ECOREGION General advice
SUBJECT Bycatch of small cetaceans and other marine animals – Review of national reports under Council Regulation (EC) No. 812/2004 and other published documents

Advice summary

ICES provides new information on the bycatch of small cetaceans and other marine animals, derived from EU Member Country reports under Council Regulation (EC) No. 812/2004 for the year 2012 (the latest available). No reports were provided by Spain and Finland. Sweden did not provide the necessary information for 2012.

A preliminary assessment of overall harbour porpoise bycatch rates in the North Sea was carried out using information gathered since 1995. This assessment indicated that bycatch rates in some fisheries may be above any proposed reference limits, but the uncertainty is large. There may also be biases in the choice of fisheries to monitor towards fisheries with a higher bycatch. Better quality data on bycatch rates and fishing effort from more fisheries is required from EU Member Countries before this assessment can be refined and conclusions drawn as to the overall bycatch of harbour porpoise in the North Sea.

Robust methods for setting reference points for bycatch of protected species already exist. ICES recommends that a process involving both managers and scientists be established to set species-specific and, where relevant, population-specific reference points. ICES advises that a bycatch risk-based approach be used to classify fisheries in terms of risk to protected species.

Request

Annex IIA in the Memorandum of Understanding between the EC and ICES requests that ICES:

"Provide any new information regarding the impact of fisheries on other components of the ecosystem including small cetaceans and other marine mammals, seabirds and habitats."

ICES advice

ICES advises below on small cetaceans and other marine animals. Advice on seabird bycatch was provided in December 2013; advice on the locations and impacts of fishing on vulnerable habitats will be provided separately. Most of the advice below derives from EU Member Country reports under Council Regulation (EC) No. 812/2004 for the year 2012 (the latest available).

ICES reiterates its advice that monitoring for protected species bycatch requires particular sampling stratification that may differ from that used by most Data Collection Framework (DCF)-based monitoring programmes. If DCF monitoring programmes are used, protocols should also require specific monitoring of protected species and appropriate sampling methods.

Reported cetacean bycatch rates and monitoring effort

Information on cetacean bycatch and monitoring effort in 2012 has been summarized from ICES (2014) and national reports used in preparing ICES (2014). Supplementary bycatch information (e.g. species, area, and métier) and the bycatch rates, estimated by EU Member Countries (if bycatch occurred), were collated from the various reports and summarized in Annexes 1 and 2.

Belgium: Belgium has no monitoring obligation under Council Regulation (EC) No. 812/2004. Observations carried out under other observer programmes (e.g. DCF) did not report any cetacean bycatch.

Denmark: There was no dedicated monitoring for marine mammal bycatch in Danish pelagic trawls and gillnets. Observer data on marine mammal bycatch from static gear has been collected under the DCF and using remote electronic monitoring (REM). DCF observations from vessels using static gear were carried out in Subdivision IIIa (45 sea days on vessels < 15 m) and Subarea IV (35 sea days; 30 days on vessels >15 m, 5 days on vessels < 15 m) with no bycatch observed. REM was installed on seven gillnet vessels in Subdivisions 22, 23, and 27. A total of 752 days at sea were monitored (681 days on vessels < 15 m and 71 days on vessels >15 m). A total of 17 individual cetaceans were observed bycaught.

Estonia: Static gears were used on vessels up to 10 m, but effort data were not reported and there was no bycatch monitoring. Interviews with fishers suggest that no cetacean bycatch occurs in gillnets in this fleet. Under a dedicated monitoring scheme on pelagic vessels (midwater otter trawl – OTM) in Subdivisions 25–32 for vessels above 16 m, 22 of 101 vessels were monitored during 198 days at sea for a total of 2290 hours, with no cetacean bycatch observed.

Finland: Finland last submitted a report in 2009 for year 2008.

France: Dedicated monitoring was carried out for a total of 796 fishing days. The monitoring represented 199 days at sea in ICES Subarea VIII with static gears and 233 days at sea with towed gears in ICES Subareas VII and VIII and the Mediterranean Sea. In addition, ICES Subareas IV and VII were monitored for 268 days and around Corsica for 96 days with setnets. A total of 26 cetaceans were observed as bycatch. One of these was in the Mediterranean, the other observations were in ICES Divisions IVc and VIIb,e,f,h.

Germany: Fishing and monitoring effort was recorded in hours rather than days at sea (the standard unit used by other MS). In ICES Subareas VI, VII, and VIII, 925 hours of monitoring were carried out on >15 m pelagic trawlers. There was no monitoring effort of static gear on vessels >15 m, despite 3000 hours of fishing effort in areas covered by Council Regulation (EC) No. 812/2004. In the Baltic (Division IIId), monitoring was carried out for 300 hours of fishing effort by >15 m pelagic trawlers and 833 hours of fishing effort by < 15 m static netters. No cetacean bycatch was observed. In a pilot project, bycatch of seabirds and marine mammals was monitored on three gillnet vessels through REM; no cetacean bycatch was observed.

Ireland: A total of 227 days of monitoring was carried out on board pelagic trawlers. The majority of days were spent monitoring the >15 m pelagic fleet, and three days were spent on the < 15 m pelagic fleet. In static nets, 41 days were spent monitoring the interactions between seals and setnets. Only one bycatch event of harbour porpoise *Phocoena phocoena* in gillnets was reported. No bycatch was observed in all other monitored fisheries (pelagic and midwater trawlers).

Italy: A total of 518 days were spent monitoring the >15 m pelagic/midwater trawler fishery. Council Regulation (EC) No. 812/2004 is not applicable to the monitoring of static gear in Italy and no fishing effort was reported. One bottlenose dolphin *Tursiops truncatus* was recorded in midwater pair trawl for GSA 17.

Latvia: Observations were made in pelagic trawls for small pelagic fish on nine vessels, four of which are in the >15 m category but the size of the remaining vessels was not reported. Coverage of the pelagic trawl fleet was high, with 1096 days observed in the >15 m pelagic fleet. A further 135 days of the static net fleet (unknown length) was also monitored. No cetacean bycatch was observed.

Lithuania: Monitoring was conducted for nine days (of 111 days of fishing) on two larger pelagic trawl vessels. Twenty-three midwater otter trawlers spent 722 days at sea but were not monitored. No monitoring was conducted on vessels with static gears, which fished for 119 days. No cetacean bycatch was observed.

The Netherlands: Protected species monitoring is integrated with the collection of discards data under the DCF monitoring. The >15 m pelagic freezer-trawler fleet was monitored during thirty days of fishing in Subareas VI–VIII (January–March and December), and 93 days of monitoring for the rest of the fleet operating in all other areas. This amounts to 123 observer days coverage of the entire pelagic fleet. There has been little (no further detail) fishing effort with static gears. Some vessels fished in Division IVb but were not monitored. One cetacean bycatch (long-finned pilot whale *Globicephala melas* in OTM) was observed.

Poland: Observers monitored 70 days on pelagic trawls and 59 days on set gillnetters. A further nine days were spent monitoring static nets on vessels with total length of 6–8 m. No cetacean bycatch was observed.

Portugal: The gillnet/trammelnet fleet comprises 372 vessels >12 m and the fleet was monitored for 71 days. Three common dolphins *Delphinus delphis*, one harbour porpoise and one bottlenose dolphin were observed bycaught.

Slovenia: Only two pelagic trawlers of the Slovenian fleet were required to be monitored under Council Regulation (EC) No. 812/2004. These trawlers were scrapped during 2012; no bycatch was recorded.

Spain: Spain last submitted a report for the year 2009 when relatively large bycatches were reported in some fisheries.

Sweden: The report received from Sweden did not contain any of the required data.

United Kingdom: One hundred days of pelagic trawl effort and 299 days of gill- and tanglenet effort were monitored. A total of 26 cetaceans were observed bycaught.

Implementation of bycatch mitigation measures

Eleven EU Member Countries are affected by the mitigation requirements of Council Regulation (EC) No.812/2004. Belgium, France, and the Netherlands have never required the use of acoustic deterrent devices ("pingers"). In Sweden, pingers with an expected life time of two years were provided to fishers in 2007, and it can be assumed that these pingers are no longer working. No information was received from Spain. Pingers are assumed to have been used by vessels in 2012 in Denmark, Germany, Ireland, Latvia, Poland, and the United Kingdom. However, the sections 3.2 of the national reports (under Article 2.4 of Council Regulation (EC) No.812/2004) from these EU Member Countries were insufficient to evaluate the overall effectiveness of the mitigation.

Total bycatch rates of harbour porpoise in the North Sea

A preliminary assessment of overall harbour porpoise bycatch rates in the North Sea was carried out using information gathered since 1995. This assessment indicated that bycatch rates in some fisheries may be above any proposed reference limits, but the uncertainty is large. There may also be biases in the choice of fisheries to monitor towards fisheries with a higher bycatch. Better quality data on bycatch rates and fishing effort from more fisheries is required from EU Member Countries before this assessment can be refined and conclusions drawn as to the overall bycatch of harbour porpoise in the North Sea.

New information on the bycatch of species other than cetaceans

Information on the bycatch in 2012 of seals, turtles, seabirds, and fish and invertebrate species of conservation concern was provided by some Member Countries.

France: Two harbour seals *Phoca vitulina* and one grey seal *Halichoerus grypus* were caught in trammel nets; one was released alive. Two loggerhead turtles *Caretta caretta* were caught and released alive from trawls in the Mediterranean.

Italy: Thirty-four loggerhead turtles were caught in pair midwater trawls fishing for anchovy in GSA17 (with 33 incidents occurring in the northern Adriatic subarea), as well as a large number of sharks, rays, and a few noble pen shells *Pinna nobilis* (when the net touches the seabed) and twaite shad *Alosa fallax*.

Ireland: In a study examining interactions between seals and Irish setnet fisheries, five common guillemots *Uria aalge*, 17 common skates *Dipturus batis*, one porbeagle *Lamna nasus*, 76 spurdog *Squalus acanthias*, 40 tope/smooth-hound *Galeorhinus galeus/Mustelus mustelus*, one harbour seal *Phoca vitulina*, and 27 grey seals *Halichoerus grypus* were reported as bycatch.

Poland: Three common guillemots, one herring gull *Larus argentatus*, and three unidentified birds were caught in observed set gillnet fishing. One guillemot was released alive. No protected species of fish were reported by the observers.

United Kingdom: Using bycatch rates calculated from data collected annually under the bycatch programme since 2005, estimates of seal bycatch for 2012 from static net fisheries in ICES Divisions VIIa,e,f,g,h,j give an estimation of 492 seals, thought to be predominately grey seals (95% CI 358–700) bycaught in this area.

Reference points

Several methods have been used in defining limits or threshold reference points to bycatch of cetaceans. The robustness of the various models to uncertain information varies. All rely on a policy decision to define the overall conservation objective in terms that can be used in mathematical models, so their derivation requires not just the input of scientists, but also of relevant authorities.

The ASCOBANS limit of 1.7% is probably the most widely cited reference point for porpoises. Other possible reference points for harbour porpoise bycatch in the North Sea have been derived using a variety of methods, including the PBR (potential biological removal) and CLA (catch limit algorithm) methods (Table 1.5.1.1.1).

Table1.5.1.1.1 Harbour porpoise bycatch limits for the North Sea using different possible reference points (based on an abundance of 216 400 animals).

Reference point	Annual bycatch limit (individuals)
ASCOBANS 1.7%	3679
ASCOBANS 1%	2164
PBR	1246
CLA	840

ICES cannot provide advice on acceptable limits or threshold reference points for each species, but repeats its recommendation that the European Commission establishes a process involving both scientists and managers to derive these limits, using the most appropriate of these approaches for populations of species believed to be most at risk of bycatch. ICES repeats its advice that the harbour porpoise and common, striped, and bottlenose dolphin populations appear to be the species most at risk from bycatch in European waters at present.

ICES repeats its advice that a bycatch risk-based approach be used to identify areas and fisheries posing the greatest likely conservation threat to cetacean species due to bycatch (Figure 1.5.1.1.1). This approach can also be used for protected species other than cetaceans. The approach splits the population numbers of each protected species into different management areas (MAs) and calculates bycatch limits of species by area for any reference point used. By using an expected bycatch rate (numbers per day or per unit of catch) multiplied by the total fishing effort, an approximate total number of bycaught animals can be estimated for each fishery and compared with any proposed limit.

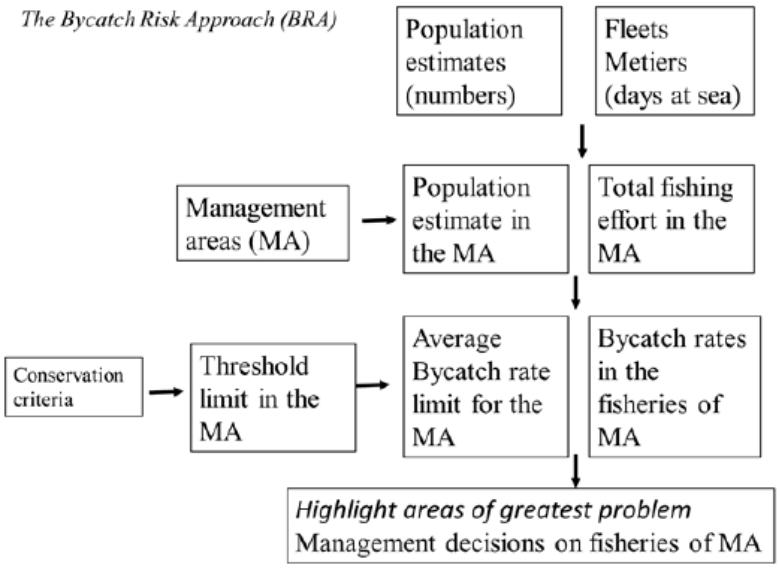

Figure 1.5.1.1.1 Bycatch risk-based approach process.

Implementation of monitoring parts of Council Regulation (EC) No. 812/2004 in 2012

Sixteen EU Member Countries are affected by the monitoring requirement. Meeting these requirements is achieved through a variety of observation methods in isolation or combination. These include the use of dedicated protected species observers, DCF observers, and the use of remote electronic monitoring and/or scientific research projects.

Most Member Countries affected by Council Regulation (EC) No. 812/2004 carried out or attempted to carry out monitoring; however, some Member Countries did not make all of their effort and monitoring data available in their annual report. In addition, many reports did not differentiate by vessel length nor give the total size/effort of the fleet, which made assessment of the percentage of coverage impossible. Some countries do not consider the trammelnets as these gears are not listed in the regulation while others include the trammelnets (see Annex 1).

Although monitoring is only mandatory in Council Regulation (EC) No. 812/2004 for the >15 m sector, observations were made on < 15 m vessels ('Scientific studies') by some Member Countries, although coverage of the large number of vessels generally remained very low. Issues of the cost of monitoring schemes were raised by some Member Countries.

The standard unit of fishing and observer effort across all Member Countries is 'days at sea' with the exception of Germany that reports effort in hours, thus excluding their data from overall bycatch estimates.

ICES notes that 'net metre per immersion day' would be a more precise unit for reporting static gear effort than 'days at sea'. This information is rarely reported.

Source

ICES. 2014. Report of the Working Group on Bycatch of Protected Species (WGBYC), 4–7 February 2014, Copenhagen, Denmark. ICES CM 2014/ACOM:28.

Annex 1

Collation of data on bycaught cetacean specimens and estimations of bycatch rates (if bycatch occurred) in 2012 (from the 2012 national reports; ICES, 2014). (GNS: gillnet; DEF: demersal; GTR: trammelnet; OTB: bottom otter trawl; OTM: midwater otter trawl; PTM: midwater pair trawl). * = bycatch estimates based on data from 2006 to 2012.

MS	Métier	Fishing area	Main target species	Cetacean species	Number of incidents	Number of individuals		Bycatch rates per haul		Total bycatch estimate (CV)
						With pingers	Without pingers	With pingers	Without pingers	
Baltic Sea										
DK	GNS–DEF< 15 m	27.SD22	NA	Harbour porpoise	4	4		0.020		NA
DK	GNS–DEF ≥15 m	27.SD22	NA	Harbour porpoise	2	2		0.028		NA
DK	GNS–DEF< 15 m	27.SD23	NA	Harbour porpoise	11	11		0.024		NA
Northeast Atlantic										
FR	GTR–DEF< 15 m	IVc	sole	Harbour porpoise	2	2		0.18		NA
FR	PTM–DEF	VIIe	sea bass	Common dolphin	2	5		0.11		124 (83%)
FR	PTM–DEF	VIIh	sea bass	Common dolphin	2	13		2.60		48 (49%)
FR	GNS–DEF	VIIIb	bream	Harbour porpoise	1	1		0.01		61 (100%)
FR	GNS–GTR–DEF ≥15 m	VIIe	monkfish	Harbour porpoise	1	2		0.09		NA
FR	GNS–GTR–DEF ≥15 m	VIIh	monkfish	Harbour porpoise	1	1		0.03		22 (98%)
FR	GNS–GTR–DEF< 15 m	VIIe	monkfish	Common dolphin	1	1		0.01		77 (102%)
IE	GNS	VIIb	crawfish	Harbour porpoise	1	NA	NA	NA	NA	NA
NL	OTM small pelagic fish 4–11 m	VIIj	horse mackerel	Long-finned pilot whale	1	0	1	0	0.08	9 (346%)
UK	GNS–DEF< 15 m	VIIe	Mixed demersal	Harbour porpoise	2	0	2	0	0.008	821 (14%)*
UK	GNS–DEF< 15 m	VIIf	Mixed demersal	Harbour porpoise	3	0	3	0	0.023	
UK	GNS–DEF< 15 m	VIIg	turbot	Harbour porpoise	1	0	1	0	0.013	
UK	GNS–DEF >15 m	VIIe	Mixed demersal	Harbour porpoise	3	0	3	0	0.083	
UK	GNS–DEF >15 m	VIIf	Mixed demersal	Harbour porpoise	2	0	2	0	0.095	
UK	GNS–DEF >15 m	VIIf	anglerfish	Harbour porpoise	3	0	3	0	0.333	
UK	GNS–DEF >15 m	VIIg	Mixed demersal	Harbour porpoise	2	1	1	0.040	0.166	
UK	GNS–DEF >15 m	VIIe	anglerfish	Harbour porpoise	2	2	0	0.068	0	
UK	GNS–DEF< 15 m	VIIe	mixed	Common dolphin	2	0	2	0	0.008	254 (23%)*
UK	GNS–DEF >15 m	VIIe	anglerfish	Common dolphin	2	2	0	0.068	0	

UK	GNS–DEF >15 m	VIIe	mixed	Risso's dolphin	1	0	1	0	0.027	NA
UK	PTM–DEF >15 m	VIIe	sea bass	Common dolphin	3	3	0	0.043	0	NA
PT	GNS–GTR–DEF	IXa	Mixed demersal	Common dolphin	NA	0	3	0	0.0125	NA
PT	GNS–GTR–DEF	IXa	Mixed demersal	Harbour porpoise	NA	0	1	0	0.0063	NA
PT	GNS–GTR–DEF	IXa	Mixed demersal	Bottlenose dolphin	NA	0	1	0	0.0063	NA
Mediterranean Sea										
FR	OTM–OTB–SPF	GSA 07	anchovy	Striped dolphin	1	1		0.07		NA
IT	PTM	GSA 17	anchovy	Bottlenose dolphin	1	0	1	0	0.0006	31 (41%)*

Annex 2

Summary of monitoring of static and towed gears in 2012 to meet Council Regulation (EC) No. 812/2004 as reported in national reports. N/A = not applicable, X = no data provided.

Member Countryountry	Gear	Days at sea			Coverage (%)		
		Total	>15 m	< 15 m	Total	>15 m	< 15 m
Belgium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Denmark	Towed	1	X	X	X	X	X
	Static (REM)	752	71	681	0.1	17.6	5.7
	Static (DCF)	80	61	19	X	X	X
Estonia	Towed	198	198	0	15.6	15.6	0.0
	Static	N/A	N/A	N/A	N/A	N/A	N/A
France	Towed	233	X	X	X	X	X
	Static	199	X	X	X	X	X
Germany	Towed	925 hrs	925 hrs	0	X	19.0	0.0
	Static	0	0	0	0.0	0.0	0.0
	Static	1133 hrs	300 hrs	833 hrs		1.1	0.0
Ireland	Towed	227	224	3	6.5	6.4	0.1
	Static	41	33	8	1.5	1.2	0.3
Italy	Towed	518	518	0	5.0	5.0	0.0
	Static	N/A	N/A	N/A	N/A	N/A	N/A
Latvia	Towed	1096	666	430	19.5	32.9	12.0
	Static	135	X	X	9.6	X	X
Lithuania	Towed	9	X	X	8.1	X	X
Netherlands	Towed	123	30	93	8.0	5.3	9.5
	Static	0	0	0	0.0	0.0	0.0
Poland	Towed	70	70	0	1.1	X	X
	Static	59	50	9	X	2.4	X
Portugal	Static	71	71	0	0.1	X	X
Slovenia	Towed	X	X	X	X	X	X
Sweden	Towed	X	X	X	X	X	X
United Kingdom	Towed pelagic	100	93	7	5.0	X	X
	Static	299	66	234	0.6	X	X