

Agenda Item 4.1.

Review of New Information on Threats to  
Small Cetaceans

Bycatch

**Document 4.1.a**  
**Rev.3**

**Report of the Bycatch Working  
Group**

**Action Requested**

- Take note
- Give guidance

Submitted by

Bycatch Working Group



**NOTE:**  
**DELEGATES ARE KINDLY REMINDED**  
**TO BRING THEIR OWN COPIES OF DOCUMENTS TO THE MEETING**



## **INTERSESSIONAL WORKING GROUP ON BYCATCH: REPORT for AC22**

**Compiled by Peter G.H. Evans (WG Chair)**

Several issues relating to cetacean bycatch are covered in other documents tabled for AC22 and so I will not duplicate those here. They include the report of the Expert Workshop on the Requirements of Legislation to Address Monitoring and Mitigation of Small Cetacean Bycatch; and the report of the Workshop on the Further Development of Management Procedures for defining the Threshold of Unacceptable Interactions. Here I have compiled the National Summaries relating to Bycatch provided by Parties to ASCOBANS for 2014-15, with an Appendix giving the Commission's Report to the European Parliament on Member States' implementation of Regulation 812/2004.

### **BYCATCH NATIONAL SUMMARIES:**

**LITHUANIA** No incidental catches of cetaceans were recorded by observers in 2012 or 2013. In fact, the last records of harbour porpoise in Lithuanian territory were in 2001 and 2003 (though both were as bycatch). Fishing effort made with 24 small fishing vessels (OTM fishing gear) = 78,261 kw\*fishing days. Fishing efforts made with three large fishing vessels (PTM fishing gear) = 148,052 kw\*fishing days. Fishing effort overall amounted to 213,003 kw\*fishing days. An observer was on board during 9,852 kw\*fishing days. This five percent of kw\*fishing days had independent observers on board.

By implementing Council Regulation of 26.4.2004 No 812/2004 laying down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98 Lithuania run into difficulties due to two problems: The first is an economic one since observer schemes cannot be financed or co-financed under Commission Regulation (EC) No 1078/2008 of 3 November 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 861/2006 as regards the expenditure incurred by Member States for the collection and management of the basic fisheries data (OJ L 295, 4.11.2008, p. 24-33) and by other EU financial programmes. Part of the Lithuanian fleet, which operates with pelagic trawls and gillnets, is relatively small anyway. One gill-netter and 24 OTM trawlers are not suitable to take an observer on board due to lack of space on the vessel and for safety reasons. Full execution of the Lithuanian obligations on observer schemes depends upon cooperation with one fishing company, which has three vessels that are operating with pelagic pair trawls (PTM).

**FINLAND** During the observation scheme of 2006-07, no bycatches were detected or porpoises sighted by the observers. Since the 2006-07 scheme, porpoise bycatch has not been reported/detected nor have sightings of porpoises been reported by fishermen or by fisheries authorities.

**POLAND** The project “Removal of the Ghost Nets from the Baltic Sea” by WWF Poland was completed. Within the scope of the project, a total of 21,275 ghost nets were removed, amounting to 1,400 kg in Lithuanian waters and 19,875 kg in Polish waters. One of the project’s results was an interactive database of locations where there are underwater hooks (shipwrecks, rocks, other obstacles), which may cause damage to the fishing gear. The database is available in three languages – Polish, English and Lithuanian, on the website: [sieciwidma.wwf.pl](http://sieciwidma.wwf.pl). At present, there are 333 entries in the database, 233 of these were from the Hydrographic Office of the Polish Navy at the end of 2013 as a part of their information exchange. The removal of ghost nets from the Baltic Sea is planned to be continued within the framework of the Operational Programme “Fisheries and Sea”, as well as through other sources of funding – from within Poland and other Baltic states.

The project of the Marine Station of the Institute of Oceanography of the University of Gdańsk, undertaken since 2011 and involving testing in Puck Bay of “cod-pot” traps as a possible alternative to gill nets as used in cod fishing, was continued.

The Ministry of the Environment in cooperation with the Ministry of Agriculture and Rural Development had planned a project entitled “Testing Alternative Fishing Gear Protecting Harbour Porpoises and Seals as well as Birds Against Incidental Catches in the Polish Marine Areas”. However, this has not been completed for formal reasons.

The Ministry of Agriculture and Rural Development also had planned to implement a HELCOM BALTFIMPA project entitled “Fisheries Management on the Baltic Sea Protected Areas”, concerning the impact of different tools and intensity of commercial fishing on habitats and species in respective Baltic Sea Protected Areas (BSPA) as one of the project partners. The project application was submitted to LIFE+ for financing. It failed to succeed with one point, and the project was not continued further. Part of the project was included within the HELCOM Baltic BOOST project

**SWEDEN** In 2010, the SBF bought nine camera systems to place on board fishing boats, to investigate discards as well as marine mammal and bird bycatch. Four of these were placed on trawlers and five on smaller fishing boats fishing with gillnets. A large effort was put into this project but only one fisherman was willing to participate even if they were offered incentives for participating. These systems were later taken over by the SwAM who has been responsible for the task since July 2011.

Studies investigating alternative fishing gear such as cod pots and traps for species like cod, pike-perch and herring have been carried out by the Department of Aquatic Resources, the Swedish University of Agriculture Science.

SLU, in cooperation with DTU Aqua in Denmark, started a project developing cod pots in the southern Baltic. The purpose of the project is to develop the cod pots, make them more effective, and to investigate if the fishery can be economically reliable.

South Baltic Flag, an organisation funded by EU, in collaboration with Swedish Agriculture University (SLU), finished their project involving cod pots and their effectiveness as well as practicality. The goal of the South Coast Fishing Area is to develop future coastal fishing industries by initiating and supporting projects with greater integration between fish nutrition and other nutritional interests in the region. The project was carried out in close collaboration with fishermen. Many different pots were tried and the project showed that cod pots in the future may be an effective and viable fishery. One of the fishermen designed a large bottom standing cod pot with four entrances. The pot gave on average 7.7 kg per pot.



**Figure 1.** Bottom standing cod pot with four entrances

The Department of Aquatic Resources of the Swedish University of Agriculture Science, investigated what parameters do affect the cod pots catchability. Parameters taken into regards were current velocity and direction, topography, season and soaktime. Different stimuli to attract cods to the pots were also investigated. Light is a stimulus that can increase the pot's catchability significantly.

A project developing a new concept trying to catch cod in the southern Baltic started in 2014. The project was carried out by the SLU. Two pontoon traps adjusted to catch cod were developed and one of them was put in use in 2014. The traps can be effective and the project continued in 2015.

Bryhn, A.C., Königson, S.J., Lunneryd, S.G., and Bergenius, M.A.J. 2014. Green lamps as visual stimuli affect the catch efficiency of floating cod (*Gadus morhua*) pots in the Baltic Sea. *Fisheries Research*, 157: 187-192. DOI 10.1016/j.fishres.2014.04.012.

Königson, S.J., Fredriksson, R.E., Lunneryd, S-G., Strömberg, P., and Bergström, U. M. 2015 Cod pots in a Baltic fishery: are they efficient and what affects their efficiency? – *ICES Journal of Marine Science*, doi: 10.1093/icesjms/fsu230.

Lundin, M., Calamnius, L., Lunneryd, S.G., and Magnhagen, C. 2014. The efficiency of selection grids in perch pontoon traps. *Fisheries Research*, 162: 58-63. doi:10.1016/j.fishres. 2014.09.017.

Burfiske I. and Östersjön-Nytt, I. Östersjön. Sydkustens fiskeområde i samarbete med SLU. Report written in Swedish.

**DENMARK** The information below is taken from Denmark's latest annual report (2014) to the European Commission on the implementation of Reg. 812/2004, submitted in August 2015.

In relation to Council Regulation (EC) No. 812/2004, the relevant Danish fishing fleet totals 118 vessels in ICES areas III d24/III c22 and 37 vessels in ICES area III a/IV. All 155 vessels used gillnets in the course of 2014. Of these vessels, 18 are obliged to use pingers because they measure 12 metres or have an overall length above 12 metres.

### **Monitoring of bycatch**

Gillnets are believed to be the gear type that has the highest potential for bycatch of marine mammals. Therefore, in order to increase the coverage of gillnetters and develop new monitoring methods for future monitoring programmes, a video monitoring project of Danish gillnet vessels was launched by DTU Aqua (Technical University of Denmark) in May 2010 and continued until April 2011. The electronic monitoring systems (REM systems) were installed on six gillnet vessels less than 15 metres in order to test if the system is suitable for vessels with limited space. With the video footage it was possible to monitor all vessel activities. With close to 100% coverage, all catches and incidental catches were recorded according to a number of variables including season, target species, mesh sizes and fishing area. The REM system placed on the six vessels recorded incidental catch of six harbour porpoises in area III aN and one harbour porpoise in area III b in the course of the first four months of 2011.

Based on the results from the project, it is believed that a much more cost-efficient method, compared to at-sea observers, can be developed to monitor incidental catches of small marine mammals. Data can with this method be collected with high coverage, and incidental catches can be monitored from small-sized gillnet vessels (Kindt-Larsen *et al.* 2012).

In spring 2012, a second REM project was launched covering 10 fishing vessels. The purpose of this project was to further develop the monitoring of incidental catch of harbour porpoises in different net gear types, with focus on inner Danish waters (operating in ICES areas 22, 23 and 24) using CCTV to ensure full monitoring of smaller gillnetters. The set up ensured that all seasons, the most common types of gillnets used and types of fisheries, were monitored. Furthermore, it provided information about incidental catches of porpoises and

birds per season/area and supported the development of fisheries management plans in Natura 2000 sites designated for the protection of harbour porpoises. Preliminary results from the project are included here. The full reporting on the project will be in the Danish Annual Report for 2015.

Furthermore, DTU Aqua has been gathering information on the gillnet fishing effort in the Great belt (area not covered by Council Regulation EC No. 812/2004) across the year (2013) by counting all set nets from boat and land along the coast several times a year. Results from this registration document the distribution of set nets in the area, which can be used for further analysis on the effects of pingers on the harbour porpoises in the Great belt as well as an indicator on identifying hotspot areas.

Another initiative launched in Denmark, is the reporting of incidental catches of harbour porpoise in recreational fisheries as well as for vessels with an overall length less than 12 metres. Fishery inspectors are today required to report all incidental catch in the inspection report/ logbook. In 2014, no incidental catches were reported in the recreational fishery.

### **Monitoring and assessment of mitigation measures**

The pinger type "AQUAmark100" is generally used in gillnet fisheries, where the use of pingers is mandatory.

No projects on monitoring of pinger use in Danish seas have been conducted in 2015. However, the Danish fisheries inspection vessels, which are equipped with hydrophones, check for active pingers as part of their sea-going inspections.

Furthermore, DTU Aqua (Technical University of Denmark) has conducted a project to study if use of pingers cause habituation and habitat exclusion over time. Based on the study it was concluded that when the pinger AQUAmark100 was in use there was no signs of habituation. The results furthermore suggested that pingers may affect the distribution of harbour porpoises. However, there was no conclusion or estimates regarding the extent of an exclusion zone for porpoises in relation to the use of pingers.

Swimming patterns of wild harbour porpoises have also been investigated. The study showed detection and avoidance of gillnets at very long ranges, <50 m. It was unclear whether the porpoise use sonar or other senses to detect the nets at long distances.

### **Measures to control specifications when pingers are in use by fishermen**

Monitoring of pingers is a mandatory part of the general inspection of gill net vessels in Denmark. When a gear control is conducted, the inspector registers if there is a requirement for use of pingers on the gear. If there is a requirement, it is controlled if the pingers are active and used with the correct distance.

In 2014, the Danish fisheries inspection conducted a total of 21 inspections on vessels with an overall length of 12 metres or above, and 72 inspections on

vessels < 12 metres. No violations have been reported from these inspections.

Besides the direct inspections, the Danish fisheries inspection vessels, which are equipped with hydrophones, also check for active pingers when they pass by gill nets marked as gill nets with pingers. These inspections are not registered unless a violation is registered.

No inspections of other Member States' fishing vessels were conducted in 2014. Denmark recommends, that for the coming annual report for 2015, Member States indicate infringements in relation to national fishing vessels as well as other Member States' fishing vessels. Thereby, all infringement cases will be reported to the Commission.

### **Overall assessment**

At present, pingers are the only effective solution to avoid bycatches of small cetaceans. From the management point of view the implementation of pingers under Council Regulation No. 812/2004 has not always been without problems. The quality and lifespan of pingers have in many cases been fairly low and the handling onboard the fishing vessels at times difficult. However, many fishermen have over time gained experience with the use of the pingers. They report positively to the Danish AgriFish Agency about the advantages of pingers.

Furthermore, the differentiation of vessels under or above 12 metres in relation to the use of pingers can be questioned because it is not the vessel size, but the gear type used, that causes the entanglement of small cetaceans. The differentiation appears to be illogical to most fishermen and some fishermen question the obligation to spend money on pingers if a similar vessel below 12 metres fishing with the same gear in the same area is exempted from the obligation to use pingers. Indicators such as area, season, mesh size or net type seem to be more logical rather than vessel size when assessing the need for the use of pingers.

### **Pelagic trawls**

In 2014, no specific monitoring programmes for incidental catch of marine mammal took place in the Danish pelagic trawl fishery. The reason for not continuing the monitoring programmes from 2006-2008 was that the observer schemes, with a coverage up to 7%, had no incidental catch detections. Consequently, it would have required a much higher percentage coverage if cetaceans and other marine mammals were to be detected as incidental catch in the pelagic trawl fishery in Denmark. It was also considered to be a very expensive task compared to the outcome.

### **Gillnets**

In 2014, no specific monitoring according to the Council Resolution No. 812/2004 took place in the Danish gillnet fishery. Instead, observer data on incidental catches of marine mammals from gillnets have been collected under the Data Collection Regulation scheme (DCR).

As the DCR programme's main purpose is to monitor discards of fish, the

observer coverage of gillnet vessels is in general very low. The reason for this is that gillnetters usually have a low discard and therefore observer hours have not been prioritised on gillnetters.

### **Video monitoring**

Video monitoring continued in 2014 on board 12 different vessels in three different trials conducted by DTU Aqua (Technical University of Denmark). All 12 vessels were less than 15 metres of length. Overall coverage was 849 days at sea, or 8.2% of the total fishing effort for the gillnet fleet (<15 m) of 10,293 days at sea. The observed bycatch totalled 35 porpoises.

### **Assessment of bycatch**

The number of stranded harbour porpoise and the report of incidental catches in recreational fisheries do not indicate high bycatch rates. Preliminary studies of collected video data show the same trend.

Because of the small number of fishing vessels covered in earlier observation periods and projects, compared to the total number in the relevant segment of the fishing fleet, it is not considered reliable to extrapolate these bycatch numbers to fleet level. DTU Aqua (Technical University of Denmark) secured funding for REM monitoring of incidental catches of harbour porpoises in subdivision 22, with the aim to provide the basis for estimating the total number of incidental catches of harbour porpoise in the area. This project began in May 2012 and continued until autumn 2014. The preliminary results show incidental catches for areas IIIa, b and c at 15 to 29 individuals per 1000 sea days (min./max. 95 % CL). Results are strictly based on Danish data. For the North Sea (areas IV, VIID, IIIA) the number of incidental catches was 27 to 29 individuals per 1000 sea days (min./max. 95 % CL). These results are based on a combination of data from countries that submit data to ICES WGBYC, primarily Denmark and UK.

The data collected through the video monitoring mentioned above is currently being analysed with the purpose to estimate total incidental catches for ICES areas 22 and 23. These results will contribute to a more precise estimate of overall incidental catches.

### **Recommendations to the EC**

As already mentioned, other indicators such as area, season, mesh size or net type seem to be more logical when assessing the need for the use of pingers rather than vessel size. Denmark has already communicated to the Commission that the protection measures in the Council Regulation (EC) No. 812/2004 are not completely adequate, since acoustic deterrent devices are only required for vessels of 12 metres or over in overall length. Many smaller vessels use similar gillnets and could therefore potentially also have incidental catches of harbour porpoises. Thus, Denmark suggests that the future regulation should focus directly on gillnets and less on vessel size. It is vital that a uniform European protection of harbour porpoises is ensured.

Monitoring of incidental catches of marine mammals in Danish waters in 2014

has generally been low, except for vessels >15 metres in sub-area IIIaN. Gillnets are, however, still believed to be the gear type that has the highest potential for incidental catches of marine mammals. In order to increase the coverage of gillnetters and develop new monitoring methods for future monitoring programmes, a large video monitoring project of Danish gillnet vessels began in spring 2012 and continued until autumn of 2014. Results from the monitoring project are still to be fully analysed, and only part of the results are documented here. The full analyses will form part of the 2015 report for submission in 2016.

## Conclusions

In order to ensure a better protection of harbour porpoises, a future regulation should focus directly on gillnets and less on vessel size. It is vital that a uniform European protection of harbour porpoises is ensured.

It is concluded that the monitoring programme specifically monitoring incidental catches of marine mammals is still in the development phase. Based on the results from research projects, it is expected that instruments like the REM system can help to increase the monitoring coverage, thereby contributing to a better monitoring process of both Danish and other Member States gillnet vessels.

## References

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<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0578:FIN:EN:HTML>
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- Nabe-Nielsen, J., Sibly, R.M., Tougaard, J., Teilmann, J., and Sveegaard, S. (2014). Effects of noise and bycatch on a Danish harbour porpoise population. *Ecological Modelling*, 272, 242-251. doi:<http://dx.doi.org/10.1016/j.ecolmodel.2013.09.025>.

**GERMANY** Monitoring of marine mammal bycatch has been conducted in commercial fisheries in the North and Baltic Sea through marine mammal observers (sampling), in accordance with EU Regulation 812/2004 [Kock, v. Dorrien, TI].

## Acoustic Alerting Device “PAL” (Porpoise ALarm)

PAL (Porpoise ALarm) is a newly developed acoustic warning system for porpoises, which imitates the communication sound of porpoises in order to

protect the animals from fishing nets. The alarm system was developed by Prof. Dr. B. Culik (F3 Forschung. Fakten.Fantasie.,Heikendorf) together with the L-3 EALC Nautik (Kiel). The testing phase is being carried out together with the Thünen Institute of Baltic Sea Fisheries.

Harbour porpoises communicate by clicks and click-trains. Certain click-trains (“upsweep chirp”) have been identified as used to serve as a warning sound. The PAL device is a click generator, configured in such a way that it generates corresponding warning clicks with increasing frequency. A project funded by the BMELV (Federal Ministry for Food, Agriculture and Consumer Protection, now “BMEL” – “Federal Ministry for Food and Agriculture”) is being carried out by the Thünen Institute of Baltic Sea Fisheries to test the effectiveness of the device in a field study. Those studies started in July 2012. The first results have shown that the animals do understand the signal correctly, and they react with intensive acoustic inspection. However, this reaction of harbour porpoises has still to be confirmed during ongoing field experiments.

For the field study, the Thünen Institute cooperates with local fishermen equipping gillnets with the PAL system over the time period of one year. Based on those results, the study also aims at further optimising the warning system, and to enable this first step, the small-scale production of a prototype [BMEL/TI/F3: Forschung Fakten Fantasie / L-3 EALC Nautik] has taken place.

Further information can be found at: [http://www.elac-nautik.de/\\_uploads/images/pdf/L3\\_ELAC\\_Nautik\\_Protection\\_of\\_Marine\\_Mammals.pdf](http://www.elac-nautik.de/_uploads/images/pdf/L3_ELAC_Nautik_Protection_of_Marine_Mammals.pdf)

### **Alternative fishing gear**

The project “Testing and, where applicable, further development of alternative and ecosystem-friendly fishing gears for the prevention of bycatch of seabirds and harbour porpoises in the German EEZ of the Baltic Sea” (duration: December 2012 – October 2015) is funded by the Federal Agency for Nature Conservation (BfN) and conducted by the German NGO NABU (“Naturschutzbund Deutschland” / Nature And Biodiversity Conservation Union) in cooperation with international institutions (BirdLife International, National Fishery Institution, Gdynia/Poland, Institute of Coastal Research, Sweden and the Swedish Board of Fisheries).

The aim of the project is the practical test of different fishing gears as an alternative to gillnets in the German Baltic Sea fisheries. As a first step, one fishing boat will be equipped with four Jigging-Reels and one with an automated long-lining system. Further boats will be equipped with fish traps in the course of the project. With this programme, the cost effectiveness as well as the feasibility will be tested. The project contributes to the implementation of a sustainable and ecosystem-friendly fishery within marine Natura 2000 sites. The programme is accompanied by a monitoring scheme to analyse catch rates, bycatch of target and non-target species, as well as the economic feasibility of the different alternative fishing gears [Pusch, BfN; Detloff, NABU].

**THE NETHERLANDS** IMARES Wageningen UR and Marine Science and Communication (MS&C) started a Remote Electronic Monitoring project in December 2012, to investigate bycatch of harbour porpoises by the Dutch gill net fishery. This project will last until 2016, and includes the monitoring of 10 to 12 vessels. The project is funded by the Dutch Ministry of Economic Affairs.

In 2013, an impact assessment was carried out on the effects of set net fisheries on the conservation objectives for harbour porpoises in the Natura 2000 area, Noordzeekustzone. For this assessment, existing data were used regarding bycatch in set nets. Different categories of set nets were analysed; commercial and recreational. To reduce the bycatch in commercial set net fisheries on cod, seabass and mullet, the assessment recommends the use of pingers. For commercial set nets aimed at sole, a reduction in net length and a closed season from April to November are recommended. It is proposed to expand the use of these measures to the entire distribution range of the harbour porpoise and not only in the Noordzeekustzone.

### Reference

Jongbloed, R.H., Hintzen, N.T., Machiels, M.A.M., and Couperus, A.S. (2013) Nadere effecten analyse staandwantvisserij – bruinvis in Natura 2000 gebied Noordzeekustzone. IMARES Wageningen UR, report nr. C206/13.

**BELGIUM** No bycatch was reported, although the results of the investigations on stranded animals demonstrate that bycatch takes place. The Belgian report on the Regulation 812/2004 is provided as a separate document and can be accessed as part of [AC21/Inf.12.1.a](#).

The Government of Flanders (Belgium) took the decision to prohibit the recreational use of different types of gill and trammel nets on the beach as a protective measure for marine mammals in the intertidal zone. The principal goal of this measure is the protection of the harbour porpoise. This new legislation also forms an answer to the infringement procedure (DG ENV 3801/12/ENVI, procedure 2014/4014) which the European Commission introduced against Belgium concerning the adequate protection of harbour porpoises as mentioned in the Habitats Directive. The decision to ban the recreational use of gill and trammel nets on the beach was taken by the Flemish government on 13 March 2015, and it was published in the Belgian Official Journal on 25 March 2015.

**UNITED KINGDOM** The two main species affected by fishing in UK waters are the harbour porpoise and the short-beaked common dolphin. All reports to the European Commission on activities conducted by the UK under Regulation 812/2004 [<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:150:0012:0031:EN:PDF>]

], and under Article 12(4) of the Habitats Directive, provide details of the monitoring work undertaken in the UK and estimates of cetacean bycatch. The most recent reports on cetacean bycatch in UK waters submitted to the European Commission under the requirements of EC Regulation 812/2004 can be found on the Department for Environment Food and Rural Affairs (Defra) website:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18535> ].

A dedicated cetacean bycatch monitoring programme is in place and operated by the Sea Mammal Research Unit (SMRU). Fisheries research laboratories operating fisheries observer programmes in the UK also provide data, which are included in our assessment of cetacean bycatch. Whilst the UK observer scheme relies upon good collaborative links with industry, fisheries regulations have been enacted in England and Scotland to ensure that there is also a legal obligation for skippers and owners to allow observers on board when asked to do so.

The principal area of concern for cetacean bycatch remains the southwestern waters of the Western Channel and Celtic Sea. The situation in the North Sea remains unclear, as only limited monitoring has been carried out since the late 1990s. Monitoring activities are focused on these areas and, as sufficient data are compiled, more robust estimates of current bycatch rates will become available.

The latest UK cetacean by-catch report for 2013 as required under EU Regulation 812/2004 suggests an increase in estimated porpoise by-catch. However, this is not primarily due to an increase in direct observations, but rather the result of the inclusion of new data this year. This estimated increase brings with it a number of uncertainties, which the authors note have likely led to an over-estimate of porpoise bycatch. This is therefore considered as a precautionary maximum with actual numbers likely to be much lower (full details of estimates of bycatch are given in Annex 1 of the report). However, the UK remains committed to bringing cetacean by-catch down and further work is being done to reduce uncertainties in bycatch estimates. In 2013, actual observer days covered 22 trips (101 days) on pelagic trawlers and 166 trips (346 days) on static gear vessels. In pelagic gears, over time, monitoring has reduced in major trawls for herring and mackerel because observations indicate bycatch is low. Instead, observer effort has switched to smaller pelagic fisheries, which have not been routinely sampled in the past. Monitoring continues at a relatively high level in the bass pair trawl fishery, which has a known dolphin bycatch issue but where pinger use appears to be effective. In static gear fisheries, roughly 82% of sampling took place in the south and west of the UK (Subarea VII), and around 18% in the North Sea (IV), again where there have been known bycatch issues. Among the static gears sampled, 25 days were categorised as drift nets, and 321 as fixed nets.

In simple terms, bycatch estimates are calculated on the basis of the number of animals observed caught per fishing operation (haul), scaled up to fleet level by estimating actual fishing effort (number of hauls) and applied to the reported number of days at sea by fishery stratum. The most recent figures for 2013

estimate levels of porpoise by-catch by the UK fleet in UK waters to be between 1600-1900 individuals per year (18 actual observed porpoise bycatch incidents). This is significantly higher than in previous years where levels had been estimated at c. 800 individuals per year. However, bycatch estimates for other species have remained consistent with previous years; c. 320 common dolphins and c. 470 seals.

There are several reasons for this estimated increase in harbour porpoise bycatch. Firstly, all UK gillnet fisheries have now been included in the assessment, whereas in previous years estimates were only included for those fisheries where sufficient sampling had been undertaken. Extrapolation of observed bycatch rates to all peripheral areas and the assumptions made relating to fishing effort introduce a greater degree of uncertainty into the 2013 estimates. It is also likely that bycatch has been overestimated in some areas, notably ICES area VIIId where observed bycatch rates remain lower than other Area VII sub-areas. Secondly, porpoise bycatch rates may have actually increased in some areas over the past decade – although the trend is difficult to quantify at this time. Thirdly, by-catches have been observed in some fisheries (e.g. drift nets and light gillnets for flatfish such as sole) that were not previously seen due to a lower sampling frequency. These métiers were excluded from previous estimates.

### **Efforts to reduce bycatch**

During 2013, investigations on methods to reduce bycatch have focused on the continued monitoring and testing of acoustic deterrent devices (ADDs), or 'pingers'. SMRU has continued to monitor the bycatch of common dolphins in the bass pair trawl fishery, which is using DDD pingers on a voluntary basis. Bycatch rates in this fishery continue to remain at very low levels compared with historic rates prior to the adoption of pingers. SMRU has also continued to monitor the use of DDDs in the offshore gillnet fleet that operates in the South West of England in order to maintain an overview of longer term effects of pingers on cetacean bycatch rates and seal depredation levels in these fisheries. A new pinger model (Fishtek 'banana pinger') was also tested by the Cornwall Wildlife Trust in conjunction with Fishtek and local fishermen from the inshore fleet during 2013. The results of this on-going work can be found at [http://www.cornwallwildlifetrust.org.uk/livingseas/dolphin\\_pinger\\_trial](http://www.cornwallwildlifetrust.org.uk/livingseas/dolphin_pinger_trial)

A number of research projects have been carried out by the Scottish Government, including a recent project that concluded at the end of 2013 entitled 'Evaluating and assessing the relative effectiveness of non-lethal measures, including Acoustic Deterrent Devices (ADDs), on marine mammals'. The aim of this project was to carry out a comprehensive literature and data review on the capabilities of current and developing non-lethal measures for deterring marine mammals. This should help answer questions on design, effectiveness, best practice and impacts of these devices on marine mammals. The final report will be available later in 2014. However, further details on this and other cetacean bycatch avoidance research undertaken by the Scottish Government can be found at:

<http://www.scotland.gov.uk/Topics/marine/marineenvironment/species/1988>

## 7.

Additional information on potential incidents of bycatch is also provided through necropsies carried out under the UK Cetacean Strandings Investigation Programme (CSIP).

**FRANCE** Cetacean bycatch monitoring is in place, operated by DPMA and IFREMER, and reported yearly. The national programme OBSMER dedicated to all the observations on board includes the English Channel set net fisheries, which is not a requirement of European regulation. This programme is implemented by the Ministry of Agriculture and Fisheries (Direction des Pêches Maritimes et de l'Aquaculture), and IFREMER. All the results are now included in the national report for regulation 812/2004. For set net and pelagic trawl fisheries, observers for the EC regulation (n° 812/2004) are deployed for vessels greater than 15 m and through pilot studies for vessels less than 15 m. However, it was not always possible to put observers on boats less than 8 m for safety reason.

A programme named INPECMAM has been funded and agreed between the fishermen, the Iroise Sea MPA, University of Brest, the National Natural History Museum and Oceanopolis to work on the bycatch of marine mammals (cetaceans and seals) and the depredation in set net fishery in the Iroise Sea with also a social approach on these issues. The low result in observed bycatch does not allow, statistically, for an extrapolation to estimate overall bycatch and so the strategy adopted is to continue such research on these topics focusing on the areas and periods of greatest risk.

During the year 2012, the effort dedicated to observation on board of vessels for the European Regulation 812/2004 represents 199 days at sea for static gears in ICES area VIII, and 158 days at sea for towed gears in ICES areas VII & VIII. In addition, 268 days at sea were dedicated to all kinds of set nets in areas concerned with pingers (zones IV and VII). Overall, 625 fishing days were monitored at sea during 2012 for the ASCOBANS area. The monitoring scheme contained a higher number of days by assuming a coverage rate of 10% throughout the year for trawlers less than 15 m, 5% for trawlers of 15 m or more, and 1% for vessels less than 15 m operating with set nets.

In the ASCOBANS area, two species of cetaceans were caught incidentally during 2012: common dolphin (19 animals) and harbour porpoise (6 animals). The bycatch was estimated on some segments of fleets. An estimate of 172 common dolphins was obtained for pair midwater trawling in the area VIIe,h, and an estimate of 77 common dolphins for set nets in Western Channel. An estimate of 61 harbour porpoises was calculated for set nets with vessels less than 15 m in area VIIIb, and 22 harbour porpoises for netters greater than 15 m and working with large mesh size. However, the coefficients of variation are high on these estimates.

No bycatch of cetaceans has been observed in some segments well covered by

observations. This was the case for the tuna pelagic trawl fishery in area VIII, and pelagic trawling on small pelagic species in area VIIIb. No estimate has been possible in some fisheries with set nets in the English Channel, nor in the south of the North Sea. Analyses made on strandings demonstrate that the incidental catch of common dolphin exists in some fisheries in the Bay of Biscay (van Canneyt *et al.*, 2013) - fisheries which are not well or sufficiently observed at sea.

Observations conducted during 2013 have recorded 12 common dolphins and four porpoises in pelagic trawls. Non-mandatory observations are still continuing on all set netters in the area dedicated to pingers by the regulation. The 2014 national report has been delivered to EC.

It would be useful to improve the monitoring scheme to obtain enough samples in the fisheries potentially contributing cetacean incidental bycatch, such as PTM seabass trawling and set nets in the Bay of Biscay. In the North Sea/eastern English Channel, an effort should be made to increase the sampling of vessels.

An additional study over the last three years was also achieved. This study was included in the national report for Reg. 812/2004. A period of three years offers the advantage to increase the amount of observations for an analysis. The fisheries having the higher bycatch rate per cetacean species have been ranked, but some samples remain low. A list of métiers having no cetacean bycatch after at least 50 observed days was also established. These results should help to improve the regulation.

In 2014, a new synthesis on interactions between cetaceans and set nets in France was conducted in order to provide some information to stakeholders in preparing the new European regulation. This synthesis uses all the observation data available over the years 2008 to 2013. A final report was made available in May 2014 (Morizur *et al.*, 2014). All the observations were done on nets without pingers and they were pooled to provide an average bycatch rate of marine mammals by fleet. Estimates of annual bycatch were calculated for each fleet by using the fishing efforts of the year 2012. Harbour porpoise was the most common bycatch in set nets. An average annual removal of 600 harbour porpoises was estimated from set net fisheries operating in the Bay of Biscay and the Channel; other species recorded in set nets were mainly the common and striped dolphins as well as the grey and harbour seals. Based on 14237 set net hauls, which may not well representative of the whole fishing net operations, 80% of the French bycatch of porpoises occurred in the monkfish and sole trammel net fisheries of areas IV, VII and VIII. Gill nets in area VIII were responsible for the remaining 20%. Most harbour porpoise by-catches occurred in the 80-110 metres depth range. Some level of spatio-temporal variation in bycatch rates was found; highest rates were found in the Bay of Biscay in winter and in the Channel and Celtic Sea in the summer, consistently with the species seasonal change in distribution. Bycatch rates of harbour porpoise did not differ between trammel nets and gill nets. These results show that the EC regulation needs to be improved to include more clearly trammel nets in the mandatory list of set nets requiring pingers and/or observations on board.

Besides the on-board observer programme conducted by IFREMER in fulfilment of Regulation 812/2004, Observatoire PELAGIS attempted to derive estimates of total common dolphin bycatch from an analysis of the subset of the French and UK stranding data composed of all individuals showing by-catch marks. This analysis suggests that total bycatch for this species in the Bay of Biscay, southern Celtic Sea and western Channel, would be about ten times higher than reported by observer programmes conducted under regulation 812/2004 in the same area (Peltier and Ridoux, 2015). The difference between the two approaches would mostly result from the observer programmes being focused on a limited number of fisheries and the stranding response schemes receiving by-caught animals from all fisheries with no distinction. It is proposed that this kind of analyses would usefully complement observer programmes by providing a broader view of the phenomenon.

### **Implementation of methods to reduce bycatch**

Since 1<sup>st</sup> January 2012, a French ministerial regulation requires fishermen to report marine mammal bycatch with the objective of contributing to scientific knowledge. The aims of this regulation are not to produce bycatch estimates but they should involve fishermen through a scientific programme to obtain information of the species composition of catches, their spatial and temporal distribution, etc. At the end of 2012, a pilot programme with four fishing ports (Atlantic and English Channel coast) began to assess the possibility of land bycaught animals for biological samples (diet, genetic, age, reproductive status, contaminants). This programme is coordinated by PELAGIS/ULR (CRMM).

### **Reference**

Morizur, Y., Gaudou, O., and Demaneche, S. 2014. Analyse des captures accidentelles de mammifères marins dans les pêcheries françaises aux filets fixes. <http://archimer.ifremer.fr/doc/00209/32016/>

Peltier, H. and Ridoux, V. 2015. Marine megavertebrates adrift: a framework for the interpretation of stranding data in perspective of the European Marine Strategy Framework Directive and other regional agreements. *Environmental Science & Policy*, 54: 240–247.

# **APPENDIX 1 COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on the implementation of certain provisions of Council Regulation (EC) No 812/2004 laying down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98**

## **INTRODUCTION**

COUNCIL REGULATION (EC) 812/2004 [1] lays down measures for the reporting of incidental catches of cetaceans in defined fisheries and measures to mitigate against such catches. The Regulation identifies fisheries where the use of acoustic deterrent devices (ADDs) is mandatory, the technical specifications and conditions of use of these devices, and fisheries where observer schemes to obtain representative data have to be conducted in order to assess the extent of bycatch of cetaceans. Member States are responsible for enforcing the use of ADDs and monitoring their efficacy over time, as well as implementing monitoring schemes according to the guidelines under this Regulation.

Under Article 6 of the Regulation, Member States must send the Commission an annual report on the implementation of certain provisions of the Regulation. In accordance with Article 7, the Commission, after receiving the second of these reports from Member States, must produce a Communication to the European Parliament and the Council on the operation of this Regulation[2]. Following the submission of the fourth annual report by Member States, the Commission must present an updated Communication to the European Parliament and the Council. These Communications must be based on the assessment of Member States reports and also take account of assessments made by the International Council for the Exploration of the Sea (ICES) and the Scientific, Technical and Economic Committee for Fisheries (STECF). This document is intended to meet the Commission's second reporting obligation.

This Communication contains a summary of the information collected during 2007-2009 and submitted by Member States to the Commission, in accordance with Article 6 of the Regulation. ICES and STECF were also requested to analyse the scientific content of the national reports, the implementation of the Regulation and any additional scientific reports provided by Member States. The conclusions from this analysis by ICES and STECF are reflected.

## **ANALYSIS OF MEMBER STATES REPORTS**

Reporting by the Member States under Regulation (EC) 812/2004 has improved since the first Communication from the Commission to Council and the European Parliament in 2009. However the information delivered by Member States continues to be variable in content and format. Both ICES and STECF point out that the inconsistencies found in the information provided by Member States

limit the extent of any assessment as to how the Regulation is being implemented. Only some Member States (Ireland, Netherlands, Spain, Seden and UK) have voluntarily adopted the proposed format for reporting suggested by ICES and STECF. This standard format was formally adopted by Member States in May 2010. This should improve the consistency of future reporting.

Among the twenty-two coastal EU Member States all but one has provided at least one annual report. Six Member States (Belgium, Cyprus, Greece, Malta, Bulgaria and Romania) have informed the Commission that they have no reporting obligations under the Regulation. This is either because their fleets did not carry out any fishing operations which fall under the scope of Annex I (the use of ADDs) or Annex III (onboard observers) of the Regulation or in the case of Bulgaria and Romania because their fishing operations take place exclusively in the Black Sea, which is not covered under the Regulation. Denmark, Estonia, Finland, France, Ireland, Italy, Latvia, Netherlands, Poland, Spain, Sweden and UK have submitted reports with onboard observer data. All but one has provided some estimates of incidental catches.

Despite evidence of improvement, however, it is evident to the Commission that many Member States still appear to have difficulties with the implementation of the Regulation and in particular with the requirements set out below:

### **Obligation to use ADDs**

Eight Member States (Denmark, Estonia, France, Germany, Ireland, Poland, Spain and UK) currently have fisheries in which ADDs are mandatory. These Member States have reported on their usage through direct monitoring by control and enforcement agencies, interviews with fishermen and through pilot studies. In general, the level of implementation with the provisions in Articles 2 and 3 of the Regulation is not clear and there are indications from the national reports that the actual usage by vessels and the monitoring carried out by Member States remains unsatisfactory.

All of the Member State using ADDs have concluded that further work is needed to improve the reliability, effectiveness and practical handling of the current devices. These problems have led virtually all of the Member States affected to comission studies to monitor and assess the use of ADDs and improve their practical handling and technical characteristics in cooperation with several manufacturers. Associated safety hazards with the use of ADDs have also been considered but reports from Member States indicate that these can be largely overcome through improved design, better quality control at supplier level and also through changes to operational practice. Testing of new types of ADDs that have become commercially available has also been carried out by some Member States and at least one of these new devices has given encouraging results. There has been a good level

of industry input into all of these trials. Such collaborative research should be continued.

The annual cost of deploying ADDs also remains an issue. This can vary considerably in relation to the technology employed in the devices and the rate of loss of ADDs in specific fisheries. The costs are considered to be significant for static net[3] fisheries and these costs combined with poor reliability and negative impacts on fishing operations have discouraged the use of ADDs and compliance with the Regulation. Several Member States have, however, instigated grant aid schemes or provided fishermen with ADDs free of charge to offset the costs and to try and increase usage. This has helped in some cases but is not uniform across Member States and seems only a short-term solution.

Several Member States have studied the effects of increasing the spacing between ADDs mounted on static nets, concluding that effectively doubling the spacing does not appear to lower their effectiveness. By doubling the spacing, costs to fishermen can be reduced. Article 3 of the Regulation allows Member States to temporarily authorise the use of devices different to the specifications laid out in the technical annex of the Regulation and this does include increasing the spacing of devices. At least two Member States have availed of this derogation.

There is still ambivalence towards ADDs from NGOs due to perceived habitat exclusion and environmental noise effects but there is no scientific evidence of these effects. Habituation has also been cited as a reason that ADDs do not work by NGOs although again there is little scientific evidence that this is in fact the case. ICES has concluded that such effects are unproven and it seems reasonable to assume that as ADDs are effective at reducing incidental catches of harbour porpoises, this outweighs any potential collateral effects.

An additional issue of importance in relation to ADDs is the development of systems to detect if they are functioning correctly. Control and enforcement agencies in a number of Member States have indicated that the provisions of the Regulation are practically unenforceable given the difficulties in testing whether devices are operational or whether fishermen have actually deployed them on gear. The German and Danish authorities have developed a monitoring device which permits inspection of ADDs at sea. Further assessment of whether this device could be adopted should be undertaken by the control authorities of Member States.

### **Obligation to design and implement observer schemes**

This obligation has been fulfilled by most Member States through a combination of dedicated monitoring programmes, pilot projects, observations carried under the Data Collection Framework (DCF) and from various other scientific and technical trials. As per the requirements of Article 5 of the Regulation it is apparent that suitably

qualified observers have been used in all cases.

Denmark, France, Latvia, Poland, Spain, Sweden and UK all reported on observed fishing effort above the levels required under the Regulation. Denmark, Finland, France, Ireland, Netherlands, Slovenia and UK also achieved the required level of coverage in both  $\leq 15\text{m}$  and  $\geq 15\text{m}$  vessel groups. Estonia, Portugal and Germany have achieved only low coverage of their fisheries for a variety of reasons relating to cost and availability of observers.

A series of constraints limiting observations and their utility are reported by a number of Member States and also by ICES. These difficulties concern (a) the deployment of observers, (b) achieving fishing effort coverage as required by the Regulation, and (c) administrative and economic constraints.

1. Some Member States report difficulties accessing vessels due to a lack of notification to observers of vessel movements from producer organisations or individual fishermen; misunderstanding of the role of observers leading to lack of cooperation from fishermen; lack of space preventing observers going to sea, particularly on small vessels; or, lack of manpower (single observers) making sampling difficult when observers are required to combine sampling of discards with monitoring cetacean bycatch.

2. It is clear from even a cursory review of the reports under the Regulation that very few Member States have managed to achieve estimates of incidental catches with a coefficient of variation (cv)[4] anywhere near to 0.3 as required in the Regulation. This is primarily due to the low level of bycatch events observed making validation of results obtained statistically difficult. Achieving a cv of 0.3 requires a high sampling coverage which is expensive and according to ICES is not realistic in a situation where incidental catches are sporadic (i.e. bycatch events are rare meaning a large proportion of hauls need to be observed relative to the total number of hauls carried out in the fishery to have any reasonable chance of observing such events). Member States who opted to observe the required fisheries at a level of 5% of fishing effort using pilot monitoring schemes, as allowed for under the Regulation, also reported difficulties in complying fully with this provision. In some cases Member States had to monitor a large number of vessels to meet the 5% target or observe multiple fisheries in which their vessels were involved. This generally resulted in some fisheries being observed at or above the 5% level while others observed at levels well below 5% or not at all.

3. Some Member States pointed out that the level of observations carried out to date can no longer be supported financially in the future, particularly considering the current economic conditions. Many Member States have concluded that it is not cost effective to have dedicated observer programmes solely for this Regulation and have therefore used other observer programmes.

## **INCIDENTAL CATCHES**

Based on the reports submitted incidental catches are estimated as being low in many of the fisheries observed, although in most cases it is difficult to extrapolate observed catches to estimates of total catches at fleet level. Therefore accurate estimates of incidental catches levels are not available. Both ICES and STECF, however, do highlight that significant incidental catches have been consistently reported in several fisheries. France, Netherlands and Spain reported incidental catches of cetaceans in static net fisheries operating in ICES subareas IV, VII and VIII. The incidental catches were composed mainly of harbour porpoise, common dolphin and striped dolphin.

Observations made for pelagic trawls operated by France and Spain reported incidental catches of common dolphin in ICES subareas VII and VIII. For the same areas, France reported the incidental catch of four long-finned pilot whales. Observations made in the French fisheries in the Mediterranean Sea reported the incidental catch of three striped dolphins and one bottlenose dolphin.

The remaining Member States reported no bycatch in any of the observed fishing fleets requiring monitoring under the Regulation. This was commonly explained due to minimal interaction between cetaceans and the fisheries involved, low observed coverage of the fisheries relative to actual fishing effort, or a lack of coverage of fisheries where incidental catch tends to be significant i.e. the wrong fisheries are being monitored. In this later case, this is due to fisheries with a known bycatch not being required to be monitored under the Regulation as in these fisheries the use of ADDs, designed to mitigate against bycatch, is mandatory.

Several Member States did go beyond the reporting requirements under the Regulation and presented results of observations of incidental catches registered in fisheries not required to be monitored under the Regulation. These results showed occurrences of bycatch of cetaceans in static net fisheries in the North Sea and Celtic Sea (harbour porpoise, common and striped dolphin) as well surface longline operations in the Mediterranean (long-finned pilot whale).

Member States also reported occurrences of stranded marine mammals, whose death was reported as being associated to fishing gears. ICES, point out that care must be taken not to over-interpret data from stranded animals, and that protocols for establishing the real cause of death must be put in place. Stranded animals diagnosed as having died in fishing nets may alert managers to the presence of a potential issue, but should not be used to try to extrapolate the scale of such incidental catches.

## **ICES & STECF ADVICE**

The information on cetacean absolute abundance in EU waters, including the Mediterranean Sea, is extremely heterogeneous and

unsatisfactory from a management perspective. In 2010 ICES[5] carried out an assessment of the population status of the cetacean species concerned by the Regulation based on best available information. Table 1 below summarises the findings of this assessment.

**Table 1.** Population Status of main cetacean species concerned by Regulation 812/2004

Species	Area	Population Status
Harbour Porpoise	Baltic Sea	Very low – critically-endangered
	Kattegat, Belt Seas	Unknown – cause for concern
	Atlantic (North)	Stable or Increasing – evidence of migrations from other areas
	Atlantic (South) – Iberia	Low abundance - major cause for concern
	North Sea	Stable - evidence of southwards migration
Common Dolphin	Mediterranean	Unknown - sharp decline reported over the last 30-40 years
	Atlantic	Relatively stable
	North Sea	Stable - small population
Striped Dolphin	Mediterranean	Unknown – vulnerable
	Other Areas	Unknown - thought to be relatively stable
Bottlenose Dolphin	Mediterranean	Unknown – several sub-populations in coastal areas classed as endangered
	Other Areas	Unknown - thought to be relatively stable

From this table it can be seen that one population of harbour porpoise in the Baltic is critically endangered, while a further four are at a level that is described by ICES as of being cause for concern, either because there are indications of a decline in the population, or because there is a lack of information. The harbour porpoise population in the Black Sea, which is not covered by the Regulation, is also considered to be under threat. The other populations are considered to be relatively stable but that is not to say that incidental catches of these species are not impacting on the populations and the nature of trends that would have occurred in the absence of the regulation is unknown.

Following this assessment, ICES[6] attempted to carry out an analysis of the total incidental catches of cetaceans by management region and whether at their current levels they impact on populations. Due, however, to the incomplete and inconsistent nature of the data available ICES found it only possible to assess bycatch levels in a few fisheries. Existing information on cetacean distribution and abundance

available cannot be used to evaluate the effects of the Regulation. Nonetheless ICES concluded that in the following fisheries incidental catches were of concern so monitoring and mitigation measures should be continued or in the case of the Black Sea included under the Regulation:

- harbour porpoises in static nets in the Baltic, Kattegat, North Sea and Skagerrak, Atlantic and Black Sea;
- common and striped dolphins in static nets in the Atlantic and Black Sea;
- common dolphins in pelagic trawls for bass and tuna in the Atlantic; and
- bottlenose dolphins in the Mediterranean.

In its assessment of reporting under the Regulation, ICES advises adopting a more flexible approach to monitoring focusing on areas where incidental catches of cetaceans are known to be high, instead of monitoring fisheries with very low observed incidental catches and/or low levels of fishing effort.

Both ICES and STECF have identified several gaps in the Regulation that should be addressed. Currently the Regulation does not include a requirement for Member States to report for the Black Sea, where there are clearly bycatch issues. The activities of vessels < 15m that are known to be responsible for incidental catches are not adequately covered. Under Article 4 of the Regulation Member States are requested to collect scientific data on vessels < 15m through scientific studies and pilot projects. While some Member States have carried out such studies and projects, monitoring remains poor. In this regard Member States are obliged under the Habitats Directive[7] to monitor incidental mortality of protected species, including cetaceans, so all fisheries concerned should be included in the scope of the Regulation.

Under Article 12.4 of the Habitats Directive, Member States are required to establish a system to monitor the incidental capture and killing of strictly protected animal species, such as cetaceans, listed under Annex IV of the Directive. Relevant information forms part of the reporting requirements under Article 17 of the Habitats Directive and is currently contained in an EU database[8]. ICES assessed the data contained in this database and looked for linkages between data collected under the Habitats Directive and under the Regulation. ICES concluded that there was a large degree of duplication between the two and very little evidence of coordination among Member States activities between addressing obligations under the Habitats Directive (area based management and species protection including bycatch monitoring) and actions undertaken in fulfilment of the Regulation. Furthermore the Habitats Directive is focused on area based management through the creation of protected areas, yet in most cases

this is unlikely to be an effective means of addressing conservation issues for cetaceans, most of which range over very wide areas and are caught in many different fisheries. ICES therefore advised that it may make sense to review the national arrangements to monitor incidental catches under the Habitats Directive and their coordination with the Regulation.

ICES and STECF have pointed out the need to extend monitoring under the Regulation to include bycatch of pinnipeds, seabirds and sea turtles. ICES have highlighted the significant incidental catches of loggerhead turtles reported in a wide range of fisheries in the Mediterranean and seabirds in longline fisheries. Again Member States have obligations under the Habitats Directive to monitor incidental catches of these species.

ICES have recommended that clear definitions of the gear types to which the Regulation applies should be developed and included in the Regulation as it is currently unclear whether certain types of fishing gear known to interact with cetaceans are covered by the scope of the Regulation (e.g. trammel nets).

## **RESEARCH CONDUCTED**

OVER THE PERIOD 2007-2010, A NUMBER OF MEMBER STATES CARRIED OUT STUDIES WITH THE OBJECTIVE OF DEVELOPING NEW MITIGATION MEASURES OR IMPROVING THE CURRENT ADDs, improving monitoring programmes including the use of novel monitoring equipment (CCTV) and improving knowledge on the distribution of cetaceans and interactions with fishing operations. These studies were either developed at national level or in collaboration with other Member States. The EU funded a major research project called NECESSITY that specifically looked at mitigating incidental catches in pelagic trawl fisheries.

In addition to these studies, a great deal of research work has also been undertaken globally, recognising the importance of the issue of incidental catches of cetaceans. However, it is apparent that there are currently no alternative technical mitigation measures to ADDs that have been proven to be effective at reducing the incidental catches of cetaceans in fishing gears. Alternative mitigation devices such as excluder grids and net barriers tested primarily in pelagic trawls have resulted in high fish losses and are not acceptable to fishermen. Other measures such as time and area closures have been shown to reduce the incidental catches but only when catch events are predictable and relatively restricted in time and space. Such circumstances in European fisheries are rare. Results from trials with acoustically reflective gillnets in Denmark, Canada and South America are more encouraging but require further testing before being considered a viable alternative

to ADDs.

## **CONCLUSIONS**

1. There has been insufficient sampling in the right fisheries or areas to enabling sound management decisions to be made with respect to cetacean bycatch. Of the Member States that actually did report to the Commission most reported low or no bycatch in EU waters but scientific evidence from at-sea observer schemes or from post-mortem analysis of stranded animals continues to indicate significant interactions between fisheries and cetaceans. Information on cetacean populations is fragmented and population status remains unclear so the actual impact of fishing on populations is poorly understood. Absolute estimates that might be useful to inform management actions exist only for a few species in the North Sea, the Baltic Sea and parts of the NE Atlantic.

2. Currently there appears to be an over emphasis on mitigation measures (i.e. ADDs) where such measures are only proven to work in reducing bycatch of harbour porpoise in static net fisheries and not for other cetacean species (e.g. common and striped dolphin) or with other fishing methods (e.g. pelagic trawls). This has resulted in Article 2 of the Regulation being ineffective. There is a general reluctance by fishermen to use the devices currently available due to practical and economic reasons that are well documented.

3. Many Member States have made a considerable effort to meet the reporting requirements of the Regulation. The improvements to the reporting format advised by ICES and STECF and accepted by the Member States will further improve this. However, the quality and content of the reports from some Member States submitted remains inconsistent, making analysis difficult. Reporting by Member States should be at a fleet segmentation level that follows the classification set out in the DCF and also with a monthly rather than a quarterly resolution.

4. Monitoring targets specified in the regulation appear over ambitious and these targets could be rethought. Adherence to the monitoring scheme mandated under the Regulation in fisheries where bycatch rates are known to be low is not the most effective use of resources, especially when bycatch is known to be occurring more frequently in fisheries or areas where there is currently no requirement for monitoring under the Regulation. According to ICES, a more general approach whereby Member States would be required to demonstrate their fisheries were not exceeding some agreed level of cetacean bycatch would be more appropriate without overburdening Member States with excessive monitoring requirements. Greater flexibility and co-ordination is required in allocating monitoring effort.

5. Cetacean distribution and interactions with fisheries are not constant through time. The development of dedicated research on mitigation measures and improvement of monitoring interactions between cetaceans and fisheries in parallel with the full implementation of the Regulation will contribute to a better understanding of those shifts and support the enhancement of sound management tools. Data collection under the Habitats Directive and also the linkage with the Regulation needs to be clarified so the utility of the data collected is maximised and there is not duplication.

6. Member States have obligations under the Habitats Directive to monitor the incidental capture and killing of all cetaceans and ensure that incidental capture or killing do not have a significant impact on the populations. In this regard, for other fishing activities and for other areas where incidental catches are problematic and not covered by the Regulation, Member States have the responsibility to take appropriate measures to safeguard cetacean populations. In particular incidental cetacean bycatch in the Black Sea and the incidental catches of pinnipeds, seabirds and turtles in fishing gears in all areas are highlighted as specific cases which are currently outside the scope of the Regulation but require monitoring.

#### **WAY FORWARD**

Although monitoring targets, data formats and other issues are subjects of ongoing debate, the Regulation has, according to ICES, "succeeded in providing a much more comprehensive picture of cetacean bycatch in European fisheries". Some Member States have become more knowledgeable about the impacts that their fisheries have on cetaceans, allowing them to streamline the needs for research and protection of cetaceans and improve the implementation of the Regulation.

The Regulation has been in place for 6 years, and despite these improvements it is still not fully meeting its objective of preventing the accidental capture of cetaceans in fishing gears. Bycatch is still evident in a number of fisheries in the North Atlantic, North Sea and the Baltic and according to ICES several sub-populations of harbour porpoise and common dolphin in these areas are considered as endangered. For the Mediterranean and the Black Sea it is apparent that estimates of cetacean abundance are inadequate making any assessment of population or bycatch impossible for these regions but there is enough evidence to conclude that bycatch remains high in these sea basins.

There is therefore a need to ensure that monitoring and mitigation are targeted in the areas and for the species most under threat. Improved mitigation measures could be incorporated under the new technical measures framework that will be developed as part of the reform of the Common Fisheries Policy. This would set out the scope, objectives and targets to be met in relation to cetacean bycatch, with the possibility for Member States to take specific mitigation measures for

specific areas and fisheries. The monitoring requirements could be incorporated into the DCF, in line with a move to a wider ecosystem approach to fisheries monitoring which would include bycatch of non-target species such as cetaceans, seabirds and benthic organisms. Once this is achieved, Regulation (EC) 812/2004 could be repealed.

[1] Council Regulation (EC) No 812/2004 adopted in April 2004 lays down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98

[2] COM(2009) 368 final

[3] Static nets include gillnets, entangling nets and trammel nets

[4] The coefficient of variation (cv) is defined as the ratio of the standard deviation to the mean.

[5] ICES, 2010. EU request on cetacean bycatch regulation 812/2004. Item 4, Special request Advice May 2010.

[6] ICES, 2010. EU request on cetacean bycatch Regulation 812/2004. Item 3, Special request Advice October 2010.

[7] Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora.

[8] <http://eionet.europa.eu/article17>