

1.6.1.1 Bycatch of small cetaceans and other marine animals – review of national reports under Council Regulation (EC) No. 812/2004 and other information

Advice summary

Reports by EU Member States on the bycatch of marine mammals, observed in conformity with Council Regulation (EC) No. 812/2004, are summarized. The lack of statutory reports from some major fishing nations compromises ICES ability to assess the overall impact of fisheries on small cetaceans and other marine animals. Estimates of total common dolphin mortality in fisheries in ICES subareas 27.7, 27.8, and 27.9 are provided; these bycatches may be unsustainable. An updated evaluation of the total annual bycatch of harbour porpoises in the Kattegat and Belt Seas indicates that levels are below those assumed to be unsustainable. There are unknown amounts of bias in both of these assessments. Bycatch estimates for seabirds in a single EU Member State's fisheries indicate catches in excess of 10 000 individuals in Division 27.9.a. ICES continues to advise that any move to integrate monitoring of the bycatch of protected species in all EU waters within the Data Collection Framework will require the very careful consideration of sampling regimes and, as such, monitoring will require significant adjustments from that used for commercial fish bycatch.

Request

Annex IIA in the Memorandum of Understanding between the EU and ICES requests ICES, under "Fisheries-based advisory deliverables", to:

"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. This should include any new information on the location of habitats sensitive to particular fishing activities."

This advice section covers only aspects of impacts on marine mammals, seabirds, and other marine vertebrates. Information relating to habitats is advised separately (Section 1.6.1.2).

Elaboration on ICES advice

Based on reports provided by EU Member States, a total of 57 cetacean specimens were observed taken as bycatch in 2014. ICES has not raised these observations to assess total mortality this year due to uncertainties in fishing effort data. Estimates of total cetacean bycatch were, however, provided by two individual Member States for 2014: 334 common dolphins *Delphinus delphis* in a single Member States purse-seine net fishery in Division 27.9.a and four in a single Member States pelagic trawl fishery in Division 27.7.b.

Estimate of total harbour porpoise mortality in static nets 2006–2014 in the Kattegat and Belt Seas

In 2015, ICES provided estimates of harbour porpoise *Phocoena phocoena* mortality for subdivisions in the North Atlantic. For the Kattegat and Belt Seas (ICES subdivisions 27.3.a.21, 27.3.b.23, and 27.3.c.22), bycatch rates (pooled over the years 2010–2014) have been updated with 2014 fishing effort as well as observer coverage. The mortality of the harbour porpoise population due to bycatch in 2014 in the Kattegat and Belt Seas was estimated (Table 1.6.1.1.1). These results suggest that < 1% of the harbour porpoise population is being taken in this region. However, fishing effort is likely to be underestimated as effort from smaller vessels is not fully represented in both areas.

Table 1.6.1.1.1 Estimates of bycatch rates of harbour porpoise in the Kattegat and Belt Seas.

Harbour porpoise assessment region	Year	Static net fishing effort (days at sea)	Estimate of bycaught porpoises (Low–high)		Best estimate of abundance (CV)	% mortality using lower bycatch estimate	% mortality using higher bycatch estimate
Kattegat and Belt Seas – subdivisions 27.3.a.21, 27.3.b.23, 27.3.c.22	2014	10625	165	263	40475 (0.235)	0.41	0.65

Common dolphin mortality in fisheries in subareas 27.7, 27.8, and 27.9

ICES advises that, based on bycatch rate and total fishing effort, total annual removals of common dolphins *Delphinus delphis* in European fisheries may exceed the 1.7% limit established by ASCOBANS which has been used in previous ICES advice. However, these estimates of common dolphin mortality are based upon information that is not complete. It is not known if these estimates are biased (nor the direction of any bias), so this advice cannot yet be regarded as definitive.

Accepting the biases and unrepresentative sampling by gear type, observed bycatch rates of common dolphins in subareas 27.7 and in 27.8 are highest in pelagic trawl fisheries, but the somewhat lower rates observed in static net fisheries may be equally significant as they would result in similar levels of total bycatch because the effort in static net fisheries is much larger than pelagic trawl fisheries. Furthermore, pelagic trawl fishery data are biased by focusing sampling in those métiers that have shown the highest bycatch rates in the past.

Seabird bycatch in Division 27.9.a in 2014

A total of 42 seabird specimens in 21 bycatch events were reported for 13 bird species. Bycatch estimates (observed bycatch raised by fishing effort) by a single EU Member State for seabirds in Division 27.9.a included 9500 individual yellow-legged gulls *Larus michaellis* in longlines, 690 individual northern gannets *Morus bassanus* in bottom trawls, and 3800 northern gannets in longline fisheries in Division 27.9.a. The bycatch estimate of 205 individual Balearic shearwaters *Puffinus mauretanicus* in purse-seine nets may be significant for this species as it is classified as critically endangered by IUCN.

Comparison of bycatch data collected by dedicated observers with data obtained through other monitoring programmes

Three different observation schemes in 2014 – i) Data Collection Framework (DCF)/log book, ii) dedicated observers focusing on protected species, and iii) remote electronic monitoring (REM) – were compared.

Over a period of 1120 days of DCF monitoring, six individuals of protected species were caught as bycatch in towed gears. In contrast, during 895 days of dedicated monitoring, 85 individuals of protected species were taken as bycatch, although most of these were in trawls in the Mediterranean Sea.

In static nets, 165 days of DCF monitoring saw three individuals of protected species caught as bycatch, 838 days of dedicated monitoring 34 bycaught individuals, and 849 days of REM 35 bycaught individuals. A similar (statistically significant) difference was observed in marine mammal bycatch rates from the UK's dedicated bycatch and DCF programmes from 2005 to 2014.

These monitoring programmes are not in the same fisheries or always in precisely the same areas or at the same times; however, the scale of these differences is so large that ICES advises that specifically designed monitoring schemes including dedicated observers or REM are required if good estimates of protected species bycatch are required.

Basis of the advice

Background

Reports required under Council Regulation (EC) No. 812/2004 for 2014 were received from 13 of the 17 EU Member States affected by the Regulation in that year. No reports for 2014 were provided to the Commission by Germany, Finland, Spain, or Sweden, but Sweden and Germany did supply relevant data to ICES. The quality and scope of the information provided by the reports for 2014 was variable, with several Member States simply repeating the information provided in previous years. It is difficult for ICES to assess the overall impact of fisheries on protected species bycatch if data is not forthcoming from major fishing nations; additional challenges arise from the submission of non-standardized data.

Results and conclusions

Estimates of total common dolphin mortality in fisheries in subareas 27.7, 27.8, and 27.9

Static net fishing effort is high in these subareas. If trammelnets and set gillnets are combined, then over 100 000 days at sea were reported in 2014 in Subarea 27.7, over 140 000 days in Subarea 27.8, and over 100 000 days in Subarea 27.9. These are underestimates, because Member States have not included all effort from small vessels. Information on bycatch held by ICES is most complete for gillnets and pelagic trawls, though bycatch of cetaceans has been observed in other gears that have not been subjected to regular monitoring. For example, few observations have been undertaken on vessels using bottom trawls, even though common dolphin bycatches are known to occur in this gear.

Monitoring under Council Regulation (EC) No. 812/2004 has been extensive and currently over 13 000 days at sea have been monitored by the nations that fish in subareas 27.7, 27.8, and 27.9 (Table 1.6.1.1.2). In Subarea 27.7, the majority of the monitoring is carried out by the fleets of France and the UK. In Subarea 27.8 the majority of monitoring is of the French fleet. It is not clear to what extent any monitoring in Spain has been focused on protected species bycatch, and how much simply reflects DCF data collection which elsewhere is known to under-represent protected species bycatch.

Table 1.6.1.1.2 Combined observer monitoring effort totals (days at sea) 2009–2013, number of observed bycatch incidents, and number of individual common dolphins (na = not applicable due to no observation effort) for each major gear type. Bycatch rates (animals/day at sea) are illustrative and should not be used for extrapolation as they are not necessarily representative of the fleet segments to which they are ascribed.

Subarea	Gear type métier level 4	Monitored (days at sea)	Bycatch events	No. common dolphin	Bycatch rate
27.7	Driftnet	42	0	0	0.0000
27.7	Midwater otter trawl	880	3	6	0.0068
27.7	Midwater pair trawl	3990	331	929	0.2328
27.7	Bottom otter trawl	35	1	3	0.0857
27.7	Pots and traps	0	0	0	na
27.7	Set gillnet	3774	137	251	0.0665
27.7	Trammel nets	815	17	17	0.0208
27.8	Midwater otter trawl	94	9	9	0.0963
27.8	Midwater pair trawl	595	153	1137	1.9122
27.8	Bottom otter trawl	0	0	0	na
27.8	Bottom pair trawl	0	0	0	na
27.8	Pots and traps	0	0	0	na
27.8	Set gillnet	1192	44	50	0.0420

Subarea	Gear type métier level 4	Monitored (days at sea)	Bycatch events	No. common dolphin	Bycatch rate
27.8	Trammel nets	710	0	0	0.0000
27.9	Midwater pair trawl	1	0	0	0.0000
27.9	Bottom otter trawl	734	2	2	0.0027
27.9	Bottom pair trawl	0	0	0	na
27.9	Pots and traps	0	0	0	na
27.9	Purse-seine	537	44	102	0.1899
27.9	Set gillnet	347	3	3	0.0087
27.9	Set longlines	0	0	0	na
	Total	13746	744	2509	

Using abundance estimates for common dolphins for the three subareas and a limit of 1.7% of anthropogenic removals, the total bycatch that should not be exceeded is also calculated (Table 1.6.1.1.3).

Table 1.6.1.1.3 Abundance estimates for common dolphins in subareas 27.7, 27.8, and 27.9.

Division	Mean density	Abundance (CV)	1.7% of estimate of best available abundance
27.7	0.05	84390 (0.25)	1434
27.8	0.05	114836 (0.28)	1952
27.9	0.09	59306 (0.24)	1008

Extra information

Protected species other than cetaceans observed under Council Regulation (EC) No. 812/2004 in 2014

Information on the bycatch of protected species other than cetaceans (and seabirds in Division 27.9.a) was provided by eight Member States under Council Regulation 812/2004. The species/groups involved in 2014 were grey seals *Halichoerus grypus* and harbour seals *Phoca vitulina*, loggerhead turtles *Caretta caretta*, seabirds, and protected fish species.

France

Reports for both 2013 and 2014 were available. In 2013, 660 days at sea were observed for towed and static gears and a bycatch of one harbour seal was observed in Division 27.7.g. In 2014, 808 days at sea were observed for towed and static gears: two harbour (Divisions 27.4.b and 27.7.h) and two grey seals (Division 27.7.h) were observed as bycatch.

Germany

A bycatch of 13 grey seals was observed in 42 hauls (out of a total of 131 hauls) by pelagic trawlers larger than 15 m in Division 27.7.b.

Ireland

Three grey seals were caught as bycatch in large mesh tangle- and trammelnets off the south coast during 13 days of observation. No bycatch was observed in 100 days in pelagic trawl fisheries.

Italy

Seven loggerhead turtles, 49 twait shads *Alosa fallax*, and 23 elasmobranchs (of three species) were observed as bycatch.

Data collection was poor in comparison to previous years, with only 92 days at sea and 324 hauls (0.9% of fishing effort) observed in Division 37.2.1. No monitoring was carried out in divisions 37.1.3 and 37.2.2.

The Netherlands

Two bluefin tuna *Thunnus thynnus* and one grey seal were caught in pelagic fishery in two events in Division 27.6.a during 93 days of observation. Three grey seals were caught in three events in Division 27.7.b in 53 days of pelagic fishery observation. Three basking sharks *Cetorhinus maximus* were caught in three incidents in May/June in 104 days of observation in Division 27.4.a.

Poland

No bycatch was observed in 134 days (65 days on vessels using towed gears and 69 days on vessels using static gears).

UK

An estimate of 417 grey seals caught as bycatch (largely in tangle- and trammelnet fisheries) is similar to estimates from previous years.

In 21 days of dedicated monitoring of demersal longlines in Division 27.6.a, 114 seabirds (predominantly northern fulmars *Fulmarus glacialis*) were caught as bycatch. A further six seabirds were recorded as bycatch during nine days of dedicated observation in demersal longlines in Division 27.4.a. No seabird bycatch was recorded during nine days of monitoring of longline fisheries in Division 27.7.j.

Recreational fisheries

Qualitative information on potential impacts on protected species from bycatch in recreational gillnet fisheries was provided by Belgium and the Netherlands (both in Division 27.4.c).

Thirteen harbour porpoises that washed ashore in Belgium had drowned in fishing gear in 2014; some of these individuals are suspected to have been caught in recreational gillnets set from the beach.

Recreational gillnet fishing with nets set from the beach is allowed in the Netherlands under certain conditions. Harbour porpoise bycatch in these fisheries was recorded in 2011 and in 2014, although the 2014 incident appeared to be in nets set illegally. It is unknown if these incidents occur more frequently. There is no formal monitoring of these fisheries.

Mitigation

Seal bycatch in Swedish pot fisheries can be reduced by equipping pot entrances with seal exclusion devices; these devices do not affect the pot's catching efficiency.

The Spanish Mediterranean surface longline fishery targeting swordfish *Xiphias gladius* has adopted (2008 onwards) changes in bait (from squid to mackerel) and fishing depth (from the surface to over 140 m). Bycatch of loggerhead turtles has been reduced by over 95% whereas swordfish catch has been maintained or has increased (less catch but bigger individuals).

Sources and references

ICES. 2016. Report of the Working Group on Bycatch of Protected Species (WGBYC), 1–5 February 2016, Copenhagen, Denmark. ICES CM 2016/ACOM:27. 74 pp.