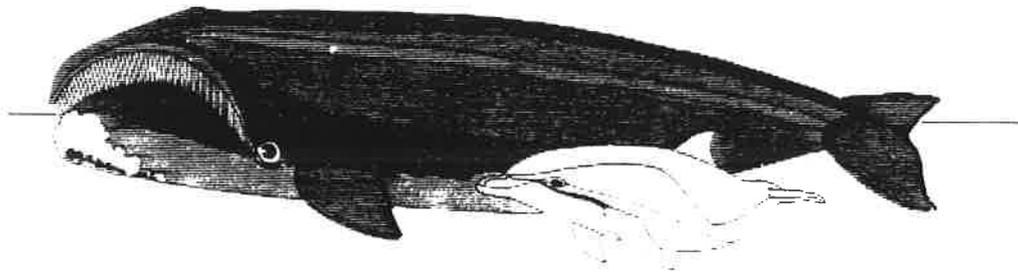


ECS Newsletter no. 12

THE
EUROPEAN CETACEAN
SOCIETY



Edited by
Peter Evans, Marjan Addink & Joke Bakker

Autumn 1991

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EDITORIAL

We continue to have difficulties extracting news or reports of fieldwork from ECS members besides those on Council. Please **especially if you are a national contact person**, can you think hard whether there is any information from your country which you think ECS members elsewhere would be interested in (including any cetacean meeting you have attended recently, or notice of a future meeting - well in advance, please). It is very easy to take for granted newsworthy events or work that one is doing. If you find of interest some of the reports provided by others here in this issue, please take some trouble to return the favour!

If you have anything to contribute for the next newsletter, please can you send it by December 1st.

Looking forward to hearing from you!

PETER EVANS
MARJAN ADDINK
JOKE BAKKER

ECS NEWS

Next ECS Conference The next annual conference of the European Cetacean Society will be held at San Remo in Italy between 20 and 22 February 1992. It is being organised by Giuseppe Notarbartolo di Sciarra and

details are enclosed with this newsletter. Please ensure that you complete the forms and return them **by the closing date** if you intend to come.

Subscription Renewal Several ECS members have still not renewed their annual subscription. If you have a subscription reminder with this newsletter, **this means you!** Please therefore will you respond as soon as possible if you wish to remain a member and receive this year's proceedings and any further newsletters. The society is run on a small budget, and we will not be able to develop unless members support it.

Annual subscription fees are £12.50 for full and institutional members and £7.50 for student members (25 years old or younger, a full-time student or unemployed). Payment can be made by UK cheque, Eurocheque or bank draft in pounds sterling. You can pay by cheque in any other currency, but you must add £6 to cover exchange charges. Payments in excess of the membership fee are gratefully received as a donation to the Society.

Please send your membership fee to:

PHIL HAMMOND

RECENT RESEARCH IN EUROPE

A RESEARCH CRUISE TO STUDY WESTERN MEDITERRANEAN CETACEANS

From 2 August to 5 September 1991, a sightings cruise to estimate abundance of cetaceans was carried out in the western Mediterranean. The main objective of the cruise was the striped dolphin, not only because this is the most abundant species in that area but also because, after the epizootic that recently killed many hundred individuals, the status of the population was unknown.

The cruise was carried out with the Greenpeace ship "Sirius" and, apart from members of that organisation, scientists from different universities and research centres of Spain, France and Denmark were involved in the fieldwork. The cruise track and protocol for data collection had been jointly designed by the University of Barcelona and the Sea Mammal Research Unit of Cambridge.

In total, more than 4,339 nautical miles were sailed across the whole western Mediterranean basin, from the Gibraltar Straits to a line drawn between Sardinia and northern Africa. The weather conditions were extremely good during most of the cruise, and this made it possible to record 278 sightings of eight different cetacean species.

As expected, the cetacean species most abundantly seen was the striped dolphin, which still appeared abundant all over the area covered, although the most important concentrations were found in deep waters off southern France and northeastern Spain. Fin whales, the species second in frequency of sightings, were concentrated in the Gulf of Lions and the Ligurian Sea, and common dolphins were mostly located in the Alboran Sea, although occasional observations of this species were also made in other areas. Other cetaceans also sighted during the cruise were sperm whales, Cuvier's beaked whales, pilot whales, Risso's dolphins, and bottle-nosed dolphins.

The data collected is currently being analysed by the University of Barcelona and the Sea Mammal Research Unit, and it is expected that it will serve to obtain the first estimate of the population size of striped dolphins and fin whales in the western Mediterranean.

ALEX AGUILAR

RECENT RESEARCH ELSEWHERE IN THE WORLD

[Editors' Note: Following the first response to our new invitation to research workers outside Europe to report on his or her studies, Bernd Würsig very kindly provided an article on the work he and his wife Melany have been conducting on various dolphin species which appeared in the last newsletter. Bernd also wrote about his field studies of bowheads and this article appears below.]

BOWHEADS

Since 1980, there has been an intensive effort to describe the behavioural patterns and ecology of the bowhead whale *Balaena mysticetus*. This whale, called Greenland right whale by the early whalers, occurs only in the northern reaches of the northern hemisphere, both in the waters of the North Atlantic (eastern arctic) and in the Bering-Chukchi-Beaufort Seas north of the Pacific Ocean (western arctic). It is an ice-loving whale, never far from ice as it rests and socializes in winter, then travels north with receding ice cover in spring, and feeds in the productive waters of the higher latitudes in summer. Most research has focused on the largest remaining population of bowheads, that of the western arctic around northern Alaska and Canada. The research has been mainly driven by the need to know whale occurrence patterns, migration routes and timing, numbers, and behaviours, all relative to oil and natural gas exploration and development activities in US and Canadian waters. Research in the arctic is expensive, and many agencies, mainly the US Minerals Management Service, have paid for the work. Although I have been mostly in charge of natural behaviour of bowhead whale research, my work was only possible with the collaboration of over one dozen researchers, covering behavioural reactions to industrial noise, bioacoustics, surveys, physical and biological oceanography, and statistical ways to analyse patterns of behavioural ecology. I single out Dr W. John Richardson, of LGL environmental research

associates, as the most powerful positive influence on the gathering of biological information on bowhead whales.

Work on bowhead behaviour is mainly done from a twin engine aircraft, circling over whales at an altitude of 457 m (1500 ft), which we have established as a minimum altitude to obtain information without bothering whales. We circle clockwise while two trained behavioural observers speak comments on surfacings, respirations, initiation of dives, orientations, spacings of animals in a group, behavioural reactions to each other, and other events into a tape recorder and onto the audio channel of a high resolution video camera which is operated by a third observer. These data are laboriously transcribed from audio and video tapes, into a standard format to be analysed by computer. For every hour spent in the air, many more hours (indeed, days) must be spent transcribing, computer coding, analysing, evaluating, and writing. We also have used boats, cliffs on land or islands, and ice promontories to describe whale actions. Boat work is especially valuable because one can obtain hydrographic and prey distribution information concurrent with behavioural descriptions. This allows for an analysis of patterns of behavioural ecology - for example, how do certain water regimes affect the distribution pattern and foraging behaviour of the whales? We have also radio-tracked bowheads throughout the Beaufort Sea of the western arctic, and have described patterns of surfacing, feeding, socializing, and travelling not only during daytime, but during night and inclement weather as well.

I restrict myself here to a brief summary of major findings on normal, undisturbed behaviour and will not detail the large body of information available on disturbance reactions to industrial activities. Bowhead whales of the western arctic spend winters near the ice edge and in large open leads in the middle to upper Bering Sea. We do not know how they spend their winters, but some feeding appears to occur, as well as much social and sexual activities, the latter towards the end of winter and onset of spring. They migrate north as the ice recedes

and breaks up, and they appear to head through the Bering Straits and into the northern regions as soon as physically possible. Much mating, as well as giving birth to calves, conceived the year before, goes on during this coastal migration. Mothers and their newborn calves are the last to migrate through the opening leads of water, possibly because the small (4 m long) calves cannot dive for more than a few minutes at a time, and can therefore not traverse under large ice floes as found more often earlier in spring.

Bowhead whales are vociferous creatures, producing loud and low tonal moans and grunts, and on the spring migration at least some whales produce sets of tones in repeating fashion. Because of the repetition, these sequences can properly be termed song, like human, humpback whale, and bird song. These fascinating songs have recently been described by my colleague Chris Clark from Cornell University. The songs may function as mating calls or male-male communicatory signals, similar to songs of humpback whales. However, presently it is not known whether only bowhead males sing. At any rate, singing has only been recorded in spring. At other times of year, bowheads are also quite soniferous, keeping in contact by low frequency moans and grunts of large variety. Their use of sounds, which travel for at least several kilometres under water, reminds us to think of herds or groups of whales not only in the sense of immediate proximity of animals, but in terms of an extended herd concept, of whales which are "in touch" by sound.

During summer, bowhead whales feed throughout the Beaufort Sea, in deep water at the edge of the permanent ice shelf, and in water as shallow as five metres deep, at times close to shore on some remote section of beach or cliff. They go, often in extended herds of several hundred animals, where abundant concentrations of small invertebrate copepods and euphausiid crustaceans have drifted with the vagaries of tide and current. How whales find these food concentrations, quite variable in time and space, is unknown. But certainly their sounds are likely to be at least a partial

answer: when one or a few find stands of prey, sound type and intensity might change (we have no direct evidence for this at present), and whales may aggregate. Bowhead whales are much more social than had been assumed before our studies; they aggregate rapidly when food has been found, and they often alternate feeding with bouts of social interactions of two to four, sometimes more, whales intertwining at the surface. Social activity can also be boisterous, with tails or foreflippers slapped onto the water surface or onto each other. Breaching and tail lobbing, by forcefully slapping the tail onto the surface after a very high throw of the tailstock into the air, may be an outgrowth of social activity, and can signal a heightened activity level. The function of social activity during non-sexual times remains unclear, but perhaps it is important for these whales to get to know each other in order to engage in important activities such as coordinated feeding, described below.

Summer is time to replenish body energy stores after relatively little feeding the rest of the year (although recent evidence indicates that some important feeding may also be occurring in the Bering Sea in winter). Bowhead whales have a thick, up to one metre, blubber layer which allows them, like other baleen whale species, to fast for up to several months. But they make up for it in summer. They spend much time feeding at the surface, in the water column, or near the bottom, wherever zooplankton occurs in cloudlike blooms. At the surface, they will spend hours and days with large mouths wide open (with a gape of up to five metres size), taking in water and food in the front and sieving the food from water at the sides of the mouth, by the longest and finest-fringed baleen plates of any of the baleen whales. They chug through the water at a constant rate, of perhaps 3 to 5 km/hour, sculling their broad powerful tails back and forth as they literally force the huge mouth against the dense watery medium. This is often done by individuals, criss-crossing in front of or underneath each other while paying relatively little attention to each other. But at other times, whales coordinate activities by swimming together, side-by-side but staggered, so that one whale is at an apex,

and others trail to either side, one-half length of a whale behind and to the side. We have witnessed up to 14 whales in such "echelon" formations. There does not appear to be any particular leader, for the apex individual may change when the echelon formation changes direction or when other whales join or leave the echelon. The formation appears strikingly similar to the echelon formations of migrating geese or pelicans. In the whales' case, I hypothesise that the wall of another whale to one's side serves as a barrier through which prey cannot escape, and therefore helps to concentrate prey for that whale. This happens all down the echelon line, with the apex whale not gaining this advantage, but perhaps having the advantage of being the first animal to cleave through a relatively undisturbed area of ocean. At any rate, these ungainly-seeming broad whales periodically get together to coordinate foraging activities, and getting to know each other as individuals, and therefore communicating by sound and touch at other times, may be of importance.

Bowhead whales also feed below the surface of the water. We surmise feeding in the water column when whales dive for up to 30 minute periods, repeatedly in the same area, and come up for only a few minutes to breathe. While at the surface, they may also defaecate, indicating that feeding has been taking place in the past several hours, and since the almost stereotypic behaviour of surfacing and diving goes on for many hours to days in a particular area, defaecations are one indication that our guess of water column feeding is correct. But of course we do not see water column feeding directly, yet it probably occurs very frequently. Another form of feeding came as quite a surprise when first observed. It consists of whales surfacing with great quantities of stick bottom mud washing off their bodies, and at times, coming directly from their mouths. We had known that gray whales do this when grubbing for inbenthic invertebrates, but the large mouths and extremely long and finely-fringed baleen of bowheads did not seem structured for dabbling in mud. Most such near-bottom feeding in bowheads occurs in water 20 m or less deep, and we surmise

that the animals do not actually suck mud into their mouths, as do gray whales, but that they feed on hyperbenthic prey just above the bottom and mud gets onto the skin, and often enough into their mouths. There is some indication from stomach contents of whales killed by eskimos (and, indeed, 20 to 40 whales are killed per year by eskimos from several northern villages), that most bottom feeders tend to be juveniles, perhaps taking less suitable or numerous prey due to inexperience in finding and securing food. As for whales skim feeding in echelon formation at the surface, there is at least some coordination of activities when whales feeding below the surface dive and surface in synchronised fashion. This does not happen all the time, but synchrony within an area of 2 to 5 kilometre diameter is strong at other times, for unknown purpose.

As late August to September comes along, ice begins forming on feeding grounds, and whales start their migration towards the west to Point Barrow, then south through the Bering Straits. The onset of migration is variable by year and parts of the Beaufort Sea, and its exact course is impossible to predict. Whales do not all have a strong "Zugunruhe", or migratory unrest. Instead, our radio tracking studies show that they may move westwards for 200 km, then stop to feed for up to a week, then move on, then perhaps stop again for several days, and so on. Usually, they move in pulses, of from a dozen to several hundred animals in presumed acoustic contact. And as the autumn season advances, more classical, and hurried migration tends to take place. Bowheads can break ice up to at least 60 cm thickness, with the top of their head above the blowhole, but they, like the smaller white and gray whales to a stronger degree, can also become stuck in heavy ice if they remain too far to the east too late in the season.

The winter is upon the western arctic, and bowhead whales are once again at edges of ice in the Bering Sea. No one has looked at them in detail in winter, and I am quite sure that, there too, surprises of behaviour and ecology await us.

BERND WÜRSIG

FUTURE MEETINGS

Ninth Conference on the Biology of Marine Mammals

The Ninth Biennial Conference on the Biology of Marine Mammals will be held from 5 through 9 December 1991 at the Chicago Marriott Hotel in downtown Chicago, Illinois. It will be sponsored by the Society for Marine Mammalogy and hosted jointly by the John G. Shedd Aquarium and the Chicago Zoological Society (Brookfield Zoo). The conference will be held on a single floor of the Marriott Hotel. The two adjacent oral presentation rooms will be surrounded by poster rooms.

The conference schedule will be able to accommodate about 194 oral presentations and 200 posters. There will be two concurrent oral presentation sessions each day, beginning on 6 December. All posters will remain on display throughout the conference. The general business meeting of the Society will occur on the evening of 6 December. The banquet will occur on the evening of 8 December.

Registration fees are US\$111 for members, US\$165 for non-members and US\$61 for students (without banquet). Registration payments should be made out to Marine Mammal Conference 1991 and sent to John G. Shedd Aquarium, 1200 South Lake Shore Drive, Chicago, IL 60605, U.S.A. Additional information can be obtained from Mr William P. Braker at the above address.

Mediterranean Striped Dolphins Mortality International Workshop, Palma de Mallorca, 4-5 November 1991

Beginning in July 1990, an unexpected major die-off of striped dolphins occurred in the Western Mediterranean. The first strandings occurred on the shores of the Valencia region, and then rapidly spread to the Balearic Isles and Catalan shores. By the end of the summer the die-off had reached Murcia and Andalusia shores, expanding

south to Algerian and Moroccan coasts and east to France and Italy, west as far as the Straits of Gibraltar. Dead animals were also found along the Atlantic coasts of Andalusia. By the end of the year, the number of dead dolphins recorded on the West Mediterranean coasts was over five hundred and added to these must be an indefinite but far greater number of animals which died far out on the high seas, whose bodies never reached the coast.

The numbers of dead dolphins created public and scientific interest and concern. Various scientific groups began to investigate the cause of this apparently unprecedented mass mortality. A morbillivirus has been identified in some dolphins. This has been found to be similar to the one which was the proximate cause of the deaths of 18,000 harbour seals in North European seas in 1988. High levels of organochlorines, abnormal density of parasites and other symptoms apparently not related to morbillivirus infection have also been detected. This has led to debate about whether factors like contamination and lack of food, were of primary importance in the mortality.

Because of this debate and the potential importance of this and other recent mass mortalities to marine mammals, the Greenpeace Mediterranean Project has decided to convene a workshop bringing together all the scientists involved in these investigations, as well as other experts and interested persons. The intention is to facilitate the exchange of ideas and information about this massive die-off of striped dolphins, the most serious known to have ever affected cetaceans. The workshop will be held in Palma de Mallorca on 4-5 November 1991. Details can be obtained from Mr Xavier Pastor, Greenpeace International Mediterranean Sea Project, Mediterranean Striped Dolphins Mortality International Workshop, Ses Rofaletes, 16-9^o J, 07015 Palma de Mallorca, Balearic Islands, Spain.

EUROPEAN NEWS

Ireland - Europe's First Whale and Dolphin Sanctuary!

On the 7th June, 1991 the Irish Prime Minister, C.J. Haughey declared Irish territorial waters a whale and dolphin sanctuary. This declaration conformed with the government's Environmental Action Programme and the Dublin Declaration on the Environment which was adopted by the European Council during Ireland's Presidency of the European Community in June, 1990. The hunting of all whale species, including dolphins and porpoises, has been totally banned, within the exclusive fishery limits of the state (200 miles from the coast), by the Wildlife Act, 1976 but this declaration reinforces the government's commitment to the preservation and protection of cetaceans in their natural environment. This declaration has been well received both within Ireland and abroad. Some reservation has been expressed by the fishing industry in Ireland due to the fishery implications, such as the new Irish tuna fishery.

It is hoped that this declaration, the first of its kind in Europe, will be copied by other maritime nations. It is worth noting that Ecuador also recently declared their 200-mile exclusive fisheries zone cetacean sanctuary, the first of its kind in South America.

SIMON BERROW

Dept. of Zoology,
University College Cork,
Ireland.

Italy - Driftnetting for swordfish likely to cause unsustainable kill of cetaceans in the Mediterranean

The uncontrolled growth of the Italian swordfish driftnet fleet, presently about 900 boats strong, is causing the incidental catch of large numbers of cetaceans, and widespread international concern for their conservation. Although an accurate

assessment of the impact is impossible due to the purposeful destruction of evidence by the fishermen, it is presumed that each year several thousands cetaceans drown in driftnets in the seas surrounding Italy alone. The greatest fraction of the incidental catch is composed of striped dolphins; however, sperm whales, Cuvier's beaked whales, long-finned pilot whales, Risso's dolphins and bottle-nosed dolphins are also caught. Of all cetacean carcasses found along the Italian shores in the past four years, for which a cause of death could be established, 83% bore circumstantial evidence of having been caught in driftnets (source: *Centro Studi Cetacei*, Milano). Pressed by environmentalist groups and by the scientific community, the courts imposed to the Italian government the ban of driftnets last year (July 1990). Yielding to a protest by the fishermen, who in August 1991 blockaded the Strait of Messina, the new Minister of Merchant Marine has now reallocated driftnetting albeit with major limitations (maximum length 2.5 km, corkline 6 m deep). However, none of these limitations are enforced and it is well known that fishermen are presently using the same net lengths and configurations as last year.

GIUSEPPE NOTARBARTOLO DI SCIARA

A new die-off of striped dolphins in the Mediterranean

Last summer, more than 200 striped dolphins were found dead or agonizing along the shores of southern Italy (Ionian coasts of Sicily and Calabria, Basilicata and Puglia) by volunteers of the *Centro Studi Cetacei*. Dolphins are still stranding to date, although it is apparent that the phenomenon is declining. Tissue samples shipped for analysis to the National Institute of Public Health and Environmental Protection in Amsterdam confirmed the presence of the same morbillivirus implicated in last year's die-off of striped dolphins in the Spanish Mediterranean. Preliminary analyses of contaminant levels performed by the Department of Environmental Biology of the University of Siena indicate that PCB contents in the dolphins stranded in the die-

off are significantly higher than in free-ranging dolphins of the same species, recently biopsied in the Italian seas.

GIUSEPPE NOTARBARTOLO DI SCIARA

ANNOUNCEMENTS

WHALE BOOKS

Apply for our new catalogue no. 10: Whales-Whaling-Arctic/Antarctic and Maritime. More than 300 books, publications and prints, including the works of v. Deinse, Fraser, Matthews, Schlegel, and Slijper.

Antiquariaat



Schoolstraat 31.2202 HD Noordwijk, The Netherlands. Tel. 01718-19498.

CAN ANYONE HELP WITH COLOUR SLIDES OF THE FOLLOWING CETACEAN SPECIES FOR INCLUSION IN A IDENTIFICATION TRAINING PACK?

Several ECS members have been very helpful in contributing to the slide-tape pack which I am assembling to help in the training of observers in species identification. There are still a number of important gaps and I would be very grateful to hear from anyone who has colour slides, of which copies could be used, of the following species:

- northern bottlenose whale, Sowerby's and Cuvier's beaked whales)
- bowhead whale
- blue, fin and sei whales
- long-finned pilot whale underwater
- false killer whale
- pygmy sperm whale
- white-beaked dolphin
- Atlantic white-sided dolphin
- Risso's dolphin
- harbour porpoise

Any person providing slides for this venture will be given a complete pack free of charge. It is hoped that the pack will comprise up to four slides each of as many European cetacean species as possible. Where possible, one picture will be an underwater shot, whilst the others should cover the key identification features including any age/sex variation.

If you can help, please provide copies or originals for me to copy by **December 1st**. Many thanks in anticipation!

PETER EVANS

LETTERS

REQUEST FOR INFORMATION ON FIN WHALE DIET IN THE MEDITERRANEAN

I am trying to collect information and data about the ecology of mysticetes (especially fin whales) in the Mediterranean Sea and, at the moment, I am particularly interested in their diet.

So, I shall be particularly grateful to anyone who would send me information about the stomach contents of specimens of these species stranded along the Mediterranean coasts.

LUCA MARINI

c/o Prof. Carlo Consiglio,
Dipartimento di Biologia,
Animal e Dell'Uomo,
Universita "La Sapienza",
Viale dell'Universita, 32,
00185 Roma, Italy

REQUEST FOR INFORMATION THAT MAY LEAD TO IMPROVED MEDICAL CARE OF DOLPHINS IN CAPTIVITY

I am working at the dolphinarium of the Holiday Park HaBloch, Germany and hope to

complete a doctorate (supervised by Prof. Kaft of the Veterinary University of Munich) reviewing new perceptions concerning the medical care at dolphinariums/zoos. This should be of benefit to dolphins and those who have dolphins in their care.

I have prepared a questionnaire which I would be grateful if those working/caring for dolphins would take the time to complete. All information provided would be treated confidentially, each dolphin assigned a number at random so that nobody can draw conclusions concerning specific individuals.

CHRISTINA SCHNUG

Deidesheimer StraB 4,
1000 Berlin 33,
Germany.

FURTHER INFORMATION ON THE STATUS OF SPERM WHALES IN THE WESTERN MEDITERRANEAN

In amplification of the article in ECS Newsletter no. 11 by Odile and Alexandre Gannier on the status of cetaceans in the Mediterranean, ECS members may be interested in the following observation.

During a couple of day visits to the area 20-40 miles east and north-east of the north-east point of Menorca this summer, we have found two and at least four sperm whales respectively. In view of this it would seem that there is a certain number of whales in the area which has soundings of 1500-2500m. According to satellite photographs that I have seen, there is an upwelling of cold water often to be found in the area which is in any case on a corner which whales would have to pass in moving from the north-east Algero-Provencale towards its westerly extension that ends in the Alboran Sea.

LORD LATYMER

c/o Rafael Blanes, 63,
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