



# FINS

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## CMS and ACCOBAMS join efforts on behalf of the world's whales and dolphins

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For the CMS (Convention on Migratory Species) family of agreements, a paramount task is to contribute to the achievement of the United Nations' 2010 biodiversity targets of significantly reducing biodiversity loss. "On the move to 2010" was the theme of the eighth Conference of the Parties (COP) which instructed CMS, ACCOBAMS and other regional agreements to co-operate in adopting indicators to measure the 2010 target. An important move to promote the conservation of endangered animals during the COP was the inclusion of the Mediterranean population of the Short-beaked Common Dolphin on both CMS Appendices which grants the highest conservation status to this seriously endangered marine mammal.

As many cetacean species are highly migratory, they are globally distributed. The Humpback Whale migrates from summer feeding grounds in polar seas to warmer waters near the Equator where it breeds in winter. Migration routes of cetaceans also pass through territorial waters of the Caribbean and South Pacific Island states. Their coastal waters offer large marine habitats, breeding grounds and key corridors. During their migration cetaceans are exposed to a number of threats such as by-catch, interaction with fisheries, depletion of prey and climate change. By-catch has been addressed with CMS and ACCOBAMS to cooperate with regional fisheries bodies in order to mitigate the threat. CMS' enhanced commitment is also reflected in the adoption of resolutions on by-catch and on human-induced impacts on cetaceans during the COP.

CMS in collaboration with ACCOBAMS and ASCOBANS will play a leading role in giving

technical advice within the framework of the Memorandum of Cooperation on cetaceans in the South Pacific. The agreement will include a practical work plan initially focusing on the Cetaceans agreement and Action Plan. The new Memorandum on Cetaceans in the South Pacific clearly reveals the linkages between marine mammals and ecosystems. ACCOBAMS expertise will contribute to joining up resources in order to conserve more effectively cetaceans in this region. The recent accession of Samoa to the Convention is another step towards drawing up trans-boundary cooperation among range states. An increasing membership among Parties in this region is essential to stop further decline in numbers and work towards a binding Conservation Plan. ACCOBAMS' Conservation Plan includes legislative measures, human/cetacean interaction, protection of habitats, research and monitoring, capacity building,

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public awareness and responses to emergencies.

Enhanced collaboration and coordination within the CMS family show tangible results: more networks and accumulated expertise ultimately boost the conservation of migratory animals. The CMS family raises its profile and increases its influence in the world. As the legal platform CMS will continue supporting infrastructure such as administrative services and information tools.

Over the last year the CMS family has engaged in a continuous exchange of information allowing to identify strategies to best conserve migratory species. A crucial aspect is a harmonized appearance in public to raise awareness and enhance corporate identity under the aegis of the United Nations Environment Programme. Joint publications with cross-references are a valuable contribution to a common information policy. Thus, the Review of Small Cetaceans and the brochure on conserving cetaceans emphasize CMS' and ACCOBAMS' scientific expertise as part of UNEP. Periodical information on behalf of CMS and its Agreements such as the current calendar 2006 will be distributed at major meetings. As a conference planner it will help to better coordinate meetings. A close cooperation between the CMS Secretariat and the Agreements will strengthen the authority of the Convention as a competent global player in species conservation.

New agreements concluded under CMS will bring us closer to achieving the 2010 targets. Joint projects, concerted action under the aegis of the Convention will promote synergies and make an impact on conserving migratory animals and cetaceans in particular.

This edition of FINS will surprise us with new approaches in cetacean conservation with a focus on the importance of ecosystems. It emphasises our common objective of linking migratory animals and ecosystems and promoting the conservation of animals and their habitats. Evaluations and reports from the Agreement Area illustrate the specific conservation angle. ACCOBAMS has successfully positioned itself in the international environmental conservation. While conserving cetaceans and large whales, thus enhancing the marine focus of the Convention, ACCOBAMS adds value to the entire CMS Family.

Moreover, this year it is the 10th ACCOBAMS Anniversary (the Agreement was signed in November 1996): a series of events will take place in order to raise public awareness on cetaceans and to implement the Agreement.

We wish ACCOBAMS every success and a really satisfactory Anniversary! 📧

## New guidelines for cetacean releases

by Cathy Williamson

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Article II of the ACCOBAMS agreement text requires Parties to "prohibit and take all necessary measures to eliminate, where this is not already done, any deliberate taking of cetaceans." The capture and long-term captivity of cetaceans from the ACCOBAMS area are therefore contrary to the provisions and spirit of the Agreement.

Nevertheless, the ACCOBAMS region faces a similar situation to other parts of the world, where swimming with dolphins and other interaction programmes are becoming increasingly popular, and facilities holding cetaceans in captivity are being established in growing numbers. In addition, cetaceans originating from the Agreement area - in particular, bottlenose dolphins from the Black Sea - have been captured from the wild and are held in captivity in several countries throughout the world.

In recent months, commercial facilities displaying cetaceans from the ACCOBAMS area have been established in countries such as Egypt and Turkey. WDCS is concerned that captures of cetaceans are continuing in the Agreement area for display in national facilities. In 2002, CITES, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, established a zero annual export quota for live specimens from the Black Sea population of *Tursiops truncatus* removed from the

wild and traded for primarily commercial purposes. This does not address the issue of captures of individual animals for display in national facilities, which do not enter international trade. We are also worried about continued international trade in Black Sea bottlenose dolphins, irrespective of existing capture and trade restrictions, with specimens of this species recently entering Egypt and Turkey for public display purposes. In addition, we are concerned about the display of live cetaceans in unsuitable conditions and possible disease transmission and genetic pollution from alien species introduced into the Agreement Area and held in sea pen facilities, such as belugas. At its second meeting in 2003, the ACCOBAMS Scientific Committee noted its concern about the "increasing interest in the Agreement area for commercial operations involving "swim with" and "dolphin-assisted therapy" (DAT) programmes... to the extent that such operations are likely to cause increasing conservation problems to wild cetacean populations through illegal takes and reintroductions."

At this same meeting, the Israeli Nature and Parks Authority presented a request it had received from Dolphin Reef, a facility holding captive dolphins for public display and swimming with dolphins programmes, to issue permits for the export of six of its Black Sea bottlenose dolphins to Russia for

**The views and opinions expressed herein are those of the author(s) and do not necessarily represent those of the Secretariat of ACCOBAMS**


release into the Black Sea. Concerns raised by the Scientific Committee in relation to this proposal included the risk of genetic pollution, disease transfer, post-release monitoring, the site chosen for release and the welfare of the dolphins proposed for release. However, in August 2004, following export from Israel and a month in captivity in Russia, two dolphins, a 10-year-old male and a 12-year-old pregnant female, were released into the Black Sea, their dorsal fins marked for photo-identification opportunities. The current status of the released animals is unknown, one reason why ACCOBAMS has called for a commitment to post-release monitoring following such releases. Another male Black Sea bottlenose dolphin, 'Dicky', was released into the Black Sea in 1996, after six years in captivity at Dolphin Reef. Sightings of him were confirmed until at least 2000, four years after release. In his release, Dicky was accompanied by a female dolphin, captured from the local wild population. The involvement of wild dolphin captures to aid the release of long-term captive dolphins is strictly contrary to ACCOBAMS.

In recognition of the fact that reintroduction is considered an important contribution to the conservation of wildlife by organisations such as the IUCN, and in light of its concerns and of opportunities for the responsible release of cetaceans from the Agreement area, ACCOBAMS adopted Resolution 2.17 at the second meeting of the Parties. This resolution called for guidelines to address proposals for the release of cetaceans into the wild. The guidelines developed as a result aim to ensure that special consideration is given to proposals for the release into the wild of captive cetaceans that originate from, or result from breeding between cetaceans originating from, the Agreement area. The guidelines therefore provide guidance in those rare occa-

sions where cetaceans might be released into the wild following a period of time in captivity. They also state that any release should be guided by the principles of conservation and aim to ensure that there is no negative impact on the conservation status of the wild populations of the area into which an animal is proposed for release. The guidelines are based on the following concerns about the release of captive cetaceans into the Agreement area:

- \* Risk of genetic "pollution" from the release of cetaceans originating from outside the Agreement area.
- \* Risk of disease transfer to the wild populations of the area into which cetaceans are released.

They provide guidance on the choice of a release site, the evaluation and preparation of animals for release, the logistics of the release, on-site rehabilitation and the release itself, post-release monitoring and evaluation of the animals released and the success of the project.

Releases of cetaceans previously held in captivity have been limited and, in many cases, lacked sufficient planning and post-release monitoring to determine the extent of their success. The development of guidelines to ensure a strictly regulated process and dedicated monitoring will provide the basis for such release projects and act as a positive example for similar projects in other parts of the world. We welcome the development of guidelines for the release of cetaceans into the wild in the Agreement area and call on countries in the Agreement area to cease captures, trade and display of cetaceans. 

The draft "Guidelines on proposals for the release of cetaceans into the wild", prepared by the Whale and Dolphin Conservation Society, were revised and adopted by the Scientific Committee of ACCOBAMS in 2005. The document will be subtitled for adoption to the 3rd Meeting of the Contracting Parties to ACCOBAMS in 2007

## Dolphin-Assisted Therapy: why not?

by Giuseppe Notarbartolo di Sciarra

Readers who know well that ACCOBAMS is a conservation and not an animal welfare organisation may wonder why the Agreement's Scientific Committee, on several occasions in the past, has taken a negative position concerning Dolphin-Assisted Therapy (DAT). What can possibly be wrong with a practice that has been suggested as effective in helping, among others, depressed adults and autistic children? Indeed, several considerations can be presented to discourage the implementation of DAT programmes.

First, DAT mostly involves the maintenance of dolphins in captivity. This is against the spirit of the Agreement (Art. II, 1).

Second, it is true that animal-assisted therapy can provide significant help to overcome a number of


human psychological disorders. However, the animals used in the therapy do not necessarily need to be dolphins. Quite to the contrary, overwhelming evidence deriving from practical, economical and technical considerations points to the therapeutic use of terrestrial mammals, such as dogs, cats and horses, as the most desirable, feasible and effective practice.

Third, DAT is often proposed as a good reason for keeping dolphins in captivity, and as such can be partially responsible for an increase of captivity facilities along the Mediterranean and Black Sea shores. We know that proposals exist for the installation of new facilities in several riparian countries in the region. Such knowledge elicits a high conservation concern, because experience has taught that where captivity facilities exist, soon or later releases

Smith B. 2003. The discovery and development of dolphin-assisted therapy. pp. 239-246 in: T. Frohoff and B. Paterson (eds.), *Between species: celebrating the dolphin-human bond*. Sierra Club Books, San Francisco. 361 pp.

of captive animals to the wild may occur. This entails significant risks in terms of introduction into the marine environment of exotic pathogens that may have lethal consequences for the native dolphin populations, and introduce foreign genes in the populations.

To quote Dr. Betsy Smith, a pioneer of DAT who has since changed her mind and is now strongly opposed to it, "Dolphin businesses will often justify their exploitation under the therapy pretext. ... It is a rather cynical and deceptive practice by dolphina-

rium and swim-program owners. ... At the hearth of all these therapy programs is the exploitation of vulnerable people and vulnerable dolphins. ... I had to consider ending my research after assuring myself that there were many other fine therapies, including work with domesticated animals, providing the same success stories. After a bout of deep personal angst, I decided to stop all dolphin-assisted therapy research in 1992. Perhaps it is time for us to leave the dolphins alone." 

## Dolphin - fisheries interactions in the Mediterranean: a major problem for conservation and fishermen

Bompar J.-M. 2000. *Les cétacés de Méditerranée*. Edisud. La Calade, Aix-en-Provence. 188 pp.

In his excellent book on Mediterranean cetaceans, Jean-Michel Bompar tells the story of the inhabitants of Baie des Anges (S. France), who on 27 November 1650, in desperation for the destruction being wreaked on their nets by dolphins, had resorted to seeking divine support and managed to take the bishop of Nice to the sea to curse what they viewed as satanic mammals. More than three and a half centuries later, the problem is still with us, and has probably gotten worse in the mean time. Dolphins in the Mediterranean depredate a variety of fishing gear - mostly bottom-set gillnets and small pelagic purse seines - and in the process damage both the gear and the catch. Understandably, fishermen are not happy. Damages they incur in may be very real, also considering that some of these fishermen belong to marginalised economies, already massacred by decades of mismanagement. As documented in a recent paper by Giovanni Bearzi and co-workers, massive dolphin culls were promoted in support of fisheries by a number of Mediterranean coastal governments around the half of the last century. Today, some fishermen again request from their governments dolphin cullings. When such requests are denied, some decide to take the matters in their own hands, and dolphins get eventually killed.

Governments have turned to scientists and engineers to find solutions but this has not proven to be an easy task. All sorts of technological fixes including acoustic devices have been tried, but so far none of them has proven to serve the purpose any better than the bishop of Nice. Science is currently in an impasse, the unknowns are simply too many. There are areas in which interactions happen, and areas in which they don't. Why such differences between perfectly good candidate sites? What are the dolphin species involved, and what are the fisheries most affected? Are there behavioural differences among individual dolphins, with only a few of them engaging in net depredation, or is this a behaviour that can be generalised to the entire population? Is it at all possible to protect the fishermen's activities at the same time as allowing dolphins to rightfully roam across their habitat? Has the damage by dolphins to fisheries ever been objectively quantified? Is the economic damage to fishermen always as bad as portrayed? Would compensation schemes work? Most importantly, if one day in the future contraptions will be developed that will effectively exclude the dolphins from portions of their habitat, to be set aside for fisheries, what would be the consequences for dolphin conservation?

Bearzi G., Holcer D., Notarbartolo di Sciara G. 2004. The role of historical dolphin takes and habitat degradation in shaping the present status of northern Adriatic cetaceans. *Aquatic Conservation: Marine and Freshwater Ecosystems* 14: 363-379.

	bycatch	depredation
main cetacean species involved	pelagic odontocetes, e.g.: striped dolphins, sperm whales, pilot whales, Cuvier's beaked whales	coastal odontocetes, mainly bottlenose dolphins
main gear involved	pelagic driftnets	bottom-set gillnets, purse seine (small pelagics)
main habitat involved	pelagic	coastal
function of devices	warning	deterrence
main conservation concern	accidental mortality	direct mortality deriving from human hostility, potential exclusion from habitat


A healthy attitude would be to recognise that lack of effective fisheries management is the real culprit for the depletion of many coastal fish stocks, regardless of the presence of dolphins. Certainly, in the current poor state of health of Mediterranean fisheries competition between fishermen and dolphins can only be exacerbated. This considered, concentrating efforts to keep dolphins away from nets rather than confronting the problem at its roots, through the implementation of ecosystem-based fisheries management, seems like a rather pointless and insane exercise. Small-scale coastal fishermen do need all the help they can get if this activity is to survive; however, pointing the finger at the dolphins as culprits for the whole of their problems is a cheap shot, and ineffective at best.

Even within the narrow logic of implementing technological solutions to the problem, confusion reigns. One may want to keep dolphins away from nets for one of two reasons: (a) to avoid that nets and catch gets damaged by the dolphins, or (b) to keep dolphins away from nets to avoid to get them accidentally entangled and drowned. These two reasons are very different in many respects, and in general in the Mediterranean a fishery is confronted to solve one of these problems: either it is depredation, or it is bycatch. In rare cases it may be both, but in most it is not. This is due to a number of circumstances. Normally dolphins that depredate a fishing net rarely get entangled (bottlenose dolphins in the Balears may be an exception), whereas dolphins that get entangled in a net very rarely present a depredation problem for that fishery. Dolphins that depredate nets are usually of a different species than cetaceans that are most vulnerable to being accidentally caught. Depredated nets are a different gear from nets that most often cause bycatch. Habitats in which nets get depredated are different than those in which bycatch is a major issue. The table at the bottom of the previous page summarises the differences between depredation and bycatch in the Mediterranean.

Acoustic technology has been invoked to address both depredation and bycatch. However, consid-

ring the substantial differences between the two situations, the underlying mechanisms at work are accordingly different. In the case of bycatch, acoustic devices deployed near the nets serve as a warning to inadvertent dolphins that a threat is present, so that they can become alerted and enact effective avoidance manoeuvres; the devices used for this purpose are in general low-power pingers. In the case of depredation, by contrast, the devices' function is to forcefully repel from the nets dolphins that know very well where the nets are, and are looking for them to conquer an easy meal; accordingly, devices used in these cases must possess substantial energetic output. The two situations are so radically different that it is hard to understand how anyone can confuse them together, and hope to repel bottlenose dolphins using low-power pingers designed to simply warn the animals of the presence of nets. Pingers have proven to be effective in keeping dolphins away from nets only in the early phase of experiments, but the animals soon become habituated to this novelty, and at that time may even use the sound emitted by pingers to locate the nets faster.

To conclude, so far the problem has proven rather intractable. One of the knowledge elements urgently needed is an objective independent assessment of the real damage to the fisheries. Understanding more about the extent of the problem is another priority. Accordingly, the Scientific Committee of ACCOBAMS recommended doing a survey to assess the geographical extent of the phenomenon throughout the Agreement area. Ideally, the survey should point to the presence of hotspots where in-depth investigations could be conducted, and *ad hoc* measures implemented.

The theme of depredation is a complex one and FINS will treat it often in the future given its high conservation relevance. What follows in this issue is a technical discussion of pingers, excerpted from a document adopted by the Parties to ACCOBAMS on their second meeting, and the account of a case study, the coastal fishery at the island of Asinara, NW Sardinia. 

## Pingers in the ACCOBAMS area

by Simon Northridge, Caterina Fortuna and Andrew Read

*Dolphin-fishery interactions: a purely technical point of view* - There is still much uncertainty over many aspects of the mitigation tools that have been used in attempts to minimise cetacean fishery conflicts. In some cases the efficacy of the methods used is still questionable. These Guidelines have been compiled with the knowledge that there are no certain solutions to any of these problems, and that much scientific work remains to be done to understand how they can be resolved in the long

term. Governments are urged to support research efforts in this area.

Conflicts between fisheries and cetaceans generally take one or both of two forms. These are: the accidental capture of cetaceans in fishing operations (**bycatch**) and the **depredation** of fishing gear by cetaceans, leading to loss of catch and damage to fishing gear. In many cases these two problems occur in the same fisheries, and resolving the latter

Excerpt from:  
"Guidelines for  
technical measures  
to minimise  
cetacean-fishery  
conflicts in the  
Mediterranean and  
Black Seas",  
(Doc 28 annexed to  
Resolution 2.12  
and adopted by the  
ACCOBAMS MOP2)

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problem may help to resolve the former.

The 2001 ICRAM workshop recognised a variety of potential mitigation methods to deal with cetacean bycatch and depredation of fish catches in static net fisheries in the Mediterranean. Perhaps the most widely-used methods involve acoustic devices of one form or another. The ICRAM workshop recognised two major categories of acoustic mitigation devices: Acoustic Harassment Devices (AHDs) and Acoustic Deterrent Devices (ADD), including pingers.

Pingers are relatively low-intensity (generally <150dB re 1 $\mu$ P at 1m) battery-powered sound generators that operate in the mid to high sound frequencies (between about 10kHz to around 100 kHz). Pingers are usually designed to prevent small cetaceans from becoming entangled in gillnets, however a new generation of such devices has been designed to mitigate the depredation. At the other extreme, AHDs are designed to work by causing pain, discomfort or irritation to potential predators, and have been developed primarily with the aim of discouraging seals from approaching caged fish. Pingers are usually small (hand-sized) devices that run for weeks, months or years on small batteries. AHDs, in contrast, have relatively high sound source levels (typically >185dB re 1 $\mu$ P at 1m) and operate primarily in the low to mid frequency range (c. 5-30kHz). They are typically bulky pieces of equipment powered from mains electricity or large lead-acid vehicle batteries. As they have primarily been designed with seals in mind, AHDs produce sound within pinniped hearing sensitivities, which are typically lower than those of small odontocetes. Not all acoustic devices necessarily fall into one category or another and the difference between the two types of device, especially in terms of their acoustic output, is qualitative.

**How do acoustic devices work?** It remains unclear how most of these devices work and a range of possible mechanisms has been postulated. These include: in the case of AHDs discomfort; scaring; deterring; masking of the animals' acoustic detection senses; or simple confusion. However, in most cases the exact behavioural mechanism by which AHDs work is unclear.

In some cases, it appears that ADDs function in an aversive manner. For example, several studies have shown that harbour porpoises (*Phocoena phocoena*) and, to a lesser extent, bottlenose dolphins (*Tursiops truncatus*) avoid pingers. Nevertheless, the scope of this research is limited. The response of small cetaceans to any acoustic stimulus is likely to be context-dependent and our understanding of their reaction to any such sound is limited at best.

**Do they work?** Both practical experience and several experimental studies have shown that pingers are able to significantly reduce the bycatch of harbour porpoises in gillnets. Several other studies have shown a similar effect with other small cetacean species including the striped dolphin (*Stenella coeruleoalba*), common dolphin (*Delphinus delphis*) and franciscana (*Pontoporia blainvillei*). The exact

reduction in by-catch depends on many factors including the behavioural response of the species in question and the degree to which devices are properly used and maintained.

Early types of AHD were shown to be ineffective in the medium to long term in several experimental studies in North America. Pinnipeds habituated to these devices and sometimes came to regard them as a **dinner bell**, resulting in **increased depredation** at salmon capture sites. Since these early studies, a new generation of AHDs has been designed for the salmon aquaculture industry. Unfortunately, there have been very few experimental studies to show whether or not these new generation AHDs are effective in reducing depredation. One study in Sweden, in which one model of 'seal scarer' AHD was used close to a salmon netting station was shown to be effective over a short period of several weeks.

Several studies in the Mediterranean have tested the effectiveness of acoustic deterrents in reducing damage to gear and depredation caused by bottle-nose dolphins. The results of these studies, while promising in some cases, **do not present a clear and straightforward answer to the question.**

**Concerns about the use of acoustic devices** - Several concerns have been raised about the use of acoustic devices. Louder devices, such as AHDs designed to keep pinnipeds away from fish farm sites, have been shown to exclude cetaceans from large areas. Concerns have, therefore, been raised that the widespread use of such devices may significantly reduce the habitat available for cetaceans in an area. This concern has also been expressed with respect to the large-scale use of pingers, although the spatial scale of such exclusion is likely to be much smaller for each individual device. Small-scale exclusion has been reported for harbour porpoises around active pingers, but intensive use of such devices over a large area may be a cause for concern if small cetaceans are likewise excluded from significant parts of their habitat. The potential exclusion effect of pingers may be ameliorated to some extent by the finding that continued exposure to such devices may lead to a diminution (though not a disappearance) of the behavioural response and, thus, the area of exclusion.

The possibility has also been raised that some of the AHDs in use around aquaculture sites may cause physical damage to animals nearby. It might be assumed that animals would choose to remain at a comfortable distance from a very loud sound source, but in situations in which aversive signals are only emitted sporadically it is possible that a cetacean or seal might get close enough to a sound source to suffer auditory damage if the device was activated. Theoretical studies suggest that auditory damage would be possible for cetaceans within 10m of a sound source. Pinnipeds, with less sensitive hearing, are less likely to be damaged unless they were even closer.

In the Mediterranean, where small populations of the highly endangered Mediterranean monk seal

still survive, there are important concerns about the possibility of both habitat exclusion and hearing damage to seals as a result of the use of AHDs.

**Depredation: approaches to minimising the problem** - There are numerous accounts of dolphins depredating fisheries in the Mediterranean. Fisheries involved include hook and line fisheries, purse seine or lampara fisheries and gillnet fisheries. While not the only species involved, bottlenose dolphins appear to be the most frequently implicated.

Member States in the ACCOBAMS area have committed themselves to protecting cetaceans, and thus have a duty to assist fishermen in finding appropriate means of minimising these conflicts. Experience in many areas shows that if fishermen are not given appropriate assistance and guidance that they may resort to inappropriate measures to deal with the problem. Appropriate mitigation measures should therefore be sought and encouraged by Member States.

**At present there does not appear to be any one simple panacea that will solve the problem of depredation.** It is likely that solutions will be case-specific, and the national authorities of member states will need to determine which are the most likely routes to resolve the problem. **It should be stressed that at present there has been no demonstration of long term effectiveness of any solution.**

Acoustic mitigation measures represent a potential avenue that may lead to a solution, but many other appropriate ideas should also be explored, including changes in fishing practices and behavioural conditioning of animals. Member states should be encouraged to explore such ideas.

Several acoustic deterrents are currently being marketed for use in the ACCOBAMS region to minimise dolphin depredation. **It is important to note that no study of such devices has yet shown anything**

**more than a short-term effect.** Further trials are urgently required, particularly as there are concerns that animals may habituate to acoustic deterrent signals over time and resume depredation. At the present time, no acoustic device has been shown effective at reducing depredation over the medium to long-term.

The acoustic devices marketed to reduce depredation are all relatively quiet, none approaching the sound source levels achieved in the AHDs used at aquaculture sites. This is largely because AHDs are very expensive and require significant power inputs, whereas most of the lower power devices are less expensive and run on standard alkaline or lithium cells.

Not all trials done so far have involved battery-powered sound sources, and some have relied on physical sound production using bells, tubes or clangers. Although these sounds may reduce depredation over the very short term, their effects are not long-lasting.

As some of these devices may effectively limit cetacean habitat availability, member states should be aware of where and how they are being used, and should consider ways to monitor their use. If certain devices are shown to be effective at reducing depredation over the long-term, it may be advisable to certify them for use as mitigation tools. Member States should determine the number of users, the number and type of devices, their output levels, the exposure schedule, the gear type on which they are being used, the area and season of use and the number of 'target' and 'non target' species present (notably monk seals).

The main species involved in depredation is the bottlenose dolphin (*Tursiops truncatus*). This species, like other cetaceans, may show **an obvious startle reaction to novel stimuli that could lead to exces-**



**sively optimistic expectations by the fishermen.** In fact, this species learns rapidly, is extremely adaptable and likely to habituate in the long run to almost any noise. Therefore, alternative mitigation strategies or "combined approaches" - such as changes in fishing practices or behavioural conditioning should be favoured.

Overall, acoustic tools to minimise dolphin predation should be used only in an experimental manner. Government agencies should continue to learn how and if they work, and in what circumstances, and also the nature and extent of any ill-effects that they might have, including habituation to the signal. **With adequate co-operation and transfer of experience, much may be learned with little expenditure.**

Member states should also be aware that other approaches, such as changes in fishing practice or behavioural conditioning, may also prove useful avenues for further research.

**Bycatch: unintentional capture in fishing operations** - There are numerous records of bycatch of cetaceans in the ACCOBAMS area. Almost all species of cetaceans that are present in any number in the ACCOBAMS area have been recorded taken in some fishing operation or other. In the Black Sea the largest number of animals taken are harbour porpoises. In the Mediterranean and Contiguous Atlantic areas common and striped dolphins are the species most often recorded.

European Council regulation 812/2004 requires the use of pingers in many northern European gill and entangling net fisheries from 2005 - 2006. The intention of this regulation is primarily to minimise bycatch of harbour porpoises in EU waters. As noted above, pingers have been shown to be effective in reducing porpoise bycatch in a number of fisheries in Europe and North America, and there is no evidence yet that their effectiveness is diminished through time. It should be noted that there have been at least two studies in which bycatch of delphinid species in driftnets has been demonstrably reduced through the use of pingers.

It must also be recognised that bycatch of cetaceans cannot ever be completely eliminated by the use of

acoustic devices. Pingers have been shown to reduce porpoise bycatch by 90% or more in carefully controlled field experiments. Similar studies have shown a reduction of dolphin bycatch by 80% or more.

Where pinger use has been mandated in other areas, including northern Europe, accompanying observer/monitoring programmes have been mandated to ensure that the efficacy of these devices is maintained. This is even more important where delphinids are concerned, as they may be less easily deterred from entanglement than porpoises.

Any intention to deploy pingers should be preceded by a practicability trial in which selected vessels are equipped with the devices so that deployment issues can be addressed. **Experience elsewhere shows that while one pinger may work in one fishery, unexpected problems may arise in another fishery.** Issues of concern include how the devices are attached to the net, how they effect fishing efficiency and whether they lead to net fouling. Other issues, including spacing, costs, battery replacement, and enforcement (where this is needed) need to be considered in advance of any deployment programme.

**As with measures to reduce depredation, acoustic approaches are not the only possible solution. Other approaches may include, on a case by case basis, time or area closures for fisheries, or switching to other gear types.**

**Final remarks** - The possible adverse impacts of acoustic devices on cetaceans, at both individual and population level, remain poorly known. Furthermore, their effectiveness in reducing depredation is still in the process of being assessed. There is scientific evidence that pingers may reduce the bycatch of harbour porpoises and other small cetaceans in some fisheries. However, it is still too early to say whether acoustic devices will be effective in reducing depredation over the long term. More focused, long-term research on these topics is urgently needed. 📄

## Dolphin depredation: the case study at the Asinara Island (Sardinia, Italy)

by Giancarlo Lauriano

Among the Italian areas in which competitive interactions between cetaceans and fisheries have been reported to cause damages to fisheries, Sardinia can be indicated as one of the most affected.

In 1999 the oldest consortium of Sardinian fishermen, the Cooperativa di Pescatori di Stintino, located in north western Sardinia, commissioned a

study aimed at highlighting the modalities and extent of the interaction between common bottlenose dolphins (*Tursiops truncatus*) and their small-scale fishery. The study was also intended to provide an estimate of the economic caused by the interactions, a first of its kind.

As elsewhere in the Mediterranean Sea, no detailed

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information on the interaction, if any, was available in the area; this lack of data was seen as a major hindrance towards possible solutions to such a complex issue. In Italy roughly 13,000 artisanal fishery licenses are granted. The fishing gears that are deployed along the Italian coasts vary depending on the target species, the season and the local peculiarities. Consequently, the problem of the interaction cannot be oversimplified; all the factors at play interact in various combinations, complicating a system cannot be generalised.

The study was performed in the surrounding waters of the Asinara Island National Park, where several fishing gears are commonly deployed according to the season, the legislation and the target species. These include mostly trammel nets and bottom long-lines and, to a smaller extent, bottom fish traps.

Among trammel nets two main systems can be distinguished: nets for lobster (*Palinurus elephas*) and cuttlefish (*Sepia* spp. ), and nets for striped red mullet (*Mullus surmuletus*). Such systems differ for several characteristics, such as mesh size (being the smallest for the red mullet) and season (cuttlefish in winter, lobster in summer and red mullet in autumn).

The study provided some clear indications concerning the interaction mechanisms, thus pointing to possible:

a) The interactions were highly seasonal and clearly favoured by the attraction that bottlenose dolphins seem to have for striped red mullets. Between late summer and autumn, mullets become gregarious and coastal and as a consequence they become profitable for the fishermen. However, this trait is also exploited by the dolphins, which can easily feed on them. Dolphins apparently use the nets as barriers to concentrate their prey and to facilitate its capture. This behaviour often results in tears in the nets, damages to fish in the nets, fish removal, and decreased catch available to the fishermen. As a final result of this complex of interactions, overall catch rates decline.

b) The frequency of interactions varied greatly from year to year, with consequent substantial yearly fluctuations in economic losses, comprised between Euro 500/year and E. 2000/year per boat. Such inter-year differences were mainly related to fluctuations in total catches, explained by natural fluctuations of the available resource. In any case, the total damage was never as large as previously thought on the basis of the fishermen's reports.

c) Other variables possibly affecting the catch rate included the nets soaking time and setting depth. In addition, a key element limiting the fishermen's income was the time reduction (up to 25%), due to adverse weather, of the profitable four month-long striped red mullet season.

d) The provision of cues to the dolphins whilst setting and hauling the net, which acted as a "dinner bell" resulting in the attraction of the animals to the fishing area. We speculated that these cues might have been provided by the noise produced by the

net hauling system or by the engine noise at low revolution and characterised by frequent stops. The dinner bell hypothesis was strengthened by the observation that there was little or no interaction of dolphins with the long-line fishery, in which the gear is hauled in manually and noiselessly.

The Stintino cooperative operates a small fishing fleet, consisting of 21 boats. In the small community decisions on the way to conduct the activities are taken collectively. This results in a homogeneous way of proceeding with the fishing operations, including time of leaving port and return, and frequent aggregations of boats in the same fishing grounds, which are likely to emphasize the provision of cues to the dolphins. Fishermen themselves report that after a few days of forced inactivity due to adverse weather conditions interactions are scarcer, suggesting that dolphins get out of the habits to looking for nets.

All the factors listed above suggest that when developing a mitigation strategy a combination of methods, rather than a single one-time solution, should be envisaged.

In the study area, fishermen complain about damages from the dolphins as the only detriment to their activity, although several other elements, as previously indicated, are likely to cause a reduction in the catch rates. Thus public awareness programmes should be implemented in order to inform the fishing community as well as the general public that the issue of interactions with dolphins is rather complex, and that the dolphins cannot be considered as the only responsible for poor catches. The short time span of the red mullet fishery as well as the special preference of the dolphins for this species could be an advantage, given that the problems are concentrated in only part of the year. "Stealth fishing", as suggested by Nick Tregenza, where attention is given not to produce acoustic cues advertising the presence and location of fishing activities, could also be an useful strategy. Instead, the Stintino cooperative decided to follow the example of other Sardinian fishermen and experiment with pingers. Following a general "fashion" about acoustic devices, up to 1,500 pingers were recently employed in Sardinia alone, 300 of which in the Asinara area during 2002 - 2004. As noted during the monitoring performed by ICRAM within the framework of LIFE programme LIFE03 AT/IT/000148, an initial positive effect on the dolphins was soon followed by an increase in the severity of the interaction.

As a consequence, fishermen in the area now prefer not to use acoustic devices. More simply, many have spontaneously decided to give up with red mullets and concentrate on other species with gears that are not so prone to involving interactions with dolphins. 📌

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# A call for stricter protection: common dolphin in the Mediterranean Sea listed in Appendix I of the Convention on Migratory Species

by Niki Entrup

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The rhythm of Kenyan drumming by the locally well known musicians from Kenge Kenge, a live-size inflatable blue whale model, tents to protect delegates from potential rain in the mid-autumn, but still warm African nights set up the surrounding for a reception hosted by the ACCOBAMS Secretariat and WDCCS, the Whale and Dolphin Conservation Society, that has been titled "A Night for the Common Dolphin".

That night already indicated that at the 8th Conference of the Parties of the Convention on Migratory Species a proposal of great importance to cetacean conservation will be discussed: Monaco proposed the listing of the common dolphin in the Mediterranean Sea in Appendix I and also list the whole population in Appendix II of the Convention (so far, just the "western population" was listed in Appendix II).

In 2003, Mediterranean common dolphins (*Delphinus delphis*) were classified as Endangered in the IUCN Red List of Threatened Animals, which refers to an inferred 50% decline in abundance over the last three generations. In November 2004 a Conservation Plan for common dolphins in the Mediterranean Sea was presented to the 2nd Meeting of the Parties of ACCOBAMS (Bearzi et al. 2004). This Plan was strongly welcomed by the Parties, and a Resolution (2.20) was adopted where Parties and Riparian States are invited to implement appropriate parts of the Conservation Plan for Mediterranean common dolphins without prejudice to other international obligations and introduce relevant activities into their national action plans (ACCOBAMS 2004).

The need for the implementation of actions described in the Plan has been reiterated at the ACCOBAMS Scientific Committee meeting held in May 2005 in Cairo, Egypt (ACCOBAMS 2005).

On Thursday, the 24th of November, the 93 Parties to the CMS adopted the proposal from Monaco and

listed the common dolphin in the Mediterranean Sea in Appendix I of the Convention.

The meaning of the Appendix I listing is indicated within the review of legal instruments of relevance to the conservation of Mediterranean common dolphins (Annex I to the "Conservation Plan for short-beaked common dolphins in the Mediterranean Sea" that has been "strongly welcomed" by the ACCOBAMS Parties at the MOP2):

"Appendix I species are those which are "endangered". There are provisions on the listing and delisting of such species. Parties that are range States of Appendix I species are prohibited from "taking" animals of these species, though this prohibition is qualified (e.g. where "the taking is for scientific purposes"). The term "taking" is broadly defined as "taking, hunting, fishing, capturing, harassing, deliberate killing, or attempting to engage in any such conduct".

With some caveats, Parties that are range States of Appendix I species must also, put briefly, endeavour: (a) to conserve and restore habitats of importance in removing the species from danger of extinction; (b) to act in relation to "activities or obstacles" that seriously impede or prevent migration; (c) to act in relation to "factors" that endanger or are likely to further endanger the species".

So the question is whether there is still time to prevent further common dolphin groups disappearing from their range or whether we are able to protect them efficiently? Let's put it that way. What can be achieved on paper has been achieved. Little has been done in practice. It's now up to the countries, politicians, the wider public and stakeholders to prove that mankind is able to conserve and protect this extraordinary marine mammal species. A task, humans have most often failed so far. 🙄

Thanks  
to the  
Principality of Monaco  
for its support  
of the reception  
"A Night for the  
Common Dolphin"

## **STRIPED DOLPHIN *Stenella coeruleoalba* listed in Appendix II of CMS**

Subject to another proposal submitted by the Principality of Monaco, the whole Mediterranean population of striped dolphin was listed in Appendix II of the Convention. Previously this status was limited to the "western population".

The widespread use of driftnets in the Mediterranean since the 1980s has been a major source of mortality for striped dolphins in the region. Thousands of striped dolphins still die every year in pelagic gillnets.

# News from the Secretariat

## Current state of signatures and ratifications.

In the frame of the accessions to ACCOBAMS and from 1 September 2005, Italy officially became Party to the Agreement after having deposited its instrument of ratification on 24 June 2005. Cyprus ratified the Agreement, deposited its instrument, and will officially become Party to the Agreement on 1st May 2006. This brings the Parties to ACCOBAMS to a total of 19. In addition, during the Conference of the Parties of Barcelona Convention that was held in November in Slovenia, the Executive Secretary met the Ministries of Serbia Montenegro and Slovenia in order to strengthen the relationship with these countries and to accelerate their process of ratification of the Agreement.

## Reinforcement of the Permanent Secretariat by Italy.

The Italian Ministry of Environment renewed its support to ACCOBAMS by seconding to the Secretariat an Italian expert in media-communication, Silvia Sartori. This assignment, which coincides with the accession of Italy to the ACCOBAMS Agreement, confirms the important role that Italy has always played in implementing the Agreement on a voluntary basis and grants further technical support to the Secretariat. Moreover, in view of the ten years of ACCOBAMS (1996-2006) and of the special events that will be organized, this new member of the staff will be particularly helpful.

## Successful outcome of the trainings courses on "Techniques of cetaceans monitoring".

Two training courses on "Techniques of cetaceans monitoring" were held from 28th August to 3rd September in Elba Island (Italy) and from 10th to 14th October in Stintino (Italy). Organized thanks to the support of the Italian Ministry of Environ-


ment and in collaboration with the University of Genoa, they had a very successful outcome with a number of adhesions higher than expected. Theory lessons were alternated to field surveys in order to allow participants to acquire basic knowledge on cetology and observe species directly in their natural habitat.

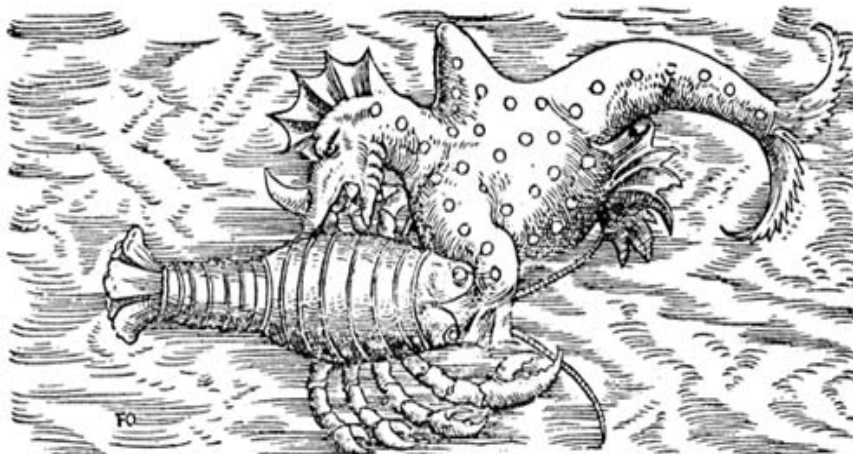
## ACCOBAMS Workshops on "Conservation of Mediterranean fin whales", "Collisions between cetaceans and vessels" and "Detection and localization of marine mammals using passive acoustics".

From 12 to 18 November 2005 scientists from all over the world gathered in Monaco to attend three different workshops organized by ACCOBAMS. From 12 to 13 a meeting was held focusing on fin whales, to lay the bases for a Conservation Plan for this species in the Mediterranean. From 14 to 15 a workshop was held on the alarming issue of collisions, and from 16 to 18 the theme of discussions was the use of passive acoustics to detect cetaceans.

The first two workshops were organized thanks to the support of the Italian Ministry of the Environment, while the third was held in collaboration with the University of Paris XII and CEBC CNRS.

All workshops, although in large part attended by different scientists, gave participants a valuable occasion for joining conservation efforts and comparing scientific data and potential mitigation measures.

On 15 November a press conference was also organised: many journalists participated to interview the Executive Secretary and selected scientists. After the conference, scientists and media joined the ACCOBAMS Secretariat to a cocktail honoured by the presence of HSH Prince Albert II, who renewed His deep interest and support to the ACCOBAMS activities. 



# The Regional Activity Centre for Specially Protected Areas: the Mediterranean Sub- Regional Coordinating Unit for ACCOBAMS

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The Regional Activity Centre for Specially protected Areas (RAC/SPA) is a Centre established within the framework of UNEP's Mediterranean Action Plan, with the mandate of supporting the Parties to the Barcelona Convention to implement the Convention Protocol on Specially protected Areas and Biological Diversity in the Mediterranean. The RAC/SPA provides, among other things, technical follow-up for the implementation of the Action Plan for the conservation of Cetaceans in the Mediterranean adopted in 1991 by the Contracting Parties to the Barcelona Convention as part of the Mediterranean Action Plan.

The meeting of the Parties to ACCOBAMS, in its first session held in Monaco from 28 February to 2 March 2002, adopted the Resolution 1.4 which entrusted the RAC/SPA with the duties of a sub regional coordinating Unit (MedSRCU) and mandated the ACCOBAMS Secretariat to sign a Memorandum of Cooperation with the RAC/SPA.

Regarding the need of specific actions in the sub-region, the most conspicuous gaps found in the Agreement area could be summarised as follows:

- \* Important lack of knowledge on the level of threat provoked by accidental captures and on possible solutions to conflicts with fisheries;
- \* Lack of national action plans and stranding networks for cetaceans in several countries;
- \* Insufficient level of knowledge on the status of the populations in the Agreement area;
- \* Need for creating and strengthening capacities.


Actions undertaken in the field of cetacean conservation after the entrusting to RAC/SPA of the MedSRCU, concerned mainly the following:

- \* Optimising of coordination with the Secretariat ACCOBAMS through the harmonisation with recommendations from Contracting parties of the Barcelona Convention, to the maximum extent possible with the agreement needs;
- \* Improvement of knowledge of the species' state, including actions to take advantage of strandings of cetaceans to improve knowledge of conservation problems and their possible solutions.

In this context, several actions were implemented, including:

- \* The setting-up of a Mediterranean Database on Cetaceans Stranding (MEDACES) at the University of Valencia through an agreement with that institution. This database is currently supported by the Spanish Ministry of the Environment.
- \* The elaboration of guidelines for developing stranding networks at the national level (e.g., notification of stranding, skills and role of the local correspondents, equipment, sampling and standardisation of records, national coordination, regular meetings, workshops), further improved and completed through the contribution of ACCOBAMS experts.
- \* The elaboration of a review document on whale watching activities compatible with cetacean conservation. The document was further harmonized and included as an annex to the ACCOBAMS whale watching guidelines.
- \* The offer of technical and financial assistance by RAC/SPA to Libya, for the development of its National Action Plan for the Conservation of Cetaceans, and to Tunisia for the development of a cetacean stranding network.
- \* Contribution and participation to the following workshops, organised by the ACCOBAMS Secretariat:
  1. Workshop on the preparation of a project "Assessment and mitigation of cetacean bycatch in the ACCOBAMS area", Rome, 29-30 April 2004.
  2. Workshop on Acoustic Deterrent Devices, Rome 28 June 2004.

For the triennium 2005 - 2007, a Memorandum of Cooperation was signed by the ACCOBAMS Secretariat and RAC/SPA, defining the following fields in which the Sub-Regional Coordinating Unit will assist the ACCOBAMS Secretariat:

- \* The identification and the creation of Specially Protected Areas for cetacean in the Mediterranean sub-region.
- \* The elaboration and development of databases on important areas for cetaceans, and on national authorities, research and rescue centres, stranding networks, scientist and non-governmental organisations concerned with cetacean conservation. 

# Third Meeting of the Bureau of ACCOBAMS

On 1st and 2nd December the Third Meeting of the Bureau took place. Its members (Miguel Aymerich Huyghues/Spain, Ahmed Chouayak/Tunisia, Simon Nicolaev/Romania, Ana Strbenac/Croatia and the Chair of the Scientific Committee Giuseppe Notarbartolo di Sciara) met in the premises of the ACCOBAMS Permanent Secretariat in Monaco to discuss on different issues.

According to the text of the Agreement (article VI) the Bureau has to:

- a) Provide general policy guidance and operational and financial direction to the Agreement Secretariat and the Co-ordination Units concerning the implementation and promotion of the Agreement;
- b) Carry out, between sessions of the Meeting of the Parties, such interim activities on its behalf as may be necessary or assigned to it by the Meeting of the Parties;
- c) Represent the Parties vis-à-vis the Government(s) of the host country (or countries) of the Agreement secretariat and the Meeting of the Parties, the Depositary and other international organizations on matters relating to this Agreement and its secretariat.

The Bureau normally meets once per annum and provides a report on its activities for each session of the Meeting of the Parties.

The last Meeting examined the status of the accessions and the implementation of the Agreement by the countries, the relationships with the Sub-Regional Coordination Units, the ongoing collaborations with other instruments and the budgetary matters. Five Non Governmental Organizations were conferred of the Status of ACCOBAMS Partner on the basis of a concrete planning of collaboration: the Conservation Biology Research Group - University of Malta, the Dipartimento di Biologia - University of Genoa, the Groupe de Recherche sur les Cétacés, Morigenos - the Marine Mammal Research and Conservation Society and Nature Trust.

The Bureau also recognized the value of the cooperation with Partners and the way to strengthen it asking the Partners to supply the Parties with a report on their activities within ACCOBAMS.

The Bureau also acknowledged the progress report

on the activities of the Scientific Committee and with regard to some matters of emergency such as the use of driftnets in the Mediterranean recommended that the Secretariat should:

- \* Raise concerns about illegal driftnetting activities within the area, with special regard to the Pelagos Sanctuary;
- \* Communicate with the European Commission, ICCAT and GFCM to report actions being taken to monitor and enforce the EU/GFCM driftnet ban in the Mediterranean Sea and establish joint initiatives to intensify the investigations into possible illegal driftnetting activities and to conduct targeted surveys to prevent illegal driftnet fishing in both national waters (in co-operation with national authorities) and the high seas;
- \* Communicate with all Parties and Range States to report actions being taken to monitor and enforce the EU/GFCM driftnet ban (as appropriate) with respect to their fishing fleets, national waters and adjacent high seas and request Parties to report any incidences of cetacean mortalities/strandings that are identified or suspected to be caused by interactions with driftnets.

The urgency of the case of the Common Dolphin in the Mediterranean Sea was also underlined, and the Bureau agreed on the need of raising awareness among fishermen and promoting the implementation of the Conservation Plan in the countries through the development of concrete actions.

With regard to the 2010 initiatives the members agreed in inscribing the identification of sites of interest for cetaceans in the "2010 Targets" in particular with the integration of cetaceans into the existing networks.

According to the MOP2 decisions, the members also examined a proposal for the creation of an extended Bureau and for its terms of reference.

The Next Meeting, mainly focused on the preparation of the Third Meeting of the Parties is planned to be held in April 2007. 🇮🇹

Want to send news and articles to FINS? We welcome contributions in the field of cetacean conservation from all parties. Please send proposals, suggestions and items for the calendar of events to: G. Notarbartolo di Sciara, [disciara@tin.it](mailto:disciara@tin.it)

## News from Member States

### Sergey Krivokhizhin

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### Offshore gathering of harbour porpoises in the central Black Sea: is it a norm or exception?

by Sergey Krivokhizhin and Alexei Birkun, Jr.

Regarding the Black Sea, it is generally acknowledged that circumlittoral shelf area (i.e. inshore waters less than 200m deep) is the primary habitat of harbour porpoises (*Phocoena phocoena relicta*) and bottlenose dolphins (*Tursiops truncatus ponticus*), whereas upper layers of offshore waters over the continental slope and deep-sea depression (where depth varies from 200 to 2,212 m) represent the main habitat of common dolphins (*Delphinus delphis ponticus*). It is known also that sometimes the both coastal species are sighted in the deep-water area as well as the latter pelagic cetaceans approach occasionally very close to the coast. So far, there was no evidence that harbour porpoises can form sizeable accumulations in mid part of the Black Sea beyond bounds of the shelf.


A shipboard line-transect cetacean survey was carried out from 24 September to 7 October 2005 in the central Black Sea just between the Crimea peninsula, Ukraine, to the north and Sinop province of Turkey to the south (see the map). Six tracklines (660km of observation effort) crossed study area (31200 km<sup>2</sup>) leaving aside shallow shelf zone and territorial waters of the riparian states.

Although everyone in the research team expected to meet with common dolphins mainly and, hopefully, with few bottlenose dolphins, the results turned out quite different - 169 harbour porpoises (22 sightings), 107 common dolphins (33 sightings) and none bottlenose dolphins on the record (however, some *T. truncatus* individuals happened outside of study area, in coastal waters of Ukraine and Turkey).

Harbour porpoises were sighted in groups of 1-50 animals (7.7 on average) at a distance of 38-215km from the nearest coast where depth comes to 450-2,170m. Usually, neighbouring groups were observed not far from each other suggesting their belonging to larger aggregations. The estimated density of harbour porpoises and common dolphins in the study area amounted to 0.3 and 0.2 animals per 1km<sup>2</sup>, respectively.

The occurrence of harbour porpoise accumulations offshore in the deep-water area pretends to be crucial in view of resumptive estimation of this species abundance in the Black Sea in whole. At present available data are not enough for such comprehensive assessment. In this context, the preparation of basin-wide cetacean survey should be priority of fundamental importance.

The survey in the central Black Sea was organized and conducted by the Brema Laboratory (Ukraine)

and Institute of Ecology and Evolution (Moscow) in the framework of joint Russian and Ukrainian Belobochka'05 project. Research team: Alexei Birkun, Jr. (project co-ordinator from Ukraine), Lev Mukhame-tov (project coordinator from Russia), Sergey Krivokhizhin (survey team leader), Olga Shpak, Anna Kryukova and Eugeny Nazarenko. The methodological assistance and field equipment for surveying were kindly provided by the Sea Mammal Research Unit (University of St. Andrews, Scotland, UK). Financial support: Utrish Dolphinarium Ltd. (Moscow) and UK Department of Environment, Food and Rural Affairs by force of British Council-Ukraine as a part of SEPS-II (via NNCC-project). 

See a map of the Black Sea with the locations mentioned in this text at:<http://www.accobams.org/newsletter/index.htm>

### Consolidation of national network for cetaceans monitoring and conservation in Ukraine

by Alexei Birkun, Jr.

History of the Ukrainian national network for cetaceans monitoring and conservation (NNCC) is not long - 17 years only. Before 2005, the network consisted of 15 non-governmental and state-operated organisations including the coordinating centre (Brema Lab, Simferopol) and 14 focal points located mainly along the Black Sea coast, except one situated at the Sea of Azov (see FINS 1(1):13). Critical analysis of NNCC activities has been conducted within "Morski Ssavtsi-2003" project supported by the Ukrainian Ministry of Environment. It was stated that NNCC focal points are in need of capacity building including: (a) development of common methodology; (b) providing of basic training for most members; (c) upgrade of field equipment; (d) ramification of local branches of the network by dint of involvement of voluntary assistants; (e) producing of handy means for public awareness; (f) creation of a common NNCC database; and (g) strengthening of information links with mass media.

All these items were declared as objectives of a one-year project (Jan-Dec 2005), "Improvement of the Ukrainian national network for cetaceans monitoring and conservation", a NNCC-project selected for implementation in the framework of the so-called Small Environmental Project Scheme (SEPS II). The project obtained major funding from the United Kingdom "Environment for Europe Fund" supported by the UK Department of Environment,

Food and Rural Affairs. Some results of this project are presented below.

**Spatial and membership growth.** NNCC currently consists of 19 operational units functioning in 17 inhabited localities (cities, towns and villages) and adjacent territories extending along the Black Sea, Azov Sea and Kerch Strait coasts of Ukraine (see map on website). Activities of the operational units cover almost entirely the seashore and marine coastal waters in the Crimea Autonomy, Odessa, Nikolayev, Kherson, Zaporozhye and Donetsk provinces, and Sevastopol administrative district. According to the updated directory of NNCC members, at present the network includes 197 individuals and 38 collective or corporative participants.

The NNCC scientific core consists of focal points established in six research institutes and laboratories, two biosphere reserves and five nature reserves. Four of these organizations belong to the National Academy of Science of Ukraine. These are: the Dunaysky (Ukrainian Danube Delta) and Chernomorsky (Black Sea) biosphere reserves, Karadag Nature Reserve and Odessa Branch of the Institute of Biology of Southern Seas. At the same time, the NNCC coordinating centre - the Brema Laboratory - is a private institution; it is the only Ukrainian and one of two Black Sea organizations honoured with the status of "ACCOBAMS Partner". Five environmental NGOs are also involved in NNCC activities. One of them - "Oasis" Society for the Protection of Archaeological and Historical Memorials, Flora, Fauna and Coastal Waters of the Heraklea Peninsula - acts as the NNCC focal point in the Sevastopol district.

Ukrainian citizens of different social layers are engaged in NNCC activities. Most individual members are scientists, professional conservationists (including employees of the reserves), university lecturers and students, and teachers of secondary schools. Besides, in some places fruitful cooperation was achieved with coast guard officers, fishermen, beachfront rescuers and sailors. Quite many volunteers are represented by physicians. There are also some governmental officers (including officers of the Black and Azov Seas Ecological Inspection and Fish Protection Service), businessmen and lawyers involved personally in NNCC activities. Pupils of secondary schools and other young children do not take part in the Ukrainian NNCC as individual members because of safety, health and responsibility concerns. Nevertheless, two country-side schools in Crimea, one lyceum in Odessa and one gymnasium in Simferopol expressed their interest in assisting focal points as corporative NNCC members.

**Awareness and educational issues.** Three colour posters (47 x 68 cm, 1000 copies of each) aimed to enhance public awareness were designed and published this year by Brema Lab. The first poster - How to behave in the presence of a stranded cetacean - includes advice for the general public on dos and don'ts if somebody finds a live or dead dolphin or porpoise on the beach. The second poster - How

to behave in the vicinity of dolphins at sea - is dedicated to popularization of the ACCOBAMS guidelines for cetacean watching activities. The third poster - Make an effort - don't cause harm to dolphins - describes man-made risk factors which pose various threat to Black Sea cetaceans in the wild. Over 600 copies of each poster have already been distributed free of charge. Most of these are posted in public places located in different populated areas along the coastline of Ukraine.

A total of 109 peer reviewed scientific publications relating to the centennial period from 1903 to 2004 were collected, scanned (1260 pages in total) and assembled in the form of a Digital Library on Cetaceans of the Black and Azov Seas. One hundred CD ROM copies of this library were produced in order to distribute them among the focal points and specialists interested in research and conservation of Black Sea marine mammals.

A guide for members of the network entitled Cetaceans at Sea and on the Beach has been written and supplied with original drawings. It is expected that the guide will be published and mailed to NNCC focal points in the very near future.

**Training.** A Training course on development of the network for cetaceans monitoring and conservation has been conducted in Koktebel, Crimea, during one week, from 23-29 May 2005. A total of 24 trainees and five trainers representing 16 Ukrainian organizations took part in the course, and two additional participants were invited as observers from Russia. The training programme included six full-time (1.5 hour) lectures, four practical studies (including one day at sea, one day on the beach and one day in necropsy room), five mini-lectures (0.5-1-hour presentations prepared by the trainers and trainees) and round table discussions. As a result, representatives of the NNCC focal points were provided with basic knowledge and practical skills on cetacean anatomy, physiology and pathology, field data collecting, sampling as well as on common methodology of NNCC management. This included approaches to the monitoring of cetacean strandings, by-catches and sightings and methods on how to increase public awareness and public participation in conservation activities.

Practical lesson on the line transect method of cetacean surveying was carried out in coastal waters near Balaklava (between Cape Khersones and Cape Sarych in south-western Crimea; 143 km<sup>2</sup> of study area; 65 km of observation effort) by means of concurrent use of three sailing/diesel-powered yachts. Practical lesson on search of stranded cetaceans (40 km of pedestrian promenade) was conducted on the western Azov Sea coast represented with sandy beaches of Arabat Spit. Two practical lessons on small cetacean measuring, sampling and dissection techniques were carried out in the Feodosia Veterinary Clinic. To show cetacean necropsies in details, two carcasses of incidentally caught harbour porpoises, located in fishing nets by Evpatoria NNCC members, were stored in a freezer long before the training.

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At the beginning of the training, each trainee received a set of 18 work documents, information and awareness issues including seven different posters and three different CD-ROMs prepared and published by Brema Lab in 2003-2005. Two additional documents - the Recommendations on the Sampling of Cetaceans and Cetacean Carcass Data Sheet - were distributed among trainees when the course came to its end. Later on, in June and July, during managerial visits of the project coordinator to NNCC focal points, 24 persons received their training certificates. It is important to underline that the trained specialists, after returning to their organisations, were in turn able to conduct trainings to the rest of their team members.

Another training initiative supported by NNCC was carried out from 24 September to 7 October 2005 within the "Belobochka-2005" joint Ukrainian - Russian cetacean boat survey carried out in the central Black Sea. Seven observers representing the Brema Lab (Simferopol) and the Institute of Ecology and Evolution (Moscow) were trained to use modern line-transect methodology elaborated and kindly made available by specialists from the Sea Mammal Research Unit (University of St. Andrews, Scotland).

**Provision of equipment.** In May 2005, just before the training course, the project management team assembled 15 field sets aimed to provide NNCC focal points and coordinating centre with basic standardized equipment for data recording and sampling. Each field set, stacked in a backpack, consists of 30 items. Among other things, NNCC focal points obtained GPS personal navigators, digital photo cameras, measuring tools (tape-lines and scales), preparation tools (tweezers, scalpels and scissors), field journals, chemicals and accessories for tissue sampling, fixation, labelling and transportation. The field sets were delivered to responsible representatives of NNCC focal points against their written obligation to use this equipment for needs of the network.

**New knowledge.** The implementation of the project provided the NNCC coordinating centre with new valuable information on cetacean sightings, strandings and bycatches in different areas along the Ukrainian coastline of the Black and Azov Seas and in the Kerch Strait. This information, presented by the focal points in the form of standardised reports, in most cases includes regular (monthly) data collected in June-October 2005 (after the training course) and less systematic data recorded in January-May 2005 and in 2004 (before the training). The obtained results should be considered a valuable by-product of the project, although they will still need further systematization and some analytical effort. Nevertheless, even now it can be stated that NNCC contributed new essential facts to the knowledge of cetacean distribution, abundance and anthropogenic threats along almost the entire Ukrainian seaboard. Special sections of the reports are dedicated to hot spots which were abundant in cetacean strandings and entanglements in fishing gear. These results could be used as important background for the designation of marine protected areas specialized in the conservation of two Black

Sea cetacean species -harbour porpoises (*Phocoena phocoena*) and bottlenose dolphins (*Tursiops truncatus*).

**Dissemination of information.** With the purpose of widely distribute NNCC public awareness information, a Briefing on the Conservation of Black Sea Cetaceans was conducted (Simferopol, 24 March 2005) with the participation of 54 scientists, NGO conservationists, governmental officers and journalists including 18 newsmen from 17 Ukrainian and Russian media. Two-hour press-conference served as a central event of the briefing: six responsible persons from the Ukrainian Ministry of Environment, British Council-Ukraine, NNCC coordinating centre and focal points responded to questions concerning the state of cetacean populations in the Black Sea and human activities for their conservation. A long series of newspaper, TV and radio publications and messages produced by news agencies appeared (and continue to appear) after that briefing.

**Website.** Information of NNCC activities was also organized by means of placing respective data on the website [www.dolphin.com.ua](http://www.dolphin.com.ua) dedicated to the conservation and research of cetaceans in the Black and Azov Seas. This web site was put online in 2003 in support of the MORECET-project (MONitoring and REhabilitation of CETaceans; 2002-2006) adopted by the Ministry of Environment of Ukraine. The Executive Council of this project welcomed the idea of hosting NNCC data on the website. The design and programming of the NNCC section of the website were developed and basic descriptive materials regarding the network were delivered to the Internet in the first quarter 2005. At present periodical replenishment of the materials takes place not less than once every two months.

**NNCC database.** The computerized database servicing NNCC was designed and developed during spring and summer 2005. The database consists of five blocks accumulating cetacean records from different areas of the Ukrainian Black and Azov Seas including the Strait of Kerch: 1) sightings of free ranging animals; 2) live strandings; 3) live bycatches; 4) strandings of dead animals; and 5) lethal bycatches. The entering of the initial information can be done by means of appropriate web-forms supplied with hyperlinks. All the data inserted by users are verified by a database moderator appointed by the NNCC coordinating centre. The user interface prepared in Russian allows to obtain the consolidated data (statistic tables) on cetacean sightings, strandings and bycatches recorded by each NNCC operational unit separately and within the Ukrainian NNCC on the whole. The database is available for use by NNCC operational units on the same web site [www.dolphin.com.ua](http://www.dolphin.com.ua). Non-members of the network have no access to the database.

**Impact on the environment.** There is no conspicuous direct impact of the NNCC project on the state of environment. At the same time, its indirect influence seems to be meaningful owing to geographical widening of the monitoring and conservation network, growth of its membership, reinforcement and standardization of its methodological



base, educational tools and logistics, improvement of efficiency and altruistic motivation of NNCC activists and their voluntary assistants. All these factors (i.e. outputs of the project) ultimately lead to the amplification of public participation in environmentally concerned actions for the conservation of cetaceans and maintenance of biological diversity in the Black and Azov Seas or, in other words, to the

achievement of the major project goal. Thus, there is every likelihood that the project results, taken in their totality, will serve in due course to the improvement of the state of Black and Azov Seas cetacean populations and their habitat. 📄

## Short news

### Training course on cetacean research methods and conservation strategies for Lebanese and Libyan researchers

by Giovanni Bearzi

In July 2005 ACCOBAMS organised a field training course attended by researchers from the Lebanese National Centre for Marine Sciences, the Libyan Marine Biology Research Centre at Tajura, and the Libyan Environment General Authority. The course, held at two field stations managed by the Tethys Research Institute, was centred around the use of photo-identification and other methods to study cetacean ecology and population dynamics. Practical field work focused on two dolphin species (common bottlenose dolphins *Tursiops truncatus* and short-beaked common dolphins *Delphinus delphis*) in two study areas: the waters surrounding the island of Kalamos and the Gulf of Amvrakikos, in north-western Greece.

Dolphins were seen every day during surveys from large inflatable craft, and the trainees had opportunities to do practical field work on both cetacean species and practice photo-id with a dedicated digital camera under ideal circumstances. After each survey, the trainees could review and evaluate their work at the field stations, and assess their capability to identify individual dolphins, under the supervision of four experienced researchers from Tethys.

In addition to practical work in the field, seminars and lectures were given every day on topics including threats affecting cetaceans, conservation strategies, cetacean data management, the use of GIS technology to study cetacean habitat use, the management of a dolphin research projects and other topics. Although intensive and intellectually demanding, the training course was held in an informal way, facilitating personal exchanges and promoting future collaboration. At the end of the course the trainees were provided with a CD-ROM including a selection of key cetacean literature, educational videos on marine conservation, a list of the equipment needed to run a cetacean study, and

miscellaneous information on Mediterranean cetaceans. 📄

A photo album of the course can be found at the link:

[www.accobams.org/activities/capacity\\_building\\_2005.htm](http://www.accobams.org/activities/capacity_building_2005.htm)

### Atypical mass stranding of Cuvier's beaked whales in Southern Spain

by Antonio Fernández

On the 26th of January the NGOs Almería PRO-MAR and the Spanish Cetacean Society (SEC) requested the collaboration of the Unit of Cetacean Research (Veterinary Pathology Unit, Institute for Animal Health, Veterinary School) from Las Palmas University in the Canary Islands, to conduct a pathological study of four whales that mass stranded on the Almería's coasts in Southern Spain.

The veterinary pathologists carried out the necropsy of two males and two females beaked whales (*Ziphius cavirostris*, family Ziphiidae). All animals were in good body (nutritive) conditions with some rests of ingested prey. Three carcasses were in fresh condition and the fourth was moderately decomposed when necropsied.

The epidemiological data showed an "atypical" beaked whale mass stranding involving four whales which died during the evening and/or night of the 26th of January 2006. Two animals were found alive and two were found dead. The two live animals appeared to show clear signs of "sickness" and died soon after being found.

All the four animals showed a "Gas and Fat Embolic Syndrome" as a result of the pathological study. This syndrome, as it has been previously described in beaked whales, would be responsible for the stranding and death of these animals. When whales with this syndrome strand alive, they develop a more severe cardiovascular clinico-pathological picture and die shortly afterwards.

The pathological findings in the Almería mass

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stranding is very similar to previous referenced in "atypical" beaked whale mass strandings associated spatially and temporally to military naval exercises (Bahamas, 2000; Canary Islands, 2002, 2004). In all of these cases mid-frequency active sonar was used before or during the time of strandings. The whales involved were mainly of the Ziphiidae family.

Based on current scientific knowledge, and the pathological findings in this study, the most likely primary cause of this type of beaked whale mass stranding event is anthropogenic acoustic activities, most probably anti-submarine active mid-frequency sonar used during the military naval exercises. 📖

Further readings:

Fernández, A. 2004. Pathological findings in stranded beaked whales during the naval military manoeuvres near the Canary Islands. Pp. 37-40 In Proceedings of the Workshop on Active Sonar and Cetaceans (P. Evans and L. Miller, eds.).

Fernández, A., Arbelo, M., Deaville, R., Patterson, I.A.P., Castro, P., Baker, J.R., Degollada, E., Ross, H.M., Herráez, P., Pocknell, A.M., Rodríguez, F., Howie, F.E., Espinosa, A., Reid, R.J., Jaber, J.R., Martin, V., Cunningham, A.A., and Jepson, P.D. 2004. Beaked Whales, Sonar and Decompression Sickness. *Nature* 10: 1038.

Fernández, A., Edwards, J.F., Rodriguez, F., Espinosa de los Monteros, A., Herraiez, P., Castro, P., Jaber, J.R., Martin, V. and Arbelo, M. 2005. "Gas and fat embolic syndrome" involving a mass stranding of beaked whales (family Ziphiidae) exposed to anthropogenic sonar signals. *Veterinary Pathology*. 42:446-57.

Jepson, P.D., Arbelo, M., Deaville, R., Patterson, I.A.P., Castro, P., Baker, J.R., Degollada, E., Ross, H.M., Herraiez, P., Pocknell, A.M., Rodriguez, F., Howie, F.E., Espinosa, A., Reid, R.J., Jaber, J.R., Martin, V., Cunningham, A.A. and Fernández, A. 2003. Gas-bubble lesions in stranded cetaceans. *Nature* 425:575-576.

## Book Review

by Giuseppe Notarbartolo di Sciara

**Marine Conservation Biology: The Science of Maintaining the Sea's Biodiversity.** Elliott A. Norse and Larry B. Crowder (eds.). 2005. Island Press, Washington, D.C., 470 pp. ISBN 1-55963-661-0

This is a book written for the constituency of frustrated souls who call themselves marine conservation biologists, and who hope to be able to provide soon or later some sensible contribution to stem the flood of destruction that our species is wreaking on the marine environment. Let's face it: as cetacean conservation goes, the greatest success story we can be proud of so far is that no human being alive today has witnessed the extinction of a whale or dolphin species. However, this may change soon. So perhaps our greatest accomplishment in this field has been to slow down the cetacean extinction clock. The real question is: can we do better? What can marine ecologists do to prevent themselves from being forced into the role of marine palaeontologists?

The book "Marine Conservation Biology" explains what can be done in clear words and excellent detail. First, by recognising that conserving the sea is not like conserving the land. This is not only because the conservation actors are themselves land mammals, and consequently inclined by their own nature to think and act "terrestrially". In the initial part of their book, Elliott Norse and Larry Crowder - two well-known North American colleagues - take turns in detailing the many ways in which the seas function differently than the lands. For example, the practical implications of the sea being much larger than land and more three-dimensional, of water being less transparent than air, of the greater dispersal distances of marine species, of the greater rapidity by which pelagic ecosystems shift spa-

tially, of the greater patchiness of primary production; but also on our much greater dependence on marine than on terrestrial wildlife for human consumption, and on the problems generated by the lack of ownership and responsibility for the use of the resources, so typical of marine affairs, known as the "tragedy of the commons". Things become even more difficult when we endeavour to deal with the marine environment beyond national jurisdiction, i.e. outside of the 200 nautical miles-wide Exclusive Economic Zones. This surface, which could be called "no-man's seas", occupies more than 60% of the world's oceans, and there is still a hair-raising lack of rules governing what can and cannot be done to biodiversity and resources out there. Second, we must recognise and understand that in our strives to restore the seas we would be mistaken to hold in our minds, as a model, our own perception of "pristine" based on what we remember. This could well be a false benchmark on which to base our work (Daniel Pauly's concept of the "shifting baselines"), because things have started deteriorating well before we were there to notice.

The book is subdivided into five parts. The first ("Marine populations: the basics") contains a discussion of the implications of marine population biology to conservation biology (Steve Palumbi and Dennis Hedgcock), of the Allee Effect in the sea (Don Levitan and Tamara McGovern), of the extinction risk in marine species (Ransom Myers and Andrea Ottensmeyer), and of behavioural approaches to marine conservation (Julia Parrish). The second part ("Threats to marine biological diversity") describes the potential for nutrient over-enrichment to diminish marine biodiversity (Nancy Rabalais), bioinvasions (James Carlton and Gregory Ruiz), diseases and the conservation of marine organisms (Kiho Kim, Andy Dobson, Frances Gul-

land, Drew Harvell), and multiple stressors in marine organisms (Denise Breitburg and Gerhardt Riedel). The third part of the book doesn't even make a pretence to hide what can and should be considered the Mother of all threats to marine conservation: fisheries. Chapters in this part deal with the possibility of coexistence between global fisheries and marine conservation (Dave Preikshot and Daniel Pauly), the global destruction of bottom habitats by mobile fishing gear (Les Watling), the effects of fishing on long-living marine organisms (Selina Heppell, Scott Heppell, Andrew Read and Larry Crowder), the evolutionary impacts of fishing on target populations (Richard Law and Kevin Stokes), and on the achievability of sustainable fisheries (Ray Hillborn). The fourth part of the book deals with marine protected areas ("Place-based management of marine ecosystems"), with a discussion of the relationship between MPAs and biodiversity conservation (Callum Roberts), of marine reserve function and design for fisheries management (Joshua Sladek Nowlis and Alan Friedlander), of place-based ecosystem management in the open ocean (Elliott Norse, Larry Crowder, Kristina Gjerd, David Hyrenbach, Callum Roberts, Carl Safina and Micael Soulé), and on metapopulation structure

and marine reserves (Romuald Lipcius, Larry Crowder and Lance Morgan). Finally, the fifth part of the book ("Human dimensions") deals with developing rules to manage fisheries (James Acheson), the roles of legal regimes in marine conservation (Alison Rieser, Charlotte Gray Hudson and Stephen Roady), uncertainty in marine management (Louis Botsford and Ana Parma), recovering populations and restoring ecosystems (Robert Richmond), toward a sea ethic (Dorinda Dallmeyer), and a concluding chapter by Elliott Norse on ending the range wars on the last frontier: zoning the sea.

Even such a cursory glance at the contents of this volume should be sufficient to understand the importance and value of such a rich, authoritative and varied collection of knowledge, nicely concentrated and offered under the single roof of "Marine Conservation Biology". A most useful and highly recommended working tool, particularly for species-oriented conservation scientists and managers (such as those involved with ACCOBAMS and the concern for cetaceans), who will find an extraordinary source of insight in this presentation of the whole spectrum of the issues and conundrums related to the conservation of marine biodiversity. 📖

## Calendar of events, March - June 2006

20-31 March 2006

CBD: 8th Meeting of the Conference of the Parties (COP8)

Curitiba, Brazil

3-6 April

20th Annual Conference of the European Cetacean Society "Marine Mammals and Man in Coastal Ecosystems: Can They Co-exist?"

Gdynia, Poland

25-27 April

ASCOBANS: 13th Advisory Committee Meeting (AC13)

Tampere, Finland

8-10 May

1st Biannual Scientific Conference of the Black Sea Commission

"Black Sea Ecosystem 2005 and Beyond"

Istanbul, Turkey

22 May

International Day for Biological Diversity

22-26 May

Review Conference on the Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks

New York

5 June

World Environment Day

12-15 June

7th Meeting of the Open-Ended Informal Consultative Process on Oceans and the Law of the Sea

New York

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de Stephanis R. 2004. Interactions between killer whales and the bluefin tuna fishery in the Strait of Gibraltar. FINS, the Newsletter of ACCOBAMS 1(2):6-7 (available from <http://www.accobams.org/newsletter/index.htm>).