Annual report on the implementation of Council Regulation (EC) No 812/2004 – 2012

Member State: United Kingdom

Reference Period: 2012

Date: May 23rd 2013

Authors: Simon Northridge[1], Al Kingston[1] and Len Thomas[2].

[1] Sea Mammal Research Unit / Scottish Oceans Institute, University of St Andrews.

[2] Centre for Research into Ecological and Environmental Modelling, University of St Andrews.

SUMMARY

This report summarises work on the implementation of Council Regulation 812/2004 during the calendar year 2012 by the United Kingdom (UK). Work focused on monitoring a range of fisheries, including some for which monitoring is not required under Regulation 812/2004 but where cetacean bycatch is likely to occur at high enough levels to warrant monitoring under Article 12 of the Habitats Directive (92/43/EEC). 414 days at sea were completed on dedicated protected species bycatch monitoring trips. 255 days at sea were also undertaken on gillnet vessels under the English and Northern Irish discard sampling programmes and a further 809 days of discard sampling were achieved on vessels using other gears (mainly demersal trawls) by Cefas and AFBINI.

Using bycatch rates calculated from data collected annually under the bycatch programme since 2005, estimates of cetacean bycatch for 2012 from static net fisheries in the Irish Sea, Western English Channel and Celtic Shelf (ICES divisions VIIaefghj) were 821 harbour porpoises (*Phocoena phocoena*: 95% CI 510-1338) and 257 short-beaked common dolphins (*Delphinus delphis*: 95% CI 132-475), though caveats apply to these estimates. An estimated 492 seals, thought to be predominately grey seals (*Halichoerus grypus:* 95% CI 358-700) were also bycaught in this area.

Work on acoustic deterrent devices (pingers) has mainly focused on developing protocols for implementation and compliance with Regulation 812/2004. Other work on mitigation focused on operational aspects of pinger use including the development of a new sea going recharging unit that should enable skippers to recharge multiple STM pingers (DDD-03L) simultaneously whilst at sea. Monitoring under "scientific studies" has continued and bycatch observers have undertaken a number of trips with vessels in the Cornish offshore (over 12 m) netting fleet to assess the on-going effectiveness of the devices being used. Sampling has been at a relatively lower level in comparison to previous years when the initial trials were being conducted and the efficacy of these devices in reducing dolphin bycatch is still unclear. Porpoise bycatch rates remain lower when DDDs are used in line with the recommended operating procedures.

Another STM pinger model (DDD-03H) continues to be used by the UK component of the midwater pair trawl fishery for bass in the Western English Channel (VIIe). In 2012 this fishery was almost fully monitored and 3 common dolphins were reported bycaught.

General monitoring continued in 2012 in various static net fisheries in ICES subareas IV and VII. No sampling was achieved in division VIa (West of Scotland) but monitoring levels are steadily increasing in division VIId (Eastern Channel), an area that has been lightly monitored in the past. In line with recommendations, monitoring levels in the main herring and mackerel pelagic trawl fisheries continue to be reduced. Other pelagic trawl fisheries for blue whiting, horse mackerel, bass and sprat were all monitored in 2012.

Bycatches of harbour porpoises and common dolphins were reported from several static net types during 2012. A single Risso's dolphin (*Grampus griseus*) was also recorded in a static net in the Celtic Sea, the first bycatch of this species that has been recorded under the UK's bycatch programme.

Bycatch estimates are not presented in the main body of this report for each of the strata as specified in the reporting format because often these strata are too restrictive for meaningful or useful estimates to be produced. As in previous years, more precise

estimates have been made for several UK gillnet and tangle net metiers for ICES divisions VIIaefghj (Irish Sea, Western Channel and Celtic Shelf) combined.

Difficulties encountered are described and discussed together with the UK rationale for continued monitoring of fisheries more widely than is required under Regulation 812/2004.

ACOUSTIC DETERRENT DEVICES

1. General information

Between 2009 and 2011 the UK trialled an alternative pinger type which is not listed in Annex II of Regulation 812/2004, as part of a scientific investigation as outlined under paragraph 3 Article 2 of the Regulation. As described in previous annual 812/2004 reports, this work was a response to a request from the fishing industry to assess the efficacy of using a louder and more robust device that could be attached to the ends of fleets of nets, rather than every 100 m or 200 m along each fleet, as specified in Annex II of the Regulation. It was demonstrated that bycatch rates of harbour porpoises can be reduced by up to 95% when a DDD-03L pinger is deployed at each end of a fleet of nets, provided the fleet is less than 4km in length. Longer fleets (4 km – 8 km) showed a non-significant difference in porpoise bycatch rate when compared with unpingered fleets. A full description of trials of these devices can be found in Kingston and Northridge (2011) and in Northridge *et al* (2011). The Commission has subsequently issued a derogation to the UK to allow the use of this device as it does not meet the specifications for pingers listed in Annex II of the Regulation.

After completion of the field trials the industry in the Southwest was provided with a supply of DDDs to equip the locally based fleet (circa 13 vessels). Concerns related to charging the devices at sea are being addressed and newly developed multi-pinger charging devices (MBC10) were field tested with offshore vessels in the Southwest between February and April 2013. Feedback from the industry regarding the MBC10 has so far been positive.

Logbook reports for the North Sea suggest that 15 UK registered over 12 m vessels operated gill or entangling nets in the North Sea in 2012, an increase from 9 vessels in 2011. At least 13 of these vessels are reported to have used nets with mesh sizes of 220 mm or greater. These vessels are obliged to use acoustic deterrent devices, and some are believed to have already acquired and started using pingers. There is also a requirement for over 12 m vessels using fleets of nets of less than 400 m in length to use acoustic deterrent devices (short fleets of nets are typically shot on or near wrecks where porpoise bycatch rates in the North Sea are relatively high) between the 1st of August and the 31st of October. Information relating to fleet lengths in official logbooks is unreliable and often difficult to interpret, so it has not been possible to determine how many boats fit this particular description, but based on the over 12 m fleet size and our understanding of fishing patterns in the North Sea, it is unlikely to exceed 3 boats.

UK effort in the bass midwater pair trawl fishery in the English Channel consisted of one Scottish pair team during early 2012. This pair team routinely used a version of the DDD designed specifically for trawl use (DDD-03H). Two other English pair teams conducted one trip each (3 and 4 days in total) in March and September 2012 respectively. We have no information on the exact gear type these boats used or whether pingers or any other bycatch mitigation devices were deployed. All trips by the Scottish pair team were monitored by SMRU observers and recorded cetacean bycatch in this fishery was 3 common dolphins in 2012.

2. Acoustic Deterrent Devices (Article 2 and 3)

2.1 Description of the fleet using pingers

Metier	Ground	Vessels	No of Trips	Days at Sea	% Using pingers	Months
GNS-Demersal	VIId	2	700[1]	28	0	1-12
GNS-Demersal	VIIe	14		435	29	1-12
GNS-Demersal	VIIf	11		369	27	1-12
GNS-Demersal	VIIg	11		1014	27	1-12
GNS-Demersal	VIIh	13		566	23	1-12
GNS-Demersal	VIIj	6		272	0	1-12
GNS-Pelagic[2]	VIIe	3		150	-	1-12
GNS-Pelagic	VIIf	2		196	-	1-12
GNS-Pelagic	VIIh	1		2	-	1-12
GNS-Shellfish	VIIe	3		37	33	1-12
GNS	VIIefghj	22	700	3068	18	1-12
GNS-Demersal	IVabc	16	270	3214	>0*	1-12

* Exact number unknown at present but anecdotal reports suggest a figure >0

Table 2.1 is derived from logbook data for all over 12 m UK registered vessels fishing in the relevant ICES divisions detailed in Annex I of Regulation 812/2004. Overall there were 22 UK registered vessels over 12 m that reported using gill and entangling nets in ICES divisions VIIdefghj. Most of these vessels fished in several divisions during 2012. Official logbook records indicate that 15 UK registered vessels fished in divisions IVa and IVb during 2012 using gill or entangling nets with a mesh size of 220 mm or more. The number of UK vessels using wreck nets (fleets of 400 m or less) during the months of August to October in the North Sea is not known with any certainty, but is unlikely to be more than 3. We have no information about whether these 3 boats actually used pingers.

Official logbooks do not include a mandatory field for recording whether or not vessels are using acoustic deterrent devices, so our best estimate of pinger use in subarea VII is based on the number of vessels that used pingers during monitoring trips under the "scientific studies" section of the bycatch programme. These numbers are detailed in Table 2.1 and provide a minimum estimate of the proportion of the UK gillnet fleet in subarea VII that used pingers at some time during 2012. Informal reports from observers based in the Southwest support these figures.

Industry sources indicate that at least some of the Spanish owned UK-registered fleet of larger netters fishing in division IVa and parts of subarea VII have purchased pingers. Discussions are underway with vessel agents to increase levels of observer coverage in this fleet sector to improve our understanding of their fishing patterns and to help determine the most appropriate bycatch mitigation measures or approaches for this fleet.

Use of pingers in the bass pair trawl fishery is currently on a voluntary basis and most participating vessels have been using pingers routinely for a number of years.

[1] Trips often span more than one fishing ground so it is not useful to estimate the number of trips by fishing ground.

[2] This metier refers to three vessels in total using 'encircling gillnets' to catch mainly pilchards (sardines). Although described as encircling gillnet, this gear type is more like a seine net (ring net) than a typical gillnet.

2.2 Mitigation measures

Metier[3]	Fishing area	Pinger characteristics (see http://www.stm-products.com)	Other mitigation measures
GNS	VIIdefghj	DDD-03L	none
PTM	VIIe	DDD-03H	none

2.3 Additional information

- Procedures for the use of the DDD-03L pingers in the Celtic Sea and English Channel have been developed with the local Producers Organisation which represents most of the 22 over 12m vessels using static nets in this area.

- The UK's Marine Management Organisation (MMO), which is responsible for compliance and enforcement of fishery regulations, has developed a protocol for assessing vessel compliance through shore side and at sea inspections and naval officers have received training in the interpretation of Regulation 812/2004. Industry has recently been notified that the pinger requirements of the regulation will be fully implemented from summer 2013.

- The UK has received a derogation from the Commission to allow the over 12 m fleet to use DDD pingers in accordance with agreed procedures.

- There are still insufficient data to say how effective DDDs might be in reducing common dolphin bycatch in fleets of static nets.

- The data collected to date do not suggest any increase in seal depredation associated with the use of DDDs, though this situation is regularly reviewed.

- Bycatch rates in the bass pair trawl fishery remain low (less than $1/10^{th}$ of observed rates from 2002-2005) but some bycatches (3 animals) were recorded during 2012 in 82 observed tows.

- The issue previously raised by fishermen concerning the multi-charger units that were supplied by the manufacturer but which were considered unsuitable for static net fisheries, has been addressed and the manufacturer has supplied a newly designed multi-charger which has been field tested on four offshore vessels in the Southwest.

[3] GNS= set gillnets; PTM= midwater pair trawl (pelagic pair trawl) for bass;

3. Monitoring and assessment

3.1 Monitoring and assessment of the effects of pinger use

Monitoring of vessels using pingers (DDD-03L) is being continued under the heading of "scientific studies" as required by Regulation 812/2004, but at a relatively low level in comparison to preceding years. A total of 131 hauls with pingers were monitored in 2012. Dolphin and porpoise bycatches are being recorded using GPS positions, as are the locations of DDDs being used on the same fleets which will allow us to assess if the efficacy of these devices changes over time. Seal damage levels to the commercial fish catch is also being routinely recorded.

3.2 Report on measures to control specifications when pingers are in use by fishermen

The UK's MMO and the Marine Scotland Compliance and Enforcement Unit have acquired pinger detection units that are being used to determine compliance at sea. Some of the relevant vessels are already using pingers routinely and full implementation of the regulation will begin in summer 2013 by which time it is expected that all vessels will be compliant.

3.3 Derogation

The UK has authorised the use of the DDD-03/03L manufactured by STM products Ltd, in relevant static net fisheries in ICES subareas IV and VII under derogation from Annex II of Regulation 812/2004. Full technical specifications of these devices can be found at: http://stm-products.com and detailed descriptions of the scientific trials are available in Kingston and Northridge (2011) and in Northridge *et al* (2011).

3.4 Overall assessment

A collaborative approach involving scientists and the fishing industry has removed many of the original objections to the obligations imposed on parts of the UK fleet by Regulation 812/2004, and a number of over 12 m vessels in the Southwest are now using pingers. Uptake in other areas has been slower, but a collaborative research effort is now underway with UK registered Spanish owned vessels (fishing mainly in division IVa) to explore fishing patterns, bycatch rates and gear use and help devise an appropriate mitigation strategy under the requirements of Regulation 812/2004.

OBSERVER SCHEMES

4. General information on implementation of Articles 4 and 5

4.1 Information on legislative or administrative measures following provisions of Articles 4 or 5.

- Monitoring of protected species bycatch in UK fisheries is conducted by the Sea Mammal Research Unit (SMRU), part of the Scottish Oceans Institute at the University of St Andrews, in collaboration with the Centre for Environment, Fisheries and Aquaculture Science at Lowestoft (Cefas), the Agri-Food and Biosciences Institute of Northern Ireland (AFBINI). Marine Science Scotland no longer monitor pelagic trawl fisheries so have not contributed data to this report.

- Monitoring under Regulation 812/2004 is done largely in collaboration with the fishing industry. Bycatch mitigation work is a key complementary programme of work that is

intended to ensure any problem that is identified with protected species bycatch can be addressed in an equitable and expedient manner to meet the UK's obligations under Regulation 812/2004 and Article 12 of the Habitats Directive. The observer scheme relies upon good collaborative links with industry. Nevertheless fisheries regulations were enacted in England and Scotland to ensure that there is also a legal obligation for skippers and owners to take observers to sea when asked to do so.

4.2 Provide information on difficulties implementing articles 4 and 5 of Council Regulation (EC) No 812/2004.

- The UK has identified those fisheries that are thought to have the highest bycatch rates of cetaceans, and has refocused a portion of observer effort into these segments. Monitoring of pelagic trawl fisheries was further reduced during 2012, partly because discard monitoring of pelagic trawlers by Marine Science Scotland – which in previous years provided a substantial proportion of pelagic trawl monitoring – has been discontinued, and partly in recognition that the two major fisheries, for herring and mackerel in IVa and VIa respectively have very low cetacean bycatch rates. Monitoring effort in pelagic trawl fisheries has been redirected to some smaller fisheries, but monitoring levels in the bass pair trawl fishery remain relatively high (44 days in 2012). The smaller fisheries for sprats, blue whiting and various other species operate in a more unpredictable manner and involve fewer vessels which can make planning observer trips more difficult.

- The polyvalent nature of many of the UK's smaller vessels also present challenges both in the interpretation of logbook and landings data to plan sampling levels, and also in terms of extrapolating observed bycatch rates to the fleet level.

- Regulation 812/2004 requires that the level of monitoring of certain fleets should be designed to obtain a bycatch estimate with a Coefficient of Variation (CV) of less than 0.3 for the most commonly bycaught species. This precision target is not feasible where bycatch rates are very low (for example in most pelagic trawl fisheries - see Northridge and Thomas 2003), and this means that monitoring levels in these fisheries was targeted at the seasonal 'pilot' levels of 10% and 5% of effort. In 2012 pelagic trawl monitoring covered approximately 5% of total annual effort.

- The UK again suggests that a more productive means of setting bycatch monitoring goals would be to limit the amount of sampling in any one fishery to a level that is sufficient to determine whether or not bycatch levels exceed a pre-specified threshold or reference limit. Such limits remain undefined but will need to be set at a regional (EU) level.

4.3 Indicate whether the observer programme is dedicated for the purpose of this Regulation only, or whether the on-board observers are used for other purposes also.

A dedicated monitoring scheme is operated by the SMRU, while collaborative links with two of the three fishery research laboratories in the UK also allow selected observations from the national discard sampling programmes to be included in our assessment of cetacean bycatch. Data from discard surveys conducted by Cefas and AFBINI are used with discretion because discard sampling is not always compatible with protected species bycatch monitoring. In 2012 414 days of dedicated sampling were achieved, while data from a further 255 days of discard monitoring on static net vessels were also available (see Annex 2). The UK observer monitoring programme is also designed to fulfil the UK's obligations under Article 12 of the Habitats Directive.

5. Monitoring

Fishing effort data for the UK fleet and corresponding observation levels are listed for 2012 by fleet segment as proposed by the Commission in 2010. Fleet segments or metiers are described to at least Level 5 of Appendix IV of Council Decision 2008/949. This level of disaggregation of effort data, however, would still result in grouping fishery types with very different bycatch rates into the same categories, so we have also, where appropriate, separated those specific fleet segments that should be considered separately from others in the same group at Level 5 of Appendix IV of Council Decision 2008/949. The number of hauls and towing time are not reliably available for the UK fleet, so the most detailed and useful effort descriptor is days at sea. Data are given separately for pelagic towed gears in Table 5.1 (100 days sampled in 2012 (cf. 186 days in 2011); 5% of total pelagic trawl effort in 2012) and for static gears in Table 5.2 (299 days sampled in 2012 (cf. 324 in 2011); 0.63% of total static net effort in 2011). Additional monitoring of other gear types is described in Annex 2.

5.1 Description of fishing effort and observer effort in towed gear

Metier	Fishing Ground	Season[4]	TOTAL FLEET EFFORT			TOTAL OBSERVED EFFORT					
			No. of Vessels	No. of Trips	No. of Days	No. of vessels	No. of trips	Days at Sea	No. of Hauls	Type of Monitoring	% Coverage
OVER 15M VESSELS											
>15-OTM-	IVb	S	2	2	8						
>15-OTM-	IVb	W	1	1	2						
>15-OTM-	VIIa	S	1	1	5						
>15-OTM-	VIIe	S	1	1	7						
>15-OTM-	VIIg	S	1	3	12						
>15-OTM-Blue Whiting	VIa	W	5	10	37	2	2	10	7	PMS	27%
>15-OTM-Blue Whiting	VIIc	W	2	3	10						
>15-OTM-Boarfish	IVb	S	1	1	10						

[4] S=April to November; W=December-March

>15-OTM-Boarfish	IVc	S	1	1	10						
>15-OTM-Boarfish	VIIh	S	4	4	58						
>15-OTM-Demersal	IVa	S	1	1	6						
>15-OTM-Demersal	VIIa	S	4	12	40						
>15-OTM-Demersal	VIIa	W	2	7	25						
>15-OTM-Demersal	VIIg	S	1	1	1						
>15-OTM-Herring	IIa	W	9	11	18	1	1	4	3	PMS	23%
>15-OTM-Herring	IVa	S	24	90	234						
>15-OTM-Herring	IVa	W	5	5	15	1	2	5	4	PMS	33%
>15-OTM-Herring	IVb	S	4	5	1						
>15-OTM-Herring	VIa	S	20	29	65						
>15-OTM-Herring	VIa	W	2	2	7						
>15-OTM-Herring	VIIa	S	1	1	3	1	1	2	1	PMS	67%
>15-OTM-Herring	VIIc	S	1	1	10						
>15-OTM-Herring	VIId	S	2	2	28						
>15-OTM-Herring	VIIe	S	1	1	7						
>15-OTM-Herring	VIIh	S	1	1	1						
>15-OTM-Horse mackerel	IVa	S	1	1	6						

>15-OTM-Horse mackerel	IVb	S	1	1	4						
>15-OTM-Horse mackerel	VIa	W	3	5	24						
>15-OTM-Horse mackerel	VIIc	S	1	1	19						
>15-OTM-Horse mackerel	VIId	S	1	1	0.2	2	1	1	1	PMS	-
>15-OTM-Horse mackerel	VIIe	S	1	1	11	2	1	8	6	PMS	50%
>15-OTM-Mackerel	IVa	S	26	80	250						
>15-OTM-Mackerel	IVa	W	1	1	1						
>15-OTM-Mackerel	IVb	S	1	1	1						
>15-OTM-Mackerel	VIa	W	21	67	276	1	1	5	3	PMS	2%
>15-OTM-Mackerel	VIIb	W	7	7	36						
>15-OTM-Mackerel	VIIc	W	1	1	5						
>15-OTM-Mackerel	VIIj	W	1	1	4						
>15-OTM-Sprat	IVb	S	1	3	26						
>15-OTM-Sprat	VIa	S	1	1	3						
>15-PTM-	IVa	W	1	1	3						
>15-PTM-Bass	IVb	W	1	1	0						
>15-PTM-Bass	IVc	W	1	1	1						
>15-PTM-Bass	VIIe	S	1	1	2						

>15-PTM-Bass	VIIe	W	2	16	31	2	11	44	83	PMS&SS	139%*
>15-PTM-Bass	VIIh	W	1	1	4						
>15-PTM-Demersal	IVa	S	1	3	13						
>15-PTM-Demersal	IVb	S	1	2	4						
>15-PTM-Herring	IVa	S	2	12	40						
>15-PTM-Herring	IVb	S	2	10	31						
>15-PTM-Herring	VIa	S	5	11	19						
>15-PTM-Herring	VIa	W	3	4	2						
>15-PTM-Herring	VIIa	S	2	26	34	1	6	14	26	PMS	41%
>15-PTM-Horse mackerel	VIIc	S	2	2	5						
>15-PTM-Horse mackerel	VIId	S	2	10	12						
>15-PTM-Horse mackerel	VIId	W	1	1	1						
>15-PTM-Horse mackerel	VIIe	S	2	13	46						
>15-PTM-Horse mackerel	VIIe	W	2	4	23						
>15-PTM-Horse mackerel	VIIh	S	2	2	11						
>15-PTM-Horse mackerel	VIIj	S	2	6	33						
>15-PTM-Horse mackerel	VIIj	W	2	4	22						
>15-PTM-Mackerel	IVa	S	2	5	5						

>15-PTM-Mackerel	VIa	W	2	2	5						
>15-PTM-Mackerel	VIIb	W	2	2	6						
>15-PTM-Mackerel	VIIj	W	4	4	23						
>15-PTM-Sprat	VIa	S	4	28	16						
>15-PTM-Sprat	VIa	W	4	39	22						
UNDER 15M VESSELS											
<15-OTM-Anchovy	VIIe	S	1	1	1						
<15-OTM-Anchovy	VIIe	W	2	4	7						
<15-OTM-Bass	VIId	S	2	2	4						
<15-OTM-Bass	VIId	W	1	1	1						
<15-OTM-Bass	VIIe	W	3	5	6						
<15-OTM-Herring	IVc	S	3	6	7						
<15-OTM-Herring	IVc	W	3	7	7						
<15-OTM-Herring	VIIe	S	1	1	2						
<15-OTM-Herring	VIIe	W	6	10	12						
<15-OTM-Mackerel	VIIe	S	1	1	2						
<15-OTM-Mackerel	VIIe	W	1	3	3						
<15-OTM-Pilchards	VIIe	S	2	2	2						

<15-OTM-Pilchards	VIIe	W	3	14	14						
<15-OTM-Sprat	IVc	W	1	15	15						
<15-OTM-Sprat	VIIe	S	5	138	139	1	7	7	7	PMS	5%
<15-OTM-Sprat	VIIe	W	3	78	82						
<15-PTM-Bass	VIIe	W	1	1	2						
<15-PTM-Demersal	IVc	S	2	2	1						
<15-PTM-Herring	IVc	S	2	18	9						
<15-PTM-Herring	IVc	W	2	52	27						
<15-PTM-Smelt	IVc	S	2	2	1						
<15-PTM-Sprat	IVc	W	7	92	49						
TOTALS				**1034**	**2108**		**33**	**100**	**141**		**5%**

*Figure is correct: observed effort exceeded official records.

5.2 Description of fishing effort and observer effort in static gear[5]

		Fleet Effort			Observer Sampling Effort								
Metier	**Fishing Ground**	**Vessels**	**Trips**	**Days at Sea**	**No. of Vessels**	**No. of trips**	**Days at Sea**	**No. of Hauls**	**Season**	**Length of nets (Km)**	**Total Soak Time (KmHr)**	**Type of monitoring**	**Coverage**
<15-Drift Oth-Demersal	IVc	79	639	703	2	2	2	6	Sep	4	3	HDM	0.28%
<15-Drift Oth-Demersal	VIIa	2	7	7	1	2	4	2	Jul	1	1	HDM	
<15-Drift Oth-Demersal	VIId	41	302	396									
<15-Drift Oth-Demersal	VIIe	39	80	134									
<15-Drift Oth-Demersal	VIIf	9	9	14									
<15-Drift Oth-Shellfish	IVc	10	26	44									
<15-Drift Oth-Shellfish	VIId	10	36	68									
<15-Drift Oth-Shellfish	VIIe	4	8	16									
<15-Drift Oth-Shellfish	VIIf	1	1	2									
<15-Drift Pel-Pelagic	IVb	6	60	60	1	1	1	2	Jan	1	1	HDM	1.67%
<15-Drift Pel-Pelagic	IVc	73	340	348									
<15-Drift Pel-Pelagic	VIId	29	155	199	1	4	5	4	Nov	9	37	HDM	2.42%
<15-Drift Pel-Pelagic	VIIe	101	527	1246									
<15-Drift Pel-Pelagic	VIIf	37	84	217									
<15-Gill Hake-Demersal	VIIe	2	2	4									
<15-Gill Hake-Demersal	VIIf	2	12	39									
<15-Gill Hake-Demersal	VIIg	2	6	35									
<15-Gill Hake-Demersal	VIIh	2	2	6									
<15-Gill light flatfish-Demersal	IVb	16	57	57	1	3	3	8	Apr	3	42	HDM	5.26%

[5] This Table also includes metiers that are not listed under Annex III of Regulation 812/2004, that have been monitored by the UK in order to better quantify bycatch in areas where it is known or thought to occur most frequently. This is an obligation under Article 12 of the Habitats Directive (Council Directive 92/43/EEC of 21 May 1992).

<15-Gill light flatfish-Demersal	IVc	147	1300	1378	5	6	4	14	Jun-Dec	8	11	HDM	0.32%
<15-Gill light flatfish-Demersal	VIIa	18	75	75	3	9	8	11	Mar-Aug	8	125	HDM	10.98%
<15-Gill light flatfish-Demersal	VIId	458	8993	9835	1	1	1	1	Mar	1	12	HDM	0.01%
<15-Gill light flatfish-Demersal	VIIe	265	1229	1392	3	15	17	97	Feb-Sep	93	2089	HDM	1.23%
<15-Gill light flatfish-Demersal	VIIf	66	263	275	3	9	4	15	Feb-Jul	12	285	HDM	1.41%
<15-Gill light-Demersal	IVb	24	52	52	3	14	14	29	Jan-Dec	11	120	HDM	26.92%
<15-Gill light-Demersal	IVc	126	954	985	1	1	1	2	Oct	1	2	HDM	0.10%
<15-Gill light-Demersal	VIIa	32	276	276	1	3	2	3	Jun	1	24	HDM	0.54%
<15-Gill light-Demersal	VIId	432	4226	5490									
<15-Gill light-Demersal	VIIe	415	2360	3035	2	3	2	6	Feb-Dec	5	56	HDM	0.06%
<15-Gill light-Demersal	VIIf	216	1375	1461	4	10	5	23	Jan-Dec	16	107	HDM	0.37%
<15-Gill light-Demersal	VIIg	40	203	204									
<15-Gill light-Pelagic	IVb	5	37	37									
<15-Gill light-Pelagic	IVc	9	11	13									
<15-Gill light-Pelagic	VIIa	5	5	5									
<15-Gill light-Pelagic	VIId	29	58	69									
<15-Gill light-Pelagic	VIIe	49	252	343									
<15-Gill light-Pelagic	VIIf	23	254	368									
<15-Gill light-Pelagic	VIIg	1	1	1									
<15-Gill light-Pelagic	VIIh	1	1	2									
<15-Gill-Demersal	IVb	86	483	483	3	6	5	17	Jan-Mar	5	87	HDM	1.07%
<15-Gill-Demersal	IVc	133	550	577									
<15-Gill-Demersal	VIIa	10	15	21									
<15-Gill-Demersal	VIId	233	903	1098	1	2	2	8	Nov	5	356	HDM	0.20%
<15-Gill-Demersal	VIIe	359	2087	2361	1	3	1	3	Mar-Apr	2	18	HDM	0.04%
<15-Gill-Demersal	VIIf	176	852	934	3	5	7	29	Jan-Dec	11	205	HDM	0.75%
<15-Gill-Demersal	VIIg	8	17	69	1	4	10	59	Apr-Dec	18	325	HDM & SS	14.50%
<15-Gill-Demersal	VIIh	6	21	99									
<15-TangTram-Cephalopods	VIIf	1	1	1									
<15-TangTram-Demersal	IVb	16	23	23	4	4	4	16	Mar-Dec	4	90	HDM	16.67%
<15-TangTram-Demersal	IVc	91	329	359	3	3	3	7	May-Nov	4	104	HDM	0.72%

<15-TangTram-Demersal	VIIa	7	43	43	1	6	7	22	Mar-May	25	1339	HDM	15.35%
<15-TangTram-Demersal	VIId	180	543	687	2	2	2	7	Jan	3	189	HDM	0.29%
<15-TangTram-Demersal	VIIe	252	1700	1888	9	57	58	310	Jan-Dec	262	19719	HDM	3.09%
<15-TangTram-Demersal	VIIf	135	980	1063	6	27	25	119	Jan-Dec	136	12005	HDM & SS	2.31%
<15-TangTram-Demersal	VIIg	13	37	182	2	6	34	107	Apr-Jul	422	39192	HDM & SS	18.71%
<15-TangTram-Demersal	VIIh	1	1	9									
<15-TangTram-Shellfish	IVb	45	168	168									
<15-TangTram-Shellfish	IVc	49	171	223									
<15-TangTram-Shellfish	VIIa	11	23	23									
<15-TangTram-Shellfish	VIIb	1	9	19									
<15-TangTram-Shellfish	VIId	131	719	1270									
<15-TangTram-Shellfish	VIIe	210	1022	1517									
<15-TangTram-Shellfish	VIIf	142	846	939	2	4	3	10	May-Jun	7	1080	HDM	0.33%
<15-TangTram-Shellfish	VIIg	10	25	43									
>15-Gill Hake-Demersal	VIIe	1	1	1									
>15-Gill Hake-Demersal	VIIf	8	44	180	1	1	1	2	Oct	9	226	SS	0.33%
>15-Gill Hake-Demersal	VIIg	9	50	289	1	2	6	19	Jul-Oct	91	2122	SS	1.98%
>15-Gill Hake-Demersal	VIIh	4	5	20									
>15-Gill Hake-Demersal	VIIj	2	5	26									
>15-Gill light flatfish-Demersal	VIId	1	3	26									
>15-Gill light flatfish-Demersal	VIIe	1	3	17									
>15-Gill light-Demersal	VIIg	1	1	4									
>15-Gill-Demersal	IVb	5	33	233									
>15-Gill-Demersal	IVc	3	3	5									
>15-Gill-Demersal	VIIe	10	30	101	1	1	1	2	Mar	2	48	SS	0.52%
>15-Gill-Demersal	VIIf	7	16	43	2	4	10	31	Feb-Oct	83	1999	SS	23.85%
>15-Gill-Demersal	VIIg	12	28	158	1	2	3	11	Jul-Oct	43	1042	SS	2.09%
>15-Gill-Demersal	VIIh	9	55	278									
>15-Gill-Demersal	VIIj	4	9	82									
>15-TangTram-Demersal	IVa	16	29	1087									
>15-TangTram-Demersal	IVb	1	1	9									

>15-TangTram-Demersal	VIa	2	2	3									
>15-TangTram-Demersal	VIb	6	6	228									
>15-TangTram-Demersal	VIIb	3	3	60									
>15-TangTram-Demersal	VIIc	7	8	221									
>15-TangTram-Demersal	VIIe	6	25	143	2	6	29	65	Mar-Nov	311	20446	SS	20.49%
>15-TangTram-Demersal	VIIf	4	18	117	1	2	3	10	Mar	40	3840	SS	2.33%
>15-TangTram-Demersal	VIIg	9	46	393	2	3	11	34	May-Oct	145	12629	SS	2.92%
>15-TangTram-Demersal	VIIh	11	28	180	1	2	1	2	Nov	8	480	SS	0.69%
>15-TangTram-Demersal	VIIj	4	7	163									
>15-TangTram-Demersal	VIIk	7	16	383									
>15-TangTram-Shellfish	VIIe	1	1	6									
TOTALS			**36346**	**47641**			**299**	**1113**					**0.63%**

6. Estimation of incidental catches

Cetacean bycatches have been observed during 2012 in static net and pelagic trawl fisheries as detailed in Table 6.1 below. A total of 8 dolphins (including 1 Risso's) and 18 porpoises were reported from 12 fishery strata.

No total mortality estimates have been generated by stratum in Table 6.1, as these are too narrowly defined to provide useful estimates of bycatch. Instead synoptic estimates of bycatch of harbour porpoises, dolphins and seals are presented in Annex 1 of the report.

6.1 Incidental cetacean bycatch rates by fleet segment and target species

					Individuals		Bycatch rate per haul	
Metier	**Area**	**Target**	**Cetacean Species**	**No of incidents**	**With pingers**	**Without pingers**	**With pingers**	**Without pingers**
<15-GNS-Demersal	VIIe	Mixed	Harbour porpoise	2	0	2	0	0.008
<15-GNS-Demersal	VIIf	Mixed	Harbour porpoise	3	0	3	0	0.023
<15-GNS-Demersal	VIIg	Turbot	Harbour porpoise	1	0	1	0	0.013
>15-GNS-Demersal	VIIe	Mixed	Harbour porpoise	3	0	3	0	0.083
>15-GNS-Demersal	VIIf	Mixed	Harbour porpoise	2	0	2	0	0.095
>15-GNS-Demersal	VIIf	Anglerfish	Harbour porpoise	3	0	3	0	0.333
>15-GNS-Demersal	VIIg	Mixed	Harbour porpoise	2	1	1	0.040	0.166
>15-GNS-Demersal	VIIe	Anglerfish	Harbour porpoise	2	2	0	0.068	0
Totals and Mean rates				***18***	***3***	***15***	***0.054***	***0.103***
<15-GNS-Demersal	VIIe	Mixed	Common Dolphin	2	0	2	0	0.008
>15-GNS-Demersal	VIIe	Anglerfish	Common Dolphin	2	2	0	0.068	0
>15-GNS-Demersal	VIIe	Mixed	Risso's Dolphin	1	0	1	0	0.027
Totals and Mean rates				***5***	***2***	***3***	***0.068***	***0.018***
>15-PTM-Demersal	VIIe	Bass	Common Dolphin	3	3	0	0.043	0
Totals and Mean rates				***3***	***3***	***0***	***0.043***	***0***

6.2 Recording of incidental catches

Under the UK protected species bycatch monitoring programme, dedicated bycatch observers follow a standard data collection protocol. On a haul by haul basis they record the vantage point on the ship from which they are able to make their observations, which can depend on the discretion of the master of the vessel and on safety considerations. Observers also make a judgement of the probability that they would be able to observe a bycaught mammal should one occur.

Bycaught animals are sampled whenever possible. One or more teeth are removed for age determination, skin samples are obtained, sex is determined and girth, length and blubber thickness measurements are taken. The internal temperature of each animal is also recorded to estimate an approximate time of death.

Consideration needs to be given to safety and human health issues when animals are sampled, which means that not all bycaught mammals can be sampled. It is also often the case, especially on small boats, that bycaught cetaceans cannot be brought on board and have to be cut from the net before coming over the net hauler. A proportion also drop out of the net as it leaves the water. Animals caught in trawls are generally easier to access for sampling, but sampling must not contaminate fish that are intended for human consumption. Whether or not the animal reached the deck or fell from the net is recorded, as is its orientation in the net.

A complementary sub-project to obtain whole bycaught specimens for detailed analysis ashore was also started during 2012. The project aims are two-fold: 1) to use the samples to carry out a detailed assessment of the external signs of bycatch which may help improve the detailed diagnosis of bycatch from stranded animals and 2) to provide additional biological material which may be more representative of the population than samples obtained purely from stranded animals which include a high proportion of sick animals. A number of vessels in the Southwest UK are participating in the project and all the relevant licences were obtained to permit the legal sea and shore side transport of the corpses. To date 6 whole harbour porpoises and 5 grey seals have been obtained. The storage facilities for this project have also enabled us to collect a variety of other samples (mainly stomachs for diet analysis) that it would normally not have been possible to have returned to shore.

7. Discussion

Reporting for 2012 has again followed the guidelines proposed in 2010 by the Commission, with fleet and observer bycatch and effort data presented by major gear class, by ICES division and by target group. This means that for some divisions where little or no sampling was done for specific metiers, and no bycatch was reported, the bycatch estimates would be zero, even though bycatch may have been observed in these sectors in previous years. Bycatch estimates have therefore not been generated for the 12 individual fishery strata given in Table 6.1, as these would be misleading given their very narrow scope. Instead, as in previous years, observations of bycatch rates from 2005 to 2012 have been used to generate more precise estimates of bycatch by metier. These are presented in Annex 1 of this report.

No bycatch estimate has been generated for the bass pair trawl fishery because almost all of the effort in the fishery was monitored by bycatch observers. 7 days by non-observed boats are also recorded in the fisheries activity database for 2012. Four of these occurred in

September (outside the normal season for this fishery) and three days occurred in March 2012 when bycatches are known to occur. Observed bycatch amounted to 3 common dolphins and this is likely to be the actual or very close to, the total mortality for the UK component of this fishery in 2012.

Estimates of porpoise and dolphin bycatch for the static net fisheries in the Western English Channel and Celtic Sea (ICES Divisions VIIefghji) calculated in Annex 1 are around 821 porpoises in 2012 (cf 836 in 2011) and 254 common dolphins (cf 327 in 2011). These same fisheries have been monitored for many years, and a previous statistical analysis using a generalised linear modelling approach did not reveal any significant differences in catch rates between years since 2005. Bycatch rates have therefore been calculated using combined data from 8 years of sampling 2005-2012 to generate the total mortality estimates. Preliminary statistical analysis suggests that in the most recent year (2012) there may be some evidence that rates are no longer the same as in 2005, suggesting a new sampling 'window' may be required. This conclusion is subject to further on-going statistical analysis.

8. Conclusions

The principal area of concern for cetacean bycatch remains the south-western waters of the Western Channel and Celtic Sea. The situation in the North Sea remains unclear. Three porpoises have now been reported caught among 725 hauls observed in the North Sea since 2005 among several metiers (a rate of 1 animal per 241 hauls, compared with 1 per 66 hauls in the Southwest), but we are reluctant to extrapolate before we have made a more detailed analysis of the representativeness of the sampling which has so far been focused on a relatively few places and gear types.

The UK is now undertaking more limited monitoring in its pelagic trawl fleets, except where cetacean bycatch is known to be a concern, or where there is insufficient information to form an assessment of likely bycatch rates.

Most sampling effort is now directed at under 15 m vessels using static gears in subareas IV and VII and it is expected that sampling of the UK registered Spanish owned over 15 m fleet will increase over the coming years. Some sampling under "scientific studies" of over 12 m vessels using pingers will also be continued, though at a lower rate than in recent years.

Dolphin bycatch in the pelagic pair trawl fishery for bass remains historically low; the absence of a controlled experimental approach to the use of DDDs in this fishery may have reduced bycatch rates but means it is difficult at this point in time to determine the exact effect that DDDs are having and other as yet unknown or unquantified factors may also be influencing results.

Porpoise bycatch in static net fisheries is being addressed by the use of DDDs which can more easily be deployed on long fleets than the devices described by Annex II of the Regulation and this approach appears to be currently favoured by industry. It is clear that DDDs are effective and practical if used at each end of fleets up to 4km in length.

Although there is still no evidence of a major conservation issue for either common dolphins or harbour porpoises in UK waters, the UK Government is committed to reducing cetacean bycatch to the lowest level possible and to sustainable and responsible fishing practices that minimise environmental impacts, with an overall vision for clean, healthy, productive and biodiverse seas.

9. References

Kingston, A. and Northridge, S. 2011. Extension trial of an acoustic deterrent system to minimise dolphinand porpoise bycatch in gill and tangle net fisheries. Report to the MMO under the Fisheries Challenge Fund. Available from: http://marinemanagement.org.uk/fisheries/funding/documents/fcf-acoustic-deterrent.pdf

Northridge, S., Kingston, A., Mackay, A., and Lonergan, M. 2011. Bycatch of Vulnerable Species: Understanding the Process and Mitigating the Impacts. Final report to Defra project MF1003. Contract (pp. 1-99). Available from http://randd.defra.gov.uk/Document.aspx?Document=MF1003-FINALRevisedAugust2011.pdf

Northridge, S., Kingston, A. and Thomas, L. 2011. Report to the European Commission on the implementation of Regulation 812/2004 by the United Kingdom for the calendar year 2011.

Northridge, S. and Thomas L. 2003. Monitoring Levels Required in European Fisheries to Assess Cetacean Bycatch, with Particular Reference to UK Fisheries. University of St Andrews.

ANNEX 1 to UK Progress Report on Implementation of Council Regulation 812/2004, for 2012

As with previous years, we have not tried to estimate bycatch of marine mammals by the narrowly defined gear types and areas described in Table 6.1. Estimates of bycatch by ICES subdivision would be unnecessarily restricted and would result in a much more patchy understanding of overall bycatch than is provided by estimates based on larger regions. This is justified because we see little evidence of a regional effect across the main area of study (VIIefghj). Furthermore we do not use observations from 2012 alone to provide estimates of bycatch for that year. We assume an underlying bycatch rate that we are trying to quantify through monitoring which does not change rapidly from year to year.

Previous analysis showed us that between 2005 and 2011 there was no evidence of any change in the bycatch rate among the metiers we have sampled in VIIefghj. For 2012, preliminary analysis suggests that a trend could be emerging suggesting that continued use of all observations from 2005 onwards may not be justified. Further and more detailed analysis is required to be sure of this trend and to determine whether this applies to all metiers and divisions across the region of study. In the meantime, we have produced estimates of bycatch for the entire region for each of the 5 metiers for which we have reasonable data, based on all observations since 2005. These are shown in Table A1 below for porpoises, dolphins and seals.

Table A1. Bycatch estimates by species for 2012 based on bycatch rates estimates from 2005-2012

Metier	Observed Bycatch Rate per haul[6]	Estimated no of UK hauls	Porpoises Observed	Estimated no of animals killed	CV of estimate	95% Hi	95% Lo
Harbour Porpoises							
Gill	0.011	21523	12	235	0.31	407	124
Gill Hake	0.049	1441	14	70	0.28	116	39
Gill Light	0.002	25975	1	58	1.00	210	8
Gill Light Flatfish	0	9826	0	0			
TangTram	0.021	21527	57	458	0.15	605	339
TOTALS		80292	84	**821**	**0.14**	**1338**	**510**
Common Dolphins							
Gill	0.002	21523	2	39	0.71	111	9
Gill Hake	0.021	1441	6	30	0.40	60	13
Gill Light	0	25975	0	0			
Gill Light Flatfish	0	9826	0	0			
TangTram	0.009	21527	23	185	0.27	301	106
TOTALS		80292	31	**254**	**0.23**	**472**	**128**
Seals (assumed all to be grey seals)							
Gill	0.003	21523	2	57	0.49	126	21

[6] Bycatch rates calculated from a total of 5145 hauls among these metiers that were not equipped with pingers.

Gill Hake	0	1441	0	0			
Gill Light	0	25975	0	0			
Gill Light Flatfish	0.002	9826	1	15	1.01	56	2
TangTram	0.019	21527	32	**420**	**0.11**	**518**	**336**
TOTALS		80292	35	**492**	**0.11**	**700**	**358**

As in previous years we have excluded two driftnets metiers (one for pelagic fish, the other for demersal fish – bottom drift nets) as we had no evidence that these gears caught marine mammals in VIIefghj. During 2011 two porpoises were reported caught in such gear types (one in each metier), though both of these were in the North Sea. We have continued to refrain from generating any estimates of bycatch for UK North Sea fisheries, as data are still too sparse.

For 2012 we have estimated bycatch rates assuming initially that none of the fleet is using pingers, and basing our bycatch rates on observations of fleets that did not have pingers attached. This is a conservative approach which will overestimate the bycatch because some vessels were using pingers and bycatch rates by those vessels are likely to have been much lower. The over 12 m sector of the fleet is estimated to have caught about 200 of the 821 porpoises estimated for the whole fleet (24%). Previous work (Northridge et al 2011) suggested that if DDDs are deployed on nets at a maximum spacing of 4000 m, bycatch rates would be reduced by 95%. We might therefore expect that the bycatch of porpoises in the over 12 m sector would have been reduced from 200 to 10 in the current year, if all vessels had used deterrent devices in line with the recommended operating procedures.

We have not included estimates of dolphin bycatch in the bass pair trawl fishery which was effectively subject to a bycatch census in 2012. Three common dolphins were taken and these can be added to the total estimate and the confidence limits for this species in 2012 (total expected 257, CLs: 133-475)

Once again, we estimated fishing effort in terms of fleet hauls based on the number of days at sea reported in the fleet activity database. We used the observer data from 2000-2011 to estimate the mean number of hauls per day by metier. We have not as yet included the error associated with our estimates of the number of hauls per day by metier in the final calculation of bycatch. This is something that should be addressed in future and will have the consequence of increasing the CV and the upper confidence limit on each estimate, but will not alter the point estimates.

ANNEX 2: Other dedicated and non-dedicated sampling.

2.1. Other dedicated sampling of gear types not required under 812/2004 or 92/43/EEC.

Table 2.1: Dedicated monitoring effort not required under 812/2004 or 92/43/EEC.

Size class	Nantes Type	Metier Group	Target Group	ICES Division	Vessels	Trips	Days at Sea	Hauls	Season	Bycatch
<15	FPO	Pots	Shellfish	VIIe	1	2	2	2	Aug-Dec	0
<15	OTB	Demersal Trawl	Flatfish / cephalopods	VIIe	1	1	2	3	Jan	0
>15	OTB	Demersal Trawl	Mixed whitefish	IVa	1	1	9	21	Jun	0
>15	OTB	Demersal Trawl	Mixed whitefish	IVb	1	1	2	2	Jun	1 seal

15 days of dedicated monitoring were also conducted during 2011 on gear types not specifically required under 812/2004 or the Habitats Directive.

The monitoring of strings of pots occurred opportunistically when a vessel hauled pots during a trip where static nets were also hauled and the observer recorded the data even though pots are not a gear type of direct interest to the monitoring programme at this time.

We also carried out some low level monitoring on demersal trawls, mainly in the North Sea, in response to some anecdotal reports we received regarding the potential for porpoise bycatch to occur in a particular spatiotemporally distinct fishery.

2.2. Non-dedicated sampling.

Table 2.2: Non-dedicated sampling conducted by collaborating institutions under DCF and other programmes.

Gear Group	Gear Type	Area	Target	Days	Hauls	Dolphins	Porpoise	Contractor
Demersal Trawl	Dredge	IVc	Oyster	1	12	0	0	Cefas
Demersal Trawl	Dredge	VIa	Queen scallop	16	76	0	0	AFBINI
Demersal Trawl	Dredge	VIIa	Scallop	4	42	0	0	AFBINI
Demersal Trawl	Dredge	VIId	Scallop	12	142	0	0	Cefas
Demersal Trawl	Dredge	VIIe	Scallop	15	168	0	0	Cefas
Demersal Trawl	Dredge	VIIf	Scallop	3	14	0	0	Cefas
Demersal Trawl	Dredge	VIId	Mixed	2	502	0	0	Cefas
Demersal Trawl	Dredge	VIId	Oyster	1	65	0	0	Cefas
Demersal Trawl	Semi Pelagic	VIIa	Whitefish	25	38	0	0	AFBINI
Demersal Trawl	Single Nephrops	IVb	Nephrops	5	8	0	0	Cefas
Demersal Trawl	Single Nephrops	VIa	Nephrops	12	40	0	0	AFBINI
Demersal Trawl	Single Nephrops	VIIa	Nephrops	127	343	0	0	AFBINI & Cefas
Demersal Trawl	Twin Nephrops	IVb	Nephrops	2	2	0	0	Cefas
Demersal Trawl	Twin Nephrops	VIa	Nephrops	39	99	0	0	AFBINI
Demersal Trawl	Twin Nephrops	VIIa	Nephrops	192	518	0	0	AFBINI
Demersal Trawl	Twin Nephrops	VIIg	Nephrops	10	24	0	0	AFBINI
Demersal Trawl	Triple Nephrops	VIIa	Nephrops	6	14	0	0	AFBINI
Demersal Trawl	Beam	IVc	Shrimp	4	23	0	0	Cefas

Demersal Trawl	Beam	VIId	Lemon sole	9	64	0	0	Cefas
Demersal Trawl	Beam	VIId	Plaice	10	77	0	0	Cefas
Demersal Trawl	Beam	VIIe	Anglerfish	14	89	0	0	Cefas
Demersal Trawl	Beam	VIIe	Cuttlefish	50	362	0	0	Cefas
Demersal Trawl	Beam	VIIe	Dover sole	9	54	0	0	Cefas
Demersal Trawl	Beam	VIIe	Lemon sole	8	58	0	0	Cefas
Demersal Trawl	Beam	VIIe	Megim	17	99	0	0	Cefas
Demersal Trawl	Beam	VIIf	Dover sole	6	50	0	0	Cefas
Demersal Trawl	Beam	VIIf	Lemon sole	3	15	0	0	Cefas
Demersal Trawl	Beam	VIIg	Megim	9	56	0	0	Cefas
Demersal Trawl	Beam	VIIh	Anglerfish	14	80	0	0	Cefas
Demersal Trawl	Beam	VIIh	Megim	33	193	0	0	Cefas
Demersal Trawl	Otter	IVa	Cod	6	16	0	0	Cefas
Demersal Trawl	Otter	IVb	Bass	1	2	0	0	Cefas
Demersal Trawl	Otter	IVb	Cod	4	7	0	0	Cefas
Demersal Trawl	Otter	IVb	Dover sole	1	1	0	0	Cefas
Demersal Trawl	Otter	IVb	Haddock	12	34	0	0	Cefas
Demersal Trawl	Otter	IVb	Mixed	1	2	0	0	Cefas
Demersal Trawl	Otter	IVb	Whiting	3	6	0	0	Cefas
Demersal Trawl	Otter	VIa	Cod	9	22	0	0	Cefas
Demersal Trawl	Otter	VIIa	Cod	9	22	0	0	Cefas
Demersal Trawl	Otter	VIIa	Plaice	5	8	0	0	Cefas
Demersal Trawl	Otter	VIId	Dover sole	2	10	0	0	Cefas
Demersal Trawl	Otter	VIId	Lemon sole	1	3	0	0	Cefas
Demersal Trawl	Otter	VIId	Plaice	1	3	0	0	Cefas
Demersal Trawl	Otter	VIId	Cuttlefish	1	2	0	0	Cefas
Demersal Trawl	Otter	VIIe	Haddock	1	4	0	0	Cefas
Demersal Trawl	Otter	VIIe	Lemon sole	4	6	0	0	Cefas
Demersal Trawl	Otter	VIIe	Skate	2	2	0	0	Cefas
Demersal Trawl	Otter	VIIe	Squid	1	3	0	0	Cefas
Demersal Trawl	Otter	VIIf	Bass	5	19	0	0	Cefas
Demersal Trawl	Otter	VIIf	Cod	8	20	0	0	Cefas
Demersal Trawl	Otter	VIIf	Skate	1	3	0	0	Cefas
Demersal Trawl	Otter	VIIf	Squid	7	28	0	0	Cefas
Demersal Trawl	Otter	VIIg	Cod	8	20	0	0	Cefas
Demersal Trawl	Twin Otter	IVa	Cod	10	23	0	0	Cefas
Demersal Trawl	Twin Otter	IVb	Nephrops	1	2	0	0	Cefas
Demersal Trawl	Twin Otter	IVc	Dover sole	1	6	0	0	Cefas
Demersal Trawl	Twin Otter	VIIa	Plaice	2	2	0	0	Cefas
Demersal Trawl	Twin Otter	VIIe	Anglerfish	7	23	0	0	Cefas
Demersal Trawl	Twin Otter	VIIe	Cuttlefish	1	2	0	0	Cefas
Demersal Trawl	Twin Otter	VIIe	Haddock	6	21	0	0	Cefas
Demersal Trawl	Twin Otter	VIIe	Lemon sole	1	3	0	0	Cefas
Demersal Trawl	Twin Otter	VIIf	Bass	5	19	0	0	Cefas
Demersal Trawl	Twin Otter	VIIf	Skate	9	26	0	0	Cefas
Demersal Trawl	Twin Otter	VIIg	Bass	5	19	0	0	Cefas
Demersal Trawl	Twin Otter	VIIh	Anglerfish	7	23	0	0	Cefas
Demersal Trawl	Triple Otter	VIIe	Megim	4	16	0	0	Cefas
Drift Net	Drift	VIIa	Bass	1	1	0	0	Cefas
Drift Net	Drift	VIIa	Cod	1	1	0	0	Cefas
Drift Net	Drift	VIId	Bass	2	2	0	0	Cefas
Static Net	Gill	VIIa	Bass	1	3	0	0	Cefas
Static Net	Gill	VIIe	Anglerfish	11	33	0	0	Cefas
Static Net	Gill	VIIe	Dover sole	8	9	0	0	Cefas
Static Net	Gill	VIIe	Pollack	4	16	0	0	Cefas
Static Net	Gill	VIIe	Red mullet	3	7	0	0	Cefas
Static Net	Gill	VIIe	Whiting	1	6	0	0	Cefas
Static Net	Gill	VIIf	Anglerfish	13	25	0	0	Cefas

Static Net	Gill	VIIf	Bass	2	4	0	0	Cefas
Static Net	Gill	VIIf	Haddock	3	6	0	0	Cefas
Static Net	Gill	VIIf	Pollack	11	58	0	0	Cefas
Static Net	Gill	VIIf	Red mullet	3	7	0	0	Cefas
Static Net	Gill	VIIg	Haddock	18	58	0	0	Cefas
Static Net	Gill	VIIg	Pollack	11	58	0	0	Cefas
Static Net	Gill	VIIh	Anglerfish	8	28	0	0	Cefas
Static Net	Tangle / Trammel	VIId	Anglerfish	2	5	0	0	Cefas
Static Net	Tangle / Trammel	VIId	Plaice	4	7	0	0	Cefas
Static Net	Tangle / Trammel	VIIe	Anglerfish	64	96	0	0	Cefas
Static Net	Tangle / Trammel	VIIe	Brill	3	5	0	0	Cefas
Static Net	Tangle / Trammel	VIIe	Dover sole	4	8	0	0	Cefas
Static Net	Tangle / Trammel	VIIe	Skate	3	9	0	0	Cefas
Static Net	Tangle / Trammel	VIIf	Anglerfish	30	35	0	0	Cefas
Static Net	Tangle / Trammel	VIIf	Red mullet	3	7	0	0	Cefas
Static Net	Tangle / Trammel	VIIf	Turbot	10	21	0	0	Cefas
Static Net	Tangle / Trammel	VIIg	Anglerfish	13	17	0	0	Cefas
Static Net	Tangle / Trammel	VIIh	Anglerfish	18	43	0	0	Cefas
TOTAL				**1064**	**4330**	**0**	**0**	

The majority of non-dedicated monitoring during 2012 was conducted on demersal trawl gear types under the national discard sampling programmes. These data are not used to produce annual bycatch estimates as we cannot be sure that all bycatches would have been seen or recorded by discard officers as they have different work patterns and commitments while on deck compared with dedicated bycatch observers. Nevertheless these data could provide a useful insight into the potential for bycatch to occur in gear types not covered by 812/2004.

However, it is worth noting that during 2012 in 1064 non-dedicated sea days conducted under the English and Northern Irish discard programmes no marine mammal bycatch was recorded. By comparison, 33 marine mammals were observed bycaught in 414 dedicated sea days conducted under the protected species bycatch programme in 2012. A similar pattern was evident in the 2011 data. These figures are likely to be influenced by the proportion of different gear types monitored and by the specific duties required of the observers in each programme. Nevertheless it highlights the importance of designing and optimising monitoring programmes specifically for purpose.