

Agenda Item 4.3

Priorities in the Implementation of the
Triennium Work Plan (2010-2012)
Review of New Information on Bycatch

Document 4-16

**Note on the recent French studies on
by catch and pingers in the English
Channel**

Action Requested

- Take note
- Comment

Submitted by

France



NOTE:
IN THE INTERESTS OF ECONOMY, DELEGATES ARE KINDLY REMINDED TO BRING THEIR
OWN COPIES OF DOCUMENTS TO THE MEETING

Note on the recent French studies on by catch and pingers in the English Channel

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The English Channel comprised the ICES areas VIIe and VIId which are more or less a part of the North Sea area as delimited by Ascobans.

Two studies (Pingeroise and FilManCet) were conducted in that area. FilmanCet study comprises two different areas: North Brittany and Nord Pas de Calais (Figure 1). The main objectives are to quantify accidental catches of marine mammals in set nets and identify solutions to limit them. Pingeroise is a study dedicated to the set net fishery in the Iroise area at the west of Brittany. The three objectives of that study in a marine protected area was to make comparative trials with pingers, to determine the bycatch in set net fishery operating inside and around the Marine protected area and to estimate the abundance and the distribution of cetaceans.

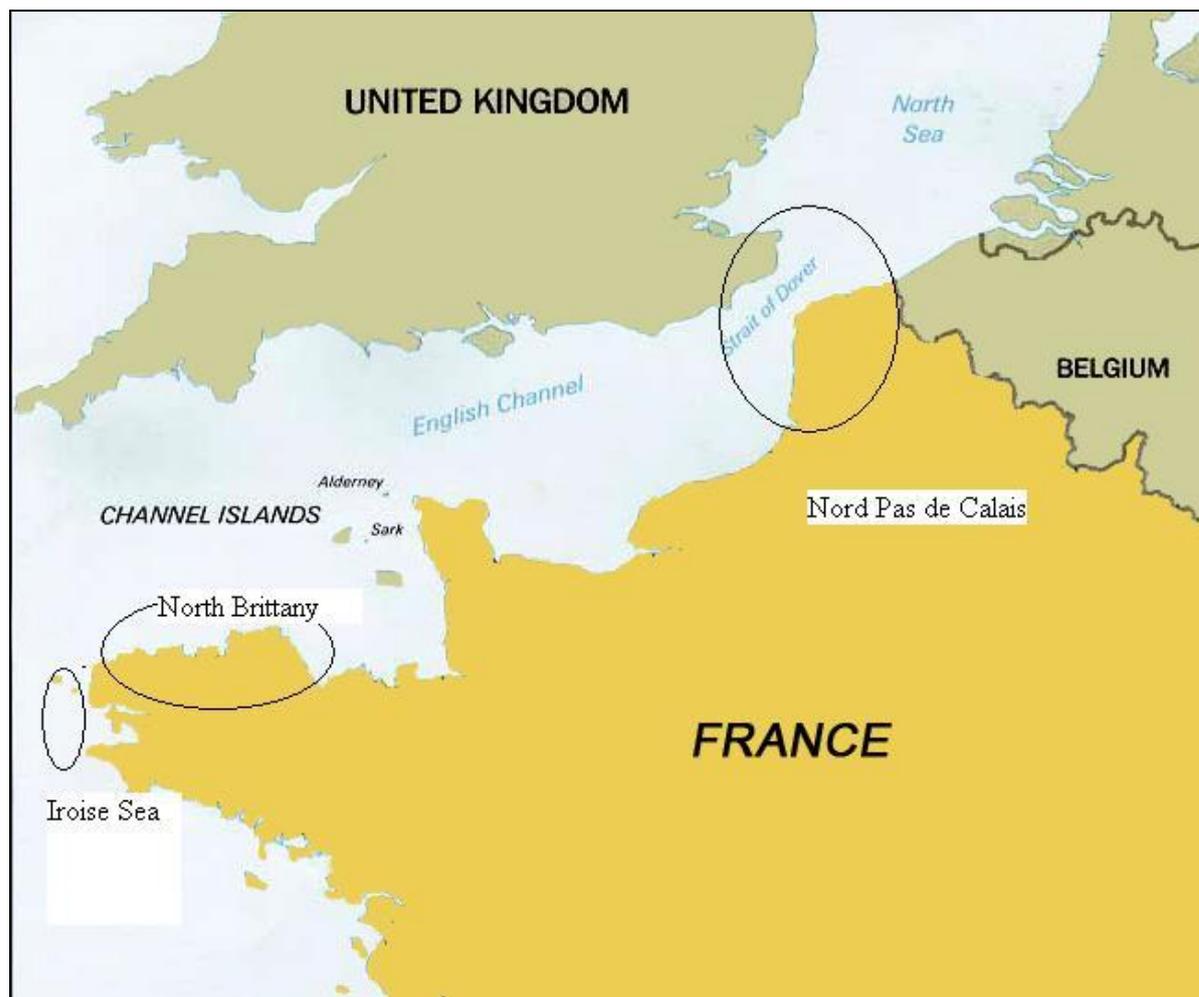


Figure 1: French areas of the bycatch study in the English Channel

1. A field experiment on acoustic deterrent devices in a large mesh net fishery off the Celtic shelf (the “Pingeroise” study)

A pinger experiment was carried out on the French trammel net fishery in the marine protected area off the west coasts of Brittany in order to compare acoustic mitigation measures for harbour porpoise and also to collect bycatch informations.

Three types of pinger devices (*Aquamark 100*, *Marexi V2.2*, *DDD02*) were used for porpoise mitigation in the area where no bycatch estimation has previously been made. The pingers *DDD02* were attached at each end of the net near the anchor. The pinger *Aquamark 100* and *Marexi V2.2* were attached to the headline of the nets and were respectively spaced by 400 m and 200 m. The EC regulation 812/2004 requires such a pilot study. Observers were deployed on board of 10 fishing vessels from the fishing harbours of Le Conquet and Audierne.

The results were analysed from 19/04/2008 to 17/04/2009, a full year's on-board observations. The nets analysed are large-meshed nets which target anglerfish.

During one year, 462 km (x 72 hours soak time) of control nets (non-equipped) and 150 km of equipped nets (with one of the three systems) were observed in order to compare bycatch, as well as physical reliability and practicability of pingers. Three harbour porpoises *Phocoena phocoena* were caught in the control nets whereas two porpoises and two grey seals *Halichoerus grypus* were recorded by-caught in the nets equipped with *Aquamark 100*. The by-catch rate was 0.00008 porpoises per km.h on the control nets and twice as many in the pingered nets or, more precisely, six times more for those equipped with the *Aquamark 100*. No statistical test could be performed due to the small numbers of bycaught individuals. The practicability, reliability and costs were analyzed for each pinger type. The results are discussed in relation to mitigation measures and regulations.

In this area the bycatch was evaluated to 11 porpoises by vessel for the one full year (2008-2009).

Table 1 : Incidental by-catches observed in the monkfish trammel nets in the Iroise sea over a one-year time period ;

Incidental bycatch (Species)	Date	Trip number/Observer code	Latitude North	Depth (m)	Equipped Net (Pinger/No)
<i>Halichoerus grypus</i>	19-avr-08	2/SD	48°11	61	Aquamark 100
<i>Phocoena phocoena</i>	25-août-08	8/YG	47°54	70	No
<i>Phocoena phocoena</i>	08-sept-08	11/MB	47°49	90	No
<i>Phocoena phocoena</i>	25-sept-08	16/MB	47°50	100	Aquamark 100
<i>Phocoena phocoena</i>	05/11/2008	26/AB	48°32	105	Aquamark 100
<i>Halichoerus grypus</i>	04/04/2009	30/ABN	48°19	55	Aquamark 100
<i>Phocoena phocoena</i>	18/04/2009	31/SD	48°17	-	No

Table 2 : Length of nets observed, numbers and rate of incidental bycatch

	Control nets	Pinger nets
Km hauled	462	150
Incidental bycatch (numbers)		
<i>Phocoena phocoena</i>	3	2
<i>Halichoerus grypus</i>	0	2
Bycatch rate (Nb/km)		
<i>Phocoena phocoena</i>	0.006	0.013
<i>Halichoerus grypus</i>	0	0.013

Table 3 : Comparison of the initial costs and inferred costs of the pingers for a 3.2 km standard length of fixed nets in the context of our experimental rhythm and in the case of a rhythm of commercial fishing.

Pingers	Number of pingers for 3.2 km	unit Cost	initial Cost	immediate Rate of replacement	Number of units of replacement during one year	annual Rate of observed increase	Experimental additional cost for one year (1)	Additional cost for fishermen for one year (2)	Real cost for fishermen after one year (2)	real Cost for fishermen after one year in the 812/2004 reg. conditions (3)
V2.2	16	60	960 €	4 units/1 month	48	300%	2880 €	5760 €	6720 €	13440 €
Aqu. 100	8	110	880 €	2 units/2 months	12	150%	1320 €	2640 €	3720 €	7440 €
DDD 02	2	330	660 €	1 unit/3 months	4	200%	1320 €	2640 €	3300 €	3300 €

(1) at the rate of one immersion per month; (2) at the rate of two immersions per month; (3) at the rate of two immersions per month and spacing imposed by the EC regulation



Figure 2: Some damaged pingers indicating an actual lack of certification of the pinger models; pinger inducing fouling of the nets

2. By-catch rate assessments in the English Channel (the “FilManCet” study)

Up to now there has been no strong investigation on by-catch of marine mammals in the French set net fisheries of the English Channel (ICES areas VIIe,d &IVc) as the EC 812/2004 regulation does not oblige the state members to put observers on board of vessels in the ICES area VII. A study named FilManCet has been started end 2008-beginning 2009 to focus on the by-catch occurring on the set net vessels (whatever the hull length is) issued from Boulogne and Dunkerque ports (fisheries in VIIId&IVc) and from the ports of North of Brittany. In this study which is conducted by the Fishing Industry, the data are made available to the scientists

of Ifremer who has prepared also the sampling scheme for observation at sea. Two observers are employed full time in the North of France coasts by the regional committee for marine fisheries (CRPMEM) and four observers are employed by the company SINAY. The observation program is carried on for 2 two years. Trials to test pingers will be implemented this year in the northern part of the VIIId area.

At the end of October 2009, a total of 358 fishing days were observed (74 fishing days in area VIIId and 214 fishing days were observed in area VIIe. Even if the coverage is not as high as planned, the observations in the North of Brittany (VIIe) are regular, covering all the months between beginning of February and end of October.

Three by-catch of cetacean has been recorded in the 1866 km of nets non equipped with pingers and hauled in the French fisheries of the English Channel. Two porpoise and one pilot whale were all captured with vessels less than 12m working in the area 26E5 with nets targeting the monkfish *Lophius piscatorius* with trammel nets immersed at a depth greater than 90 m. The harbour porpoise *Phocoena phocoena* (2 animals) were captured in June and in October 2009 and the pilot whale was recorded in October.

For the Western Channel, the by-catch rate in set nets resulting was only two porpoise for 214 days at sea having a total of 1437 km of non pingered nets hauled. The observed nets were compounded of 1062 km of large mesh nets (monkfish and rays), 270 km of spider crab nets and 105 km of miscellaneous targeted fish. The VIIe investigated area was the fishing area of vessels from Saint-Malo to Morlaix. This by-catch in a part of VIIe where some nets targeting spider crabs are used with long immersion time corresponds to one pilot whale per 160 000 km.h and one porpoise per 80 000 km.h which is 100 times lower than what has been observed on Irish nets in the Celtic Sea and 700 times lower than what has been reported in the North Sea by some authors.

Such a low by-catch rate was yet observed in the VIIe area from which includes Paimpol where another observer has observed 160 days at sea between July 2007 and November 2008 with only one by-catch of common dolphin.

Other French data yet reported for area VII indicate that a higher bycatch rate of marine mammals including harbour porpoise seems to occur in VIIIf areas in 2007 and 2008 summers. All these information indicate that by-catch rates are very variable between areas inside ICES area VII. The by-catch rate in the south of area VIIe is very low compared to other areas as VIIIf. Such an information can help to improve the EC 812/2004 regulation.

3. Cetacean surveys

Three different surveys have been carried out in the English Channel along the French coasts:

In 2005, the LEMM/Océanopolis, Brest, France) conducted an aerial survey along Brittany coasts (in Area VIIe) according to standard line-transect methodology. Tracklines were surveyed following a saw-tooth pattern (Figure 3) designed for a high-winged twin engine aircraft, equipped with bubble windows (Partenavia P68C) flying at an altitude of 600 ft (182 m) at a speed of 100 knots.

The aerial survey was conducted during the summer (August). It covered 1578 km. A total of 24 schools of harbour porpoises (54 individuals) were observed, which represented 68.6% of the total cetacean schools sightings. The encounter rate was 1.5 sightings per 100 km throughout the studied area. All the sightings were concentrated around the western part of

Brittany. In this area (377 km of aerial survey), the encounter rate peaked at 5.8 sightings per 100 km.

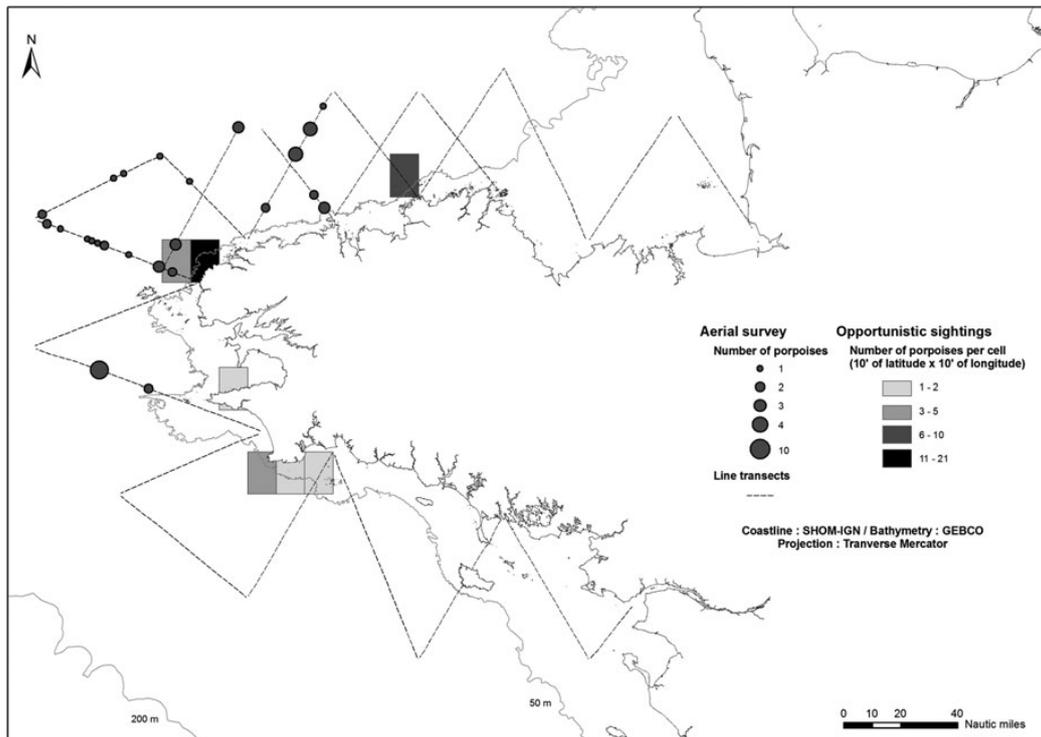


Figure 3: Aerial survey and opportunistic sightings along Brittany coasts in 2005

In 2008/2009, linked to the “Pinguoise” study, other aerial surveys were carried out by the LEMM/Océanopolis in partnership with the marine protected area of Iroise Sea (in Area VIIe). Using the standard line-transect methodology a prospected area of 7076 km² was covered by surveying 10 line transects spaced by 5 miles (Figure 4) at an altitude of 600 ft at a speed of 100 knots operated by the Partenavia P68C with bubble windows.

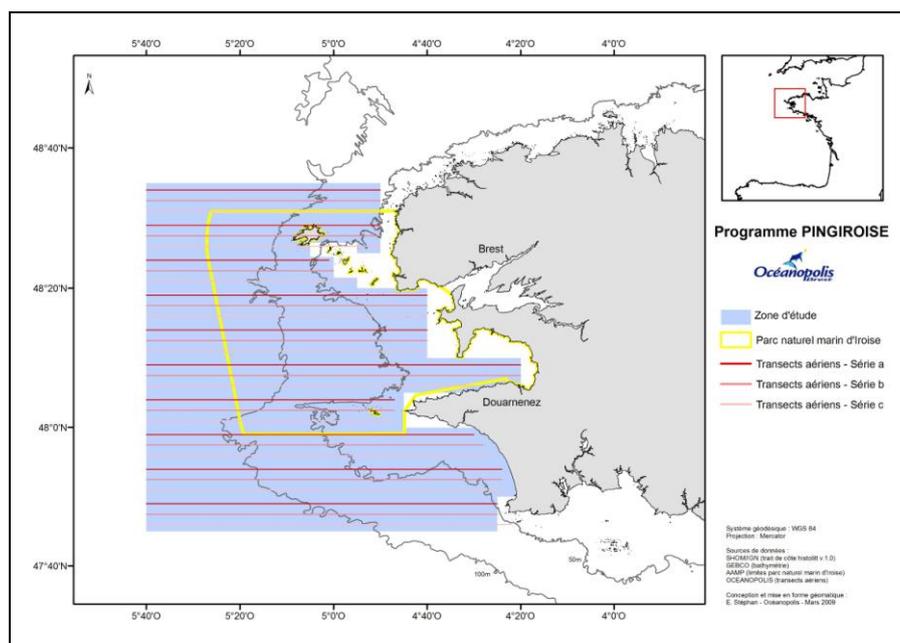


Figure 4: Aerial survey in Iroise Sea in 2008/2009

From April 2008 to May 2009, 3946 km were crossed for a total of 7 surveys. All the harbour porpoise sightings (28) occurred during the summer. The encounter rate was 3.1 sightings per 100 km. Concerning the common dolphins, 17 sightings on 27, occurred in winter with an encounter rate of 2.9 sightings per 100 km.

In 2009, OCEAMM, a non-governmental organization (Zyuzcoote, France), conducted in the framework of the study FilManCet, ship based standard line-transect surveys from the Belgian border to the Bay of Somme (in side areas VIIId and IVc). 12 saw-tooth pattern line transects were surveyed. The study area was divided in two subdivisions (Figure 5) and the surveys were carried during two seasons: March-April and August-September. A total of 282.4 km on effort was covered for the first period and 421.8 km for the second period (total of 704.2 km).



Figure 5: Ship based survey from the Belgian border to the Bay of Somme in 2009

The encountered rate for the harbour porpoise were 17.7 sightings per 100 km for the first period and 7.8 sightings per 100 km for the second, representing, respectively, 50 and 33 sightings.

4. Conclusions

Harbour porpoises, pilot whales and common dolphin are sometimes incidentally caught in set nets; The by-catch rate for harbour porpoise is very low compared to other areas (Celtic Seas or North sea). The low bycatch rate calculated in the fisheries in Brittany is probably due to a lower abundance of the harbour porpoise in the sampled area: 0.132 ind/km² in Iroise Sea (Pingiroise study) compared to 0.408 ind/km² in the Celtic Sea (SCANSII).

An other explanation could be linked to the fishing process, especially for spider crab netting.

The pinger systems as mandated by the EC 812/2004 regulation are very expensive, not always reliable and their utilization involved fishermen security concerns. The less expensive

system seems the DDD02 placed at each end of the net but the system has the greatest exclusion area. These experiments raise the problems of practicability and certification of acoustic deterrent systems as some trades have a poor technical reliability.

Furthermore, first results of the FilManCet study show that it is necessary to assess the impacts of fishing gear with an area and seasonal approach in order to find the more adapted solution to limit them.