

### 1.5.1.3 New information on impact of fisheries on components of the ecosystem

#### Request

As part of the Memorandum of Understanding between ICES and the European Commission, ICES is asked to provide advice on interactions between fisheries, fish stocks and the marine ecosystem. ICES is requested 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 sensitive habitats.* Following a further request in 2007 it was agreed that this advice should include information provided in national reporting under article 6 in Regulation 812/2004.

#### ICES response

This section of advice only deals with impact of fisheries on cetaceans.

#### 1. New information on bycatches

**ICES provides** some information on current bycatch rates below. This information is very incomplete and therefore **ICES advises** that other data sources, including that already collected under the DCR, that collected from pilot studies made under EC Regulation 812/2004 and any relevant studies made in relation to Directive EC/42/1992 (the Habitats Directive) should be used to gain a better picture of where there may be particular bycatch problems of protected species. These data alone cannot provide quantified estimates of bycatch but would enable further monitoring efforts to evaluate bycatch to be better targeted.

In relation to EC Regulation 812/2004, **ICES reiterates advice given in 2008** that, in order to provide a comprehensive overview, reporting by relevant Member States of the European Union should follow a standardised format and be made available in English. The most important information required is on total effort, number of animals observed caught and effort related to that number. In addition, **ICES recommends** that this standardised reporting should include the results of pilot studies made under EC Regulation 812/2004 and any relevant studies made in relation to Directive EC/42/1992 (the Habitats Directive).

Recent bycatch estimates for five species of cetacean and one species of turtle in seven different fisheries are summarised in Table 1 below.

**Table 1**

Species	Country	Fleet segment	Area	Year of estimate	Total bycatch estimate	CI
Common dolphin	France	Pelagic pair trawl	VI, VII, VIII	2007 (apr-nov)	13	
Common dolphin	France	Pelagic pair trawl	VI, VII, VIII	2007 (dec – mar)	226	
Common dolphin	UK	Set nets	VII	2005	154	
Common dolphin	UK	Set nets	VII	2006	554	
Striped dolphin	France	Pelagic pair trawl	VI, VII, VIII	2007 (apr-nov)	40	
Bottlenose dolphin	France	Pelagic pair trawl	VI, VII, VIII	2007 (apr-nov)	54	
Bottlenose dolphin	Italy	Pelagic pair trawl	Adriatic	2006(jul)-2008(nov)	34	
Long-finned pilot whale	France	Pelagic pair trawl	VI, VII, VIII	2007 (apr-nov)	13	
Harbour porpoise	France	Set nets boats >15m	VIa, VIIa,b, VIIIa-c, IXa	2007	100	
Harbour porpoise	France	Set nets boats <15m	VIa, VIIa,b, VIIIa-c, IXa	2007	500	
Harbour porpoise	UK	Set nets	VII	2005	464	
Harbour porpoise	UK	Set nets	VII	2006	730	
Loggerhead turtle	Italy	Bottom trawl	Mediterranean	1999-2000	4273	2186-8546
Loggerhead turtle	Italy	Pelagic pair trawl	Adriatic	2006(jul)-2008(nov)	1284(34 dead)	

In addition, ICES has collated bycatch records of many more cetaceans, seals, birds, turtles and elasmobranchs from a several sources in a wide variety of EU fisheries. Some of these are anecdotal records obtained by chance, while others were records from ongoing at sea sampling schemes, such as those conducted under the aegis of the Data Collection Regulations. Bycatch estimates were not possible from such records either because fleet effort and/or sampling effort

data were not available or because the sampling programme was not adequately documented to assess how representative the sampling had been.

The bycatch of protected species remains poorly documented throughout European waters, and estimates of bycatch of individual species are incomplete. **ICES advises** that data from all on board observer programmes including those conducted under the Data Collection Regulations (DCR) and the new Data Collection Framework should be better integrated with data collected under other programmes specifically targeting bycatch of protected species (e.g. under Regulation 812/2004 or the Habitats Directive).

The Data Collection Framework (DCF, Council Regulation 199/2008) encourages Member States to collect survey information on fish stocks and on environmental impacts that may be caused by fisheries on the marine ecosystem in order to implement progressively an ecosystem-based approach to fisheries management. Although the sampling strategy for fishing trips in support of the Framework has been established, including lists of the species to be sampled, there is no explicit mention of protected species. There is currently no obligation on Member States under the DCF to collect information on the bycatch of protected species; nevertheless some member states do so. It would seem sensible that if an ecosystem based approach to fisheries management were to be implemented under DCF, then information on the bycatch of protected species should also be collected.

Existing data from member states that have collected information on protected species under the DCR show that bycatches of protected species are more widespread than might be assumed based on the sampling requirements, for example, of Regulation 812/2004. Records of cetacean bycatch in demersal trawl fisheries and on longlines, and of seabird bycatch in gillnets and trawls demonstrate a widespread interaction. Although surveys conducted under the DCR and DCF are not designed to estimate bycatch rates of protected species, data collected by such surveys provide a wide ranging overview of bycatch events that can help to focus more dedicated bycatch surveys on specific fisheries and areas where bycatch could be of conservation concern.

Data already collected under the DCR should therefore be used to obtain a more comprehensive and integrated overview of the nature and scale of protected species bycatch in European fisheries, and Member States should also be encouraged to collect data on protected species under the DCF. Better integration of bycatch data from on board sampling surveys is also recommended.

The European Commission supplied ICES reports on the implementation of EC Regulation 812/2004 from Denmark, Estonia, Finland, France, Ireland, Italy, Lithuania, the Netherlands, Poland, Spain and the United Kingdom. Information from Sweden was also available to ICES. Reports were not available from Belgium, Cyprus, Germany, Greece, Latvia, Malta, Portugal or Slovenia. Only one report followed the standard format proposed by ICES in 2008, while the other reports used a variety of different formats. Eight of the eleven reports that were provided were in English. Several species of marine mammal were bycaught, including harbour porpoise *Phocoena phocoena*, common dolphin *Delphinus delphis*, bottlenose dolphin *Tursiops truncatus*, striped dolphin *Stenella coeruleoalba* and long-finned pilot whale *Globicephala melas*.

As can be seen above, quantitative estimates of cetacean bycatch are still largely lacking in most European Union waters. It is thus impossible to provide estimates of the total impact of EU fishing operations on species or populations. In addition, bycatch on these populations will also be occurring in adjacent non-EU waters. Nevertheless, Regulation (EC) 812/2004 has improved the level of monitoring in several EU Mediterranean countries. A recent GFCM/ACCOBAMS workshop demonstrated that cetacean bycatches are widespread in most other Mediterranean and Black Sea countries.

Under Regulation EC 812/2004 Member States are required to undertake pilot projects of two sorts: the first on certain vessels below 15 m in length and second on the effects of acoustic deterrent devices over time. Many Member States report on the results of such projects but not in a standardised format. A standardised format would enable these results to be collated and used more effectively.

## **2. Management framework for bycatch limits**

**ICES advises** that a Catch Limit Algorithm approach is the most appropriate method to set limits on the bycatch of harbour porpoises or common dolphins. In order to use this (or any other) approach, specific conservation objectives must first be specified. In both species improved information on bycatch and the biology of the species would improve the procedure.

The SCANS II and CODA projects included examinations of two possible management frameworks to estimate bycatch limits for both harbour porpoises in the North Sea and common dolphins in the European Atlantic and North Sea. The two management frameworks examined were based on a Catch Limit Algorithm (CLA) and on Potential Biological Removal (PBR). The CLA procedure, developed by the International Whaling Commission, uses time series of both

population abundance estimates and by-catch data. The PBR procedure, employed by the USA, uses a single estimate of population size which is updated when a new abundance estimate becomes available. Both procedures explicitly incorporate uncertainty in the estimates of population size.

#### **Sources of information**

Report of the Study Group for bycatch of protected species (CM 2009/ACOM:22)

Report of the Working Group on marine mammal ecology (CM 2009/ACOM:21)