCK	YES
HOUSTON	M	1975	#253	03/06/79	HP	TEX, ROCKPORT, TROUT BAYOU	DINNES	D-C	01/16/87	PRIMARY BRONCHOPNEUMONIA	YES
ROISSY	F	1974	#253	03/06/79	HP	TEX, ROCKPORT, TROUT BAYOU	DINNES	D-C	03/31/91	SEPTICEMIA & RENAL FAILURE	YES
GEM #3 KAY	F	1971	#253	03/08/79	HP	TEX, ROCKPORT, MUD ISLAND	DINNES	D-C	06/27/82	KIDNEY FAILURE	YES
VIRGINIA #9	F		#253	08/20/79	HT	TEX, ROCKPORT, COPANO BAY	DINNES	R-N	10/25/79	RELEASED TO GULF OF MEXICO	N/A
FLIPPER	F	1979		07/29/79	CB	BORN OF EVELYN	N/A	D-N	06/15/80	PERITONITIS; 11 MOS OLD	YES
#303 JOSEPHINE	F		#253	04/09/80	HP	TEX, ROCKPORT, PALACIOS POINT	DINNES	G-C			
ROBI	M	1970		06/08/81	EX	FROM KNIE KINDERZOO, RAPPERSWILL, SWITZERLAND	N/A	D-N	01/28/87	ARTERIOSCLEROSIS AND ATHEROMA	YES
AUORE	F	1981	#483	09/27/85	HP	MS, MISSISSIPPI SOUND	DINNES	G-C			
ECUME	F	1981	#483	09/27/85	HP	MS, MISSISSIPPI SOUND	DINNES	G-C			
CORALINE	F	1981	#483	09/27/85	HP	MS, MISSISSIPPI SOUND	DINNES	D-C	03/14/91	RENAL FAILURE & TERMINAL PULMONARY	YES

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NAME OF ANIMAL HOLDER: MARINELAND COTE D'AZUR

SPECIES SCIENTIFIC NAME: TURSIOPS TRUNCATUS
COMMON NAME: ATLANTIC BOTTLENOSE DOLPHIN (code=054)

ASN: 79	LEX:
ANREP: YES	FNUM: P201

ANIMAL NAME / IDENTIFICATION	S E X	EST BIRTH YEAR	AUTHOR DOCUMENT	DATE TAKEN OR ACQUIRED	TAKE TYPE	LOCATION OF TAKE PLACE NAME AND LATITUDE-LONGITUDE	COLLECTOR OR SOURCE	CURR STAT	DEATH OR DISPOSITION		NECRP FILED
									DATE	EXPLANATION	
STIMEY	M	1979	#483	06/24/85	HP	MS, MISS SOUND (DIED/MAINT BY DINNES P303)	DINNES	D-C	06/01/89	E COLI SEPTICEMIA	YES
DARLA	F	1981	#483	06/27/85	HP	MS, MISS SOUND	DINNES	T-C	10/19/90	TRANS TO THE MIRAGE (PERMIT #686)	N/A
NEMO	M	1975		11/23/88	FT	GUATEMALA		D-N	08/27/92	MULTI-ORGAN FAILURE	YES
LIMO	M	1975		11/23/88	FT	GUATEMALA		D-N	01/27/92	SEVERE, CHRONIC PNEUMONIA	YES
ECLAIR	M	1990		09/13/90	CB	MARINELAND COTE D'AZUR	N/A	G-N			

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NAME OF ANIMAL HOLDER: MARINELAND COTE D'AZUR

SPECIES SCIENTIFIC NAME: ZALOPHUS CALIFORNIANUS
COMMON NAME: CALIFORNIA SEA LION (code=101)

ASN: 79 LEX:
ANREP: YES FNUM: P201

ANIMAL NAME / IDENTIFICATION	SEX	EST BIRTH YEAR	AUTHOR DOCUMENT	DATE		TAKEN OR ACQUIRED	TAKE TYPE	LOCATION OF TAKE PLACE NAME AND LATITUDE-LONGITUDE	COLLECTOR OR SOURCE	CURR STAT	DEATH OR DISPOSITION		NECRP FILED NHFS
				YEAR	MONTH						DATE	EXPLANATION	
JEWEL	M	1967	P/A				HP	CA, CHANNEL ISLANDS	N/A	D-N			NO
SLICKY	M	1971	P/A	02/15/79			EX	FROM MARINELAND, MALLORCA, SPAIN	N/A	G-N			
PEBBLES	F	1970	P/A	10/15/80			EX	FROM MARINELAND, MALLORCA, SPAIN	N/A	G-N			

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NAME OF ANIMAL HOLDER: MARINELAND COTE D'AZUR

SPECIES SCIENTIFIC NAME: OTARIA FLAVESCENS
COMMON NAME: SOUTH AMERICAN SEA LION (code=102)ASN: 79 LEX:
ANREP: YES FNUM: P201

ANIMAL NAME / IDENTIFICATION	SEX	EST BIRTH YEAR	AUTHOR DOCUMENT	DATE TAKEN OR ACQUIRED	TAKE TYPE	LOCATION OF TAKE PLACE NAME AND LATITUDE-LONGITUDE	COLLECTOR OR SOURCE	CURR STAT	DEATH OR DISPOSITION		NECRP FILED NMFS
									DATE	EXPLANATION	
LIMA	M	1972	N/A	10/31/74	FT			D-N	08/27/87	ARTERIOSCLEROSIS	NO
FLORA	F	1972	N/A	10/31/74	FT			D-N	12/25/80	GASTRO ENTERITIS	NO
MIRA	F	1972	N/A	10/31/74	FT			G-N			
SOPHIE	F	1981	N/A	01/17/82	FT			G-N			
LUCIE	F	1981	N/A	01/17/82	FT			D-N	02/12/84	GASTRO ENTERITIS	NO
SNEEZY	F	1981	N/A	01/17/82	FT			D-N	02/13/84	GASTRO ENTERITIS	NO
GOOFY	M	1983	N/A	04/28/84	FT	MONTEVIDEO	MONTEVIDEO ZOO	G-N			
DAISY	F	1983	N/A	04/28/84	FT	MONTEVIDEO	MONTEVIDEO ZOO	G-N			
CHARLOTTE	F	1983	N/A	04/28/84	FT	MONTEVIDEO	MONTEVIDEO ZOO	G-N			
FANNY	F	1983	N/A	04/28/84	FT	MONTEVIDEO	MONTEVIDEO ZOO	D-N	03/04/85	EDWARDSIELLA TARDA	NO
NUTS	F	1983	N/A	04/28/84	FT	MONTEVIDEO	MONTEVIDEO ZOO	G-N			
NO 1	F	1984	N/A	05/21/84	CB	MARINELAND COTE D'AZUR	N/A	D-N	05/21/84	DIED 12 HOURS AFTER BIRTH	NO
SWF-OF-8101	M	1973	AN79A	02/01/88	EX	MARINELAND S A	N/A	G-C			
MARIANNIE	F	1989		07/10/89	CB	MARINE COTE D'AZUR	N/A	G-N			
ANISETTE	F			04/12/88	EX	MULHOUSE ZOO, FRANCE	N/A	G-N			
LOUIS	M	1989			CB	MARINELAND SA	N/A	D-N		DIED 8 DAYS AFTER BIRTH	NO

Annex 2

MARINE MAMMAL INVENTORY REPORT

Page: 429

Date of Report: 03/23/94

NAME OF ANIMAL HOLDER: MARINELAND COTE D'AZUR

SPECIES SCIENTIFIC NAME: PHOCA VITULINA

COMMON NAME: HARBOR SEAL (code=115)

ASN: 79 LEX:
ANREP: YES FNUM: P201

ANIMAL NAME / IDENTIFICATION	SEX	EST BIRTH YEAR	AUTHOR DOCUMENT	DATE TAKEN OR ACQUIRED	TAKE TYPE	LOCATION OF TAKE PLACE NAME AND LATITUDE-LONGITUDE	COLLECTOR OR SOURCE	CURR STAT	DEATH OR DISPOSITION		NECRP FILED
									DATE	EXPLANATION	
NOSEY	M		N/A		FT			D-N	09/01/80		NO
X	F		N/A		FT			D-N			NO
MICK	M		N/A		FT			D-N	07/26/82 RESPIRATORY INFECTION		NO
MACK	M		N/A		FT			D-N	07/04/82 RESPIRATORY INFECTION		NO
HARBIE	F		N/A	08/24/81	EX	FROM THE CHESSINGTON ZOO, UK	N/A	G-N			
HERBIE	M		N/A	08/24/81	EX	FROM THE CHESSINGTON ZOO, UK	N/A	G-N			
ASTAIRE	M	1989	AN79B	09/12/90	EX	CALIFORNIA MARINE MAMMAL CENTER	N/A	G-N			

MARINE MAMMAL INVENTORY REPORT
Date of Report: 03/23/94

NAME OF ANIMAL HOLDER: MARINELAND COTE D'AZUR

SPECIES SCIENTIFIC NAME: HALICHOERUS GRYPUS
COMMON NAME: GRAY SEAL (code=124)

ASN: 79 LEX:
ANREP: YES FNUM: P201

ANIMAL NAME / IDENTIFICATION	SEX	EST BIRTH YEAR	AUTHOR DOCUMENT	DATE		LOCATION OF TAKE PLACE NAME AND LATITUDE-LONGITUDE	COLLECTOR OR SOURCE	CURR STAT	DEATH OR DISPOSITION		NECRP FILED NMFS
				TAKEN OR ACQUIRED	TAKE TYPE				DATE	EXPLANATION	
CHOU-CHOU	F		P/A	10/11/73				G-N			
ARTHUR	F		P/A	10/11/73				G-N			
X	M		P/A					T-N	GIVEN TO CASABIANCA AQUARIUM		N/A
X	M		P/A	10/11/73				D-N			NO
X	F		P/A					T-N	GIVEN TO MONACO ZOO		N/A
X	F		P/A					T-N	GIVEN TO MONACO ZOO		N/A
GREY	F		N/A	08/24/81	EX	FROM THE CHESSINGTON ZOO, UK	N/A	G-N			

Annex 2

MARINE MAMMAL INVENTORY REPORT

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Date of Report: 03/23/94

NAME OF ANIMAL HOLDER: MARINELAND COTE D'AZUR

SPECIES SCIENTIFIC NAME: MIROUNGA LEONINA
COMMON NAME: SOUTHERN ELEPHANT SEAL (code=128)

ASN: 79 LEX:
ANREP: YES FNUM: P201

ANIMAL NAME / IDENTIFICATION	SEX	EST BIRTH YEAR	AUTHOR DOCUMENT	DATE		LOCATION OF TAKE PLACE NAME AND LATITUDE-LONGITUDE	COLLECTOR OR SOURCE	CURRENT STATUS	DEATH OR DISPOSITION		NECRP FILED
				TAKEN OR ACQUIRED	TAKE TYPE				DATE	EXPLANATION	
RED	M	1975	N/A		FT	INDIAN OCEAN, KERGUELEN ISLAND		D-N			NO
MIMI	F		N/A		FT	INDIAN OCEAN, KERGUELEN ISLAND		D-N			NO
BLACK	F		N/A		FT	INDIAN OCEAN, KERGUELEN ISLAND		D-N	04/27/86	INFECTION OF EWARDSIELLA TARDA	NO
GREEN	F		N/A		FT	INDIAN OCEAN, KERGUELEN ISLAND		T-N	01/11/79	TO MALLORCA, SPAIN	N/A
BABY	F	1983	N/A	12/18/83	FT	SOUTH AFRICA	N/A	G-N			