

ASCOBANS Annual National Report

A. General information

<i>Name of party:</i> Netherlands	<i>Period covered:</i> 1 January – 31 December 2006
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<i>Any changes in co-ordinating authority, appointed member of advisory committee:</i> The co-ordinating authority is the Ministry of Agriculture, Nature & Food Quality, focal person is Drs. M.H.W (Maaïke) Moolhuijsen. Post address P.O. Box 40201 NL-2500 EK Den Haag. Telephone (+)31 70 378 5315. E-mail: m.h.w.moolhuijsen@minlnv.nl	

B. NEW measures/action towards meeting the resolutions of the 2nd Meeting of Parties

1. Direct interaction of small cetaceans with fisheries

Effects of pingers on the behaviour of North Sea fish species

To reduce the unwanted bycatch in gillnets, pingers (acoustic alarms) have been developed that are attached to the nets. In the European Union, pingers will be made compulsory in some areas in 2005 and in others in 2007. However, pingers may affect non-target marine fauna such as fish.

Therefore a study has been carried out by Seamarco and IMARES (Institute for Marine Resources and Ecosystem Studies) in The Netherlands, to quantify the effects of seven presently commercially-available pingers on the behaviour of five North Sea fish species in a large tank. The species tested were: sea bass (*Dicentrarchus labrax*), pout (*Trisopterus luscus*), thicklip mullet (*Chelon labrosus*), herring (*Clupea harengus*), and cod (*Gadus morhua*).

The fish were housed as single-species schools of 9–13 individuals in a tank. The behaviour of fish in quiet periods was compared with their behaviour during periods with active pingers. The results varied both between pingers and between fish species.

Of the seven pingers tested, four elicited responses in at least one fish species, and three elicited no responses. Whether similar responses would be elicited in these fish species in the wild, and if so, whether such responses would influence the catch rate of fisheries, cannot be derived from the results of this study. However, the results indicate the need for field studies with pingers and fish. Based on the small number of fish species tested, the present study suggests that the higher the frequency of a pinger, the less likely it is to affect the behaviour of marine fish.

Kastelein, Ronald, A., Sander van der Heul, Jan van der Veen, Willem C. Verboom, Nancy Jennings, Dick de Haan, Peter J.H. Reijnders 2007. Effects of commercially-available acoustic alarms, designed to reduce small cetacean bycatch in gillnet fisheries, on the behaviour of North Sea fish species in a large tank. Mar. Env. Res. (in press)

Effects of pingers on the behaviour of bottlenose dolphins

A basin study started in 2005 on the impact of pinger sounds (a technical mitigation tool to reduce dolphin by-catches in fishing gear) on

a captive bottlenose dolphin of the dolphinarium Bruges (Belgium).
 Nowadays there are commercial pingers in use, which produce very high-frequency sound of high density noise, which will mask echo-location sonar reflections with possible negative effects for dolphins to navigate in dangerous trawl areas and could have an opposite effect and add to bycatch in stead of a reduction.
 The research deals with the question what the threshold of the frequency density is (ΔF) and with which type of sound dolphins first meet problems in detecting a target.
 IMARES defined the test signals with the SaveWave and AquaTec pinger types as sound model as well as the acoustic measurements and calibrations of the equipment.
 The study is conducted in the mainframe of the EU co-funded project "Necessity" and executed in co-operation with Seamarco (Ron Kastelein) and the dolphinarium Bruges, Belgium.

Net modifications to reduce by-catch of cetaceans in pelagic trawling

Sea trials on net modifications to reduce by-catch of cetaceans in pelagic trawling were carried out by IMARES from 15/09/2006 to 05/10/2006 onboard FRV "Walther Herwig III" in EU-project NECESSITY (Contract No SSP8-CT-2003-501605). A 'cetacean tunnel barrier' was rigged in the front part of a 4300 meshes circumference pelagic trawl to avoid the animals from entering the aft part of the trawl and induce an escape route in front of the barrier. The research was conducted in the Bay of Biscay along the French shelf edge and started on the most northern position of the research area (position 46.43.3N and 004.36.8 W). The most southern position was 45.05.4 N and 002.25.7 W.

After initial test hauls, fishing was continued day and night, optimise chances of encountering animals and observe their behaviour against the barrier. Autonomous video recorder systems were attached to the trawl's top panel at the position of the tunnel barrier outlet. A WESMAR™ trawl sonar was attached to the centre of the headrope to detect fish entering the trawl and any other vocalisation as time reference for the video observations at the tunnel barrier. A total of 19 instrumented hauls were carried out, during all of which video and sonar recordings were collected. On night hauls the trawl was fished with an opened codend to avoid fish catches and hauling of the gear at night. A panel of 250 mm square meshes in the codend collected larger animals, which passed the barrier. The towing speed was about 4-5 knots. The ship's hull sonar system was used in passive mode to detect cetacean vocalisations and their position and heading relative to the ship and trawl. On the first night haul three male common dolphins (*Delphinus Delphis*) were caught, on that haul the video instrumentation was not fully optimised and the illumination of the target area contained saturated areas. Relatively large numbers of sunfish (*Mola mola*) were bycaught with the highest numbers in the southern part of the research area (51 in 12 hours, 11 in 2:15 hours). All newly developed underwater instruments performed as expected, no other damage than a cable failure can be reported.

Investigations of methods to reduce by-catch

Implementation of methods to reduce by-catch

Estimates of by-catch in set net and pelagic trawl fisheries

Species	Estimated number of by-caught animals	Area (ICES area or more detailed)	Notes (type of fishery, effort, seasonal variations, etc.)
Harbour porpoise	>200	Dutch North Sea coast	Presumably gillnets

2. Reduction of disturbance to small cetaceans

Impact study of a wind farm off the North Sea coast of The Netherlands

The first phase of a study on the possible impact of a wind farm off the North Sea coast of The Netherlands (close to Bergen at Sea) has

been finished. The outcome has provided reference data on abundance, occurrence and distribution of harbour porpoises in the wind farm area and two reference sites. Both boat surveys and the deployment of hydrophones (T-PODs) have been used to acquire the necessary baseline data. The construction of the wind farm has been finalised at the end of 2006. During the construction works, noise levels have been recorded and are being processed. Early 2007, the second phase of this study will start and continue for at least two years to investigate again abundance, occurrence and distribution of harbour porpoises.

High speed ferry routes

There are no longer high speed ferry routes under dutch control. In June 2006 Stena Line announced the termination of the high-speed service with the catamaran ferry *Stena Discovery* per 8 January 2007. It had been carrying the majority of the passenger traffic on the Hoek van Holland–Harwich route. This service was halted due to the excessive costs and competition from the budget airlines. The service is replaced by regular ferries.

Acoustic impacts

An interdepartmental working group is formed to discuss and survey the issue of acoustic impacts. There are plans to investigate the size of the problem in the Dutch continental shelf. There are also plans to investigate the acoustic sensitivity of Harbour porpoise in basins, but there are problems in the use of test animals.

Effects of sonar on marine mammals

In 2003 a study started on the effects of sonar on marine mammals. TNO developed software (SAKAMATA) that provides information on the marine mammals that may be expected in the operational area, as well as on the sensitivity of their hearing. SAKAMATA includes a database for the audiovisual monitoring of marine mammals. For each operational area the system will generate a so-called ramp-up scheme, that takes into account the sonar specifications, the environmental conditions and the species of marine mammals present in the area. With SAKAMATA it is possible to keep the hearing damage to marine mammals within limits.

http://www.tno.nl/content.cfm?&context=markten&content=product&laag1=178&laag2=177&item_id=580&taal=2

During military exercises of the Royal Netherlands Navy there is the conduct that, when marine mammals are visually or acoustic observed, they turn to passive sonar (which means: only listening).

http://www.minlnv.nl/portal/page?_pageid=116,1640803&_dad=portal&_schema=PORTAL&p_news_item_id=20071-14k-

There is a research project together with United Kingdom and Norway on the sensitivity of Killer whale to sonar.

http://www.minlnv.nl/portal/page?_pageid=116,1640803&_dad=portal&_schema=PORTAL&p_news_item_id=20071-14k-

Information on levels of disturbance

(e.g. seismic surveys, new high-speed ferry routes, studies about acoustic impacts on cetaceans, etc.)

There are no guidelines or new legislation to reduce disturbances to small cetaceans.

Implementation of guidelines, new legislation, etc. to reduce disturbance

3. Protected areas for small cetaceans

Special Areas of Conservation (SACs) in the Dutch sector of the North Sea

A study has been carried out by IMARES (the Institute for Marine Resources and Ecosystem Studies) in The Netherlands on request of the The Dutch government, with the aim to identify candidate Special Areas of Conservation (SACs) under the Bird- and Habitat Directive and OSPAR in the Dutch sector of the North Sea. This study has been finalized and presented to the responsible authorities. In the Dutch Continental Shelf and Coastal Waters 4 areas have been identified as marine areas: Friese Front, Klaverbank, Doggerbank and parts of the

coastal zone.

In 2008, these areas will be proposed to the EU commission as Special Areas of Conservation (SAC's) under the European Birds and Habitats Directives and will also be reported to the OSPAR Secretariat as MPA's according to the OSPAR Convention. Although it is not to be expected that these potential SACs will be designated for small cetaceans especially, they may well contribute to their protection.

Measures taken to identify, implement and manage protected areas

4. Further research on small cetaceans

Stranded harbour porpoises

In September 2006, 64 earlier in that year on the Dutch North Sea coast stranded harbour porpoises, have been investigated. This was a joint study by the Institute for Marine Resources and Ecosystem Studies and the Royal NIOZ. Of the carcasses suitable for investigation, the percentage bycatch-victims are estimated at 64-70%. The majority of the studied animals were subadult, but the estimated percentage bycatch did not differ between young and old(er) animals.

Porpoises strand on the coast the entire year round, but there are two distinct periods when higher numbers were found. The first wave of strandings was observed in March and April. These animals were healthy, freshly dead, often with full stomachs. Of these spring strandings, around 84% are estimated to have died because of drowning in fishing gear (nets). A second wave was discernable in the summer. These animals were usually unhealthy, with very little blubber reserves and empty stomachs. Drowning as a cause of death of these summer strandings was estimated to amount to only 25%. Animals unsuitable for investigation (progressed state of decomposition) were not equally distributed over the year: few in the spring period when the estimated percentage bycatch was very high, and much more rotten animals in summer period with a lower estimated bycatch percentage. When the found bycatch percentages amongst the fresh carcasses were applied to all the collected stranded porpoises including the unsuitable ones, the percentage bycatch victims during the collection period, decreased to 53-57%.

The outcome of this investigation reveals that the percentage bycatch amongst all collected animals is at least 53% (excluding animals which were suspected to be bycaught, but no conclusive evidence) and a maximum bycatch percentage (including the suspected possible bycatch victims).

The number of stranded porpoises on the Dutch North Sea coast has strongly increased in recent years. It is expected that in 2006 around 500 porpoises will strand. The increase runs parallel to the increase in numbers of porpoises observed alive off the Dutch coast. Porpoises are strictly protected under the Dutch Flora and Fauna Law, which is based on the EU Habitat Directive. The large amount and annually rapid increasing number of dead stranded animals, from which a high percentage are bycatch victims, is of great concern.

Leopold M.F. & C.J. Camphuysen 2006. Bruinvisstrandingen in Nederland in 2006: Achtergronden, leeftijdsverdeling, sexratio, voedselkeuze en mogelijke oorzaken. IMARES Rapport COB3/06, NIOZ Report 2006_5, Wageningen IMARES en Koninklijk Nederlands Instituut voor Onderzoek der Zee, Texel

(see also: www.walvisstrandingen.nl).

Implementation of schemes to use and gain information from stranded cetaceans

Overview on occurrence harbour porpoises

A historic overview has been produced on the past and present occurrence of harbour porpoises in Dutch coastal waters. This overview spans the 20th century till present, and is based on effort corrected sightings from sea-watching sites, and *ad hoc* observations. Along the mainland North Sea coast in The Netherlands (i.e. south of Den Helder) several fixed effort sites exist, providing very frequent sightings and a clear-cut seasonal pattern.

Harbour porpoises initially were winter visitors in Dutch coastal waters, but are becoming year-round visitors. Adult females with small

offspring have been observed with increasing regularity in recent years. Documented strandings show a similar trend: increasing numbers wash ashore, and more frequent strandings of young individuals. It is postulated that the same trends and seasonal patterns occur at the west-Frisian islands, which is corroborated by opportunistic sightings only.

The increase in harbour porpoises in the Dutch waters since the mid-1990s until now, is linked to a distributional shift of harbour porpoises in the North Sea rather than population fluctuations. The re-distribution may be triggered by local reductions or regional changes in principal prey available.

Scientists from The Netherlands have actively participated in the cetacean survey SCANS II, and the results have been and will be reported to ASCOBANS and elsewhere in different fora.

Research on abundance, population structure etc.

Consequences at the population level of exposure of marine mammals to contaminants

In order to assess consequences at the population level of exposure of marine mammals to contaminants, a study has been carried out using bottlenose dolphins as a sentinel species. It has shown that the annual accumulation rate of polychlorinated biphenyls (PCBs) in Sarasota bottlenose dolphins might be depressing the population growth rate.

Hall, A.H., McConnell, B.J., Rowles, T.K., Aguilar, A., Borrell, A., Schwacke, L., Reijnders, P. J. H. & Wells, R. S. 2006. An individual based model framework to assess the population consequences of polychlorinated biphenyl exposure in bottlenose dolphins. Environ. Health Perspect. 114 (suppl.1): 60-64.

Research on the effects of pollutants on cetacean health

5. Public awareness and education

Whales and Dolphins of the North Sea

In 2006 the Foundation of the North Sea published a book "Walvissen en dolfijnen in de Noordzee", written by Kees Camphuysen and Gerard Peet. This book was sponsored by the ministry of Agriculture, Nature and Food Quality, VSBfonds, Prins Bernhard Cultuurfonds, ANWB, Natuurpunt, Federal public service, Kust en zee, UNEP en CMS. It is also available in English under the title: "Whales and Dolphins of the North Sea". This book will be presented to the members of the ASCOBANS meeting.

Measures taken in the fields of public awareness and education to implement or promote the Agreement