Cetacean Bycatch Monitoring and Mitigation under EC Regulation 812/2004 in the Northeast Atlantic, North Sea and Baltic Sea from 2006 to 2014

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A bycaught short-beaked common dolphin on-board a pelagic trawler in Galicia © Fiona L. Read

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EXECUTIVE SUMMARY

Concern over the impact from high levels of fisheries interactions on cetacean populations has led to the adoption of several international agreements as well as regional legislation in Europe. The European Union regulates fishing activities of its Member States through the Common Fisheries Policy (CFP). Council Regulation (EC) 812/2004 of the CFP specifically concerns mitigation (Articles 2 and 3), monitoring (Articles 4 and 5), and reporting (Article 6) of fisheries in order to reduce incidental catches of cetaceans in fishing gear. The Regulation also includes the phasing out, and ultimately a ban, on the use of driftnets in the Baltic by early 2008.

This report reviews and assesses the reporting of EU Member States in the North East Atlantic, North Sea and Baltic Sea on their cetacean bycatch monitoring and mitigation obligations under EC 812/2004. Information, where available, has been collated from Member States' EC 812/2004 annual reports, the International Council for Exploration of the Sea (ICES) Study Group for Bycatch of Protected Species / ICES Working Group on Bycatch of Protected Species reports, National Reports to the Convention on Migratory Species (CMS) Regional Agreement on the Conservation of Small Cetaceans on the Baltic, Northeast Atlantic, Irish and North Seas (ASCOBANS) (for relevant Range States) and from Member States directly.

The review also identifies flaws and limitations in the existing Regulation that Member States have identified during their implementation efforts. These include the lack of fisheries data, requirement for monitoring and mitigation on a wider range of vessels and gear types (not restricted to vessel length), better bycatch effort and coverage data leading to better bycatch estimates, access to funds to monitor the fleet and issues with infringements.

The driftnet ban has likely reduced bycatch levels for cetaceans and the use of acoustic deterrent devices (ADDs) on sections of some fishing fleets will have reduced harbour porpoise (*Phocoena phocoena*) and (to a lesser extent) short-beaked common dolphin (*Dephinus delphis*) (hereafter referred to as common dolphins) bycatch levels in some areas. However, many thousands of cetaceans continue to be bycaught since the introduction of EC Regulation 812/2004 and both individual and population level impacts continue to occur in European waters. Overall, more than a decade after implementation of the Regulation, uncertainties remain in cetacean population estimates and with particular regard to fisheries monitoring, inadequate sampling across the fishing fleets means that bycatch rates could be higher than reported, across Europe. Member States efforts to understand and reduce cetacean bycatch remain inadequate (Table 1).

The effectiveness of the Regulation was reviewed by the European Commission in 2009 and in 2011; they found that full implementation across Member States had not been achieved, and urged Member States to improve implementation (European Commission, 2009; 2011). Numerous annual ICES bycatch reports[1] have concluded that the lack of implementation has resulted in large uncertainties in monitoring and has impeded the application of effective mitigation. In 2015, an ASCOBANS review found monitoring of cetacean bycatch in the majority of fisheries and areas to be insufficient, and has thus impeded the

[1] http://www.ices.dk/news-and-events/news-archive/news/Pages/Catch-the-latest-round-of-bycatch-advice.aspx

application of effective mitigation. In 2017, the OSPAR Intermediate Assessment found low confidence in harbour porpoise bycatch estimates due to insufficient monitoring.

Table 1. Summary of EU Member State compliance with EC Regulation 812/2004 on cetacean bycatch

Country	Reporting	Monitoring	Mitigation	Overall
Belgium	Moderate	Moderate	Moderate	Moderate
Denmark	Good	Moderate	Moderate	Moderate
Estonia	Good	Moderate	Moderate	Moderate
Finland	Poor	Poor	Moderate	Poor
France	Good	Good	Poor	Moderate
Germany	Moderate	Moderate	Moderate	Moderate
Ireland	Good	Moderate	Moderate	Moderate
Latvia	Good	Moderate	Moderate	Moderate
Lithuania	Moderate	Moderate	Poor	Moderate
Netherlands	Good	Good	Moderate	Good
Poland	Good	Moderate	Moderate	Moderate
Portugal	Good	Moderate	Moderate	Moderate
Spain	Poor	Poor	Poor	Poor
Sweden	Poor	Poor	Poor	Poor
United Kingdom	Good	Good	Good	Good

Recommendations are made towards compliance of the existing Regulation 812/2004 measures, as well as identification of further management requirements where the current Regulation is not fit for purpose.

Recommendations

Our overarching recommendation is that Member States be compelled to comply with the Regulation, and implement any future measures that replace the Regulation, in an effort to continually reduce bycatch.

Further recommendations

- There is a requirement for significantly better recording and monitoring of fishing activities in logbooks, which means that logbooks have to be reformatted to allow extra details;
- Access to logbook data is necessary;
- Logbook data should be included in the design of an adequate bycatch sampling scheme;
- The Data Collection Framework is not adequate for monitoring cetacean bycatch. It should be a legal obligation for vessels to take on-board observers, and/or including if space does not allow, to instigate remote electronic monitoring (REM) appropriate to monitor cetacean bycatch, and to apply mitigation measures where these are identified as being required;
- Use of the full range of bycatch observation tools available (including REM) will result in the collection of the best data to enable compliance;

- Studies of the effectiveness of REM when compared to dedicated on-board observations should be undertaken by Member States;
- To reduce cetacean bycatch, mitigation is required in the Danish Belt Sea and southern Kattegat; and monitoring and mitigation is required in the tangle and gillnet fisheries off the southwest of England, north-west France, Spain and Portugal, purse-seines and beach seines in Portugal, and for pelagic trawls in all areas;
- Measures should be applied in all regions of Europe where required, including in static nets in the Mediterranean (currently exempt), in the Black Sea and in the outermost regions *e.g.*, French Guiana, Mayotte and Réunion;
- EC Regulation 812/2004 has been widely recognised as not serving its purpose as it only provides limited coverage in terms of fishing fleets, areas and gears. Any new Regulation should include clearly articulated measures to monitor bycatch across the range of fisheries, and obligations should not be dependent on vessel length;
- To enable better assessments of bycatch risk and bycatch estimates, more accurate measures of fisheries effort are required, including details of gear types, the incorporation of days at sea, soak time, net length, *etc.*;
- For polyvalent fleets, an approach to separate gear types should be to use landing data, and hourly gear specific effort should be documented;
- Mitigation measures should be robust, tested and flexible. Measures should extend beyond the use of ADDs to a wider suite of tools that are focused on the particular fishery and the species being bycaught;
- Member State compliance monitoring is required to ensure that mitigation is being adequately implemented where it is required;
- European funding should be better focused to allow for adequate bycatch monitoring and mitigation across Member States; and,
- Member States annual bycatch reports should be more readily available on the European Commission webpage.

WDC would urge to the European Commission to look to use all necessary powers to ensure full compliance of the Member States with Regulation 812 or equivalent future measures.

INTRODUCTION

The incidental capture of cetaceans in fisheries (bycatch) has long been recognised as a serious threat world-wide (*e.g.*, see International Whaling Commission (IWC), 1994) with mortality being a major conservation and welfare issue, including in European waters over the last two decades (*e.g.*, Kuiken *et al.*, 1994; Lowry and Teilmann, 1994; Tregenza *et al.*, 1997a, 1997b; Tregenza and Collet, 1998; López *et al.*, 2003; Soulsbury *et al.*, 2008; Read *et al.*, 2012; Desportes, 2014; Dolman *et al.*, 2016; Peltier *et al.*, 2016; and annual reports of International Council for Exploration of the Sea Working Group on Bycatch of Protected Species (ICES WGBYC)). Concern over the impact from high levels of cetacean-fisheries interactions on cetacean populations has led to the adoption of several international agreements as well as regional legislation in Europe and other countries (in particular the Marine Mammal Protection Act[2] in the United States).

EUROPEAN LEGISLATION & REGIONAL COMMITMENTS

In the European Union (EU), primary legislation relevant to bycatch of cetaceans in the North and Baltic Seas and North East Atlantic includes the Habitats Directive[3], the Common Fisheries Policy (CFP)[4] and related Council Regulation (EC) 812/2004[5] and the Marine Strategy Framework Directive (MSFD)[6]. In addition, the Agreement on the Conservation of Small Cetaceans on the Baltic, Northeast Atlantic, Irish and North Seas (ASCOBANS) is a Regional Agreement adopted under the auspices of the 1979 Convention for the Conservation of Migratory Species of Wild Animals (the "Bonn Convention")[7]. The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) covers all habitats and species in the North East Atlantic area[8]. More recently, the United States (U.S.) Rule on imported fish may prevent fisheries with high bycatch rates from exporting their products to the U.S, including European fisheries[9].

EU Habitats Directive

The Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (the 'Habitats Directive' 92/43/EEC) aims to promote and maintain biological diversity through the conservation of natural habitats and wild flora and fauna in the European territory of the Member States. The Directive directly refers to bycatch, where Article 12(4) states that '*Member States shall establish a system to monitor the incidental capture and killing of the animal species listed in Annex IV (a). In the light of the information gathered, Member States shall take further research or conservation measures as required to ensure that incidental capture and killing does not have a significant impact on the species concerned*. Under Articles 12 and 17, Member States are required to report to the European Commission on a six-yearly cycle on their implementation of the Habitats Directive for habitats and species in the Annexes II, IV and V. The core of the Article 17 reports is assessment of conservation status of the habitats and species

[2] http://www.nmfs.noaa.gov/pr/laws/mmpa/
[3] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043
[4] https://ec.europa.eu/fisheries/cfp_en
[5] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32004R0812
[6] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0056
[7] http://www.ascobans.org/es/documents/agreement-text
[8] https://www.ospar.org/convention
[9] https://www.federalregister.gov/documents/2016/08/15/2016-19158/fish-and-fish-product-import-provisions-of-the-marine-mammal-protection-act

targeted by the Directive. The assessment is made based on information on status and trends of species, populations or habitats, and on information on main pressures and threats mapped in 10x10 km grids. Conservation status is assessed as being either 'favourable', 'unfavourable-inadequate' or 'unfavourable-bad'.

The establishment of a network of protected areas is designed to maintain both the distribution and the abundance of threatened species and habitats, terrestrial and marine, as identified in the Annexes (Article 3). This network of Special Areas of Conservation (SACs) is called 'Natura 2000'. Article 11 requires population surveillance, where baseline data are essential to inform bycatch monitoring data. The provisions of the Habitats Directive apply automatically to marine habitats and species located in territorial waters. All species of cetacean are listed in Annex IV as "*species of community interest in need of strict protection*" while the bottlenose dolphin (*Tursiops truncatus*) and harbour porpoise (*Phocoena phocoena*) are also listed in Annex II and, as such, there is a requirement to designate SACs for their protection.

EU Common Fisheries Policy

The EU regulates fishing activities of its Member States through the Common Fisheries Policy. Article 2 of Council Regulation (EC) 1380/2013 refers to sustainable exploitation of fishery resources whilst minimising the impact of fishing activities on marine ecosystems, but makes no specific mention of marine mammals or their incidental capture. Council Regulation (EC) 812/2004 (hereafter referred to as EC 812/2004 or the Regulation) specifically concerns monitoring and mitigation of fisheries in order to reduce incidental catches of cetaceans. The main requirements of this Regulation include i) the mandatory use of acoustic deterrent devices (ADDs, *e.g.*, 'pingers') for vessels $\geq$ 12 m involved in fixed gear fisheries (bottom-set gillnets and entangling (trammel) nets) in specific ICES areas and periods of the year (see Figure 1) (Articles 2 and 3), ii) placement of observers on some vessels of $\geq$ 15 m length in order to achieve a bycatch estimate of the most commonly caught cetacean species with a coefficient of variation (CV) of less than 0.3. Where not possible, 5% and 10% on-board observer coverage of total fishing effort for these fleets are specified (Articles 4 and 5), and iii) annual reporting to the Commission by 1st June of the preceding year (Article 6). The Regulation also provided deadlines for phasing-out the use of driftnets in the Baltic Sea, and on 1st January 2008 that ban came into effect.

In the Regulation of Technical Measures in the Baltic, Council Regulation (EC) 2187/2005, a bycatch reporting obligation explicitly specifies the inclusion of trammel nets in Article 27, requiring '*a scientific assessment of the effects of using in particular gillnets, trammel nets and entangling nets on cetaceans*', unlike EC 812/2004. This Regulation covers the Baltic Sea, the Belt Seas and the Sound.

Following a request from the European Commission to the International Council for Exploration of the Sea (ICES), a Study Group for Bycatch of Protected Species (ICES SGBYC) was established in 2008. The aim of the Study Group was to review the National Progress report of work carried out by Member States under EC 812/2004. In 2011 the SGBYC changed to the ICES Working Group on Bycatch of Protected Species (ICES WGBYC). The Study Group was also requested to compile the information on bycatches and assess the effects of the use of the gear types on the relevant populations of cetaceans (notably the harbour porpoise) as specified in EC 2187/2005. In 2015, the ICES WGBYC conducted an historical review of EC 812/2004 bycatch and effort data from 2006-2013 (ICES WGBYC, 2015). In 2013 and 2014, bycatch rate estimates were reported by ICES fishing area and species rather than by country.

Numerous annual ICES bycatch reports[10] have concluded that the lack of implementation has resulted in large uncertainties in monitoring and has impeded the application of effective mitigation.

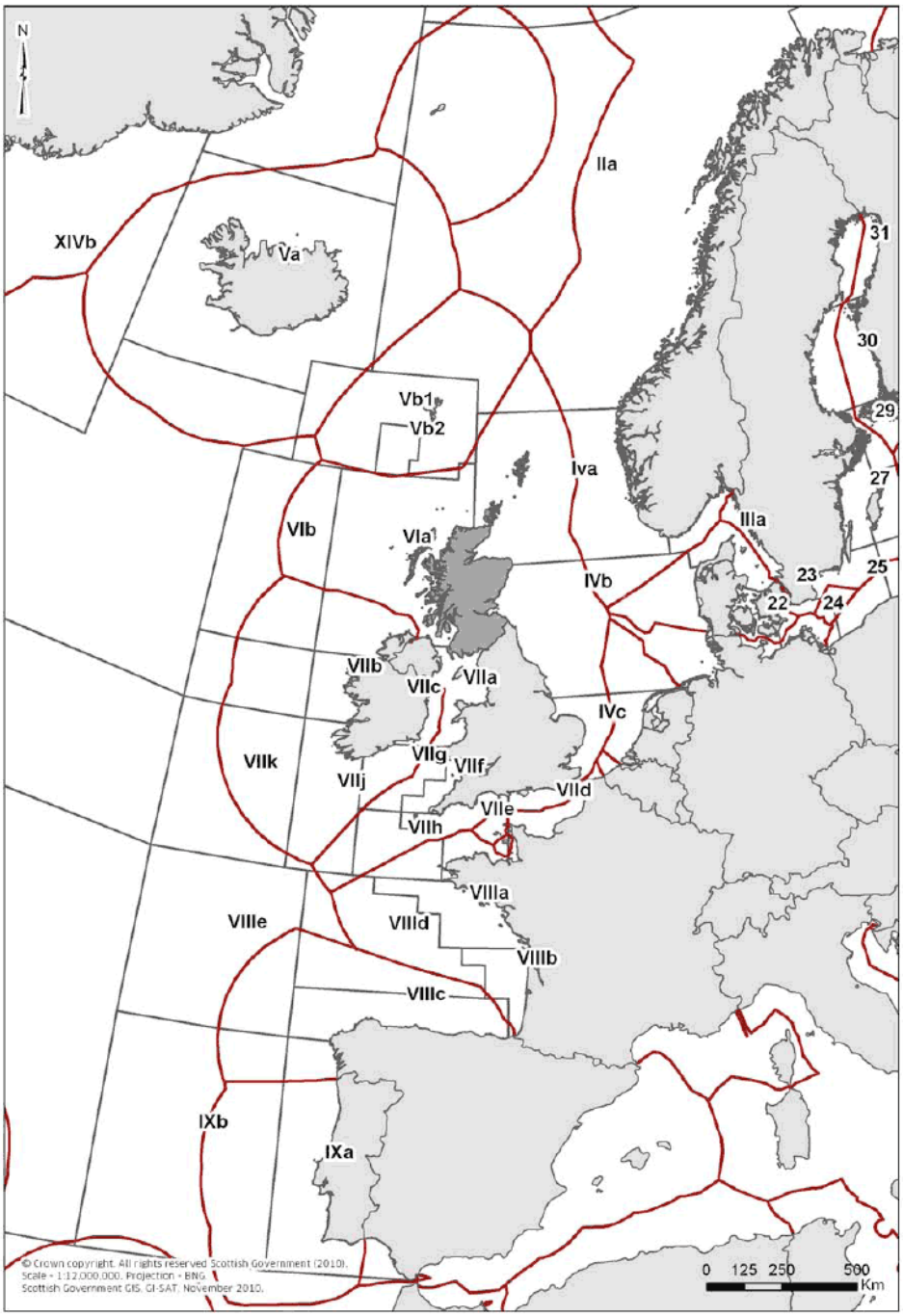

Figure 1. ICES Areas used for the management of marine fisheries in the North Atlantic[11]

The effectiveness of the Regulation was reviewed by the European Commission in 2009 and in 2011; they found that full implementation across Member States had not been achieved, and urged Member States to improve implementation (European Commission, 2009; 2011).

[10] http://www.ices.dk/news-and-events/news-archive/news/Pages/Catch-the-latest-round-of-bycatch-advice.aspx
[11] Source: http://www.gov.scot/Publications/2010/11/22125407/4

Under Council Regulation (EC) 199/2008, relating to the EU (fisheries) Data Collection Framework (DCF), there is a requirement for observers to monitor all discards and incidental catches in several fisheries in the ICES area. However, sampling under the DCF alone is not sufficient for the assessment of cetacean bycatch. In 2016, in accordance with Article 3 of the DCF, Implementing Decision EU 2016/1251 was adopted to establish '*a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019*' [12]. This Decision included cetacean bycatch in the Annex under Chapter 3 'Data to assess the impact of Union fisheries on marine ecosystems in Union waters and outside Union waters' which states that data shall consist of '*For all types of fisheries, incidental bycatch of all birds, mammals and reptiles and fish protected under Union legislation and international agreements…. including absence in the catch, during scientific observer trips on fishing ships or by the fishers themselves through logbooks*'.

EU Technical Conservation Measures

Regulation 812/2004 is being repealed and incorporated into a proposed Regulation on the Conservation of Fishery Resources and the Protection of Marine Ecosystems through Technical Measures (2016/0074). In March 2016, the European Commission produced a technical conservation measures legislative proposal that includes measures for cetacean bycatch. The European Council reviewed and proposed amendments to the Commission proposal in early 2017 and the European Parliament is currently reviewing the Commission proposal.

The Parliamentary committee responsible for examining the Commission proposal is the Committee on Fisheries (PECH), and a formal opinion has also been given by the Committee on Environment, Public Health and Food Safety. The PECH Committee will vote on amendments in November 2017. For a detailed overview of the process see Dolman *et al*. (2017). In relation to this report, the proposed language presently includes removing bycatch measures in various regions, and one amendment proposes to remove the drift net ban in the Baltic, as well as remove bycatch measures from south western waters off Spain and Portugal which would be detrimental for cetacean populations. Other amendments would improve bycatch measures.

EU Marine Strategy Framework Directive

The EC Council Directive 56/2008 (Marine Strategy Framework Directive, MSFD) was adopted in 2008 and aims to achieve '*Good Environmental Status* (GES)' for the marine waters within the EU by 2020 and to '*protect the resource base upon which marine-related economic and social activities depend*. The MSFD is the first EU legislation related to biodiversity, and requires that Member States develop a marine strategy for their national waters, with the explicit regulatory objective to achieve GES and ensure '*biodiversity is maintained by 2020*'. Each Member State has given an assessment of their current environmental status and a targeted programme of measures to be introduced by 2016. The MSFD follows '*an adaptive management approach*' requiring the Marine Strategies to be kept up-to-date and reviewed every six years. Cetaceans are covered by Descriptors: 1: Biological diversity (species and habitats maintained), 4: Elements of marine food webs, 8: Contaminants, 10: Marine litter, and 11: Introduction of energy, including underwater noise. Bycatch mortality in relation to population status is one of the parameters assessed under Descriptors 1 and 4.

[12] https://datacollection.jrc.ec.europa.eu/c/document_library/get_file?uuid=a9a69267-d036-45ad-90b5-f2d0dcd4e80d&groupId=10213

Regional Agreements: ASCOBANS

The main objective of the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS) is close co-operation '*to achieve and maintain a favourable conservation status for small cetaceans… with the overall aim to ultimately reduce bycatch to zero*'. Member Parties are required to bring into force the laws, regulations and administrative provisions necessary to comply with the provisions of the Agreement. In 2008, the area covered by ASCOBANS was extended westwards to include Ireland, Spain and Portugal, although to date, these countries are not signatories. For the range covered by ASCOBANS and an overview of Member State Parties, see Figure 2 and Table 2, respectively.

Within the agreement, Parties have international obligations for the conservation, research, and management measures prescribed in the Annex. Bycatches and strandings are included in the Annex and, as such, Parties are required to establish an efficient system for reporting and collecting specimens, conduct full necropsies, report on the cause of death and diet analysis, and make the information available in an international database. In 2016, at the latest Meeting of the Parties, ASCOBANS adopted Resolution 5 on monitoring and mitigation of small cetacean bycatch.

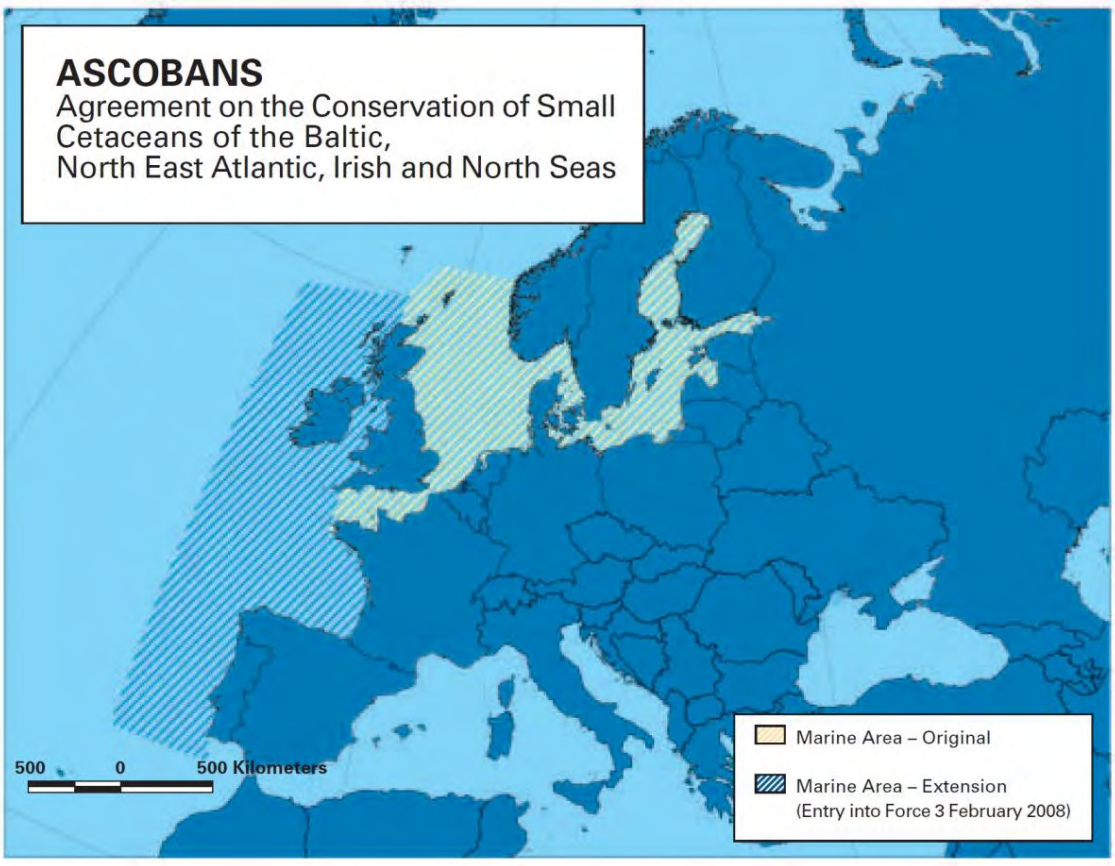

Figure 2. ASCOBANS range area

In a recent ASCOBANS review, monitoring of cetacean bycatch in the majority of fisheries and areas has been found to be insufficient, and has thus impeded the application of effective mitigation (ASCOBANS, 2015).

Spain and Portugal are signatories to the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) although the area of the agreement extends west only as far as the Cape St Vicente in Portugal until the extension has been ratified. Member States covering the ACCOBAMS region are not covered in detail in this report.

Table 2. Overview of Parties and Non-Party Range States of the ASCOBANS Agreement

Country	Region	ASCOBANS status	Status date
Belgium	North Sea	Party	1993
Denmark	Baltic Sea, North Sea	Party	1993
Estonia	Baltic Sea	Non-Party Range State	NA
European Union		Signed but not ratified	
Finland	Baltic Sea	Party	1999
France	Atlantic Ocean, North Sea	Party	2005
Germany	Baltic Sea, North Sea	Party	1993
Ireland	Atlantic Ocean	Non-Party Range State	NA
Latvia	Baltic Sea	Non-Party Range State	NA
Lithuania	North Sea	Party	2005
Netherlands	North Sea	Party	1992
Norway	North Sea	Non-Party Range State	NA
Poland	Baltic Sea	Party	1996
Portugal	Atlantic Ocean	Non-Party Range State	NA
Russia	Baltic Sea	Non-Party Range State	NA
Spain	Atlantic Ocean	Non-Party Range State	NA
Sweden	Baltic Sea, North Sea	Party	1992
United Kingdom	Atlantic Ocean, North Sea	Party	1993

OSPAR

The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) (replacing the Oslo and Paris Conventions) has been leading the international development of indicators and targets for determining GES in the Northeast Atlantic. An OSPAR Common Indicator for marine mammals (M-6) includes '*Mortality of seals and cetaceans due to bycatch*'.

Harbour porpoise has been included in the OSPAR List of Threatened and/or Declining Species and Habitats for the Greater North Sea and Celtic Seas owing to evidence of a decline in populations, their sensitivity, and the threat of incidental capture and drowning in fishing nets[13]. OSPAR has also developed a number of Ecological Quality Objectives (EcoQOs) for the North Sea, including for bycatch of harbour porpoise. Their most recent assessment found low confidence in bycatch estimates due to insufficient monitoring.

[13] https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/biodiversity-status/marine-mammals/harbour-porpoise-bycatch/

United States Marine Mammal Protection Act import rule

This rule implements aspects of the United States (U.S.) Marine Mammal Protection Act (MMPA) that aim to reduce marine mammal bycatch associated with international commercial fishing operations, including those undertaken in European waters, by requiring nations exporting fish and fish products to the United States to be held to the same standards as U.S. commercial fishing operations.

The rule also establishes the criteria for evaluating a harvesting nation's regulatory programme for reducing marine mammal bycatch, and the procedures required to receive authorisation to import fish and fish products into the U.S. Measures include procedures to reliably certify that the fish product sent to the U.S. was not caught as a result of intentionally killing marine mammals. To ensure effective implementation, the rule establishes a 5-year exemption period to allow foreign harvesting nations time to develop, as appropriate, regulatory programmes comparable in effectiveness to U.S. programmes. The government must apply for a comparability finding for each of its fisheries so the burden of proof lies with the government.

Summary

Various binding legal requirements were put in place to monitor and reduce bycatch in 2004 under EC Regulation 812/2004. Yet, most recently, the OSPAR Intermediate Assessment on harbour porpoise bycatch found a low confidence in bycatch estimates due to incomplete monitoring data[9]. The effectiveness of the Regulation was reviewed by the European Commission in 2009 and 2011 and found that full implementation across Member States had not been achieved, and urged Member States to improve implementation (European Commission, 2009, 2011). More recently, monitoring of cetacean bycatch in the majority of fisheries and areas has been insufficient, and has thus impeded the application of effective mitigation (ASCOBANS, 2015).

The remainder of this report will focus on implementation of EC Regulation 812/2004, with a specific reference to Article 6 – annual reporting by Member States on their implementation of Articles 2 and 3 (mitigation) and Articles 4 and 5 (monitoring). This review considers information from Member State's EC 812/2004 annual reports and/or information from the ICES reports (ICES SGBYC 2008, 2009, 2010; ICES WGBYC 2011, 2012, 2013, 2014, 2015, 2016), National Reports to ASCOBANS (for relevant Range States)[14] and information direct from Member States. The region covered includes the Northeast Atlantic, North Sea and Baltic Sea. Research studies relating to cetacean-fisheries interactions, including acoustic deterrent device (ADD) trials and remote electronic monitoring (REM) have been extensively covered in the ICES SGBYC/WGBYC and National Reports, and so are not covered below.

An interim version of this report was presented at the 2017 ASCOBANS Advisory Committee meeting held in Le Conquet, France from 5-7th September 2017[15]. All Member States were individually contacted and requested to review their respective sections of the report. Comments were received from all Member States except Ireland.

[14] http://www.ascobans.org/en/documents/national-reports

[15] http://www.ascobans.org/en/document/cetacean-bycatch-monitoring-and-mitigation-under-ec-regulation-8122004-northeast-atlantic

IMPLEMENTATION BY MEMBER STATES – Monitoring, mitigation and reporting

1. BELGIUM

The commercial fishing fleet in Belgium is relatively small. Between 2006 and 2014, Belgium was required to implement Articles 2, 3, 4 and 5 although their obligations to the Regulations varied annually (Table 3). With the exception of 2007, Belgium submitted an annual report of their implementation to the Regulation. The reports were submitted in Dutch.

Bycatch monitoring

Belgium has no dedicated on-board observer programme for monitoring cetacean bycatch and information gathered was conducted under different fisheries monitoring schemes, *e.g.*, the DCF and discards monitoring. Very few on-board observations were conducted under the Regulation. No cetacean bycatch was recorded through on-board observations, although some voluntary reporting of bycatch was made.

In years when on-board observation data was provided, only gillnets were covered. No information was available on the presence (or absence) of a trawl fleet requiring monitoring under the Regulation, although the fleet is thought to be very small.

In 2012, Belgium reported that EC 812/2004 is in full application in Belgium. In the same year, the ICES WGBYC stated that 'observer data must be requested for Belgium in the future', although the Regulation apparently did not require this. Effort data was only provided in 2006, 2009 and 2014.

Bycatch mitigation

For most years the use of ADDs were not required due to the mesh size/gear length of the nets and/or the vessel size (<12 m) and in years when ADDs were required, the fleet size applicable was 1-3 vessels. Belgium reported that in 2006 and 2007 it was not possible to obtain ADDs, although it is not mentioned if the ADDs were a mandatory requirement for implementation in the fishery or research trials. ADD trials were conducted from 2008-2009, although it was concluded that the low fishing effort and limited use of the devices made it difficult to evaluate the mitigating effect of ADDs on harbour porpoise bycatch. Belgium did not conduct controls of ADD compliance, and therefore no infringement cases were recorded.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

In the 2010 National Report, Belgium reported that there are legal requirements to report bycatch and permit observers to board vessels. No bycatch was observed by on-board observers and very few bycaught harbour porpoise were handed in to the authorities. However, results from necropsies of strandings show that harbour porpoise, harbour seal (*Phoca vitulina*) and grey seal (*Halichoerus grypus*) are all frequently bycaught. From necropsies it was not possible to determine in which gear the stranded animals were bycaught but many are thought to be from recreational gillnets. The use of recreational gillnets from shore was banned in Belgium in 2001 (below the low water mark) and in 2015 (intertidal zone).

Summary

Overall, information on the fleet sectors affected by the various Articles is unclear. Belgium concluded in their annual reports (submitted 8 out of 9 years) that due to the limited number of vessels, the Belgian fishing industry has a limited impact on marine mammal populations. However, there is no dedicated on-board observer scheme. The measures required by the Regulation are mostly not applicable to the Belgian static gear fishing vessels, active mainly in ICES Area IVc. Although the fleet covered by the Regulation is relatively small, Belgium has not fully complied with their obligations under the Regulation.

Table 3. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Belgium

BELGIUM	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	Dutch	Partial/ None?	Yes	Yes?	Yes?	No	None	Yes?	Yes?	No	Yes	No	Partial?
2007	No	NA	Partial/ None?	Yes	Yes?	Yes?	No	None	Yes?	Yes?	No	No	No	Partial?
2008	Yes	Dutch	None?	Yes	No	No	Trials	Partial	No	No	No	No	Yes - 0	NA
2009	Yes	Dutch	Partial	Yes	Yes	No	Trials	Partial	Yes	Yes	No	Yes	Yes - 0	Partial
2010	Yes	Dutch	Partial	Yes	Yes	No	Trials	Partial	Yes	Yes	No	No	Yes - 0	Partial
2011	Yes	Dutch	Partial	Yes	Yes	Yes	No	None	Yes	No	No	No	Yes - 0	Partial
2012	Yes	Dutch	Partial	Yes	Yes	Yes	No	None	Yes	Yes	No	No	Yes - 0	Partial
2013	Yes	Dutch	None	Yes	Yes	No	NA	NA	Yes	Yes	No	No	No	None
2014	Yes	Dutch	Partial	Yes	Yes	Yes	No	None	Yes	Yes	No	Yes	No	Partial

2. DENMARK

Denmark is required to implement Articles 2, 3, 4 and 5 of the Regulation and has submitted an annual report on Regulation 812 implementation since 2006 (Table 4). Reports from 2006, 2007 and 2009 contained very limited information, with almost no data from the ADD trials or on-board observer schemes, however some data for 2006 was reported retrospectively.

Bycatch monitoring

Denmark implemented an observer scheme in 2006 with coverage of 5.2% of trawls and 0.5% of gillnets included in Articles 4 and 5. No data were available for 2007 and 2009. In 2008, observers were placed on pelagic trawl fisheries covering between 3-11% of the fleet in the different areas. From 2010, on-board observations were undertaken within the DCF, however only gillnets were included because '*observer programmes covering trawls in previous years had not revealed any cetacean bycatches and coverage of the fleet was low*'. From 2006, no cetacean bycatch was reported in the Danish National reports although no information was provided for 2007, 2013 and 2014. One harbour porpoise was mentioned to have been bycaught during 2008 by the ICES WGBYC report in 2011 (covering 2009), however it was not mentioned in what gear or area this incident occurred or if it was reported during EC 812/2004 monitoring, REM trials or directly from the fisher. Nonetheless, this harbour porpoise was not reported in 2008 showing the potential inconsistencies in different reporting fora.

Bycatch mitigation

Implementation of ADDs was not specified in the annual reports in 2007, 2011 and 2012. Based on information on the fishing fleet from other years and the ADD trials being conducted, one can assume that there are some Danish vessels requiring ADDs annually, however the number of vessels affected by the Regulation and using ADDs are unclear, and vary greatly between areas. In 2007, Denmark obtained a derogation to increase the spacing of ADDs from 200 metres (as stipulated in EC 812/2004) to 455 metres until March 2017.

In 2010 and 2011, Denmark questioned the logic of limiting ADDs requirements to vessels >12 m on the basis that it is the gear characteristics that influence(s) interaction(s) rather than the vessel size. Denmark reported that the enforcement of ADDs was not an easy process due to the low quality and lifespan of ADDs, and the difficulties in regulating ADD use. However, fishers reported positively to the regulators on the advantages of ADDs.

Infringement of the use of ADDs was monitored using hydrophones on inspection vessels. No infringement cases were reported except in 2013 when two infringements were detected, although the origin of the vessels was not noted. In 2015 Denmark stated that it will report infringement from all Member States fishing in Danish waters to the European Commission.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

In 2007, Denmark reported in their National Report that the majority of harbour porpoise strandings are due to bycatch, although for most years, only a few necropsies are carried out to determine cause of death. Between May 2010 and April 2011, REM was conducted on 6 gillnetters with vessel lengths varying between 10-15 m and 36 bycaught porpoises were recorded by REM and a further 3 that had not been observed by REM were reported in the fisher's logbooks (Kindt-Larsen *et al.*, 2012). This study

highlights that cetacean bycatch is occurring in vessels not covered by on-board observers under EC 812/2004. The study also details the effectiveness of REM when compared to dedicated on-board observations.

Summary

Overall, Denmark has partially implemented Regulation 812. An annual report was submitted to the European Commission every year, but with only partial compliance of bycatch monitoring and mitigation between 2006-2014. Effort by on-board observers was very low in Denmark for most years and did not cover all the fleet and areas as required. No bycatch was reported from on-board observations although bycatch was reported from REM trials in gillnets <15 m. The use of ADDs appears to have been implemented in the required fisheries. Furthermore, Denmark has invested significantly into studies on the use of ADDs, maximum spacing of ADDs, potential habituation as well as ADD detection by porpoises (for mitigation) and authorities (for monitoring infringement). Denmark has not fully complied with their obligations under the Regulation.

Table 4. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Denmark

DENMARK	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	English	Partial	Yes	Yes	Yes	Yes	Full	Yes	Yes	Yes	Yes	Yes - 0	Partial
2007	Yes	Danish	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes?	Yes	No	Partial
2008	Yes	English	Partial	Yes	Yes	Yes	Yes	Full	Yes	Yes	Yes	Yes	Yes - 0	Partial
2009	Yes	English	Partial	Yes	Yes	Yes	Yes	Full	Yes	Yes	No	Yes	Yes - 0	Partial
2010	Yes	English	Partial	Yes	Yes	Yes	Yes	Full	Yes	Yes	No	Yes	Yes - 0	Partial
2011	Yes	English	Partial	Yes	Yes	Yes	Yes	Full	Yes	Yes	No	Yes	Yes - 0	Partial
2012	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	No	Yes	Yes - 0	Partial
2013	Yes	English	Partial	Yes	Yes	Yes	Yes	Full	Yes	Yes	No	Yes	No	Partial
2014	Yes	English	Partial	Yes	Yes	Yes	Yes	Full	Yes	Yes	No	Yes	No	Partial

3. ESTONIA

Estonia is required to implement Articles 2, 3, 4 and 5 and reports annually on their implementation of the Regulation (Table 5).

Bycatch monitoring

In the pelagic trawl fishing fleet during 2006-2008 and 2011-2012 there were dedicated on-board observers and in 2010 observations were conducted as part of a biological sampling programme. All the on-board observations included fishing effort. Two gillnetters were fishing in the areas requiring on-board observers, however, the vessels did not cooperate and allow observers during 2007. One trip was covered during 2008.

Between 2009 and 2010 there was no dedicated observer scheme and instead interviews with fisheries stakeholders were conducted. No cetacean bycatch was reported between 2006-2014 from observers or interviews.

Bycatch mitigation

In 2009, two vessels that were required to use ADDs apparently started to use them after the fishermen were requested to during an interview. Since 2010, the fleet in Estonia has not been fishing in the area and/or with the gear affected under Articles 2 and 3. Estonia did not conduct of controls of ADDs compliance, therefore no infringement cases were recorded.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

Fishers are obliged to report bycaught marine mammals (HELCOM, 2015). A large number of grey seals and ringed seals (*Pusa hispida*) are reported annually (*e.g.*, Dagys *et al.*, 2009). Under Article 17 reporting, Estonia stated that '*there is no pressure or threat to marine mammals from fisheries*'.

Summary

Overall, Estonia has partially implemented EC 812/2004. An annual report was submitted to the European Commission every year, and there was partial compliance with bycatch monitoring and mitigation between 2006-2014. In recent years there was no fleet fishing in the area affected under Articles 2 and 3, and interviews were used as an alternative to a dedicated observer scheme for some years. The fishing fleet appears to be relatively small. Estonia has not fully complied with their obligations under the Regulation.

Table 5. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Estonia

ESTONIA	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes - 0	Partial
2007	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes - 0	Partial
2008	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes - 0	Partial
2009	Yes	English	Partial	Yes	Yes	Yes	Yes	Full	Yes	Yes	No	Yes	No	Partial
2010	Yes	English	Partial	No	No	No	NA	NA	Yes	Yes	No	No	Yes - 0	Partial
2011	Yes	English	Partial	Yes	No	No	NA	NA	Yes	Yes	Yes	Yes	Yes - 0	Partial
2012	Yes	English	Partial	Yes	No	No	NA	NA	Yes	Yes	Yes	Yes	Yes - 0	Partial
2013	Yes	English	Partial	Yes	No	No	NA	NA	Yes	Yes	No?	Yes	Yes - 0	Partial
2014	Yes	English	Partial	No	No	No	NA	NA	Yes	Yes	No?	Yes	Yes - 0	Partial

4. FINLAND

Finland is required to implement Articles 4 and 5 of the Regulation annually and in some years Articles 2 and 3 (Table 6). The report was submitted in Finnish to the European Commission in 2006. Following a request from the Commission to all Member States, the reports in 2007 and 2008 were submitted in English.

Bycatch monitoring

The Ministry of Agriculture and Forestry enforced an on-board observer scheme by a decree for two full years from 2006 to 2007. No bycatches were reported during this observation period.

In Finland, according to the fishing legislation (Article 62), all registered professional fishermen and vessels are required to report cetacean bycatch via an online form to the Natural Resources Institute Finland (former Finnish Game and Fisheries Research Institute) for reporting to the European Union (and ASCOBANS and ICES). No bycatch was reported during the two year pilot study in 2006-2007, therefore it was deemed that no further monitoring of EC 812/2004 was necessary. No reports have been submitted since 2008 even though it appears that the Finnish fleet are fishing with vessels requiring on-board observers.

Bycatch mitigation

A number of Finnish vessels (14 gillnets and 7 driftnets) were authorised to use ADDs in 2007. No authorisation or implementation of ADDs use was reported after 2007. Fishing vessels from Finland are no longer active in the area where ADDs are mandatory. In 2007, Finland did not conduct controls of ADDs compliance.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

In late 2006, a mother and calf pair of common dolphin were observed swimming for two weeks off southern Finland and subsequently found drowned in gear fishing for salmon. Between 2006-2014 no other stranded cetaceans were reported in Finland's National Reports and sightings of harbour porpoise were very low, varying between 1 individual sighted in 2006 to a peak of 7 observations of a total of between 11-17 animals in 2011. In 2008, the Ministry of the Environment and the Ministry of Agriculture and Forestry recommended that fishermen avoid fishing with nets in coastal areas where harbour porpoises have been sighted.

Summary

Overall, Finland has minimally implemented EC 812/2004. An annual report was submitted to the European Commission for 2 of 9 years (in 2008, a report was submitted with no data) and only very limited compliance of bycatch monitoring and mitigation were achieved in 2006-2007. Finland only committed to two years of on-board observer monitoring. Finland has not fully complied with their obligations under the Regulation.

Table 6. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Finland

FINLAND	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	Finnish	Partial	Yes	Yes	Yes?	No	None	Yes	Yes	Yes	Yes	Yes - 0	Full
2007	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes - 0	Full
2008	Yes	English	None	No	No	No	NA	NA	Yes	Yes	No	No	No	None
2009	No	NA	None	No	No	No	NA	NA	Yes	Yes	No	No	No	None
2010	No	NA	None	No	No	No	NA	NA	Yes	Yes	No	No	No	None
2011	No	NA	None	No	No	No	NA	NA	Yes	Yes	No	No	No	None
2012	No	NA	None	No	No	No	NA	NA	Yes	Yes	No	No	No	None
2013	No	NA	None	No	No	No	NA	NA	Yes	Yes	No	No	No	None
2014	No	NA	None	No	No	No	NA	NA	Yes	Yes	No	No	No	None

5. FRANCE

France is required to implement Articles 2, 3, 4 and 5 of the Regulation (Table 7). France submitted EC 812/2004 reports annually although the 2013 report was submitted very late. Reports were submitted in French with an English summary. In the absence of the formal report, data from 2013 was made available at the ICES WGBYC meeting in 2015. Although France is concerned with both the Atlantic and the Mediterranean, for the present report the Mediterranean Sea is not included.

Bycatch monitoring

In accordance with the Regulation, a government funded dedicated on-board observer programme was initiated in 2006 led by the research institute 'L'Institut Français de Recherche pour l'Exploitation de la Mer' (IFREMER). In 2009, the French Ministry of Fishing decided from 2010 all the European Union and national observer requirements including EC 812/2004 would be merged to make data collection more economically efficient and avoid multiple observers interacting with the same vessels.

Observer effort data was reported annually, however data from 2013 was only made available at the 2015 ICES WGBYC. Although France had a large coverage of on-board observers in different fishing areas, effort generally did not meet the full requirements of the Regulation. Effort was not evenly spread across the sectors requiring observers, *e.g.*, in 2008 coverage of set-nets was 2% and trawls varied between 0 and 9.3%. Furthermore, observation effort varied greatly between the areas and inter-annually, *e.g.*, in 2010 no monitoring was conducted in the sea bass fleet during January and February when 80% of common dolphin bycatch occurred in previous years (ICES WGBYC, 2012). In some other years, the three largest pelagic trawls were not included in the French monitoring programme because they were operating from a port in the Netherlands. However, they were covered by the Dutch observer programme.

Bycatch estimates were reported annually until 2013. The change in estimating bycatch rates from individual countries to ICES areas from 2013 meant that no French data were included in the estimates for 2013 and 2014. France estimated high annual bycatch rates for common and striped dolphins (*Stenella coeruleoalba*) and harbour porpoise. Bottlenose dolphin and long-finned pilot whale (*Globicephala melas*) (hereafter referred to as pilot whale) were also bycaught but in relatively smaller numbers. The overall cetacean bycatch estimates would be significantly underestimated with the exclusion of French data. On-board observers were also placed on vessels <15 m, however, for safety reasons it was difficult to put observers on vessels <8 m.

Bycatch mitigation

ADD trials were initiated in 2005 and continued until 2009. During 2009 no violations were found during inspections although there is no detailed information on the inspections in 2009, nor for other years. In 2010 and 2011, 117 and 116 French vessels required ADDs, respectively, but there was no implementation. However, in the EC 812/2004 reports, France reiterated annually that the requirement to use ADDs remained a problem (namely due to safety and reliability issues). Although some fishers were voluntarily using ADDs from previous research projects, there is no other mention of compliance and ADDs were not used from 2009. France reported in 2010 that the Regulation needs to be revised because bycatch is not a function of vessel length and that ADDs (*e.g.*, pingers) may only be effective

for harbour porpoise but that other species are also bycaught. In 2014, France applied for a derogation to use Dolphin Dissuasive Devices (DDDs) (an ADD not specified in EC 812/2004).

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

Since 2012, a French ministerial Regulation requires fishermen to report marine mammal bycatch and contribute to scientific knowledge of bycatch (*e.g.*, report on spatial and temporal distribution and composition of bycatches). However, in the 2015 National Report to ASCOBANS, France reported that under this Regulation no bycatch had been reported to date.

A large number of stranded cetaceans along the French Atlantic coast have provided evidence of fisheries interactions originating from the Bay of Biscay (*e.g.*, van Canneyt *et al.*, 2012; Mannocci *et al.*, 2012; Peltier *et al.*, 2012, 2016). In 2011, France reported that the on-board monitoring scheme should be extended to the Bay of Biscay to include fisheries with potential cetacean bycatch. However, in 2012-2014 monitoring by on-board observers in the Bay of Biscay remained very low (ICES WGBYC, 2015).

Summary

Overall, France had achieved partial compliance with the Regulation in most years. In comparison to other countries, France has an extensive on-board observer scheme and has achieved a lot of on-board sampling at a high cost, especially during the early years of the Regulation. France also reported on cetacean bycatch not mandated by Regulation but collected under the broader auspices of the Habitats Directive. Although a large section of the fleet required ADDs, there was no compliance and ADD trials were only conducted between 2006 and 2009. As a result, France has not fully complied with their obligations under the Regulation.

Table 7. Overview of implementation EC Regulation 812/2004 between 2006-2014 by France

FRANCE	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	French	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	Yes	Yes	Yes	Partial
2007	Yes	French	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	Yes	Yes	Yes	Partial
2008	Yes	French	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	Yes	Yes	Yes	Partial
2009	Yes	French	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	Yes	Yes	Yes	Partial
2010	Yes	French	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes	Partial
2011	Yes	French	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes	Partial
2012	Yes	French	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes	Partial
2013	Yes - but very late	NA	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	No	Partial
2014	Yes	French	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	No	Partial

6. GERMANY

Germany is required to implement Articles 2, 3, 4 and 5 (Table 8) and has submitted a report on implementation of the Regulation annually, except in 2007 and 2014. In 2006, the report was submitted in German but following a request from the Commission, the report was submitted in English in subsequent years.

Bycatch monitoring

A dedicated on-board observer programme in accordance with the Regulation was not initiated until October 2010. In previous years, as an interim measure, cetacean bycatch monitoring was carried out via the DCF or other fisheries monitoring programmes, *e.g.*, discard sampling. It is unclear for how long the dedicated observer programme continued and monitoring in 2014 (and possibly 2012 and 2013) was, again, conducted via the DCF. Whilst no EC 812/2004 reports were submitted in 2007 and 2014, some monitoring of cetacean bycatch was conducted within other monitoring programmes.

In 2008, Germany reported that whilst monitoring the hauling of set-nets was feasible for reporting cetacean bycatch, this approach was not practical for large pelagic trawlers. In the years without the dedicated on-board observer programme, coverage was limited and observations were conducted almost entirely on trawls. Five pilot whales and one common dolphin were bycaught in pelagic trawls in 2011 and 2014, respectively. No other cetacean bycatch was recorded by on-board observers.

Although effort data was submitted by Germany for most years, effort was stated in the format of 'hours' rather than 'days at sea' as requested. Germany reported that monitoring under EC 812/2004 in the German Baltic is difficult and the success of the Regulation in the Baltic is likely to be limited because the majority of active fishing vessels are excluded from the Regulation due to their size and/or the gear they are using.

Bycatch mitigation

German fishing companies were informed through official notices regarding their obligations to use ADDs as specified under the Regulation. No information was recorded on the implementation of ADDs during 2006, 2007 and 2014, although in 2007 Germany reported six ADD infringements during inspections of vessels from other EU States but did not specify which ones. Between 2008 and 2013, ADDs were used in the relevant fleets and no further infringements were reported, however the level of implementation, *e.g.*, the number of vessels requiring and using ADDs was not available.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

A high number of harbour porpoise strandings along the German Baltic coastline have demonstrated evidence of bycatch and based on abundance estimates from surveys, the number of bycaught harbour porpoises is a conservation issue for the population (Koschinski and Pfander, 2009). The number of stranded harbour porpoises on German North- and Baltic Sea coasts remains high with roughly 200-300 animals being reported annually (Roller *et al.*, 2017).

In the 2011 National Report to ASCOBANS Germany stated that within the framework of a research project for better implementation of the Integrated Coastal Zone Management (supported by the Federal Agency for Environment and the Federal Ministry for Environment, Nature Conservation and Nuclear Safety) the pilot project "Harbour Porpoise Friendly Eckernförde Bay" was established. The project aimed to prevent bycatch in gillnets, and therefore stabilise the Baltic harbour porpoise population by providing ADDs for gillnets, testing alternative fishing methods and establishing a service to collect bycaught porpoises for examination. On a voluntary basis, 7 out of 12 fishing companies participated and in turn were permitted to use an official ecolabel logo to demonstrate that their catch was from a 'porpoise friendly fishery'. In late 2015, the service was expanded by a general possibility for fishermen to anonymously report and land bycaught harbour porpoises.

In 2013, Germany reported a further voluntary agreement between the Landesfischereiverband (Fishery Association of Schleswig-Holstein), the Fischereischutzverband (Fishery Protection Union of Schleswig-Holstein), the Baltic Sea Info-Center Eckernförde and the Ministry of Energy transition, Agriculture, Environment and Rural Areas Schleswig-Holstein. The agreement mandates a reduction of the total length of gillnets for fishing boats >8 meters from 1st July until 31st August. Gillnets are also banned within 3 nautical miles of the Wadden Sea in Schleswig-Holstein Marine Protected Area. However, it remains unclear how effective the voluntary agreement is because there are no independent studies to assess whether the measures are in place.

Summary

Overall, Germany has partially implemented EC 812/2004. An annual report was submitted to the European Commission for 7 of the 9 years, and only partial compliance of bycatch monitoring and mitigation were achieved between 2006-2014. The use of ADDs was implemented from 2008-2013 and on-board observations for cetacean bycatch were conducted annually but not to the level of coverage required under the Regulation, and static nets were largely under-represented. The lack of effort data for most years (and the low occurrence of bycatch reporting) meant that it was not possible to report bycatch estimates. Germany has not fully complied with their obligations under the Regulation.

Table 8. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Germany

GERMANY	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	German	Partial	Yes	Yes	Yes	No?	None?	Yes	Yes	No	No	Yes - 0	Partial
2007	No	NA	Partial	Yes?	Yes?	Yes?	No?	None?	Yes	Yes	No	No	Yes - 0	Partial
2008	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes?	Yes?	No	No	No	None/ Partial?
2009	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes?	Yes?	No	No	No	None/ Partial?
2010	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Partial
2011	Yes	German	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	No	No	Partial
2012	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	No?	Yes	Yes - 0	Partial
2013	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	No?	Yes	Yes - 0	Partial
2014	No	NA	Partial	Yes	Yes	Yes	No?	None?	Yes	Yes	No	Yes	No	Partial

7. IRELAND

Ireland is required to implement Article 2, 3, 4 and 5 (Table 9) and reports annually on implementation of the Regulation although the level of implementation varied annually.

Bycatch monitoring

A dedicated on-board observer programme was initiated in 2010. Prior to 2010, on-board observers were incorporated into research and technical monitoring although monitoring was not consistent. On-board observers on vessels using gillnets estimated a bycatch rate of 355 harbour porpoise during 2005-2007, however observer coverage per year was not defined. Between 2007-2010, no gillnets were monitored with on-board observers (contradicting the bycatch data previously reported for 2007). In 2011, gillnets were covered by the dedicated monitoring programme and two harbour porpoise, two common dolphin and one common minke whale (*Balaenoptera acutorostrata*) were bycaught. In 2012, one harbour porpoise was bycaught in a gillnet. No cetacean bycatch was reported observed during monitoring of gillnets in 2013 and 2014.

Coverage of trawls with on-board observers was more consistent year to year, including prior to the implementation of the dedicated observer scheme, due to other research interests in these gears. Effort and coverage were reported, although both varied greatly inter-annually, and it is not known if coverage was representative of the fleet. No cetacean bycatch was reported between 2006-2014 in the Irish pelagic trawl fisheries, therefore Ireland concluded that it was impossible to design a sampling strategy aimed at achieving a CV no higher than 0.3 for the most frequently caught species.

In 2010, based on the absence of bycatch data, Ireland reported difficulty in justifying the current legal requirements to continue dedicated observer programmes in pelagic trawling operations under EC 812/2004. Furthermore, they suggested '*a thorough review of the Regulation which results in smarter, more efficient bycatch reduction programs which focus on fisheries where problems actually exist and where achievable targets are set*.'

Bycatch mitigation

In 2006-2007, ADDs trials were conducted using four different ADD models to assess their impact on fishing operations, functionality, cost, and durability. Based on the results of the study, the Irish government applied for a derogation in June 2007 to increase the maximum spacing of ADDs from 200 m to 500 m. No information on the use of ADDs with increased spacing was provided in 2008-2009 before the derogation lapsed.

Information on the implementation of ADDs by Irish fisheries has been patchy. The trials conducted in 2006-2007 indicate that ADDs were used during these years. From 2008, no legislative or administrative measures were taken to further the use of ADDs and no information on the number of vessels requiring, nor using ADDs, was available. Between 2007-2009, the Irish Naval Service conducted 148 inspections of gillnet vessels and ten vessels were detained for various infringements including the failure to deploy ADDs. Since the end of 2009, there is no information on the enforcement of ADDs although a fishery information notice was produced to inform fishermen of the Regulation's requirements in 2010.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

Brown *et al*. (2014) reported high levels of cetacean bycatch in the Irish pelagic trawl fisheries for albacore tuna (*Thunnus alalunga*) during fishing activities in 1996. Although there were no observations of cetacean bycatch by observers in this tuna fishery between 2005-2012, DDDs were provided to 12 vessels with operating guidelines in 2012 as a voluntary measure to further reduce the probability of any bycatch occurring if fishermen feel there is an increased risk (*e.g.*, cetaceans in the fishing grounds during trawling).

Analysis of strandings data show that there was an increase in common dolphin strandings between 2004-2014 (McGovern *et al*., 2016) which was consistent with temporal trends of common dolphin strandings attributed to bycatch in other regions of the NE Atlantic, *e.g.*, France, Spain and the UK (López *et al*., 2002; Leeney *et al*., 2008; Mannocci *et al*., 2012). Strandings are not systematically necropsied in Ireland. However, during one week in January 2013, 13 common dolphins were found stranded along the north-west coast of Ireland and necropises were conducted on 5 of the animals, all of which showed lesions consistent with bycatch from a trawl fishery (Anon, 2013). Peaks in common dolphin strandings in Ireland have previously been attributed to bycatch (Berrow and Rogan, 1997; Murphy, 2004).

Summary

Overall, Ireland has partially implemented EC 812/2004. An annual report was submitted to the European Commission every year, but only partial compliance of bycatch monitoring and mitigation were achieved between 2006-2014. The level of monitoring and mitigation was not consistent annually. During the early years, ADD trials were conducted and more recently, a dedicated on-board observer programme was initiated. No cetacean bycatch was reported in trawls although bycatch was reported in gillnets. Ireland has not fully complied with their obligations under the Regulation.

Table 9. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Ireland

IRELAND	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	English	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	No	Yes	Yes	Partial
2007	Yes	English	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	No	Yes	Yes	Partial
2008	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	No	Yes	Yes	Partial
2009	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	No	Yes	Yes	Partial
2010	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes	Partial
2011	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes	Partial
2012	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes	Partial
2013	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes	Partial
2014	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes	Partial

8. LATVIA

Latvia is required to implement Articles 4 and 5 annually and Articles 2 and 3 since 2010 (Table 10). Reports on implementation of EC 812/2004 have been submitted since 2006.

Bycatch monitoring

Latvia had a dedicated national on-board observer scheme in most years, although in 2010 cetacean bycatch monitoring was carried out alongside the DCF and in 2013, no monitoring was required. Effort data was submitted for most years, although not always in the format of 'days at sea' and effort varied greatly between years, *e.g.*, coverage of 19% pelagic trawls and 1.68% static nets in 2009, and 32.9% pelagic trawls and 9.6% of static nets in 2012.

No cetacean bycatch was reported from 2006-2014. In 2008, after two years of dedicated monitoring with no cetacean bycatch reported, the Latvian Ministry stated '*there is no financial justification for continued on-board monitoring*' and suggested replacing the requested intensive observation programme by collecting information from other available sources, although there was no specification on the alternative sources. From 2010-2012, Latvia informed the Commission of plans to cease dedicated cetacean bycatch observer programmes and incorporate observations into other existing fisheries programmes.

Bycatch mitigation

The Latvian fishing fleet operating in the areas and with gears requiring implementation is very small and not consistent inter-annually. ADDs were used from 2010 although no details were provided on the impact of the ADDs, the ADD specifications, or how measures were enforced. Previous to 2010, mitigation trials using ADDs were not required. No compliance controls were conducted by Latvia.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

Fishers are required to report bycaught animals (HELCOM, 2015).

Summary

Overall, Latvia has partially implemented the Regulation. An annual report was submitted to the European Commission 8 out of 9 years, with only partial compliance with bycatch monitoring and mitigation between 2006-2014. The Latvian fishing fleet requiring monitoring or mitigation appears to be relatively small and despite high coverage in some years, on-board observers reported no cetacean bycatch. Latvia has not fully complied with their obligations under the Regulation.

Table 10. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Latvia

LATVIA	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	Latvian & English	Full?	No	No	No	NA	NA	Yes	Yes	Yes	Yes	Yes - 0	Full
2007	No	Latvian & English	Partial	No	No	No	NA	NA	Yes	Yes	Yes	Yes	Yes - 0	Partial
2008	Yes	Latvian & English	Full?	No	No	No	NA	NA	Yes	Yes	Yes	Yes	Yes - 0	Full
2009	Yes	Latvian & English	Partial	No	No	No	NA	NA	Yes	Yes	No	Yes	Yes - 0	Partial
2010	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Full
2011	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Full
2012	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Full
2013	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	No	Yes	Yes	Yes - 0	Full (but NA)
2014	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Full

9. LITHUANIA

Lithuania is required to implement Articles 4 and 5 (Table 11) and reported on implementation most years.

Bycatch monitoring

There is no dedicated on-board observer programme due to financial and logistical reasons. There is only one company with pelagic trawls in Lithuania and they did not permit observers to board their vessels due to safety reasons, except during 2011, 2012 and 2013. Data on fishing effort and bycatch have been collected from interviews with fisheries stakeholders, fisheries inspections and the DCF. No cetacean bycatch was recorded by on-board observers between 2011-2013. Furthermore, based on interviews with fishermen conducted in 2007, 2008, 2010, 2011 and 2014, no cetacean bycatch was reported. In 2006 and 2010 no EC 812/2004 reports were submitted, although in 2010 data were extracted from the National Report to the ICES WGBYC.

Bycatch mitigation

None reported.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

Almost no data exists on the presence of cetaceans in Lithuanian waters. In their 2014 National Report to ASCOBANS, Lithuania reported that fishermen were interviewed about harbour porpoise observations and bycatch over a 2 year period from 2012-2014 and the results showed that the fishermen had never seen a harbour porpoise in Lithuanian waters. Furthermore, the last observation of a bottlenose dolphin was in 2007.

Summary

Overall, Lithuania has minimally implemented EC 812/2004. Lithuania reported that they did not fulfil their monitoring obligations mainly due to financial reasons. An annual report was submitted to the European Commission 7 out of 9 years, with only minimal compliance to bycatch monitoring and no mitigation between 2006-2014. Data submitted for most years was from alternative sources to a dedicated on-board observer programme. No cetacean bycatch was reported although the fleet covered under EC 812/2004 is relatively small. Lithuania has not fully complied with their obligations under the Regulation.

Table 11. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Lithuania

LITHUANIA	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	No	NA	None	?	?	?	?	None?	?	?	No	No	?	None?
2007	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	No	Yes	No	Partial
2008	Yes	English	Partial	?	?	?	?	?	Yes	Yes	No	Yes	No - interviews	Partial
2009	Yes	English	None	No	No	No	NA	NA	Yes?	Yes?	No	Yes	No	None/ NA?
2010	No	English	Partial	No	No	No	NA	NA	Yes	Yes	No	No	No - interviews	Partial
2011	Yes	English	Partial	No	No	No	NA	NA	Yes	Yes	No	No	Yes - 0	None
2012	Yes	English	Partial	No	No	No	NA	NA	Yes	Yes	No	Yes	Yes	Partial
2013	Yes	English	Partial	No	No	No	NA	NA	Yes	Yes	No	Yes	Yes	Partial
2014	Yes	English	Partial	?	?	?	NA	NA	Yes?	Yes?	No	No	No - interviews	None

10. NETHERLANDS

The Netherlands is required to implement Articles 4 and 5 and reports annually on their EC 812/2004 obligations (Table 12).

Bycatch monitoring

According to the Regulation, the Dutch have the obligation to monitor pelagic fishery in months December to March in ICES subdivisions 6, 7 and 8. The on-board observer programme in the Dutch fleet is combined with monitoring that takes place under the DCF. Monitoring of set gillnets in the Netherlands is not required because almost all effort takes place in area 6c and most of the vessels are less than 12 m. Hence the majority of observations have been conducted on pelagic trawls, with considerably less monitoring on set gillnets. Fishing effort has been reported for each year, however the level of coverage from year to year, as well as between areas, has been notably different, although overall, the target coverage has been fulfilled. The Netherlands also reported the refusal of some vessels to take on-board observers on trips where there might be a lot of discards, leading to potential biases in observer coverage.

During 2007 to 2011, no cetacean bycatch was reported from on-board observations of trawls. One Atlantic white-sided dolphin (*Lagenorynchus acutus*) and one long-finned pilot whale were reported to be bycaught in pelagic trawls in 2006 and 2012, respectively.

Bycatch mitigation

Implementation of ADDs was only reported during 2006 and 2007 although it is unclear if the ADDs trials were conducted for mandatory mitigation purposes under Articles 2 and 3 or for research purposes. Compliance was not investigated. Between 2008 and 2014, the Dutch fishery included no fleet segments in which ADDs are mandatory, although the reason, *i.e.*, fishing area, fishing gear or vessel size, was not specified. The Netherlands has no fisheries requiring the implementation of ADDs, although this was contradicted in the ICES WGBYC (2014) covering 2012.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

Cetacean bycatch has also been reported in fleet segments not included for monitoring or mitigation under EC 812/2004, *e.g.*, gillnets carried on vessels <10 m. During a 24-day REM trial in 2011, six harbour porpoises were bycaught in a gillnet carried on a vessel <10 m, giving an overall estimated bycatch rate of 93 porpoises during the period December to March. A high number of harbour porpoises that strand in the Netherlands have evidence of fisheries interactions (*e.g.*, Camphuysen and Siemensma, 2011) further indicating that the Dutch fishing sectors covered by EC 812/2004 are not necessarily the ones with the highest cetacean-fisheries interactions.

Summary

The Netherlands has partially implemented EC 812/2004. An annual report was submitted to the European Commission every year. Implementation of the Regulation has been relatively constant, *e.g.*, observers on pelagic trawls and annual reporting of effort data although monitoring was not conducted with a dedicated observer programme. The Netherlands has no fisheries requiring the implementation of ADDs, although this was contradicted in ICES WGBYC (2014) covering 2012. The Netherlands has partially complied with their obligations under the Regulation.

Table 12. Overview of implementation EC Regulation 812/2004 between 2006-2014 by The Netherlands

THE NETHERLANDS	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	English	Partial	Yes	Yes	Yes	No	Partial	Yes	Yes	No	Yes	Yes	Partial
2007	Yes	English	Partial	Yes	Yes	Yes	No	Partial	Yes	Yes	No	Yes	Yes - 0	Partial
2008	Yes	English	Partial	No	No	No	NA	NA	Yes	Yes	No	Yes	Yes - 0	Partial
2009	Yes	English	Partial	No	No	No	NA	NA	Yes	Yes	No	Yes	Yes - 0	Partial
2010	Yes	English	Partial	No	No	No	NA	NA	Yes	Yes	No	Yes	Yes - 0	Partial
2011	Yes	English	Partial	No	No	No	Trials	NA	Yes	Yes	No	Yes	Yes - 0	Partial
2012	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	No	Yes	Yes	Partial
2013	Yes	English	Partial	No	No	No	NA	NA	Yes	Yes	No	Yes	Yes - 0	Partial
2014	Yes	English	Partial	No	No	No	NA	NA	Yes	Yes	No	Yes	Yes - 0	Partial

11. POLAND

Poland is required to implement Articles 2, 3, 4 and 5 of the Regulation (Table 13) and reports annually to the Commission on their implementation of the Regulation.

Bycatch monitoring

A pilot on-board observer programme was conducted between 2006 and 2008. The Monitoring Incidental Catch of Cetaceans Scheme was initiated by the National Marine Fisheries Research Institute in Gdynia in 2009. However, due to financial shortages during 2010, the National Marine Fisheries Research Institute collected recordings during a fisheries monitoring programme under the DCF. Since 2011, the Monitoring Incidental Catch of Cetaceans Scheme fulfils monitoring obligations of Articles 4 and 5. Between 2006-2014, the level of monitoring (effort and coverage) varied annually and in most years, the level of monitoring required under the Regulation was not obtained. No cetacean bycatch was reported. In 2008, Poland reported that '*it is unlikely that continuing the stipulated 5% observer coverage on vessels >15 m will meet the goals of Regulation 812/2004*.'

Bycatch mitigation

During 2006 and 2007 fishers reported that it was not possible to purchase ADDs to attach to gears as required by Articles 2 and 3 due to the lack of producers in Poland, however, ADDs were deployed across Puck Bay to create a barrier for porpoises during the intensive fishing seasons. In the autumn of 2008, 500 ADDs were purchased by the Ministry of Agriculture and Rural Development and given to gillnetters with vessels >12 m fishing in the ICES 24 Area, although reporting on their use did not occur until 2009. Taking into account that ADDs are thought to have a lifetime of around two years, in 2015 a detailed inspection to determine whether the devices were still operational was carried out. The inspection showed that 253 ADDs were required to be replaced. The Ministry requested that fishers with ADDs had to replace the devices which were not in good working condition.

During 2009-2014, inspectors made visual observations on the use of ADDs at sea and in harbours and no infringement of the Regulation was reported. From September 2010, ADD use was also assessed by hydrophones that allowed real-time monitoring of their use in-situ. However, no further information on the level of enforcement or infringements were provided. In 2010, Poland reported that over half of the vessels requiring ADDs were in possession of the devices. However, the majority of boats (>75%) fishing in the relevant areas with gillnets are <12 m and therefore, whilst they are known to record harbour porpoise bycatch, they are omitted from mandatory mitigation under the Regulation. It was suggested that the use of ADDs should be extended to include vessels between 10 and 12 m in length.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

Limited data exist on strandings in Poland. Between 1990-1999, harbour porpoise bycatch was documented most frequently in Puck Bay between December-April in semi-drift nets fishing for salmon (*Salmo salar*), rainbow trout (*Onchorynchus mykiss*) and sea trout (*Salmo trutta*) (40% of bycatch cases). Other gears found to have harbour porpoise bycatch were bottom set nets for cod (*Gadus morhua*) (33% of cases) and flounder (*Platichthys flesus*) and pike-perch (*Sander lucioperca*) nets (15.5% of cases). The majority of incidences were reported by fishermen and a few animals were reported as strandings (Skóra and Kuklik, 2003). Although these data were collected prior to the establishment of EC 812/2004, Puck Bay is excluded from monitoring and mitigation under the

Regulation due to the area not being covered and the small vessels used in the fishery. In order to minimise cetacean-fisheries interactions in Puck Bay, an acoustic barrier using ADDs was introduced in 2010 with the aim to prevent harbour porpoises crossing the barrier and coming into contact with fishing nets.

Additionally, within the Monitoring Incidental Catch of Cetaceans Scheme for years 2011-2014, additional non-obligatory monitoring of bycatches of cetaceans on small vessels, <15 m, has been carried out in the Puck Bay and Gulf of Gdansk.

In 2009, in the National Report to ASCOBANS, Poland reported that the number of incidents of harbour porpoise bycatch dropped rapidly since the early 2000s. Fishermen reported that the significant reduction in reporting activity was due to the introduction of EC 812/2004 and the fishermen's disapproval of phasing out drift nets in the Baltic Sea. In 2010, it was further reported that '*fishermen understand the necessity for porpoise protection, but the technical means proposed in EC 812/2004 do not favour effective protection of the Baltic porpoises…. eventual imposing further means for porpoise protection which would make commercial fishing difficult or impossible, should be introduced only after consideration of actual and reliable scientific data'*.

Summary

Overall, Poland has partially implemented EC 812/2004. An annual report was submitted to the European Commission every year, but only partial compliance with bycatch monitoring and mitigation between 2006-2014. The use of ADDs in the relevant fleet started in October 2008. On-board observer schemes (initially within a pilot project before the dedicated programme started in 2010) covered gillnets and trawls although coverage was low in most years. No cetacean bycatch was recorded, but gears with high levels of bycatch do not require monitoring (or mitigation) under the Regulation. Poland has not fully complied with their obligations under the Regulation.

Table 13. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Poland

POLAND	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes - 0	Partial
2007	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes - 0	Partial
2008	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Partial
2009	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Partial
2010	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	No	Yes	Yes - 0	Partial
2011	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Partial
2012	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Partial
2013	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Partial
2014	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Partial

12. PORTUGAL

In relevance to this report, Portugal is required to implement Articles 4 and 5 in the north-east Atlantic. The Portuguese fleet requiring implementation includes gillnets/trammel nets but the vessels are generally polyvalent (multi-gear fisheries) (Table 14).

Bycatch monitoring

Reports submitted in 2006, 2008 and 2009 contained limited information due to the lack of a dedicated observer programme and no report was submitted in 2007.

Since 2010 a dedicated observer programme has been implemented by combining data from the National DCF and research projects, *e.g.*, SafeSea-EEA Grants 2008–2010 and Life+ MarPro- 2011–2016. Portugal has stressed the difficulties in calculating fishing effort (and therefore bycatch rates) in polyvalent fisheries, although effort data was provided. Portugal reported that their main difficulties in implementing EC 812/2004 are due to logistics, *i.e.*, that neither research projects nor the Portuguese government have sufficient funds to monitor the fleets in order to achieve the predefined level of 5% of fishing effort using observers, therefore coverage has been low (<1%) for all gears monitored.

Polyvalent fisheries also make estimating bycatch rates difficult due to their multi-gear nature (*e.g.*, on a daily basis one vessel can fish with more than one gear, or yearly, they change gears according to their target species and market demands). Moreover, effort units used in the calculations are usually daily trips, which do not apply to polyvalent fisheries, thus, direct extrapolations should not be applied as they can produce unrealistic figures. Bycatch rates were tentatively estimated for 2010-2012, although the figures vary greatly, *e.g.*, 6137 and 206 common dolphins in 2010 and 2011, respectively. From 2013 onwards, bycatch rates were estimated by the ICES WGBYC for each cetacean species and ICES area affected.

Bycatch mitigation

None reported. Portuguese vessels are apparently not fishing in the areas with the types of gear listed in the Regulation.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

Portugal reports considerably more information on cetacean-fisheries interactions to the ICES WGBYC than their national obligations under EC 812/2004.

The SAFESEA and Life+ MarPro projects included the voluntary use of ADDs on 14 gillnet, 14 purse-seine and 2 beach-seine vessels. In 2010, fewer cetacean-fisheries interactions were observed with purse-seines and gillnets with ADDs (ICES WGBYC, 2012). In contrast, increased cetacean-fisheries interactions were observed with purse-seines and gillnets using ADDs in 2014 (ICES WGBYC, 2016).

Outside of the Regulation, cetacean bycatch in Portuguese waters is also reported in purse-seines, mainly of common dolphin (Marçalo *et al.*, 2015) and beach-seines (Read, 2016). Beach-seines mainly accidentally catch harbour porpoise and the level of bycatch is most likely unsustainable for the genetically distinct Iberian harbour porpoise population (Read, 2016).

Portugal has a high number of cetacean strandings annually, and between 37%-50% of stranded individuals have provided evidence of dying due to fisheries interactions, mainly in fixed net fisheries (*e.g.*, gillnets, trammelnets or illegal coastal driftnets) (ICES WGBYC, 2013; 2015). The most frequently bycaught species are common and bottlenose dolphins and harbour porpoises, although striped dolphins and minke whales have also been reported (Vingada *et al.*, 2011; ICES WGBYC, 2014).

In 2013, Portugal started to use electronic monitoring (EM) systems to increase coverage of the fleets and provide more realistic bycatch estimates. In general, there is a good collaboration between researchers from various institutes and fisheries stakeholders in mainland Portugal.

Summary

Overall, Portugal has partially implemented EC 812/2004. An annual report was submitted to the European Commission 8 out of 9 years, but only partial compliance with bycatch monitoring and no mitigation between 2006-2014. Reporting by Portugal was initially very limited due to 'administrative and financial reasons' but since 2010, implementation of the Regulation and reporting have significantly improved. Portugal has not fully complied with their obligations under the Regulation.

Table14. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Portugal

PORTUGAL	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	Portuguese	None	No	No	No	NA	NA	Yes	Yes	No	No	No	None
2007	No	NA	None	No	No	No	NA	NA	Yes	Yes	No	No	No	None
2008	Yes	English	None	No	No	No	NA	NA	Yes	Yes	No	No	No	None
2009	Yes	English	None	No	No	No	NA	NA	Yes	Yes	No	No	No	None
2010	Yes	English	Partial	No	No	No	Trials	NA	Yes	Yes	Yes	Yes	Yes	Partial
2011	Yes	English	Partial	No	No	No	Trials	NA	Yes	Yes	Yes	Yes	Yes	Partial
2012	Yes	English	Partial	No	No	No	Trials	NA	Yes	Yes	Yes	Yes	Yes	Partial
2013	Yes	English	Partial	No	No	No	Trials	NA	Yes	Yes	Yes	Yes	Yes	Partial
2014	Yes	English	Partial	No	No	No	Trials	NA	Yes	Yes	Yes	Yes	Yes	Partial

13. SPAIN

The Spanish fishing fleet are required to implement Articles 2, 3, 4 and 5 (Table 15). Reports were only submitted between 2006-2009. In 2006 and 2007, Spanish National Reports were submitted but there was no implementation of the Regulation.

Bycatch monitoring

In the 2006 and 2007 Spanish National Reports, existing programmes for observers in fisheries/discards were mentioned but no information on cetacean bycatch was reported. Based on data from fisheries logbooks in 2007, an observer scheme was designed and implemented towards the end of 2008. Reports submitted for the Regulation covering monitoring in 2008 and 2009 contained information on the dedicated on-board observer scheme, including information on fishing effort and cetacean bycatch in gillnets and trawls. Bycatch estimates were calculated for 2009, with a high number of harbour porpoise (374 animals) estimated to be bycaught in ICES Areas VIIIa and b (north-west France). At the end of 2009, the pilot observer scheme finished and no further implementation of the Regulation was conducted.

Bycatch mitigation

Dedicated mitigation was only conducted in 2008 and 2009 and implementation was partial due to the lack of ADD trials. No controls on compliance of mandatory ADDs were conducted.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

Spain has the largest fishing fleet in the EU, half of which is based in Galicia, north-west Spain (Spanish Ministry of Agriculture, Food and Environment, 2013). Although not officially reported by Spain to the ICES WGBYC, during 2006-2014 there was a high level of cetacean-fisheries interactions in the Atlantic waters of Spain based on analysis of strandings (*e.g.*, Vázquez *et al.*, 2014; Read, 2016) and interviews with fishermen (*e.g.*, López *et al.*, 2012; Goetz *et al.*, 2014), as previously shown in the late 1990s (López *et al.*, 2003) and early 2000s (Fernández-Contreras *et al.*, 2010). The main species with high cetacean-fisheries interactions are common and bottlenose dolphin and harbour porpoise.

Although the DCF is meant to report all discards, in 2013, the ICES WGBYC expressed 'considerable uncertainty' regarding how comprehensive the Spanish DCF data were in relation to monitoring marine mammal species, and excluded the data from the WGBYC database. Furthermore, available data collected via the DCF and other projects has not been consistently reported to one forum, *e.g.*, data was provided to the ICES Working Group on Marine Mammal Ecology (ICES WGMME) from 2003-2007, and the ICES SGBYC for 2008 and 2009.

Summary

Overall, implementation of EC 812/2004 by Spain has been extremely poor. An annual report was submitted to the European Commission 4 out of 9 years, with only partial compliance with bycatch monitoring and no mitigation. Although Spain has an obligation to implement Articles 2, 3, 4 and 5 of the Regulation, partial implementation was only conducted for two reporting years. Spain has not complied with their obligations under the Regulation.

Table 15. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Spain

SPAIN	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	Spanish	None	Yes	Yes	Yes	No	None	Yes	Yes	No	No	No	None
2007	Yes	Spanish	None	Yes	Yes	Yes	No	None	Yes	Yes	No	No	No	None
2008	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes	Partial
2009	Yes	English	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes	Partial
2010	No	NA	None	Yes	Yes	Yes	No	None	Yes	Yes	No	No	No	None
2011	No	NA	None	Yes	Yes	Yes	No	None	Yes	Yes	No	No	No	None
2012	No	NA	None	Yes	Yes	Yes	No	None	Yes	Yes	No	No	No	None
2013	No	NA	None	Yes	Yes	Yes	No	None	Yes	Yes	No	No	No	None
2014	No	NA	None	Yes	Yes	Yes	No	None	Yes	Yes	No	No	No	None

14. SWEDEN

Sweden is required to implement Articles 2, 3, 4 and 5 of the Regulation however implementation of all Articles including reporting (Article 6) has been very inconsistent (Table 16). In some years, although a report was submitted, it did not contain the required data (*e.g.*, 2012). No report was submitted in 2007, 2013 and 2014 although some data were made available for the ICES SGBYC and WGBYC reports.

Bycatch monitoring

The dedicated on-board observer programme under the Regulation initiated in 2006 was only implemented until 2008. In three years of monitoring, no bycatch was reported. From 2009 onwards, vessels covered by Articles 4 and 5 were active but no monitoring of fishing effort and cetacean bycatch was reported.

In 2012 and 2013, the ICES WGBYC stated '*All Member States that are affected by the Regulation, except for Sweden, carry out or attempt to carry out some form for bycatch monitoring'*. Sweden reported in 2014 that the reason for not having dedicated observers for monitoring bycatch of marine mammals is because '*Reg. 812 is not serving its purpose to reduce bycatch. Reg. 812 is focusing on monitoring pelagic trawl fisheries in the Baltic. Harbour porpoises are extremely rare in the Baltic and bycatch most often occur in gillnets and not in pelagic trawls. Therefore observing 5% of the trawl fleet in the Baltic will not produce useful bycatch estimates. The likelihood of observing a porpoise bycatch in this fishery is extremely small* .'

Bycatch mitigation

In 2006, the use of ADDs was initiated. ADDs were issued to fisheries operating in the areas of mandatory implementation in 2007 although there was no reporting on ADD use or their reliability in any years. ADDs are thought to have a lifetime of around two years, so after 2009 one cannot expect that the ADDs from 2007 were still in use and functional. Therefore, from 2010 onwards it can be assumed that there was no implementation of Articles 2 and 3 in Swedish fisheries.

In 2013, 23 fishing vessels required ADDs in Sweden and during 2014 Sweden reported interviewing fishermen fishing in the areas where ADDs are obligatory. In contrast, in the 2012 National Report to ASCOBANS, Sweden reported that only one vessel required ADDs, whilst these reports are covering different years, it is unlikely that the fishing fleet fluctuated so much between 2012 and 2013, highlighting the inconsistencies of different reporting fora. Furthermore, in 2014 no infringement regarding compliance of ADD use was investigated or reported in the Swedish inspection plan due to '*its low priority*'. Although outside of the timeframe of this report, from 2015 the use of voluntary ADDs started in Sweden (Sara Königson, *pers. comm.*).

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004

There is a vast amount of seal-fisheries interactions in Swedish waters (*e.g.*, Königson *et al.*, 2009) and Sweden noted annually that studies were underway to reduce the seal-fisheries conflicts due to seal predation, as well as bycatch. In the 2009 National Report to ASCOBANS, Sweden reported that fishermen on the west coast of Sweden noted that ADDs appeared to be effective in reducing harbour porpoise bycatch, however there was an increase in bycaught seals. Fishing boats with high harbour porpoise bycatch rates in Sweden are <12 m (ICES WGBYC, 2014). In 2011, gillnetters <12 m were

offered free ADDs and 6 vessels started to use them voluntarily. In the annual National Reports to ASCOBANS, Sweden reported that several harbour porpoises that stranded between 2006-2014 died as a result of bycatch but strandings and necropsy data is very limited in the reports.

Summary

Overall, Sweden has poorly implemented EC 812/2004. An annual report was submitted to the European Commission 3 out of 9 years, with low compliance of bycatch monitoring and mitigation between 2006-2014. Implementation and reporting of the Regulation by Sweden has been extremely poor even though Sweden has active fleets requiring ADDs and on-board observer programmes. Sweden has not fully complied with their obligations under the Regulation.

Table 16. Overview of implementation EC Regulation 812/2004 between 2006-2014 by Sweden

SWEDEN	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Partial
2007	No	NA	Partial	Yes	Yes	Yes	No	None	Yes	Yes	Yes	Yes	Yes - 0	Partial
2008	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes - 0	Partial
2009	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	No	Yes	No	None
2010	Yes	English	Partial	Yes	Yes	Yes	Yes	Partial	Yes	Yes	No	Yes	No	None
2011	No	English	None	Yes	Yes	Yes	No	None	Yes	Yes	No	No	No	None
2012	Yes	English	None	Yes	Yes	Yes	No	None	Yes	Yes	No	No	No	None
2013	No	English	None	Yes	Yes	Yes	No	None	Yes	Yes	No	Yes	No	None
2014	No	English	None	Yes	Yes	Yes	No	None	Yes	Yes	No	Yes	No	None

15. UNITED KINGDOM

The United Kingdom (UK) is required to implement Articles 2, 3, 4 and 5 of the Regulation and reports annually on implementation (Table 17).

Bycatch monitoring

The UK has had a dedicated protected species monitoring scheme since 2005 funded by the Department for Environment and Rural Affairs (DEFRA) and Marine Scotland. The scheme is managed and co-ordinated by the Sea Mammal Research Unit (SMRU) at the University of St Andrews in collaboration with the Centre for Environment, Fisheries and Aquaculture Science at Lowestoft (Cefas) and the Agri-Food and Biosciences Institute of Northern Ireland (AFBINI). Data from Cefas and AFBINI include data collected under the DCF. In 2009, the UK reported that fisheries regulations had been enacted in England and Scotland making it a legal obligation for vessels to take observers if requested although the English regulation has since been repealed.

In the UK, sampling has been concentrated in the Celtic Sea, English Channel and Irish and Scottish waters. The highest incidences of bycatch have occurred in the Celtic Sea and English Channel. In 2014, there was an increase in monitoring of static nets in the Irish Sea.

No cetacean bycatch was reported from monitoring vessels >15 m under the Regulation between 2005-2008 although bycatch was reported from observations of other vessels. From 2009 onwards, bycatch was reported annually during monitoring of the Regulation. Bycatch estimates were provided annually for harbour porpoise and common dolphin, although in some years they were considered to be underestimates due to excluding areas and fisheries where bycatch is known to occur but no monitoring was conducted (*e.g.*, 2010 when 86 common dolphin and 338 harbour porpoise were estimated to have been bycaught). In other years bycatch estimates are thought to be potentially overestimates due to the way the data was extrapolated (*e.g.*, 2013 when 320 common dolphin and between 1600-1900 harbour porpoise were estimated to have been bycaught). Other cetacean species reported to have been bycaught during on-board observer monitoring under the Regulation are pilot whale, Risso's dolphin (*Grampus griseus*) (1 in 2012), bottlenose, white-sided and white-beaked dolphins (*Lagenorhynchus albirostris*) (1 individual of each species in 2013) and striped dolphin (2 in 2013), all in set-nets >15 m.

Between 2005 and 2014, there was a decrease in the number of common dolphins bycaught in the UK pelagic sea bass pair trawl fishery (*i.e.*, 2005: n=155, 2006: n=40, 2011: n=17, 2012: n=7). The decrease in bycatch has been linked to an alternative ADD, the Dolphin Dissuasive Device (DDD), trials that started in the winter of 2006, although no controlled trials comparing tows with and without the ADDs have been conducted to confirm these findings.

A comparison was conducted using data collected in static nets from the dedicated and non-dedicated (DCF) observer schemes between 2005-2014 (see Northridge *et al.*, 2015). Overall, the results were statistically significantly different with a higher bycatch rate reported from the dedicated scheme.

Bycatch mitigation

ADD trials have been conducted since 2005. In the initial years of the Regulation the UK reported that only a few vessels requiring ADDs were using them due to concerns over their efficiency, reliability and

safety. In 2008, in accordance to Article 3 of the Regulation, the UK applied for a derogation to conduct scientific trials with the DDD not specified in the Regulation. After the trials were completed in 2011, the UK government notified the European Commission that it had authorised and was implementing the use of the DDD from 2012. The derogation was extended in 2014 for a further two years.

Prior to 2013, the degree of compliance of ADDs was unknown although during 2010, around 19 gillnet vessels were reported to have been using ADDs, representing between 67% and 100% of the UK fleet operating in the areas requiring ADDs. In 2013, all relevant vessel owners and masters were advised of the provisions of the Regulation and full guidance on the implementation and use of ADDs was provided by the Marine Management Organisation and Marine Scotland, which are responsible for compliance and enforcement of fisheries regulations in England and Wales, and Scotland respectively.

From 2013, the UK reported to be fully implementing the use of ADDs, and the Royal Navy and relevant national marine enforcement officers started to carry out at-sea inspections for compliance. No infringements were detected in 2013. Some infringements were reported in 2014 and compliance improved in the same year after these cases.

In 2013 and 2014, based on bycatch reported from static nets with and without ADDs, the UK included in their report a section on the number of harbour porpoises estimated to have been 'saved' from bycatch due to the use of ADDs under the Regulation, assuming full implementation on all required vessels. The estimates were 265 and 228 for 2013 and 2014, respectively.

Relevant information on marine mammal-fisheries interactions not covered under EC 812/2004
In 2005, the UK implemented a ban on sea bass pair trawling within 12 nautical miles (nm) of the coast to mitigate common dolphin bycatch. However, the ban is only applicable to UK registered vessels and the European Commission did not implement the same ban for other Member States. High numbers of common dolphin strandings with evidence of fisheries interactions continue to be recorded (*e.g.*, Deaville *et al.*, 2011). Overall, it is not clear how effective the 12 nm ban has been, if the ban has moved the issue further offshore or if the bycatch occurs in other fisheries in the region.

During 2006/2007 trials using DDD in the sea bass pelagic pair trawl fishery were conducted and no common dolphin bycatch was reported. Trials have continued over the years and the implementation of DDDs appears to have reduced common dolphin bycatch by an order of magnitude, although no formal trials of tows with and without DDDs have been conducted so the exact effectiveness remains unclear (Northridge *et al.*, 2012). Following the initial results from the UK fleet, Ireland voluntarily implemented DDDs in the albacore tuna fleet.

Escape hatch/exclusion grid trials were conducted in the pelagic sea bass pair trawl fishery between 2003 and 2007 to mitigate common dolphin bycatch. During the trials some common dolphins were observed exiting the gear via the grids/hatches but bycatch was also recorded (Northridge *et al.*, 2005).

Strandings data demonstrate a wider range of bycaught species, including minke and humpback whales (*Megaptera novaeangliae*) most commonly bycaught in creel gear that is not included in EC 812/2004 (Deaville *et al.*, 2011).

Summary

Overall, in 2013 and 2014 the UK was fully implementing the Regulation. Prior to 2013, ADD trials, on-board observations including effort data and bycatch estimates were conducted annually but were slightly short of the levels required under the Regulation. The UK also reported on cetacean bycatch not mandated by the Regulation but collected under the broader auspices of the Habitats Directive. The UK is fully implementing the Regulation and reporting on their obligations annually to the Commission.

Table 17. Overview of implementation EC Regulation 812/2004 between 2006-2014 by the United Kingdom

UNITED KINGDOM	ANNUAL REPORT (ARTICLE 6)			MITIGATION (ARTICLE 2 AND 3)					MONITORING (ARTICLE 4 AND 5)					
	Report submitted?	Language of report	Overall implementation for the Regulation	Fishing in areas affected?	Fishing with gears affected?	Fishing with vessel size affected?	Implementation of ADDs?	Implementation?	Fishing in areas affected?	Fishing with gears / vessel size affected?	Dedicated observer scheme?	Effort data reported?	Bycatch estimate reported?	Implementation?
2006	Yes	English	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	Yes	Yes	Yes - 0	Partial
2007	Yes	English	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	Yes	Yes	Yes - 0	Partial
2008	Yes	English	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	Yes	Yes	Yes	Partial
2009	Yes	English	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	Yes	Yes	Yes	Partial
2010	Yes	English	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	Yes	Yes	Yes	Partial
2011	Yes	English	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	Yes	Yes	Yes	Partial
2012	Yes	English	Partial	Yes	Yes	Yes	Trials	Partial	Yes	Yes	Yes	Yes	Yes	Partial
2013	Yes	English	Full	Yes	Yes	Yes	Yes	Full	Yes	Yes	Yes	Yes	Yes	Full
2014	Yes	English	Full	Yes	Yes	Yes	Yes	Full	Yes	Yes	Yes	Yes	Yes	Full

DISCUSSION

Overview of implementation

Despite the legal requirements to monitor and reduce bycatch, monitoring of cetacean bycatch in the majority of Member State fisheries and areas covered by this report has been insufficient. The lack of implementation has resulted in large uncertainties in levels of bycatch and thus has impeded the application of effective mitigation (ASCOBANS, 2015). A study conducted by ASCOBANS, focusing on implementation in the North Sea, previously came to this same conclusion (Desportes, 2014), as have numerous annual ICES bycatch working group reports (for example, ICES, 2015). In addition, routine implementation and reporting of the Regulation has varied between Member States, and between years, resulting in a general lack of compliance (as discussed below).

Annual reports should be submitted to the Commission by the beginning of June of the preceding year. Table 18 gives an overview of the reporting status of Member States from 2006-2014. It should be noted that some Member States appear to have made data available to the ICES WGBYC despite not submitting an EC 812/2004 report to the Commission. No account for details of implementation and compliance is indicated, Table 18 refers only to submission of the report. The effectiveness of EC 812/2004 was reviewed by the European Commission in 2009 and 2011 and found that full implementation across Member States had not been achieved and urged Member States to improve implementation (European Commission, 2009, 2011). However, overall, there appear to have been no significant improvements to bycatch monitoring and mitigation levels. Implementation by the majority of Member States remains poor or moderate (Table 1) and the degree of compliance and enforcement is largely unknown.

Table 18. Status of EC Regulation 812/2004 reports submitted to the Commission by Member States

MEMBER STATE	EC REGULATION 812/2004 REPORT SUBMITTED								
	2006	2007	2008	2009	2010	2011	2012	2013	2014
Belgium	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Denmark	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Estonia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Finland	Yes	Yes	Yes	No	No	No	No	No	No
France	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes-late	Yes
Germany	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Ireland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Latvia	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lithuania	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Netherlands	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Poland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Portugal	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spain	Yes	Yes	Yes	Yes	No	No	No	No	No
Sweden	Yes	No	Yes	Yes	Yes	No	Yes	No	No
United Kingdom	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Benefits of EC Regulation 812/2004

The main benefit of EC 812/2004 is that the Regulation is coherent. Member States recognise what they have to do in terms of cetacean bycatch monitoring, mitigation and reporting under the Regulation. The Regulation allows for consistency between Member States with active fishing fleets in the areas using the gears as specified, and transparency in reporting.

Short-falls of EC Regulation 812/2004

However, the Regulation has been widely recognised as not serving its purpose due to only providing limited and ill-focused coverage in terms of fishing fleets, areas and gears.

Some Member States reported a requirement for the use of ADDs on a wider range of vessels, insufficient funds to monitor the fleet adequately and/or that the Regulation focuses on the wrong section of the fleet. Flaws and limitations of the Regulation are more fully discussed elsewhere.

Lack of fisheries data

For most Member States, the basic statistics of the fishing fleet are unclear due to inadequate reporting and, as such, it is not possible to know how many vessels require monitoring and mitigation under the Regulation. In 2008, the ICES SGBYC reported that for several Member States the institutes responsible for implementing monitoring and mitigation obligations under the Regulation had limited, or no, access to the National logbook data of their country. Access to such data is a prerequisite to designing a sampling scheme with the required level of coverage and to extrapolate to fleet level, as well as for adequate monitoring. The Steering Group recommended that the countries' administrations provided access to the relevant data to the institutes responsible for reporting on the Regulation. In recent years, some countries (*e.g.*, Denmark, Germany, Ireland and the UK) still reported that they did not know the number of vessels requiring and using ADDs in their National Reports.

Generally, on-board observations and ADDs have traditionally been conducted on fishing vessels with operative stakeholders (*i.e.*, willing fishers and/or managers) meaning that the vessels implementing the Regulation are self-selecting. Some Member States reported difficulties in collaboration with the fishing vessels, *e.g.*, in Estonia and Lithuania, fishers/producer organisations did not permit observers on-board, and France reported difficulties due to administrative rules for small vessels (ICES SGBYC, 2009; ICES WGBYC, 2013). Belgium, England and Scotland have enacted fisheries regulations to make it a legal obligation for vessels to take on-board observers, although it appears that the English regulation has since been repealed. Clearly, obtaining access to fishing vessels is central to effective implementation of the Regulation.

The lack of sufficient detailed data in fisher's logbooks also impedes bycatch assessment. For example, the number of hauls, tow times, net lengths and soak times are all required to estimate effort and bycatch rates, but are often not recorded (Northridge *et al.*, 2014). These factors greatly influence bycatch rates, *e.g.*, gillnet soak time is the main predictor of bycatch (ICES SGBYC, 2009). Additionally, many gillnetters do not record in their logbook the type of gillnet (*e.g.*, tangle or trammel net) being used or if ADDs are in use, both factors which may also influence bycatch rates. Overall, there is a need for significantly better recording and monitoring of fishing activities, including in logbooks.

Investigations into the use of remote electronic monitoring have identified that, if appropriately placed, results are more robust and provide higher bycatch rates than dedicated on-board observations, which themselves provide more reliable data than logbooks alone (see *Alternative methods* for details). Such monitoring is increasingly being relied upon[16] and the cost of implementation is reducing as a result. Use of the full range of bycatch observation tools available will result in the collection of the best data to enable compliance with the Regulation.

Inadequate coverage of fishing areas and gears

Within the Regulation, the fishing areas for monitoring and mitigation to be undertaken were clearly defined based on areas with known or foreseeable high levels of cetacean-fisheries interactions. However, several Member States reported no bycatch in the areas specified for most years. Some Member States have reported that areas and fisheries with high bycatch rates are not covered by the Regulation. For example, high numbers of harbour porpoise bycatch have been reported in the Belt Sea and southern Kattegat but mitigation is not required for most of this area under EC 812/2004 (Northridge, 2011) and UK tangle and gillnet fisheries in the southwest of England, and purse-seines and beach seines in Portugal, are not monitored under the Regulation even though necropsies of stranded cetaceans in those areas indicate high rates of bycatch (Northridge *et al.*, 2007; Marçalo *et al.*, 2015; Read, 2016). Furthermore, the Regulation makes no mention of mitigation measures for pelagic trawls even though common dolphins are bycaught in high numbers in some of those fisheries (*e.g.*, Peltier *et al.*, 2016).

A few years after implementation of the Regulation, ICES reported that '*it had become apparent* (*partly through evidence gathered under the Regulation) that the Regulation was not targeted particularly well at the fisheries that have the highest risk of cetacean bycatch*' (ICES, 2010). Poland reported that the Regulation has not been effective in reducing harbour porpoise bycatch in Polish waters, and recommended a more regional approach for monitoring and mitigation to target areas where the risk of bycatch is the highest (ICES SGBYC, 2009).

Observer data from the UK and Ireland between 2005-2011 showed that cetacean bycatch incidents are very rare in pelagic trawls targeting small fish such as mackerel (*Scomber scombrus*), Atlantic herring (*Clupea harengus*) and horse mackerel (*Trachurus trachurus*). Based on the observer data, Ireland and the UK reported that it is difficult to justify the high costs associated with compliance with legal requirements to continue dedicated observer programmes in these fisheries (ICES WGBYC, 2013). In contrast, high bycatch rates have been recorded in pelagic trawls in other areas such as the Bay of Biscay and NW Spain targeting European sea bass (*Dicentrarchus labrax*) and blue whiting (*Micromesistius poutassou*), respectively (Fernández-Contreras *et al.*, 2010; Peltier *et al.*, 2016). Ireland further suggested that after five years of implementation of EC 812/2004, it was time for a thorough review of the Regulation which would result in smarter, more efficient bycatch reduction programmes focusing on fisheries where problems actually exist and where achievable targets are set (ICES WGBYC, 2012). Cetaceans and fisheries may shift areas from year to year, and therefore prescribing areas and fisheries for monitoring may require more flexibility.

[16] http://eminformation.com

Whilst not covered by the present report, EC 812/2004 has ignored not only static nets in the Mediterranean, but also all cetacean bycatch issues in the Black Sea, yet both of these areas should be addressed under the Regulation (Northridge, 2011), as should the outermost regions *e.g.*, French Guiana, Réunion and Mayotte (Dolman *et al.*, 2017).

Vessel length

The most obvious shortfall in the requirements of the Regulation is that mitigation and monitoring obligations are dependent on vessel length. The mandatory use of ADDs is only required for certain vessels ≥12 m and observers are required on certain vessels ≥15 m. Several Member States reported that cetacean bycatch is not a function of vessel length and the differentiation of vessels appears to be illogical to most fishermen. For example, Denmark and France reported that it is difficult to justify to fishers their obligation to purchase and implement ADDs when a vessel <12 m using the same gear and in the same area, is exempt from the obligation (ICES WGBYC, 2012, 2013). Furthermore, for many Member States, the majority of vessels are smaller than 12 m, *e.g.*, around 90% of the Galician (north-west Spain) and Portuguese fleets (including gillnets and other artisanal gears) and over 75% of Polish gillnets are <12 m (ICES SGBYC, 2009; Spanish Ministry of Agriculture, Food and Environment, 2013; ICES WGBYC, 2015), and are all known to have cetacean bycatch (*e.g.*, López *et al.*, 2003; ICES SGBYC, 2009; Goetz *et al.*, 2014; Read, 2016).

Additionally, Northridge (2011) noted that '*Delivery on the 'scientific studies' of the under 15 m vessel fishing sector required by the Regulation has been limited, but there are no guidelines in the Regulation to determine what levels of monitoring are required for such scientific studies*'. Rather than vessel length, assessing fisheries for appropriate monitoring and mitigation based on net type and length, mesh size, season and area would be more appropriate.

Bycatch effort and coverage data

Fisheries effort data are essential for estimating bycatch rates, and have been extensively discussed by Northridge and Thomas (2003) and the ICES WGBYC. Member States have not been consistent in reporting effort data nor in the format of data provided, *e.g.*, in the years when Germany provided effort data, effort was recorded in hours rather than the requested 'days at sea' (ICES WGBYC, 2014). Lithuania reported in their 2013 EC 812/2004 report that they do not agree to 'coverage' expressed as the percentage of 'days at sea observed' from the total number of 'days at sea'. They stated that evaluating the volume of water filtered through the trawl is much more important for evaluating cetacean bycatch.

In 2014, the ICES WGBYC reiterated that since implementation of the Regulation, the main limiting factor in evaluating the magnitude of bycatch mortality has been the lack of accurate total fishing effort from relevant European waters. Following advice from ICES, the European Commission requested additional data on effort from Member States, including total soak times. However, Member States rarely record these data (ICES WGBYC, 2016).

Many small vessels are polyvalent (vessels using more than one type of fishing gear) in the UK, Portugal and Spain, and may use different gears at the same time, or in different seasons. The UK and Portugal noted in National Reports that providing information on fishing effort is difficult due to the polyvalent fleets and that bycatch estimates in these fisheries could be overestimated if 'days at sea'

were used for effort. The ICES WGBYC recommended in 2012 that, for polyvalent fleets, an approach to separate gear types could be to use landing data and that daily gear specific effort should be requested.

Poor bycatch estimates

Under EC 812/2004, Member States are required to place on-board observers on vessels ≥15 m in order to achieve a bycatch estimate with a coefficient of variation (CV) of less than 0.3, or where this is not possible, on-board observer coverage of 5% and 10% of total fishing effort for specified fleets. For most Member States, obtaining a bycatch estimate with a CV of <0.3 is unattainable due to the lack of observed bycatch in the fleets covered by the Regulation. Poland reported that in order to obtain a CV of 0.3, 80% coverage would be required (ICES WGBYC, 2012) which is likely to be financially and logistically unfeasible.

Bycatch monitoring remains less than optimally targeted in many cases. Estimated bycatch rates based on observed data extrapolated to the fleet level should be treated with caution because of the low coverage of certain fleets, and observer effort may not be representative of fleet effort (ICES WGBYC, 2013).

Until 2013, the ICES SGBYC and ICES WGBYC estimated bycatch rates by gear and area for each Member State. In order to improve consistency and improve bycatch estimates, since 2013 Member States' data have been collated, and bycatch rates estimated for harbour porpoise (ICES WGBYC, 2015) and common dolphin (ICES WGBYC, 2016) by gear and area. In most years of reporting under the Regulation, France reported high bycatch rates for several cetacean species but did not submit data in 2013 and 2014. The lack of bycatch data from France is therefore likely to have resulted in a significant underestimate in the bycatch estimates.

As mentioned previously, reliable bycatch estimates have largely been hindered by the lack of fisheries effort data, especially for gillnets where the type of gillnet is often not specified. In 2012, Ireland reported in their EC812/2004 National Report that observer data show major differences in the properties of bycatch associated with different gear types. Therefore, more specific data on gear type are essential for improved bycatch estimates.

Inadequate dedicated on-board observer schemes

For most years, only France, Ireland, Latvia, Poland, Portugal and the UK had dedicated on-board observer schemes. Other countries have relied on other programmes for data collection for implementation of the Regulation, such as the DCF. The DCF is not adequate for monitoring cetacean bycatch. In Belgium in 2012, no cetacean bycatch was reported from DCF monitoring. However, analysis of strandings data indicate that DCF monitoring is inadequate to inform on the reliable level of bycatch in fisheries (ICES WGBYC, 2014).

In the UK, cetacean bycatch rates reported in static nets under the non-dedicated scheme were thirty-six times lower than in the dedicated scheme between 2013 and 2014. The significant difference is most likely due to the sampling duties of the on-board observers in dedicated and non-dedicated schemes (Northridge *et al.*, 2014). A similar pattern was reported for bycatch rates of harbour porpoise in the Baltic when data collected via the DCF and REM were compared (ICES WGBYC, 2016). Northridge *et al.* (2015) stated that '*attempts to provide accurate advice about fisheries impacts on marine mammals in*

particular (and potentially other protected, endangered and threatened species) would be significantly hampered if only data collected under the DCF in its current form were used.' As a result, to ensure compliance with the Regulation, dedicated on-board observations must be maintained.

Mitigation

Implementation of ADDs by Member States has been discussed extensively in the individual country sections. Implementation has varied greatly between Member States as well as inter-annually by Member States. For example, in the early years of the Regulation, France actively conducted ADD trials. However, by 2010, there was no implementation of ADDs even though under the Regulation, 117 vessels required ADDs. For most years, the majority of Member States reported that they do not have figures for the number of vessels requiring (and implementing) ADDs, as previously highlighted by Desportes (2014).

In fisheries that have been implementing ADDs, there is strong evidence that harbour porpoise bycatch has been reduced (*e.g.*, Larsen and Eigaard, 2014; Northridge *et al.*, 2015). Overall, for a combination of technical, social and economic reasons, the implementation of ADDs by Member States has been poor or moderate overall. Only the UK achieved good ADD implementation.

ADDs, currently specified within the Regulation, may only be effective for reducing harbour porpoise bycatch and are not yet proven for other species, *e.g.*, common dolphins, that are also bycaught in gillnets. Trials of ADDs for common dolphins have been undertaken (voluntarily) by the UK and Ireland in pelagic trawls. Although no bycatch had been reported before implementation of the ADDs in Ireland, the results in the UK are promising for reducing common dolphin bycatch. The Regulation (or other relevant legislation) should be amended to allow for the further research and implementation of ADDs on pelagic trawls and ADDs effective for other cetacean species, which are presently limitations.

Measures should extend beyond the use of ADDs to a wider suite of tools that are focused on the fishery and the species being bycaught. The Regulation provides no flexibility to allow for forms of mitigation other than ADDs, such as different technologies or spatial or temporal measures. More flexibility in mitigation approaches will be required to successfully reduce bycatch for the range of species covered under EU legislation. Mitigation measures should be robust, tested and flexible.

Alternative methods

Investigations into the use of remote electronic monitoring (REM) have identified that results are generally more robust and provide higher bycatch rates than dedicated on-board observations, which themselves provide more reliable data than logbooks alone. After the initial set-up and equipment costs, REM can achieve very high coverage at a low cost compared to on-board observers (see Kindt-Larsen *et al.* (2012) for more details). REM trials should be pursued by other Member States.

To date, ADDs are the only proven mitigation measure to reduce incidental catches of cetaceans. Methods for mitigating bycatch involve changing human behaviour, using technology, or changing animal behaviour to prevent interactions with gear (Dawson *et al.*, 2013). Cetacean-fisheries interactions can be minimised by gear modification, time or area closures, or fishing practices. Fernández-Contreras *et al.* (2010) found that if pelagic trawlers only operated in water deeper than 250 m, bycatch of common dolphins could be significantly reduced, and almost entirely avoided if fishing was restricted to

waters over 300 m. Several studies have found that most bycatches in trawls occur during nocturnal trawling (*e.g.*, Morizur *et al*, 1999; López *et al.*, 2003; Fernández-Contreras *et al.*, 2010). Limiting trawling to daylight hours, hauling the gear more slowly during the night, or not setting gear when cetaceans are present, would also reduce cetacean bycatch (Read, 2016).

Improved spatial and temporal data on cetacean distribution in relation to fisheries activities need to be assessed and used to guide fisheries stakeholders (fishers, regulators, scientists, etc.) to where monitoring and mitigation effort should be focused (*e.g.*, Breen *et al.*, 2017). Kindt-Larsen *et al.* (2016) found that modelling harbour porpoise density and fishing effort data together predicted areas of bycatch risk which in turn can be used for fisheries management and bycatch mitigation. Such data may ultimately reduce administrative burdens and be more cost-effective for Member States.

Interviews with fisheries stakeholders are a means of obtaining quantitative data from large-scale fisheries and can be a useful method for first contact with fishers. Whilst interviews are subject to various biases (like all monitoring methods), interviews regarding cetacean-fisheries interactions have been successfully conducted in the Iberian Peninsula (*e.g.*, López *et al.*, 2003; 2012; Goetz *et al.*, 2014) and data obtained from interviews and on-board observers were consistent (Wise *et al.*, 2007; Goetz *et al.*, 2015).

Infringements

Denmark, France, Germany, Ireland, Poland and the UK are the only Member States that report having conducted inspections of ADD implementation in relevant fisheries, although no details of the enforcement strategies are provided. Presently, the only time that gillnets covered under the Regulation can face a penalty for non-compliance is if the nets are cast without ADDs or with non-operational ADDs. Germany noted in the National Reports that it is difficult to conduct controls, and detect (and report) infringements, because once the gear is in the water it is difficult to prove that ADDs were not operational when they were cast.

The lack of controls by most Member States has not gone unnoticed by fishers, *e.g.*, Swedish fishers commented that they do not use ADDs in Swedish waters when and where it is mandatory because there is no control, but they do use ADDs in German waters because the German authorities carry out controls (S. Königson, *pers. comm.*, from ICES WGBYC, 2015). In 2012, Denmark stated that all infringements will be reported to the European Commission, including infringements by other Member States detected by the Danish authorities, indicating that infringements by non-national vessels have been identified.

Denmark, Germany, Poland and the UK have been developing and/or testing 'ADD devices' to detect if pingers are active once the gears have been cast. Germany reported that the main concern is that '*the legal framework for enforcement needs to be optimised. A detailed inspection procedure is required from the legislator so that enforcement officials can properly determine whether an infringement has occurred*' (ICES WGBYC, 2012). For the majority of Member States, the exact number of vessels requiring ADD is unknown, making implementation and compliance enforcement hard to achieve.

Cost of implementation

There has been a wide disparity in the resources that Member States have provided for implementation of the Regulation. Since 2005/6, France and the UK have funded dedicated observer schemes whilst other Member States have relied on other monitoring programmes. In 2008, the ICES WGBYC recommended that '*funding should be made available by national governments to establish formal monitoring programmes where these have not already been established, so that National obligations under Regulation 812/2004 can be fully met*.'

Ireland, Lithuania and Portugal all reported on the lack of implementation for financial reasons, and Germany reported that it is costly to obtain observer coverage at the compliance levels of the Regulation. The initial outlay costs of ADDs for different devices based on 20 km of gillnets was assessed by Cosgrove *et al*. (2006) and presented with updated data in ICES WKREV812 (2010). The cost of implementing EC 812/2004 for individual Member States is not easy to find and will vary greatly depending on the logistics and structure of the country's fleet covered by the Regulation. As an example of the cost, the UK's budget for cetacean bycatch work between 2011 and 2017 (5 years of monitoring) is £1,373,052 which is equates to around £274,610 per year[17]. The UK is presently fully implementing the Regulation, and costs for other Member States would be relative to the sizes of their fleet covered by the Regulation.

The European Maritime and Fisheries Fund (EMFF) is one example of available funding that could be better utilised by Member States to fund bycatch monitoring and mitigation.

Compliance and enforcement

To the best of our knowledge, no formal requests for implementation or complaints were submitted from the European Commission to Member States regarding their lack of compliance despite the fact that several were not implementing the Regulation, notably Finland, Spain and Sweden. In particular, Spain has the largest fishing fleet in the EU, half of which is based in Galicia, north-west Spain (Spanish Ministry of Agriculture, Food and Environment, 2013). High bycatch rates of common dolphin and harbour porpoise have been reported in Galician fisheries active in the region (*e.g.*, López *et al*., 2003; Fernández-Contreras *et al*., 2010; Goetz *et al*., 2014; Read, 2016). Additionally, a high number of harbour porpoise are bycaught in Spanish gillnets fishing off north-west France (ICES WGBYC, 2011).

WDC would urge to the European Commission to look to use all necessary powers to ensure full compliance of the Member States with Regulation 812 or equivalent future measures.

Other information

The ICES WGBYC has continually reported on the inconsistent submission and content of annual reports by some Member States, and the shortcomings of the Regulation to accurately reflect the true magnitude of cetacean bycatch in gears affected by the Regulation (ICES WGBYC, 2015). Member States are required to submit EC 812/2004 reports to the Commission by 1st June the preceding year. However, data are not generally available until after the ICES WGBYC the following year, *e.g.*, around 18 months after the end of the study year. Most Member States' reports are not easily accessible. Annual reports should be made readily available on the European Commission webpage.

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

Whilst writing this report, we noticed that reporting by Member States to different fora (*e.g.*, ASCOBANS and ICES WGBYC) can be slightly contradictory. Data in the ICES reports also contradict in places, most likely due to the addition of data to the Working Group in later years that was not formally submitted in Member States' reports. We further note that the Terms of Reference (ToRs) of the ICES WGBYC change annually, but for reporting of compliance of EC 812/2004, it would be helpful and logical for the Working Group to have a consistent format for an annual overview rather than the information provided and the analysis conducted varying annually.

CONCLUSIONS

The Regulation itself is not entirely fit for purpose. As a result, understanding levels of bycatch and efforts to reduce bycatch levels are not adequately implemented across Europe. In order for implementing any measures to be successful, extensive stakeholder collaboration and appropriate incentives or enforcement are essential (Komoroske and Lewison, 2015). There should be better collaboration between Member States to improve monitoring and mitigation, and to ultimately reduce cetacean-fisheries interactions.

Overall, despite the legal obligations of Member States to implement EC Regulation 812/2004, monitoring, mitigation and reporting by the majority of Member States remains moderate or poor (Table 1) and the degree of compliance and enforcement is largely unknown. To date, there have been no consequences for Member States consistently not complying with the Regulation.

As a result, our overarching recommendation is that Member States be compelled to comply with the Regulation, or any future measures that replace the Regulation, in an effort to continually reduce bycatch.

RECOMMENDATIONS

Our overarching recommendation is that Member States be compelled to comply with the Regulation, and implement any future measures that replace the Regulation, in an effort to continually reduce bycatch.

Further recommendations

- There is a requirement for significantly better recording and monitoring of fishing activities in logbooks, which means that logbooks have to be reformatted to allow extra details;
- Access to logbook data is necessary;
- Logbook data should be included in the design of an adequate bycatch sampling scheme;
- The Data Collection Framework is not adequate for monitoring cetacean bycatch. It should be a legal obligation for vessels to take on-board observers, and/or including if space does not allow, to instigate remote electronic monitoring (REM) appropriate to monitor cetacean bycatch, and to apply mitigation measures where these are identified as being required;
- Use of the full range of bycatch observation tools available (including REM) will result in the collection of the best data to enable compliance;
- Studies of the effectiveness of REM when compared to dedicated on-board observations should be undertaken by Member States;
- To reduce cetacean bycatch, mitigation is required in the Danish Belt Sea and southern Kattegat; and monitoring and mitigation is required in the tangle and gillnet fisheries off the

southwest of England, north-west France, Spain and Portugal, purse-seines and beach seines in Portugal, and for pelagic trawls in all areas;

- Measures should be applied in all regions of Europe where required, including in static nets in the Mediterranean (currently exempt), in the Black Sea and in the outermost regions *e.g.*, French Guiana, Mayotte and Réunion;
- EC Regulation 812/2004 has been widely recognised as not serving its purpose as it only provides limited coverage in terms of fishing fleets, areas and gears. Any new Regulation should include clearly articulated measures to monitor bycatch across the range of fisheries, and obligations should not be dependent on vessel length;
- To enable better assessments of bycatch risk and bycatch estimates, more accurate measures of fisheries effort are required, including details of gear types, the incorporation of days at sea, soak time, net length, *etc.*;
- For polyvalent fleets, an approach to separate gear types should be to use landing data, and hourly gear specific effort should be documented;
- Mitigation measures should be robust, tested and flexible. Measures should extend beyond the use of ADDs to a wider suite of tools that are focused on the particular fishery and the species being bycaught;
- Member State compliance monitoring is required to ensure that mitigation is being adequately implemented where it is required;
- European funding should be better focused to allow for adequate bycatch monitoring and mitigation across Member States; and,
- Member States annual bycatch reports should be more readily available on the European Commission webpage.

WDC would urge to the European Commission to look to use all necessary powers to ensure full compliance of the Member States with Regulation 812 or equivalent future measures.

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