



FINS

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The Second Meeting of the Parties to ACCOBAMS: an important step forward for the protection of whales and dolphins in the Mediterranean Sea, Black Sea and contiguous Atlantic Area

by Marie-Christine Van Klaveren

It is a great honour for us to announce that the 2nd Meeting of the ACCOBAMS Parties was held from 9 to 12 November 2004 in Palma de Majorca, Spain. The meeting was attended by around 80 delegates, comprising representatives from the Parties, observer countries, ACCOBAMS Partners, IGOs and NGOs. The Parties agreed by consensus to adopt ambitious initiatives that will certainly contribute to the improvement of the conservation status of whales and dolphins in the Agreement Area.

One of the main items discussed and adopted was a very extensive Working Programme for the period 2005 - 2007, listing eleven priority actions. These included the conduction of comprehensive cetacean population surveys in the Agreement Area, the drafting and implementation of conservation plans for various species, and other initiatives addressing vital work areas, such as the establishment and effective coordination of stranding networks, the strengthening the current tissue bank system, the determination of the impact of ship collisions on the most vulnerable cetacean populations, the addressing of bycatch and prey depletion which may be serious threats to cetaceans within the Agreement area, of the issue of anthropogenic noise and its effects on cetaceans, the promotion of the development of whale watching as a complementary or alternative activity to problematic practices, and the continuation of efforts to implement a strategy for capacity building.

All these activities are to be conducted in close collaboration with related conventions, international organisations and partners, to best ensure the effective implementation of the programme. To this effect, the important regional and international role of ACCOBAMS was recognised at the meeting through the strengthening of the links with the United Nations Environment Programme and with the Convention on Migratory Species (CMS), ACCOBAMS' mother convention. In addition, the Parties agreed to contribute to the implementation of the Joint Working Programme between CMS and the Convention on Biological Diversity, the action of ACCOBAMS being a vital part within the preparation and implementation of national biodiver-

sity strategies and action plans. During the meeting the need was also emphasized to strengthen the links with the World Conservation Union (IUCN), as well as with the NGO community.

Among the highlights of the meeting, one of the main priorities recognised by the Parties, as strongly recommended by the Scientific Committee, involved the collection of baseline population estimates and distributional information of cetaceans within the Agreement area as soon as possible, to establish baseline knowledge needed to assess risk and to determine possible mitigation measures and priority of actions.

The Parties strongly welcomed a Conservation Plan for common dolphins in the Mediterranean Sea. In 2003 short-beaked common dolphins in the Mediterranean were recognised as "endangered" by IUCN and listed as such in the Red List, as a result of scientific evidence documenting the decline of the species in the Mediterranean Sea in the last few decades, and its almost total disappearance from large portions of its former range.

Much attention was given to a resolution addressing the impact of man-made noise on cetaceans, in the awareness that some types of noise can travel hundreds and even thousands of kilometres underwater and are unrestricted by national boundaries to a greater extent than most forms of pollution. The Parties resolved by consensus to urge Range States to take special care and, if appropriate, to avoid any use

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of man made noise in habitats of vulnerable species, such as Cuvier's beaked whales, and in areas where marine mammals may concentrate. Parties are urged to consult with any profession conducting activities producing underwater sound having the potential of causing adverse effects on cetaceans, and to exercise extreme caution until satisfactory guidelines are developed.

Cetacean bycatch, which was identified by CMS and its Regional Agreements as one of the major causes of cetacean mortality due to human activities, is a special concern for the ACCOBAMS Parties in consideration of the continued use of pelagic gillnets in contrast to mainstream international and national legislation. With a specific resolution, the Parties urged all Range States to ensure that their fishing operations be conducted in full accordance with the relevant existing regulations aimed at the mitigation of cetacean bycatch. The a proposed project to assess and mitigate the adverse impacts of interactions between cetaceans and fishing activities in the Agreement Area was welcomed. On the front of the conflicts between cetaceans and fishing operations, a step forward was made by adopting the "Guidelines for technical measures to minimize cetacean-fishery conflicts in the Mediterranean and Black Seas", which addresses, among other things, the problems and uncertainties surrounding the use of acoustic devices to deter dolphins from depredated nets. In

recognition of such uncertainties, the Meeting urged the Parties to only use such devices, where authorized and appropriate, under carefully controlled studies to ensure that they are an effective mitigation measure, and to link any use of acoustic devices with an observers scheme designed to monitor their effectiveness over time.

Other subjects discussed included the development of criteria for the selection of specially protected areas for cetacean conservation, guidelines on the granting of research permits, the promotion of photo-identification activities, and the continued development of a system of tissue banks in the Agreement area. The promotion of education, training and awareness initiatives was also recommended and agreed upon.

The full success of the meeting was also due to the efforts and the gracious hospitality of the Spanish Government. The Parties expressed their gratitude to the organizers for all the work accomplished and warmly welcomed the invitation by Croatia to host the next Meeting, which will take place towards the end of 2007.

The Second Meeting of the Parties was an important milestone for ACCOBAMS and demonstrated that the Agreement has grown to become an important tool for the conservation not only of whales and dolphins, but also of the Mediterranean and Black Seas biodiversity as a whole. 

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Cetacean conservation and "Ecosystem-Based Fishery Management"

by Peter J. Corkeron

One of the points in the Plan of Implementation developed by the United Nations' World Summit on Sustainable Development in 2002 (the Johannesburg Summit) was to "encourage the application by 2010 of the ecosystem approach" to fisheries. "Ecosystem-Based Fishery Management" (EBFM) or the "Ecosystem Approach to Fisheries" (EAF) have become terms that are being heard more commonly in discussions regarding fisheries management internationally. But what is EBFM, and where has it come from?

Documented expressions of concern for the effects of fisheries on ecosystems can be traced back to the 14th Century. Yet it is only relatively recently that the effects of fisheries on marine ecosystems have been seriously questioned. This concern has grown as growing evidence of overfishing and destructive fishing raise serious doubts that we can persist with current forms of fishery management. Possibly the first major scientific paper to raise ecosystem considerations in the context of sustainable use of living resources was that by Sidney Holt and Lee Talbot, published in 1978. Over the past decade, there has been a huge increase in scientific

papers; national and international meetings, and discussion papers for government and international agencies on EBFM.

The call from the Johannesburg Summit for implementation of the "ecosystem approach" to fisheries by 2010 is sure to result in an even greater proliferation of EBFM-related material. But what is EBFM? Of the multiple definitions available, one that encapsulates EBFM clearly and succinctly is that of Pikitch and co-authors in a recent issue of *Science*: "EBFM reverses the order of management priorities so that the objective of sustaining ecosystem structure and function supersedes the objective of maximizing fisheries yields".

But do we need EBFM, and how could it improve on single species fishery management (SSF), still the norm for most fisheries management? Under SSF, most fisheries management is based on consideration of single species or stock of fish - catch levels are set by combining abundance estimates of the fish in question with population models incorporating fisheries mortality (virtual population analysis, or VPA). From this, reference points can be determined; for example, what is the lowest limit to

which the biomass that a fish should be allowed to fall. Then performance indicators can be developed - how well is the management plan performing relative to reference points. Finally, control rules can be developed: computer programs that relate performance indicators to management decisions.

There are fishery scientists who argue that the calls for EBFM miss the point, and that the problems with SSFM are overstated. There are, for example, some fisheries that are recovering from overexploitation, or that are not being overexploited, thanks to SSFM. Some problems with SSFM arise from it being applied badly. Examples include that often, managers reject scientists' recommendations on reference limits (e.g. the history of ICES advice on cod quotas); and Illegal, Unreported and Unregulated (IUU) fisheries contribute substantially to the problems of overfishing (e.g. the IUU fishery for cod in the Barents Sea). Others point to problems with governance: that issues such as overcapitalisation; inappropriate subsidies; the "race for fish"; and a general lack of incentives for fishers to both engage in practices likely to encourage sustainability and refrain from inappropriate behaviour are more important than ensuring that there is an "ecosystem approach" to fisheries.

Coincident with the growth in interest in EBFM has been increased interest in Marine Protected Areas as tools in fisheries management. Here I follow the recently published results from the deliberations of a US working group, defining MPAs as "areas of the ocean designated to enhance conservation of marine resources", and fully protected marine reserves as "areas of the ocean completely protected from all extractive and destructive activities". That is, marine reserves are a special subset of MPAs. There seems little doubt that zoning in MPAs and some form of networks of marine reserves will prove useful in fisheries management, although sufficient data to convince sceptics of the merits of MPAs as management tools remain elusive. Rather than discuss the debate going on regarding the relative importance of MPAs in EBFM, this provides a jumping-off point for discussing one perspective on how we use the tools of science to inform decisions we make regarding fisheries management.

There are several general tools available to the applied ecologist, whether working on the land or in the ocean, whether a conservation biologist employed by a non-government organization or a government fisheries biologist. As ACCOBAMS deals with cetaceans, the examples that follow are from marine mammal science, mostly dealing with cetaceans. We can observe the animals (or whatever component of the ecosystem) that are of interest without perturbing the system under study. Observations may be simple, or may be sophisticated. An example might be estimating the abundance of a population of cetaceans: whether by mark-recapture from photo-identification; or distance sampling from vessels, land or aircraft. We can model the animals or system of interest, using mathematical models inside our computers, for example using population models to estimate the sustainability of cetacean deaths due to fishery bycatches. These two techniques do not involve perturbing the system in any way to see how it works.

We can also conduct experiments: make changes to the system under study to see what happens.

These can be laboratory based, for example studying the way porpoises in captivity respond to pingers. They can be conducted at a small scale on animals or systems outside laboratories. An example is setting a line of pingers in a place known to be used by porpoises, and observing changes in the behaviour of porpoises when the pingers are on, compared with control conditions when the pingers are off. Or we can run large-scale experiments, for example working with net fishers, with some fishers setting nets with pingers, and other setting nets without, and measuring differences in cetacean mortalities, fishery catch rates, and whatever else may be of interest in the study.

Finally, there are "natural experiments" where something about the system of interest varies over space, time or both, allowing us to observe differences between these mini-systems. A small-scale example of these might be observing dolphins' behaviour in an area where vessel traffic changes markedly over time to determine whether dolphins' behaviour varies with levels of vessel traffic. On a much larger scale, islands with and without large populations of sea otters work as "natural experiments" on the way in which trophic linkages driven by sea otter predation on sea urchins influences the structure of kelp communities.

The science behind classical SSFM tends to rely on observation - estimating the abundance or biomass of a particular fish stock - and modelling VPAs to estimate sustainable fishing mortality. Experimentation (other than laboratory-based work to improve parameter input into VPAs) generally has little role to play in SSFM. An exception to this generalization is the "Effects of Line Fishing" programme running on the Great Barrier Reef, where classical SSFM tools are embedded into a large-scale experimental design that manipulated the levels of a commercial fishery across several coral reef complexes within a huge MPA (the Great Barrier Reef Marine Park).

There is a point to this digression from EBFM. One thing that MPAs offer, and in particular what marine reserves offer (remember, marine reserves are places where no extractive activity is allowed at all - no fishing of any sort, including recreational fishing) is a way of manipulating fishing pressure that is generally not used in classical SSFM. So we have an option for more experimental approaches to assessing the ecosystem effects of fishing. At the risk of making a gross generalization, most discussions of the utility of MPAs and marine reserves in SSFM can be reduced to technical arguments about whether the data available from MPAs (and particularly marine reserves) are embedded in an appropriate experimental design.

Why does experimentation matter in applied ecology? From the classical work of R.A. Fisher at Rothamsted where in a few months, his experiments answered questions about agricultural productivity that observational studies had failed to answer over decades, to Before-After Control-Impact (BACI) and beyond-BACI designs environmental impact assessment, properly designed experiments or quasi-experiments allow strong inference to be drawn regarding ecological (or anthropogenic) processes. This is not news, but its relation to EBFM is worth exploring.

Just as any experiment is only as good as the weakest aspect of its design, any mathematical model is only as good as its weakest assumption. The population biology underpinning models used in SSFM is fairly well understood, although the observational data used in the models can be less than perfect. And allowing for observational uncertainty within SSFM models remains problematic. What happens when we move to EBFM? Not only do we need to describe the pattern that we observe - precisely and accurately - we also need to understand the processes responsible for these patterns. These processes - how ecosystems function - are arguably more complex and less well understood than the population biology underpinning VPA models in SSFM.

There are two general forms of modelling that are being developed for EBFM - mass-balance models (e.g. EcoPath with EcoSim), and multispecies derivatives of VPA models (MSVPA). I shall concentrate on MSVPAs, as proponents of mass-balance models generally support MPAs for EBFM (and in some well-known cases, are some of the strongest supporters of MPAs for EBFM), while proponents of MSVPAs (mostly in Nordic countries) seem less inclined to accept MPAs as tools in fisheries management.

Marine ecosystems are composed of many species. A relatively simple system, such as that in the Barents Sea, includes at least 150 species. How does a modeller construct an MSVPA of this system? One approach is to attempt a "minimum realistic model" of the system, modelling only the components of interest for fisheries. This has been done in the Barents Sea, modelling minke whales, cod, herring and capelin. The issue with the utility of this modelling approach for EBFM is the multiple assumptions associated with reducing a system of at least about 150 components to 4, and reliably determining the processes that govern the interactions between the components of even this greatly reduced skeleton of the system. If our understanding of the processes driving the system is poor, one or more of the assumptions of the model is likely to be weak (I am ignoring whether the observational data is of sufficient quality to inform the model). That being so, how do we evaluate the utility of this model if it is used as input into a management process? If the natural science behind EBFM relies entirely on the twin components of most SSFM - observation and modelling - how can we assess the efficacy of an MSVPA? Embedding fishery management within a design that can be evaluated as a large-scale experiment becomes more important when our primary management aim is "sustaining ecosystem structure".

An approach separate from MPAs that reflects the philosophy of EBFM is to develop something akin to reference points in SSFM. One example, in the European context, has been the process of establishing "Ecological Quality Objectives" (EcoQOs, with apologies for the proliferating acronyms in this essay!). Examples of EcoQOs dealing with marine mammals in the North Sea that are under development include ensuring that estimates of abundance of some seal species do not fall below a certain percentage of their current abundance over a set period of years. A problem with EcoQO approach is that if

an objective is not met (i.e. a limit reference point is breached), the only action required is for research into why the limit has been passed.

To here, there has been relatively little mention in this essay of marine mammal conservation or Europe. What does EBFM have to do with ACCOBAMS? Perhaps EBFM offers us the opportunity (to paraphrase Proust) not to seek new seascapes, but to have new eyes. Is the conservation of cetaceans in the Mediterranean Sea, Black Sea and contiguous Atlantic waters to be achieved simply by passing laws forbidding direct killing and attempting to reduce indirect killing, while leaving all these waters open to virtually all forms of human use?

Cetacean conservation, in the context of EBFM, is not just about looking after animals because people think they are cute, or because nations are signatories to international treaties that bind them to attempt conservation. Many marine mammal populations worldwide are reduced from historical abundances. Locally abundant marine mammals can be important components of marine ecosystems. When relatively abundant, sea otters can influence kelp forests, dugongs can affect the structure of seagrass communities, grey whales can reshape benthic substrates. Fisheries influence dolphins' foraging behaviour, and in some places may affect their social structure. Cetaceans' long lives, blubber coats (relatively easy to sample using remote biopsies) and position at or near the apex of food chains mean they can act as pointers to problematic levels of persistent organic pollutants, with implications for other ecosystem components and for human health. Healthy populations of cetaceans may not, of themselves, indicate healthy marine ecosystems, but cetacean populations that are in trouble are evidence that something is wrong in an ecosystem.

It is about here that I should be able to finish up this essay, perhaps with some parting suggestions regarding how implementing EBFM could be considered by ACCOBAMS. Unfortunately, I can't. A different view of "EBFM" has arisen in parallel with EBFM as described above. This version is best exemplified by the recent policy adopted by the Norwegian parliament in 2004, that seeks "the establishment of an ecosystem-based management regime for marine mammals in areas under Norwegian jurisdiction" (quotations are from a translation of the policy paper's summary chapter, available on the web).

The policy includes proposals to increase quotas for minke whales; to substantially increase catches of harp seals, including offering quota bonuses in other fisheries to fishermen prepared to take part in the harp seal hunt; and "regulate population growth in coastal seals to reduce damage to the fisheries". The policy also identifies the need to "introduce a set of general principles to be used as a basis for marine mammal management in Norway, and *seek to achieve the widest possible international support for them*" (my italics).

Application of this version of "EBFM" in Norway is becoming clear. Since 2003, the quotas for grey seals along the Norwegian coast have been set at 25% of the estimate of grey seal abundance, despite advice for lower quotas from scientists at the Norwegian Institute of Marine Research. A bounty was introduced in 2004 after quotas were not filled, and

plans are in place to allow international hunters in to take part in hunt tourism, perhaps by this year (until now the hunt was limited to Norwegian nationals and permanent residents). Substantial state subsidies have been allocated for the sealing industry in 2005. The current design of the grey seal surveys along the Norwegian coast is such that a complete survey takes four or five years to complete - the last finished in 2004. You don't have to be a survey design genius to work out what will happen if quotas are reached over the period of the next survey.

The aim of Norway's new management approach appears to be to reduce the abundance of selected marine mammal populations (so far, minke whales; harp, grey and harbour seals, with indications that other species may soon join this list) to the point where they are not perceived as affecting fisheries. For grey seals, this is in direct conflict with one of the EcoQO metrics of "ecological quality" identified for seals, detailed above. This has been pointed out by the ICES Working Group on Marine Mammal Ecology in 2003 and 2004, but does not appear to concern the fisheries managers and politicians responsible for drawing up and implementing the new policy. Performance indicators and control rules implementing EcoQOs do not yet exist (and there are no plans for EcoQOs to result in anything other than more research, so control rules are pretty meaningless anyway). However, rather than considering this in terms of reference points that are under review, it is worth discussing how this version of "EBFM" differs from EBFM as described above.

The natural science underpinning the new policy comprises observations and modelling: estimates of abundance of the species in question; estimates of their food consumption from (mostly) studies of stomach contents; and at least two different MSVPAs (one mentioned above) of the systems of interest. Currently, there are no plans to implement an experimental approach - places where seals are killed compared with places where seals are not - in a design that would allow the efficacy of this form of "EBFM" to be evaluated. Whether the weakest assumptions of MSVPAs are sufficient to render them meaningless cannot be assessed, and there appear to be no plans to see that they are assessed. It is hard to see how this "new" policy is anything more than predator culling, rebadged as "EBFM".

This might not be especially important - if marine mammals along the Norwegian coast are culled what does it matter to those of us living elsewhere? However, the policy includes a call for international acceptance of this approach as EBFM, recall the comment "seek to achieve the widest possible international support for them". Reading reports from institutions such as the Food and Agriculture Organization of the United Nations (FAO), it is very clear that this

international support is already being sought.

One thing is clear about "EBFM". There is a great deal of debate still to come about what EBFM means. Anyone who has attended an international meeting where scientists discuss management can imagine the number of ways in which scientists and managers will argue the meaning of EBFM - from defining ecosystems, to deciding the aspects of ecosystems that need maintenance to achieve EBFM, what is "maintenance", what are appropriate reference points and control rules and how are these set, monitoring. The list is almost endless.

Perhaps we can agree what is not EBFM. Renaming marine mammal culls as EBFM will be a great step backwards for marine resource management. This is especially so when culls are not coupled with any way of experimentally determining the efficacy of a culling program on fishery landings - compared with what landings would be without culling - and ensuring that marine mammal populations are not driven to local extinction in the process. Within the context of ACCOBAMS, it will also be of no value for cetacean conservation.

Ensuring that ecosystem function has precedence over maximizing fishery yields will probably improve the chances that fisheries can contribute to humanity's food security into the future. It is also likely to be a step forward for cetacean conservation. Culls won't help. Stopping chronic overfishing and destructive fishing as quickly as possible would be a good start. 🐟

Some relevant references:

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Special issues of journals on EBFM-related topics:

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Ecological Applications 13(1) Supplement 2003 (on no-take marine reserves).

ICES Journal of Marine Science 57(3) 2000 (special issue on Ecosystem Effects of Fishing).

Marine Ecology Progress Series 274: 269-303 2004 (Theme Session on EBFM).

Peter Corkeron is an applied ecologist whose interests lie in understanding the manner in which peoples' activities affect marine wildlife, and working to reduce these impacts. Until recently, he was employed at the Norwegian Institute of Marine Research, working on seal population biology. He resigned over the implementation of Norway's new policy regarding marine mammals and is currently unemployed.

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Interactions between killer whales and the bluefin tuna fishery in the Strait of Gibraltar

by Renaud de Stephanis

The Strait of Gibraltar is the narrow and shallow connection between the Mediterranean Sea and the Atlantic Ocean. Bluefin tunas (*Thunnus thynnus*) migrate through the Strait of Gibraltar, entering the Mediterranean Sea in Spring (during the months of March-June) to spawn, and leaving the Mediterranean Sea in Summer (July-August).

The in-bound Spring migration occurs close to the coast and at low depths. When the tunas enter the Mediterranean, they do not eat. This is why the "almadrabas", a kind of fishing trap placed perpendicular to the coast, are set at this time along the Atlantic coasts of Morocco and Spain. The nets are arranged as a labyrinth. The tuna, during its coastal migration, enters the trap and remain inside until the fishermen lift the net (every 3 or 4 days). During 2004, between 5,000 and 6,000 bluefin tunas, weighing between 200 and 400 kg, were captured in this kind of net along the Spanish coasts. Five almadrabas are placed in Spain and seven in Morocco.

During the months of July and August, bluefin tunas return to the Atlantic waters through the Strait. This is the moment of the year in which around 80 Spanish boats, coming from the harbour of Tarifa, and 210 Moroccan boats, based in the ports of Ksar Sghir, Diky, Oued R'mel, Ferdioua and Oued Aliane, wait for the tuna in the Strait waters, to catch them with lines having one or two hooks. The tunas, which now weigh between 150 and 300 kg, are quite hungry and feed at the bottom of the Strait. The tunas will fight from one to two hours after being hooked, and will fetch around 10 €/kg in Spain and 4-5 €/kg in Morocco.

The presence of killer whales (*Orcinus orca*) in the area of the Strait of Gibraltar has been known for more than 500 years. Attacks of killer whales on fin whales have been reported around 1820, but their presence is historically best known in inshore waters, where almadrabas are or were placed along the Spanish and Moroccan coasts. Nowadays, during the months of March, April and May, around three groups of killer whales, with a total of 26 individuals identified until now, can be seen around the Spanish almadrabas. Killer whales are attracted near the nets by the presence of tunas. During their migration in shallow waters, the tunas are particularly vulnerable to the attacks from the whales, who can chase the fishes for 30-45 minutes before catching them. Based on data of maximum anaerobic and maximum sustained swimming speeds of bluefin tuna and other related species, a likely hypothesis is that killer whales have a greater endurance than tuna; this would enable the cetaceans to chase the tunas until they are exhausted. Acoustic recordings revealed that killer whales are mostly silent when trying to locate the tuna, and produce only rare, irregular clicks that are probably contact calls among them. During the course of a number of research activities conducted in the area in recent years, killer whale groups were never seen entering almadrabas. However, fishermen and gear technicians whom we interviewed said that the presence of killer whales around the almadrabas can stress the tuna in the net, causing stampedes and possibly damage to the gear.

For this reason, in the 1970s and probably before it was common practice to shoot at the whales. Some of the animals still have bullet marks on their body, for example on their dorsal fin.

During July and August killer whales can be observed around the central area of the Strait of Gibraltar. Most of the time, the whales are found in the vicinity of tuna hook and line fishing vessels. Two core areas for this fishery exist: one is situated close to the Moroccan coast, and the other is 3-4 nautical miles to the north-west. In each fishing area there may be up to 200 boats in a circle of one nautical mile of diameter. Killer whales usually subdivide into two groups, each targeting one of the two core areas. When a boat catches a tuna, the fight starts. The fish, which is hooked in deep waters, is lifted to the surface. The tuna must be tired before being gaffed and hauled onboard; therefore, when the fishermen see that the tuna is too excited, they give slack to the nylon, and then start to reel in the fish again. This fight can last for up to two hours, depending on the weight of the tuna. The presence of a tired tuna at the surface, ready to be hauled on board, provides an opportunity to the killer whales to grab the fish and snatch it away from the fishermen. Normally a whale would seize the tuna in its mouth and try to get out of the fishing area, to eat it with the rest of the pod. In the process, the fishing line will tighten and will often break. The fishermen will have to pursue the killer whales if they want to try to recover at least a small part of the tuna. This fight can go on for one hour, and three different outcomes are possible. In the first case the line breaks off: the tuna will be lost for the fishermen, and two to three hours of work will have been lost as well. In the second case the fishermen will manage to recover part of the tuna head, the rest of the body being eaten by the whales. The recovered portion of the tuna cannot be sold, so also in this case the catch is lost, along with two to three hours of work. In the third case the fishermen manage to recover the tuna from the killer whale and bring their catch on board. Even in this case, however, the damage is significant because the fishermen only recover part of the fish, and the market price per kilogram is dramatically decreased. During Summer 2004, 20% of the catches were estimated to be lost by the Spanish fishing fleet. Understandably, the fishermen are highly irritated by this problem, and every year threaten to dynamite the killer whales. Luckily, however, we have been able to monitor this killer whale community since 1999, and no individuals have been missing; the community has increased with two newborn whales, and no attacks from the fishermen were recorded.

Negative interactions with fisheries are not the only potential problem for killer whales in the Strait of Gibraltar. Whale watching vessels are present in the area as well, and their numbers increase each year. In 1998, only two small boats were in operation there, with about four trips per week. In 2004 the number had increased to five, with a total of three to four whale watching trips per day. Added to those boats, and to one to two permanent research vessels, an average of three boats are also present around the killer

whales, chartered by different production companies interested in filming them. Finally, even helicopters are occasionally used to do whale watching at low altitude, less than 40 meters above the sea level.

Such considerable vessel density and traffic, and the possibility of a negative impact deriving from interactions with the fishermen, adds to the consideration that the bluefin tuna population is now dramatically depleted. The few thousands tunas caught in Spring 2004 along the whole of the Spanish coasts offer a meagre comparison with the 80,000 tunas that

were caught in 1540 in the almadraba of Conil de la Frontera alone.

All these considerations raise high concerns for the conservation of killer whales, bluefin tunas and the marine environment in the Strait of Gibraltar, and the urgent implementation of management measures is highly recommended. 🐟

See photographs of killer whale - fishermen interactions in the Strait of Gibraltar at:

http://www.accobams.org/index_science.htm

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Conservation Plan for short-beaked common dolphins in the Mediterranean Sea

by Giovanni Bearzi

At the first meeting of the ACCOBAMS Scientific Committee, held in Tunis back in the year 2002, the Tethys Research Institute presented a proposal to address the problem of common dolphin conservation in the Mediterranean. This project, that was endorsed by the Scientific Committee, included 1) a review of Mediterranean common dolphin ecology, status and conservation, 2) the management of a section of the ACCOBAMS web site dedicated to Mediterranean common dolphins, 3) the preparation of a Conservation Plan, 4) the analysis of an existing common dolphin dataset, and 5) an action plan for common dolphins in the area of Kalamos, Greece.

The third step has been completed recently, resulting in a valuable tool for the protection of these endangered and rapidly declining animals: the Conservation Plan for short-beaked common dolphins in the Mediterranean. This 90-page document represents the first attempt to address the problem of common dolphin conservation in the region in a comprehensive manner. It was prepared in close collaboration with the ACCOBAMS Secretariat, in consultation with members of the Scientific Committee and other experts, and it was co-funded by ACCOBAMS, the Whale and Dolphin Conservation Society and ASMS OceanCare.

The Plan acknowledges that: 1) the formulation and recommendation of management measures is made difficult by the present lack of understanding of the cause(s) for common dolphin decline in the region; 2) nevertheless, it can be assumed that most of the factors that are responsible for the decline of common dolphins in the Mediterranean derive from human activities in this marine region that are unsu-

tainable and/or illegal (e.g., overfishing, use of driftnets, pollution); 3) the fate of Mediterranean common dolphins depends on range States having the political will to take responsible and precautionary action to mitigate the known anthropogenic threats; 4) the principal management measures that will benefit common dolphins are already embedded in a large number of existing legislation and treaties, which most of the Mediterranean common dolphins range States have already ratified; 5) if all such measures, invoked by existing international, regional and national legal instruments for the management of the Mediterranean, were to be fully implemented and enforced, the decline of common dolphins would likely cease.

The Plan concludes that honouring existing obligations with regard to the management of fisheries, pollution and other forms of habitat degradation represents the single most important action to stop the decline of Mediterranean common dolphins and facilitate their recovery. Therefore, the Plan strongly advocates that such obligations be respected and implemented without any further delay.

In addition to recommending compliance with existing obligations, the Plan envisages and outlines a series of actions that specifically address the problem of common dolphin conservation in the Mediterranean, with special attention to areas which appear to contain important habitat for the species, where common dolphins are still reported to occur in sizeable numbers.

Actions are divided into five broad categories: Management, Legislation, Research, Capacity building, Awareness & Education. The Plan stresses that

all categories are equally important and the corresponding actions will have to be implemented simultaneously. In particular, it is recognized that while research plays a fundamental role in supporting the design and development of science-based management measures, the risks of simply perpetuating calls for more research must also be considered. In the case of the Mediterranean common dolphin population, which appears to be declining rapidly, unwillingness to act based on what is known could allow the population's conservation status to deteriorate further. Therefore, the Plan recommends that research actions be taken to obtain information in a timely manner, while ensuring that the management process is implemented without delay in view of the precautionary principle.

The Plan identifies eight Areas of Conservation Importance (ACIs) where management actions should be taken without delay and knowledge gaps preventing the identification of effective conservation strategies should be immediately filled by research. These areas include 1) the Alborán Sea, 2) the waters surrounding the island of Ischia, in the south-eastern Tyrrhenian Sea, 3) the waters surrounding the island of Malta and south-eastern Sicily, 4) the eastern Ionian Sea and the Gulf of Corinth, 5) the Gulf of Saronikos and adjacent waters, 6) the waters surrounding the Northern Sporades, 7) the northern Aegean Sea, and 8) the waters surrounding the Dodekanese. The Plan recommends that other ACIs should be identified as soon as possible in addition to those proposed here, and outlines research actions that will help define and locate important habitat for common dolphins.

All the actions outlined in the Plan should be implemented in view of obtaining measurable results within five years from the implementation of the Plan, with a priority for management actions in ACIs.

The Plan entirely shares the view expressed by the ACCOBAMS Parties that "diffusing research and monitoring abilities throughout the region is a timely challenge and one of the highest priorities as far as cetacean conservation is concerned", and outlines actions aimed to address both individual and

institutional capacity building.

Public awareness and education also represent essential parts of this Conservation Plan, as they create a favourable ground for conservation-oriented management. The Plan highlights the need to conduct public campaigns based on well-defined, science-based public awareness strategies, and identifies a series of awareness and education actions targeting managers, teachers, school children and the general public.

The common dolphin Conservation Plan has been presented formally at the second Meeting of the Parties held in November 2004 in Palma de Majorca, Spain, and was "strongly welcomed" by the Contracting Parties to the Agreement, who invited Parties and Riparian States to implement the Plan and introduce relevant activities into their national action plans. The ACCOBAMS Scientific Committee was charged to review, further develop and propose amendments to the Conservation Plan, ensuring a regular assessment of the adequacy of the provisions advocated by the Plan on the basis of the advances in scientific knowledge and feedback received from the Range States.

An important first step will be the establishment of a position of Co-ordinator, responsible for the implementation of all aspects of the Conservation Plan, who will work in close collaboration with the ACCOBAMS Secretariat to enforce and harmonize the efforts to protect Mediterranean common dolphins and accomplish the various actions in an expeditious manner.

It is our hope that this Plan for common dolphin conservation won't be just another bunch of paper prompting no real change out at sea, leaving the conservation people with a feeling that they have done something, while in fact common dolphins keep being in big trouble. Indeed, this Conservation Plan implies significant implementation effort and the next challenge, now that "what can be done" has been made clear, is doing it. 📄

The Conservation Plan can be downloaded from the Science section of the ACCOBAMS web site at: http://www.accobams.org/index_science.htm

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Referencing the information contained in FINS

FINS is a newsletter, not a peer-reviewed journal, and for this reason citing uncritically articles appeared on FINS may be discouraged by the editors of scientific journals. However, to cite factual information reported on FINS, which has not appeared elsewhere (e.g., documented strandings or sightings of unusual species), it may be useful, sometimes, to make reference to news item appeared on FINS. In such cases the following format, which is applied for exemplification purposes to an article on this issue, may be adopted:

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 on <http://www.accobams.org/newsletter/index.htm>).

News from the Secretariat

by Marie-Christine Van Klaveren and Roberta Mazzucco

Current state of signatures and ratifications

Since the first Meeting of the Contracting Parties, the Depository recorded the deposit of the instruments of ratification of six Riparian States (France, Lebanon, Libya, Portugal, Syria, Ukraine) as well as the notification of the Greek Republic confirming that its signature of the Agreement on 24 November 1996 was valid as ratification. All this brings the Parties to ACCOBAMS to a total of 17. For an updated information on the ratification status of the Agreement, see:

<http://www.accobams.mc/Accob/Wacco.nsf/Fram2Gb1OpenFrameSet>

Some political outcomes from the last Meeting of the Parties

Links with UNEP and CMS

During the 2nd Meeting of the Parties to ACCOBAMS it was decided that a strengthened relationship between the Secretariat and UNEP and CMS will facilitate the implementation of the Agreement, and consequently the promotion of wider goals in the region, including synergies with other UNEP Conventions, and in particular CMS and the Barcelona Convention.

In the relations between the Secretariat and CMS, special emphasis was put on (i) links between ACCOBAMS and other regional and global initiatives affecting cetaceans; (ii) co-operation on information management systems; (iii) joint conservation and publicity projects; (iv) joint fundraising; and (v) joint capacity building programmes.

Following the decision of the Parties to urge the Secretariat, in connection with the Government of the Principality of Monaco and the pertinent UNEP structures, to find the ways and the means to strengthen the links with UNEP, the Executive Secretary of ACCOBAMS visited the head offices of UNEP in Nairobi in December to make progress in this issue and to explore the possibility of establishing a memorandum of understanding or equivalent with this Organisation.

Links with IUCN

Further strengthening of the relations between ACCOBAMS and IUCN were recommended to facilitate the implementation of the Agreement, and at

the same time the promotion of IUCN goals in the region, and synergies with its specialized Commissions. To this end the Secretariat was urged to liaise with IUCN, and, possibly, to prepare a memorandum of understanding.

International Flair at the ACCOBAMS Secretariat

Throughout 2004, Roberta Mazzucco, expert in international cooperation and media-communication, was seconded to the ACCOBAMS Secretariat by the Italian Ministry of Environment after her commitment there as Secretary of the Italian Steering Committee of the Pelagos Sanctuary. Due to her valuable expertise, a three-year contract as administrative assistant to the ACCOBAMS Secretariat was approved by the Contracting Parties at their Second Meeting.

International relations expert Dilara Betz was hired to help in the organisation of the Second Meeting of the Parties. The Secretariat was pleased to extend the cooperation with Dilara until mid-2005, through a consulting contract, to further assist the Secretariat in administrative and event management activities.


Visit of HSH the Crown Prince Albert

HSH the Crown Prince Albert visited the new premises of the Secretariat and renewed his interest and support to the ACCOBAMS activities, with a particular emphasis on the Educational Programme adopted by the Second Meeting of the Parties.

ACCOBAMS Secretariat moved

In August 2004, the Permanent Secretariat moved to a new office, thanks to the kind availability of the Government of Monaco, which offered to the Secretariat an independent and nice "villa".

The new address is:

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News from the Scientific Committee

by Giuseppe Notarbartolo di Sciarra

A new Scientific Committee is nominated in November 2004

During their second meeting, the Contracting Parties to ACCOBAMS nominated the Agreement's new Scientific Committee. Four of the new members were designated by the Parties as Regional Representatives (RR) of the four areas in which the Agreement is subdivided (western Mediterranean and contiguous Atlantic; central Mediterranean; eastern Mediterranean; Black Sea). Five members were designated by the General Director of the International Council for the Scientific Exploration of the Mediterranean Sea (CIESM), and one member was designated by each of the following organisations, bringing the Committee's complement to twelve: the European Cetacean Society (ECS), the World Conservation Union (IUCN), and the International Whaling Commission (IWC). In addition, the Parties also nominated four alternate members. The following experts were nominated in the Committee (in alphabetical order): Ferdinand Bego (Central Mediterranean, alternate), Alexei Birkun, Jr. (CIESM), Nejmedine Mohammed Bradai (Western Mediterranean and Contiguous Atlantic, alternate), Ana Cañadas (CIESM), Greg Donovan (IWC), Christophe Guinet (CIESM), Myroula Hadjichristoforou (RR, Eastern Mediterranean), Drasko Holcer (CIESM), Sergey Krivokhizhin (Black Sea, alternate), Anastasia Komnenou (Eastern Mediterranean, alternate), Giancarlo Lauriano (RR, Central Mediterranean), Giuseppe Notarbartolo di Sciarra (CIESM), Simone Panigada (ECS), Gheorghe Radu (RR, Black Sea), Juan Antonio Raga (RR, Western Mediterranean and Contiguous Atlantic), Randall Reeves (IUCN).

Procedures for the evaluation of research or management proposals

On its second meeting (Istanbul, 20-22 November 2003), the Scientific Committee adopted the following rules concerning the evaluation of research and management proposals that may be brought to its attention:

a. Between sessions, the Scientific Committee may be requested by the Secretariat to provide opinions on research or management proposals, which have been submitted to ACCOBAMS for endorsement, for advice, or for funding. Proposals will be treated differently depending on whether they require funding or not.

b. Proposals may be submitted in writing at any time of the year (although, under normal circumstances, it is considered preferable that decisions be taken during the meetings of the Committee rather than in the intersessional period). The Secretariat shall pass the proposal to the Chair, who would ask a Scientific Committee member, or a group of Scientific Committee members, or, if necessary, a group of independent experts, to evaluate it and draft an opinion within 30 days. This opinion will then be circulated to all Scientific Committee members, who shall eventually suggest modifications within 15 days.

The Secretariat shall inform proposers of this time schedule in order to avoid pressure derived from submissions made "on the rush".

c. Proposals requiring funding would be treated as in (b). In addition, given the limitation of funds, the Secretariat shall provide to the Scientific Committee, together with the proposal (which should include a budgetary appraisal), relevant information concerning the availability of funds in line with the program-budget adopted by MOP, the expected income, and its opinion on the need to find additional contributions. The Scientific Committee shall recommend that funds be granted taking such information into account. If funds are not available, the Scientific Committee may recommend that the proposal be funded as soon as funds are secured. According to resolution MOP1 1.7 (6), the Scientific Committee, together with the Sub-Regional Coordination Units, will assist the Secretariat in consulting with the Parties and potential sponsors concerning sponsorship.

d. Proposals submitted at the annual Scientific Committee meeting will follow the same procedure, i.e., answered within 45 days.

Coordination meeting on the mitigation of interactions between cetaceans and fishing activities. Rome, 19-20 April 2004.

A meeting was held at the head offices of FAO, Rome, to coordinate the planning of future efforts related to addressing the problems of interactions between cetaceans and fisheries in the ACCOBAMS area. The impetus for such meeting was provided by relevant resolutions adopted during the First Meeting of the Parties, as well as recommendations from the Scientific Committee. The meeting examined a first draft of a region-wide project prepared by Mr. Chedly Rais, consultant to the Secretariat, in which a comprehensive set of actions are envisaged in cooperation with the ACCOBAMS Sub-regional coordinating Units, i.e. the RAC/SPA (Mediterranean) and the Black Sea Commission, the General Fisheries Commission for the Mediterranean, and the appropriate FAO regional programmes such as COPEMED, ADRIAMED and MEDSUDMED. The discussion resulted in the formulation of a comprehensive set of activities, to be implemented over two years, addressing all the problems deriving from negative interactions between cetaceans and fisheries in the Mediterranean and Black Seas, in particular bycatch and the depredation of coastal nets by dolphins.

Workshop on the establishment of a system of Tissue Banks in the ACCOBAMS area. Tajura, Libya, 29 May - 2 June 2004.

A workshop on tissue banks was held in coincidence with the International Meeting on Cetacean Conservation in Mediterranean and Black Sea Regions, organised by ACCOBAMS in cooperation

with the Environment General Authority of Libya, the Marine Biology Research Centre of Tajura, and the RAC/SPA, which was also acting as ACCOBAMS Sub-regional coordinating unit for the Mediterranean and adjacent Atlantic area. The workshop served as a forum for discussion on how to best proceed towards the establishment of a system of tissue banks in the ACCOBAMS area, to make available biological material, mostly deriving from stranded and bycaught cetaceans, to the scientific community. Such material would then be used to promote knowledge, inter alia, on mortality causes, toxicology, pathology, parasitology, population structure, and trophic relationships of the region's cetaceans. The meeting recognised the need for the establishment of an Agreement-wide coordinating mechanism, which would facilitate the links between the national and regional stranding networks and the bycatch programmes on one side, and the tissue banks on the other side. To help the functioning of such linking mechanism, it was suggested to consider the establishment of a central tissue bank Coordinator, who would interact on an operational basis with national stranding/bycatch focal points. It was further suggested that a Working Group be established to develop the matter in consultation with relevant experts, with a set of guidelines, in particular to perform the following tasks: suggest the establishment and terms of reference of a co-ordination unit; identify objectives, priorities of research and tissues to be stored for the existing and potential future tissue banks; create a network composed of tissue banks focusing on complementary objectives, in order to be comprehensive and avoid overlapping; establish workable procedures for the collection and storage of tissues, in particular through networking with existing and future stranding and by catch programmes in the Agreement area; adopt protocols for exchange and release of samples; ensure co-ordination and exchange of samples; and ensure the appropriate mechanisms for the expeditious dissemination of scientific results to decision makers and managers. The Working Group was created at the end of the meeting, which drafted a set of tissue bank guidelines later adopted by the Meeting of the Parties.

Meeting on the use of acoustic devices in the ACCOBAMS Area: preparation of guidelines. Rome, 28 June 2004.

Based on a decision adopted by the Scientific Committee during its second meeting, and to provide scientific support to the Secretariat, frequently requested for advice concerning the use of acoustic devices to deter dolphins from depredating nets, an

expert meeting was organised in Rome, with the support of RAC/SPA, and kindly hosted by the Italian Ministry of agricultural policies. Aim of the meeting was to set the stage for the drafting of practical guidelines and recommendations for national authorities and administrators when faced with requests for the use of acoustic deterrents by the fishing community. Use of such deterrents in the past has proven highly problematic due to the lack of consistent and lasting effectiveness, and concern for the possibly negative environmental effects of massive deployment of such devices. The meeting decided to request Simon Northridge, Caterina Fortuna and Andrew Read to summarise the discussion and prepare a document, "Guidelines for technical measures to minimise cetacean-fishery conflicts in the Mediterranean and Black Seas", to be submitted to the Meeting of the Parties in November. These guidelines were subsequently adopted by the Parties, and are available on the Agreement website.

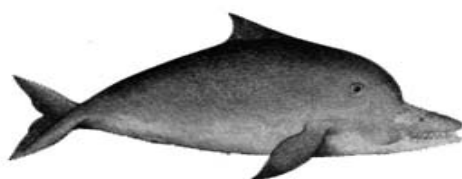
Workshop on obtaining baseline cetacean abundance information for the ACCOBAMS area. Val-sain, Spain, 17-19 December 2004.

Based on a recommendation by the Scientific committee concerning the urgent need of obtaining baseline population estimates and distributional information of cetaceans within the ACCOBAMS area, a workshop was organised with the primary objective of reviewing the available information, looking at the theory and practice of multi-species surveys and how best to design them, drawing up preliminary survey blocks, and examining various coverage options and the implications for resources (in terms of ships, planes, scientists and equipment). The workshop defined the objectives of the survey (areas to be covered and species to be surveyed), reviewed the current information, suggested initial planning criteria, including a discussion of methods for survey design, and drafted a preliminary proposal including rough costings. The combination of visual and acoustic techniques, as well as the integration of the population surveys with population structure studies based on genetics methods, were also discussed. The results of the workshop will be submitted to the next meeting of the Scientific Committee for discussion and to enable progress to finalise the project and raise the necessary funds.

It was also suggested that, during the interim before the basin-wide survey will be accomplished, local initiatives to at least generate measures of relative abundance of cetaceans should be encouraged, as these would provide useful preliminary information in the planning phase, and generate motivation and involvement at the local level. 📄

Giuseppe Notarbartolo di Sciara is currently acting as the interim chair of the Scientific Committee of ACCOBAMS

For more information:
www.accobams.org/index_science.htm



News from Range States

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Cetacean surveys become a tradition in the Northern Black Sea

by Alexei Birkun, Jr. and Sergey Krivokhizhin

There have been several recent surveys to study distribution and estimate abundance of cetaceans in the northern Black Sea. Aerial surveys in the Azov Sea, Kerch Strait and northeastern shelf area of the Black Sea have been conducted by means of super-light amphibian aircrafts by a joint Ukrainian-Russian team in July 2001 and August 2002. In August-October 2003 the latter team represented by researchers from the Brema Laboratory (Simferopol) and Institute of Ecology and Evolution (Moscow) had carried out boat surveys in the entire 12-miles-wide zone of the Ukrainian and Russian territorial waters in the Black Sea and in the Kerch Strait. This year next boat survey took place from 1-12 September in the northwestern Black Sea bordered by Ukraine, Romania and Bulgaria. The yacht "Peter the Great" sailed mainly offshore where short-beaked common dolphins and bottlenose dolphins were known to occur from early spring to late autumn. The observers were pleasantly amazed to see also groups of harbour porpoises just in the center of research area, quite far (93-100km) from the nearest coast. Line-transect methodology and photo-identification techniques, as learned through the training organised by ACCOBAMS in 2003, have been used for research purposes. During the survey our joint team had opportunity to finalize analysis of cetacean images collected in 2003-2004 in the Ukrainian and Russian Black Sea. The result - initial catalogue "Black Sea Fins" prepared according the EUROPHLUKES format - was presented on CD at the 3rd "Marine Mammals of Holarctic" conference (Koktebel, Ukraine, 11-17 October 2004) and placed on the web site: www.dolphin.com.ua. 

See the map of the cruises of the "Peter the Great" at: www.accobams.org/index_science.htm

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A stranded short-beaked common dolphin on the seashore of Béjaïa (North-eastern Algeria)

by Farid Belbachir and Mourad Ahmim

On 17 December 2004 a dead short-beaked common dolphin, *Delphinus delphis*, was found stranded by local residents on the beach of Béjaïa located about 250 km east of Algiers. The specimen was collected in the vicinity of Sidi-Ali Lebhar and transported to the local conservation & development unit (U.C.D.) of the National Agency for Nature Conservation (A.N.N.) for investigation. The animal was photographed, measured, and sexed by the local staff. Species identification was afforded by the clear pigmentation patterns, typical of the species, as visible in the photographs. Body length and weight measurements totalling 157 cm and 50 kg, respectively, as well as the location of the genital slit, closer to the navel and farther from the anus, fairly brought the specimen closer to a young male. For compari-

son, the body of adult common dolphins may reach a total length of 240 cm for the females and 260 cm for the males with an average weight of 75 kg.

Even though the reasons of the stranding are still unclear, the occurrence of the aforementioned dolphin in the seashore of Algeria is in keeping with the wide distribution characterizing the species in Atlantic and Pacific Oceans as well as Mediterranean and Black Seas. However, the distribution of common dolphin in the coasts of Algeria is not well documented. It is noteworthy that a comprehensive compilation of records on the species has been documented by Kowalski and Rzebik-Kowalska about 14 years ago, mainly based on stranded animals. According to the latter authors, the common dolphin is the commonest cetacean that strands on the shores of Algeria and most of the records (based on stranded, captured or killed animals, and available skeletons) concerned the province of Oran in the north-western part of the country with the following localities: Ain-el-Turk, Bou-Sfer, Canastel, Cap Blanc, Cap Falcon, Kristel, Les Andalouses, Madagh, Oran Bay, Oued-Hallouf Beach and Rachgoun Beach. In the north-centre of Algeria, only two localities were concerned: Algiers Bay and Bou-Ismaïl. As far as north-eastern Algeria is concerned, the species was only recorded in the estuary of Oued-el-Kebir and El-Kala. To our knowledge, the present note adds a new locality, Sidi-Ali Lebhar (Béjaïa), to the list of records on the species in north-eastern Algeria. It is worthwhile remembering that short-beaked common dolphin is legally protected by an Algerian ministerial decision dated 1995 (Arrêté du 17 janvier 1995) as are nine other cetacean species: Cuvier's beaked whale, fin whale, long-finned pilot whale, right whale, sperm whale, harbour porpoise, common bottlenose dolphin, Risso's dolphin, and striped dolphin. An effective in situ protection of the cetaceans, a well-managed fishery and sea pollution control in the coasts of Algeria, as well as concerted conservation effort involving Algerian experts with international organizations are strongly recommended for a long term survival of these threatened cetaceans. 

Suggested readings:

Kowalski K., Rzebik-Kowalska B. 1991. Mammals of Algeria. Wrocław: Polish Academy of Sciences.

Reeves R. R., Smith B.D., Crespo E.A., Notarbartolo di Sciarra G. (compilers). 2003. Dolphins, Whales and Porpoises: 2002 - 2010 Conservation Action Plan for the World's Cetaceans. IUCN/SSC Cetacean Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK.

See the photographs of the stranded common dolphin at: www.accobams.org/index_science.htm

Action Plan for cetaceans in Georgia

by Giovanni Bearzi

In August 2004, the ACCOBAMS Secretariat funded an exploratory visit to the Marine Ecology and Fisheries Research Institute (MEFRI) located in Batumi, Georgia. This visit was aimed at (1) gathering

information on the available local expertise, and (2) identifying the most appropriate strategy for the development of cetacean conservation actions in national waters, which was started in 2003 through a specific photo-identification training course sponsored by ACCOBAMS. The short-term goal of the visit was to outline actions to be developed immediately in Georgia, in order to start the process of implementation of ACCOBAMS conservation priorities.

MEFRI was selected as reference institute for Georgia, following indications provided to the ACCOBAMS Secretariat by the Georgian Ministry of Environment and Natural Resources. The visit to Batumi included a series of meetings with researchers from MEFRI, representatives of the Georgian Ministry of Environment and Natural Resources, and experts affiliated with the local NGO "Black Sea Eco-Academy". Based on the information collected during the visit, a report titled "Cetacean research and conservation in Georgia: background information and suggested actions" was presented by the Tethys Research Institute, which outlines a short (two years) and medium-term strategy (subsequent three years) for the development of cetacean conservation in Georgia. Suggested actions and recommendations are inspired by the preliminary strategy for cetacean research and conservation in the Black Sea presented at the 2nd Meeting of the ACCOBAMS Scientific Committee.

A series of actions were identified as having a high priority in the region. However, some of these cannot be implemented immediately due to inter alia insufficient specific expertise, lack of funding and/or logistic constraints. Consequently, it was recommended that efforts be initially aimed at creating or improving expertise by means of specific capacity building actions. Such capacity building actions, to be implemented in the first two years, will create the background on which future research, management and public awareness actions will be based. 📄

Workshop of the establishment of the National Network for the monitoring of Cetacean stranding in Syria. Latakia, 3- 4 July 2004

With the aim of supporting the Parties in establishing national networks for the monitoring of cetacean stranding, the ACCOBAMS Secretariat has elaborated a project to assist several Parties defining the structure of their national network as well as a tissue bank protocol through the production of an operative manual.

Within this context a two-day workshop was organized in Latakia (Syria), at the High Institute of Marine Research. The workshop consisted of a first part on the presentation of the objectives and the techniques of the monitoring of cetacean stranding, and a second part on the elaboration of an operative manual for the establishment and the functioning of the National Network for the monitoring of cetacean stranding in Syria. The manual will serve as a reference document for the imple-

mentation and the running of the network. 📄

Status of Common Dolphins along the Israeli Mediterranean coast

by Aviad Scheinin, Dan Kerem, Oz Goffman and Ehud Spanier

By information gathered in the last decade, the short-beaked common dolphin *Delphinus delphis* should be considered a rare species along the Israeli shore, with sporadic observations and precious few beachings. A recent increase in encounter rate gives us the hope that common dolphins may be re-inhabiting the easternmost part of the Mediterranean Sea.

Since IMMRAC has started collecting data eleven years ago, mainly of stranded marine mammals, carcasses of common dolphin were hardly seen. Prior to IMMRAC's research, between the years 1950-1980, two common dolphin skulls were collected by the Tel-Aviv University Zoological Museum.

The first encounter with common dolphins by IMMRAC researchers was on 11 August 1994. A group of eight dolphins were photographed feeding behind a bottom-trawl boat, two nautical miles off Bat-Yam, at a depth of about 40 m. On 30 October 2001 a decomposed carcass of a mature female washed on the central part of the Israeli Mediterranean shore, three km north from Michmoret. On 18 August 2003, a single individual was photographed off the southern part of the Israeli Mediterranean shore. Eight days later, a mixed group of mother and calf common bottlenose dolphin *Tursiops truncatus* and a single common dolphin were observed in the northern part of the Israeli Mediterranean shore in the vicinity of a bottom-trawl boat. Photo identification ascertained that the two were different individuals. On 26 June 2004 the decayed carcass of a mature male was spotted on the southern part of the shore. It was not clear, due to its condition, whether it was the same dolphin sighted last year in this vicinity. Tissue samples for genetic analysis and stomach contents were collected. On 14 July 2004, a pod of two common dolphins were observed in the southernmost part of the Israeli coastline. On 27 July 2004, once again a common dolphin in company with a single bottlenose dolphin were seen in the vicinity of a bottom trawl boat in the northern part of Israel. The lack of pictures from this sighting precludes comparison with the individual sighted in the mixed pod exactly one year before, in the same location.

Possible reasons for the local rarity of this species can be due to the following factors: reduction in overall productivity due to reduced nutrient inflow caused by the damming of the Nile river in 1970; reduced availability of prey caused by overfishing and habitat degradation; contamination by xenobiotic chemicals resulting in immunosuppression and reproductive impairment; environmental changes such as increased water temperatures affecting ecosystem dynamics; and incidental mortality in fishing gear, especially gillnets. The cumulative importance of these fac-

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tors in Israel is poorly understood. Apparently it seems that there was no dramatic change in the last decade that might suggest a better environment for the common dolphins to return to the Israeli shore.

During the last two summers we had more encounters with common dolphins than in all past years combined. Observations span the entire length of the Israeli shoreline. Is this due to recent presence of IMMRAC research activities on monthly outings aboard trawlers and to wider reporting, or are common dolphins starting to come to visit our area in the summer? The answers must await future long-term research. 📌

See the map of recent strandings and sightings of common dolphins in Israel at:
www.accobams.org/index_science.htm

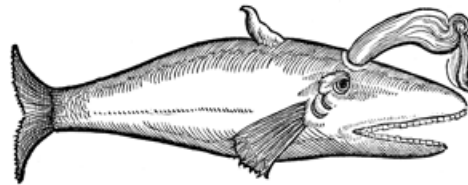
International Meeting on Cetacean Conservation in the Mediterranean, Black Sea Regions and Con-

tiguous Atlantic Area. Tajura, Libya 30 May-1 June 2004

The meeting was organized by ACCOBAMS and the RAC/SPA (ACCOBAMS Sub regional coordination unit for the Mediterranean and adjacent Atlantic area) in collaboration with EGA Libya, MRBC Centre of Tajura.

The meeting recognised the need for the establishment of an Agreement-wide coordinating mechanism, which would facilitate the links between the national and regional stranding networks and the bycatch programmes on one side, and the tissue banks on the other side. To help the functioning of such linking mechanism, it was suggested to consider the establishment of a central tissue bank coordinator, who would interact on an operational basis with national stranding/by catch focal points.

In collaboration with local scientists and the ACCOBAMS Secretariat, the base for the National Action Plan of Libya was set up. 📌



News from Range States SPECIAL from SLOVENIA

***Editors' Note:** With this issue, FINS begins to regularly dedicate a special space to inform on cetacean conservation-related activities in an ACCOBAMS Range State. In this issue we feature Slovenia, a nation that, in spite of its mere 46 km of coastline, demonstrates an extraordinary eagerness to better understand and care for the cetaceans, mostly bottlenose dolphins, that inhabit its waters. Slovenia is not yet a Party to ACCOBAMS, so the information given here is not deriving from a formal communication provided by the Slovenian Government. Rather, it consists of the contributions from three quite active and lively NGOs, that FINS is happy to host on these pages.*

Adriatic Project Society by Vanja Svetina

The Adriatic Project Society is officially appointed as the organization responsible for the implementation of the action plans for the cetaceans in Slovenia by the Regional Institute for the Conservation of Natural and Cultural Heritage in Piran (a Department of the Ministry of the Environment and Special Planning). As such, since 1999 we have organized the research project in order to obtain the baseline information for the national action plan for marine mammals conservation. We gained basic knowledge and first experience on cetacean research thanks to the Tethys Research Institute and Adriatic Dolphin Project on Losinj, Croatia. Following and fulfilling the priorities set up for the Mediterranean coun-

tries and UNEP RAC/SPA, we have developed a research project in the area of the Gulf of Trieste and open waters along the Istrian peninsula. We have carried out the PHARE project on acoustic monitoring, the subject of noise pollution in the Gulf of Trieste in cooperation with the National Institute of Biology, Marine Station of Piran (including the Riserva Marina di Miramare in Trieste as the partner organization). Thanks to the Regional Institute for the Conservation of Natural and Cultural Heritage in Piran, and in particular Mr. Robert Turk, we have been part of the UNEP RAC/SPA campaign. Our current activities today include: population monitoring by conducting the regular transect line surveys from the different platforms (sailing boat combined with acoustics and aerial surveys); maintaining of the cetacean stranding network and related dissemina-

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tion of the collected information (founded in 2000 by the Society); maintaining the tissue bank established in collaboration with the Faculty of Biology of the University of Ljubljana (starting from 2001); performing the post-mortem analyses on pathology, bacteriology and virology of stranded animals, in cooperation with the Faculty of Veterinarian Science of the University of Ljubljana; monitoring on cetacean-fisheries interactions (from 2003); and public awareness activities in collaboration with the Museum for Natural History. Future work is based on further developing the "Concept of the long-term study and directions for protection of bottlenose dolphin in north-eastern Adriatic", based on experience of monitoring cetaceans from platforms of opportunity and systematic surveys (distance sampling, transect lines based monitoring) in cooperation with the Faculty of Biology of Ljubljana. 📄

See photographs of northern Adriatic cetaceans taken by the Adriatic Project Society at:
www.accobams.org/index_science.htm

Morigenos and cetacean activities in Slovenia

by Tilen Genov

The Slovenian sea, which represents a small portion of the Gulf of Trieste, appears to be a part of the home-range of a resident population of bottlenose dolphins, the only regular cetacean in the northern Adriatic sea. Other species common in the Mediterranean, such as the fin whale, Risso's dolphin and striped dolphin occasionally stray into the area. Until recently, no long-term research has been done on cetaceans in Slovenia, the general public opinion being that dolphins are absent from the area and that dolphin sightings are just rare exceptions of lost individuals.

"Morigenos - Marine Mammal Research and Conservation Society" is a non-profit Slovenian NGO, dedicated to dolphins, whales and other marine mammals and the preservation of the marine environment. "Morigenos" means "sea born" and comes from the ancient Celtic language. The organization was established in 2001, in order to promote cetacean conservation and to conduct research on cetaceans.

In summer 2002, we started a preliminary research on the presence of dolphins in the Gulf of Trieste. Reports from local people, fishermen, sailors, etc. revealed that dolphins can indeed be found in Slovenian waters. In 2003, the preliminary work was converted to a long-term project through a higher search effort and the beginning of the photo-identification surveys. The project is focused on investigating the present status of bottlenose dolphins in the area, collecting data on population size and structure, distribution, abundance, habitat use, site fidelity, reproduction, behaviour and interaction with human activities (fisheries, traffic, etc.).

During 2003, photo-identification surveys have enabled the recognition of more than 23 individuals. Some of them (including females with newborns) were resighted during the year. Our observations of females with calves suggested that dolphins are also reproducing in the area. First results of this research have been presented in the form of a poster at this

year's 18th annual conference of the European Cetacean Society in Sweden. Observations from boat surveys and land observation points, coupled with reports from local people, have shown that bottlenose dolphins are present in Slovenian sea all year long. Given that the Slovenian sea is very small (approximately 300 km², 43 km of coastline), dolphins are, of course, moving across the borders of neighbouring Italy and Croatia. However, the Slovenian sea apparently represents a part of their home range and they seem to be resident in the Gulf of Trieste and the surrounding waters. Because dolphins are not limited by national borders, Morigenos collaborates with organizations from Italy and Croatia in terms of data and information exchange. The photo-id catalogue will be compared to catalogues from other areas of the Adriatic sea, in order to provide possible insight into the movements and home range of dolphins in the Adriatic. Moreover, Morigenos has become an Europlukes contributor and is currently in the process of contributing the existing photographic data into the international database. The research of Morigenos was continued in 2004. Some dolphins from 2003 were re-sighted several times, while many new ones (probably about 15, but matching is still in progress) have been identified. Females with calves and newborns are also encountered very often.

Strandings are another way of gaining information about cetaceans. However, most of the recent strandings occurred on the Italian side of the Gulf of Trieste, therefore necropsies were performed by experts at the University of Trieste and International School for Advanced Studies of that city, with assistance of Miramare Natural Marine Reserve and the Morigenos team. Nevertheless, should strandings occur on the Slovenian coast, Morigenos holds a permit to take samples and will also co-operate with colleagues from Italy and Croatia.

We believe that we have made some significant progress in the development of cetology in Slovenia and towards a better understanding of the bottlenose dolphin population inhabiting our waters. However, this is of course just the first step and the effort will be continued. Since the beginning of the organization, we have been very active in educating and informing the public about cetaceans and our work and in raising public awareness about the importance of cetaceans, the threats they are facing and the need for a healthy marine environment.

This is being done through lectures and presentations at schools, faculties and various events, the publication of popular articles and interviews, exhibitions of photographs taken in the field, the production of information material and a code of conduct for yachtspeople, the development of an internet site, and the organisation of specific activities such as the "Adopt a dolphin" project and Summer Dolphin Research Camps.

The work of Morigenos is public and we keep informing the public about all our activities, achievements and results. It seems that our activities have had a positive impact on the Slovenian population, and on foreigners as well. According to comments, conversations and feedback from various people, it seems that awareness on dolphins in Slovenia has risen. More and more people are aware that dol-

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phins are a part of the Slovenian marine ecosystem and moreover, they care for their protection. Also, more and more people know about our efforts and are willing to either participate in our activities or support them. 📷

See photographs of northern Adriatic cetaceans taken by Morigenos at:

www.accobams.org/index_science.htm

For more information on Morigenos, see:

www.morigenos.org

***Vivamar* - Society for Sustainable Development of the Sea**

by Darja Ribaric

The future of the planet Earth is calling for changes in our thinking and relations to better manage the coastal and marine ecosystems. Most developed States around the world are now seeing and are trying to be active against the further degradation of the ecosystems. Many of them started to implement different action plans in terms of sustainable development. Also in Slovenia, a new member of the European Union, people are more than ever before aware of the problems of the environment. This can be seen as well in a growing number of NGOs, which may be active not only in terms of raising public awareness, but also collecting data from different topics of ecology. Many of NGOs present such, sometimes crucial, data to the governmental institutions. Activities of the NGOs can therefore enhance and accelerate the governmental debate on a given ecological topic. And this may be of big help in further decision making...

One of such societies, which has the vision to be active on the above mentioned fields is *Vivamar* - Society for Sustainable Development of the Sea. *Vivamar* was founded on 5 June 2002, on the World's Environmental Day. Its vision is to bring together people, who will disseminate awareness in terms of sustainable development of the sea. It has established international connections within countries, such as Italy, Croatia, France, Portugal, Israel, Austria, Greece, Germany, Denmark, Montenegro and Taiwan, trying to exchange experiences and data. One of the highest priorities of *Vivamar* is the protection and conservation of the last living marine mammals in the Adriatic Sea. At the moment one of

our strongest activity is to collect data on the presence of bottlenose dolphins in the Slovenian sea and neighbouring - mostly Croatian - areas. Collecting such data could help not only to better understand what's happening with this part of the dolphins' population, that is regularly visiting this area, but also to better estimate the ecological status of its environment. *Vivamar* has, since its foundation, continued to collect data about dolphins' presence, at the beginning under the kind hospitality of Slovenian Natural History Museum. To roughly evaluate species' presence in the northernmost part of the Adriatic sea, *Vivamar* has disseminated questionnaires to a variety of seagoing people: maritime police, coast guard, fishermen, staff of the Aquarium in Piran and of the Marine Biological Station, yacht skippers, divers etc. Over a two year period, from Jan 2001 - Dec 2002, a total of 316 dolphins were reported, showing that these animals are present all year round, but with apparent fluctuations depending on seasons. Group sizes were comprised between 1 and 40. Further information were collected through direct observations from a small fibreglass boat from Feb - Nov 2002. Dolphins were sighted on three of the 21 surveys, which totalled 34.9 hours of effort. Starting from this year, *Vivamar* is equipped with a larger and safer boat, which allows faster and easier monitoring.

Vivamar has also been engaged in building awareness, through active presence in different fairs and the dissemination of information material throughout coastal hotels and marinas in Slovenia; and delivering lectures on dolphin biology and conservation to a variety of audiences. *Vivamar* has successfully conducted in 2003 two projects, "With innovation to the European Union", and "From the art of focused discussion to the power of effective action", the latter project having been funded by the EU. One of the greatest achievements so far was to be an active partner in "AdriaWatch", an integral part of "AdriaSave", an Interreg IIIa project, due to finish in the year 2006, and aiming at the collection of data concerning the presence of large vertebrates in the northern Adriatic. The collected knowledge could further help to better manage the mentioned animals, as an important integral part of the marine ecosystems, in terms of the sustainable development. This is exactly what the mission of *Vivamar* is about. 📷



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Short News

The Europhlukes Project is concluded

by Simone Panigada

On November 1st 2004, the Europhlukes project (www.europhlukes.net), funded by the European Commission under the Fifth Framework Programme, and contributing to the implementation of the Key Action 1.1.4.-9: Support for Research Infrastructure Concerted Action within the Energy, Environment and Sustainable Development thematic programme ended. Aims of the project were:

- to develop a European cetacean photo-identification system as a facility for research on the sustainable management of the marine environment;
- to initiate a European network of providers and end-users of the European Cetacean photo-identification system;
- to ensure continued contribution of material and supportable use of the database.

Forty-seven research groups from 14 countries around Europe have contributed over 54,000 digitised images and associated data representing 20 cetacean species. These are held on a central database that can be accessed electronically. In addition, a meta database structure has been developed that enables the linking of different types of data (such as photo-ID, line-transect survey, acoustic monitoring, biopsy sampling, and focal follows).

The main features used to identify individual cetaceans included nicks in dorsal fins and tail flukes, and pigmentation patterns on the head, back, flanks, fin and tail. The ten species with the greatest number of images were common bottlenose dolphin (30%), long-finned pilot whale (21%), short-beaked common dolphin (17%), Risso's dolphin (10%), sperm whale (8%), killer whale (5%), fin whale (4%), short-finned pilot whale (1%), minke whale (1%), and humpback whale (1%). Bottlenose dolphin images existed in the catalogues of 24 research groups, Risso's dolphins in the catalogues of 12 groups, and sperm whales in the catalogues of 10 groups.

The project deliverables consisted in three semi-automated matching software programs, to enable end-users to match their pictures using tail fluke margins, dorsal fin margins, and fluke pigmentation patterns. The software showed great potential to enhance the matching process when dealing with large digitised catalogues. Future work will focus on the different ways to combine the use of different types of features present on the same individuals, in order to facilitate the recognition of true matches and to minimise false matches. ▼

See a graph with the species composition of the Europhlukes database at:

www.accobams.org/index_science.htm

Training course on cetacean research and conservation

by Giovanni Bearzi

After a number of previous positive experiences involving researchers from Black Sea countries, a training course on cetacean research and conservation was organised by ACCOBAMS in 2004 to build capacity among four selected trainees from Slovenia and Greece. The course was held at the Tethys Research Institute field station on the island of Kalamos, and its main topic was the use of photo-identification methods to study cetacean ecology and population dynamics. Practical field work and photo-id 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 Amvrakia, in north-western Greece. All the trainees were given chances to practice photo-id with digital cameras, and could review their work after each survey to evaluate their capability to identify individual dolphins, under the supervision of experienced researchers. 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 etc. Although intensive and intellectually demanding, the training course was held in an informal way, facilitating personal exchanges and promoting future collaboration among the participants. ▼

The proceedings of the CIESM workshop "Investigating the roles of cetaceans in marine ecosystems",

which had been announced on FINS 1(1):11, have now been published as CIESM Workshop Monograph n° 25. A special mention deserves, among other things, a very useful discussion on the use of trophodynamic models by Mariano Koen Alonso and John Harwood, in the executive summary of the monograph. ▼

The 144-page document can be downloaded as a pdf file from:

www.ciesm.org/publications/Venise04.pdf (4.69 Mb).

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Representatives of ACCOBAMS ensured with their presence the **participation of the Agreement to the following events:**

(a) the Meeting of the Advisory Council of the Convention of Migratory Species, Glasgow, 1-3 April 2004;

(b) the International Policy Workshop on Sound and Marine Mammals, organised by the Marine Mammal Commission in partnership with the Joint Nature

Conservation Committee, London, 28-30 September 2004;

(c) the final meeting of the Steering and Liaison Committees of the Europhlukes Project, Lanzarote, Spain, 23-26 October 2004, during which the interest of ACCOBAMS in supporting the continuation of Europhlukes was asserted; and

(d) the IWC Habitat Degradation Workshop, Siena, Italy, 12-15 November 2004. 📄



In memory of Bill Watkins, a pioneer of cetacean bioacoustics

by Giuseppe Notarbartolo di Sciara

William Alfred Watkins, Oceanographer Emeritus of the Woods Hole Oceanographic Institution, died on 28 September 2004, aged 78, after a long career dedicated to the study of cetaceans and their sounds. Bill was one of the first scientists to investigate cetacean acoustics in the Mediterranean, with a dedicated cruise in the seas surrounding Sicily in Summer 1985, in which a school of rough-toothed dolphins, *Steno bredanensis*, was sighted and recorded for the first time in this region. He was a real pioneer in marine mammal bioacoustics.

Bill joined WHOI in 1958, and soon started working with William Schevill, the founder of marine mammal bioacoustics. The two Bills created a terrific team; working together for four decades, they propelled cetacean bioacoustics into the era of modern electronics from the dark ages of this discipline, when the early navy acousticians were calling sperm whales "carpenter fishes" in want of a better explanation of what they were hearing. In particular, Bill Watkins was responsible for the development of many of the research tools that still today are at the base of most marine bioacoustic work, including the construction of portable tape recorders, the use of hydrophone arrays to identify, locate and follow individual whales, methods for underwater playback experiments, and even radio and acoustic whale tags. In 1962 he published with Schevill a phonograph recording of marine mammal sounds called "Whale and Porpoise Voices", which served to bring to the world's general public the notion that cetaceans communicate through underwater sound.

Bill Watkins was special for many reasons. To begin with, he was able to conjugate the natural curiosity of a scientist with a thaumaturgic talent for making boxes full of electronics work in a salty environment. This endowment allowed him to come back ashore with great data on acoustic pattern recognition systems, seasonal distribution and acoustic behaviour of cetaceans, and unique information obtained through acoustic, radio and satellite tracking systems. Secondly, he built a proper home for all these good things by creating a lab at WHOI where he and his team could work together, publish an enormous amount of scientific papers, store a digital database with over 20,000 calls from more than 70 species of marine mammals, and organising an extremely interesting and valuable bibliographic collection, pieced together and personally annotated by Bill Schevill during his lifetime, into a database searchable by anyone.

Third, and not last, Bill was a wonderful man and a great friend. He was a specially kind and generous person. I have been working with him since 1979 in the Caribbean, in the North Atlantic and in the Mediterranean, and visited him many times at WHOI. Bill's departure leaves a great void at the personal level, but he has left behind an extraordinary heritage in terms of knowledge, for all of us - whales and dolphins included - to take advantage of. 📄

See the portrait of a thoughtful Bill Watkins at:
www.accobams.org/index_science.htm

Book Reviews

by Giuseppe Notarbartolo di Sciara

Sperm whales: social evolution in the ocean. Hal Whitehead. 2003. The University of Chicago Press, Chicago & London. xxiv - 432 pp.

His head does not make up one third of his body length, nor does he slurp whole squids in the dark; nevertheless, Hal Whitehead is fully entitled to be considered a honorary sperm whale. Probably no human on Earth knows sperm whales as deeply as Hal does, having followed them for over 20 years across oceanic expanses with boats usually half as long as the whales themselves. The book contains an extremely rich compendium of knowledge of a most extraordinary mammal. Sperm whales have a social structure which has bizarre similarities to that of elephants; students of sperm whales, however, in contrast to elephant experts (who can continuously watch their animals for 12 hours in a row, sitting in their jeeps) can see the whales only when they come to the surface to breathe, and this makes up a mere 20% of their time. This consideration prompted Hal Whitehead to define sperm whales 'surfacers' rather than 'divers'. Science has not been able so far to overcome the challenge of observing animals that spend most of their life in a dark and opaque medium such as the ocean, which is also so hostile to human researchers. Hal Whitehead has managed to combine his diverse talents of field person and mathematician to address such challenge through inference, ingenuity, and half a lifetime of observations. The results of his labour - in part review of the existing knowledge, in part original - are superbly presented in this book. No aspect of the sperm whales' biology, ecology and behaviour escapes from Hal's treatment, which is subdivided into nine chapters. These include a general introduction to the sperm whale, 'an animal of extremes'; a description of the whales' environment and ecology; horizontal and vertical movement patterns; population ecology; behaviour and vocalisations; social ecology; and conservation. Conservation concerns for sperm whales exist worldwide, but nowhere are they as justified as in the Mediterranean Sea, where the species is taking a very hard beating from pelagic drift-nets. The most fascinating part of Hal's writing is, in my view, the one which deals with the concept of cultural traits and their evolution in sperm whale societies. It is now a well-known fact that cultural transmission of behaviour is not a human prerogative, however it is always refreshing, and a healthy cure for our congenital arrogance, to find new examples of this, and Hal provides a very good one. He reports that certain sets of sperm whale social units possess very similar coda repertoires. This allows the classification of such units in 'clans', which are very stable in time and, as Hal suggests, may represent cultural variants. Hal argues that the 'attributes of the open ocean, such as its large-scale variations, its connectedness, and its suitability for vocal communication, may have promoted culture in cetacean societies.' In this process, sperm whales may have been able to take advantage of their extraordinarily large brains and specialised noses, not too unlike ele-

phants. Quite some food for thought. A book that any student of animal ecology and behaviour should become familiar with. 

Marine mammals: fisheries, tourism and management issues. Nick Gales, Mark Hindell, Roger Kirkwood (Eds.). 2003. CSIRO Publishing. xii - 446 pp.

This book is a substantial source of information and inspiration for everyone concerned with the problem of managing human activities at sea in ways that are compatible with the continued survival and well-being of marine mammals. At a first glance the book, which won a 2004 Whitley Award, may seem to be permeated by a southern hemisphere bias, given that most of the examples provided as case studies are indeed centred in areas located south of the equator. This could hardly have been otherwise, given that its chapters are all derived from papers that were presented at the Southern Hemisphere Marine Mammal Conference which was held in 2001 on Philip Island, in Victoria, Australia. Nevertheless, the lessons learned from all of these examples are quite valid and instructive wherever the types of cetacean-human interactions that are described may occur, including the Mediterranean and Black Seas.

The book contains 21 contributions by scientists from 12 countries, and is organised in three main sections: marine mammals and fisheries, marine mammals and tourism, and management issues. The part on fisheries is quite exciting because, unlike most books dealing with marine mammals and fisheries in the past, it is not limited to discussions on bycatch. In its far greater diversity, this section contains an essay by David Lavigne on the role of science in the culling debate; a critical review of the interactions between aquaculture and marine mammals by Catherine Kemper and colleagues; and several extremely interesting papers tackling the thorny issue of trophodynamic relationships within marine ecosystems, where fisheries and marine mammals overlap as predators, and may compete. These include a chapter on the ecological consequences of Southern Ocean harvesting by Stephen Nicol and Graham Robertson; on trophic interactions between marine mammals and fisheries in Australia by Simon Goldsworthy and colleagues, in Patagonia by Silvana Dans and colleagues, and in South Africa by Jeremy David and Patti Wickens; a review of operational interactions between fisheries and pinnipeds and cetaceans in Australia by Peter Shaughnessy and colleagues; between fisheries and Hector's dolphins in New Zealand by Franz Pichler and colleagues; between fisheries and franciscana dolphins in the southwest Atlantic by Edu Secchi and colleagues; and between fisheries and New Zealand sea lions by Ian Wilkinson and colleagues.

The section on tourism is also particularly interesting because studies analysing the effects on marine mammals of tourism, and in particular of whale watching, are still very rare. The chapters include a detailed review of methods for evaluating the effects of nature-based tourism on cetaceans by Lars Bejder and Amy Samuels (with an appendix containing 19 abstracts on related topics and case studies), a review of pinniped-focused tourism in the whole of the southern hemisphere by Roger Kirkwood and colleagues, a discussion of the management and conservation implications of swim-with-cetaceans programmes by Amy Samuels and colleagues, and a review by Janet Mann and Courtney Kemps of the potentially disruptive effects of provisioning wild dolphins with fish in famous Monkey Mia, Australia.

The last section, on management issues, is also rich of thought-provoking contributions, including a discussion of ethics and marine mammal research by Nick Gales and colleagues, the use of seals as potential tools for monitoring ecosystem change by Mark Hindell and colleagues, and useful reviews of the problem of underwater sound on marine mammals by Robert McCauley and Doug Cato, on the uses of DNA research by C. Scott Baker and colleagues, and a review by Karen Evans of the threats to marine mammals from pollution, which are present even in the southern hemisphere.

As argued by Helene Marsh and co-authors in the introductory chapter, where a broad overview of the strategies for conserving marine mammals is presented, managing human activities in an environment which is inhabited by marine mammals is an extremely tricky and delicate business, and few success stories exist to date. We may add that this is particularly true in marine regions, such as the Mediterranean and Black Seas, where human presence is so intense. ACCOBAMS was envisaged and implemented precisely because of this reason. But not many examples exist yet of careful, thorough analyses of case studies that can properly inform policy and management. In this respect, this book presents a quite useful collection of information based on good science, and represents therefore an invaluable resource for every person engaged in the conservation of cetaceans in the Agreement area. 🐬

Between species: celebrating the dolphin-human bond. Toni Frohoff, Brenda Peterson (Eds.). 2003. Sierra Club Books, San Francisco. xii - 361 pp.

Even persons professionally engaged in conserving cetacean populations sometimes wonder what is it that is so special about whales and dolphins, that stimulates humans to care so much for their survival and well-being. We can see signs of the special value that is being attributed to cetaceans not only in the personal behaviour and emotions of so many human beings, but also in entire governments, and ACCOBAMS is, among others, a living proof of this fact. "Between species: celebrating the dolphin-human bond" addresses this question by giving the floor to a large variety of persons who have been involved,

in one way or other, in human-dolphin interactions. The result of this effort is a very heterogeneous collection of essays, something that in my opinion represents a value for the book rather than a shortcoming. About half of the 36 contributors to this book have a scientific background, and were drawn to the world of dolphins by their profession. The other half comprises writers, journalists, artists, poets, dolphin rights advocates, and even physicians. Some of the essayists concentrated on how special and portentous were their experiences with the dolphins, almost giving it for granted that also the dolphin's experiences were as special as theirs. Others were not as easily captured by the perceived perspective of inter-species communication, voicing instead their concern for the potential for ever greater intrusion by well-meaning humans into the dolphins' lives and worlds that such attitude might have. All of them, however, concurred that being in the presence of a live cetacean, possibly in its natural environment, is a quite special, unforgettable experience.

The book is divided into four parts, followed by a set of useful appendices. Part I, 'Where we meet: the dolphin-human bond', is dedicated to the attempt of defining the specialness of the encounters between dolphins and humans. Contributors to this part of the book are Brenda Paterson, Ashley Montagu, Diane Ackerman, Bernd and Melany Würsig, Toni Frohoff, Ben White, and the late John Lilly. Part II, 'The many worlds of the dolphins: international waters', takes a look at a variety of cultural approaches to the world of dolphins, through the writings of Jim Nollman, Giovanni Bearzi, Sy Montgomery, Marcos Santos, Cathy Kinsman, Christina Lockyer, Monica Müller, Rachel Smolker, and Erich Hoyt. Part III, 'Beyond our myths: the real life of dolphins', contains contributions from Linda Hogan, Pat Weyer, Howard Garrett, Bill Rossiter, Naomi Rose, Lindy Weilgart, Betsy Smith, Leigh Calvez, Rochelle Constantine, Suzanne Yin, and Marc Bekoff. Part IV, 'Necessary kindness: our shared future', is dedicated to a look to the future, with writings from Joana McIntyre Varawa, Kathleen Dudzinski, Horace Dobbs, Cathy Englehart, Paul Spong, Helena Symonds, Brenda Paterson, and Richard Wilbur.

The issues raised in the book are many, and it is impossible in this short review to mention them all. One recurring theme, however, regards the conflict between the desire of interacting with the dolphins that possesses many persons, and the concern for our encroaching on more and more on the dolphins' lives. Exemplary, in this respect, is the contribution on dolphin-assisted therapy (DAT) by Betsy Smith, the person responsible for the first development of DAT back in the 1980s. Today, considering the turn that was taken by the events, Dr. Smith has no doubts: 'In the rush for personal pleasure, people disregarded the damage that could be done to the other species, and swimming with wild dolphins has now exploded into a worldwide business. ... Therapeutic purposes are often the justification given for this rude invasion.' In 1992, she decided to stop all DAT-research. "Perhaps - she concludes - it is time for us to leave the dolphins alone".

At the end of the book, the reader is rightly led to conclude that there is no simple answer to the question of why are whales and dolphins so special for

us, and the heterogeneity of the contributions in the book is a result of this. Certainly, governments need good reasons to justify considerable investments in term of time, energies and resources to care for cetaceans, and luckily there is plenty of those: cetaceans have important roles in their ecosystems, are flagship and umbrella species, are good indicators of

ecosystem health, and have a powerful symbolic value. By contrast, at a personal level we may have more trouble in deciding why dolphins and whales are so special for us. However, in this case the 'why' question may not be so important. If in fact they are special for us, that may be all we need to know. 📖

Calendar of events, January-June 2005

1-4 Feb - "Sustainable tourism and marine protected areas", Fuerteventura, Canary Islands, Spain. A workshop devoted to preparing a quality label for tourism destinations to highlight environmental and sustainability benchmarks.
www.coastalpractice.net

21-25 Feb - General Fisheries Commission for the Mediterranean, 29th Session, Rome.
http://www.fao.org/fi/body/rfb/GFCM/gfcm_home.htm

3-6 Mar - "MEDITERRE: Fiera dei parchi del Mediterraneo", Brindisi, Italy. Third Edition: "Environmental change and migratory fluxes."
www.mediterre.it

7-15 Mar - FAO Fisheries Meetings: Committee on Fisheries, 26th Session; Ministerial Meeting on Fisheries; Fourth Meeting of Regional Fisheries Bodies. FAO, Rome.
http://www.fao.org/fi/default_all.asp

23-25 Mar - International Workshop on marine and coastal protected areas, organised by the Inter-Islamic Science and Technology Network on Oceanography (INOC) and the Moulay Ismail University of Meknès, Meknès, Morocco.
<http://www.inoctr.org>

2-7 Apr - European Cetacean Society, 19th Annual Conference, La Rochelle, France, including a meeting on the continuation of Europhlukes
<http://web.inter.nl.net/users/J.W.Broekema/ecs/>

12-14 Apr - ASCOBANS, 12th Meeting of the Advisory Committee, Brest, France
<http://www.ascobans.org>

17-20 Apr - International Conference on Coastal Conservation and Management in the Atlantic and the Mediterranean, Vilamoura, Algarve, Portugal
<http://iccm2005.tripod.com>

21-19 Apr - "16th Global Warming International Conference", New York City, USA, including sessions on sea level rise and ecosystem shifts
www.globalwarming.net

3-5 May - "ECOSUD 2005", Fifth International Conference on Ecosystems and Sustainable Development", Cadiz, Spain
www.wessex.ac.uk/conferences/2005/eco05/index.html

31 May-3 Jun - 7th Meeting of the UNEP MAP SPA National Focal Points, Sevilla, Spain.
<http://www.rac-spa.org.tn/SPAHOME.htm>

6-10 Jun - "2005 International Ocean Research Conference", Paris, France, sponsored by The Oceanography Society and UNESCO's Intergovernmental Oceanographic Commission
www.tos.org/conference.htm

6-11 Jun - "25th EARSeL Symposium: Global Developments in Environmental Earth Observation from Space", Porto, Portugal, sponsored by the European Association of Remote Sensing Laboratories
www.fc.up.pt/earsel2005

13-17 Jun - Convention on Biological Diversity, Ad Hoc open-ended Working Group on Protected Areas, organised by the Secretariat of the Convention, Montecatini, Italy.
<http://www.biodiv.org/>

20-24 Jun - 57th Annual Meeting of the International Whaling Commission, Ulsan, Republic of Korea.
www.iwcoffice.org

27-29 Jun - International Conference on Advances in Marine Ecosystem Modelling Research, Plymouth, UK
www.amemr.info

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