OSPAR COMMISSION

OSPAR annual report on dumping of wastes or other matter at sea in 2013

Biodiversity Series

2015

OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention”) was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Community and Spain.

Convention OSPAR

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l’Irlande, l’Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d’Irlande du Nord, la Suède et la Suisse et approuvée par la Communauté européenne et l’Espagne.

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OSPAR Annual Report on Dumping and Placement[1] of Wastes or Other Matter at Sea in 2013

Executive summary

Background: EIHA 2014 adopted a new reporting format for the deposit at sea of dredged material. The new format (Agreement 2014-07) came into operation in 2014 in order to simplify the compilation of the annual data and improve the quality of assessments. It also agreed that an interpretive section to the annual report was to be developed. The revised Annual Report would aim to provide, when sufficient data became available, an overview of:

- the quantities of clean material deposited at sea (per country, per sea area or overall);
- the quantities of contaminated material deposited at sea (per country, per sea area or overall);
- the quantities of material reused beneficially;
- comparisons to earlier years (per country, per sea area or overall).

Reports received: reports were received from Belgium (BE), Denmark (DK), France (FR), Germany (DE), Iceland (IS), Ireland (IE), The Netherlands (NL), Norway (NO), Portugal (PT), Sweden (SE), Spain (SP) and Great Britain (UK).

Indications from data:

Reports indicate that the **total amount of material dredged** and dumped or placed at sea in the whole OSPAR region appears to be broadly in line with data reported from the previous five years.

Contaminant loads appear to be on a gradual decline since 2010. This apparent trend will be investigated in more detail when data on average concentrations become available.

The amount of material containing one or more determinands **exceeding the national action level** accounts for less than 4% of the total amount of dredged material dumped or placed at sea.

The amount of material **used beneficially**, at roughly 28 million tonnes, is equivalent to approximately one fifth of the amount dumped or placed.

Despite complications in the initial use of the new reporting format, some valuable data have been acquired through the new format and some deficiencies have been highlighted for future inclusion.

Raw data are not included in this report but can be found on the OSPAR website data page at www.ospar.org

[1]Placement in this report only relates to dredged material, i.e. placement of dredged material for beneficial uses.

1. Introduction

In 1986 OSPAR introduced guidelines relating to the dumping of wastes or other matter, e.g. dredged material, sewage sludge and fish waste. The use of these guidelines, together with existing OSPAR measures, has enabled reductions of contaminant load to the marine environment. The dumping of sewage sludge was phased out in 1998. The guidelines on dumping of fish-waste were updated in 2010, while the guidelines for management of dredged material were most recently updated in 2014.

In general, dumping or placement of dredged material is managed by licences from national and local authorities. Many OSPAR Contracting Parties also have regulatory controls on contaminant levels in dredged material. According to the OSPAR Dredged Material Guidelines (OSPAR, 2014), measures to keep the volume of dredged material to a minimum are regarded as Best Environmental Practice for minimising the effects on the environment.

Most OSPAR countries have developed sediment quality criteria (i.e. action levels) or equivalent measures for the assessment of dredged material for dumping or placement at sea.

This report, while giving mention to other wastes, is primarily focussed on the dumping and placement at sea of dredged material.

2. Data

Raw data are not included in this report but can be found on the OSPAR website data page at www.ospar.org

2.1 Quantities of dredged material and other wastes dumped or placed at sea in the OSPAR Region in 2013

Table 1 below summarises the quantities of dredged material, inert material, fish-waste and other waste dumped or placed at sea by Contracting Parties in 2013.

Table 1. Summary of dredged material and other wastes reported as dumped or placed at sea by Contracting Parties in 2013

Year	Contracting Party	Category	Dredged material (tonnes - dry weight)
2013	BE	Dredged material	27 194 846
2013	DE	Dredged material	25 281 700
2013	DK	Dredged material	2 849 028
2013	FR	Dredged material	24 738 123
2013	IE	Dredged material	348 999
2013	IS	Dredged material	230 046
2013	IS	Inert material	40 138

Year	Contracting Party	Category	Dredged material (tonnes - dry weight)
2013	NL	Dredged material	40 246 482
2013	NO	Dredged material	103 722[2]
2013	NO	Inert material	182 800
2013	PT	Dredged material	3 763 614
2013	SE	Dredged material	593 400
2013	SP	Dredged material	1 955 525
2013	UK	Dredged material	12 907 803
2013	UK	Fish waste	1 179
2013	UK	Other (Seaweed)	2 120

The amounts of fish waste, inert material and other waste contribute less than 1% of the total amounts.

The amount of dredged material reported to be dumped or placed at sea in the OSPAR region is broadly in line with data reported from the previous five years. This tendency appears to apply on both an OSPAR-wide basis as well as generally on a national basis (see Table 2 and Figure 1 below).

Table 2. Total quantities of dredged material (millions of tonnes) reported as dumped or placed in the OSPAR region from 2009-2013.

2013	2012	2011	2010	2009
140	152	142	149	140

[2] Wet weight. No moisture content available.

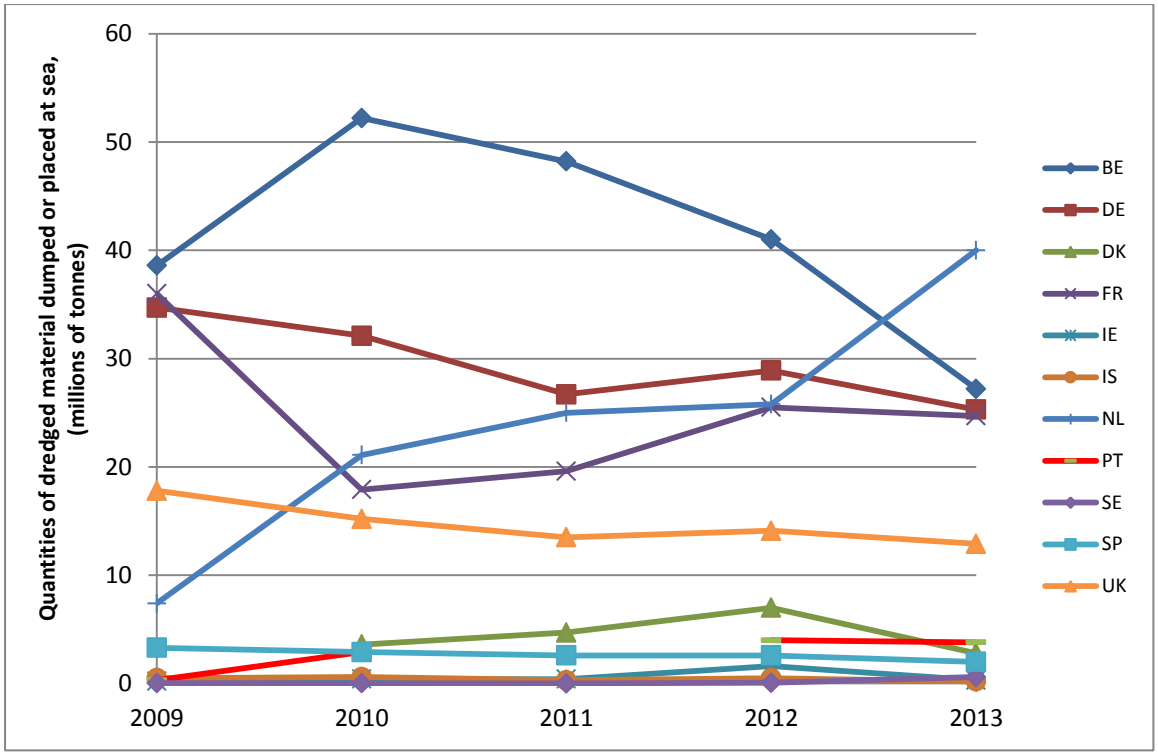


***Figure 1**. Quantities of dredged material reported as dumped or placed at sea in the OSPAR region, 2009 to 2013, by Contacting Parties.*

2.2 Contaminant loads

Table 3 (below) gives a limited summary of contaminant loads for the Contracting Parties in 2013[3]. While metals and TBT are determined by most countries in all samples, the organic parameters are less frequently determined.[4] The data reported for the organic components are included below but using these data as trend indicators is likely to lead to unreliable assessments.

Table 3. Contaminant load dumped or placed at sea per Contracting Party.

Contracting Party	BE	DE	DK	FR	IE	NL	SE	SP	UK
Cd (tonnes dry wt)	20,05	4,00	0,59	4,77	0,10	16,6	0,27	0,73	9,44
Hg (tonnes dry wt)	4,44	2,59	0,02	2,55	0,01	6,20	0,05	0,52	4,95
As (tonnes dry wt)	387,97	126	11,48	237	2,73	452	9,68	6,15	290
Cr (tonnes dry wt)	1253,00	390	11,27	646	8,59	1233	15,5	19,3	679
Cu (tonnes dry wt)	394,80	191	10,92	302	3,59	568	18,8	17,3	558
Pb (tonnes dry wt)	822,41	294	20,92	528	6,13	1028	18,7	27,5	852
Ni (tonnes dry wt)	348,21	181	11,76	335	5,36	520	8,75	11,0	584
Zn (tonnes dry wt)	2701,42	1359	66,05	1794	28,6	3605	96,3	79,2	2273
Oil (tonnes dry wt)	3385,34	499,79	ND	ND	0,06	4544	ND	ND	ND

[3] No data on contaminant loads were received from Iceland, Norway or Portugal.
[4] Spain will report on TBT from 2014.

Contracting Party	BE	DE	DK	FR	IE	NL	SE	SP	UK
ΣPAH9 (tonnes dry wt)	296,27	6,36	4,09	6,28	1,36	23,1	0.08[5]	0,34	*
ΣPAH16 (tonnes dry wt)	18,52	7,65	NI	8,64	2,01	ND	0,06[3]	NI	*
ΣPCB7 (kg dry wt)	218,66	64,6	0,34[3]	127	0,12	311	0,06	10,8	*
HCB (kg dry wt)	0,69	14,8	ND	NI	0,09	26,9	ND	NI	*
g-HCH (kg dry wt)	1,01	1,0	ND	NI	0,11	12,5	ND	NI	*
S DDT (kg dry wt)	41,46	52,1	ND	<DL[6]	0,13	301	ND	NI	*
TBT (kg dry wt)	205,60	159	2,17	31,4	1,25	169	4,59	NI	*
DBT (kg dry wt)	333,34	47,6	ND	25,6	1,32	ND	3,24	NI	*
p,p'-DDT (kg dry wt)	20,05	5,35	NI	NI	NI	NI	NI	NI	*
p,p'-DDE (kg dry wt)	4,44	9,45	NI	NI	NI	NI	NI	NI	*
p,p'-DDD (kg dry wt)	387,97	24,1	NI	NI	NI	NI	NI	NI	*

NI – no information

ND – not detected

DL – limit of detection

Data undergoing further checking highlighted in grey

* These data will be added to future report revisions following recheck.

In some cases, quantities seem to be at odds with themselves, e.g. Σ9 PAH > Σ 16 PAH. This may possibly be attributed to the fact that the Σ9PAH were calculated based on data from more sites, and therefore seeming to be greater loads.

Comparisons with previous years, shown below in Figure 2, indicate a slight decrease in contaminant loads for all metals, since 2010. It should be noted, however, that these comparisons are associated with a large uncertainty due to the lack of harmonisation for calculation. Furthermore, one has to bear in mind that dredged sediments also drift – partly - back to dredging areas and will be dredged again. This leads to higher calculated loads than in reality.

[5] Based on measurements from one site

[6] Based on measurements in 25% of operations

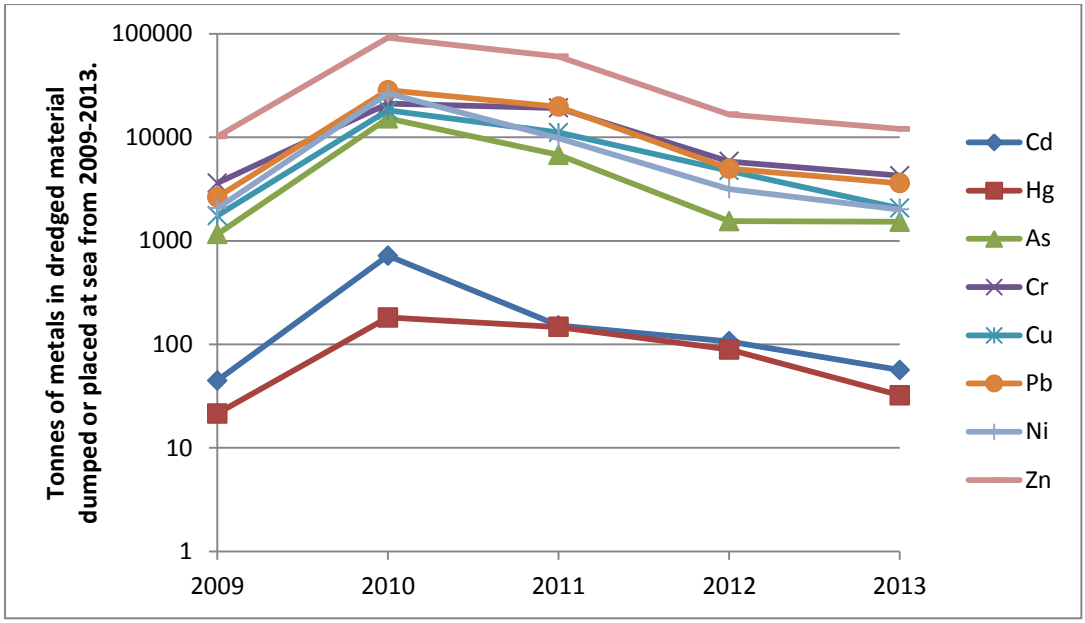


***Figure 2**. Total heavy metal loads from 2009 to 2013, per Contracting Party,*

2.3 Dumping or placement of dredged material exceeding upper action levels

Dredged material with one or more determinands exceeding national upper action levels was dumped or placed at seven sites. The amount of material involved was of 4 830 511 tonnes.

Dumping or placement of the material for five of the sites was allowed on the basis that while the contaminant concentrations of one or more organic determinand(s) exceeded the upper action levels, it was considered that no contaminants were added to the estuaries concerned. Sediments were dredged and relocated within relative short distance. A considerable amount of dredged material dumped or placed is returned to the dredging site by the currents, and therefore the same material is often dredged and dumped or placed repeatedly.

In the case of the other two sites, the material was allowed to be deposited as the average concentration of contaminants in the sediments did not exceed the national lower action level.

3. Locations of sites used for dumping or placement in 2013

Figure 3 demonstrates the number and location of sites at which dredged material was dumped or placed in 2013. It can be seen that the sites are distributed, unevenly, along the entire OSPAR coastal area but are mostly located within the WFD transition and coastal waters; few sites are located at a distance from shore of > 10 NM. Larger scale maps can be found in Annex 2.

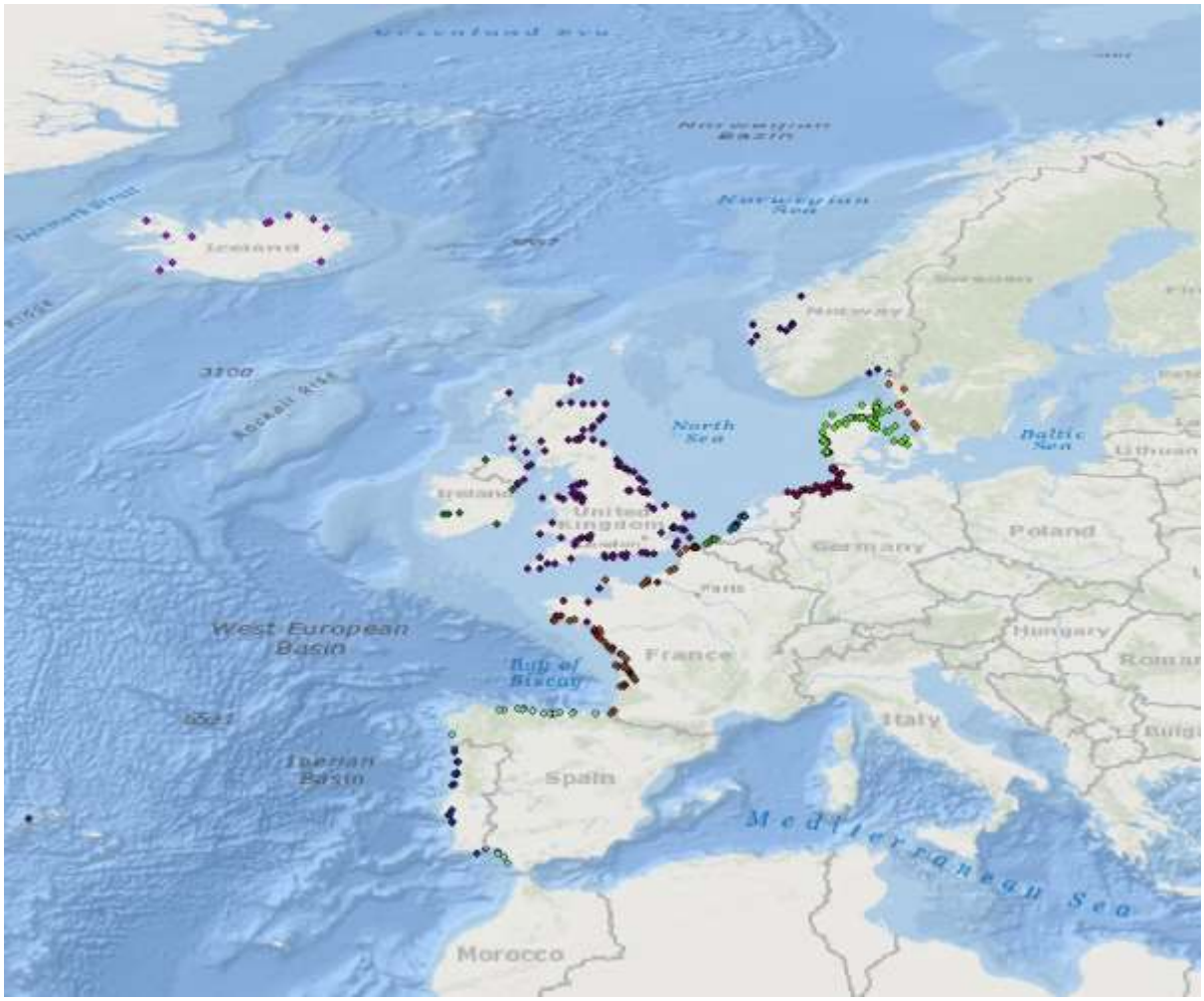


Figure 3. *Locations of sites used in 2013 for the dumping or placement of dredged material and other wastes in the OSPAR Region. Each site is represented by a point, not by its spatial extent (polygon). Larger scale maps can be found in Annex 2.*

4. Comments on the data

As expected, there were some teething difficulties encountered with the initial use of the new reporting format. Despite these issues, some valuable data have been acquired through the new format and some deficiencies have been highlighted for revision.

Data from 2013 on dumping or placement at sea of dredged material and other wastes indicate similar quantities and contaminant loads to previous years; however it needs to be noted that that lack of harmonisation of methods for calculation may be leading to erroneous results.

The type of dredging technique employed may complicate data analyses and subsequent interpretation. In addition, many external activities influence the amount of material dredged such as natural conditions (e.g. storms and floods), management strategies for the handling of dredged material, repeated dredging of the same material (recycling of dredged material) and infrequent capital dredging.

Comparisons with previous years, shown in Figure 2, indicate a slight decrease in contaminant loads for all metals, since 2010. It should be noted, however, that these comparisons are associated with large uncertainty (as addressed above). While metals and TBT are routinely determined by almost all countries in all samples, the organic parameters are less frequently determined.[7] This has led to greater anomalies in loads, and in difficulty drawing robust conclusions from those data.

Quantifying and describing material with one or more determinands exceeding upper action levels is an unreliable measure of potential impact as action levels differ for Contracting Parties.

This is the first year that data were gathered on the amounts of material used beneficially and thus comparisons were not possible.

5. Recommendations for future inclusion

For more accurate data analysis and comparisons, there is a need to include average concentration of contaminants in the material from the next reporting cycle. This will enable more reliable trend analysis. Moreover, these data may be used in the relevant MSFD descriptor assessment.

While Figure 3 highlighted the positions of sites in the OSPAR region where dumping or placement has taken place, it is intended in future to form an overview of the actual areas of the sites. It is also hoped that in time, the area of impact can be calculated and included in the report, and in the relevant MSFD assessment.

The quality of the data in the Annual Report on Dumping or Placement of Wastes or Other Matter at Sea can be improved by the application of harmonised calculation methods and harmonised approaches with regard to analytical issues e.g. on how to incorporate results below limits of detection.

The quality of future assessments could be improved by harmonising to a greater extent the suite of determinands to be routinely analysed, for example, organic contaminants.

Contracting Parties which are not currently reporting on contaminant loads will be encouraged, and assisted if required, to provide such data in future. In order to achieve a more comprehensive assessment, Contracting Parties could consider routine analyses of organic contaminants in dredged material.

Revisions based on experiences of Contracting Parties with the reporting format are expected to lead to improvements in the system for future years, and subsequently should enable a more comprehensive and reliable Annual Report.

[7] Spain will report on TBT from 2014.

6. References

OSPAR Agreement 1998/21: OSPAR Guidelines for the dumping of fish waste from land-based industrial fish processing operations. (Updated in 2010)

OSPAR 2011, Annual OSPAR report on dumping of wastes or other matter at sea in 2009, OSPAR Commission, Publication number 545/2011, ISBN no. 978-1-907390-86-9.

OSPAR 2012, Annual OSPAR report on dumping of wastes or other matter at sea in 2010, OSPAR Commission, Publication number 572/2012, ISBN no. 978-1-909159-06-8.

OSPAR 2013, Annual OSPAR report on dumping of wastes or other matter at sea in 2011, OSPAR Commission, Publication number 607/2013, ISBN no. 978-1-909159-40-2.

OSPAR 2014, Annual OSPAR report on dumping of wastes or other matter at sea in 2012, OSPAR Commission, Publication number 625/2014, ISBN no. 978-1-909159-58-7.

OSPAR, Agreement 2014-06: Guidelines for the Management of Dredged Material at Sea (as amended).

OSPAR, Agreement 2014-07: Explanatory notes – 2014 Reporting Format for the Deposit at Sea of Dredged Material

ANNEX 1

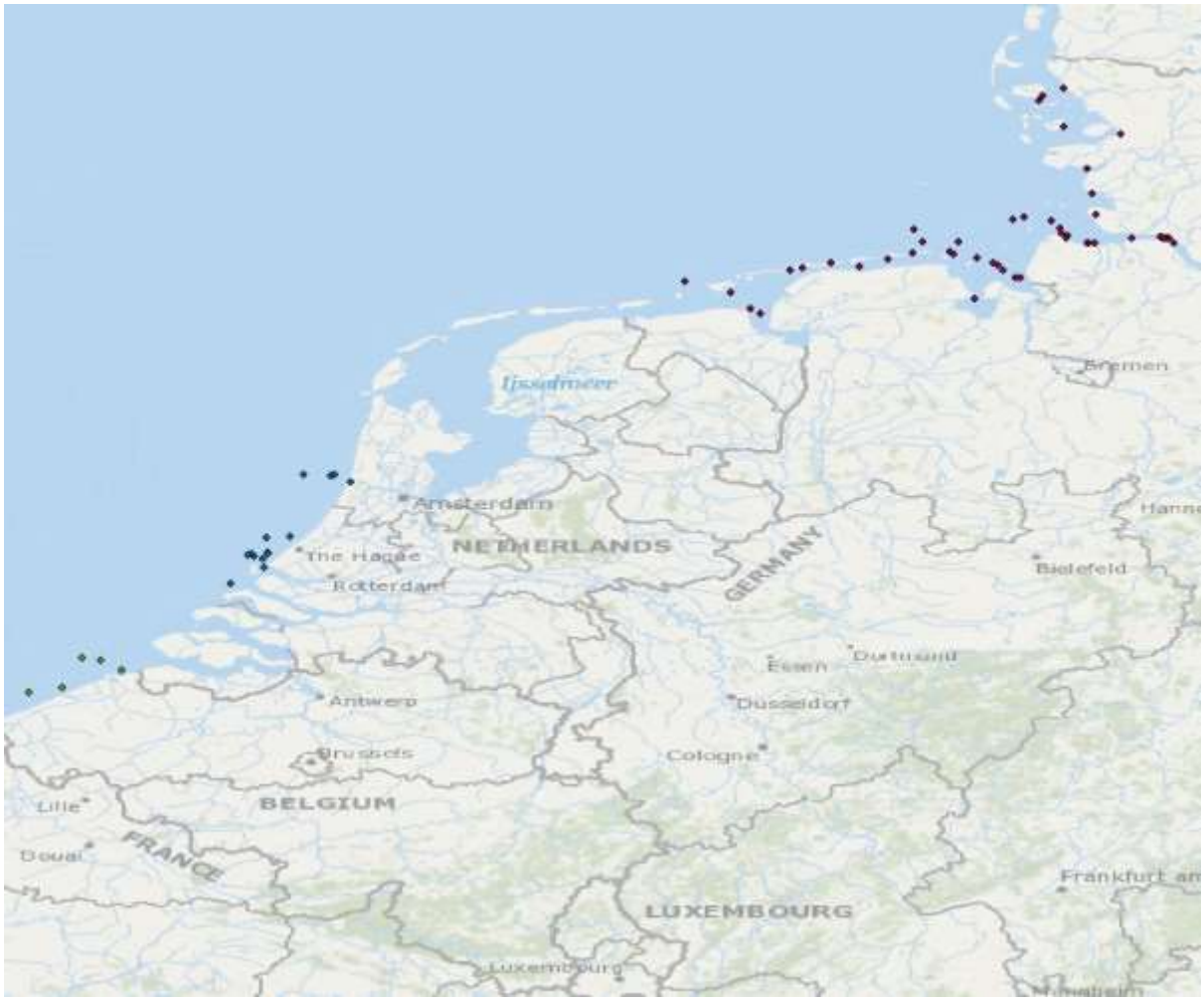
Amounts of dredged material dumped or placed at sea by OSPAR Contracting Countries from 2009 to 2013, in millions of tonnes.

	2013	2012	2011	2010	2009
BE	27,2	41	48,2	52,2	38,6
DE	25,3	28,9	26,7	32,1	34,7
DK	2,8	7	4,7	3,6	
FR	24,7	25,5	19,6	17,9	36
IE	0,3	1,6	0,4	0,4	0,2
IS	0,2	0,5	0,3	0,6	0,5
NL	40	25,8	25	21,1	7,4
NO	0,1	0,5	0,9	0,08	0,8
PT	3,8	4		2,9	0,3
SE	0,6	0,06	0,01	0,02	0,04
SP	2	2,6	2,6	2,9	3,3
UK	12,9	14,1	13,5	15,2	17,8
Total	140	152	142	149	140

ANNEX 2

Sites used by Spain and Portugal (excluding one in the Azores) for dumping or placement of dredged material.

Sites used by France for dumping or placement of dredged material.



Sites used by Belgium, Netherlands and Germany for dumping or placement of dredged material

Sites used by Denmark, Sweden and Norway for dumping or placement of dredged material Denmark, Sweden and Norway.

Sites used by Iceland, Ireland and UK for dumping or placement of dredged material.

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