Bonn Agreement
Accord de Bonn

Bonn Agreement Aerial Surveillance Programme

Annual report on aerial surveillance for 2014

CONTENTS

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Introduction

1. The nine countries bordering the North Sea work together within the Bonn Agreement to undertake aerial surveillance using specially equipped aircraft and specialised personnel to detect spills of oil and other harmful substances and enforce international environmental regulations.

2. The North West European Waters – the main part of which is formed by the North Sea – have been declared a Special Area by the International Maritime Organization for the purpose of MARPOL Annex I (Oil). This took effect on 1 August 1999, from which date the discharge of all oily wastes at sea in the Special Area is prohibited. This report demonstrates the effectiveness of co-operation in aerial surveillance among North Sea countries and their collective effort to detect marine pollution.

3. This report presents the results of aerial surveillance operations undertaken as a collective effort under the Bonn Agreement. In addition to national flights carried out under the Bonn Agreement in their own parts of the maritime area and other aerial surveillance undertaken for national purposes, the Bonn Agreement countries also co-ordinate flights of the following types:

   a. *Tour d'Horizon* (TdH) flights - monthly flights carried out by countries in turn to survey the offshore area of the North Sea where offshore oil and gas activities take place;

   b. *Coordinated Extended Pollution Control Operations* (CEPCO), where some neighbouring countries co-operate to survey intensively an area with high traffic density during a relatively short period (e.g. 24 hours). Contracting Parties may also decide to organise a so called "Super CEPCO" where Bonn Agreement Contracting Parties, often together with countries from neighbouring regions, cooperate in the surveillance of a specific area over a period of up to 10 days.

4. This report compiles, in Tables 1 - 4, data for all the surveillance undertaken for Bonn Agreement purposes. These Tables are based on data related to the number of flight hours, the number of spills and their estimated volume. This report differs from those for 2000-2002 in that the data on the number of oil spills was related in those reports to the geographical coverage of the surveillance by side-looking airborne radar (SLAR). Following the revision of the reporting format by BONN 2003, this is no longer the case. In the 2008 reporting round a draft revised reporting format has been used which was then harmonised with the Helsinki Commission. OTSOPA 2013 agreed to update the reporting format to include data on confirmed detections/observations of "other substances" and "unknowns", as Contracting Parties had identified increasing numbers of these types of spills.

5. Details on the oil slicks identified during the Tour d'Horizon flights, including maps of the flight routes and location of oil slicks, and on the outcome of investigations by Government inspectors into those oil slicks are set out in Annex 2.

6. Annex 3 includes a map of the Bonn Agreement responsibility zones, Traffic Separation Schemes and oil and gas installations.

7. A summary report on the EU-EMSA CleanSeaNet Service that supports Bonn Agreement Contracting Parties with satellite images is at Annex 4. The report presents CleanSeaNet data for the North Sea for the period 1 January 2014 – 31 December 2014.

Commentary

8. The results of the follow-up of "identified polluters" (see Tables 1 and 3) are not included in this report since it may take a year or more to obtain the outcome of court or administrative proceedings in the country responsible for such proceedings (acting as flag state, coastal state or port state). In cooperation with the North Sea Network of Investigators and Prosecutors (NSN) the Bonn Agreement has published the North Sea Manual on Maritime Oil Pollution Offences (2009) providing detailed information *inter alia* on the legal and organisational framework, national laws of North Sea states and technical and operational means of securing evidence (the Manual is available at: www.bonnagreement.org).

9. For most of the detections observed/confirmed as oil slicks or other substances, the source of the slick (i.e. the polluter) has not been identified. Most visible slicks, however, come from shipping and offshore installations.

10. This report includes estimates of the total amounts of oil discharged based on the aerial surveillance data. These oil volume estimates have been obtained by means of a simple addition of the estimated (minimum)[1] volumes of the various mineral oil slicks detected/observed at the sea surface for a given year, per type of flight and per country. These estimates use the Bonn Agreement Colour Code until 2003 and from 2004 use its replacement, the more scientifically underpinned Bonn Agreement Oil Appearance Code (BAOAC), as standard oil volume estimation method. The use of the BAOAC (just like the older Bonn Agreement colour code) results in a best estimate of the amount of oil detected on the sea surface within a reliable order of magnitude. It leads to a minimum and maximum estimated quantity, which basically reflects the respective use of the minimum and maximum oil layer thicknesses defined for each oil appearance. More detailed information on the BAOAC, the oil slick appearances and the use of the code can be found in the Bonn Agreement Aerial Operations Handbook and the BAOAC Photo Atlas.

11. However, as only limited aerial surveillance is conducted, it can be concluded that there is the potential for other incidents of oil in the sea not being detected over the course of any one year. Moreover, oil slicks are often detected with no known source, and already weathered to a certain degree, thus the amount estimated may be less than originally discharged. The Contracting Parties to the Bonn Agreement therefore consider the aerial surveillance data currently available to be too sparse and too diverse to allow for a reliable overall annual estimation of oil inputs in the entire Bonn Agreement area and that such estimates should be interpreted as indicative only.

12. The quantities of oil discharged into the North Sea by the offshore industry are reported to the OSPAR Commission by the countries under whose jurisdiction offshore oil extraction takes place (the total quantity of oil discharged from the offshore oil and gas industry into the OSPAR maritime area through discharges and spillages of oil in 2013 was 4 144 tonnes. There are at present no equivalent reliable figures for the amount of oil input to the North Sea from land-based sources or from shipping.

13. In 2014 Contracting Parties observed 131 mineral oil slicks in the Bonn Agreement area and for 99 of these, volumes were estimated (as outlined in table 5). Figure 1 shows the percentage of slicks subdivided into different size categories.

[1] As agreed within the Bonn Agreement, the minimum oil volumes should preferably be used for enforcement and statistical purposes, whereas the maximum oil volumes should preferably be used in the context of oil pollution response.

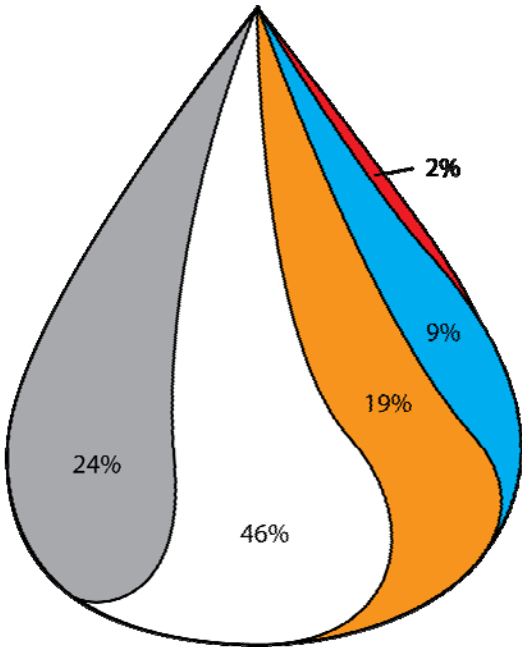


Figure 1: Percentage of mineral oil slicks in size categories observed in the Bonn Agreement area in 2014

14. No mineral oil slicks of over 100m^3 were reported and most slicks were in a size-category that did not warrant action to combat them, since they would evaporate, dissolve and disperse naturally.

15. Detections of other substances (including HNS) and unknown detections have also been reported as part of the annual aerial surveillance reporting. This has been included as national evidence has pointed to an increase in spills of other substances and therefore it was agreed that this should be tracked at a regional level. In 2014 there were 74 detections of other substances and 130 detections of unknown substances. These have been outlined in Figure 4 (Map) and are mainly in the areas of highest shipping density.

16. An overview of the locations of oil slicks observed during 2014 is given in Figure 2 (Map). A common HELCOM / Bonn Agreement map, showing the location of oil slicks observed by aerial surveillance and their estimated minimum volumes in the Baltic Sea and North Sea areas in 2014, is given in Figure 3. An overview of slicks observed during Bonn Agreement aerial surveillance activities during 2014 categorised by spill type is given in Figure 4. A common HELCOM/Bonn Agreement map showing spills observed in 2014 categorised by spill type (oil, other substance and unknown) is given in Figure 5. When examining Figures 2, 3, 4 and 5, the reader should take account of the following:

a. the density of ship traffic, and thus the associated likelihood of observing slicks, are highest in the traffic corridor along the south-eastern shore of the Bonn Agreement area;

b. Contracting Parties' flight hours reported in Table 1 are mostly spent surveying the national zones of interest, which in most cases correspond with the national EEZ or continental shelf areas. There are large differences in the sizes of these zones of interest and the respective total numbers of hours spent surveying them. This implies that the relative frequency with which areas are visited – and thus the potential density of the observations – varies significantly between Contracting Parties.

17. The format of the report's tables 1 – 4 was modified in 2000, 2003, 2013 and 2014. The 2000 to 2002 data reflects the relation of the observation with SLAR coverage through the concept of 'BA flight hour' (i.e. one hour of airborne remote sensing over the sea at a standardised speed of 335 km per hour). As a result of this revision of the reporting format in 2000, the flight hour data up to 1999 are absolute

numbers and from 2000 to 2002 the flight hour data are standardised on SLAR-coverage, i.e. corrected for relative aircraft speed. For the countries for which the average aircraft speed is significantly different from the standard speed (e.g. Belgium and UK), the data up to 1999 and from 2000 will not be comparable. As a result of a new revision of the reporting format in 2003, from 2003 onwards, the data are again absolute numbers. In 2013 the format was updated to include data on confirmed detections/observations of “other substances” and “unknowns”, as Contracting Parties had identified increasing numbers of these types of spills and agreed to collect this data for the 2012 report.

18. Figures 6, 7 and 8 outline the number of flight hours per country, the number of mineral oil slicks observed per country and the ratio of flight hours to mineral oil slicks. For 2014 there was an increase in the number of flight hours and in the number of observed slicks over those in 2013. The increase in flying hours was mostly as a result of the establishment of an aerial surveillance programme in Ireland. The ratio of slicks to flying hours decreased compared to the previous year matching its historic low in 2012.

19. Figure 9 relates to the new additional data on other substances and unknowns, which was collected at the regional level for the first time in 2012. It outlines the number of spills confirmed observed as mineral oil and other substances and those that could not be identified as unknown, broken down by country. Contracting Parties will continue to gather this information in future years to identify trends in spills other than mineral oil.

20. Figure 10 highlights the relationship between the wind speed and number of detections. It shows a significant drop in the number of detections that can be seen at wind speeds over 15 m/s. However as the wind speed is only recorded at the point of detection it is not possible to determine if this decease is due to reduced detection due to higher sea state or a reduced number of flights due to higher wind speeds.

Table 1. Summary of data relating to National Flights during 2014 [2], [3], [4], [5], [6]

Country	No. of flight hours			No. of detections inside national EEZ			Detections confirmed / observed as mineral oil spills			No. of polluters (mineral oil)				Estimated volume (m^3)	Detections confirmed /observed as other substances	No. of polluters (other substances)				Unknown detections	No. of polluters (unknown detections)			
	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Rigs	Ships	Other	Unknown			Rigs	Ships	Other	Unknown		Rigs	Ships	Other	Unknown
Belgium	182:20	41:55	224:15	3	1	4	2	0	2	0	0	0	2	0,038	1	0	0	0	1	1	0	0	0	1
Denmark	171:50	19:52	191:42	76	25	101	61	4	65	35	0	0	30	37	14	0	3	1	12	14	10	0	0	4
France	610:06	80:24	690:30	37	3	40	7	0	7	0	1	0	6	11	3	0	1	0	2	2	0	2	0	0
Germany	529:56	267:26	797:22	26	13	39	13	2	15	0	1	0	14	5	8	0	3	0	5	16	0	0	0	16
Ireland	0:00	0:00	834:42	1	0	1	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Netherlands	637:00	145:00	782:00	114	34	148	12	2	14	0	3	0	11	14,56	43	0	21	9	13	91	0	5	0	86
Norway	438:00	15:00	453:00	22	0	22	17	0	17	7	0	3	7	14,62	3	0	2	0	1	0	0	0	0	0
Sweden	196:10	35:50	232:00	11	3	14	8	0	8	0	3	0	5	0,0321	0	0	0	0	0	6	0	0	0	6
UK	65:08	0:00	65:08	3	0	3	2	0	2	0	2	0	0	0,0034	1	0	0	0	1	0	0	0	0	0
Total	**2830:30**	**605:27**	**4270:39**	**293**	**79**	**372**	**123**	**8**	**131**					**82,26**	**74**					**130**				

[2] Belgium furthermore made 15 observations of operational spills in the BA Quadripartite Zone in nearby UK, NL and FR waters; also, multiple (in total 18) accidental oil spills (mostly from Baltic Ace) were observed in nearby Dutch waters. All these observations were systematically reported to the respective neighbouring countries, and are included in the countries' data.

[3] Denmark: 6 SAT detections: Nothing Found

[4] Netherlands: Baltic-Ace Wreck: 18 detections mineral oil, 1 reported, (most large)* SPYROS ARMANAKIS wreck: 6 detections mineral oil, 1 reported (most large)

[5] UK does not conduct routine aerial surveillance patrols, but conducts pollution verification flights

[6] Detections made by an aircraft outside its own EEZ are reflected in the total number of detections of the Contracting Parties in whose EEZs the spills were found.

Table 2: Summary of data related to satellite detections in 2014

	Verified satellite detections						
Country waters	Satellite detections	Confirmed mineral oil	other substance	Natural phenomena	Unknown feature	Nothing found	Not checked or no feedback
Belgium	1						1
Denmark	157	10	9	5	9	36	88
France	12			1	3	2	6
Germany	72		16	15	11	23	7
Ireland	11	2					9
Netherlands	101	3	15	2	5	13	63
Norway	142	4	11		1	8	118
Sweden	5		1			2	2
United Kingdom	457	24	2	1	2	73	355
Total	**958**	**43**	**54**	**24**	**31**	**157**	**649**

Confirmed oil spills in this table are in addition to those in Table 1.

Table 3. Summary of data relating to Co-ordinated Extended Pollution Control Operations (CEPCO) flights during 2014[7]

Country	No. of flights	No. of flight hours			No. of detections			Detections confirmed/ observed as mineral oil spills	Estimated volume m^3	Detections confirmed/ observed as other substances	"Unknown" Detections	No. of polluters			
		Daylight	Darkness	Sum	Daylight	Darkness	Sum					Rigs	Ships	Unknown	Total
Belgium	0	0:00	0:00	0:00	0	0	0	0	0	0	0	0	0	0	0
Denmark	0	0:00	0:00	0:00	0	0	0	0	0	0	0	0	0	0	0
France	0	0:00	0:00	0:00	0	0	0	0	0	0	0	0	0	0	0
Germany	0	0:00	0:00	0:00	0	0	0	0	0	0	0	0	0	0	0
Ireland	0	0:00	0:00	0:00	0	0	0	0	0	0	0	0	0	0	0
Netherlands	0	0:00	0:00	0:00	0	0	0	0	0	0	0	0	0	0	0
Norway	0	0:00	0:00	0:00	0	0	0	0	0	0	0	0	0	0	0
Sweden	0	0:00	0:00	0:00	0	0	0	0	0	0	0	0	0	0	0
UK	0	0:00	0:00	0:00	0	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0:00**	**0:00**	**0:00**	**0**	**0**	**0**	**2**	**<1**	**0**	**0**	**0**	**0**	**0**	**0**

Table 4. Summary of data relating to Tour d'Horizon (TdH) flights during 2014

Country	No. of flights	No. of flight hours			No. of detections			No of detections identified as oil	Estimated volume m^3	No of 'other substance' detections	No of 'unknown' detections	No. of polluters				Remarks
		Daylight	Darkness	Sum	Daylight	Darkness	Sum					Rigs	Ships	Unknown	Total	
Belgium	6	20.40		20.40	28	0	28	28	5.30	0	0	26	0	2	26	
Denmark	2	8.20	0	8.20	8	0	8	8	5.69	0	0	8	0	0	8	
Germany	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1)
Netherlands	13	34.65	0	34.65	12	0	12	11		0	1	10		1	11	
Norway	3	9.60	0	9.60	4	0	4	4	0.01	0	0	4	0	0	4	
Sweden	2	7.90	0	7.90	6	0	6	4	8.07	0	2	6	0	0	6	(2)
UK	4	18.55	0	18.55	6	0	6	3	2.54	3	0	3	2	1	5	
Total	**30**	**99.30**	**0.00**	**99.30**	**64**	**0**	**64**	**58**	**21.61**	**3**	**3**	**57**	**2**	**4**	**60**	

Remarks:

(1) German TDH14 cancelled due to technical problems aircraft.

(2) Swedish TDH14: last 2 flight days cancelled.

[7] There are no CEPCO results as CEPCOs are held by HELCOM and the Bonn Agreement in alternate years.

Table 5. Distribution of the estimated sizes of confirmed/observed oil slicks

Country	Not quantified	Category 1: <0,1m³	Category 2: 0,1-1 m³	Category 3: 1–10 m³	Category 4: 10–100 m³	Category 5: >100m³	Number of Slicks	Number of quantified Slicks	%
Belgium	0	2	0	0	0	0	2	2	**1,53**
Denmark	22	23	14	5	1	0	65	43	**49,62**
France	7	0	0	0	0	0	7	0	**5,34**
Germany	1	8	5	1	0	0	15	14	**11,45**
Ireland	1	0	0	0	0	0	1	0	**1,00**
Netherlands	0	7	2	5	0	0	14	14	**10,69**
Norway	0	11	4	1	1	0	17	17	**12,98**
Sweden	1	7	0	0	0	0	8	7	**6,11**
UK	0	2	0	0	0	0	2	2	**1,53**
Total	**32**	**60**	**25**	**12**	**2**	**0**	**131**	**99**	**100**
%	**24,43**	**45,80**	**19,08**	**9,16**	**1,53**	**0,00**	**100,00**		

Figure 2: Overview of slicks observed during Bonn Agreement aerial surveillance activities during 2014

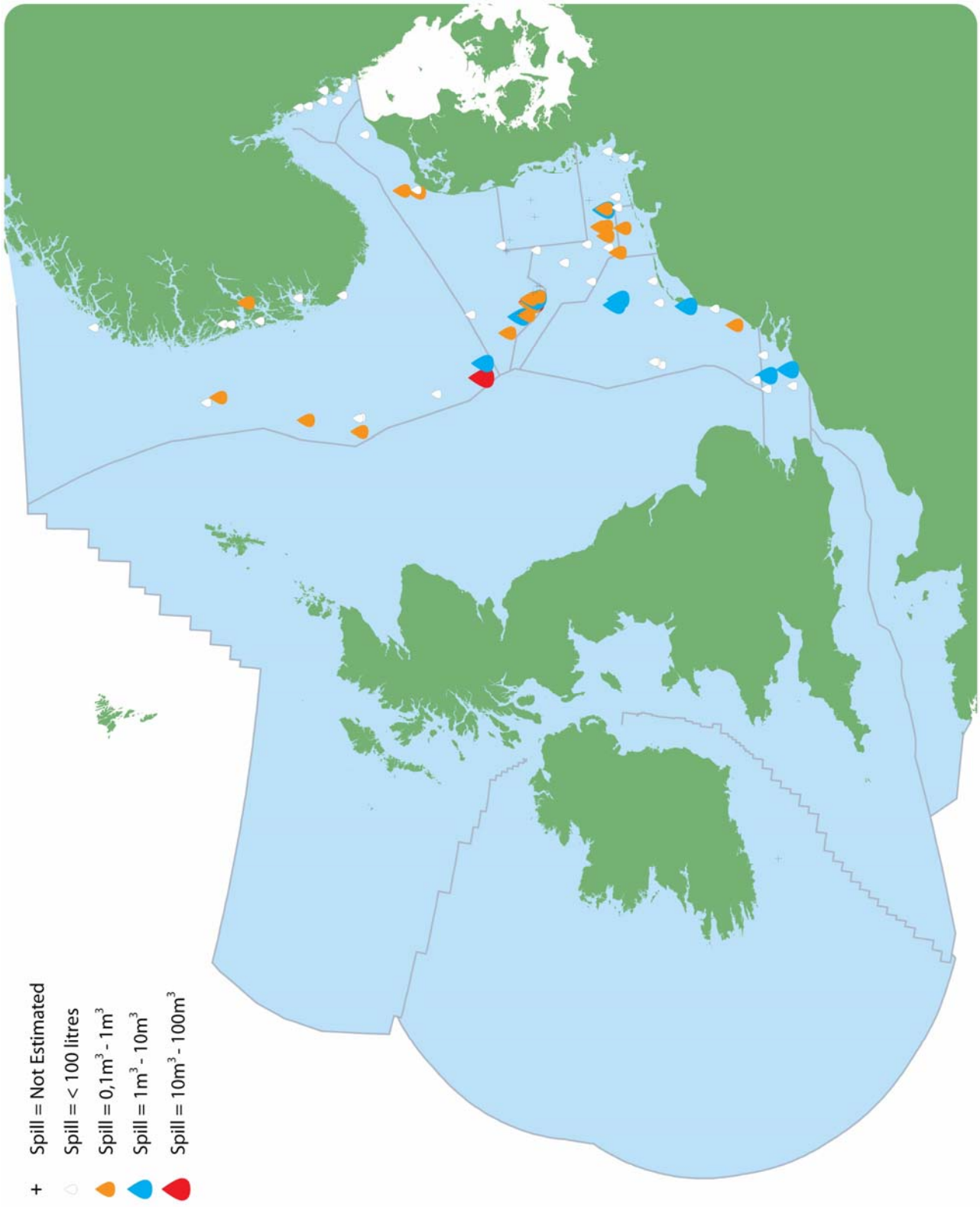


Figure 3: Common HELCOM / Bonn Agreement map showing the location of oil spills confirmed/observed by aerial surveillance within the Baltic Sea and North Sea areas in 2014

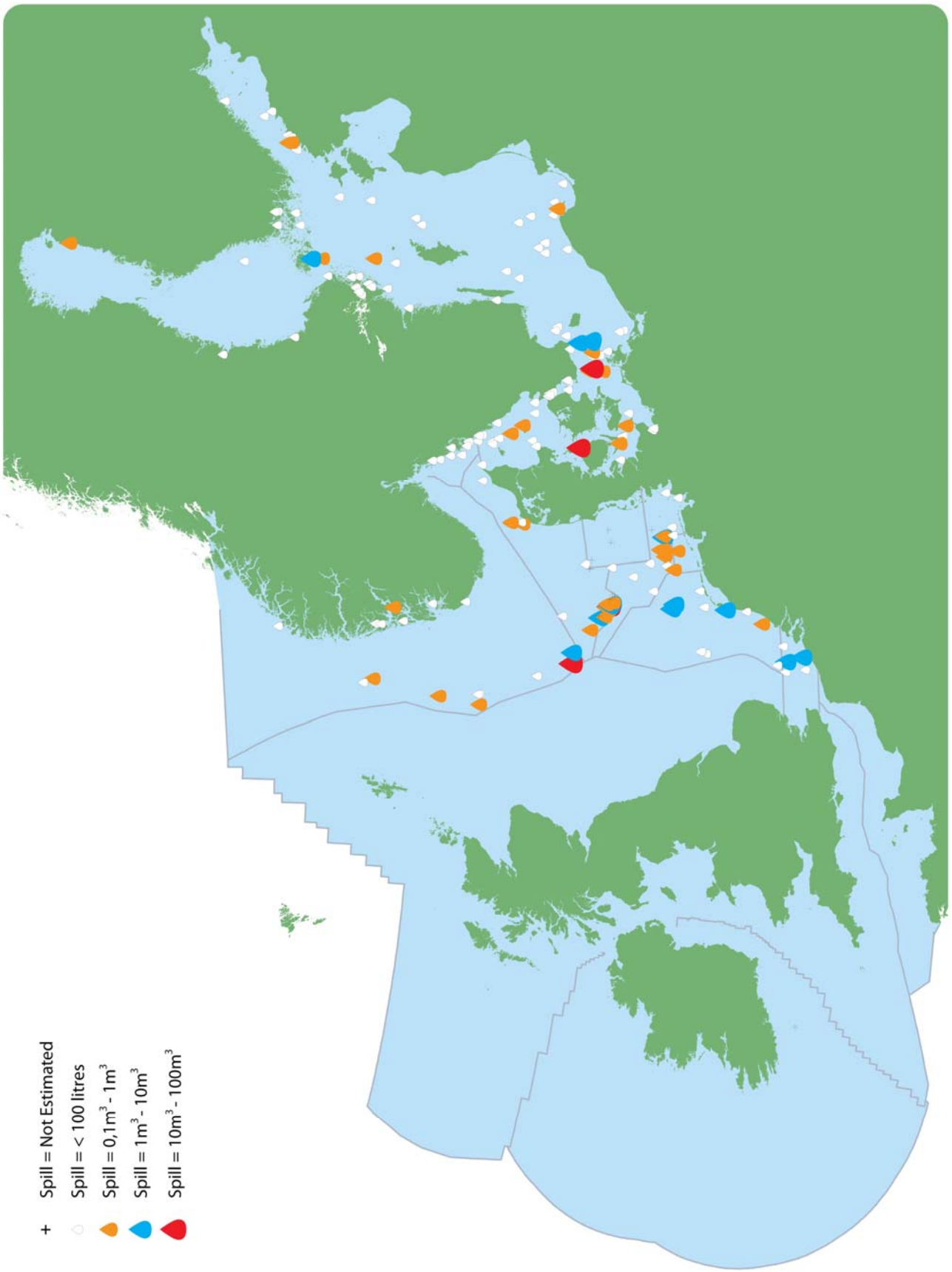


Figure 4: Overview of slicks observed during Bonn Agreement aerial surveillance activities during 2014 categorised by spill type

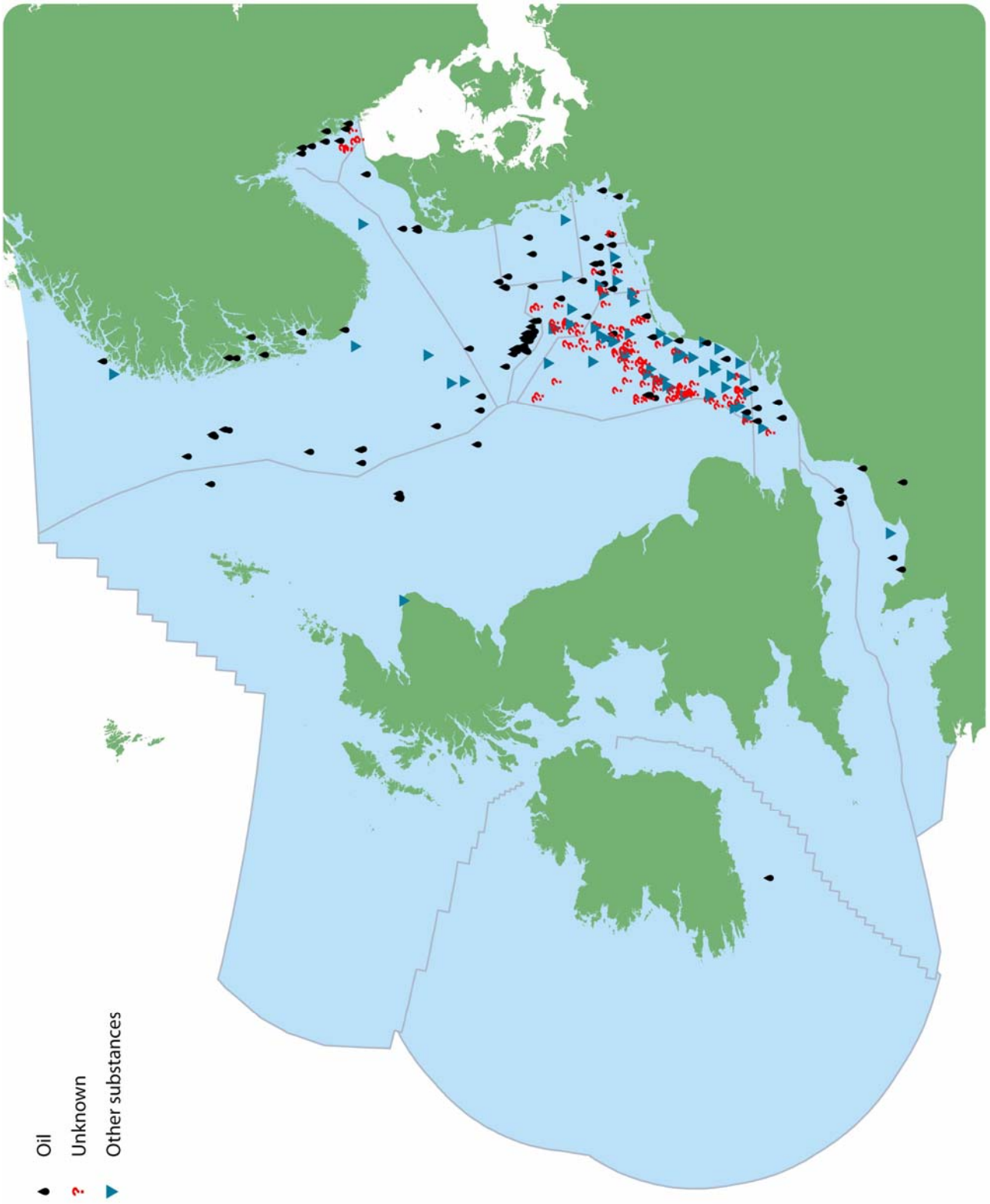


Figure 5: Common HELCOM / Bonn Agreement map showing slicks observed during HELCOM/Bonn Agreement aerial surveillance activities during 2014 categorised by spill type

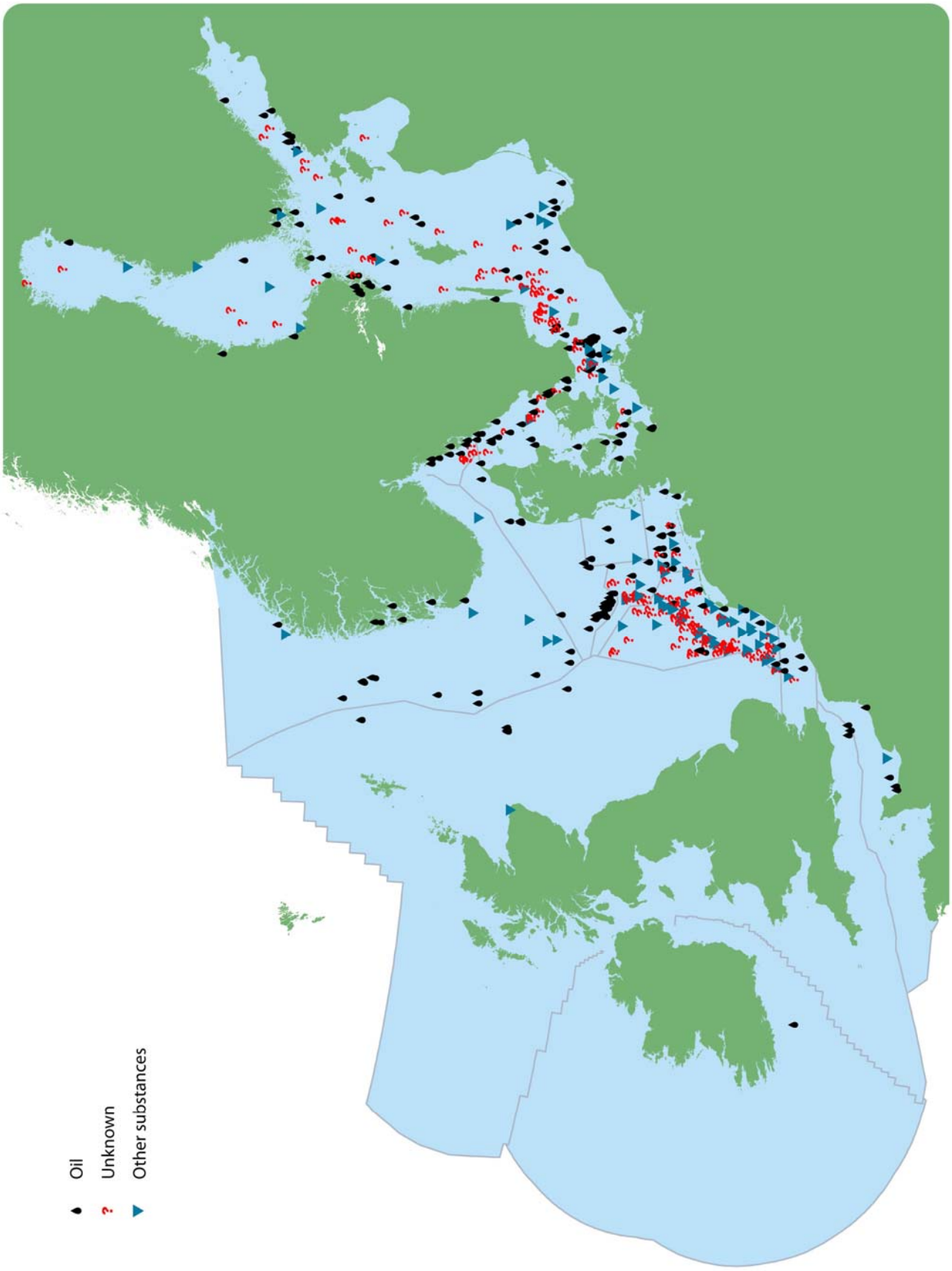


Figure 6: Number of flight hours per country 1990 – 2014

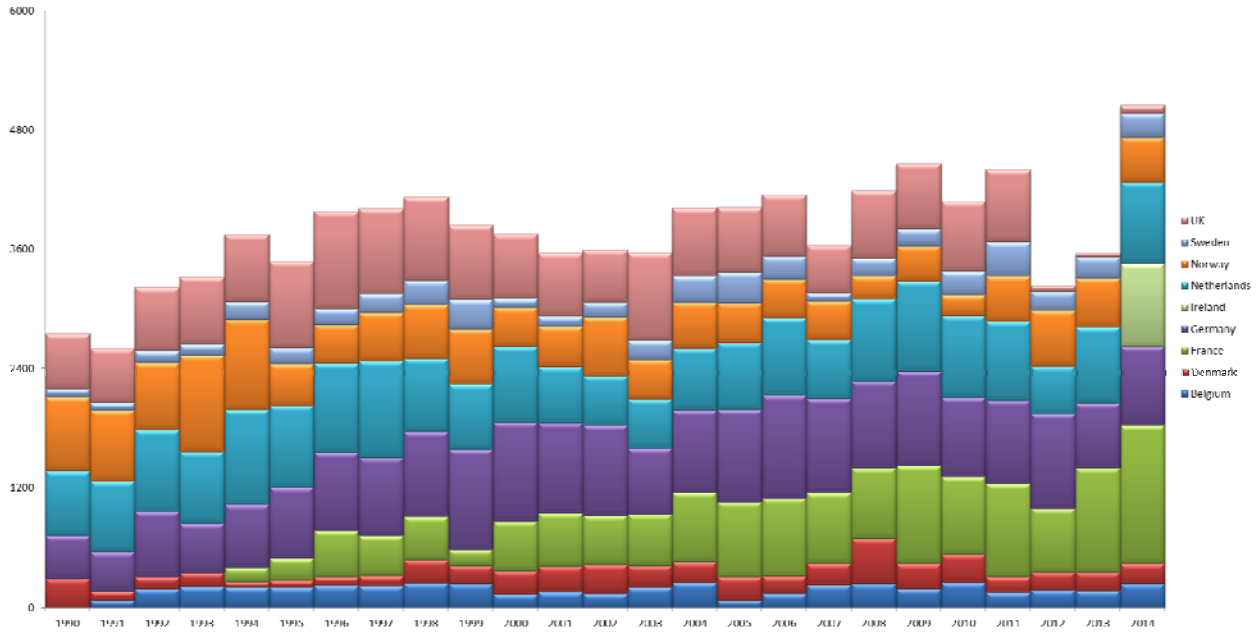


Figure 7: Number of slicks observed 1990 – 2014

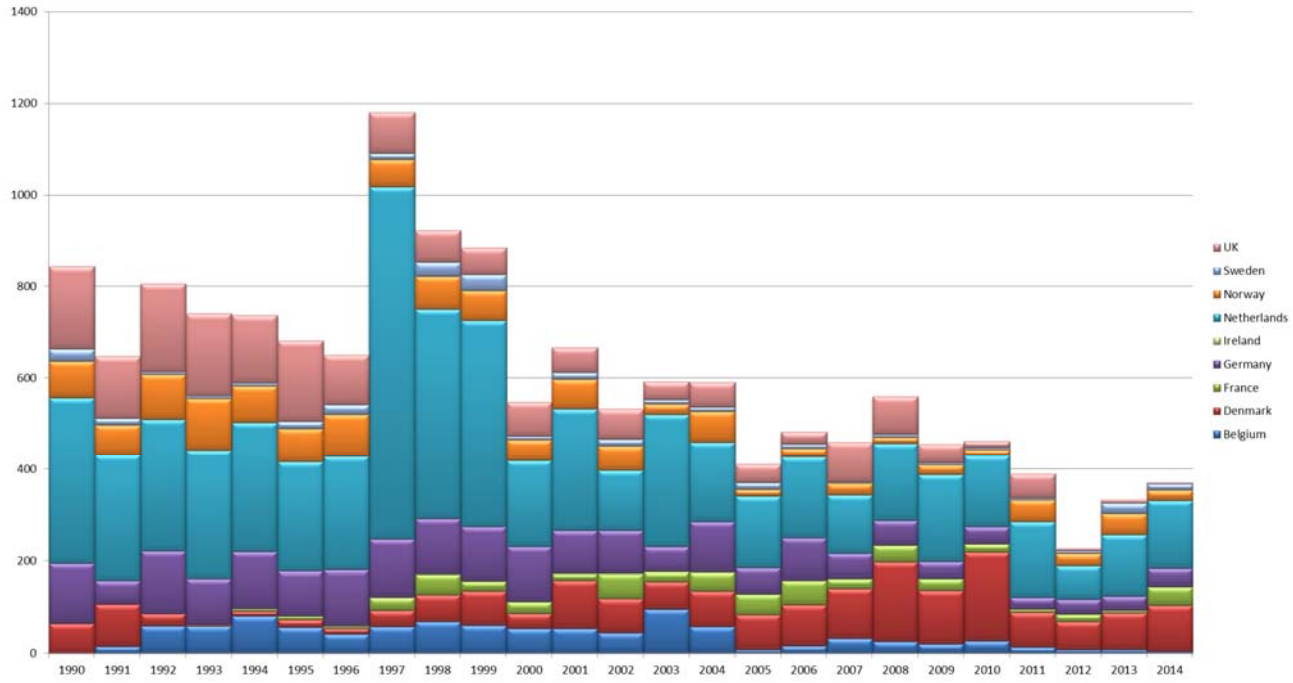


Figure 8: Total numbers: all flight hours and all observed slicks 1986 – 2014 and their ratio

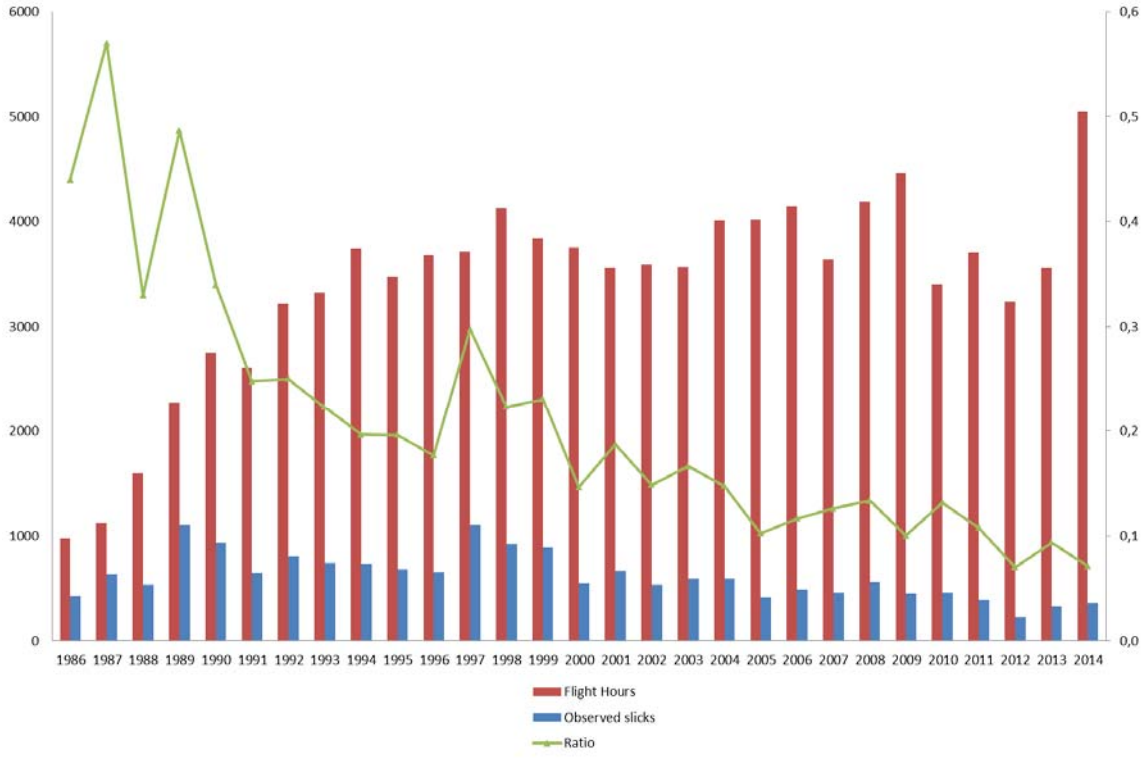


Figure 9: Number of mineral oil, other substances and unknown slicks observed 2014

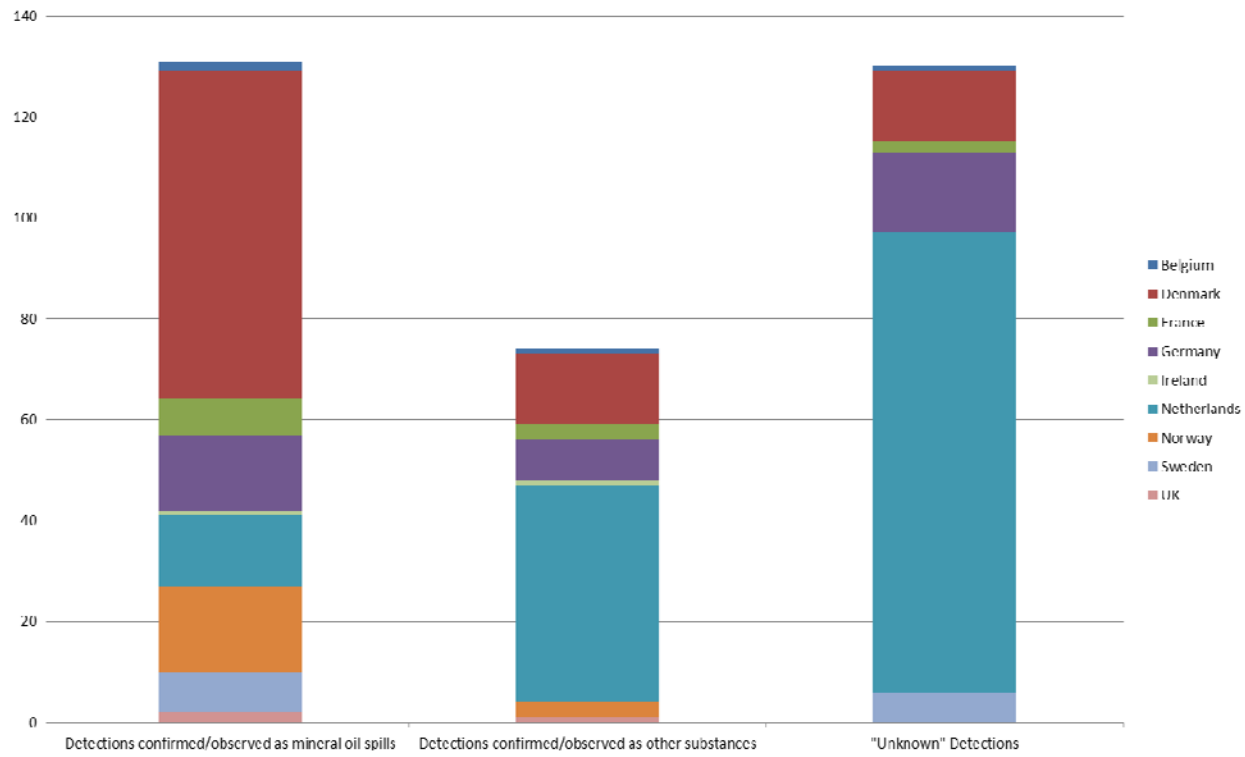
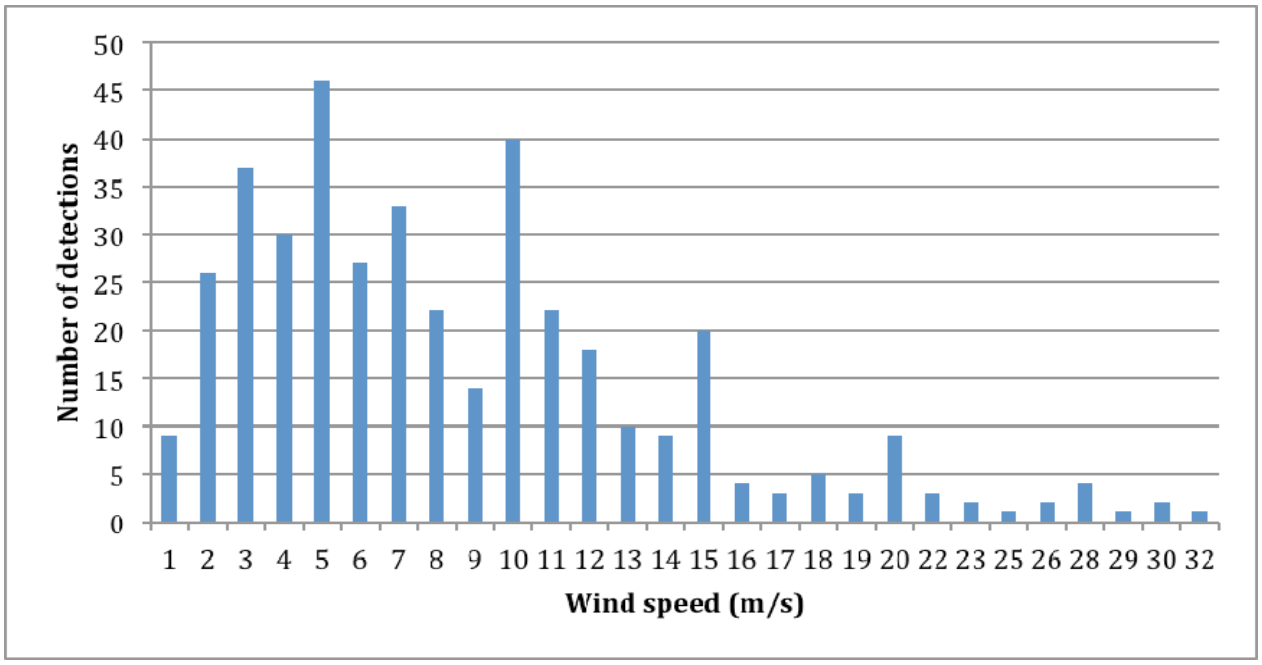


Figure 10: Relationship between wind speed and number of detections



ANNEX 1

Instructions for filling in the joint Bonn Agreement/HELCOM annual reporting form on illegal discharges observed during aerial surveillance

Reporting format

The Contracting Parties will report on their entire annual surveillance activity in the reporting year. This is data obtained during flights over their National Exclusive Economic Zone and outside their responsibility zone e.g. (Super) CEPCO or Tour de Horizon. The following format explanations and data standards should be used to complete the attached MS Excel reporting sheet – meeting the outlined standards is of the utmost importance to ensure inclusion of Contracting Parties data in the Bonn Agreement Aerial Surveillance database.

When reporting the annual data to the Bonn Agreement Secretariat, Table 1 should include only those spills that are inside the reporting Contracting Party's own national EEZ.

Each Contracting Party will send (using Table 6) a compilation of the spills detected in other Contracting Parties' EEZs to the Contracting Party in question at the end of February of the following year. The receiving Contracting Party will compare the data with their annual national data, delete any duplicates and complete their national data where needed. By doing so, all Contracting Parties will be able to obtain a full annual national dataset containing all spills inside their EEZ – inclusive of those detected by other Contracting Parties – and report this dataset (reflected in tables 1, 5 and 6) to the Bonn Agreement Secretariat by the end of March.

Once received by the Secretariat, Aerial Surveillance data will be quality controlled to ensure the data standards have been met- any queries will be forwarded to agreed contact points for resolution before the data is included in the database.

Where applicable, all values are to be presented using a comma as a decimal separator (" , ") and a space as a thousand separator (" "). All coordinates are to be calculated using WGS84 and to be presented as decimal degrees.

Reporting deadlines

The deadlines for the submission of aerial surveillance data are:

a. the end of February for reporting data on spills in the EEZs of other Contracting Parties to the Contracting Parties concerned; and

b. the end of March for the submission of full national data sets to the Secretariat.

Please:

- **do not remove, add or adjust any columns or calculations included in the MS Excel reporting sheet.**
- **only fill out the reporting sheet as it is delivered to you each year, do not use old versions. They may appear to be replicas but subtle variations are present due to the on-going streamlining of the reporting process at the Secretariat.**

Table 1. National flights

This data should be completed for flights which were conducted in the EEZ of the reporting Contracting Party

Country	Year	No. of flight hours			No. of detections inside national EEZ			Detections confirmed / observed as mineral oil spills			No. of polluters (mineral oil)				Estimated volume (m^3)	Detections confirmed/observed as other substances	No. of polluters (other substances)				Unknown detections	No. of polluters (unknown detections)				Remarks
		Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Rigs	Ships	Other	Unknown			Rigs	Ships	Other	Unknown		Rigs	Ships	Other	Unknown	

Column Header	Format Example	Explanation
Country	Netherlands	Full country name the reported data applies to
Year	2013	The year that the reported data applies to
No. of flight hours – Daylight	136:24	The number of flight hours and minutes carried out in daylight - From 30 minutes after Morning Civil Twilight, until 30 minutes before Evening Civil Twilight as given in the Air Almanac – shown as a colon separated value. No decimal values
No. of flight hours – Darkness	86:23	The number of flight hours and minutes carried out in darkness - From 30 minutes before Evening Civil Twilight, until 30 minutes after Morning Civil Twilight as given in the Air Almanac – shown as a colon separated value. No decimal values
No. of flight hours – Total	222:47	= (No. of flight hours - Daylight) + (No. of flight hours – Darkness) – shown as a colon separated value. No decimal values
No. of detections inside national EEZ - Daylight	67	The number of detections in daylight, within the EEZ of the country reporting the data - From 30 minutes after Morning Civil Twilight, until 30 minutes before Evening Civil Twilight as given in the Air Almanac
No. of detections inside national EEZ – Darkness	23	The number of detections in darkness, within the EEZ of the country reporting the data - From 30 minutes before Evening Civil Twilight, until 30 minutes after Morning Civil Twilight as given in the Air Almanac
No. of detections inside national EEZ – Total	90	= (No. of detections inside own EEZ – Daylight) + (No. of detections inside own EEZ – Darkness)
Detections confirmed / observed as mineral oil spills –	12	Of the “No. of detections inside own EEZ – Daylight” the total number of those

daylight		detections observed as mineral oil and confirmed as mineral oil
Detections confirmed / observed as mineral oil spills – Darkness	5	Of the "No. of detections inside national EEZ – Darkness" the total number of those detections observed as mineral oil and confirmed as mineral oil
Detections confirmed / observed as mineral oil spills – Total	17	= (Detections confirmed / observed as mineral oil spills – Daylight) + (Detections confirmed / observed as mineral oil spills – Darkness)
No. of polluters (mineral oil) – Rigs	2	The number of offshore installations positively identified as the source of the oil detection
No. of polluters (mineral oil) – Ships	2	The number of ships positively identified as the source of the oil detection
No. of polluters (mineral oil) – Other	90	The number of oil detections which do not fit into either the "Rigs" or "Ships" category
No. of polluters (mineral oil) – Unknown	86	The number of oil detections which could not be associated with a source
Estimated Volume (m^3)	27,36	Volume of all spills confirmed/observed as mineral oil as calculated using the Bonn Agreement Oil Appearance Code using the lower figure (BAOAC minimum) – presented as a decimal value using a comma as a decimal separator
Detections confirmed/observed as other substances ('OS')	3	The number of detections observed as other substances or confirmed as other substances ('OS') – independent of the time of day the detection was made
No. of polluters (other substances) – Rigs	2	The number of offshore installations positively identified as the source of the OS detection
No. of polluters (other substances) – Ships	2	The number of ships positively identified as the source of the OS detection
No. of polluters (other substances) – Other	90	The number of OS detections which do not fit into either the "Rigs" or "Ships" category
No. of polluters (other substances) – Unknown	86	The number of OS detections which could not be associated with a source

Unknown ('UNK') detections	70	The number of detections that could not be visually verified as mineral oil or other substances ('unknowns' or 'UNK') (((No. of UNK detections inside national EEZ – Total) – (Detections confirmed / observed as mineral oil spills – Total)) - Detections confirmed/observed as other substances)
No. of polluters (unknown detections) – Rigs	2	The number of offshore installations positively identified as the source of the UNK detection
No. of polluters (unknown detections) – Ships	2	The number of ships positively identified as the source of the UNK detection
No. of polluters (unknown detections) – Other	90	The number of UNK detections which do not fit into either the "Rigs" or "Ships" category
No. of polluters (unknown detections) – Unknown	86	The number of UNK detections which could not be associated with a source
Remarks	Source of rig spills identified as…	Any additional textual information to inform on particular situations

Table 2. Satellite detections

To be completed by NORWAY only (satellite data for the other Bonn Agreement countries will be taken directly from the EMSA CleanSeaNet report)

Country	Year	Detected	Confirmed mineral oil	Confirmed other substances	Confirmed unknown spills	Confirmed natural phenomena	Nothing found

Column Header	Format Example	Explanation
Country	France	Full country name the reported data applies to
Year	2013	The year that the reported data applies to
Detected	215	The number of satellite detections inside national EEZ
Confirmed mineral oil	7	The number of satellite detections confirmed as mineral oil
Confirmed other substances	3	The number of satellite detections confirmed as other substances
Confirmed unknown spills	2	The number of satellite detections which could not be visually verified
Confirmed natural phenomena	1	The number of satellite detections confirmed as natural phenomena
Nothing found	202	The number of verified satellite detections where nothing could be found

Table 3. Coordinated Extended Pollution Control Operations (CEPCO)

Country	Year	No. of flight hours			No. of detections inside CEPCO area			Detections confirmed / observed as mineral oil spills			No. of polluters (mineral oil)				Estimated volume (m^3)	Detections confirmed/observed as other substances	No. of polluters (other substances)				Unknown detections	No. of polluters (unknown detections)				Remarks
		Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Rigs	Ships	Other	Unknown			Rigs	Ships	Other	Unknown		Rigs	Ships	Other	Unknown	

Column Header	Format Example	Explanation
Country	Netherlands	Full country name the reported data applies to
Year	2013	The year that the reported data applies to
No. of flight hours – Daylight	136:24	The number of flight hours and minutes carried out in daylight - From 30 minutes after Morning Civil Twilight, until 30 minutes before Evening Civil Twilight as given in the Air Almanac – shown as a colon separated value. No decimal values
No. of flight hours – Darkness	86:23	The number of flight hours and minutes carried out in darkness - From 30 minutes before Evening Civil Twilight, until 30 minutes after Morning Civil Twilight as given in the Air Almanac – shown as a colon separated value. No decimal values
No. of flight hours – Total	222:47	= (No. of flight hours - Daylight) + (No. of flight hours – Darkness) – shown as a colon separated value. No decimal values
No. of detections inside CEPCO area - Daylight	67	The number of detections in daylight, within the predefined CEPCO area - From 30 minutes after Morning Civil Twilight, until 30 minutes before Evening Civil Twilight as given in the Air Almanac
No. of detections inside CEPCO area – Darkness	23	The number of detections in darkness, within the predefined CEPCO area - From 30 minutes before Evening Civil Twilight, until 30 minutes after Morning Civil Twilight as given in the Air Almanac
No. of detections inside CEPCO – Total	90	= (No. of detections inside CEPCO area – Daylight) + (No. of detections inside CEPCO area – Darkness) within the predefined CEPCO area
Detections confirmed / observed as mineral oil spills – Daylight	12	Of the “No. of detections inside CEPCO area – Daylight” the total number of those detections observed as mineral oil and confirmed as mineral oil
Detections confirmed / observed as mineral oil spills – Darkness	5	Of the “No. of detections inside CEPCO area– Darkness” the total number of those detections observed as mineral oil and confirmed as mineral oil
Detections confirmed / observed as mineral oil spills –	17	=(Detections confirmed / observed as mineral oil spills – Daylight) + (Detections

Total		confirmed / observed as mineral oil spills – Darkness)
No. of polluters (mineral oil) – Rigs	2	The number of offshore installations positively identified as the source of the oil detection
No. of polluters (mineral oil) – Ships	2	The number of ships positively identified as the source of the oil detection
No. of polluters (mineral oil) – Other	90	The number of oil detections which do not fit into either the “Rigs” or “Ships” category
No. of polluters (mineral oil) – Unknown	86	The number of oil detections which could not be associated with a source
Estimated Volume (m3)	27,36	Volume of all spills confirmed/observed as mineral oil as calculated using the Bonn Agreement Oil Appearance Code using the lower figure (BAOAC minimum) – presented as a decimal value using a comma as a decimal separator
Detections confirmed/observed as other substances (‘OS’)	3	The number of detections observed as other substances or confirmed as other substances (OS) – independent of the time of day the detection was made
No. of polluters (other substances) – Rigs	2	The number of offshore installations positively identified as the source of the OS detection
No. of polluters (other substances) – Ships	2	The number of ships positively identified as the source of the OS detection
No. of polluters (other substances) – Other	90	The number of OS detections which do not fit into either the “Rigs” or “Ships” category
No. of polluters (other substances) – Unknown	86	The number of OS detections which could not be associated with a source
Unknown (‘UNK’) detections	70	The number of detections which could not be visually verified as mineral oil or other substances (‘unknowns’ or ‘UNK’) (((No. of detections inside CEPCO area – Total) – (Detections confirmed / observed as mineral oil spills – Total)) - Detections confirmed/observed as other substances)
No. of polluters (unknown detections) – Rigs	2	The number of offshore installations positively identified as the source of the UNK detection
No. of polluters (unknown detections) – Ships	2	The number of ships positively identified as the source of the UNK detection
No. of polluters (unknown detections) – Other	90	The number of UNK detections which do not fit into either the “Rigs” or “Ships”

		category
No. of polluters (unknown detections) – Unknown	86	The number of UNK detections which could not be associated with a source
Remarks	Source of rig spills identified as…	Any additional textual information to inform on particular situations

Table 4. Tour d'horizon flights

Country	Year	No. of flights	No. of flight hours			No. of detections in TdH area			No. of polluters (mineral oil)				Estimated volume (m^3)	Detections confirmed/observed as other substances	No. of polluters (other substances)				Unknown detections	No. of polluters (unknown detections)				Remarks
			Daylight	Darkness	Total	Daylight	Darkness	Total	Rigs	Ships	Other	Unknown			Rigs	Ships	Other	Unknown		Rigs	Ships	Other	Unknown	

Column Header	Format Example	Explanation
Country	Netherlands	Full country name the reported data applies to
Year	2013	The year that the reported data applies to
No. of flights	Number (Int)	The number of flights carried out by all Contracting Parties combined
No. of flight hours – Daylight	136:24	The number of flight hours and minutes carried out in daylight - From 30 minutes after Morning Civil Twilight, until 30 minutes before Evening Civil Twilight as given in the Air Almanac – shown as a colon separated value. No decimal values
No. of flight hours – Darkness	86:23	The number of flight hours and minutes carried out in darkness - From 30 minutes before Evening Civil Twilight, until 30 minutes after Morning Civil Twilight as given in the Air Almanac – shown as a colon separated value. No decimal values
No. of flight hours – Total	222:47	= (No. of flight hours - Daylight) + (No. of flight hours – Darkness) – shown as a colon separated value. No decimal values
No. of detections in TdH area- Daylight	67	The number of detections in daylight, during the TdH routing - From 30 minutes after Morning Civil Twilight, until 30 minutes before Evening Civil Twilight as given in the Air Almanac

No. of detections in TdH area– Darkness	23	The number of detections in darkness, during the TdH routing - From 30 minutes before Evening Civil Twilight, until 30 minutes after Morning Civil Twilight as given in the Air Almanac
No. of detections in TdH area– Total	90	= (No. of detections during TdH routing - Daylight) + (No. of detections during TdH routing - Darkness)
Detections confirmed / observed as mineral oil spills – Daylight	12	Of the "No. of detections inside own EEZ – Daylight" the total number of those detections observed as mineral oil and confirmed as mineral oil
Detections confirmed / observed as mineral oil spills – Darkness	5	Of the "No. of detections inside national EEZ – Darkness" the total number of those detections observed as mineral oil and confirmed as mineral oil
Detections confirmed / observed as mineral oil spills – Total	17	= (Detections confirmed / observed as mineral oil spills – Daylight) + (Detections confirmed / observed as mineral oil spills – Darkness)
No. of polluters (mineral oil) – Rigs	2	The number of offshore installations positively identified as the source of the oil detection
No. of polluters (mineral oil) – Ships	2	The number of ships positively identified as the source of the oil detection
No. of polluters (mineral oil) – Other	90	The number of oil detections which do not fit into either the "Rigs" or "Ships" category
No. of polluters (mineral oil) – Unknown	86	The number of oil detections which could not be associated with a source
Estimated Volume (m^3)	27,36	Volume of all spills confirmed/observed as mineral oil as calculated using the Bonn Agreement Oil Appearance Code using the lower figure (BAOAC minimum) – presented as a decimal value using a comma as a decimal separator
Detections confirmed/observed as other substances (OS)	3	The number of detections observed as other substances or confirmed as other substances (OS) – independent of the time of day the detection was made

No. of polluters (other substances) – Rigs	2	The number of offshore installations positively identified as the source of the OS detection
No. of polluters (other substances) – Ships	2	The number of ships positively identified as the source of the OS detection
No. of polluters (other substances) – Other	90	The number of OS detections which do not fit into either the “Rigs” or “Ships” category
No. of polluters (other substances) – Unknown	86	The number of OS detections which could not be associated with a source
Unknown (UNK) detections	70	The number of detections which could not be visually verified as mineral oil or other substances (‘unknowns’ or ‘UNK’) (((No. of detections during TdH routing – Total) – (Detections confirmed / observed as mineral oil spills – Total)) - Detections confirmed/observed as other substances)
No. of polluters (unknown detections) – Rigs	2	The number of offshore installations positively identified as the source of the UNK detection
No. of polluters (unknown detections) – Ships	2	The number of ships positively identified as the source of the UNK detection
No. of polluters (unknown detections) – Other	90	The number of UNK detections which do not fit into either the “Rigs” or “Ships” category
No. of polluters (unknown detections) – Unknown	86	The number of UNK detections which could not be associated with a source
Remarks	Source of rig spills identified as ..	Any additional textual information to inform on particular situations

Table 5. Spill statistics

Volume category		No. of spills detected	Spill IDs
<0,1m^3	1		
<0,1-1m^3	2		
1-10 m^3	3		
10-100 m^3	4		
>100 m^3	5		

Column Header	Format	Explanation
No. of spills detected	7	The total number of detected or observed mineral oil spills, where the volume was estimated, that fit into each category
Spill IDs	UK-01, UK-02, UK-08, UK-14, UK-21, UK-22, UK-55	The Spill IDs (taken from Table 6 – Observed Spills) of all spills which have been counted towards each category

Table 6. Observed spills

Multiple slicks obviously originating from a single spill should not be reported separately but should be combined and the centre point reported as the location.

Country	Year	Spill ID	Flight Type	Date	Time	Wind speed	Wind direction	Latitude	Longitude	Length	Width	Area	Spill category	Estimated volume	Polluter	Category	Flight type	Casefile	Remarks

Column Header	**Format**	**Explanation**
Country	Belgium	Full country name the reported data applies to
Year	2013	The year that the reported data applies to
Spill ID	BE-01	An unique code which will enable each individual spill to be individually identified (*) Note: in case of a spill consisting of several slicks (multiple slicks clearly originating from 1 spill), only 1 spill ID should be added (and not x '(partial) slick' IDs). In this case, the centre point should be reported as location.
Flight Type	N	The type of flight the detection was made during: National = "N" CEPCO = "C" Super CEPCO = "S"
Date	27/03/2013	The date of the individual detection
Time	08:20	The time of the detection
Wind speed	2	The wind speed in m/s at the time of the detection
Wind direction	210	The wind direction in degrees at the time of the detection
Latitude	51,3683	The latitude of the detection in decimal degrees, using WGS84 - See also Note under 'Spill ID' above for spill consisting of several slicks (*)
Longitude	2,6733	The longitude of the detection in decimal degrees, using WGS84 - See also Note

		under 'Spill ID' above for spill consisting of several slicks (*)
Length	2,3	The length of the detection in kilometres
Width	0,1	The width of the detection in kilometres
Area	0,092	The area of the detection square kilometres^2
Spill category	OIL	The category the detection falls into from: "OIL", "OS", "UNKNOWN"
Estimated volume	0,01564	Volume of the detection confirmed/observed as mineral oil as calculated using the Bonn Agreement Oil Appearance Code using the lower figure (BAOAC minimum) in m^3
Polluter	Other	Enter "rig", "ship", "other" or "unknown"
Category	1	The category (1, 2, 3, 4 or 5) that the detection falls into: <0,1m^3 = "1" <0,1-1m^3 = "2" 1-10 m^3 = "3" 10-100 m^3 = "4" >100 m3 = "5"
Casefile	BE-0008	The name of the casefile the detection refers to
Remarks	Case pending	Any additional information to inform on particular situations

Table 7. Observed TdH Spills

Each country should report all observations from their Tour d'Horizon mission directly to the Bonn Agreement Secretariat, regardless of the location of the spills, at the same time as reporting their other surveillance data.

Country	Year	Flight Type	Date	Time	Latitude	Longitude	CP Area	Area Cov	Daylight or Darkness?	Detection ID	If Oil: Min Volume	If Oil: Max Volume	Polluter Type	Polluter ID	Is detection a verification of (CSN) Sat alert?	In flight Report?	Post Flight Fax sent?	Post Flight email sent?	Reporting made to?	Remarks

Column Header	**Format**	**Explanation**
Country	Belgium	Full country name the reported data applies to
Year	2013	The year that the reported data applies to
Flight Type	TDH	The type of flight the detection was made during: TDH =Tour D'Horizon
Date	27/03/2013	The date of the individual detection
Time	08:20	The time of the detection
Latitude	51,3683	The latitude of the detection in decimal degrees, using WGS84
Longitude	2,6733	The longitude of the detection in decimal degrees, using WGS84
CP Area	Belgium	The Contracting pater EEZ in which the detection was made
Area covered	0,092	The area of the detection in square kilometres^2
Daylight or Darkness	Daylight	Detection in Daylight or darkness
Detection ID	Oil	The category the detection falls into from: "OIL", "OS", "UNKNOWN"
If Oil: Min Volume	0.073	Minimum spill volume in square kilometres
If Oil: Max Volume	0.03	Maximum spill volume in square kilometres

Polluter type	RIG	Type of Polluter either “RIG”, “SHIP” or “UNKNOWN”
Polluter Id	Platform Alpha	The name of the Rig or Ship if identifiable
Is detection a verification of (CSN) Sat alert?	Y	Is detection a verification of (CSN) Sat alert Y or N
In Flight Report	Y	Has an in Flight Report been undertaken Y or N
Post flight Fax sent	N	Has a post flight fax report been sent Y or N
Post flight Email sent	Y	Has a post flight email report been sent Y or N
Reporting made to	National Contact Point	Who has the post flight report been sent to: national focal point or other?
Remarks	Case pending	Any additional information to inform on particular situations

Table 8. TdH Flight Routing

Date	Flight Number	Waypoint Code (Incl. Airports)	Position (only if waypoint not in Aerial Operations Handbook)

Column Header	Format	Explanation
Date	27/03/2013	The date of the start of the flight
Flight Number	NL: 1046, BE: 13046, UK: Endurance 446, Etc.	The number of the TdH Flight
Way Point Code (Including Airports)	T10, T11, T12, EGNT	The Waypoint codes for the flight taken from the Aerial Operations Handbook including Airports
Position	N XX0 XX,XX' E/W XXX0 XX,XX'	The position of the flight route (only if different from the waypoints in the Aerial Operations Handbook)

ANNEX 2

Report on Tour de Horizon flights carried out in 2014

Introduction

The Tour de Horizon (TdH) flights for 2014 were flown as follows:

- March: The Netherlands;
- April: Denmark;
- June: United Kingdom;
- September: Belgium;
- October: Sweden (but 2 out of 4 days cancelled due to technical problems);
- November: The Netherlands (2nd campaign);
- December: Norway.

The flights took place on 23 days between 10 March and 17 December 2014, more specifically:

- 10-13 March (NL);
- 2-3 April (DK);
- 5-7 June (UK);
- 15-19 September (BE);
- 29-30 September (SE);
- 10-13 November (NL);
- 15-17 December (NO).

All flight data have been sent to the BA Secretariat for compilation.

Detections

- 64 detections were made: 41 in British area, 21 in Norwegian area, and 2 in Danish area.
- 58 detections were identified as mineral oil, 3 detections could not be specified after visual verification and have therefore been categorized as substances other than oil, 3 could not be visually inspected due to low cloud base and have been categorized as 'unknowns'.
- 57 detections were found directly associated with offshore platforms (38 in UK area, 17 in NO area, and 2 in DK area), of which 54 detections consisted of mineral oil and 3 detections of 'unknowns'.
- 2 detections, both of substances other than oil, were found directly associated with vessels ('*Transbas*' and '*Atria*').
- The source of pollution of the 5 remaining detections – i.e. 4 mineral oil detections and 1 remaining detection of a substance other than oil ([4?) in UK area, 1 in NO area) - could not be established. These detections have an indication of "polluter unknown" in the tables below.
- Of the 58 mineral oil detections, minimum 10 detections (~min.vol.) and maximum 25 detections (~max. vol.) consisted of major oil volumes - *i.e.* volume of more than 1 m³. A more detailed overview of the number of oil detections per volume category is given below.

Volume category	N° of oil slicks (min. vol.)	N° of oil slicks (max. vol.)
10-100 m³	0	10
1-10 m³	10	15
0.5-1 m³	2	3
0.1-0.5 m³	13	13
< 0.1 m³	33	17

CSN SAT support

As in previous years, a CSN satellite surveillance support was given for each TdH14 mission. For 2014, this resulted in a total of 105 planned and 70 delivered SAT Scenes, and 113 CSN spill detection alerts made during a TdH mission that were reported to the aircrew in operations. A total of 18 thereof were verified and confirmed in the field as a (mostly mineral oil) spill: The United Kingdom, Belgium, Sweden and the Netherlands reported that (part of) their aerial spill detections/observations (UK: 6; BE: 7; SE: 4; NL: 1) made during their TDH14 flights were the result of a verification of a CSN satellite alert. A more detailed overview of the CSN support to the TdH14 missions is added in **Annex I**.

Flight routes

7 flight maps have finally also been added in the report, with the aim to visualize the various flight routes of the different TdH missions in 2014. These maps perfectly illustrate the very good degree of 'TdH' coverage of the (central) part of the North Sea where most of the offshore oil and gas installations are situated. Interesting to note is that the UK aircraft controlled the offshore installations/field West of the Shetlands for the first time during a TdH.

Detection reporting

The detection reporting procedures applied by aircrew has improved: most aircrew (UK, BE, SE, partially also DK) applies the newly agreed reporting procedures as good as possible, performing detection reporting in-flight and post-flight, by mail and by phone to the NFPs of the affected coastal States. NL and NO however only reported by mail to the NFPs concerned. With regard to in-flight reporting, it should be noted that some countries (e.g. DK and SE) encountered difficulties to establish contact with UK coastguard stations while being in-flight.

Detection investigation

With regard to the 57 detection investigation results received from national government inspectors, the conclusions were as follows:

- 8 detections of very minor oil spills were not pursued due to the too small quantities involved.
- 38 detections, of which 6 major oil spills[8], were assessed to be originating from oil in produced water discharged within legal limits.
- 4 detections (Brage on 29.09, 11.11 and 12.11 (3X) and Forties A on 30.09), consisting of 3 major oil spills and one spill with unknown volume, were assessed to be the result of a produced water discharge with a higher oil content than normal, but with an average still within legal limits.
- For 6 other detections, again the oil in produced water concentrations were found higher than normal, due to various reasons:
  - In the case of the Clyde Alpha spill (02.04), DECC was aware of produced water excursions from this installation and a number of notifications had been submitted leading to improvement plans provided by the operator.In the case of the Forties A spill (05.06), the higher oil in water content was the result of a corrosion inhibitor dosage.
  - In the case of the major Northern Producer spill (17.09), the oil in produced water concentration was higher than normal due to process instability as a result of gas lift trials and a pollution report had been submitted by the operator.
  - In the case of the Ninian C s pill (17.09), again process instability was the reason for the higher oil in water content.
  - In the case of the Cormorant N spill (also on 17.09), deoiler trials were the reason for the higher oil in water content.
  - In the Kittiwake spill case (18.09) the higher oil in water content was due to scale squeeze operations.
- Finally, 1 detection (Ninian N spill on 17.09) was attributed to level switch problems with a closed drains sump causing potential oil overflow to an oily water caisson on the platform.

[8] Major oil spill = spill with minimum oil volume higher than 1 m^3.

TOUR D'HORIZON 2014 RESULTS

1. SUMMARY OF RESULTS

Summary of data relating to Tour d'Horizon (TdH) flights during 2014

Country	No. of flights	No. of flight hours			No. of detections			No of detections identified as oil	Estimated volume m^3	No of 'other substance' detections	No of 'unknown' detections	No. of polluters				Remarks
		Daylight	Darkness	Sum	Daylight	Darkness	Sum					Rigs	Ships	Unknown	Total	
Belgium	6	20.40		20.40	28	0	28	28	5.30	0	0	26	0	2	26	
Denmark	2	8.20	0	8.20	8	0	8	8	5.69	0	0	8	0	0	8	
Germany	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1)
Netherlands	13	34.65	0	34.65	12	0	12	11		0	1	10		1	11	
Norway	3	9.60	0	9.60	4	0	4	4	0.01	0	0	4	0	0	4	
Sweden	2	7.90	0	7.90	6	0	6	4	8.07	0	2	6	0	0	6	(2)
UK	4	18.55	0	18.55	6	0	6	3	2.54	3	0	3	2	1	5	
Total	**30**	**99.30**	**0.00**	**99.30**	**64**	**0**	**64**	**58**	**21.61**	**3**	**3**	**57**	**2**	**4**	**60**	

Remarks:
(1) German TDH14 cancelled due to technical problems aircraft.
(2) Swedish TDH14: last 2 flight days cancelled.

2. OVERVIEW OF DETECTIONS/OBSERVATIONS PER CONTRACTING PARTY

2.1 THE NETHERLANDS: 10-13 March and 10-13 November 2014.

No	Date (dd.mm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m^3)	Max. Quan. (m^3)	Polluter ID	Pollution Type
1	1103	09:47	58°17.30' N	3°59.30' E	NO	0.21	2.20	(unknown)	Oil
2	1203	14:27	58°09.90' N	2°00.00' W	UK	0.01	0.06	(unknown)	Oil
3	1203	14:42	58°06.80' N	3°05.20' W	UK	0.01	0.07	Beatrice A-D	Oil
4	1303	11:25	57°43.60' N	0°50.70' E	UK	0.07	0.72	Forties-C	Oil
5	1303	11:26	57°43.30' N	0°54.00' E	UK	1.66	16.90	Forties-D	Oil
6	1303	11:27	57°43.80' N	0°58.20' E	UK	1.55	16.31	Forties-A	Oil
7	1303	12:05	56°29.60' N	2°09.20' E	UK	0.01	0.02	Fulmar-A	Oil
8	1111	10:27	59°11.60' N	2°23.10' E	NO	<0.01	0.01	Balder FPU	Oil
9	1111	11:29	60°32.60' N	3°02.60' E	NO	1.26	12.75	Brage	Oil
10	1211	09:32	60°32.70' N	3°04.30' E	NO	-	-	Brage	Unknown*
11	1311	10:13	57°43.90' N	0°58.20' E	UK	0.35	3.55	Forties-A	Oil
12	1311	10:21	57°43.30' N	0°54.10' E	UK	0.31	3.07	Forties-D	Oil

- * Unknown pollution type on 12 Nov. '14 at Brage: only SLAR detection, no visual verification possible.
- CSN support: None of these detections were a verification of a CSN SAT alert.
- No in-flight reporting took place. Post-flight reports only sent by mail to the NFPs of UK and NO (via NL-CG centre).

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2.2 DENMARK: 2-3 April 2014

No	Date (dd.mm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m³)	Max. Quan. (m³)	Polluter ID	Pollution Type
1	0204	11:55	56° 27.70' N	2° 16.73' E	UK	0.23	2.26	Clyde Alpha	Oil
2	0204	12:20	57° 45.36' N	0° 53.05' E	UK	2.01	21.88	Forties D	Oil
3	0204	12:20	57° 46.18' N	0° 58.74' E	UK	1.18	12.83	Forties A	Oil
4	0304	12:20	57° 45.39' N	0° 50.21' E	UK	1.12	12.18	Forties C	Oil
5	0304	11:00	60° 50.60' N	1° 22.90' E	UK	0.25	2.31	Ninian South	Oil
6	0304	11:26	61° 12.67' N	2° 16.28' E	NO	0.10	1.05	Gullfaks C	Oil
7	0304	11:39	60° 45.49' N	2° 51.57' E	NO	0.20	2.11	Brage	Oil
8	0304	11:42	60° 31.40' N	3° 01.29' E	NO	0.61	5.77	Veslefrikk A	Oil

- None of these detections were a verification of a CSN SAT alert.

- In-flight reporting attempt to UK coastguard station made on 02 April for detections 1-4, but unsuccessful. But in-flight reporting made on 03 April for detections 5-8. Post-flight reports sent by fax to UK NFP, and by mail to the NO NFP - all via the DK NFP (SOK MAS).

2.3 UNITED KINGDOM: 5-7 June 2014

No	Date (dd.mm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m^3)	Max. Quan. (m^3)	Polluter ID	Pollution Type
1	0506	11:20	57° 43.88' N	0° 58.27' E	UK	0.84	8.37	Forties A	Oil
2	0506	15:45	60° 57.88' N	0° 56.28' E	UK	<0.01	0.03	Cormorant A	Oil
3	0506	16:00	60° 48.30' N	1° 26.92' E	UK	1.69	17.95	Ninian Southern	Oil
4	0606	10:40	58° 06.18' N	3° 42.07' E	NO	-	-	Transbas (ship)	Substance other than oil
5	0606	11:45	57° 08.83' N	4° 44.07' E	NO	-	-	(unknown)	Substance other than oil
6	0706	19:44	52° 35.37' N	2° 42.43' E	UK	-	-	Atria (ship)	Substance other than oil

- All 6 detections were the result of a verification of a CSN SAT detection alert.
- In-flight reporting made for all detections. Post-flight reports sent by email to NFPs of UK and NO.

2.4 BELGIUM: 15-19 September 2014

No	Date (dd.mm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m^3)	Max. Quan. (m^3)	Polluter ID	Pollution Type
1	1609	07:55	55° 32.20' N	5° 01.70' E	DK	0.01	0.07	Duchbd	Oil
2	1609	07:58	55° 31.80' N	5° 00.40' E	DK	<0.01	0.04	Ensco71	Oil
3	1609	13:05	58° 47.26' N	1° 20.35' E	UK	0.14	1.08	Brea	Oil
4	1609	13:55	59° 11.20' N	2° 23.00' E	NO	0.01	0.18	Balder	Oil
5	1709	10:20	60° 46.30' N	3° 30.20' E	NO	0.01	0.13	Troll-B	Oil
6	1709	10:42	60° 23.40' N	2° 47.70' E	NO	0.02	0.17	Osseberg Sor	Oil
7	1709	10:50	60° 36.40' N	2° 46.40' E	NO	0.01	0.09	Osseberg C	Oil
8	1709	11:18	61° 12.80' N	1° 48.50' E	NO	0.10	1.15	Statfjord B	Oil
9	1709	11:19	61° 17.80' N	1° 53.80' E	NO	0.07	0.99	Statfjord C	Oil
10	1709	11:22	61° 15.10' N	1° 51.20' E	NO	0.02	0.18	Statfjord A	Oil
11	1709	11:33	61° 26.90' N	2° 18.30' E	NO	0.02	0.22	Snorre A	Oil
12	1709	11:57	61° 29.10' N	1° 27.90' E	UK	4.21	42.28	Northern Producer	Oil
13	1709	12:05	61° 21.70' N	1° 34.70' E	UK	0.01	0.09	Thistle	Oil
14	1709	12:08	61° 16.30' N	1° 35.70' E	UK	0.05	0.62	Dunlin A	Oil
15	1709	12:25	60° 54.40' N	1° 25.00' E	UK	0.03	0.22	Ninian N	Oil
16	1709	12:25	60° 51.50' N	1° 28.00' E	UK	0.26	1.92	Ninian C	Oil
17	1709	12:36	61° 06.10' N	1° 04.20' E	UK	<0.01	0.04	Cormorant A	Oil
18	1709	12:41	61° 16.50' N	0° 55.10' E	UK	0.01	0.08	Tern A	Oil
19	1709	12:46	61° 14.50' N	1° 08.70' E	UK	0.03	0.24	Cormorant N	Oil
20	1709	12:58	60° 57.30' N	0° 56.50' E	UK	0.02	0.22	Heather A	Oil
21	1709	13:06	60° 53.00' N	0° 51.40' E	UK	0.02	0.18	(Unknown)	Oil
22	1709	13:06	60° 51.30'N	0° 50.60' E	UK	0.06	0.42	(Unknown)	Oil
23	1809	14:05	58° 03.20' N	1° 04.40' E	UK	0.01	0.10	Alba Northern	Oil
24	1809	14:19	57° 43.50' N	0° 58.10' E	UK	0.02	0.15	Rowan Gorilla 7	Oil
25	1809	14:18	57° 43.20' N	0° 54.10' E	UK	0.10	1.41	Forties D	Oil
26	1809	14:18	57° 43.40' N	0° 50.40' E	UK	0.03	0.21	Forties C	Oil

No	Date (dd.mm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m^3)	Max. Quan. (m^3)	Polluter ID	Pollution Type
27	1809	14:36	57° 27.60' N	0° 30.30' E	UK	<0.01	0.02	Kittiwake	Oil
28	1809	14:52	57° 04.60' N	0° 53.20' E	UK	0.01	0.05	Triton	Oil

- 7 (out of 28) oil spill detections were the result of a verification of a CSN SAT detection alert.
- In-flight reporting was made for only 3 detections (incl. the single major spill – cf. detection 12). Post-flight reporting done by email to the NFPs of DK, NO and UK (+ in Cc also to national offshore inspectorate organizations), followed by a MUMM liaison officer who contacted the NFPs by phone to verify whether all reporting emails had been well received.

2.5 SWEDEN: 29-30 September 2014

No	Date (dd.mm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m³)	Max. Quan. (m³)	Polluter ID	Pollution Type
1	2909	13:16	59° 11.45' N	2° 23.18' E	NO	-	-	Balder FPU	Unknown
2	2909	14:01	60° 32.00' N	3° 03.00' E	NO	4.18	41.84	Brage	Oil
3	3009	08:33	60° 32.00' N	3° 02.00' E	NO	-	-	Brage	Unknown
4	3009	11:21	57° 43.00' N	0° 54.00' E	UK	0.29	2.92	Forties D	Oil
5	3009	11:21	57° 44.00' N	0° 51.00’ E	UK	0.26	2.59	Forties C	Oil
6	3009	11:22	57° 44.00' N	0° 58.00' E	UK	1.02	10.18	Forties A	Oil

- The last 4 (out of 6) detections were the result of a verification of a CSN SAT detection alert.
- In-flight reporting (tel. and email) was made for the last 4 detections to the NFP of NO or UK. For the first detection, a tel. in-flight report failed due to a long waiting time, and only a post-flight email report was sent to the NO focal point. For the second detection, a reporting by tel. and email was performed after flight.

2.5 NORWAY: 15-17 December 2014

No	Date (dd.mm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m³)	Max. Quan. (m³)	Polluter ID	Pollution Type
1	1712	13:40	58° 46.98' N	1° 21.00' E	UK	<0.01	0.02	Brae B	Oil
2	1712	14:35	61° 04.98' N	1° 43.98' E	UK	0.01	0.05	Brent C	Oil
3	1712	14:35	61° 08.00' N	1° 45.00' E	UK	<0.01	0.01	Brent D	Oil
4	1712	13:40	61° 21.00' N	1° 34.98' E	UK	<0.01	0.01	Thistle A	Oil

- None of these detections were a verification of a CSN SAT alert.
- No in-flight reporting was performed. Only post-flight reporting made by email to the UK NFP (+ in Cc to offshore inspectorate organization).

TOUR D'HORIZON 2014 – DETECTION INVESTIGATION SUMMARY

NETHERLANDS – March 2014 (1st campaign) and November 2014 (2nd campaign)

Date (ddmm)	Time (UTC)	Platform	Reported quantity (m³)		Government inspectors assessment
			Min.	Max.	
1203	14:42	Beatrice A-D	0.01	0.07	UK: Not pursued due to the small quantities involved.
1303	11:25	Forties-C	0.07	0.72	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1303	11:26	Forties-D	1.66	16.90	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1303	11:27	Forties-A	1.55	16.31	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1303	12:05	Fulmar-A	0.01	0.02	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1111	10:27	Balder FPU	<0.01	0.01	NO: Not checked further by duty officer
1111	11:29	Brage	1.26	12.75	NO: Higher oil in water content than normal, but within 30ppm
1211	09:32	Brage	(Unknown)		NO: Higher oil in water content than normal, but within 30ppm
1311	10:13	Forties-A	0.35	3.55	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1311	10:21	Forties-D	0.31	3.07	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.

DENMARK – April 2014

Date (ddmm)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min.	Max.	
0204	11:55	Clyde Alpha	0.23	2.26	UK: DECC aware of produced water excursions from this installation. A number of notifications were submitted during this period and improvement plans were provided by the operator to ensure appropriate actions were taken.
0204	12:20	Forties D	2.01	21.88	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
0204	12:20	Forties A	1.18	12.83	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
0304	12:20	Forties C	1.12	12.18	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
0304	11:00	Ninian South	0.25	2.31	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
0304	11:26	Gullfaks C	0.10	1.05	NO: Calm weather- Produced water. Based on several other observations the same week were all had normal production, and within legal limits.
0304	11:39	Brage	0.20	2.11	NO: Calm weather- Produced water. Based on several other observations the same week were all had normal production, and within legal limits.
0304	11:42	Veslefrikk A	0.61	5.77	NO: Calm weather- Produced water. Based on several other observations the same week were all had normal production, and within legal limits.

UNITED KINGDOM – June 2014

Date (ddmm)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min.	Max.	
0506	11:20	Forties Alpha	0.84	8.37	UK: Operator contacted by UK inspector. Oil in produced water concentration higher than normal as a result of corrosion inhibitor dosage.
0506	15:45	Cormorant Alpha	<0.01	0.03	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
0506	16:00	Ninian Southern	1.69	17.95	UK: Operator contacted by UK inspector who was on installation on 05/06/14 . Oil in produced water was within legal limit. No other issues were noted at the time of the flight.

BELGIUM – (mid) September 2014

Date (ddmm)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min.	Max.	
1609	07:55	Halfdan B	0.01	0.07	DK: Legal Discharge of oil with produced water
1609	07:58	Ensco71	<0.01	0.04	DK: Legal discharge from drilling rig
1609	13:05	Brea	0.14	1.08	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1609	13:55	Balder	0.01	0.18	NO: Produced water -Within legal limits
1709	10:20	Troll-B	0.01	0.13	NO: Produced water -Within legal limits
1709	10:42	Osseberg Sor	0.02	0.17	NO: Produced water -Within legal limits

1709	10:50	Osseberg C	0.01	0.09	NO: Produced water -Within legal limits
1709	11:18	Statfjord B	0.10	1.15	NO: Produced water -Within legal limits
1709	11:19	Statfjord C	0.07	0.99	NO: Produced water -Within legal limits
1709	11:22	Statfjord A	0.02	0.18	NO: Produced water -Within legal limits
1709	11:33	Snorre A	0.02	0.22	NO: Produced water -Within legal limits
1709	11:57	Northern Producer	4.21	42.28	UK: Operator contacted by UK inspector. Oil in produced water concentration higher than normal due to process instability as a result of gas lift trials. Pollution report submitted by operator.
1709	12:05	Thistle	0.01	0.09	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1709	12:08	Dunlin A	0.05	0.62	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1709	12:25	Ninian N	0.03	0.22	UK: Operator contacted by UK inspector. Sheen attributed to level switch problems with closed drains sump causing potential oil overflow to oily water caisson.
1709	12:25	Ninian C	0.26	1.92	UK: Operator contacted by UK inspector. Oil in produced water concentration higher than normal due to process instability.
1709	12:36	Cormorant A	<0.01	0.04	UK: Operator contacted by UK inspector. Sheen noted on daily check however, oil in produced water was within legal limit. No other issues were noted at the time of the flight.
1709	12:41	Tern A	0.01	0.08	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1709	12:46	Cormorant N	0.03	0.24	UK: Operator contacted by UK inspector. Oil in produced water concentration was higher than normal due to deoiler trials and only one train in operation.
1709	12:58	Heather A	0.02	0.22	UK: Operator contacted by UK inspector. Oil in produced water was

					within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1809	14:05	Alba Northern	0.01	0.10	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1809	14:19	Rowan Gorilla 7	0.02	0.15	UK: The Rowan Gorilla 7 was jacked up over the Forties A at this time. The Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1809	14:18	Forties D	0.10	1.41	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1809	14:18	Forties C	0.03	0.21	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
1809	14:36	Kittiwake	<0.01	0.02	UK: Operator contacted by UK inspector. Oil in produced water concentration higher than normal due to scale squeeze flow back. Pollution report submitted by operator.
1809	14:52	Triton	0.01	0.05	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.

SWEDEN – (end) September 2014

Date (ddmm)	Time (UTC)	Platform	Reported quantity (m³)		Government inspectors assessment
			Min.	Max.	
2909	13:16	Balder FPU	(unknown)		NO: Not checked further by duty officer
2909	14:01	Brage	4.18	41.84	NO: Brage had doubled the amount of produced water this day. Still within legal limits.
3009	08:33	Brage	(unknown)		NO: Not checked further by duty officer
3009	11:21	Forties D	0.29	2.92	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
3009	11:21	Forties C	0.26	2.59	UK: Operator contacted by UK inspector. Oil in produced water was within legal limit. No other issues were noted at the time of the flight. Sheen considered normal for prevailing conditions.
3009	11:22	Forties A	1.02	10.18	UK: Operator contacted by UK inspector. Oil in produced water concentration was higher than normal for the period 28-30/09/14, peaking at 70mg/l but average was less than 30mg/l for the overall period and no pollution report was submitted.

NORWAY – December 2014

Date (ddmm)	Time (UTC)	Platform	Reported quantity (m³)		Government inspectors assessment
			Min.	Max.	
1712	13:40	Brae B	<0.01	0.02	UK: Not pursued due to the small quantities involved.
1712	14:35	Brent C	0.01	0.05	UK: Not pursued due to the small quantities involved.
1712	14:35	Brent D	<0.01	0.01	UK: Not pursued due to the small quantities involved.
1712	13:40	Thistle A	<0.01	0.01	UK: Not pursued due to the small quantities involved.

TOUR D'HORIZON 2014 – FLIGHT MAPS

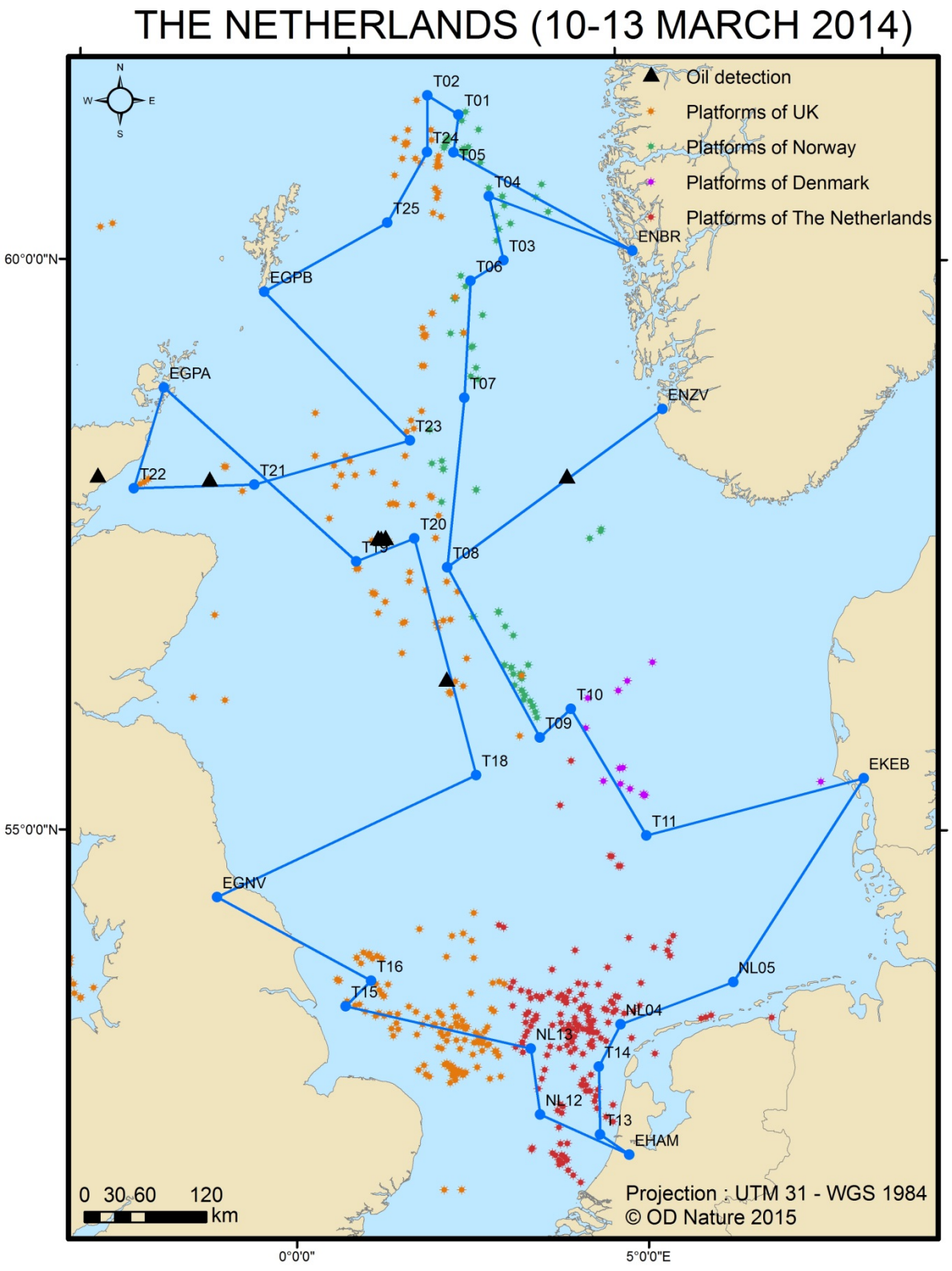


Fig. 1: TdH14 Flight route of the Netherlands (1st TdH campaign).

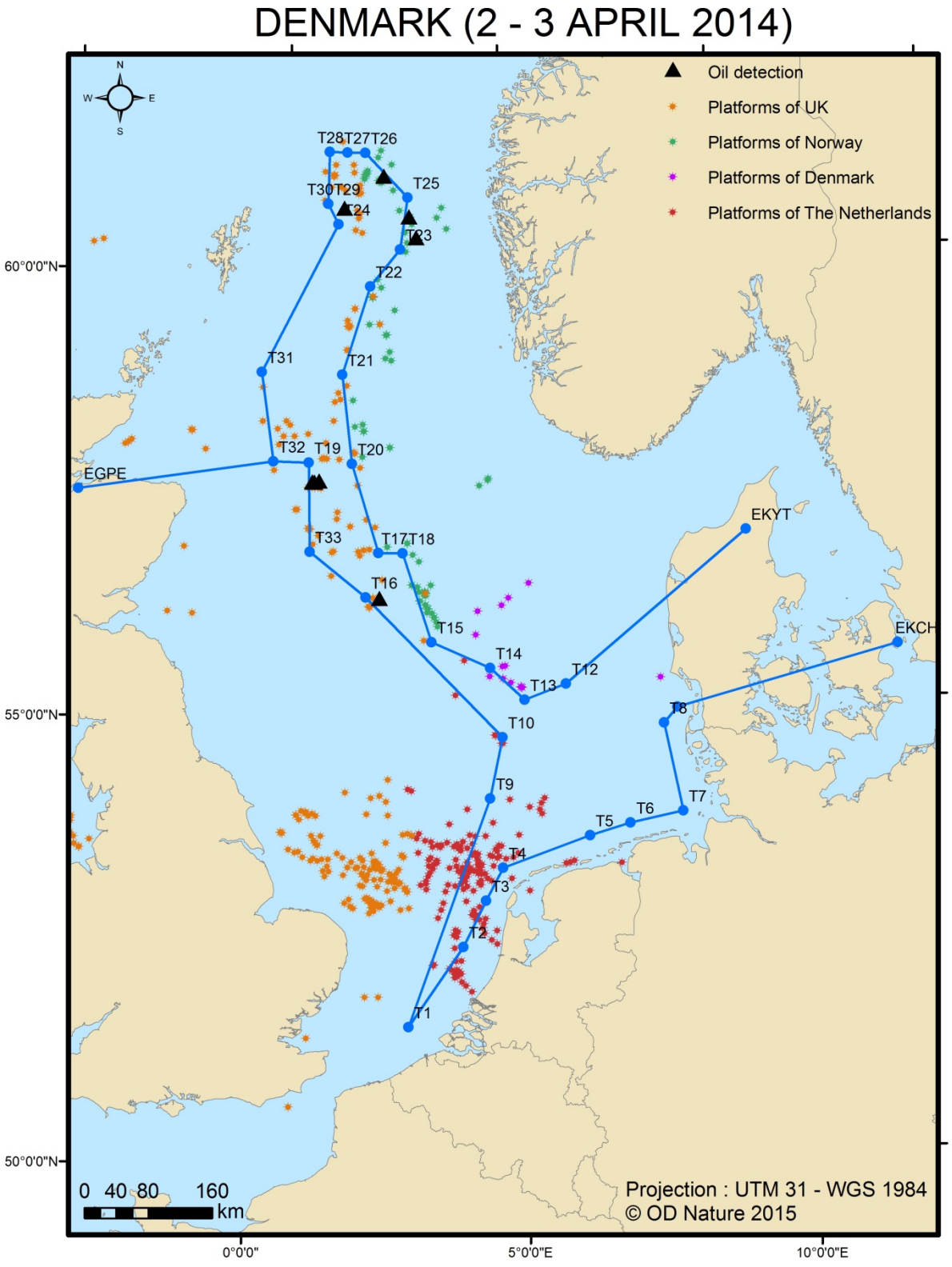


Fig. 2: TdH14 flight route of Denmark.

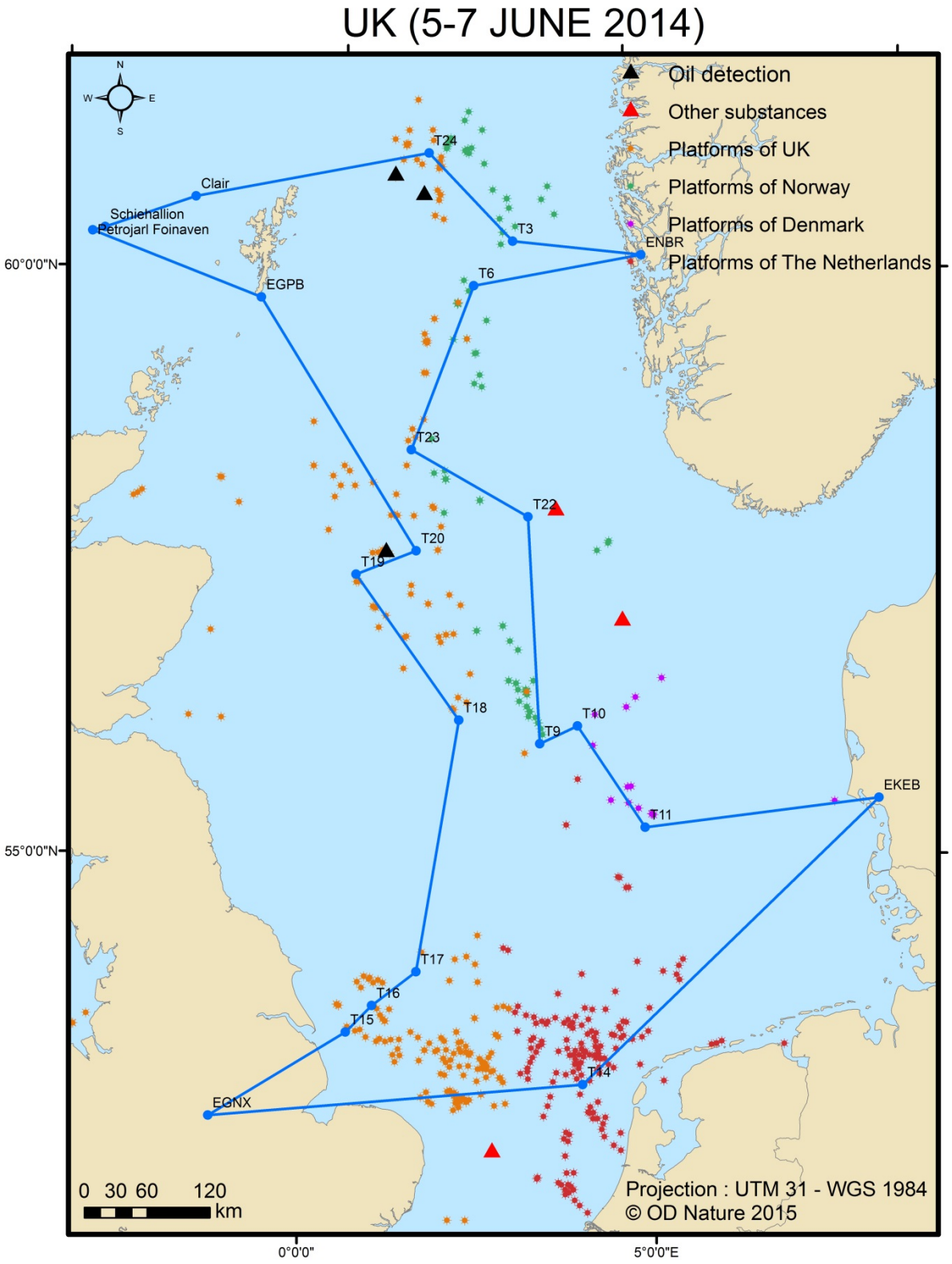


Fig. 3: TdH14 flight route of the United Kingdom.

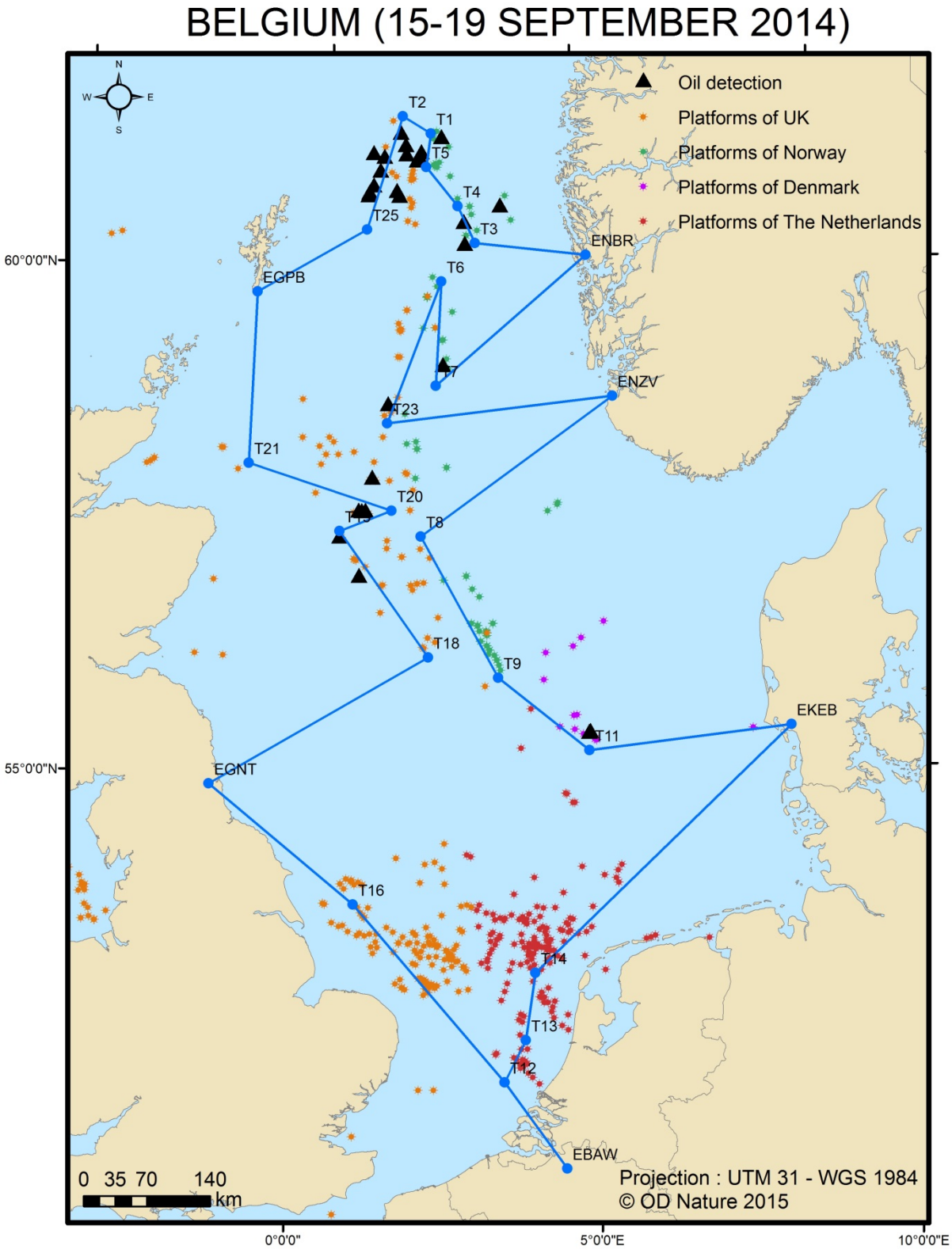


Fig. 4: TdH14 flight route of Belgium.

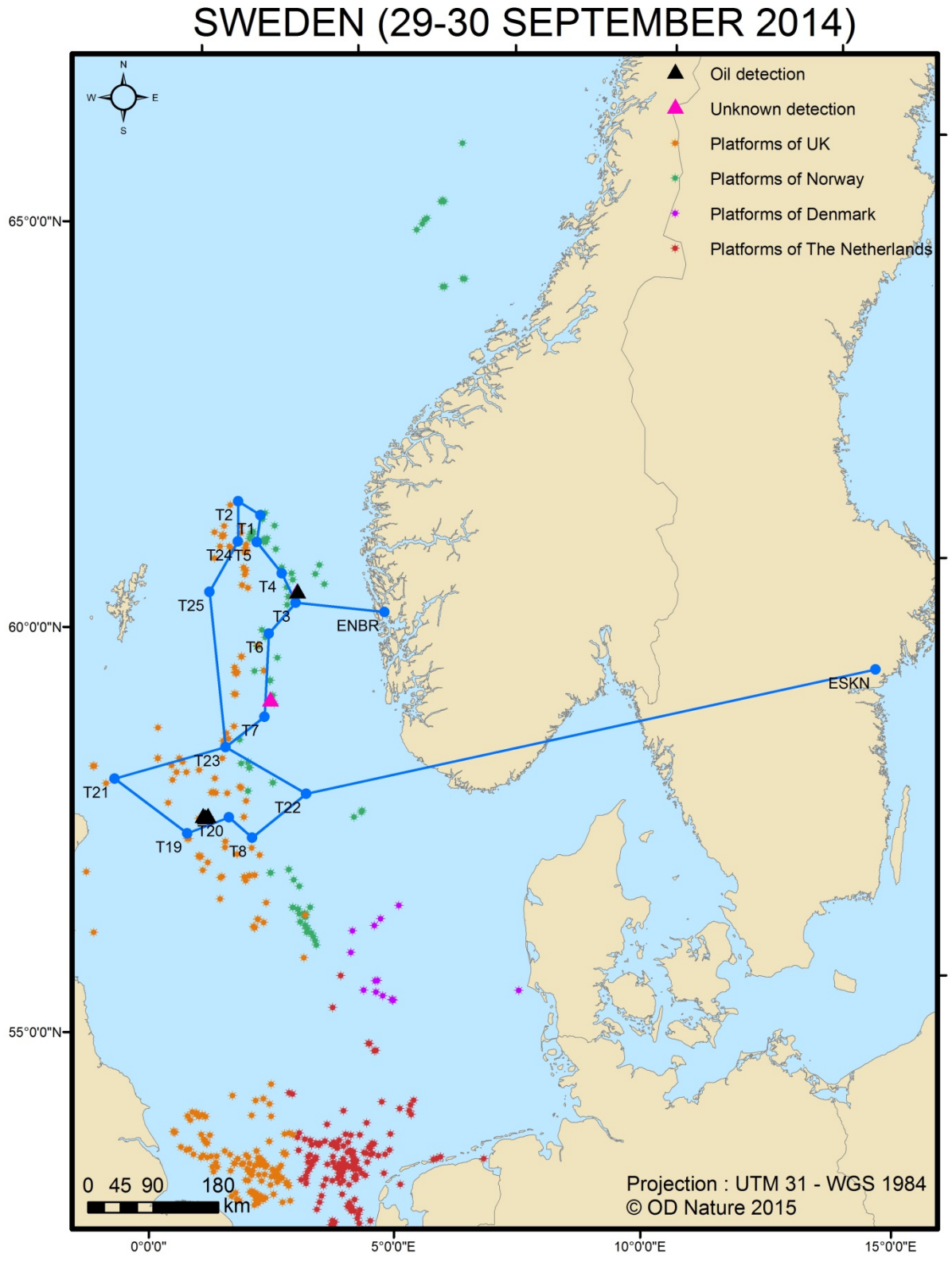


Fig. 5: TdH14 flight route of Sweden.

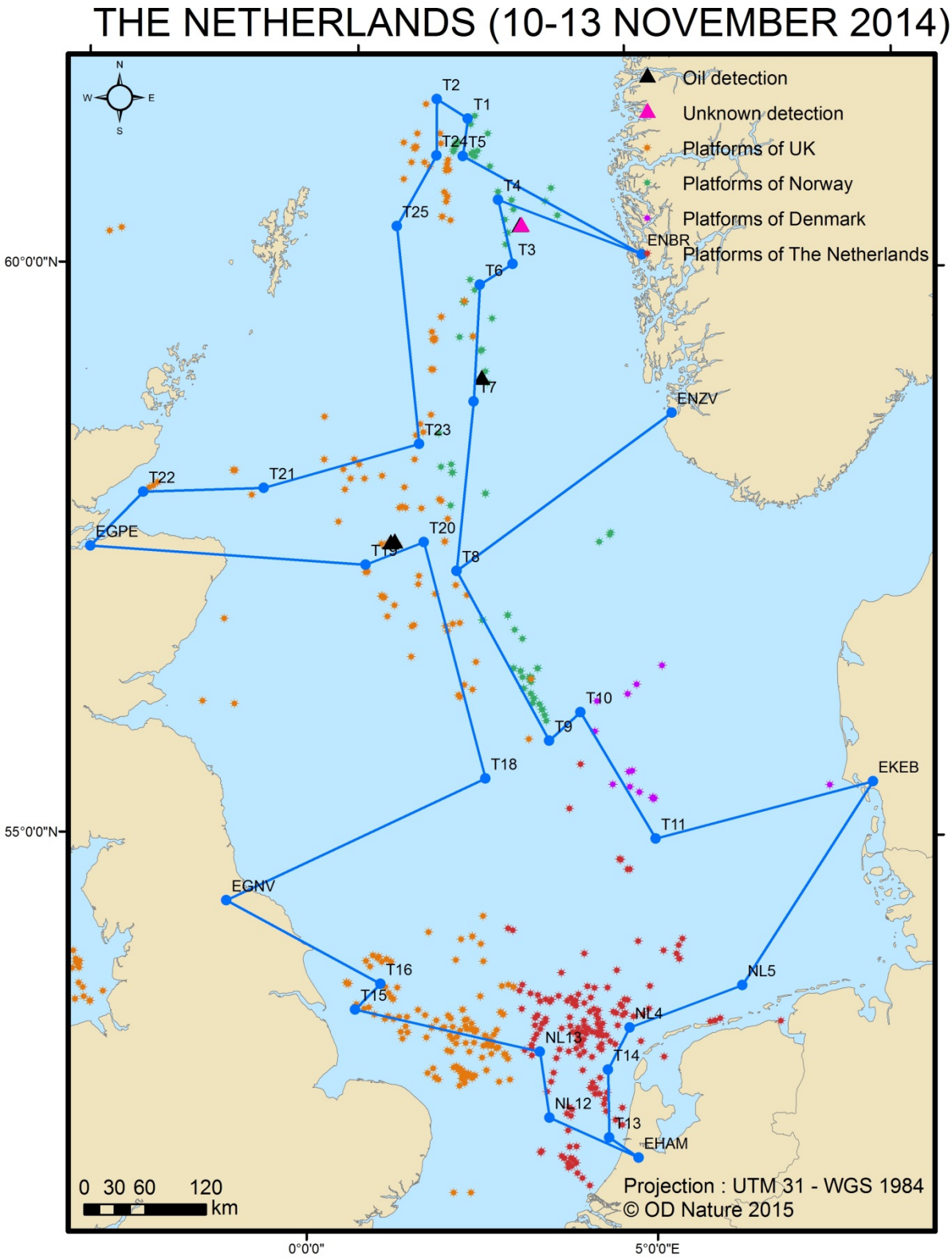


Fig. 6: TdH14 flight route of the Netherlands (2nd TdH campaign).

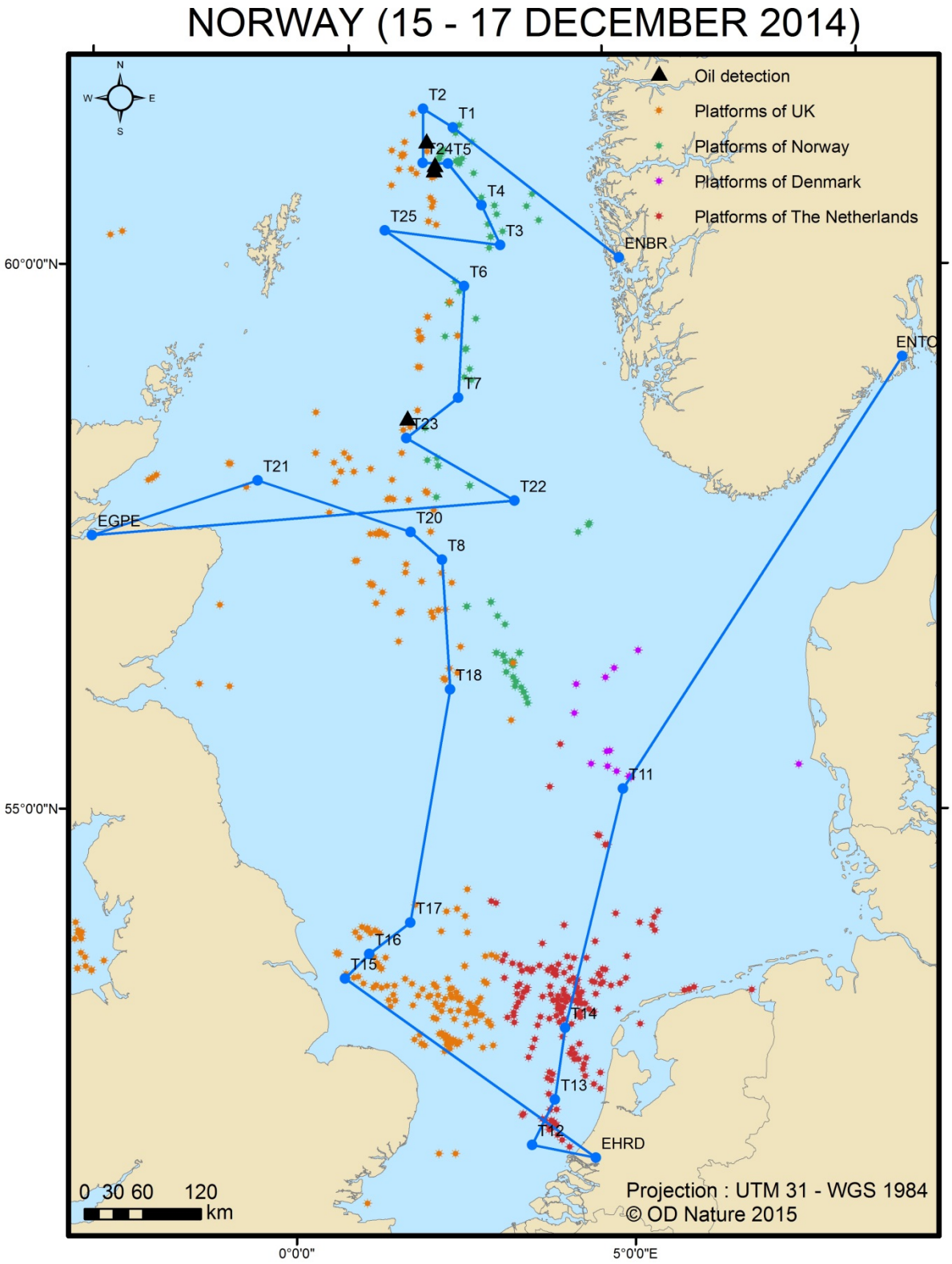


Fig.7: TdH14 flight route of Norway.

Annex I

Summary of CleanSeaNet support to TdH14 missions

Since no night flights can be undertaken by Bonn Agreement Contracting Parties as part of the TdH programme due to operational limitations, and given the fact that satellite images may provide a first alert for oil pollution during the night and that a satellite image taken at night can be very useful to aircrew performing a TdH mission as it provides a wide 'nightly' offshore area scan before take-off, a CSN support has been organized to TdH missions since 2012 (as agreed by BONN in 2011).

This CSN support basically works as follows: based on the received satellite detections the aircrew can, prior to take-off, get information of the offshore area they will fly over. All possible spills that have been detected during the satellite passage are then first evaluated by the TdH crew in coordination with the NFPs of the concerned coastal State(s). The 'TdH' aircraft can then act as an additional aerial platform for the affected coastal State(s) for verification of SAT alerts.

An overview of the CSN support given to the TdH14 missions, and the results thereof, are given in the table below.

CSN images	Scenes Planned	Scenes Delivered	#possible spill detection alerts	Confirmed spills (TdH res.)
1. The Netherlands (10-13/03)	17	10	10	1
2. Denmark (2-3/04)	4	3	3	0
3 .United Kingdom (5-7/07)	8	5	40	6
4. Belgium (7-11/07; cancelled)	*(6)*	*(6)*	*(29)**	-
5. Germany (15-17/07; cancelled)	*(14)*	*(9)*	*(39)**	-
6. Belgium (15-19/09)	17	9	40	7 (15 det.)**
7. Sweden (29/09-02/10 - 2 last days cancelled)	19	14	19	4
8. The Netherlands (2nd TdH; 10-13/11)	15	11	1	0
9. Norway (15-17/12)	5	3	0	0
TOTAL	**105**	**70**	**113** ***(+ 68)****	**18 (26 det.)****

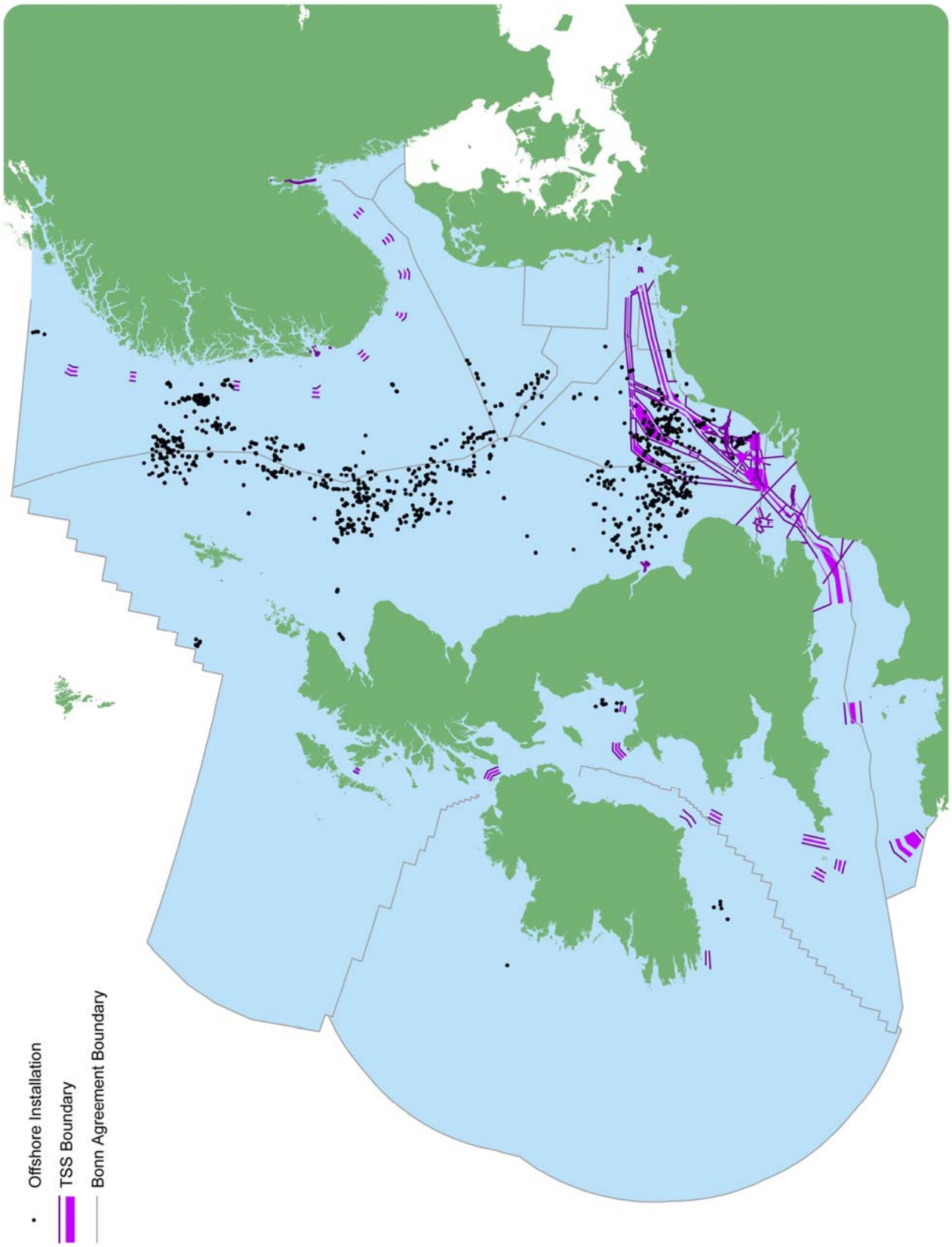
With regard to that overview table, it should first be noted that the TdH missions 4 and 5 were cancelled (cf. BE: postponed; GE: cancelled) before the start of the operations but after the SAT images ordering process; and also that for the Swedish TdH mission, the two last flight days got cancelled due to technical problems.

With regard to the major difference between SAT detection alerts used in support of actual TdH14 missions (113) and the number of confirmed spills (18) it should be noted that:

- Some SAT detection alerts came from 'post-flight' scenes, as a result of which these alerts could no longer be verified since they were reported after the operations for that given day;
- Many of the SAT detection alerts were well outside the TdH flight range for a given day (e.g. for UK: 27 out of 40 detections out of reach aircraft; for BE: 18 out of 40 detections out of reach aircraft);
- Part of the SAT detection alerts were verified in the field but no pollution was found;
- Part of the SAT detection alerts were 'double-counts' of the same spill, because the same detection was found on different consecutive SAT scenes (which is the case for BE – see ** in the above table - where 15 SAT detection alerts in fact only concerned 7 actual oil spills found at sea);
- Some SAT detection alerts have been verified by the coastal State(s) concerned, through own means (as can be derived from the CSN feedback module).

ANNEX 3

Bonn Agreement Areas of Responsibility, Traffic Separation Schemes and Oil and Gas Installations in the Bonn Agreement area



ANNEX 4

North Sea CleanSeaNet Service Statistics 2014

During this period, CleanSeaNet delivered for the Bonn Agreement region a total of 770 services. Figure 1, shows the monthly distribution of services for 2014.

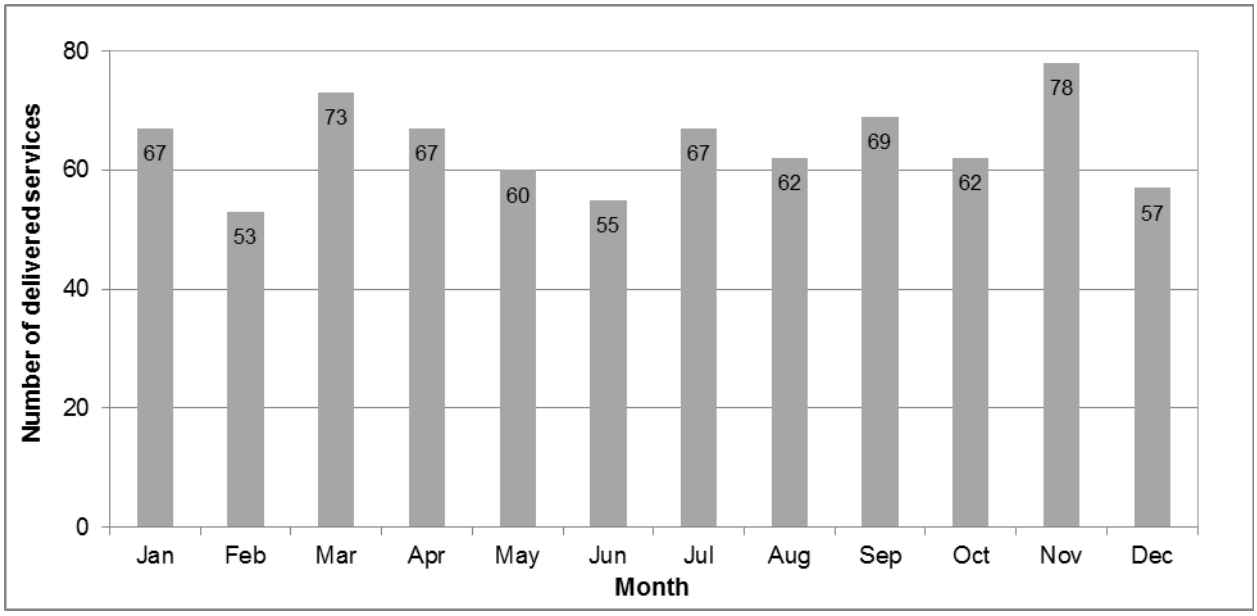


Figure 1. CleanSeaNet delivered services in 2014 for the Bonn Agreement region.

CleanSeaNet Detections

From 1 January 2014 until 31 December 2014, 958 detections were reported: 640 Classification A[9], 318 Classification B[10]. Figure 2, presents the monthly distribution of CSN detections classified as A and B.

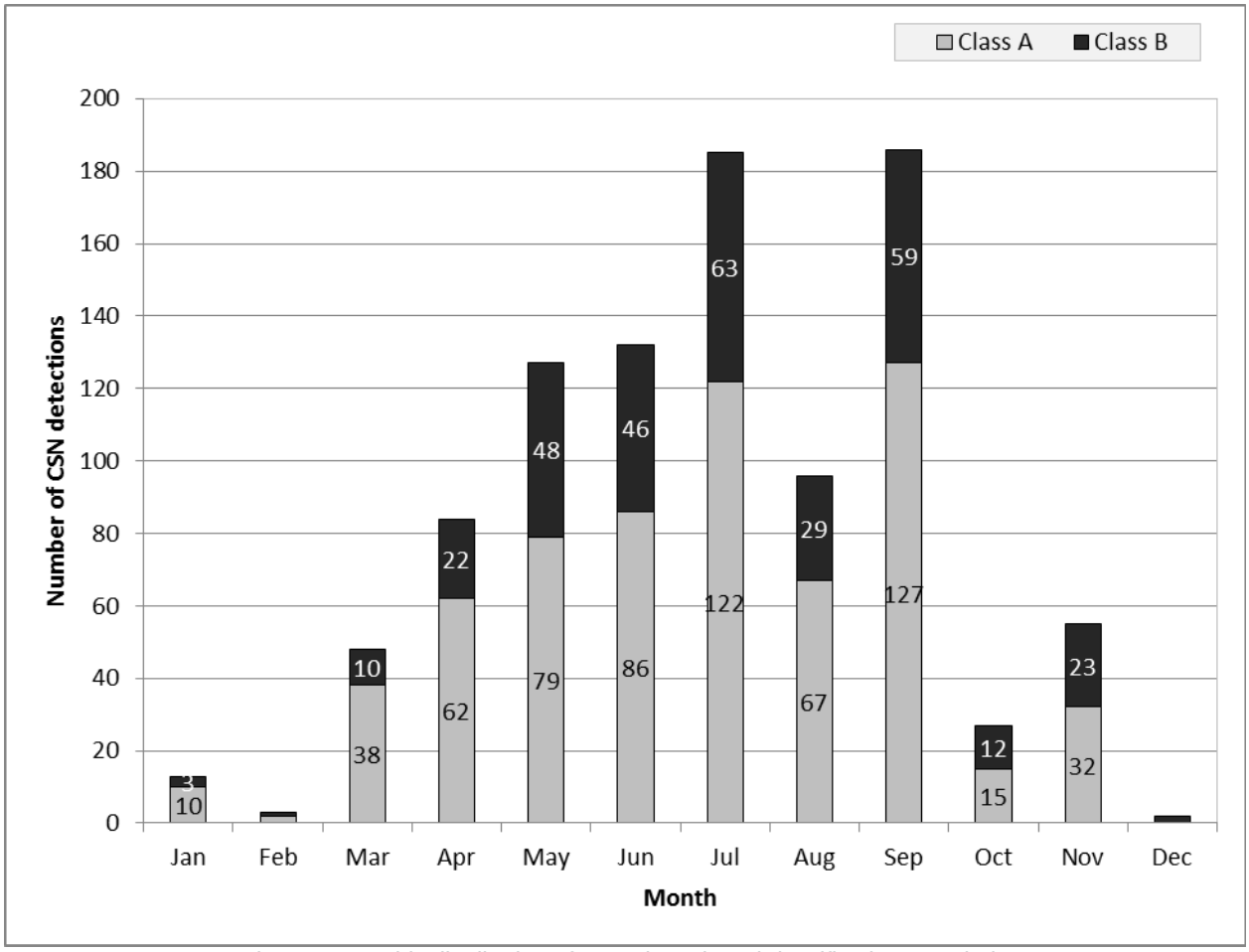


Figure 2. Monthly distribution of CSN detections (Classification A and B).

[9] Classification A - Detected spill is most probably oil (mineral, vegetable/fish oil) or a chemical.
[10] Classification B - Detected spill is less probably oil (mineral/vegetable/fish oil) or a chemical.

Verification activities

During the reporting period, out of the 958 detections, 309 (32%) were checked of which 43 (14%) were confirmed as being “mineral oil”, 54 (17%) were reported as “other substance”, 24 (8%) as “natural phenomena”, and 31 (10%) as “unknown feature”. Figure 3, shows the monthly distribution of CSN checked detections and verification results.

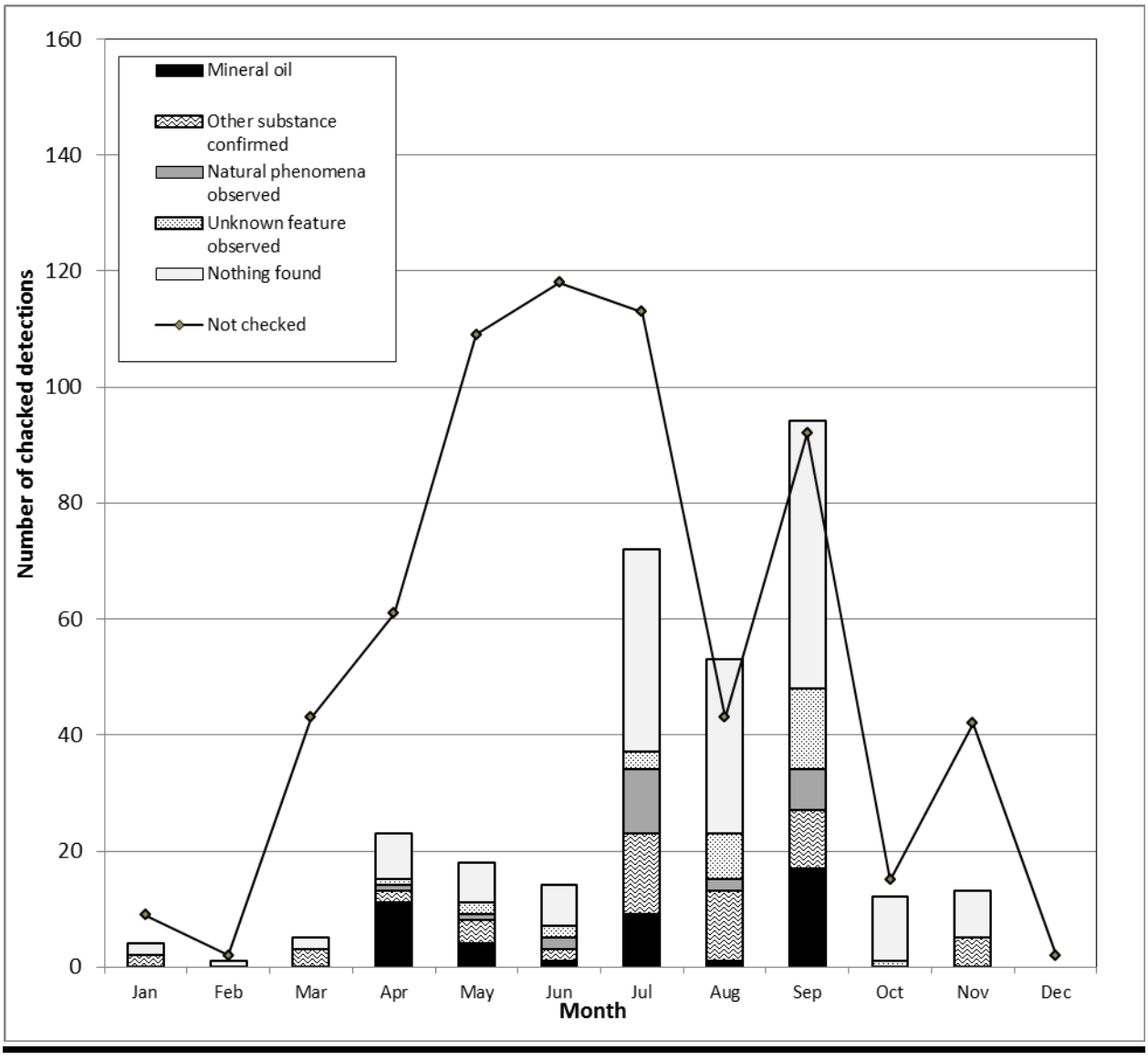


Figure 3. Monthly distribution of checked detections and verification results.
(Source: Feedback provided by Member States and stored in the CleanSeaNet database)

Table 1, presents the annual distribution of checked detections and verification results per country.

It should be noted that, in this table, CleanSeaNet detections are distributed between countries using national areas communicated to EMSA by the Bonn Agreement secretariat. The centre position of the spill is used to decide in which country's area CleanSeaNet detections shall fall.

It should also be noted that alert areas defined by each country are very often different of national areas used in this report. This could for example be due to the operational need to be alerted before a spill could affect national waters.

In addition, an alert is generated each time a spill contour polygon intersects an alert area. Therefore the number of detections per country in this report and the number of CleanSeaNet oil spill notifications alerts for the same country are different.

Table 1. CSN checked detections and verification results per country.

	Verified satellite detections						
Country waters	Satellite detections	Confirmed mineral oil	other substance	Natural phenomena	Unknown feature	Nothing found	Not checked or no feedback
Belgium	1						1
Denmark	157	10	9	5	9	36	88
France	12			1	3	2	6
Germany	72		16	15	11	23	7
Ireland	11	2					9
Netherlands	101	3	15	2	5	13	63
Norway	142	4	11		1	8	118
Sweden	5		1			2	2
United Kingdom	457	24	2	1	2	73	355
Total	**958**	**43**	**54**	**24**	**31**	**157**	**649**

Finally, Figure 4 shows the spatial distribution of CSN detections and verification activities carried out by the Coastal States in the Bonn Agreement area.

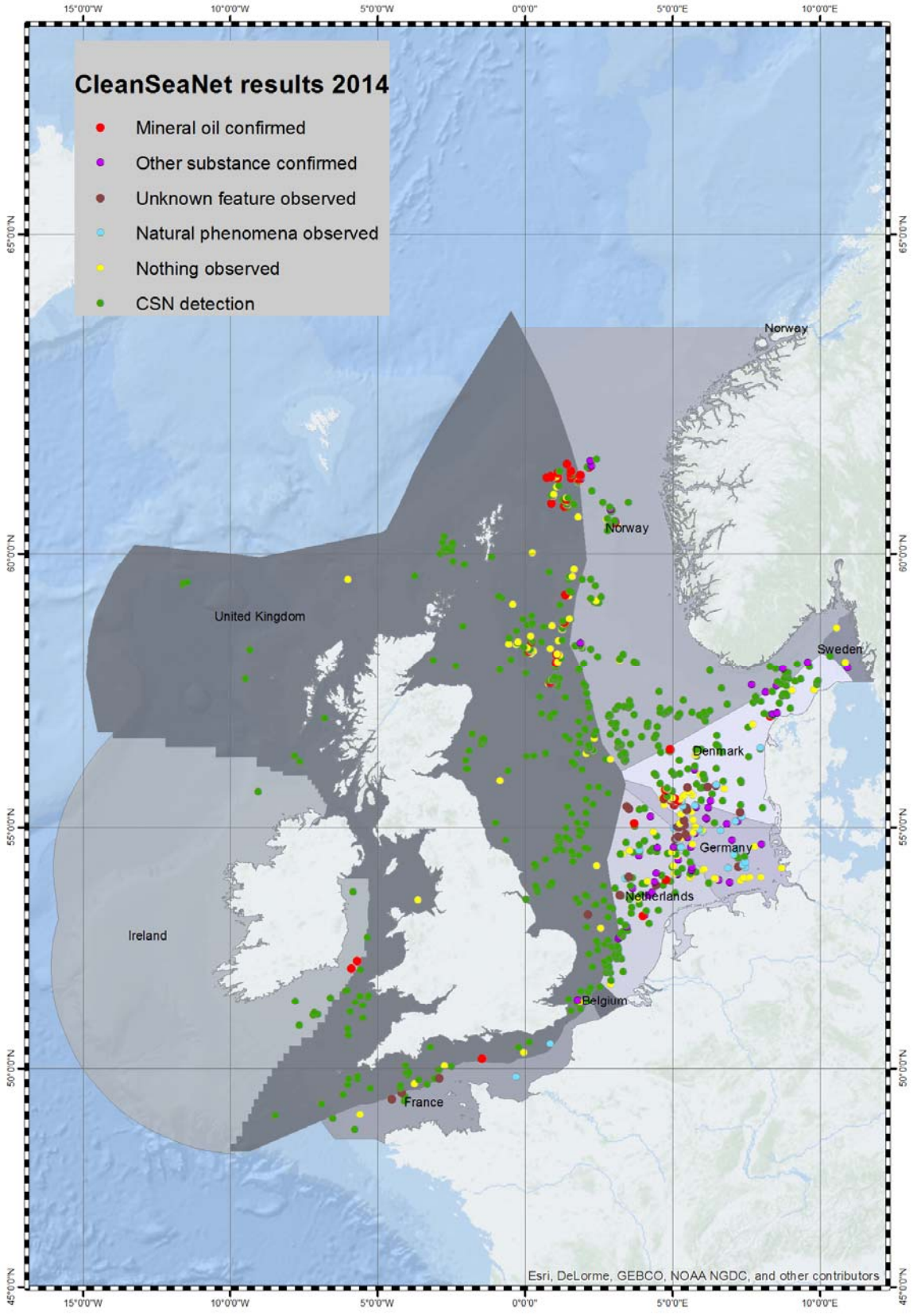


Figure 4. Spatial distribution of CSN detections and verification activities carried out by the Coastal States in the Bonn Agreement region for 2014.