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CVO report Number: CVO 09.006

Annual Report of the Netherlands to the European Commission on the implementation of Council Regulation 812/2004 on cetacean bycatch

Results of fishery observations collected during 2008

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BAS-code WOT-05-406-130
Project number: 439.12130.03

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Signature: _____

Date: July 1, 2009

Number of copies: 15
Number of pages: 24
Number of tables: 4
Number of figures: 3
Number of annexes: 1

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Summary

This report contains the results of the ongoing monitoring programme on the incidental bycatch of cetaceans in Dutch pelagic fisheries in 2008. EU Council Regulation 812/2004 requires observer coverage in ICES areas VI, VII and VIII in the period 1 December – 31 March (fleet segment A and C) and outside this area in all areas year round (fleet segment B and D). In the Dutch situation the monitoring is integrated with the collection of discards data under the EC Data Collection Regulations 1543/2000 and 1639/2001.

In 2008, during 12 fishing trips, 76 days and 159 hauls were observed in fleet segment A and C; 134 days and 276 hauls were observed in fleet segment B and D. With a total number of fleet days of 747 in fleet segment A and C and 1123 in fleet segment B and D, the coverage in segment A and C was 10.2 % and 11.9% in segment B and D.

No bycatch of cetaceans were recorded. The observed bycatch rate of 0.00 dolphins per day is in line with the findings from 2006 and 2007 when the bycatch rate was also 0.00 dolphins per day.

Further, this report presents the results of a pilot observer study in set net fisheries. In the Netherlands about 90 vessels are known to land fish caught by set nets. The main target species is sole, which is fished with tangle nets. The sampled fraction of the fleet is not representative for the total Dutch fishery, because the study focused primarily on cod/mixed species fishery with trammel nets in the first half of the year. In the fishery with trammel nets which takes place normally from October to March (in 2008 the fishery went on till June!) the bycatch rate was believed to be relatively high. In 48 day trips on board three vessels an observer was on board. The effort distribution during the trips was 210 km x days trammel nets for cod/mixed species, 64 km x days gillnets for cod and 12 km x days tangle nets for sole. One bycatch of a harbour porpoise and one bycatch of a grey seal was recorded, both in trammel nets. Raising these observed bycatches to the total fleet effort in January - June, gives an estimate of 37 bycaught harbour porpoises and 37 grey seals during that period.

This research is performed within Wettelijke onderzoekstaken (WOT) of LNV-programs

Samenvatting

Dit rapport bevat de resultaten van het doorlopende waarnemerprogramma in 2008 naar de bijvangst van dolfinen in de Nederlandse pelagische visserij. Verordening 812/2004 vereist een waarnemers inspanning in de ICES gebieden VI, VII en VIII in de periode van 1 december tot en met 31 maart (vlootsegment A en C) en buiten deze periode in alle gebieden het hele jaar rond (vlootsegment B en D). In de Nederlandse situatie is het waarnemerprogramma geïntegreerd met het verzamelen van vangst- en discardgegevens onder EU Verordeningen 1543/2000 en 1639/2001.

In 2008 zijn, tijdens 12 reizen waarnemingen uitgevoerd gedurende in totaal 76 dagen met 159 trekken in vlootsegment A en C; 134 dagen en 276 trekken in vlootsegment B en D. Met een totaal aantal visdagen van 747 in vlootsegment A en C en 1123 in vlootsegment B en D, was de dekking respectievelijk 10.2% en 11.9%.

Er werden geen bijvangsten van dolfinachtigen waargenomen. De gevonden mate van bijvangst van 0.00 dolfinen per dag, verschilt niet van die van 2006 en 2007 toen er ook geen bijvangsten werden waargenomen.

Verder wordt verslag gedaan van een verkennende studie met waarnemers in de staandwantvisserij. In Nederland voeren ongeveer 90 schepen vis aan die is gevangen met staand want. De voornaamste doelsoort is tong, welke wordt gevangen met warnetten. The bemonsterde fractie van de vloot is niet representatief voor de gehele Nederlandse staandwantvisserij omdat de studie zich in de eerste plaats richtte op de visserij op kabeljauw/gemengde soorten met spiegelnetten gedurende de eerste helft van het jaar. Men neemt aan dat in deze visserij, die normaal gesproken plaats vindt van oktober tot en met maart (maar in 2008 voortduurde tot juni), het aantal bijvangsten betrekkelijk hoog is. Tijdens 48 dagreizen, aan boord van drie verschillende kotters, werden waarnemingen over bijvangsten verzameld. De visserijinspanning tijdens deze reizen was verdeeld over 210 km-dagen spiegelnetten op kabeljauw en gemengde soorten, 64 km x dagen kieuwnetten op kabeljauw en 12 km x dagen warnetten op tong. De bijvangst van één bruinvis en één grijze zeehond werd waargenomen. Wanneer deze bijvangsten worden opgeschaald naar de inspanning van de gehele staandwantvloot in januari tot en met juni, geeft dit een schatting van 37 bijgevangen bruinvissen en 37 grijze zeehonden over deze periode.

Dit onderzoek is uitgevoerd binnen de Wettelijke onderzoekstaken in het kader van LNV-programma's

1 Introduction

Council Regulation No 812/2004¹ is obliging Member States to monitor bycatches of cetaceans in certain fisheries, certain periods of the year and in certain European Waters and to report the results of the monitoring to the European Commission. In the Netherlands, the monitoring was commissioned by the Ministry of Agriculture, Nature Conservation and Food Quality to Wageningen IMARES, the former Netherlands Institute for Fisheries Research, and started on 1 January 2005.

The aim of this study is to assess the incidental bycatch of cetaceans in the Dutch pelagic fisheries. Under the regulation the following fleet segments in the Netherlands should be monitored:

- Pelagic fishery in the period of 1 December till 31 March in ICES areas VI, VII and VIII
- Pelagic fishery in European waters during the year excluding the fishery in the period 1 December till 31 March in ICES areas IV, VII and VIII

This report covers the ongoing monitoring of Dutch pelagic fisheries in the period January – December 2008. In addition, this report presents the results of a pilot project on the monitoring of bycatches in gill net fisheries, carried out in 2008. Monitoring of set net fisheries in the Netherlands is not required according to the regulation because the majority of the fleet consists of vessels smaller than 15m and the fishery takes place in ICES subareas IVc and IVb. However, the regulation asks to execute pilot projects on fisheries that do not fall under it, but are suspected to be responsible for the bycatch of small cetaceans.

Under the regulation a coverage should be reached leading to a CV of the bycatch estimate of 30% or less. However, in a situation where there are very few bycatch incidents, this CV is not realistic (ICES 2009). Therefore the target of the current monitoring programme in the Netherlands is to cover the fleet effort according to the pilot scheme set for the first two years. The required pilot coverage is 10% for the period of 1 December till 31 March in ICES area VI, VII and VIII and 5% in the rest of the year with exclusion of fleet segment A. In the Dutch situation the monitoring is integrated with the collection of discards data under EC Data Collection Regulations: C.R. 1543/2000² and C.R. 1639/2001³ amended by C.R. 1581/2004⁴ (EC 2000) (EC 2001). The project under this regulation aims at an overall coverage of approximately 10% in European waters.

¹ Council Regulation (EC) No 812/2004 of 26.4.2004 laying down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98

² Council Regulation (EC) No 1543/2000 of 29 June 2000 establishing a Community framework for the collection and management of the data needed to conduct the common fisheries policy

³ Commission Regulation (EC) No 1639/2001 of 25 July 2001 establishing the minimum and extended Community programmes for the collection of data in the fisheries sector and laying down detailed rules for the application of Council Regulation (EC) No 1543/2000

⁴ Commission Regulation (EC) No 1581/2004 of 27 August 2004 amending Regulation (EC) No 1639/2001 establishing the minimum and extended Community programmes for the collection of data in the fisheries sector and laying down detailed rules for the application of Council Regulation (EC) No 1543/2000

Earlier studies on the incidental bycatch of cetaceans have been reported by Couperus (Couperus 1995; Couperus 2006, 2007, 2008) covering the period 1992 -1996 and 2004 - 2007. The format of this report is according to the template provided by the ICES Study Group for Bycatch of Protected Species (SGBYC) with adjustments from the Advice Drafting Group/ACOM in 2008 (ICES 2008, 2009). The numbering and order of the tables, requires to present results on set nets first. In addition the format requires to report on the use of pingers, hence the inclusion of table 2 and the inclusion of a column on pingers in table 4.

2 Pinger use

The EU regulation obliges the use of pingers in certain fleet segments. According to the criteria mentioned in the regulation, the Dutch fishery includes no fleet segments in which pingers are mandatory. Pingers were used in none of the studied fleet segments (table 2).

3 Methods

Set nets - pilot study

The Dutch set net fishery fleet consists of approximately 90 vessels, almost all smaller than 15 meter. The main target species is sole which is caught usually in the period of April-August with tangle nets. The second most important fishery is the fishery with trammel nets for mixed species (predominantly cod) from October to March.

The amount of fish caught and landed by the set net fishery at the fish auction has increased in the last decade. At the same time the number of stranded harbour porpoises and coastal sightings have increased. The number of strandings seems to be a reflection of the increased number of porpoises close to the coast (Figure 1). It has been estimated that 7-70% of the stranded porpoises has been bycaught in fisheries (Garcia-Hartmann et al. 2004; Leopold and Camphuysen 2006; Osinga et al. 2008). In the Dutch situation it is believed that set nets, more specifically set nets with large meshes, like gill nets for cod and trammel nets for flatfish and cod, are the gears in which bycatches are most likely to occur.

The Dutch set net fishery operates in inner coastal waters (Wadden Sea and around the isles in the southwest of the country) and in ICES subarea IVc. From January till June 2008, the fleet effort in IVc was 1781 days. In the same period 7 and 1 days were recorded in area IVb and III. All observer effort during the monitoring was limited to IVc.

Observer effort

In the period half February – beginning of June (week 7-22) 48 observer trips of one day were made on board three vessels. The three vessels represented a group of 15 vessels which fish in the winter for cod with trammel nets, close to the shore. They were operating (mainly) from the port of Scheveningen. It was tried to execute observer trips in the period January – March, in order to cover the second half of the season for cod. However, due to organizational problems the monitoring started later. This was compensated by the fact that these vessels continued fishing for cod till the end of May.

Registration of bycatch

Catch positions were recorded on a sheet with 1/16 ICES rectangles. In case of a bycatch, species, sex en length were recorded. Bycaught animals were labeled and taken ashore for dissection if the crew agreed.

3.1 Pelagic fleet

Observer effort

The monitoring of the pelagic fleet is integrated with the collection of discards data under EC Data Collection Regulations 1543/2000 and 1639/2001. In this programme observer effort is spread quasi random over the year. The observer trips are scheduled equally over the year and observers join the first trawler that comes in. However, the choice of area and target species are often last minute decisions of the owner of the vessel and may even alter during the trip itself. Therefore it is impossible to foresee or plan the exact effort in the area that has to be monitored under EC Regulation No 812/2004.

Table 1 presents the fleet segments that have been studied. The single pair of pair trawlers in the pelagic fleet is considered a different "fleet segment". In previous years these pair trawlers have been treated as part of fleet segment A and B. In 2008 on 12 trips an observer joined the vessel in segment A and B. According to the national logbook database, the number of fleet days in area VI, VII and VIII during season 2008 was 747. With 81 observer days the coverage was 10,8%. The coverage in segment B was $1123/139=12,4\%$.

Registration of bycatches

For each tow, the observer was present on the bridge during shooting and hauling. Position and time were recorded at the beginning of each haul. The time was recorded again when hauling started. The rear window of the bridge gives a good view on the rear deck, so that bycatches of cetaceans can be recorded from there. Of any bycatch, length and sex must be recorded. In the case of cetacean bycatches, and if the crew agrees, the animals are labeled and frozen for further examination at the institute.

4 Results

4.1 Set nets - pilot study

Trammel nets were the most frequently used gear in the observer trips. However, during the study also tangle nets for sole and gill nets for cod were used:

gear type	effort (km x days)
gill nets for cod	12
trammel nets	210
tangle nets for sole	64

Figure 2 shows the geographical distribution of the effort by different types of set nets. In all, 48 observation days were made during a total 1781 fishing days in area IVc, which corresponds with a coverage of 2.7% (table 3a). One harbour porpoise and one grey seal have been recorded as bycatch. This gives a rough indication of the bycatch rate of 0.02 porpoises/day (and 0.02 grey seals/day) or 37 specimens of both species in total during the period January – June (table 4).

4.2 Pelagic fleet

In total 435 hauls and 220 days have been observed during the 12 observer trips (table 3a). Note that a vessel may have visited several areas on one day which means that a day on which a vessel fished in two areas is counted as two days. On the other hand if a vessel did not fish at all, this day is not counted. Thus the sum of all days at sea is not necessarily the same as the total fishing days at sea. Figure 2 shows the positions of all these hauls. Of these hauls, 159 were in fleet segment A and 276 in segment B. The two pair trawlers (segment C and D) have not been sampled (Table 3b). Total coverage (observed days/total days x 100 = %) were (A) $76/661 \times 100 = 11.5\%$, (B) $134/941 \times 100 = 14.2\%$, (C) $0/86 \times 100 = 0\%$ and (D) $0/182 \times 100 = 0\%$ or (A+C) $76/747 = 10.2\%$ and (B+D) $134/1123 = 11.9\%$.

In the observed hauls no bycatches of cetaceans occurred (table 4).

5 Discussion

5.1 Set nets – pilot

The target species of set net fisheries in the Netherlands vary during the year. Sole is by far the most landed species. The fishery for sole normally takes place between half March and October. From October till March some of the cutters switch to cod. The 48 observer trips took place from half February till early June, mainly on trips targeting cod. These trips are therefore not representative for the yearly total set net fishery in the North Sea. However, the observed bycatch of 1 harbour porpoise has been raised to the number of fleet days according to the agreed SGBYC/ACOM format. The target species has not been taken in account. It can be argued therefore that the estimate of 37 animals in the first half of the year is biased, because the bycatch rate in the fishery for sole is probably different from the fishery for cod.

Based on the same observations but raised to the number of trips, and taking the landed catch in account Couperus (2009) estimated a bycatch of 2 to 31 harbour porpoises in the period half February to end of May.

The differences between the two approaches can be seen as an illustration of how uncertain this estimate is.

During the observer trips a bycatch incident with a grey seal occurred. Bycatches of seals are not covered by the EU Council Regulation 812/2004, but are reported here anyway.

5.2 Pelagic gear

With 10.2% coverage of fleet segment A and C, the target of 10% has been fulfilled. The coverage of fleet segment B and D was 11.9% which is more than twice as high as the required pilot coverage of 5%. The observer programme is combined with the collection of discards data which aims at an overall random coverage of 10%. The coverage in fleet segment A may therefore vary from year to year. The advantage of this approach is that incidental bycatches (and discards) can be estimated directly for the whole fleet without having to apply a stratum approach, which would be very complicated, due to the number of different stocks/fisheries and the continuous overlap between these during most of the trips. In addition, stratification would require to disregard some fisheries, because the number of fisheries is higher than the number of observed trips. Moreover, fishery plans often change in the course of a trip. Couperus et al. (2004) distinguished 12 types of fishery which is equal to the annual number of observer trips. Some of these fisheries are much larger in terms of effort and landings than others. Hence it is not possible to cover all types of fishery by effort or landings with the current observer effort. In this light stratification can be considered a pitfall if the objective is to estimate national or European bycatch rates. Note that the distinction between single en pair trawlers in this study is only a division in fleet segments: the random sampling scheme was applied to single and pair trawlers as one group.

The recorded bycatch is 0.00, which is similar to rates found in 2005 -2007. In these years only a few specimens have been recorded. A more extensive evaluation of bycatch rates in the light of developments in the fishery from the 1990ies till 2005 is given by Couperus (2006).

In the Dutch fishery, bycatches of dolphins occur mainly in the fishery for horse mackerel and mackerel west of Ireland in February and March (Couperus 1997). The relatively low bycatch rates in 2005 – 2008 compared to the rates in the 1990ies are probably related to the increased fishery in the blue whiting fishery (Couperus 2006), which is specifically the case in 2008 (Figure 2). In addition, the bycatch rate is lowered due to the extension of the observed period with the month December since 2004.

Due to the high number of hauls without bycatches it is not possible to estimate the bycatch rate with any accuracy with the current observer effort. The total bycatch mortality of cetaceans caused by Dutch pelagic freezer trawlers in the 2006-2007 season is in the order of magnitude of zero to several tens. However, data from the 1990ies suggest that the bycatch rate may vary, partly induced by changes in the quota's of pelagic target species.

6 Acknowledgements

I would like to thank the skippers and crew of the sampled vessels for their co-operation. I would also like to thank the observers Martien Warmerdam, Thomas Pasterkamp and Ton Visser for their hard work on board of the vessels.

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8 Tables

Table 1. Required effort by fleet segment according to EU council regulation 812/2004.

Code number for fleet segment	ICES area	Gear type	Target species	Number of vessels	Months of operation
A	VI, VII, VIII	Pelagic trawl	hor, mac, bw, her	12	1,2,3,12
B	other area's	Pelagic trawl	hor, mac, bw, her, arg	12	1-12
C	VI, VII, VIII	Pelagic trawl pair	hor, mac, her	2	1,2,3,12
D	other area's	Pelagic trawl pair	hor, mac, her	2	1-12
E (pilot)	IVc	trammel nets/ gillnets/tangle nets	cod/turbot/flatfish	90	2-6

Table 2. Description of bycatch mitigation measures (pingers). See table 1 for a description of the fleet segments.

Fleet segment	Pingers mandatory?	% using of vessel pingers	comments	Other bycatch mitigation measures
A	no	0		no
B	no	0		no
C	no	0		no
D	no	0		no
E	no	0	pilot program	no

Table 3a. Description of fishing effort and observer effort in static gear in 2008.

Fleet segment	ICES sub area	Total fishing effort					Total observer effort achieved					
		No. of vessels	No. of trips	Days at sea	Total length of nets (km)	Average soak time (hours/day)	No. of vessels	No. of trips	Days at sea	Length of net (km)	Average soak time (hours/day)	Coverage % (days at sea)
fleetE	IVc	90	1359	1781	ni	ni	3	48	48	286	24	2.70%

Table 3b. Description of fishing effort and observer effort in towed gear.

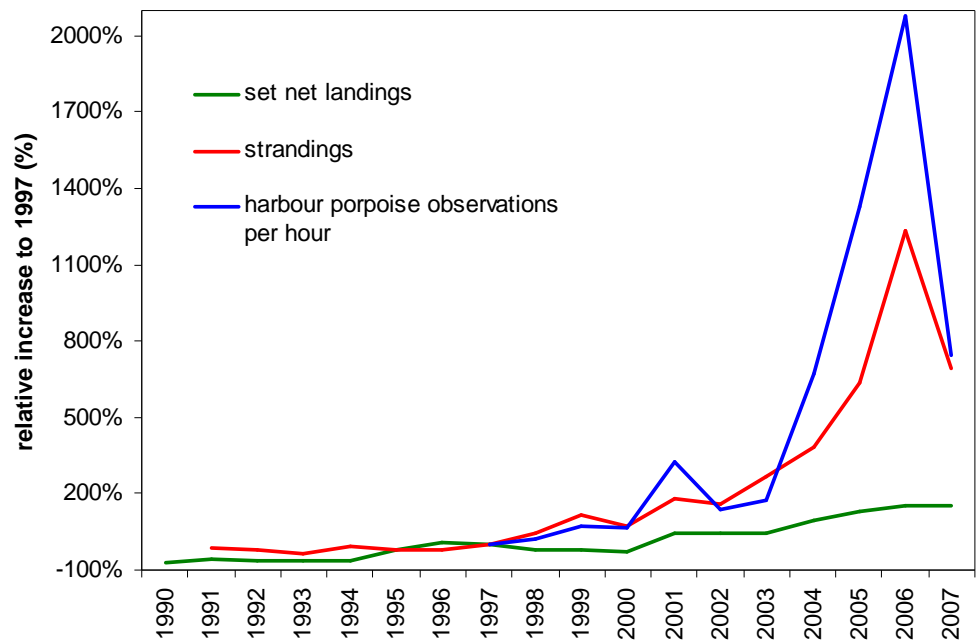
Fleet segment	ICES sub area	Total fishing effort					Total observer effort achieved					
		No. of vessels	No. of trips	Days at sea*	No. of hauls	Average towing time (hours/day)	No. of vessels	No. of trips	Days at sea	No. of hauls	Average towing time (hours/day)	Coverage % (days at sea)
A	VIA	9	15	98	ni	ni	1	1	3	6	ni	3.1%
A	VIIB	9	15	99	ni	ni	2	2	24	50	ni	24.2%
A	VIIC	10	25	200	ni	ni	3	4	30	56	ni	15.0%
A	VIID	7	12	90	ni	ni	2	2	19	40	ni	21.1%
A	VIIIE	5	7	8	ni	ni	1	2	1	2	ni	12.5%
A	VIIH	4	6	17	ni	ni	0	0	0	0	ni	0.0%
A	VIIIA	1	2	5	ni	ni	0	0	0	0	ni	0.0%
A	VIIID	1	1	2	ni	ni	0	0	0	0	ni	0.0%
A	VIIJ	11	30	115	ni	ni	1	1	4	5	ni	3.5%
A	VIIK	8	10	27	ni	ni	0	0	0	0	ni	0.0%
B	Ila	13	14	140	ni	ni	3	3	54	103	ni	38.6%
B	Ilb	3	3	27	ni	ni	0	0	0	0	ni	0.0%
B	IVA	7	16	91	ni	ni	1	1	12	22	ni	13.2%
B	IVB	7	11	17	ni	ni	0	0	0	0	ni	0.0%
B	IVC	10	20	32	ni	ni	1	1	4	4	ni	12.5%
B	VB	1	1	2	ni	ni	1	1	1	1	ni	50.0%
B	VIA	10	23	241	ni	ni	1	1	21	49	ni	8.7%
B	VIIB	4	5	25	ni	ni	0	0	0	0	ni	0.0%
B	VIIC	2	2	9	ni	ni	0	0	0	0	ni	0.0%
B	VIID	6	10	110	ni	ni	2	2	9	21	ni	8.2%
B	VIIIE	7	10	79	ni	ni	1	1	1	1	ni	1.3%
B	VIIIA	3	8	59	ni	ni	1	1	12	34	ni	20.3%
B	VIIIB	1	2	3	ni	ni	0	0	0	0	ni	0.0%
B	VIIID	1	1	2	ni	ni	2	2	7	9	ni	350.0%
B	VIIJ	3	6	104	ni	ni	1	1	18	32	ni	17.3%
C	VIID	2	12	67	ni	ni	0	0	0	0	ni	0.0%
C	VIIIE	2	8	10	ni	ni	0	0	0	0	ni	0.0%
C	VIIIA	2	2	7	ni	ni	0	0	0	0	ni	0.0%
C	VIIJ	1	1	2	ni	ni	0	0	0	0	ni	0.0%
D	IVA	2	11	56	ni	ni	0	0	0	0	ni	0.0%
D	IVC	2	23	36	ni	ni	0	0	0	0	ni	0.0%
D	VIID	2	9	36	ni	ni	0	0	0	0	ni	0.0%
D	VIIIE	2	10	40	ni	ni	0	0	0	0	ni	0.0%
D	VIIJ	2	2	14	ni	ni	0	0	0	0	ni	0.0%

* Note that a vessel may have visited several areas on one day which means that a day on which a vessel fished in two areas is counted as two days. On the other hand if a vessel did not fish at all, this day is not counted. Thus the sum of all days at sea is not necessarily the same as the total fishing days at sea.

Table 4. Netherlands: bycatch rate of cetaceans, fleet segment and target species

Fleet segment	Cetacean species	Bycatch rate (specimens/day)	Total bycatch estimate	CV percent
A	-	0	0	
B	-	not observed	not observed	
C	-	0	0	
D	-	not observed	not observed	
E (pilot)	<i>P. phocoena</i>	0.02	37	

9 Figures



Figuur 1. Increase of set nets landings, strandings and observations of harbour porpoises along the Dutch coast with reference year 1997 (source: Couperus et al. 2009).

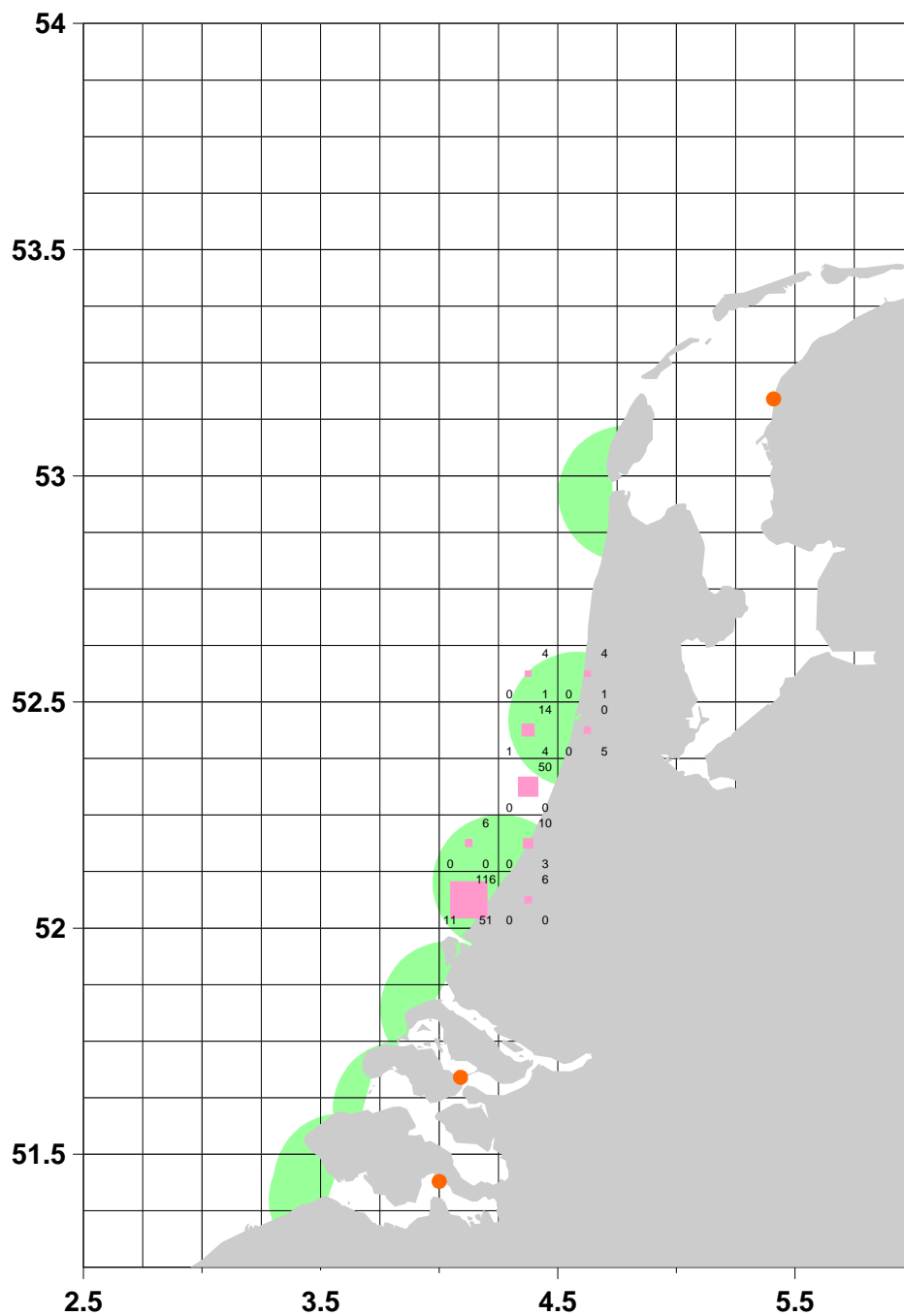


Figure 2. Observer effort in km x days in 2008. Numbers in the rectangles (1/16th ICES rectangle): upper right trammel nets, left below gill net for cod, right below tangle nets for sole. Pink squares present the relative effort: the size is scaled by the square root to the highest value (177.7). The beam of 7,5 nm around landing ports is shown in green. Orange dots: landing ports which are not located at the North Sea coast and where no cod, sole or turbot was landed.

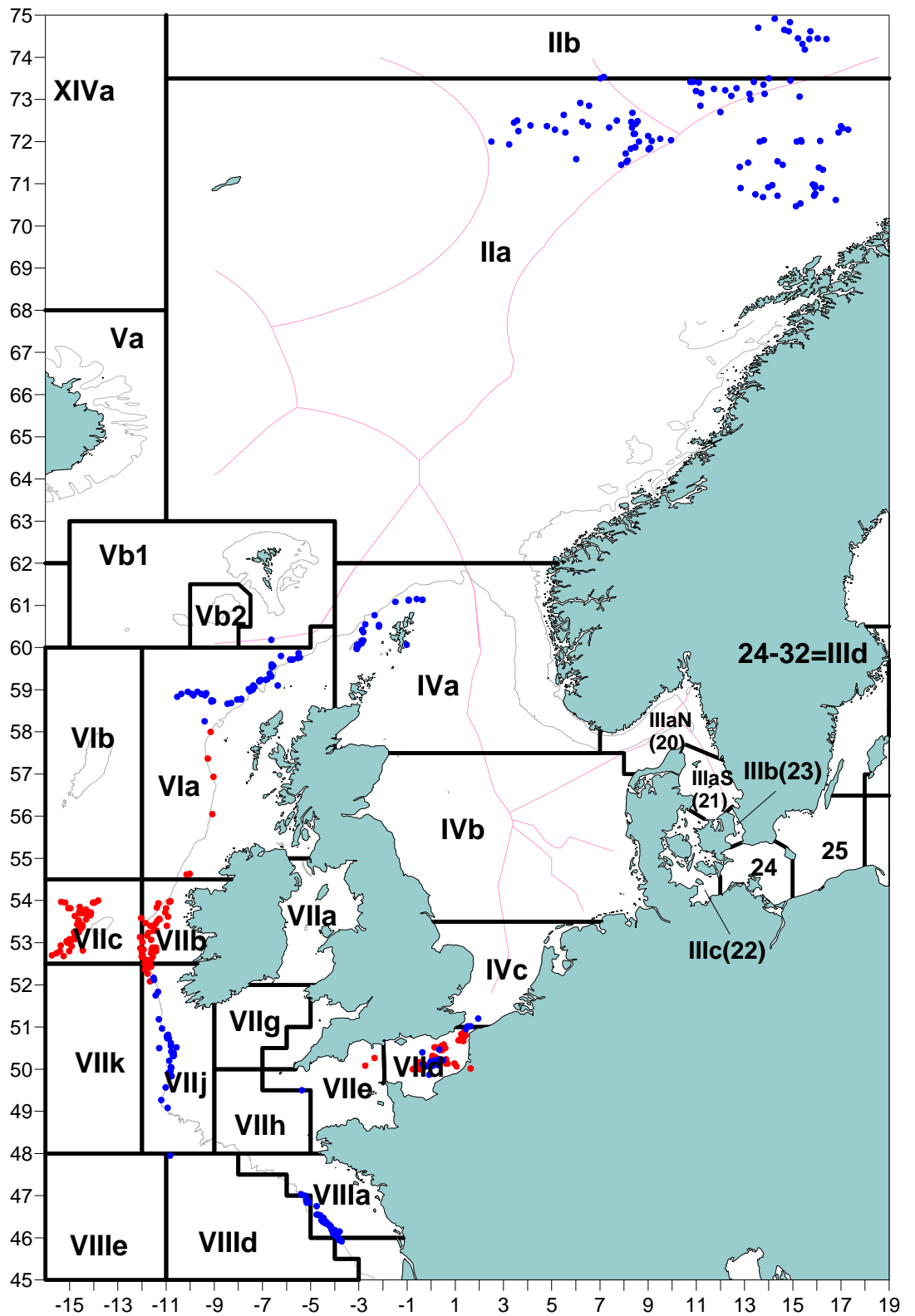


Figure 3. Map with the positions of the observed trawl hauls during the 12 trips dealt with in this report. The red dots refer to hauls within fleet segment A. The blue dots refer to hauls in fleet segment B. Verander groen in blauw en 15% van de mannen begrijpt je figuur voortaan ook!

Annex 1

Bycatch rates between 1 January and 31 March in 1993-1996 and between 1 December and 31 March in the seasons 2004/2005, to 2007/2008 in ICES area's VI, VII and VIII. Data from the period 1993-1996 are from 6 observer trips reported in Couperus (1994; 1995 and 1997). Dolphin species involved were Atlantic white-sided dolphin (*Lagenorhynchus acutus*; n=7), short beaked common dolphin (*Delphinus delphis*; n=6) and long-finned pilotwhale (*Globicephala melas*; n=1).

	hauls	days*	Incidents	dolphins	inc/ haul	dolphins/ haul	inc/day	dolphins/day
1993	75	25	0	0	0.00	0.00	0.00	0.00
1994	105	48	5	6	0.05	0.06	0.10	0.13
1995	37	13	1	3	0.03	0.08	0.08	0.23
1996	47	26	4	5	0.09	0.11	0.15	0.19
04/05	143	63	2	3	0.01	0.02	0.03	0.05
05/06	135	66	1	1	0.01	0.01	0.02	0.02
06/07	76	43	0	0	0.00	0.00	0.00	0.00
07/08	137	110	0	0	0.00	0.00	0.00	0.00

*The number of days presented here are the actual number of days at sea (these include real fishing days, but also drifting/processing of the catch and searching), unlike the numbers presented in Table 3a and b of the main text in which only real fishing days at sea are presented.