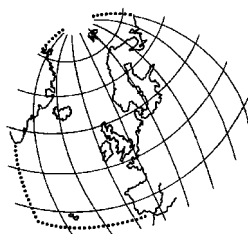


Dumping of Wastes at Sea in 2001 and 2002



**OSPAR Commission
2004**

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.

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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Assessment of the Annual OSPAR Reports on Dumping of Wastes at Sea in 2001 and 2002

Executive Summary

The assessments of the 2001 and 2002 OSPAR Reports on Dumping of Wastes at Sea aim to identify issues of concern and trends related to reported amounts of dredged material dumped and the associated contaminant loads.

Examination of trends in the amounts dumped and in the associated contaminant loads would have been useful in order to assess the effectiveness of measures. This has been difficult mainly due to the incompleteness of the data, especially with regard to data on contaminant loads. The methods of analysis of trace metals differ, resulting in lack of comparability of the data and in uncertainties about the total load of trace metals. As regard organic contaminants, the methods of analysis should have given comparable results, had the data been more complete. It is not known if the lack of reporting is due to exemptions from the analyses according to the OSPAR Dredged Material Guidelines.

The reports show that several types of wastes are dumped (dredged material, inert material, fish waste and vessels/aircraft), but more than 99% of the overall amount licensed for disposal at sea was dredged material. Contracting Parties have different licensing procedures; some issuing few permits for large amounts of dredged material and others issuing many permits for relatively small amounts (Table 1).

The total amount of dredged material disposed of at sea in 2001 and 2002 (including an estimated contribution by France for 2002) is within the same range as in previous years (approximately 100 – 110 million tonnes dry weight). The amounts of material to be dredged are strongly influenced by natural conditions, the dumping strategy, and capital dredging activities. The total amounts of material disposed of varied significantly from 1995 to 2002, however no trend could be observed. Variations in national amounts disposed of at sea are often more distinct (see Figure 1a and 1b). For most Contracting Parties the bulk of dredged material originated from maintenance dredging.

Since 1995 the total quantities of dredged material from estuaries and sea channels exceed those from harbours, but the ratio between them varies between Contracting Parties (Tables IV, V, and VI).

Data were not sufficient to derive a trend in total contaminant loads. Particularly for organic contaminants and TBT there is a lack of information. The data reported by Contracting Parties for 2001 and 2002 only allow for assessments of the trace metal data. Patterns of loads of trace metals from harbour dredging and total trace metals loads are similar. An increase in trace metal loads since 1995 is observed for all dredged material sources, but is less apparent for harbour dredgings, except for the clear increase in As loads (Figure 2).

It should be kept in mind that total contaminant loads reported to OSPAR are considered to be much higher than the actual inputs to the OSPAR maritime area. At present there is no approach available for deriving actual contaminant inputs from dredged material disposal operations to the sea.

Récapitulatif

Les évaluations des rapports OSPAR 2001 et 2002 relatifs aux immersions de déchets en mer ont pour but de déterminer les points préoccupants et les tendances dans les quantités ayant été notifiées de matériaux de dragage immergés et dans les charges en contaminants qui y sont associées.

L'examen des tendances des quantités immergées et des charges correspondantes de contaminants aurait été utile à l'appréciation de l'efficacité des mesures. Cet examen s'est avéré difficile en raison, surtout, de l'absence d'exhaustivité des données, notamment des données des charges en contaminants. Les méthodes d'analyse des métaux traces diffèrent, ce qui aboutit à un manque de comparabilité des données et à des incertitudes quant à la charge totale en métaux traces. En ce qui concerne les contaminants organiques, les méthodes d'analyse auraient du donner des résultats comparables, ceci si les données avaient été plus complètes. L'on ne sait si l'absence de notification est due aux exemptions d'analyse prévues par les Lignes directrices OSPAR visant les matériaux de dragage.

Les rapports prouvent que plusieurs types de déchets sont immergés (matériaux de dragage, matériaux inertes, déchets de poisson et navires/aéronefs). Toutefois, plus de 99% de la quantité totale faisant l'objet de permis d'élimination en mer étaient constitués de matériaux de dragage. Les modalités d'octroi des permis diffèrent selon les Parties contractantes : certaines n'émettent que peu de permis valides pour de grandes quantités de matériau, tandis que d'autres délivrent de nombreux permis valides pour des quantités relativement faibles (Tableau 1).

La quantité totale de matériaux de dragage éliminés en mer en 2001 et en 2002 (y compris la contribution de la France en 2002, qui n'était qu'une estimation), se situe dans la même fourchette que les années précédentes (environ 100 à 110 millions de tonnes, poids à sec). Les quantités de matériau à draguer sont fortement influencées par les circonstances naturelles, par la stratégie d'immersion et par les dragages de grands travaux. Les quantités totales de matériau éliminé ont fluctué très sensiblement de 1995 à 2002, quoique aucune tendance n'ait pu être observée. Au plan national, les fluctuations des quantités éliminées en mer sont souvent plus distinctes (voir Figures 1a et 1b). Chez la plupart des Parties contractantes, le gros des matériaux de dragage provenait du dragage d'entretien.

Depuis 1995, les quantités totales de matériaux de dragage extraits des estuaires et des chenaux marins ont dépassé celles draguées dans les ports, bien que le ratio entre elles varie entre les Parties contractantes (Tableaux IV, V et VI).

Le volume de données s'est avéré insuffisant pour en tirer une tendance dans les charges totales en contaminants. Notamment, on manque de renseignements sur les contaminants organiques et sur le TBT. Les seules évaluations que les données communiquées par les Parties contractantes pour 2001 et 2002 sont celles des données des métaux traces. Les profils des charges en métaux traces provenant du dragage portuaire et ceux des charges totales en métaux traces sont analogues. Une augmentation des charges en métaux traces est observée depuis 1995 dans le cas de toutes les sources de matériaux de dragage, phénomène moins apparent dans le cas des dragages portuaires, excepté la claire augmentation des charges de As (Figure 2).

Il convient d'être conscients du fait que les charges totales en contaminants communiquées à OSPAR sont considérées comme beaucoup plus élevées que les apports réels à la zone maritime d'OSPAR. Pour l'heure, il n'existe pas de méthode qui permettrait de déduire les apports réels de contaminants des opérations d'élimination de matériaux de dragage en mer.

Introduction

Assessments of the OSPAR Reports on Dumping of Wastes at Sea aim to identify issues of concern related to data and information reported by Contracting Parties. They also should examine whether requirements of the OSPAR Guidelines for the Management of Dredged Materials (OSPAR agreement reference number 1998-20) and of the reporting formats (OSPAR agreement reference number 1996-1 (now superseded) and 2002/1) are fulfilled. Furthermore, the assessment should examine, whether trends in the amounts of dredged material dumped and the associated contaminant loads can be established. Initially, the assessments were also intended to provide reliable data on contaminant inputs through dredged material to the OSPAR maritime area, however it was recognised that contaminant loads reported are much larger than the actual inputs.

All Contracting Parties (Contracting Parties), except Sweden provided data on amounts of wastes dumped at sea for 2001, and for 2002, information from France was outstanding. In the assessment reports of 1996-1997 and 1999-2000, dredged material dumped at sea by France amounted to about 20 % of the total quantity disposed of by all Contracting Parties, that dumped by Sweden amounted to about 2 % of the total quantity disposed of by all Contracting Parties. Therefore the lack of this information in 2002 will have a certain influence on the assessment of amounts disposed of (20 % of the total quantity is disposed of by France over the period 1996-2000).

Information provided on contaminant loads was often incomplete. In 2001 and 2002, 5 Contracting Parties provided complete data sets for trace metals, however only 1 complete data set was received for organic contaminants in both years. Seven Contracting Parties submitted organic contaminant loads only for part of the disposal sites or part of the contaminants in 2001 and 2002.

In 2001 Germany, Norway, Ireland, Spain, Portugal and the United Kingdom and in 2002 Germany, Norway, Iceland, the Netherlands, Sweden and the United Kingdom provided additional information requested in the reporting format. However, additional information on analytical methods was already available from the replies to the Questionnaire on Methods of Analysis of Sediments (SEABED 02/2/6). For trace metals analyses different methods are used, which may result in systematic differences in measured concentrations if, on the one hand, total (coarse-grained) samples are analysed, and on the other hand, total samples or fine fractions are analysed. This has resulted in a lack of comparability for trace metal data provided by different Contracting Parties, and consequently in a large uncertainty in total trace metal loads. In principle, methods applied for organic contaminants and organotin compounds should give comparable results, however the reported differences in detection limits may influence the estimation of loads, as concentrations of organic contaminants below detection limits are often reported. It is assumed that other factors, such as the amounts of dredged material disposed of, has had a greater impact on the contaminant loads than the methods of analysis. However, care should be taken in drawing conclusions from small changes in the data.

In order to assess the effectiveness of measures to reduce the quantities of dredged material as well as the associated contamination, it might be worth examining trends in the amounts dumped and contaminant loads over a period of several years. At present, only the amounts dumped from 1995 - 2002 are comparable and can be examined, as the reporting requirements changed from wet weight of dredged material to dry weight only in 1995. The data from the dumping reports in 2002 is far from being complete and therefore limits the comparison of the amount dumped. As mentioned above, it may be even more difficult to establish trends in contaminant loads of dredged material mainly due to incomplete data sets and to a smaller extent due to a lack of comparability of data provided by different Contracting Parties. Currently, only a rough comparison can be carried out.

Permits

Table I of the Annual OSPAR Reports on Dumping of Wastes at Sea summarises the numbers of permits issued and the tonnes licensed for the different types of wastes dumped. The amounts actually disposed of are summarised in Table II and Table III. Although several types of wastes are still dumped, most of the permits were issued for dredged material, as in previous years: About 95% of the permits and more than 99 % of the overall amount licensed for disposal at sea refer to dredged material. Disposal of 676 000 t of inert material consisting of fine sand and clay, was permitted by Portugal in 2001 and disposal of 72 500 t of inert material was permitted by Portugal 2002. Norway permitted disposal of 184 160 t of inert material in 2002. The number of vessels licensed for disposal by Norway was lower than in previous years: 8 and 3 licences were issued in 2001 and 2002, whereas in previous years 33 vessels (1999/2000) were dumped. Portugal permitted 2 vessels to be disposed of at sea in 2002. In 2001, the United Kingdom permitted 350 t of fish waste and in 2002, the United Kingdom and Ireland permitted 360 t of fish waste to be disposed of at sea.

As in previous years, a comparison of the permits and the amounts of dredged material licensed in 2001 and 2002 reflect the different licensing procedures of the Contracting Parties (Table I of this assessment). Some Contracting Parties issue few permits for large amounts of dredged material, e.g. Belgium and the Netherlands with 5 permits for more than 10 million t of dredged material, and at the other extreme, Norway issued more than 50 permits for about 600 000 t. In other Contracting Parties, a general permit (Iceland) or no formal permits are issued (Germany) or reported (Spain).

Specific reporting on dumping permits

Norway specifically reported on permits for the disposal of vessels in 2001 and Norway and Portugal reported on permits for the disposal of vessels in 2002. In 2001 and 2002, only Germany specifically reported on permits for dumping dredged material. In 2001 and 2002, Germany allowed disposal of dredged material with HCB contaminant concentrations exceeding level 2 of 6 µg/kg and in 2002 additionally with p,p'-DDE concentrations exceeding level 2 of 3 µg/kg, in order to maintain navigation and safety. Disposal was allowed as no contaminants were added to the system, and sediments were dredged and relocated within the same water body. However, it should be kept in mind, that at present not all Contracting Parties report on or issue permits. With the adoption of the new reporting format, operations regulated by other means than licences should also be reported, and possibly, more information will be provided in future. Specific reporting may also be incomplete, since not all Contracting Parties have established national action levels yet.

Amounts of dredged material dumped

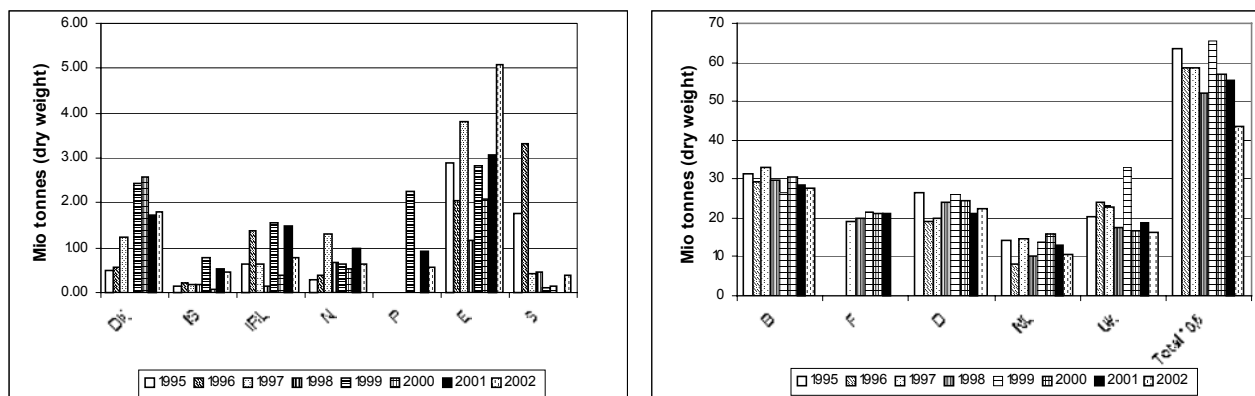
As disposal of dredged material may have physical impacts on the marine environment, total amounts of material disposed of are included in the assessment (Tables II and III). As in previous years, about 90 % of the dredged material reported to OSPAR in 2001 was dumped by only 5 Contracting Parties (Belgium, France, Germany, The Netherlands, UK). France did not report any data for 2002, but on average the amount reported in former years also contributes about 20% of the total amounts of dredged material disposed of in the OSPAR area. The Annual OSPAR Reports on Dumping of Wastes at Sea for 2002 is not complete, but assuming that the contribution of France will be in the same range as in previous years, the total amounts reported in 2001 and 2002 are within the same range as in previous years.

As the amounts of material to be dredged are strongly influenced by natural conditions, the dumping strategy, and capital dredging activities, trends in the amounts dumped may be difficult to observe. The overall amounts of material disposed of vary significantly from 1995 - 2002, however no trend in the overall amounts can be observed.

Variations in national amounts dumped are often more distinct (Fig. 1 a and b). In the UK, quantities disposed of increased from about 20 million t dredged material from 1995 – 1998 to 32 million t in 1999, and decreased to about 19 million t in 2001 and 16 million t in 2002. This peak in 1999 is mainly caused by one large capital dredging operation with about 17 million t dredged material. Also in Germany, capital dredging in the Elbe estuary caused quantities disposed of to decrease from about 25 million t dredged material in 1999/2000 to about 21 million t in 2001 and 2002. For Belgium, data indicate a decrease of about 25 % from 1995 to 2002. In the Netherlands, variations of the amount of material dredged are possibly due to various amounts of dredged material from Rotterdam Harbour. Whereas quantities disposed of in Sweden decreased significantly from 1995/1996 to 1999/2000 by about a factor 20, in Denmark an increase by a factor 4 from 1995/1996 to 2001 can be found.

For most Contracting Parties, the bulk of dredged material originates from maintenance dredging. In 2001/2002, appreciable amounts of material from capital dredging, i.e. more than 10% of the reported total amounts per Contracting Party, were reported by Iceland, Ireland, Spain and the UK in 2001, and in addition, in 2002 by Belgium, United Kingdom and Iceland. In Iceland, all the material came from capital dredging, whereas in Denmark, France, Germany, the Netherlands and Norway no or only very small amounts originate from capital dredging. For the UK, the proportion of capital dredging is difficult to estimate, as both capital and maintenance dredging is often indicated without giving the ratio of the respective amounts. The amounts of capital dredged material show a peak in the years 1999/2000 caused by high amounts of capital dredged material from Belgium, Germany, Spain and the UK.

Fig. 1a and 1b: National and total amounts of dredged material disposed of from 1995 to 2002



In order to have one y-axis for all loads, the total amount of dredged material for all Contracting Parties was multiplied by a factor of 0,5.

In addition, a separate evaluation of the amounts dredged in harbours on the one hand and in estuaries/sea channels on the other hand has been carried out (cf. Tables IV and V). Contracting Parties often indicated more than one type of area dredged per dumping operation, but usually the reports did not include information on the percentages of dredged material associated with the respective types. When both harbours and estuaries/sea channels are indicated as origin of the dredged material without the respective percentages, usually 50% was attributed to harbours and 50% to estuaries/sea channels. These amounts assigned to harbours and to estuaries/sea channels have large uncertainties.

Similarly as from 1995 to 2000, the quantities of dredged material from estuaries or sea exceeded those from harbours significantly in 2001 and 2002, and the ratio of material from harbours to that from estuaries/channels is quite constant. However, compared to the years before 1994, the relative amount of dredged material from estuaries/sea channels has increased.

Although the total quantities of dredged amounts for all Contracting Parties from estuaries/sea channels exceeded those of harbours, the distribution is quite different for Contracting Parties. The bulk of dredged material in Belgium, Portugal and to a minor extent in Denmark and Germany originates from estuaries and sea channels, whereas Iceland, the Netherlands and Norway only reported on dredged material from harbours. This distribution was quite constant over the last 8 years. For most of the other Contracting Parties, larger amounts of material came from harbours than from estuaries/sea channels. In 2001/2002 for most Contracting Parties the ratios of dredged material from harbours to that of estuaries/sea channels were similar as in previous years. However, in Germany this ratio decreased significantly from about 14 in 1997/1998 to 2,2 in 2001/2002. This may be due to differences in classifying harbour and estuarine dredgings.

As already observed in previous years, the number of dumping sites compared to the amounts dumped differs strongly for the Contracting Parties (cf. Table I). Belgium, Germany and the Netherlands disposed of much larger quantities of dredged material per disposal site (e.g. in 2001: 15, 30, 22 and 8 dumping sites for about 29 Mt, 10 Mt and 13 Mt of dredged material), whereas the ratio of the amount of dredged material to the number of dumping sites was considerably smaller in other Contracting Parties. In 2001, Iceland and Denmark e.g., disposed of about 0,5 Mt and 1,7 Mt dredged material at 15 and 30 dumping sites, respectively. This indicates that some of the dumping sites receive much higher amounts of dredged material than others. However, the dumping reports do not include information on the size of disposal sites, and these may differ. Evaluation of the impacts on the seabed, depending on the disposal of different amounts of dredged material per dumping site and taking into account its size, should be considered if possible. This information might be available from reports on monitoring dumping sites.

Total contaminant loads

In 2001, 5 Contracting Parties provided complete data sets on trace metal loads for all dumping sites, and 4 further Contracting Parties submitted data only for part of the dumping sites. No or only a few data are available from Norway and Denmark. In 2001 and 2002, Portugal reported all data on trace metal loads as smaller as certain values (e.g. < 450 tonnes). In 2002, 5 Contracting Parties provided complete data sets on trace metal loads, and Norway submitted data only for part of the dumping sites as well as only for a few trace metals. For most dumping sites without data for contaminant loads, there was no information whether

the dredged material was exempted from analyses according to the OSPAR Dredged Material Guidelines or whether required data were not reported. This information would support data assessment, as contaminant loads of material exempted from analyses are negligible in contrast to contaminant loads of material that might be contaminated to varying degrees.

Nevertheless, trace metal data are considered to be sufficient for an assessment. However, it should be kept in mind that due to incomplete reporting and to differences in the analytical approaches, as mentioned in § 4, comparison of national total trace metal loads between Contracting Parties might be associated with large uncertainty. Therefore, the overall total trace metal load for all Contracting Parties can only be regarded as a rough estimate, to have an indication of the order of magnitude of loads.

For organic contaminants and TBT, no proper assessment can be carried out, as both in 2001 and 2002, only little information on these contaminants is available from the Contracting Parties. Contracting Parties often only reported on few organic contaminants and/or on selected dumping sites. As the Dredged Material Guidelines, which introduced the requirement of analyses of organic contaminants, came into force only in June 1998, a more complete reporting on these compounds should be expected in future.

National total contaminant loads associated with dredged material are summarised in Tables II and III. Loads, which could not be estimated reliably due to a lack of data are identified with brackets and italic letters.

Trace metal loads

For most Contracting Parties, national trace metal loads reported for 2001 and 2002 are quite similar.

Comparison between the current data from 2001/2002 with national loads reported for 1999 and 2000 showed a few considerable differences:

- For a few trace metals, loads reported by Belgium in 2001 and 2002 seem to be up to a factor 2 higher than those reported for the years 1998 - 2000. However, it should be taken in account that from 1998 - 2000, no information on loads for internal dumping sites has been submitted. Dredged material disposed of at these sites amounts to about 50% of the total quantities dumped.
- In Germany, trace metal loads reported for 2001 and 2002 are comparable to those reported in 1999 and 2000.
- In the Netherlands, the trace metal loads reported for 2001 and 2002 are comparable to those reported in 1999 and 2000.
- In the UK reported trace metal loads are comparable to those reported in 1999 and 2000, except for the reported Hg loads in 2002, which show a sharp increase at one particular deposit site.

A comparison of the sums of the national total loads from 1995 to 2002 shows some variability, both for the total loads, as well as for specific total loads, i.e. total loads per e.g. 1 million tonnes (Fig. 2a). Although quantities of dredged material disposed of are lower in 2001 and 2002, total loads of most metals are comparable to 1999/2000, except for Hg loads in 2002, which show a steep increase. This is caused by the high Hg load at one particular deposit site in the UK in 2002. This also applies to the specific loads, where the individual trace metals behave differently. The specific loads seem to be comparable to previous years, except for Hg in 2002.

Data are not considered to be sufficient to derive a trend, especially bearing in mind that contaminant loads reported were often incomplete and are associated with large uncertainties. Furthermore, data were lacking for most Contracting Parties in 2002.

Contaminant Loads from Harbour Dredgings

As total contaminant loads may be influenced strongly by varying amounts of dredged material from areas with a different degree of contamination, trends probably can be established only if long time series are available. In addition, trends in total contaminant loads of dredged material are not regarded as appropriate means to assess the effectiveness of measures for the reduction of contaminant inputs, as these loads include natural background contamination and may count in and even more than once those quantities that have been merely relocated and do not constitute new input. In estuaries and sea channels, sediments often return from disposal sites to dredging sites continually due to natural currents. A trend assessment should focus on the new contaminant input, however, as yet, there is no agreed approach for its estimation available.

In order to reduce variability due to the repeated relocation of large amounts of dredged material and the associated contaminants within estuaries and sea channels, and to make the identification of a potential

trend more likely, contaminant loads from harbours and from estuaries and sea channels are assessed separately. However, as mentioned earlier, both dredged material from harbours as well as from estuaries and sea channels are often disposed of at same disposal sites, and as the respective percentages usually are not indicated, 50% each, are attributed to harbours and to estuaries/sea channels, as an estimate. This rough estimate may significantly add to the uncertainty of the assessment of contaminant loads from harbours.

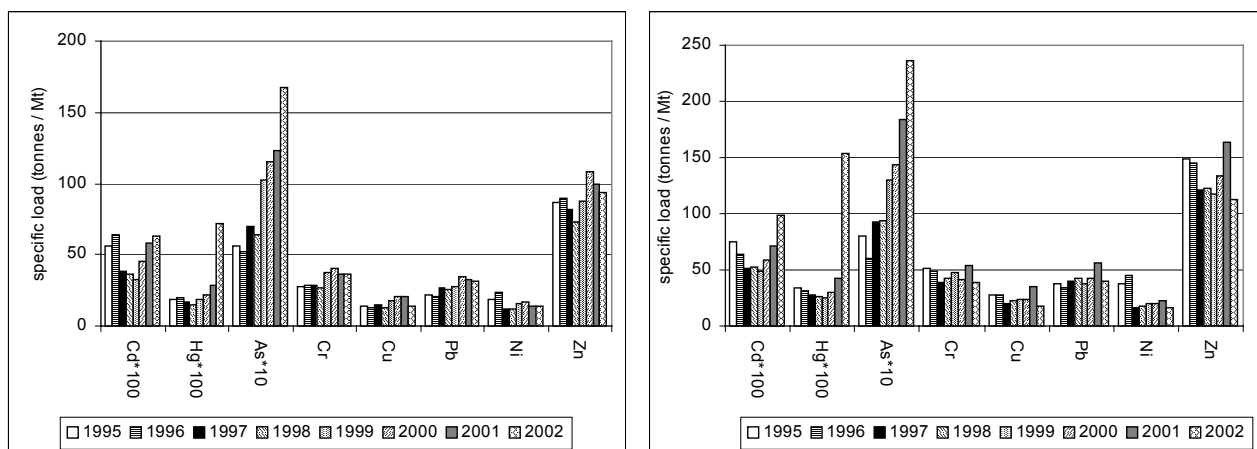
Furthermore, it is usually assumed that dredged material relocated in estuaries and sea channels repeatedly, only contribute to a minor extent to the new contaminant input compared to dredged material from harbours. However, it is recognised, that this approach is associated with large uncertainties. For example, some industrialised estuaries may need to be considered in the same category as harbour dredgings as they may contribute to new contaminant inputs.

Tables IV and V give the contaminant loads separately for harbours (Tables IV a, V a) and for estuaries and sea channels (Tables IV b and V b).

In Fig. 2, specific loads (i.e. tonnes of a trace metal / million tonnes of dredged material) from harbour dredgings (Fig. 2b) since 1995 are compared with specific total loads (Fig. 2a). Patterns of loads from harbour dredgings and total loads are similar. An increase in trace metal loads since 1995/1996 is observed for all dredged material sources but this is less apparent for harbour dredgings except for the specific As loads from harbour dredgings.

In 2001 and 2002, the mean percentage of trace metal loads in dredged material from harbours amounts to about 56% of the reported total trace metal loads. The percentage is very similar for all trace metals, and in both years, except for Hg in 2002, and is also similar to results from previous years. However, trace metal loads from estuaries/sea channels are contained in approximately double the volume of dredged material from harbours.

Fig. 2a and 2b: Specific total trace metal loads and specific loads of trace metals from harbour dredgings in 1995 to 2002



(a) All dredged material sources (b) harbour only

In order to have one y-axis for all trace metals, loads of Cd and Hg were multiplied by a factor of 100, and the As load was multiplied by a factor of ten for presentation in Fig. 2.

It should be kept in mind that total contaminant loads reported to OSPAR are much higher than the actual inputs to the OSPAR maritime area, as

- loads of naturally-occurring contaminants include a substantial proportion derived from the background content of the contaminants in the mineral matrices,
- sediments to a significant extent recirculate between dredging and disposal site, and
- the bulk of dredged material disposed of will not add new contaminants from anthropogenic sources to the sea, provided all input paths, such as direct discharge, riverine and atmospheric inputs or diffuse sources are taken into account.

At present, there is no approach available for deriving actual contaminant inputs from dredged material disposal operations to the sea.

Conclusions

There are still small amounts of several wastes other than dredged material disposed of at sea.

Disposal sites receive significantly different amounts of dredged material. Evaluation of the impacts on the seabed depending on the disposal of different amounts of dredged material per dumping site, taking into account its size, on the basis of monitoring reports should be considered.

No trend could be established for total amounts of dredged material for all Contracting Parties. However, separate evaluation of amounts for individual Contracting Parties indicated some changes.

For a reliable trend assessment it would be preferable to perform a separate assessment on the one hand for the amounts of dredged material from harbours and of dredged material from estuaries / sea channels, and on the other hand for maintenance and capital dredgings. However, at present dumping reports do not include sufficient information for a proper separation.

Trends could not be established for either total contaminant loads or for loads from harbour dredgings. At present, data are not considered to be sufficient for deriving a trend in total contaminant loads, especially bearing in mind that contaminant loads are often reported incompletely, and that they are associated with large uncertainties. Particularly for organic contaminants and TBT, there is a lack of information.

Furthermore, trend assessments of total contaminant loads are not regarded as appropriate means to evaluate the effectiveness of measures for the reduction of contaminant inputs due to the disposal of dredged material at sea. Instead, trend assessments of contaminant concentrations in dredged material from selected areas have proved to be a more effective tool for this purpose, as demonstrated in the overall assessment from the mid-1980's to 2001 in the OSPAR area (BDC 03/7/2).

Contaminant loads as reported in the annual OSPAR reports should not be considered as contaminant input to the maritime area.

Table I: Overview on the number of permits. Dumping sites and amounts of dredged material licensed (in tonnes dry weight) and dumped in 2001 and 2002

	2001				2002			
	Number of permits	Number of Dumping Sites	Amounts licensed	Amounts dumped	Number of permits	Number of Dumping Sites	Amounts licensed	Amounts dumped
Belgium	5	15	39 820 000	28 671 066	5	15	35 050 000	27 589 023
Denmark	24	30	1 543 470	1 745 938	8	30	1 943 200	1 790 029
France	46	31	21 114 548	21 073 548	NI	NI	NI	NI
Germany	13	22	20 500 000	20 980 000	15	19	22 500 000	22 462 000
Iceland	G.P.	15	523 746	523 746	12	13	533 140	444 783
Ireland	14	10	2 494 097	1 483 292	12	12	2 184 029	783 913
The Netherlands	5	8	16 625 000 m ³	12 844 655	5	8	16 605 000 m ³	10 750 105
Norway	70	13	1 004 675	1 004 675	49	13	640 268	640 268
Portugal	5	NI	918 970	918 970	10	12	578 500	578 500
Spain	-	9	-	3 080 718	-	7	-	5 093 654
Sweden	NI	NI	NI	NI	3	3	18 400 000	375 605
UK	154	103	20 768 651	18 539 824	153	127	16 169 290	16 371 841

NI: not indicated

Table II: Summary of Amounts of Wastes Dumped at Sea in 2001

Waste material/Country	Total quantity (in metric tonnes) dry	in tonnes										in kilograms				
		Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	Total PAH	Total CB	HCB	g-HCH	DDT	TBT
Dredged material																
Belgium	28 671 066	16.3	3.4	252	950	352	568	273	2 278		(6,8)	187				(0,3)
Denmark	1 745 938	(0,07)	(0,04)	(0,9)	(7,1)	(3,9)	(3,1)	(1,4)	(23,5)			(0,0)				(0,0)
France	21 073 548	11.4	3.4	191	624	295	589	277	1 972	(51,5)	13 648	(223)				(213)
Germany	20 980 000	4.9	4.0	151	582	188	365	225	1 446	(507,8)	(7,3)	(77,1)	(24,3)	(1,1)	(53,9)	(323,9)
Iceland	523 746			<i>exempted from analyses</i>										<i>exempted from analyses</i>		
Ireland	1 483 292	(0,3)	0.2	9.6	(25,8)	(14,7)	(32,8)	(14,9)	122			(12,6)	(0,9)	(1,2)	(4,6)	(13,4)
The Netherlands	12 844 655	8.0	2.9	141	437	244	356	194	1 412	1403	12.4	174	14	31	(18)	(158)
Norway	1 004 675	(0,0)	(0,0)					(0,5)				(4,3)				
Portugal	918 970	(9,5)	(5,3)	(185)	(600)	(480)	(725)	(252,5)	(2 100)	NI	(7 900)	(127,5)	(12,8)	NI	NI	NI
Spain	3 080 718	4.9	5.2	55	95	174	342	31		(1,0)		(153,2)				
Sweden	NI															
UK	18 539 824	8.7	7.0	383	1365	816	1251	579	3 701							
Total	110 866 432	64.1	31.4	1 369	4 684	2 567	4 233	1 848	13 055	(1 963)	(21 574)	(960)	(51,9)	(33,3)	(76,5)	(708)
Inert Material																
Portugal	676 000															
Fish Waste																
UK	350															
Vessels/Aircraft																
Norway	8															

Table III: Summary of Amounts of Wastes Dumped at Sea in 2002

Waste material/Country	Total quantity (in metric tonnes) dry	in tonnes										in kilograms						
		Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	Total PAH	Total CB	HCB	g-HCH	DDT	TBT		
Dredged material																		
Belgium	27 589 023	15.9	3.8	425	1 163	297	723	335	2 279		(9,4)	112				(0,4)		
Denmark	1 790 029	(0.0)	(0.0)	(0.3)	(1.1)	(0.5)	(0.8)	(0.6)	(2.9)									
France	NI	Not reported																
Germany	22 462 000	4.4	4.6	159	558	187	392	215	1 626	(537)	(6,8)	(64,5)	(23,7)	(2,0)	(10,4)	(399)		
Iceland	444 783	exempted from analyses										exempted from analyses						
Ireland	783 913	0.1	0.04	4.8	18.4	7.4	12.9	11.5	49.7		(0,3)	(0,1)	(0)	(0)	(0,2)	(7,4)		
The Netherlands	10 750 105	5.7	3.2	134	417	202	371	169	1 330	1 473	8.2	113	18	17	(2,1)	(667)		
Norway	640 268	(0,0)	(0,0)				(0,8)					(0,3)						
Portugal	578 500	(22)	(12,5)	(420)	(1450)	(1235)	(1850)	(555)	(5800)		(22300)	(355)						
Spain	5 093 654	0.5	0.8	3.4	13.8	11.7	39.6	3.0	162		(0,9)	(11,5)						
Sweden	375 605	Not reported																
UK	16 371 841	6.3	37.7	308	1 003	522	1 261	457	2 884	(24,3)		(43,3)				(2357)		
Total	(86 879 720)	(55,0)	(62,7)	(1455)	(4624)	(2462)	(4652)	(1746)	(14 133)	(2035)	(22 326)	(699)	(41,5)	(18,8)	(12,7)	(3 431)		
Inert Material																		
Norway	184 160																	
Portugal	72 500																	
Sweden	71 000 (m3)																	
Fish Waste																		
UK	200																	
Ireland	160																	
Vessels/Aircraft																		
Norway	3																	
Portugal	2																	

Table IV a: Amounts of Dredged Material and Associated Contaminants Dumped in 2001 from Harbours

Countries	total quantity (in metric tonnes) dry weight	in tonnes										in kilograms				
		Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	Total PAH	Total CB	HCB	g-HCH	DDT	TBT
Belgium	2 242 650	1.3	0.5	39.5	154	45.4	88	47	308		(3,3)	(0,0)				(0,13)
Denmark	520 702	(0,06)	(0,03)	(0,7)	(6,2)	(3,4)	(2,5)	(1,0)	(22,2)			(0,0)				(0,0)
France	6 878 248	1.8	0.8	45.5	223	68	167	65	462	51.5	3 638	11.6				49.4
Germany	6 560 000	2.1	1.7	64.5	239	81.6	157	93	636	(209)	(3,1)	(31,9)	(10,8)	(0,4)	(24,8)	(135)
Iceland	523 746	<i>exempted from analyses</i>										<i>exempted from analyses</i>				
Ireland	482 423	(0,1)	0.1	3.1	(5,7)	(3,7)	(10,1)	(3,6)	40			(3,5)	(0,1)	(0,2)	(0,9)	(5,1)
The Netherlands	12 844 655	8.0	2.9	141	437	244	356	194	1 412	1 403	12.4	174	14.0	31.0	(18)	(158)
Norway	1 004 675	(0,0)	(0,0)					(0,5)				(4,3)				
Portugal	184 470	(7)	(4)	(135)	(475)	(392,5)	(600)	(177,5)	(1850)		(7 150)	(115)	(11,5)			
Spain	1 789 649	3.1	2.7	28	47	100	193	16		(0,5)		(110)				
Sweden																
UK	8 376 093	6.0	4.8	302	878	596	919	402	2 518	ND	ND	ND	ND	ND	ND	ND
Total=	41 407 310	(29,4)	(17,6)	(759)	(2465)	(1534)	(2493)	(999)	(7249)	(1664)	(10807)	(450)	(36,4)	(31,6)	(43,7)	(348)

Table IV b: Amounts of Dredged Material and Associated Contaminants Dumped in 2001 from Estuaries and Sea Channels

Countries	total quantity (in metric tonnes) dry weight	in tonnes										in kilograms				
		Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	Total PAH	Total CB	HCB	g-HCH	DDT	TBT
Belgium	26 428 416	15	3.0	213	796	306	480	227	1970		(3,4)	187.5				(0,14)
Denmark	1 225 236	(0,0)	(0,0)	(0,2)	(0,9)	(0,5)	(0,6)	(0,4)	(1,3)			(0,0)				(0,0)
France	14 195 300	9.7	2.6	146	400	227	422	212	1 509	0	10 010	(211,9)				(163,4)
Germany	14 420 000	2.8	2.2	86	343	106	208	132	810	(299)	(4,2)	(45,3)	(13,5)	(0,7)	(29,1)	(188,7)
Iceland		<i>exempted from analyses</i>										<i>exempted from analyses</i>				
Ireland	1 000 869	(0,22)	0.1	6.5	(20,1)	(10,6)	(22,0)	(10,8)	81.9			(9,1)	(0,8)	(0,9)	(3,7)	(8,3)
The Netherlands																
Norway																
Portugal	734 500	(2,5)	(1,3)	(50)	(125)	(87,5)	(125)	(75)	(250)		(750)	(12,5)	(1,3)			
Spain	1 291 069	1.8	2.5	27	48	75	150	14		(0,5)		(43)				
Sweden																
UK	10 163 731	2.7	2.2	81	487	220	332	178	1 183	ND	ND	ND	ND	ND	ND	ND
Total=	69 459 122	34.7	13.9	609	2220	1032	1739	849	5806	(300)	(10767)	(509)	(15,6)	(1,6)	(32,8)	(361)

(....) data sets are incomplete

Table V a: Amounts of Dredged Material and Associated Contaminants Dumped in 2002 from Harbours

Countries	total quantity (in metric tonnes) dry weight	in tonnes										in kilograms				
		Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	Total PAH	Total CB	HCB	g-HCH	DDT	TBT
Belgium	2 215 006	1.2	0.44	38.5	150	44.0	166	45.4	296		(3,2)	(0,0)				(0,1)
Denmark	153 266	(0,0)	(0,0)	(0,3)	(1,0)	(0,4)	(0,7)	(0,5)	(2,6)							
France		Not reported														
Germany	6 757 000	1.7	2.0	65.6	218	77.5	155.7	84.0	684	(324)	(2,8)	(26,2)	(10,4)	(0,9)	(4,7)	(160,8)
Iceland	444 783	exempted from analyses											exempted from analyses			
Ireland	84 070	0.02	0.01	1.6	4.0	2.3	3.9	3.4	13.0		(0,01)	(0,08)				(3,8)
The Netherlands	10 750 105	5.7	3.2	134	417	202	371	169	1 330	1 473	8.2	113	17.8	16.8	(2,1)	(667)
Norway	640 268	(0,0)	(0,0)				(0,8)					(0,29)				
Portugal	578 500	(22)	(12,5)	(420)	(1 450)	(1 235)	(1 850)	(555)	(5 800)		(22 300)	(355)				
Spain	4 898 975	0.3	0.44	1.8	7.9	6.9	20.8	2.0	85		(0,8)	(6,2)				
Sweden	195 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
UK	8 500 426	3.8	35.5	172	566	304	715	262	1 633	(12,1)		(28,4)				(1234)
Total=	35 217 399	(34,7)	(54,1)	(834)	(2 814)	(1 873)	(3 284)	(1 121)	(9 843)	(1 809)	(22 315)	(529)	(28,2)	(17,7)	(6,8)	(2 066)

Table V b: Amounts of Dredged Material and Associated Contaminants Dumped in 2002 from Estuaries and Sea Channels

Countries	total quantity (in metric tonnes) dry weight	in tonnes										in kilograms				
		Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	Total PAH	Total CB	HCB	g-HCH	DDT	TBT
Belgium	25 374 017	14.7	3.4	387	1013	253	557	290	1983		(6,2)	(112)				(0,2)
Denmark	1 636 762	(0,0)	(0,0)	(0,0)	(0,1)	(0,1)	(0,1)	(0,1)	(0,2)							
France		Not reported														
Germany	15 705 000	2.6	2.6	94	340	109	237	131	942	(213)	(4,0)	(38,4)	(13,3)	(1,1)	(5,8)	(238,5)
Iceland	0	exempted from analyses											exempted from analyses			
Ireland	699 843	0.08	0.03	3.1	14.4	5.1	9.0	8.1	36.6		(0,3)	(0,03)				(3,6)
The Netherlands	0															
Norway	0															
Portugal	0															
Spain	194 679	0.2	0.4	1.6	5.8	4.7	18.8	1.0	77.8		(0,1)	(5,3)				
Sweden	180 605	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
UK	7 871 415	2.6	2.3	136	437	218	547	195	1 251	(12,1)		(14,8)				(1123)
Total=	51 662 321	20.2	8.6	622	1 810	590	1 368	626	4 290	(225)	(11)	(171)	(13,3)	(1,1)	(5,8)	(1365)

(....) data sets are incomplete

Tab. VI: Absolute and relative quantities of dredged material from different areas disposed of at sea since 1987

Origin of dredged material	total dredged material	harbour dredgings		estuaries/sea channel dredgings	
	(Mt dry weight)	(Mt dry weight)	(%)	(Mt dry weight)	(%)
2002*	87	35	41	52	59
2001*	111	41	37	70	63
2000	100	39	39	61	61
1999	131	47	36	84	64
1998	104	30	29	74	71
1997	117	43	37	74	63
1996	117	47	40	70	60
1995	127	49	39	78	61
1994	(1)	(1)	52	(1)	48
1993			42		58
1992			40		60
1991			46		54
1990			52		48
1989			47		51
1988			64		36
1987			44		56

(1): Data for 1987 to 1994 reported as wet weight

* : Data reported not complete

Part A: Dumping of wastes at sea in 2001
(Revised version, updated with French data)

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	h. Western Scotland
	i. Northern Scotland
	j. Eastern Scotland

Report on Dumping Permits Issued in 2001

Table 1 Overview of number of permits issued, tonnes licensed and tonnes dumped in 2001

Contracting Party	Number of permits issued for waste category				Number of operations regulated by other means	Tonnes licensed (dry weight)	Tonnes dumped (dry weight)	Notes
	Dredged material	Inert Material	Fish waste	Vessels or aircraft				
Belgium	2				0	325 000		(1)
						820 000	28 671 066	(2)(3)
	3					39 000 000	6 631 059	(4)
Denmark	24					1 543 470	1 745 938	
France	46				0	21 114 548	21 073 548	
Germany	13				7	11 200 000		(5)
						9 300 000	9 800 000	(6)(7)
Iceland	GP					523 746	523 746	(8)
Ireland	14				1	2 494 097	1 483 292	(9)
The Netherlands	5				numerous	16 625 000 m ³		(10)(11)
Norway	70			8		1 004 675	1 004 675	(12)
Portugal	5	4	NI	NI		918 970	918 970	
Spain							3 080 718	
Sweden								
United Kingdom	154				-	20 768 301		(13)
			2		-	350	18 540 177	(13)(14)

NI = No information

GP = general permit

Table 2 Specific reporting on permits issued in 2001*

Contracting Party	Number of permits issued *			Material of concern		Tonnes dumped ** (dry weight)	Reasons for classification
	Dredged material	Inert Material	Vessels or aircraft	Type	Level 2 (mg/kg)		
France				Cd	2,400	24 000	(1)
				Hg	0,800	23 260	
	2			Total		47 206	
Germany	1			HCB	0,006	5 400 000	(2) (3)
	1			HCB	0,006	600 000	(2) (4)
Norway			8	wooden			
Portugal	N/A	4	N/A			676 000	(5)

* The number of permits in this column includes the operations regulated by other means

** For dredged material the tonnes dumped refer to material exceeding level 2
for inert material - numbers of permits issued in total and tonnes dumped in total

Amounts of Wastes Dumped at Sea in 2001

Table 3a **Details of deposit sites and dumping methods**

OSPAR-codes	categories of waste				origin name of watersystem	dredged material			dredging operation type		total quantity (in metric tonnes)		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft		type of areas dredged							
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
Belgium													
B1	x				Pas van het Zand			x		x	810 732		
B1	x				CDNB Zeebrugge			x		x	1 220 415		
B1	x				Scheur Oost			x	x		1 276 255		
B1	x				Scheur West			x	x		1 251 137		
B3	x				Pas van het Zand			x		x	63 056		
B3	x				CDNB Zeebrugge			x		x	266 742		
B6	x				Harbour Zeebrugge	x				x	1 785 520		
B6	x				CDNB Zeebrugge			x		x	837 549		
B9	x				Nieuwpoort access channel			x		x	55 911		
B9	x				Nieuwpoort harbour	x				x	55 889		
B9	x				Access channel Oostende			x		x	52 897		
B9	x				Oostende harbour	x				x	401 241		
B/int1	x				Drempel van Vlissingen		x			x	325 332		
B/int1	x				Drempel van Borssele		x			x	868 235		
B/int1	x				Pas van Terneuzen					x	356 897		
B/int1	x				Overloop Hansweert		x			x	146 715		
B/int1	x				Gat van Ossensisse		x			x	308 425		
B/int1	x				Drempel van Hansweert		x			x	708 622		
B/int1	x				Overloop Valkenisse		x			x	433 552		
B/int1	x				Drempel van Valkenisse		x			x	21 122		
B/int1	x				Drempel van Bath		x			x	5 690		
B/int2	x				Drempel van Vlissingen		x			x	192 052		
B/int2	x				Drempel van Borssele		x			x	516 133		
B/int2	x				Pas van Terneuzen		x			x	29 782		
B/int2	x				Overloop Hansweert		x			x	58 399		
B/int2	x				Gat van Ossensisse		x			x	204 664		
B/int2	x				Drempel van Hansweert		x			x	653 653		
B/int2	x				Overloop Valkenisse		x			x	452 046		
B/int2	x				Drempel van Valkenisse		x			x	14 045		
B/int2	x				Drempel van Bath		x			x	5 759		
B/int3	x				Gat Van Ossensisse		x			x	473 199		
B/int3	x				Drempel van Hansweert		x			x	151 886		
B/int3	x				Overloop Valkenisse		x			x	31 974		
B/int4a	x				Drempel van Hansweert		x			x	112 553		
B/int4a	x				Overloop Valkenisse		x			x	174 989		
B/int4a	x				Drempel van Valkenisse		x			x	536 042		
B/int4a	x				Drempel van Bath		x			x	124 726		
B/int4b	x				Drempel van Hansweert		x			x	122 391		

OSPAR-codes	categories of waste				origin name of watersystem	dredged material type of areas dredged			dredging operation type		total quantity (in metric tonnes)		
	dredged material	inert material	fish waste	vessels/ aircraft		Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
B/int4b	x				Overloop Valkenisse		x			x	208 545		
B/int4b	x				Drempel van Valkenisse		x			x	717 804		
B/int4b	x				Drempel van Bath		x			x	137 937		
B/int5	x				Overloop Hansweert		x			x	70 482		
B/int5	x				Drempel van Hansweert		x			x	270 111		
B/int5	x				Drempel van Valkenisse		x			x	8 743		
B/int5	x				Drempel van Bath		x			x	40 664		
B/int7	x				Drempel van Hansweert		x			x	78 027		
B/int7	x				Overloop Valkenisse		x			x	294 917		
B/int7	x				Drempel van Valkenisse		x			x	179 778		
B/int7	x				Drempel van Bath		x			x	288 067		
B/int8	x				Pas van Terneuzen		x			x	91 948		
B/int8	x				Overloop Hansweert		x			x	11 865		
B/int8	x				Gat van Ossensisse		x			x	363 501		
B/int8	x				Drempel van Hansweert		x			x	51 298		
B/int8	x				Overloop Valkenisse		x			x	691 934		
B/int8	x				Drempel van Valkenisse		x			x	50 766		
B/int8	x				Drempel van Bath		x			x	31 989		
B/int9	x				Gat van Ossensisse		x			x	342 794		
B/int9	x				Drempel van Hansweert		x			x	776 052		
B/int9	x				Overloop Valkenisse		x			x	280 038		
B/int9	x				Drempel van Valkenisse		x			x	1422 125		
B/int9	x				Drempel van Bath		x			x	524 395		
B/int0	x				Drempel van Zandvliet		x			x	2 73 307		
B/int0	x				Toegangsgeul Zandvliet + Berendrechtshuizen		x			x	363 028		
B/int0	x				Drempel van Frederik		x			x	828 841		
B/int0	x				Drempel van Lillo		x			x	952 892		
B/int0	x				Drempel van de Parel		x			x	134 115		
B/int1bis	x				Drempel van Zandvliet		x			x	2073 307		
B/int1bis	x				Toegangsgeul Zandvliet + Berendrechtshuizen		x			x	363 028		
B/int1bis	x				Drempel van Frederik		x			x	828 841		
B/int1bis	x				Drempel van Lillo		x			x	952 892		
B/int1bis	x				Drempel van de Parel		x			x	134 115		
Total											28 671 066		

Denmark													
FRB20	x				Lejre Vig, Roskilde Fjord		x			x	243		
FRB23	x				Lynæs Havn samt indsejling	x				x	2 340		
NJL01	x				Aså Havn, sejlrende og forhavn	x				x	2 700		
NJL02	x				Attrup Havn, sejlrende og indsejling		x			x	675		
NJL03	x				Søsportshavnen, indsejling og forhavn	x				x	5 400		
NJL05	x				Egense, sejlrende		x			x	1 620		
NJL07	x				Gjøl Havn	x				x	3 000		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
NJL07	x				Nibe Havn, Sejlrende		x			x	6 600		
NJL11	x				Haverslev Havn, sejlrende		x			x	720		
NJL13	x				Hirtshals Havn, sejlrende		x			x	206 051		
NJL20	x				Løgstør Grund		x			x	15 319		
NJL23	x				Als Odde, sejlrenden til Mariager Fjord		x			x	38 597		
NJL31	x				Rønnerhavnen, indsejlingen		x			x	3 294		
NJL37	x				Strandby Havn,forhavn, sejlrende	x				x	17 876		
NJL37	x				Strandby Havn,forhavn, sejlrende	x				x	9 268		
NJL41	x				Sæby Havn	x				x	10 503		
NJL45	x				Øster Hurup havn	x				x	3 894		
NJL50	x				Ålbæk Havn		x			x	13 260		
RIB01	x				Esbjerg Havn, sejlrenden inden for bøje 16	x				x	12 300		
RIB01	x				Grådyb Barre, indsejlingen		x			x	262 500		
RIB02	x				Esbjerg Havn, sejlrenden inden for bøje 16	x				x	12 300		
RIB02	x				Grådyb Barre, indsejlingen		x			x	322 500		
RIB02	x				Fanø Lo		x			x	5 850		
RIB03	x				Slunden m Esbjerg og Fanø		x			x	3 600		
RIB03	x				Esbjerg Havn	x				x	82 068		
RIB04	x				Slunden m Esbjerg og Fanø		x			x	3 600		
RIB04	x				Esbjerg Havn	x				x	82 068		
RIB08	x				Grådyb Barre, indsejlingen		x			x	285 000		
RIN05	x				Sælhundeholm Løb		x			x	27 047		
RIN05	x				Thyborøn Færgehavn og sejlrende	x				x	8 978		
RIN05	x				Thyborøn Yderhavn	x				x	7 350		
RIN05	x				Thyborøn Sdr. Srbejdshavn	x				x	1 894		
RIN05	x				Lemvig Havn, sejlrende		x			x	23 808		
RIN25	x				Sejlrenden til Stauning Havn	x			x		5 586		
SJL09	x				Rømø Havn	x				x	14 705		
VIB06	x				Skive Søsportshavn	x				x	1 354		
VIB06	x				Nykøbing Mors søndre dæmning	x			x		2 594		
VIB06	x				Nykøbing Mors Sejlrende		x			x	1 632		
VIB08	x				Sejlrenden indtil Gyldeendal Havn		x			x	1 882		
VIB09	x				Hanstholm Havn, Indsejlingen	x				x	203 844		
VIB09	x				Hanstholm Havn, bassin 1	x				x	27 944		
VSJ39	x				Odden Havn, Indsejlingen		x			x	1 440		
AAR01	x				Anholt Havn	x				x	2 735		
Total											1 745 938		

France													
F/05901, 059002	x				Dunkerque Ouest	x				x	993 000	23 895	
F/05903, 05604, 05903	x				Dunkerque Est, Gravelines	x				x	499 000	10 352	
F/06201	x				Calais	x				x	532 100	3 254	
F/06202	x				Boulogne sur Mer	x				x	445 100	7 414	
F/07606	x				Tréport, Penly	x				x	90 534	1 933	

OSPAR-codes	categories of waste				origin name of watersystem	dredged material type of areas dredged			dredging operation type		total quantity (in metric tonnes)		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft		Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
F/07603	x				Dieppe	x				x	116 200	1 927	
F/07602	x				Port du Havre	x				x	788 500	20 487	
F/07601	x				Rouen		x			x	5 265 300	77 049	
F/01405	x				Deauville	x				x	17 330	871	
F/01401	x				Caen-Ouistreham	x				x	480 280	5 611	
F/05003	x				Cherbourg	x				x	8 000	ND	
F/05001, 05002	x				Granville	x				x	172 100	38 590	
F/02907	x				Le Conquet	x				x	75 500	302	
F/02906	x				Audierne	x				x	19 600	1	
F/05602, 05603	x				Port-Maria (Quiberon)	x				x	12 620	2 505	
F/05601	x				Lorient	x				x	89 420	11 714	
F/05604	x				Ban-Gâvres (Gâvres)	x				x	4 000	ND	
F/04401	x				Nantes Saint-Nazaire		x			x	1 655 000	52 482	
F/04405	x				La Turballe	x				x	3 400	ND	
F/04406, 04407	x				Le Croisic	x				x	4 800	110	
F/04408	x				La Baule Le Pouliguen	x				x	22 000	748	
F/04412	x				Pornic-Noëveillard	x				x	21 500	710	
F/08507	x				Saint-Gilles-Croix-de-Vie	x				x	480	11	
F/08503	x				La Barre-de-Monts	x				x	11 400	ND	
F/01701, 01706, 01702, 01704, 01707, 01705, 01708	x				La Rochelle-Pallice, La Rochelle, Fouras, La Flotte-en-Ré, Les Mathes, Rochefort sur Mer, St Trojan, Le Chateau d'Oleron, St Pierre d'Oleron, Bourcefranc Le Chapus	x				x	325 443	6 939	
F/03319	x				Port Autonome de Bordeaux		x			x	1 065 000	458	
F/03318	x				Port Autonome de Bordeaux		x			x	225 000	165	
F/03313, 003316, 003317	x				Port Autonome de Bordeaux		x			x	2 350 000	16 335	
F/03307, 03308, 03309, 03311	x				Port Autonome de Bordeaux		x			x	3 035 000	25 910	
F/03301, 03303, 03305, 03306, 03307	x				Port Autonome de Bordeaux		x			x	600 000	8 617	
F/06401, 06402	x				Bayonne	x				x	2 145 940	ND	
Total											21 073 548	318 389	

Germany													
D12	x				Husum harbour	x				x	54 000		(1)
D13	x				Harbour and outer harbour of Büsum	x				x	31 000		(1)
					Elbe estuary / navigation channel; outer port of the lock to the "Nord-Ostsee-Kanal" (Kiel-Canal); inner part of "Nord-Ostsee- Kanal"								
D14	x					x	x			x	4 800 000	110,410	(1)(2)(3)
D15	x				Weser estuary / navigation channel		x			x	389 000	9,713	(1)(2)(4)

OSPAR-codes	categories of waste				origin name of watersystem	dredged material type of areas dredged			dredging operation type		total quantity (in metric tonnes)		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft		Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
D16	x				Bremerhaven harbours (Columbuskaje and Stromkaje)	x				x	35 000		(1)
D17	x				Jade bay / navigation channel	x	x			x	2 149 000	34,390	(2)(5)
D20	x				Outer harbour of Hooksiel	x				x	19 000	0,335	(1)
D21	x				Wangerooge harbour	x				x	8 000		(1)
D22	x				Spiekeroog harbour	x				x	26 000		(1)
D25	x				Baltrum harbour	x				x	3 000		(1)
D30	x				Norderney harbour	x				x	8 000		(1)
D32	x				Norddeich harbour	x				x	25 000		(1)
D34	x				Ems estuary / navigation channel		x			x	1 988 000	31,807	(1)(2)(6)
D36	x				Borkum, Minitrain harbour and approach channel of Borkum island	x				x	5 000		(1)
D41	x				Niedersachsenbrücke Wilhelmshaven (approach channel and seaward mooring berth)	x	x			x	129 000	1,018	(1)
D42	x				Niedersachsenbrücke Wilhelmshaven (landward mooring berth)	x	x			x	18 000	0,141	(1)(7)
D43	x				Bensersiel harbour	x				x	27 000		(1)
D44	x				Langeoog harbour	x				x	39 000		(1)
D45	x				Approach channel of Juist harbour	x				x	11 000		(1)
D48	x				Bremerhaven harbours (Columbuskaje and Stromkaje)	x				x	36 000		(1)
Total											9 800 000	187,814	

Iceland													
IS4	x					x			x		17 690		
IS6	x					x			x		140 300		
IS18	x					x			x		6 954		
IS27	x					x			x		36 600		
IS41	x					x			x		122 000		
IS42	x					x			x		4 392		
IS43	x					x			x		4 758		
IS44	x					x			x		36 112		
IS45	x					x			x		2 440		
IS50	x					x			x		9 760		
IS51	x					x			x		18 300		
IS52	x					x			x		12 200		
IS53	x					x			x		91 500		
IS55	x					x			x		10 980		
IS58	x					x			x		9 760		
Total											523 746		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
Ireland													
Irl 6	x				Liffey/Dublin Bay	x	x		x		568 440		
Irl 6	x				Liffey	x	x			x	249 269		
Irl 8	x				Suir/Barrow Estuary		x			x	226 270		
Irl 13	x				Suir/Barrow Estuary		x			x	1 387		
Irl 17	x				Cork Harbour		x		x		156 168		
Irl 17	x				Cork Harbour		x			x	64 078		
Irl 20	x				Boyne Estuary		x			x	90 553		
Irl 33	x				Shannon Estuary	x	x			x	79 154		
Irl 37	x				Corrib/Galway Harbour	x	x			x	27 963		
Irl 38	x				Carlingford Lough	x				x	20 010		
Total											1 483 292		

Netherlands													
NL-6	x				Scheveningen Harbour	x				x	145 361	N.D.	
NL-7	x				IJmuiden Harbour	x				x	1 366 343	N.D.	
NL-8	x				Rotterdam Harbour	x				x	5 204 004	3 760	
NL-10	x				Eastern Scheldt Harbours	x				x	133 794	62 999	
NL-11	x				Western Scheldt Harbours	x				x	5 280 726	N.D.	
NL-13	x				Waddensea West Harbours	x				x	714 427		
NL-14					Waddensea East Harbours								(8)
NL-15					Ems-Dollard Harbours								(8)
Total											12 844 655	66 759	

Norway													
N1Østfold	x				Oslofjord	x				x	1 200		
N2Østfold	x				Oslofjord	x				x	600		
N3Østfold	x				Oslofjord	x				x	420		
N4Østfold	x				Oslofjord	x				x	2 040		
N5Østfold	x				Oslofjord	x				x	5 400		
N6Østfold	x				Oslofjord	x				x	240		
N7Østfold	x				Oslofjord	x				x	240		
N8Østfold	x				Oslofjord	x				x	14 400		
N9Østfold	x				Oslofjord	x				x	240		
N10Buskerud				x	Oslofjord								
N11Vestfold	x				Oslofjord	x				x	3 600		
N12Vestfold	x				Oslofjord	x				x	320		
N13Vestfold	x				Oslofjord	x				x	320		
N14Vestfold	x				Oslofjord	x				x	480		
N15Vestfold	x				Oslofjord	x				x	96		
N16Vestfold	x				Oslofjord	x				x	480		
N17Vestfold	x				Oslofjord	x				x	320		
N18Vestfold	x				Oslofjord	x				x	288		
N19/Vestfold	x				Oslofjord	x				x	4 608		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
N20/Vestfold	x				Oslofjord	x				x	1 632		
N21/Vestfold	x				Oslofjord	x				x	480		
N22/Vestfold	x				Oslofjord	x				x	1 040		
N23/Vestfold	x				Oslofjord	x				x	8 160		
N24/Vestfold	x				Oslofjord	x				x	1 120		
N25/Vestfold	x				Oslofjord	x				x	1 920		
N26/Vestfold	x				Oslofjord	x				x	320		
N27/Vestfold	x				Oslofjord	x				x	320		
N28/Vestfold	x				Oslofjord	x				x	480		
N29Vestfold	x				Oslofjord	x				x	320		
N30/Vestfold	x				Oslofjord	x				x	480		
N31/Vestfold	x				Oslofjord	x				x	480		
N32/Vestfold	x				Oslofjord	x				x	480		
N33/Vestfold				x	Oslofjord								
N34/Vest-Agder	x				Skagerrak	x				x	4 800		
N35/Vest-Agder	x				Skagerrak	x				x	5 600		
N36/Vest-Agder	x				Skagerrak	x				x	1 560		
N37/Vest-Agder	x				Skagerrak	x				x	640		
N38/Vest-agder	x				Skagerrak	x				x	2 470		
N39/Hordaland	x				North Sea	x				x	80		
N40/Hordaland	x				North Sea	x				x	80		
N41/Hordaland	x				North Sea	x				x	800		
N42/Hordaland	x				North Sea	x				x	96		
N43/Hordaland	x				North Sea	x				x	2 025		
N44/Hordaland	x				North Sea	x				x	800		
N45/Hordaland	x				North sea	x				x	290		
N46/Hordaland	x				North Sea	x				x	640		
N47/Hordaland	x				North Sea	x				x	480		
N48/Hordaland	x				North sea	x				x	3 040		
N49/Sogn og fjordane	x				North Sea	x				x	1 200		
N50/Møre & Romsdal	x				Norwegian Sea	x				x	500		
N51/Møre & Romsdal	x				Norwegian Sea	x				x	2 000		
N52/Sør-Trøndelag	x				Norwegian Sea	x				x	1 600		
N53/Sør-Trøndelag	x				Norwegian Sea	x				x	800		
N54/Sør-Trøndelag	x				Norwegian Sea	x				x	4 000		
N55/Sør-Trøndelag				x	Norwegian Sea								
N56/Sør-Trøndelag				x	Norwegian Sea								
N57/Nord-Trøndelag	x				Norwegian Sea	x				x	860		
N58/Nord-Trøndelag				x	Norwegian Sea								
N59/Nordland	x				Norwegian Sea	x				x	33 369		
N60/Nordland	x				Norwegian Sea	x				x	81 328		
N61/Nordland	x				Norwegian Sea	x				x	88 368		
N62/Nordland	x				Norwegian Sea	x				x	10 614		
N63/Nordland	x				Norwegian Sea	x				x	1 976		
N64/Nordland	x				Norwegian Sea	x				x	15 660		

OSPAR-codes	categories of waste				origin name of watersystem	dredged material type of areas dredged			dredging operation type		total quantity (in metric tonnes)		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft		Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
N65/Nordland	x				Norwegian Sea	x				x	14 048		
N66/Nordland	x				Norwegian Sea	x				x	4 432		
N67/Nordland	x				Norwegian Sea	x				x	400		
N68/Nordland	x				Norwegian Sea	x				x	160		
N69/Nordland				x	Norwegian Sea								
N70/Nordland				x	Norwegian Sea								
N71/Troms	x				Barents Sea	x				x	12 800		
N72/Troms	x				Barents Sea	x				x	1 600		
N73/Troms	x				Barents Sea	x				x	1 600		
N74/Troms				x	Barents Sea								
N75/Finnmark	x				Barents Sea	x				x	14 400		
N76/Finnmark	x				Barents Sea	x				x	16 000		
N77/Finnmark	x				Barents Sea	x				x	16 000		
N78/Finnmark	x				Barents sea	x				x	195 440		
N79/Finnmark	x				Barents Sea	x				x	409 595		
Total											1 004 675		

Portugal													
P/1		x			V. Castelo			x		x	65 000		
P/2		x			V. Castelo			x		x	260 000		
P/3	x				Esposende	x					32 500		
P/4		x			F. Foz			x		x	26 000		
P/5		x			F. Foz			x		x	58 500		
P/6	x				Nazaré	x				x	63 050		
P/7	x				Nazaré	x				x	66 820		
P/8		x			S. Mart.			x		x	325 000		
P/9	x				V.R.S.	x				x	22 100		
Total											918 970		

Spain													
E/1	x				Pasajes	x	x			x	NI	NI	
E/2	x				Bilbao	x	x			x	141 640	5 761,03	
E/3	x				Santander	x	x				360 195	4 707,75	
E/5	x				Avilés	x	x		x	x	1 339 125	21 612,55	
E/6	x				Ferrol	x			x		84 548	1 503,27	
E/7	x				La Coruña	x			x	x	486 213	29 423,79	
E/8	x				Villagarcía		x		x		72 181	3 053,27	
E/11					Sevilla	x	x			x	596 816	4 862,26	
Total											3 080 718	70 923,92	

UK													
CR019	x				Cromarty Firth	x				x	19 786		
CR020	x				Helmsdale River	x				x	5 100		
CR021	x				Moray Firth			x		x	78 475		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
CR027	x				Beaully Firth	x				x	16 914		
CR030	x				Moray Firth	x				x	21 572		
CR031	x				Grampian Coast			x		x	1 334		
CR040	x				Spey Bay/Moray Firth	x				x	7 535		
CR050	x				Grampian Coast	x				x	2 770		
CR080	x				Grampian Coast	x				x	4 363		
CR110	x				Dee River/North Sea	x		x		x	89 998		
DM001	x				Cumbria Coast	x				x	863		(9)
DV010	x				Kent Coast	x			x	x	223 726		
DV011	x				Kent Coast	x				x	434		
DV040	x				Kent Coast	x				x	40 758		
FI068	x				Shetland Coast	x			x		4 800		
FI070	x				Shetland Coast			x	x		0		
FO010	x				South Esk River	x				x	37 877		
FO020	x				Tayside Coast	x		x	x	x	11 400		
FO028	x				Firth of Tay	x				x	30 936		
FO036	x				Firth of Forth	x				x	0		
FO038	x				Firth Of Forth	x				x	61 172		
FO041	x				Firth Of Forth	x	x			x	25 696		
FO044	x				Firth Of Forth	x				x	443 828		
FO048	x				Firth Of Forth	x				x	0		
FO051	x				Firth of Forth/Fife Coast	x				x	3 840		
FO080	x				Eye River	x	x		x	x	0		
HE020	x				Isles of Muck and Eigg	x			x		16 136		
HE025	x				Loch Scresort, Isle of Rhum	x			x		10 773		
HU015	x				Humberside Coast	x				x	15 949		
HU020	x				Humber River	x	x		x	x	106 946		
HU030	x				Humber River	x	x	x		x	533 209		
HU040	x				Humber River	x				x	2 423		
HU041	x				Humber River	x				x	4 225		
HU060	x				Humber River	x	x	x	x	x	1 145 136		
HU080	x				Humber River	x	x			x	1 742 202		
HU090	x				Humber River	x	x			x	306 129		
HU143	x				Great Ouse River	x	x			x	49 059		
HU150	x				Yare River	x	x	x	x	x	23 711		
HU170	x				Witham River	x	x	x		x	28 249		
IS040	x				Anglesey Coast	x			x	x	0		
IS055	x				Conwy River	x				x	10 804		
IS110	x				Mersey River	x	x			x	132 160		
IS120	x				Mersey River	x	x	x		x	41 419		
IS128	x				Mersey River		x			x	18 695		
IS140	x				Mersey River	x	x	x		x	823 203		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
IS150	x				Mersey River/Liverpool Bay	x	x	x	x	x	1 604 711		
IS170	x				Wyre River	x				x	852 760		
IS180	x				Cumbria Coast	x			x	x	0		
IS192	x				Lune River	x				x	2 262		
IS200	x				Morecambe Bay	x				x	208 517		
IS205	x				Cumbria Coast	x			x	x	0		
IS240	x				Cumbria Coast	x				x	59 693		
IS241	x				Cumbria Coast	x				x	68 088		
IS245	x				Solway Firth	x				x	17 860		
IS251	x				Solway Firth	x				x	0		
IS286	x				Luce Bay	x				x	0		
IS288	x				Luce Bay	x				x	0		
IS400	x				Douglas Harbour, Isle of Man	x				x	750		
IS591	x				Lagan River		x			x	2 351 970		
IS650	x				Down Coast	x				x	6 792		
LU010	x				Camel River	x				x	3 680		
LU055	x				Somerset Coast	x			x		20 639		
LU070	x				Avon River	x	x			x	3 092		
LU080	x				Avon River	x	x			x	2 626		
LU083	x				Avon River	x	x			x	255 281		
LU084	x				Avon River	x	x			x	30 393		
LU085	x				Avon River	x	x			x	56 717		
LU086	x				Avon River	x	x			x	0		
LU110	x				Taff R./Severn Est.	x	x		x	x	555 822		
LU115	x				Severn Estuary	x				x	24 499		
LU125	x				Neath River	x				x	865		
LU130	x				Neath River/Swansea Bay	x	x	x	x	x	1 465 275		
LU140	x				Usk River	x			x	x	65 992		
LU168	x				Milford Haven	x				x	0		
LU190	x				Milford Haven	x				x	939		
MA010	x				Loch Ryan		x			x	0		
MA021	x				Firth Of Clyde	x				x	147 431		
MA025	x				Firth Of Clyde	x				x	0		
MA030	x				Islay Coast	x				x	0		
MA050	x				Firth Of Clyde	x			x	x	121 124		
MA501	x				Foyle River	x				x	11 812		
MA545	x				Foyle River	x				x	121 729		
MA605	x				Antrim Coast	x				x	3 412		
PL019	x				Salcombe Estuary	x				x	563		
PL021	x				Tamar River	x				x	38		
PL025	x				Tamar River	x				x	0		
PL030	x				Tamar River	x	x			x	0		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
PL031	x				Tamar River	x			x	x	516 157		
PL060	x				Fowey River/Cornwall Coast South	x	x			x	59 868		
PL075	x				Falmouth Harbour/Truro River	x	x		x	x	17 668		
PO070	x				Teign River	x				x	0		
PO090	x				Teign River	x				x	0		
PO500	x				St Helier Harbour, Jersey	x				x	36 328		
TH005	x				Waveney River	x				x	51 017		
TH034	x				Orwell River	x				x	10 296		
TH036	x				Orwell River	x				x	6 047		
TH037	x				Orwell River	x				x	0		
TH038	x				Orwell River	x				x	0		
TH049	x				Orwell/Stour Rivers + Essex/Suffolk Coast	x		x	x		0		
TH052	x				Orwell/Stour Rivers + Essex/Suffolk Coast	x	x	x	x	x	1 331 925		
TH053	x				Orwell River	x				x	0		
TH062	x				Blackwater River	x				x	247		
TH070	x				Thames River	x	x	x	x		231 911		
TH073	x				Thames Estuary	x				x	4 418		
TH103	x				Thames Estuary/Medway Estuary		x	x		x	125 335		
TH140	x				Kent Coast	x				x	39 254		
TH202	x				Orwell River	x				x	2 970		
TH203	x				Orwell River	x				x	2 970		
TH204	x				Orwell River	x				x	2 475		
TH205	x				Orwell River	x				x	990		
TH206	x				Orwell River	x				x	0		
TH207	x				Orwell River	x				x	0		
TH208	x				Orwell River	x				x	0		
TH209	x				Orwell River	x				x	0		
TH210	x				Orwell River	x				x	0		
TY022	x				Coquet River	x				x	53 336		
TY025	x				Coquest River	x	x			x	8 707		
TY042	x				Northumberland Coast	x				x	0		
TY070	x				Tyne River	x				x	20 469		
TY081	x				Tyne River	x	x			x	13 026		
TY090	x				Wear River	x			x	x	0		
TY130	x				Durham Coast	x				x	9 963		
TY150	x				Tees River/Hartlepool Bay	x	x	x		x	0		
TY160	x				Tees River/Hartlepool Bay	x	x	x		x	662 825		
TY180	x				Esk River	x		x		x	69 942		
TY181	x				Esk River	x		x			201		
TY190	x				North Yorkshire Coast	x				x	1 380		
WI010	x				Ouse River (E.Sussex)	x				x	175 632		
WI020	x				East Sussex Coast	x				x	31 646		

OSPAR-codes	categories of waste				origin name of watersystem	dredged material type of areas dredged			dredging operation type		total quantity (in metric tonnes)		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft		Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
WI031	x				Adur River/Sussex Coast	x	x	x		x	101 340		
WI035	x				Sussex Coast			x		x	2 131		
WI045	x				Chichester Harbour	x		x		x	229		
WI060	x				So'ton Water, IoW, Portsmouth	x	x	x	x	x	580 286		
WI065	x				Portsmouth Harbour	x				x	306		
WI080	x				So'ton Water, IoW etc.	x	x			x	7 909		
WI090	x				So'ton Water, IoW etc.	x				x	1 086		
WI100	x				Poole Harbour	x					3 915		
WI110	x				Poole Harbour	x	x	x	x	x	146 686		
DM001			x								300		(10)
FI045			x								53		
FI050			x								0		
Total											18 540 177		

Amounts of Wastes Dumped at Sea in 2001

Table 3b Total loads (methods of determination indicated in Part II)

OSPAR-codes	in tonnes													in kilogrammes														
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	γ-HCH	DDT	TBT	DBT	other/notes
Belgium																												Pesticides
	0,227	0,081	0,000	8,918	27,889	6,186	8,675	15,971			0,422											0,000			0,020			
B/1	0,488	0,207	22,090	81,402	18,916	25,141	44,423	145,229			1,208											0,000			0,041			
B/1	0,191	0,077	11,282	31,268	5,743	16,081	10,261	5,054			0,332											0,000			0,019			
B/1	0,188	0,075	11,060	30,653	5,630	15,764	10,059	49,545			0,325											0,000			0,019			
B/3	0,018	0,002	0,694	2,169	0,481	1,242	0,675	3,872			0,033											0,000			0,002			
B/3	0,107	0,045	4,828	17,792	4,135	9,709	5,495	31,742			0,264											0,000			0,009			
B/6	1,018	0,375	32,139	127,843	35,353	71,064	38,389	248,187			2,535											0,000			0,103			
B/6	0,335	0,142	15,160	55,865	12,982	30,487	17,254	99,668			0,829											0,000			0,028			
B/9	0,008	0,000	0,291	0,699	0,138	0,312	0,205	1,353			0,006											0,000			0,000			
B/9	0,022	0,006	0,727	2,688	0,861	1,716	0,838	5,036			0,054											0,000			0,002			
B/9	0,010	0,005	0,512	1,761	0,389	0,931	0,540	3,015			0,022											0,000			0,003			
B/9	0,225	0,076	6,620	23,673	9,229	15,308	7,383	54,970			0,722											0,000			0,025			
B/int1	0,070	0,002	2,798	8,133	0,033	1,919	0,683	5,531														0,013					0,000	
B/int1	0,087	0,043	5,296	21,706	1,823	9,203	5,036	32,125														0,035					0,035	
B/int1	0,011	0,002	4,640	9,279	0,036	3,926	0,964	10,350														0,007					0,007	
B/int1	0,070	0,001	1,031	3,239	0,022	0,785	0,297	2,799														0,001					0,001	
B/int1	0,015	0,000	1,326	4,935	0,031	1,141	0,493	4,010														0,003					0,003	
B/int1	0,035	0,004	2,834	12,047	0,106	2,764	1,417	11,338														0,007					0,007	
B/int1	0,014	0,002	1,720	6,173	0,065	1,874	0,843	6,860														0,005					0,005	
B/int1	0,001	0,000	0,080	0,338	0,030	0,103	0,046	0,401														0,001					0,000	
B/int1	0,002	0,000	0,031	0,131	0,015	0,062	0,023	0,267														0,016					0,000	
B/int2	0,040	0,001	1,652	4,801	0,019	1,133	0,403	3,265														0,008					0,000	
B/int2	0,052	0,026	3,148	12,903	1,084	5,471	2,994	19,097														0,021					0,021	
B/int2	0,001	0,000	0,387	0,774	0,003	0,328	0,080	0,864														0,001					0,001	
B/int2	0,003	0,000	0,370	1,157	0,008	0,291	0,107	0,981														0,000					0,000	
B/int2	0,010	0,000	0,880	3,275	0,020	0,757	0,327	2,661														0,002					0,002	
B/int2	0,033	0,003	2,615	11,112	0,098	2,549	1,307	10,458														0,007					0,007	
B/int2	0,013	0,002	1,756	6,367	0,068	1,947	0,872	7,069														0,004					0,004	
B/int2	0,010	0,000	0,053	0,225	0,002	0,069	0,031	0,267														0,001					0,000	
B/int2	0,020	0,000	0,031	0,132	0,015	0,063	0,024	0,271														0,016					0,000	
B/int3	0,024	0,001	2,035	7,571	0,047	1,751	0,757	6,152														0,005					0,005	
B/int3	0,008	0,001	0,608	2,582	0,023	0,592	0,304	2,430														0,002					0,002	
B/int3	0,001	0,000	0,118	0,448	0,005	0,137	0,061	0,512														0,000					0,000	
B/int4a	0,006	0,001	0,450	1,913	0,017	0,439	0,225	1,801														0,001					0,001	
B/int4a	0,005	0,001	0,650	2,430	0,027	0,750	0,333	2,732														0,001					0,001	
B/int4a	0,032	0,005	2,037	8,577	0,080	2,627	1,179	10,185														0,021					0,005	
B/int4a	0,044	0,006	0,674	2,869	0,324	1,360	0,511	5,862														0,349					0,001	
B/int4b	0,006	0,001	0,490	2,081	0,018	0,477	0,245	1,958														0,001					0,001	
B/int4b	0,007	0,001	0,772	2,865	0,031	0,892	0,396	3,174														0,003					0,003	
B/int4b	0,043	0,007	2,728	11,485	0,108	3,517	1,579	13,638														0,029					0,007	
B/int4b	0,048	0,007	0,745	3,173	0,359	1,504	0,566	6,483														0,386					0,001	
B/int5	0,004	0,000	0,345	1,058	0,011	0,296	0,099	0,846														0,001					0,001	
B/int5	0,014	0,001	1,080	4,592	0,041	1,053	0,540	4,322														0,003					0,003	
B/int5	0,001	0,000	0,033	0,140	0,001	0,043	0,019	0,166														0,000					0,000	
B/int5	0,014	0,002	0,220	0,935	0,106	0,443	0,167	1,911														0,114					0,000	
B/int7	0,004	0,000	0,312	1,326	0,012	0,304	0,156	1,248														0,001					0,001	
B/int7	0,009	0,002	1,091	4,129	0,044	1,268	0,560	4,719														0,003					0,003	
B/int7	0,011	0,002	0,683	2,876	0,027	0,881	0,396	3,416														0,007					0,002	
B/int7	0,101	0,014	1,556	6,626	0,749	3,140	1,181	13,539														0,807					0,003	
B/int8	0,003	0,003	1,195	2,391	0,009	1,011	0,248	2,666														0,002					0,002	
B/int8	0,018	0,001	0,058	0,178	0,002	0,050	0,017	0,142														0,000					0,000	
B/int8	0,003	0,018	1,563	5,816	0,036	1,345	0,582	4,726														0,004					0,004	

OSPAR-codes	in tonnes														in kilogrammes													
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	γ-HCH	DDT	TBT	DBT	other/ notes
B/int8	0,003	0,003	0,205	0,872	0,008	0,200	0,103	0,821														0,001						0,001
B/int8	0,004	0,021	2,634	9,724	0,104	2,979	1,326	10,932														0,007						0,007
B/int8	0,021	0,003	0,193	0,812	0,008	0,249	0,112	0,965														0,002						0,001
B/int8	0,011	0,011	0,173	0,736	0,083	0,394	0,131	1,503														0,090						0,000
B/int9	0,017	0,000	1,474	5,485	0,034	1,268	0,548	4,456														0,003						0,003
B/int9	0,039	0,004	3,104	13,193	0,116	3,027	1,552	12,417														0,008						0,008
B/int9	0,008	0,001	1,036	3,921	0,042	1,204	0,532	4,481														0,003						0,003
B/int9	0,085	0,013	5,404	22,754	0,213	6,968	3,129	27,020														0,057						0,014
B/int9	0,184	0,026	2,832	12,061	1,363	5,716	2,150	24,647														1,468						0,005
B/int0	6,324	1,099	37,320	149,278	124,398	152,388	47,686	684,191														98,275						0,083
B/int0	1,507	0,298	9,439	36,306	29,042	38,118	12,161	156,102														18,623						0,015
B/int0	0,945	0,191	8,371	32,739	18,069	24,865	8,786	108,578														10,775						0,033
B/int0	2,192	0,310	14,293	54,791	32,398	48,121	14,770	223,930														37,258						0,038
B/int0	0,121	0,016	1,167	4,627	1,140	2,883	1,086	14,484														1,837						0,005
B/int1bis	0,297	0,052	1,752	7,008	5,840	7,015	2,239	32,121														4,614						0,004
B/int1bis	0,147	0,030	1,300	5,082	2,805	3,860	1,364	16,855														1,673						0,005
B/int1bis	0,410	0,058	2,676	10,257	6,065	9,009	2,765	41,921														6,975						0,007
B/int1bis	0,253	0,034	2,448	9,709	2,392	6,051	2,280	30,394														3,856						0,011
B/int1bis	0,047	0,004	1,022	3,265	0,308	1,725	0,493	7,761														0,086						0,005
Total	16,345	3,425	252,337	950,139	351,661	568,246	273,478	2278,463			6,752											187,499				0,271		0,387

Denmark																							
FRB20																							
FRB23	0,000	0,000		0,005	0,012	0,007	0,005																
NJL01																							
NJL02																							
NJL03																							
NJL05																							
NJL07																							
NJL07	0,001			0,040	0,026	0,026	0,020	0,139															
NJL11	0,000	0,000		0,006	0,004	0,006	0,004	0,016															
NJL13																							
NJL20																							
NJL23																							
NJL31																							
NJL37	0,004	0,002	0,018	0,125	0,143	0,179	0,036	0,894															
NJL37	0,002	0,001	0,009	0,065	0,074	0,093	0,019	0,463															
NJL41																							
NJL45																							
NJL50																							
RIB01																							
RIB01																							
RIB02																							
RIB02																							
RIB02																							
RIB03	0,001	0,000		0,072	0,030	0,058		0,227															
RIB03	0,016	0,007		1,723	0,837	0,164		6,483															
RIB04	0,001	0,000		0,072	0,030	0,058		0,227															
RIB04	0,016	0,007		1,723	0,837	0,164		6,483															
RIB08																							
RIN05	0,001	0,001	0,087	0,179	0,081	0,095	0,111	0,495				0										0	
RIN05	0,000	0,000	0,026	0,068	0,042	0,063	0,040	0,224														0	
RIN05	0,002	0,000	0,088	0,140	0,096	0,132	0,103	0,463														0	
RIN05	0,000	0,000	0,008	0,028	0,015	0,011	0,023	0,099				0										0	
RIN05	0,007	0,003	0,114	0,452	0,286	0,310	0,286																
RIN25	0,002	0,000	0,020	0,028	0,029	0,039	0,049	0,296														0	
SJL09	0,004	0,004	0,304	1,073	0,284	0,548	0,456	1,985															
VIB06	0,000	0,000	0,008	0,011	0,013	0,012	0,010	0,055														0	
VIB06	0,003	0,000	0,042	0,078	0,067	0,062		0,311														0	
VIB06	0,002	0,000	0,026	0,049	0,042	0,039		0,196															

OSPAR-codes	in tonnes													in kilogrammes														
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	γ-HCH	DDT	TBT	DBT	other/ notes
VIB08	0,000	0,000	0,003	0,008	0,004	0,004	0,006	0,019																				
VIB09	0,006	0,006	0,020	0,591	0,143	0,347	0,245	1,508																				
VIB09	0,008	0,002	0,168	0,503	0,810	0,671		2,850																				
VSJ39																												
AAR01	0,000	0,000	0,003	0,012	0,008	0,019	0,008	0,046																				
Total	0,075	0,035	0,944	7,053	3,914	3,105	1,418	23,479													0,001					0,001		

France										(0)																		
F/05901, 059002	0,49	0,13	11,05	57,53	9,28	44,30	14,43	89,02		654,22	0,29	898,37	<DL	0,03	0,18	0,22	1,58	1,48	0,03	3,51		7,55						
F/05903, 05604, 05903	0,24	0,06	4,78	23,43	4,30	21,40	5,90	45,80		370,34	0,13	384,79	0,03	0,08	0,12	0,56	0,95	1,04	0,14	2,92		24,86						
F/06201	0,10	0,07	4,83	16,62	6,28	12,46	5,27	60,40		0,74			<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL		0,01						
F/06202	0,33	0,07	2,77	11,17	4,79	11,34	4,03	55,25		0,66			<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL		0,02						
F/07606	0,02	0,01	0,33	2,68	1,67	1,91	0,90	5,80		0,33		40,52										0,00						
F/07603	0,04	0,01	0,61	4,25	0,42	2,25	1,24	6,96		107,78	0,18	63,89	<DL	0,08	0,06	0,17	0,23	0,26	0,06	0,86	0,87		0,14					
F/07602	0,32	0,34	8,30	48,09	24,32	39,10	12,58	94,05	48,59	1,16	1 669,93	723,71	<DL	<DL	0,00	0,00	0,01	0,01	0,00	0,03	0,17		0,05					
F/07601	2,98	1,46	33,35	229,92	77,22	172,00	54,41	437,02		7 910,24	7,20	3 998,12	10,00	12,81	25,27	22,99	32,82	42,12	22,82	168,84	168,49		25,27					
F/01405	0,02	0,01		1,75	1,01	1,24	0,50	4,40		38,43	45,64	14,73	0,12	0,12	0,19	0,07	0,24	0,16	0,06	0,96		1,11						
F/01401	0,07	0,04	3,20	20,78	2,19	7,92	5,77	23,67		2 299,30	551,15	256,26	0,02	0,18	0,48	0,46	0,62	0,73	0,23	2,52		1,95						
F/05003																												
F/05001, 05002	0,02	0,00	2,14	5,43	2,47	4,88	3,18	11,74		0,04	429,95	446,83								0,01		1,38						
F/02907	0,00	0,00	0,45	2,02	1,99	1,90	0,76	3,96			42,66	41,53	0,01	0,04		0,14	0,15	0,13	0,07	0,55								
F/02906	0,00	0,01	0,01	0,12	0,32	0,37	0,04	0,67					0,00	0,00	0,01	0,00	0,01	0,00	0,00	0,02								
F/05602, 05603	0,00	0,00	0,15	0,56	0,37	0,39	0,14	1,92	2,87		32,24	8,12	<DL	<DL	<DL	<DL	0,09	0,08	<DL	0,16								
F/05601	0,01	0,00	1,08	2,64	0,86	1,76	0,98	7,54		0,09			<DL	<DL	<DL	<DL	0,01	0,01	<DL	0,01		2,65						
F/05604																												
F/04401	0,43	0,27	35,56	125,06	44,70	86,91	48,19	219,88		581,74	4 821,92	1 565,19	<DL	<DL	<DL	<DL	0,47	0,51	<DL	0,41		65,36						
F/04405	0,00	<DL	0,02	0,10	0,12	0,11	0,04	0,33																				
F/04406, 04407	0,00	0,00	0,06	0,33	0,30	0,34	0,11	0,48		10,88	12,00	3,36	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL		3,50						
F/04408	<DL	0,00	0,26	1,10	0,37	0,68	0,37	1,63		7,90	41,80	13,64	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL		0,66						
F/04412	0,00	0,00	0,24	1,72	0,82	1,01	0,58	3,01		11,20	79,55	21,50	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL		2,80						
F/08507	0,00	0,00	0,01	0,02	0,01	0,02	0,01	0,04		0,03		0,29	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL								
F/08503																												
F/01701, 01706, 01702, 01704, 01707, 01705, 01708	0,08	0,06	5,19	23,11	6,30	14,01	8,43	45,74		134,94	237,45	79,53	<DL	<DL	<DL	<DL	<DL	<DL	<DL		2,74							
F/03319	0,74	0,05	5,68	<DL	<DL	<DL	<DL	19,22																				
F/03318	<DL	0,01	1,09	<DL	<DL	<DL	<DL	6,10																				
F/03313, 003316, 003317	1,53	0,25	22,87	12,06	29,56	54,45	28,00	258,25		551,72			1,49	1,74	3,51	3,28	2,99	3,17	1,97	10,37								
F/03307, 03308, 03309, 03311	3,43	0,43	36,94	18,14	57,43	80,41	61,06	449,20		800,37			2,09	2,83	6,62	5,94	5,46	6,31	3,99	28,49		48,77						
F/03301, 03303, 03305, 03306, 03307	0,54	0,11	10,05	15,07	17,98	27,75	20,13	119,72		165,60			0,56	0,69	1,09	0,93	1,00	1,10	0,72	3,81		23,98						
F/06401, 06402																												
Total	11,408	3,397	191,013	623,708	295,066	588,911	277,048	1 971,786	51,458	13 647,7	7 972,1	8 560,4	14,326	18,614	37,532	34,774	46,625	57,111	30,076	223,483	169,533	212,789						

Germany																																		
D12	0,027	0,013	0,794	1,740	1,249	1,597	0,893	7,041	10,670		0,017	174,375	48,877																					
D13	0,016	0,010	0,565	1,723	0,638	1,618	0,728	4,278	31,170		0,022																							
D14	3,312	3,024	91,208	340,832	120,011	216,020	129,612	960,089	200,000	4,656	2,736											6,721	3,408	7,201	3,552	9,121	14,881	6,721	51,605	20,162	0,624	46,084	259,224	57,605
D15	0,171	0,066	3,031	13,987	4,662	10,879	7,382	38,854	67,000	0,206	0,097											0,303	0,183	0,284	0,136	0,369	0,466	0,276	2,017	0,179	0,054	0,831	13,210	2,292
D16	0,030	0,010	0,865	3,060	1,295	2,333	1,341	7,765																										
D17	0,408	0,301	20,204	81,676	19,989	49,435	30,091	159,052	44,000	1,419	0,838											1,225	1,075	1,118	1,870	3,009	2,364	0,838	11,499	1,333	0,215	2,751	6,448	3,009

OSPAP-codes	in tonnes													in kilogrammes															
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	γ-HCH	DDT	TBT	DBT	other/ notes	
D20	0,011	0,006	0,495	1,885	0,533	1,237	0,685	3,427	30,000	0,006	<0,001			<0,038	<0,019	<0,019	<0,019	0,019	0,011	0,010	<0,135			0,019	0,006	<0,114	1,352	0,305	
D21	0,003	0,000	0,176	0,375	0,230	0,521	0,291	1,608																					
D22	0,010	0,001	0,588	1,407	0,793	1,688	1,228	5,806																					
D25	0,002	0,000	0,071	0,180	0,105	0,221	0,112	0,761																					
D30	0,003	0,000	0,160	0,395	0,274	0,494	0,259	1,620																					
D32	0,012	0,001	0,588	1,352	0,851	1,628	0,876	5,810																					
D34	0,716	0,477	25,843	109,337	29,819	59,639	41,747	198,795	95,000	0,954	0,656			1,332	0,934	1,670	1,153	2,584	2,783	1,014	11,470			2,584	0,199	3,678	41,747	6,361	
D36	0,003	0,000	0,099	0,234	0,167	0,329	0,149	0,936																					
D41	<0,064	0,045	2,963	14,170	3,349	8,631	4,895	21,899	<15,000	0,019	0,015			<0,258	<0,129	<0,129	<0,129	<0,064	<0,064	<0,064	<0,837			<0,064	<0,026	<0,773	1,675	0,258	
D42	<0,009	0,006	0,409	1,958	0,463	1,192	0,676	3,026	<15,000	0,003	0,002			<0,036	<0,018	<0,018	<0,018	<0,009	<0,009	<0,009	<0,116			<0,009	<0,004	<0,107	0,231	0,036	
D43	0,013	0,001	0,671	1,502	0,832	1,824	0,966	6,090																					
D44	0,017	0,002	0,940	2,075	1,096	2,663	1,410	8,692																					
D45	0,004	0,001	0,247	0,609	0,310	0,741	0,367	2,601																					
D48	0,031	0,010	0,886	3,137	1,328	2,391	1,375	7,959																					
Total	4,863	3,976	150,804	581,634	187,995	365,081	225,083	1 446,108	507,840	7,263	4,385	174,375	48,877	9,912	5,766	10,437	6,877	15,176	20,580	8,931	77,679			24,350	1,127	54,339	323,887	69,866	

Ireland																						
Irl 6	<0,140	0,050	3,040	<7,780	<5,520	<8,360	<6,210	26,710	<1,600	<1,330	<1,270	<1,350	<1,320	<1,340	<1,270	<9,480	<0,110	<0,570	<2,080	<11,370	<23,850	
Irl 6	<0,150	0,040	2,390	<8,340	<5,870	<12,630	<5,560	37,300	<0,850	<0,440	<0,410	<0,530	<0,430	<0,480	<0,420	<3,560	<0,170	<0,240	<1,200	<6,570	<15,100	
Irl 8	0,036	0,009	1,374	8,353	1,507	4,998	3,265	19,040	<0,770	<0,770	<0,770	<0,770	<0,770	<0,770	<5,390	<0,770	<0,770	<3,080	<0,400	<0,200		
Irl 13	<0,001	<0,001	0,001	0,010	0,007	0,018	0,006	0,078	<0,050	<0,050	<0,050	<0,050	<0,050	<0,050	<0,050	<0,350	<0,050	<0,050	<0,200	ND	ND	
Irl 17	0,050	0,019	1,163	3,193	3,740	3,731	2,516	13,750	<0,440	<0,440	<0,440	<0,440	<0,440	<0,440	<0,440	<3,080	0,230	<0,230	<0,910	<2,530	0,240	(11)
Irl 17	0,027	0,011	0,639	3,044	2,409	2,739	1,906	9,387	<0,120	<0,140	<0,120	<0,120	<0,120	<0,120	<0,120	<0,860	<0,120	<0,120	<0,560	<3,580	<3,650	(11)
Irl 20	0,005	<0,001	0,330	0,630	0,170	0,420	0,470	1,950	<0,220	<0,220	<0,220	<0,220	<0,220	<0,220	<0,220	<1,540	<0,220	<0,220	<0,880	<0,080	<0,080	
Irl 33	<0,008	0,003	0,379	1,442	0,577	2,410	0,802	4,442	<0,080	<0,080	<0,080	<0,080	<0,080	<0,080	<0,080	<0,560	<0,080	<0,080	<0,240	<1,590	ND	
Irl 37	0,050	0,002	0,130	0,300	0,790	7,370	0,330	7,080	<0,030	<0,030	<0,030	<0,030	<0,030	<0,030	<0,030	<0,210	<0,001	<0,001	<0,002	<0,570	<0,570	
Irl 38	0,004	0,014	0,163	0,782	0,364	0,592	0,512	2,405	<0,020	<0,020	<0,020	<0,020	<0,020	<0,020	<0,020	<0,140	ND	<0,030	<0,110	<0,140	<1,480	
Total	<0,471	<0,150	9,609	<33,874	<20,006	<42,658	<20,257	122,064	<4,180	<3,520	<3,410	<3,610	<3,480	<3,550	<3,420	<25,170	<1,751	<2,311	<9,262	<26,830	<45,170	

Netherlands																											
NL-6	0,059	0,079	1,985	9,587	5,458	8,657	2,018	18,688	25,669	0,156	0,163	ND	ND	0	0	0	0	0	0	0	0	0	0	0	ND	0	
NL-7	1,076	0,318	13,878	38,718	39,691	37,490	21,606	214,283	166,611	NI	1,458	ND	ND	2	2	4	1	8	7	4	28	NI	1	0	ND	39	
NL-8	4,591	1,658	63,122	210,700	110,808	188,828	87,727	763,962	816,930	7,596	7,456	ND	ND	24	14	13	10	13	19	12	105	105	9	27	15	103	
NL-10	0,043	0,029	1,343	3,716	1,123	2,787	1,372	9,420	8,539	0,125	0,158	ND	ND	0	0	0	0	0	0	0	1	0	0	0	0	ND	
NL-11	1,942	0,699	52,669	149,472	71,949	91,587	69,314	329,980	324,054	2,040	2,486	ND	ND	3	4	4	6	4	5	4	30	29	3	3	3	ND	
NL-13	0,315	0,133	7,578	24,532	14,504	26,457	11,803	75,844	61,302	NI	0,688	ND	ND	1	1	2	1	2	2	2	11	NI	1	1	ND	16	
NL-14																										(8)	
NL-15																										(8)	
Total	8,026	2,916	140,575	436,725	243,533	355,806	193,840	1 412,177	1403,105	9,917	12,409			30	21	23	18	27	33	22	174	135	14	31	18	158	

Norway					
10stfold					
20stfold					
30stfold					
40stfold					
50stfold	0,001	0,000	0,028	0,040	
60stfold					
70stfold					
80stfold	0,004	0,007	0,483	4,280	
90stfold					
10Buskerud					
11Vestfold					
12Vestfold					
13Vestfold					
14Vestfold					
15Vestfold					
16Vestfold					
17Vestfold	0,000	0,000	0,001	0,000	
18Vestfold	0,000	0,000	0,001	0,001	
19/Vestfold	0,000	0,000	0,000	0,000	

[illegible]

OSPAR-codes	in tonnes													in kilogrammes														
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB	CB	CB	CB	CB	CB	CB	ΣPCB7	Total	HCB	γ-HCH	DDT	TBT	DBT	other/notes
Total	0,005	0,007				0,520																4,321						

Portugal (12)																			
P/1	<1	<0,5	<20	<50	<35	<50	<30	<100	NI	<300	NI	NI	<5	<0,5	NI	NI	NI		
P/2	<1	<0,5	<20	<50	<35	<50	<30	<100	NI	<300	NI	NI	<5	<0,5	NI	NI	NI		
P/3	<3	<1,5	<50	<100	<150	<150	<75	<600	NI	<2000	NI	NI	<25	<2,5	NI	NI	NI		
P/4	<1	<0,5	<20	<50	<35	<50	<30	<100	NI	<300	NI	NI	<5	<0,5	NI	NI	NI		
P/5	<1	<0,5	<20	<50	<35	<50	<30	<100	NI	<300	NI	NI	<5	<0,5	NI	NI	NI		
P/6	<1	<0,5	<20	<50	<35	<50	<30	<100	NI	<300	NI	NI	<5	<0,5	NI	NI	NI		
P/7	<5	<3	<100	<400	<300	<500	<125	<1500	NI	<6000	NI	NI	<100	<10	NI	NI	NI		
P/8	<1	0,5	<20	<50	<35	<50	<30	<100	NI	<300	NI	NI	<5	<0,5	NI	NI	NI		
P/9	<5	<3	<100	<400	<300	<500	<125	<1500	NI	<6000	NI	NI	<100	<10	NI	NI	NI		
Total	<19,0	<10,5	<370,0	<1200,0	<960,0	<1450,0	<505,0	<4200,0		<15800			<255,0	<25,5					

Spain																	
E/1	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
E/2	0,880	0,490	21,800	16,700	26,400	52,300	4,400	0,950	2,030	1,760	7,280	1,830	15,680	20,850	21,480	70,910	
E/3	0,430	0,260	0,800	2,900	6,800	23,600	3,200	NI	NI	NI	NI	NI	NI	NI	NI	0,120	
E/5	3,180	4,090	23,200	52,500	99,600	210,400	12,700	NI	NI	NI	NI	NI	NI	NI	NI	11,840	
E/6	0,040	0,010	NI	1,400	2,400	2,800	0,700	NI	NI	NI	NI	NI	NI	NI	NI	0,210	
E/7	0,290	0,250	2,600	7,500	27,800	43,600	3,400	NI	0,050	0,050	2,700	9,480	16,610	19,360	18,290	66,540	
E/8	0,060	0,050	1,700	9,500	5,000	3,100	2,300	0,030	NI	NI	NI	NI	NI	NI	NI	0,120	
E/11	ND	0,080	4,900	4,000	6,200	6,600	4,000	NI	NI	NI	NI	NI	NI	NI	NI	3,440	
Total	4,880	5,230	55,000	94,500	174,200	342,400	30,700	0,980	2,080	1,810	9,980	11,310	32,290	40,210	39,770	153,180	

UK										
CR019	0,005	0,006	0,206	0,669	1,049	1,729	0,416	8,456		
CR020	0,002	0,000	0,024	0,094	0,067	0,111	0,081	0,331		
CR021	0,001	0,002	0,110	0,298	0,094	0,126	0,188	0,691		
CR027	0,005	0,005	0,173	0,707	0,518	0,896	0,386	1,759		
CR030	0,004	0,002	0,087	0,191	0,462	0,422	0,113	1,881		
CR031	0,000	0,000	0,003	0,009	0,006	0,012	0,006	0,027		
CR040	0,001	0,001	0,042	0,087	0,099	0,122	0,393	0,311		
CR050	0,000	0,000	0,008	0,029	0,024	0,023	0,028	0,070		
CR080	0,002	0,002	0,045	0,240	0,205	0,293	0,172	0,672		
CR110	0,028	0,011	0,789	2,797	2,307	2,989	1,866	7,412		
DM001	0,000	0,000	0,017	0,045	0,023	0,039	0,027	0,102		
DV010	0,034	0,030	2,958	6,862	2,111	4,416	5,213	13,158		
DV011	0,000	0,000	0,006	0,013	0,004	0,009	0,010	0,026		
DV040	0,008	0,002	0,000	0,993	0,409	0,821	0,504	2,068		
FI068	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		
FI070	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		
FO010	0,006	0,003	0,288	0,932	0,886	0,705	0,689	2,651		
FO020	0,003	0,002	0,146	0,515	0,335	0,401	0,342	1,099		
FO028	0,005	0,000	0,204	0,854	0,582	0,953	0,569	2,982		
FO036	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		
FO038	0,029	0,049	0,636	2,594	1,823	3,976	2,765	6,056		
FO041	0,009	0,031	0,457	2,159	1,256	2,208	1,007	3,910		
FO044	0,055	0,509	6,609	30,390	21,008	30,490	14,233	57,199		
FO048	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		
FO051	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		
FO080	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		
HE020	0,002	0,001	0,055	0,077	0,099	0,139	1,031	0,641		
HE025	0,001	0,000	0,036	0,051	0,066	0,093	0,688	0,428		
HU015	0,009	0,003	0,214	0,813	0,894	0,428	0,385	8,381		
HU020	0,064	0,031	4,008	11,521	4,889	11,448	5,068	26,495		
HU030	0,347	0,156	20,210	59,497	24,674	57,093	26,004	133,007		
HU040	0,003	0,001	0,075	0,332	0,227	0,357	0,132	0,984		
HU041	0,005	0,002	0,131	0,578	0,395	0,622	0,230	1,716		
HU060	0,618	0,330	41,842	117,386	51,435	120,474	52,234	275,042		

[illegible]

OSPAP-codes	in tonnes														in kilogrammes															
	Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	γ-HCH	DDT	TBT	DBT	other/ notes	
TH034		0,005	0,004	0,201	0,871	0,835	0,654	0,426	1,795																					
TH036		0,001	0,001	0,080	0,360	0,206	0,181	0,181	0,578																					
TH037		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TH038		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TH049		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TH052		0,268	0,134	0,000	86,388	2,407	45,735	43,060	128,913																					
TH053		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TH062		0,000	0,000	0,003	0,019	0,012	0,012	0,011	0,040																					
TH070		0,035	0,026	2,833	5,417	2,629	7,852	3,117	10,789																					
TH073		0,001	0,001	0,059	0,226	0,138	0,138	0,128	0,492																					
TH103		0,019	0,014	1,531	2,928	1,421	4,243	1,685	5,831																					
TH140		0,036	0,005	0,381	1,130	0,435	1,793	0,619	2,032																					
TH202		0,001	0,000	0,031	0,095	0,030	0,047	0,049	0,132																					
TH203		0,001	0,000	0,031	0,095	0,030	0,047	0,049	0,132																					
TH204		0,001	0,000	0,026	0,079	0,025	0,039	0,041	0,110																					
TH205		0,000	0,000	0,010	0,032	0,010	0,016	0,016	0,044																					
TH206		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TH207		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TH208		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TH209		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TH210		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TY022		0,032	0,002	0,297	0,412	0,074	0,358	0,284	0,953																					
TY025		0,003	0,001	0,084	0,340	0,544	0,229	0,151	0,684																					
TY042		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TY070		0,054	0,009	0,354	1,506	1,534	5,930	0,843	15,480																					
TY081		0,038	0,006	0,220	1,146	1,134	4,281	0,584	11,325																					
TY090		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TY130		0,005	0,001	0,164	0,309	0,258	0,618	0,275	1,031																					
TY150		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																					
TY160		1,172	1,106	13,155	127,870	169,367	161,261	26,745	457,324																					
TY180		0,020	0,009	0,960	3,007	1,807	3,554	1,807	8,971																					
TY181		0,000	0,000	0,003	0,008	0,005	0,010	0,005	0,026																					
TY190		0,000	0,000	0,017	0,042	0,074	0,090	0,024	0,279																					
WI010		0,034	0,015	2,300	6,797	2,398	3,587	3,186	10,998																					
WI020		0,012	0,002	0,456	1,223	0,452	0,649	0,599	1,961																					
WI031		0,021	0,002	0,669	1,257	0,893	1,204	0,775	3,806																					
WI035		0,000	0,000	0,061	0,059	0,014	0,025	0,048	0,094																					
WI045		0,000	0,000	0,003	0,010	0,007	0,005	0,004	0,018																					
WI060		0,211	0,065	8,520	28,437	17,411	17,927	11,256	46,731																					
WI065		0,000	0,000	0,006	0,018	0,008	0,013	0,007	0,033																					
WI080		0,004	0,001	0,200	0,655	0,220	0,270	0,345	0,949																					
WI090		0,000	0,000	0,022	0,060	0,101	0,058	0,031	0,164																					
WI100		0,002	0,001	0,064	0,174	0,118	0,174	0,096	0,609																					
WI110		0,028	0,011	1,042	2,648	1,437	2,346	1,301	6,334																					
Total		8,686	7,005	383,433	1 364,848	815,913	1 250,857	579,476	3 700,838																					

GENERAL INFORMATION

The continental decimal system is used throughout this report. Empty cells indicate that no information was available. Italic numbers are used when the measured/calculated value was smaller than the actual number given in the cell.

ADDITIONAL INFORMATION

(Referring to Part II of the Formats for the Annual Reporting of Amounts of Wastes Dumped at Sea adopted at PRAM 1995)

1. Deposit Site

France

Department/ Département	OSCOM code/ Codification de la zone (1)	Deposit sites/ Dénomination du site d'immersion ou de rejet (2)	Site Position / Position de la zone (3)
Nord (59)	F/05901	Vidage ouest sud (Dunkerque)	3
	F/05902	Vidage ouest nord (Dunkerque)	3
	F/05903	Vidage milieu (Dunkerque)	3
	F/05904	Vidage est (Dunkerque)	3
Pas de Calais (62)	F/06201	(Calais)	3
	F/06202	(Boulogne)	3
Seine Maritime (76)	F/07601	Dépôt du Kannick (Rouen)	3
	F/07602	Dépôt d'Octeville (Le Havre)	3
	F/07603	(Dieppe)	2
	F/07604	(St Valéry en Caux)	3
	F/07605	(Fécamp)	2
	F/07606	(Tréport)	2
		(Honfleur)	
Calvados (14)	F/01404	(Dielette)	3
	F/01405	(estran Deauville)	2
	F/01406	(Deauville)	3
	F/01407	(estran Dives sur Mer)	3
	F/01401	(Caen Ouistreham)	3
	F/01408	(estran Courseulles sur Mer)	2
	F/01402	(Port en Bessin)	3
	F/01403	(Grandcamp-Maisy)	3
Manche (50)	F/05001	Le Cocaleu (Granville)	3
	F/05002	Le Loup (Granville)	2
	F/05003	Darse des Mielles (Cherbourg)	2
	F/05004	(Dielette)	3
Finistère (29)	F/02901	(Camaret)	2
	F/02902	(Douarnenez)	2
	F/02903	(Lesconil)	2
	F/02904	(Cap-Coz - Fouesnant - Port-La-Forêt)	2
	F/02905	(Crozon-Morgat)	2
	F/02906	(Audierne)	2

	F/2907	(Le Conquet)	
Ile et Vilaine (35)	F/03501	(St Malo)	3
Morbihan (56)	F/05601	Groix (Lorient)	2
	F/05602	Zone Est du département - site A (Vannes)	
	F/05603	Zone Est du département - site B (Vannes)	
	F/05604	Ban-Grèves	
Loire Atlantique (44)	F/04401	La Lambarde (Nantes St Nazaire)	2
	F/04402	(Pornic-Ria)	2
	F/04403	Dépôt nord (Piriac sur Mer)	2
	F/04404	Dépôt sud (Piriac sur Mer)	2
	F/04405	(La Turballe pêche)	2
	F/04406	Zone 1 (La Turballe-Le Croisic)	2
	F/04407	Zone 2 (La Turballe-Le Croisic)	2
	F/04408	(La Baule-Le Pouliguen)	2
	F/04409	(Pornichet la Baule)	2
	F/04410	(St Michel-Chef-Chef)	2
	F/04411	(La Plaine sur Mer)	2
	F/04412	(Pornic-Noëveillard)	2
Vendée (85)	F/08501	Noirmoutier-en-l'Île, L'Herbaudière, Pilier Nord	2
	F/08502	Noirmoutier-en-l'Île, L'Herbaudière, la pointe	2
	F/08503	La Barre-de-Monts, Fromentine, S.W.	2
	F/08504	L'Île d'Yeu, Port-Joinville, Nord	2
	F/08505	Saint-Gilles-Croix-de-Vie, Ouest	2
	F/08506	Saint-Gilles-Croix-de-Vie, Plage	2
	F/08507	Saint-Gilles-Croix-de-Vie, Chenal	2
	F/08508	Les Sables d'Olonne, N.W.	2
	F/08509	Les Sables d'Olonne, près plage	2
	F/08510	Talmont-Saint-Hilaire, Bourgenay	2
Charente Maritime (17)	F/01701	Dépôt du Lavardin (La Rochelle et La Pallice)	1
	F/01702	Fosse d'Aix (Fouras, Aix et St Denis d'Oléron)	1
	F/01704	Fosse de Chevarache (St Martin de Ré)	1
	F/01705	Pertuis de Maumusson (Le Château d'Oléron, La Tremblade)	1
	F/01706	Rejet Pointe des Minimes (Port des Minimes)	1
	F/01707	Rejet en Charente (Rochefort-Tonnay Charente)	3
	F/01708	Dépôt de Lamouroux (Bourcefranc le Chapus, Le Château d'Oléron)	1
	F/01709	Coureau de la Pallice	1
Gironde (33)	F/03301	Zone 1-1 (Bordeaux)	1
	F/03302	Zone 1-2 (Bordeaux)	1
	F/03303	Zone 1-3 (Bordeaux)	1
	F/03305	Zone 1-5 (Bordeaux)	1
	F/03306	Zone 1-6 (Bordeaux)	1
	F/03307	Zone 1-8 (Bordeaux)	1

	F/03308	Zone 2-1 (Bordeaux)	1
	F/03309	Zone 2-2 (Bordeaux)	1
	F/03311	Zone 2-4 (Bordeaux)	1
	F/03312	Zone 3-1 (Bordeaux)	1
	F/03313	Zone 3-2 (Bordeaux)	1
	F/03314	Zone 3-3 (Bordeaux)	1
	F/03315	Zone 3-4 (Bordeaux)	1
	F/03316	Zone 3-5 (Bordeaux)	1
	F/03317	Zone 3-7 (Bordeaux)	1
	F/03318	Zone 4-1 (Bordeaux)	2
	F/03319	Zone 4-3 (Bordeaux)	3
	F/03310	Bouée d'atterrissage Nord (Bassin d'Arcachon)	3
	F/03320	Sud bouée d'atterrissage Nord (Bassin d'Arcachon)	3
Pyrénées Atlantiques (64)	F/06401	Bayonne	3
	F/06402	Bayonne	3
Aude (11)	F/01101	(Port La Nouvelle)	3
	F/01102	(Gruissan)	3
Hérault (34)	F/03401	(Sète)	3
Bouches du Rhône (13)	F/01301	Dépôt du Golfe de Fos	2
Corse (20)	F/02201	(Ajaccio)	

(1) Giving the area a code number:

Enter the code number for the dumping area according to the following format:

F/(3 figures representing the department number)(2 figures representing the area within the department)

(2) Name of dumping site:

Local name for site (principal port connected thereto)

(3) Positioning of dumping site:

Position 1: Upstream of the limit of the sea

Position 2: Upstream of baseline (inner maritime waters)

Position 3: Downstream of baseline (territorial waters)

Reminder: The baselines are the low water mark and the straight baselines (particularly in the case of indented coasts and those with offshore islands) and the lines closing the bays which are determined by Decree.

The width of France's territorial waters is fixed at 12 nautical miles. The transverse limit of the sea in the estuaries is the artificial limit of separation of sea and river which is defined by the administration.

(4) Method used:

Code	Method
1	stationary dumping while at anchor
2	dumping while in motion
3	discharge by pipeline

(5) Depth:

Measured with regard to Nautical Chart reference (0 Nautical Chart or 0 low water in estuary).

(6) Position:

Position of a point representative of the dumping area.

(7) Plan to be supplied:

Position of the dumping area on a Nautical Chart extract, with details of the coordinates of the characteristic points defining the area.

Germany

A new dumpsite called "Robbensüdsteert" in the Weser Estuary has been notified for the first time by the State of Lower Saxony (new OSCOM-Code D-48).

Ireland

Two new dumping sites were used in 2001 - IRL 37 & 38. The locations of the deposit sites are indicated in Figure 4 and their co-ordinates in Table 1 of that figure.

Norway

Number of deposit sites per county in Norway for 2001 in the OSPAR Convention area:

Number County	2001			
	Dredged material	Inert material	Fish waste	Other waste (ships and bulky waste)
1 Østfold	9			
2 Akershus/Oslo				
3 Vestfold	22			1
4 Buskerud				1
5 Telemark				
6 Aust-Agder				
7 Vest-Agder	5			
8 Rogaland				
9 Hordaland	10			
10 Sogn og Fjordane	1			
11 Møre og Romsdal	2			
12 Sør-Trøndelag	3			2
13 Nord-Trøndelag	1			1
14 Nordland	10			2
15 Troms	3			1
16 Finnmark	4			
Total	70			8

Portugal

Areas of Dumping at Sea in 2001:

Code	Areas	Zone	Dumping points		Category of material	Quantity	
			Long. W	Lat. N		1 000 m3	1 000 tonnes
P/1	Viana do Castelo	Sea	08° 53' 00''	41° 39' 00''	Clean dredged material (Class 1)	50	65
P/2	Viano do Castelo	Sea	08° 53' 00''	41° 39' 00''		200	260
P/4	Figueira da Foz	Sea	08° 57' 30''	40° 07' 30''		20	26
P/8	S. Martinho do Porto	Sea	09° 11' 00''	39° 30' 30''		250	325
P/3	Esposende	Sea	08° 50' 00''	41° 31' 00''	Dredged material	25	32,5
P/5	Figueira da Foz	Sea	08° 54' 30''	40° 07' 30''	with traceable contamination (Class 2)	45	58,5
P/6	Nazaré	Sea	09° 07' 40''	39° 35' 45''		48,5	63,0
P/7	Nazaré	Sea	09° 11' 00''	39° 36' 00''	Dredged material with low contamination (Class 3)	51,4	66,8
P/9	V. R. St. António	Sea	07° 26' 00''	37° 03' 30''		17	22,1

United Kingdom

DM001 was a deposit site at Harrington Harbour off the North-West coast of England.

2. Method of determination

France

Definition of assumptions made in calculating quantities of dry matter in Table 3a

Relationship between the saturated density of the mixture ρ_{sat} and the concentration of dry matter ρ_{ms} :

These two parameters are connected through the following relationship:

$$\rho_{ms} = \frac{\rho_{ss}}{(\rho_{ss} - \rho_o)} \times (\rho_{sat} - \rho_o) \text{ in which:}$$

- ρ_{sat} = density of the mixture (in kg/m³)
- ρ_{ms} = concentration of dry matter in the mixture (in kg dry matter/m³)
- ρ_o = density of water at 4°C (in kg/m³)
- ρ_{ss} = density of the dry sediment (in kg/m³).

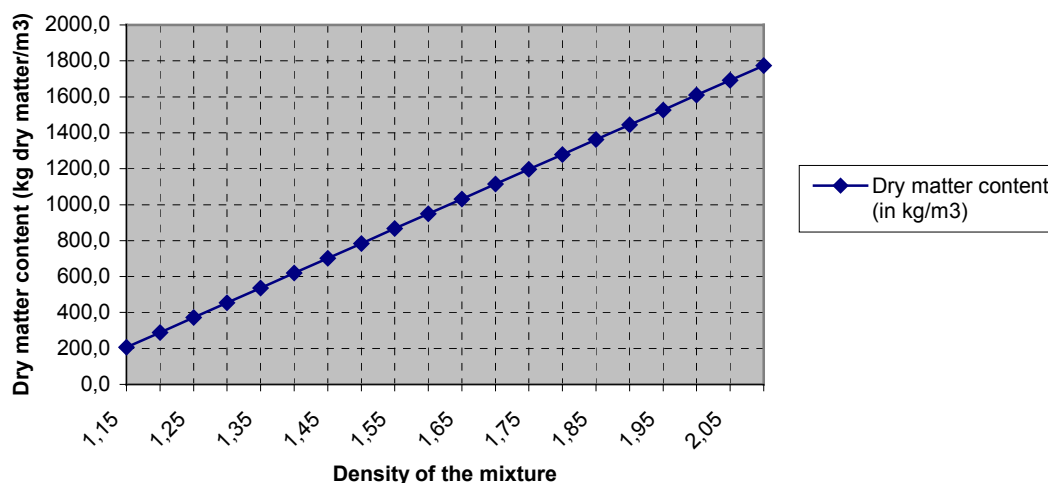
Assuming that $\rho_{ss} = 2\,600 \text{ kg/m}^3$ and $\rho_o = 1\,025 \text{ kg/m}^3$, the following simplified formula is obtained:

$$\rho_{ms} = 1\,650,8 \times (d - 1\,025)$$

where d is the density of the mixture.

This can be represented graphically as follows:

Estimation of dry matter content as a function of the density



Calculation of quantities of dry matter deposited

If the volume in situ to be dredged is known, an approximate calculation of the quantities of dry matter dredged can be carried out using the following assumptions according to the situation encountered:

Type of material	Mean density in situ	Density for calculation	Dry matter content (kg dry matter/m ³)
Fresh sludge	1,1 to 1,3	1,2	288,9
Consolidated sludge	1,3 to 1,6	1,45	701,6
Sand	1,6 to 2	1,8	1 279,4

In practice, data relating to the mean densities in situ of the sediments dredged in the principal French ports are known and listed by the Groupement d'Interêt Economique Dragages-Ports (Port-dredging Economic Interest Grouping).

If the volume in the hoppers is known, an approximate calculation of the quantities of dry matter dredged can be carried out using the following assumptions according to the situation encountered:

Type of dredging	Type of material	Mean density in the Hoppers	Density for calculation	Dry matter content (kg dry matter/m ³)
Trailer suction dredge	Liquid sludge	1,2	1,2	288,9
	Consolidated sludge	1,25 to 1,35	1,3	454,0
	Sand	1,8	1,8	1 279,4
Mechanical dredge	Fresh sludge	1,15 to 1,25	1,2	288,9
	Consolidated sludge	1,3 to 1,4	1,35	536,5
	Sand	1,8	1,8	1 279,4

Hydrocarbons

Hydrocarbons (Table 3b) are analysed on 2mm fraction of marin sediments, by extraction with CC14 in Infra Red.

Germany

For Germany where necessary, the quantities in Table 3a have been converted from cubic metres into tonnes. The following conversion factors (specific gravity) have been used:

- in case of silt: 1,2
- in case of sand: 1,8
- in case of lacking information: 1,5

in cases where no dry weight (DW) was indicated, the DW was estimated to be 50% (in order to calculate the annual load from the concentration given).

Ireland

Brief methodology for DDT analysis (supplied by analysing laboratory).

The method of analysis used was gas chromatography with mass spectrometry and detection in selective ion monitoring mode.

The methodology is based on the following principles:

- sample extracted (ASE) with DCM / acetone and reduced;
- high molecular weight interfering compounds removed by high res. size exclusion chromatography;
- cleaned by florisil and silica column;
- concentrated and injected onto GC equipped with MS in SIM mode;
- results quantified by *Chemstation* using multilevel internal tandem calibration;
- range 0,1 – 100 $\mu\text{g kg}^{-1}$ (may be extended by sample dilution);
- certified reference material run with every batch of samples.

Spain

With regard to the grain size fraction analysed, in all cases has been smaller than 0,063 mm, apart from the analysis of the deposit sites E/8 (Villagarcía), done with a smaller 2 mm than fraction.

With respect to the methods of determination used, they have been the following ones:

Sample preparation

- Drying of the sample at 60°C during 24h.
- Sieving of the sample with a 2 mm sieve.
- Separation, when done, of the smaller than 0,063 mm fraction, using water and a 0,063 mm plastic sieve.
- Homogenisation and grinding of the sample in an agate mortar.
- Determination of the humidity by drying at 105°C up to constant weight.

Heavy metals analysis

For Cd, Pb, Cu, Zn, Ni and Cu:

- Acid digestion with nitric acid in a microwave oven.
- Quantitative determination by atomic absorption spectrophotometry, in flame or in graphite chamber, depending on the sample concentration.

For As:

- Acid digestion in microwave oven with nitric acid.
- Previous reduction of the sample.
- Determination by hydride generation matched to an atomic absorption spectrophotometer.

For Hg:

- Acid digestion in microwave oven with nitric acid.

- Determination by cold steam technique matched to atomic absorption spectrophotometry.

Poly-chlorinated-biphenyls

- Extraction of homogenised and grinded sample with a methylene chloride:hexane (1:1) mixture.
- Extract concentration and passing through an anhydrous sodium sulphate column.
- Sulphur elimination by purification with powder of copper.
- Extract purification in column, avoiding the organochlorated compounds with a mixture of ethylic ether in hexane at successive concentrations of 6, 15 and 50%, ending with pure hexane.
- Quantitative determination by gas chromatography with electron capture detector, using an HP-S capillary column of 0,22 mm inner diameter.

Polyaromatic hydrocarbons

- Extraction by means of decantation, mixture with acetone:hexane (1:1) and ultrasounds.
- Purification by means of decantation with salt saturated with sodium sulfate.
- Determination using gas chromatography with a 60 mm capillary column, BOD5 and flame ionization detector.
- Confirmation, when necessary, by means of mass chromatography.

Organic matter

For this parameter we have used two types of techniques.

As volatile solids:

- Drying of the sample at 105°C, grinding in a mortar and combustion in muffle at 550°C up to constant weight.
- Determination of total quantity as (formula used in our "Recommendations for the management of dredged material in the ports of Spain"):

$$TOC \text{ mass (tn)} = \frac{0,35 \times \text{Volatile solids concentration (\%)} \times \text{dumped mass (tn)}}{100}$$

As Total organic carbon (TOC):

- Drying at 105°C, elimination of the inorganic carbon with HCL and determination by means of calcination and detection of CO₂ with an infrared detector (Elementary analysis).
- Determination of the total quantity as:

$$TOC \text{ mass (tn)} = \frac{TOC \text{ concentration (\%)} \times \text{dumped mass (tn)}}{100}$$

United Kingdom

All analyses of dredged material on <2mm fraction. Methods of determination as specified in reports listed below:

- Allchin, C.A., Kelly, C.A. and Portmann, J.P. (1989) Methods of analysis for chlorinated hydrocarbons in marine and other samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (6), 25 pp.
- Jones, B.R. and Laslett, R.E. (1994) Methods for analysis of trace metals in marine and other samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (11), 29 pp.
- Kelly, C.A., Law, R.J., and Emerson, H.S. (2000) Methods of analysing hydrocarbons and polycyclic aromatic hydrocarbons (PAH) in marine samples. Science Series, Aquatic Environmental Protection: Analytical Methods, CEFAS Lowestoft. (12), 18pp.
- Law, R.J., Fileman, T.W. and Portmann, J.P. (1988) Methods of analysis of hydrocarbons in marine and other samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (2), 25 pp.
- Waldock, M.J., Waite, M.E., Miller, D., Smith, D.J. and Law, R.J. (1989) The determination of total tin and organotin compounds in environmental samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (4), 25 pp.

3. Quality Assurance of Analyses of Dumped Material

a. Do the laboratories carrying out the analyses undertake:

Contracting Parties responding "Yes" to this question are indicated under the respective columns with their country abbreviation.

	All	None	Some
(i) the analysis of blank samples and laboratory reference materials with each batch of samples of waste and other material dumped in the maritime area that is analysed by that laboratory;	B, UK, NL		D
(ii) periodic comparative analysis of laboratory reference materials and certified reference materials;	B, UK, NL		D
(iii) the compilation of quality control charts based upon the data resulting from the analyses of the laboratory reference materials and certified reference materials, and the use of those quality control charts to monitor analytical performance in relation to all samples of dumped wastes or other materials;	B, UK, NL		D
(iv) periodic participation in interlaboratory comparison exercises, including, where possible, international comparison exercises;	B, UK, NL		D
(v) periodic participation in national and, where possible, international laboratory proficiency schemes, under which: • participating laboratories are asked to analyse samples of substances which are provided by the organisers of the scheme; • the composition of those samples is not disclosed in advance; • the results of the scheme for each participating laboratory are made available to all participating laboratories.	B, UK NL		D

- b. If reporting "Some" in the table above, please indicate which parts of the data set are not subject to the full range of QA procedures.

In Germany, several laboratories are involved in analyses of dredged material. Most of these laboratories are accredited and apply the QA procedures (i) to (v).

- c. Describe any practical action taken to apply the QA procedures described above (e.g. participation in interlaboratory comparison exercises and international QA/QC schemes).

Belgium has reported that their laboratories follow the EN ISO/IEC 17025.

- d. Are any special difficulties encountered in applying Quality Assurance procedures?

Belgium and the UK have encountered no difficulty.

Quality assurance of analysis of dumped material in Norway

Norway has reported that at present there is no verification of the use of laboratories in the Norwegian reporting system. In general, well established laboratories are used. Norway will however include a specific questionnaire dealing with the use of laboratories for next year's reporting.

FOOTNOTES TO ALL TABLES

Table 1

- (1) This quantity refers to mean tonnes licensed.
- (2) This quantity refers to maximum tonnes licensed.
- (3) 4 licences are still valid in 2001 (validity: 01.04.00 - 31.03.02) + 1 licence which is valid from 01.04.00 - 31.03.01). These 5 licences were reported in 2000. The licences mentioned in the table have been granted in 2001 and have a validity from 01.04.01 - 31.03.02. The amounts mentioned in the table only concern these two last licences.
- (4) It concerns 2 permits for the Westerschelde and 1 permit for the Beneden-Zeeschelde (internal waters). The amounts in the permit are expressed in m³, a conversion factor of 1,3 has been applied. Original amount licensed is 30 000 000 m³.
- (5) This quantity refers to sand.
- (6) This quantity refers to silt.
- (7) In Germany, formal permits are issued only for disposal of dredged material under the responsibility of the Federal States (Länder). There is no formal licencing procedure for dredging and disposal of dredged material carried out by the German Federal Waterways Administration, however all disposal activities follow national regulations which are in accordance with OSPAR/LC requirements.
- (8) There is a general permit in Iceland for disposing dredged material when the contamination of the sediment does not exceed given threshold values.
- (9) Permits are issued on the basis of wet tonnage. The dry tonnage licensed has been calculated using the amount of wet sediment dumped versus dry sediment dumped (based on the moisture content). The actual amount of wet tonnage licensed is 4 932 000 tonnes.
- (10) NL- Permits issued for dumping of dredged materials at sea are licensed in cubic metres (not metric tonnes).
- (11) NL- Permits issued for dumping of dredged materials in national waters are numerous and are not taken into account in the overview of total amounts licensed in tables 1 and 2 but are specified in table 3.
- (12) All vessels dumped are wooden vessels, usually old fishing boats. Sizes are given as follows: below 50 ft.: 3 vessels, between 50 and 150 ft.: 4 vessels, unspecified: 1 vessel.
- (13) UK licensed tonnages are usually on a wet weight basis. These are the estimated dry weight equivalents.
- (14) An additional 588 tonnes dry weight of fish waste was licensed for deposit in the sea in 2001. The material was licensed for deposit directly onto the intertidal zone but does not constitute dumping under the terms of the Convention. 387 tonnes of fish waste was deposited under this and previous licences during 2001.

Table 2

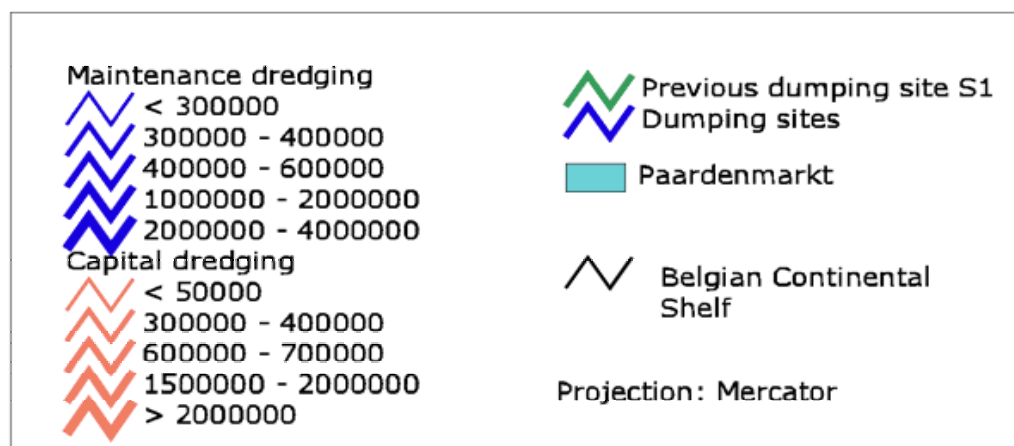
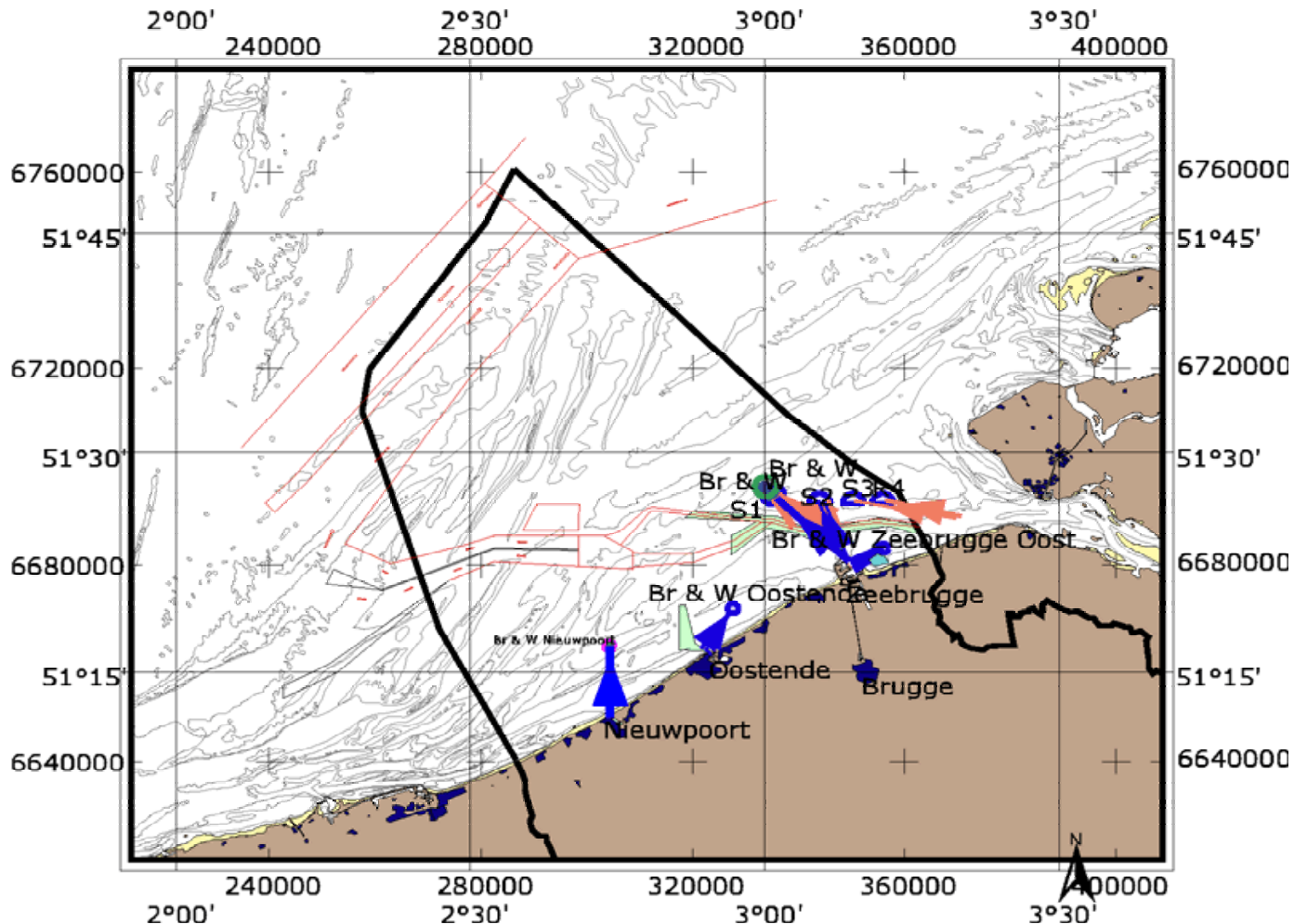
- (1) Least detriment option.
- (2) Although HCB concentrations exceed action level 2 slightly, disposal in the Elbe estuary was allowed, as it does not add contaminants to the estuary. Sediments are dredged and relocated within the same water body. Due to hydrological conditions, mixing of particulate matter between dredging and disposal areas is intensive, and therefore the same material has to be dredged and disposed of repeatedly. The concentrations of HCB in the dredged material and in suspended particulate matter of the Elbe is very similar. There is no local source for HCB in the dredging area, however HCB originates from the upper reaches of the Elbe.
- (3) Average HCB concentrations measured in dredged material were 0,0065 mg/kg.
- (4) Average HCB concentrations measured in dredged material were 0,0075 mg/kg.
- (5) The type of inert material is fine sand (P1, P2), sand/clay (P8).

Tables 3 a and b

- (0) For France, see additional information on hydrocarbons in Part II- Method of determination.
- (1) For the conversion factors of the quantities in Table 3A, see "Germany" under Part II - Method of determination.
- (2) This figure has been calculated on the basis of the silt fraction only. The quantity of the associated sand fraction which is exempted from analysis according to § 5.2 of the OSPAR Guidelines for the Management of Dredged Material (Ref. No. 1998-20) is indicated in footnotes 3-6.
- (3) Additional quantity of 4 240 000 t sand, exempt from chemical analysis.
- (4) Additional quantity of 3 100 000 t sand, exempt from chemical analysis.
- (5) Additional quantity of 1 130 000 t sand, exempt from chemical analysis.
- (6) Additional quantity of 2 710 000 t sand, exempt from chemical analysis.
- (7) This is the only site in Germany where the dumping of dredged material has not been carried out in internal waters.
- (8) For NL-14 and NL-15 no data was made available.
- (9) Material dumped in Harrington Harbour Cumbria off the North-West Coast of England.
- (10) Fish waste dumped off the coast of Jersey, Channel Islands.
- (11) There were (allegedly) a number of samples indicating high PBC levels in IRL17 (Cork Harbour). Assessment of these results was carried out based on:
 - a. the location of the alleged contaminations and proximity to any possible sources;
 - b. the occurrence of particular congeners;
 - c. relative amounts present.An informed judgement was made that this was in fact a laboratory error and therefore results reported were comparable to the lower ones reported in the same area.
- (12) For Portugal, the values are in mg/kg for metals and µg/kg for organic.

Figure 1 - Dumping sites of dredged material in Belgium in 2001

Dumping and dredging sites



III. Maps

The following maps "Approximate positions of the dumping sites for dredged material used by France (Atlantic Ocean / English Channel and North Sea)", indicate the approximate positions of the dumping sites used during 2001.

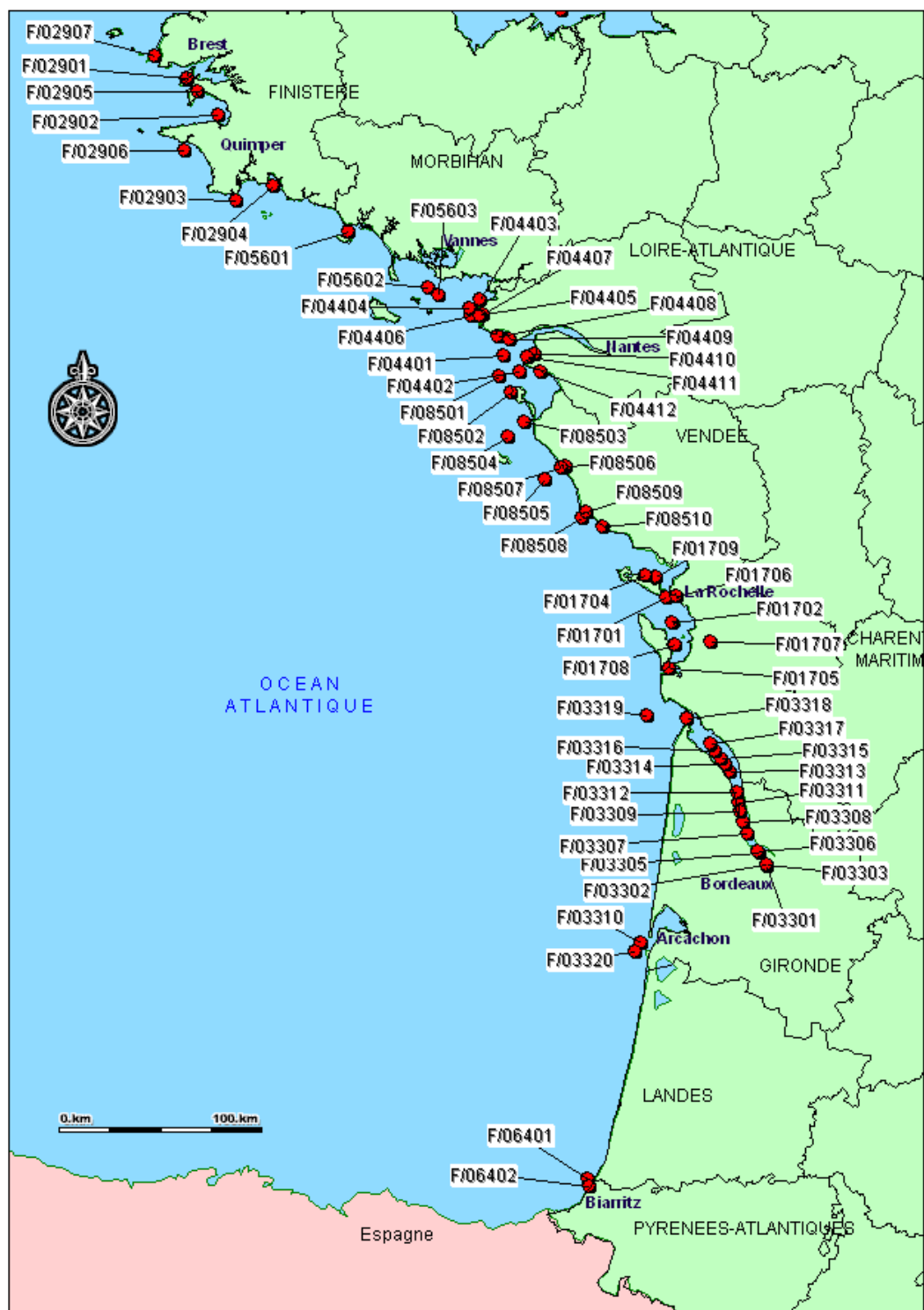


Figure 2a: Approximate positions of the dumping sites for dredged material used by France in 2001 (Atlantic Ocean)



Figure 2b: Approximative positions of the dumping sites for dredged material used by France in 2001 (English Channel and North Sea)

Figure 3 - Dumping sites of dredged material in Germany in 2001

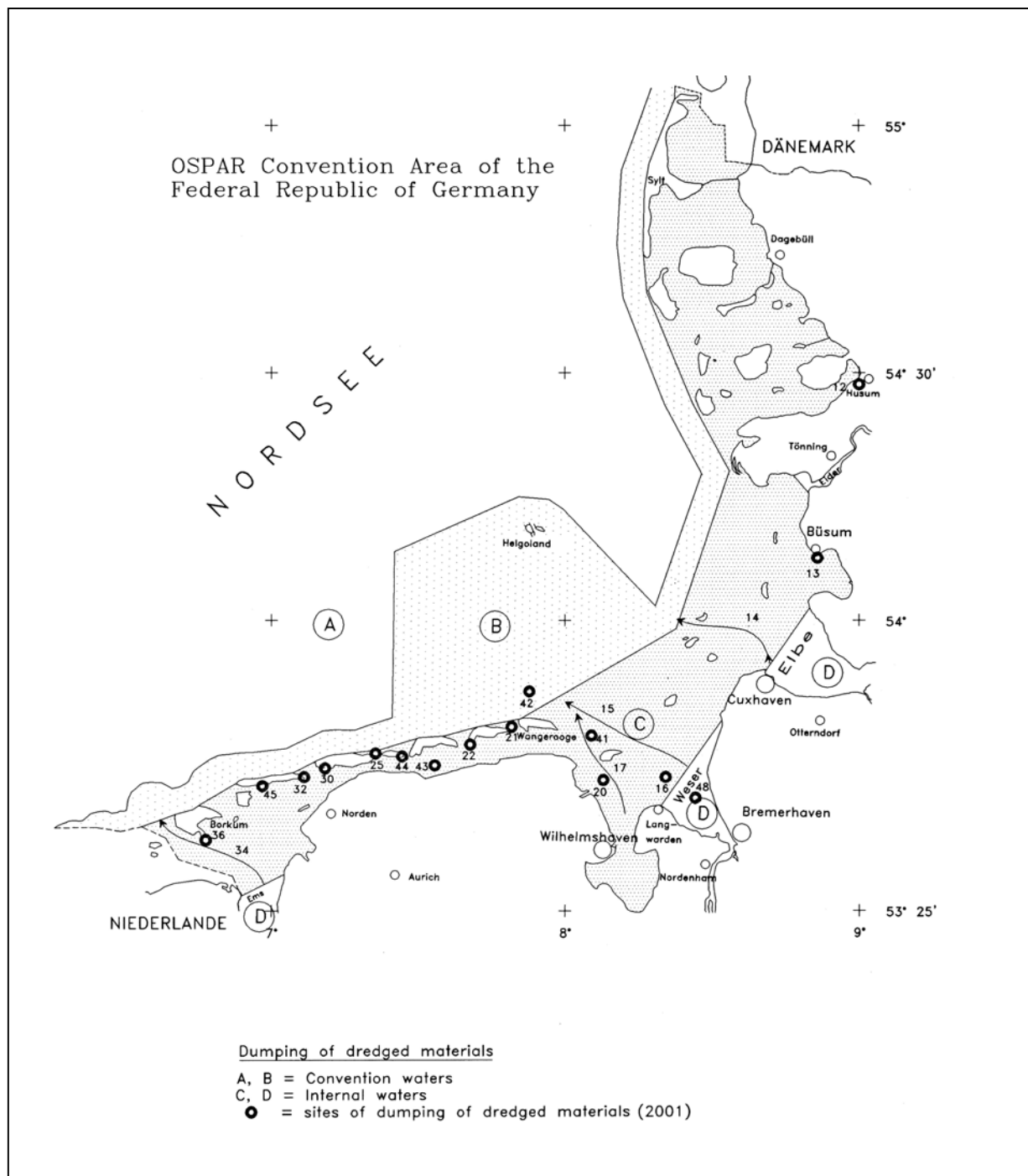


Figure 4 - Dumping sites of dredged material in Iceland in 2001

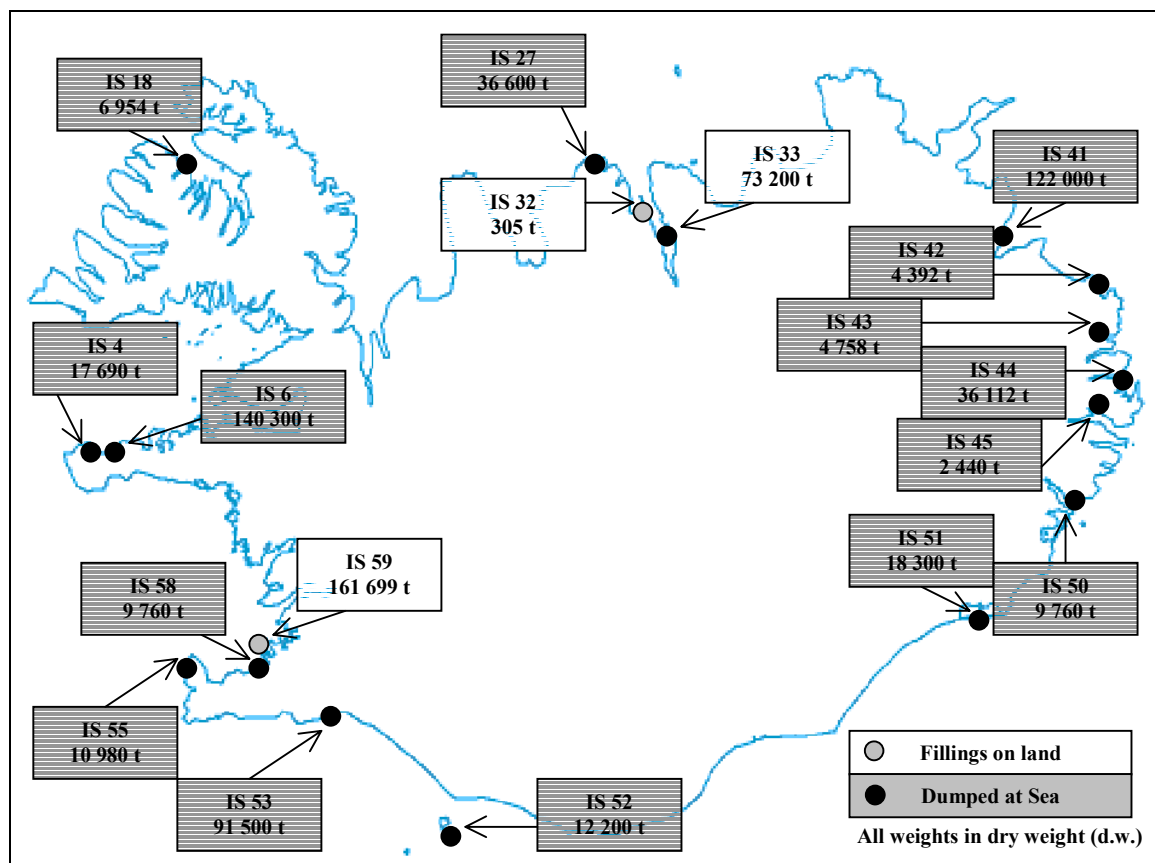
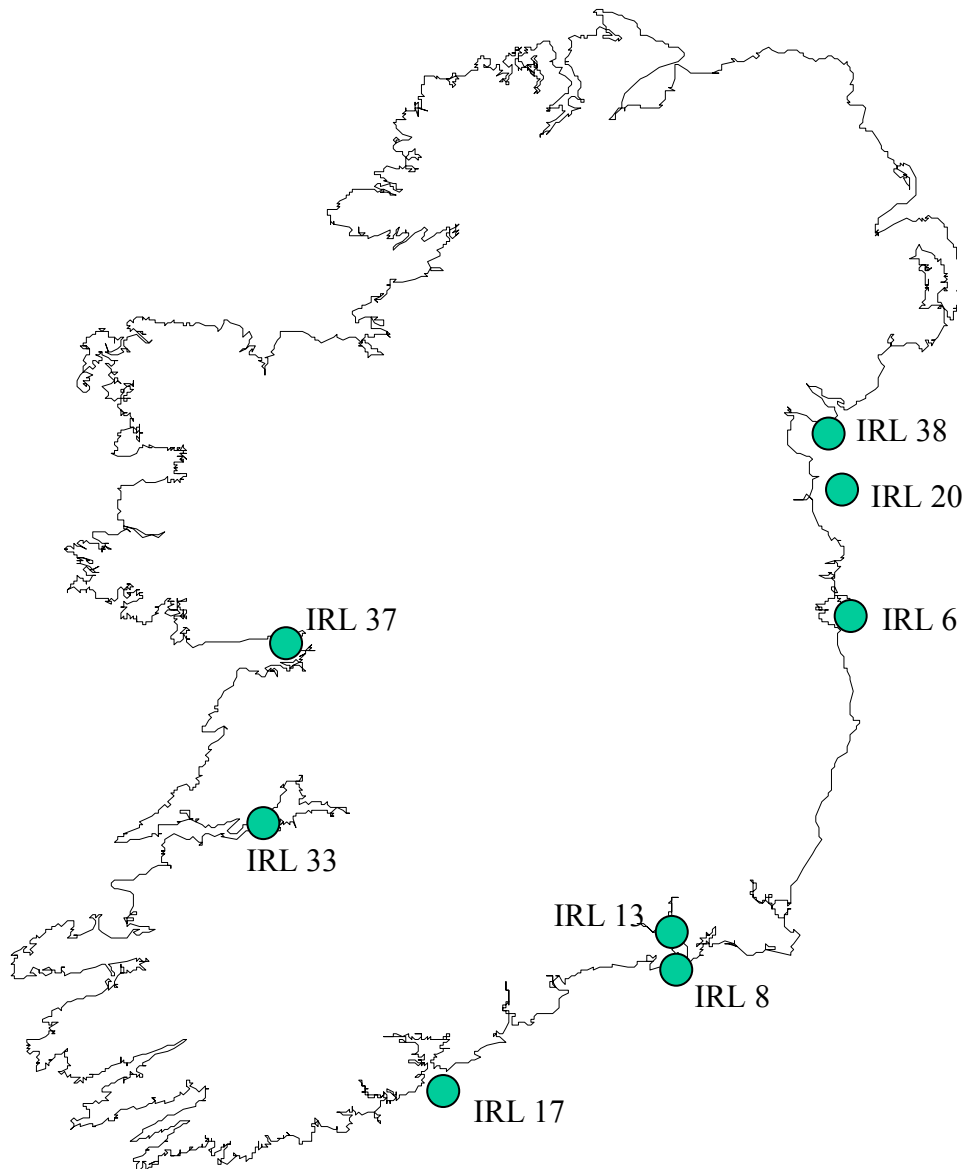


Figure 5 - Dumping sites of dredged material in Ireland in 2001

Table 1: Co-ordinates of the sites

Site No.	Latitude	Longitude
Irl 6	53.32	-6.05
Irl 8	52.13	-6.95
Irl 13	52.25	-6.99
Irl 17	51.72	-8.18
Irl 20	53.75	-6.18
Irl 33	52.622	-9.143
Irl 37	53.26	-9.01
Irl 38	53.932	-6.166



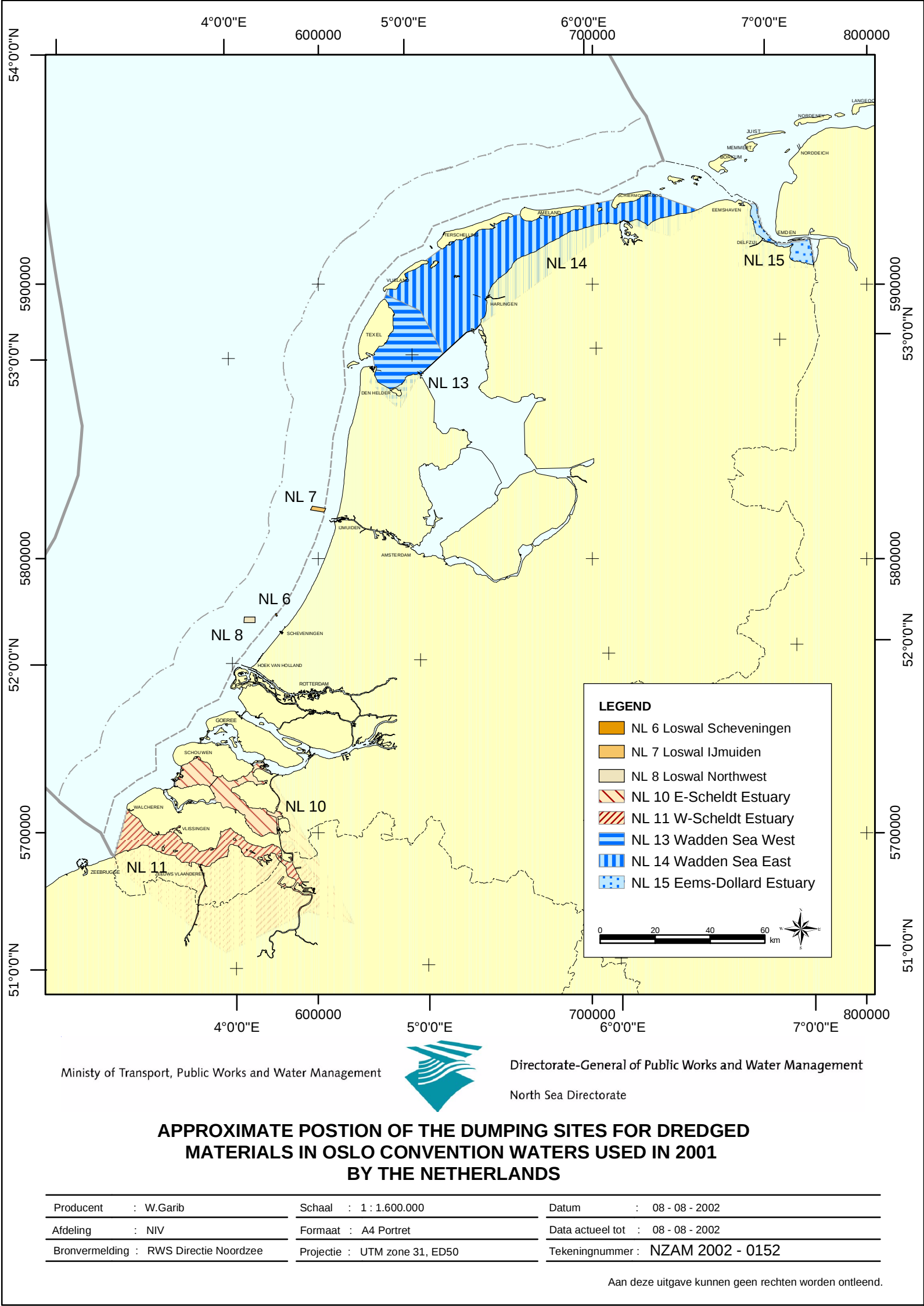


Figure 6: Dumping sites of dredged materials in the Netherlands in 2001

Figure 7 - Dumping sites of dredged material in Norway in 2001

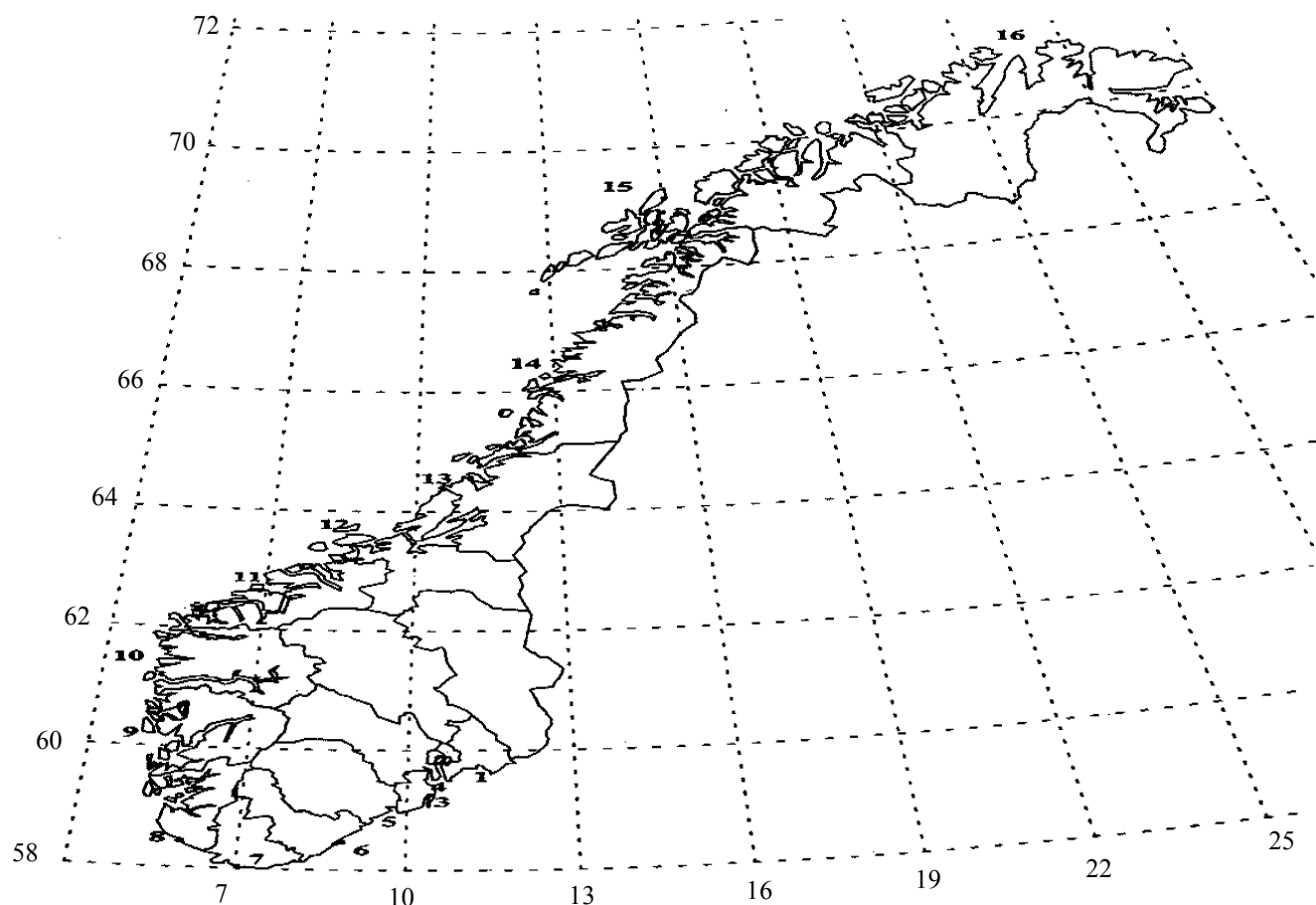


Figure 1. Map of Norway showing latitude (58-72°N, left side) and longitude (7-25°E, bottom). The different counties along the coast are indicated.
 1:Østfold, 2:Akershus/Oslo, 3:Vestfold, 4:Buskerud, 5:Telemark, 6:Aust-Agder, 7:Vest-Agder, 8:Rogaland, 9:Hordaland, 10:Sogn og fjordane, 11:Møre og Romsdal, 12:Sør-Trøndelag, 13 Nord-Trøndelag, 14:Nordland, 15 Troms, 16:Finnmark.

Dredged material:	N/ 1, 3, 7, 9-16
Inert material:	
Fish waste	
Other waste:	N/ 3, 4, 12-15 – all are wooden ships

Figure 8: Dumping sites of dredged material in Portugal in 2001

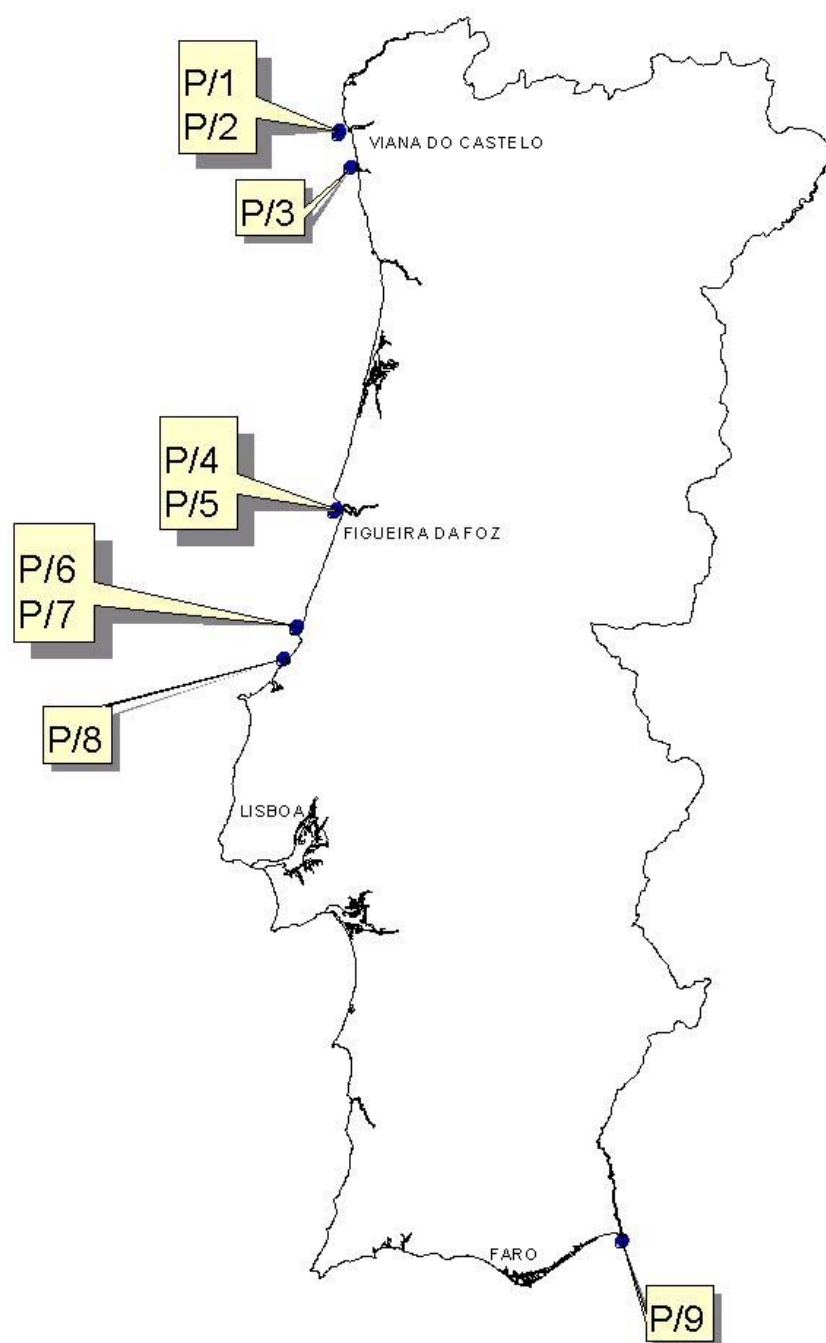


Figure 9: Dumping sites of dredged material in UK in 2001
a. North Eastern England

Marine disposal sites in Northeast England. Site codes and quantities deposited in tonnes dry weight, in 2001. All tonnages are for dredged material unless otherwise stated.

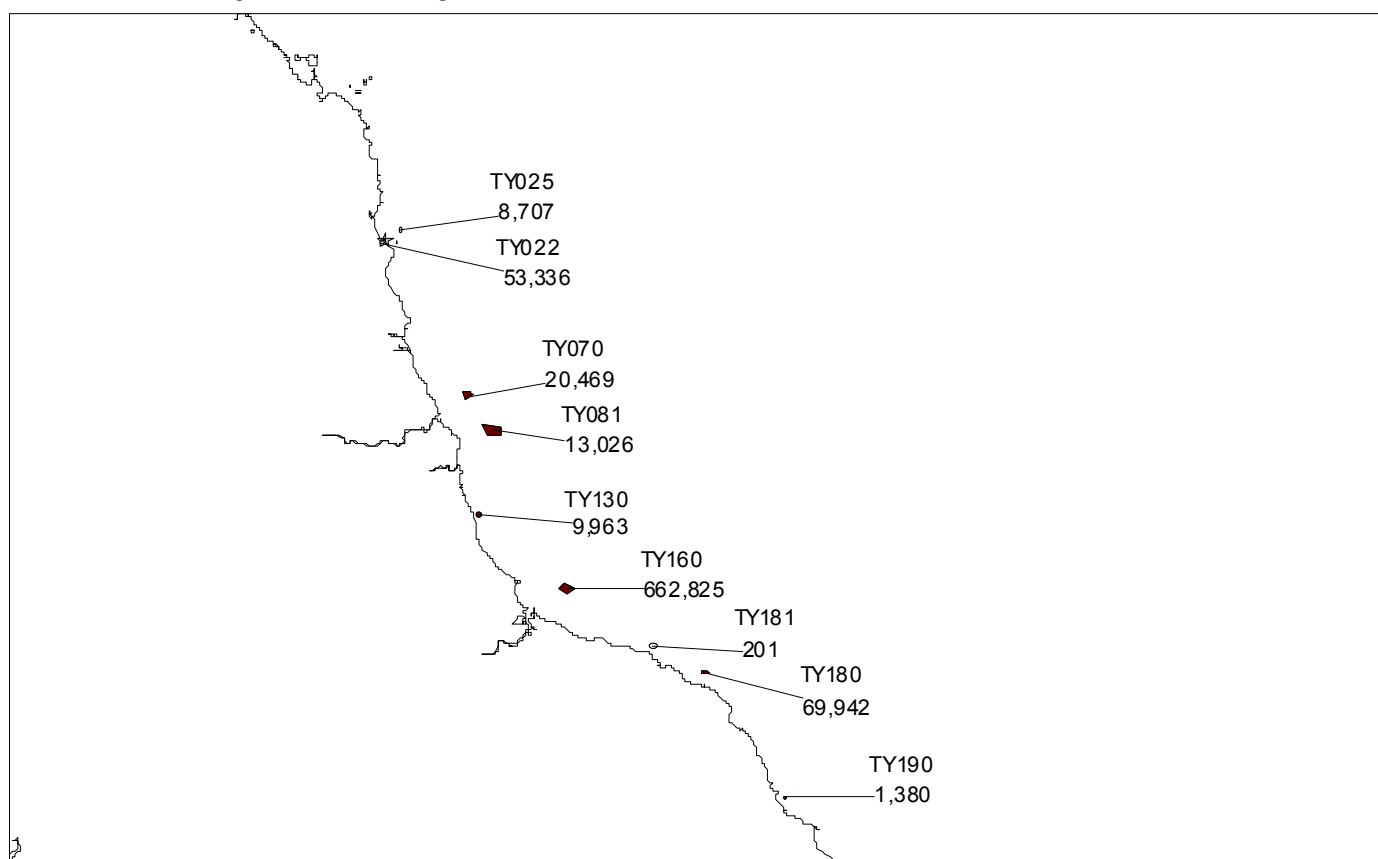


Figure 9: Dumping sites of dredged material in UK in 2001
b. Eastern England

Marine disposal sites in Eastern England. Site codes and quantities deposited in tonnes dry weight, in 2001. All tonnages are for dredged material unless otherwise stated.

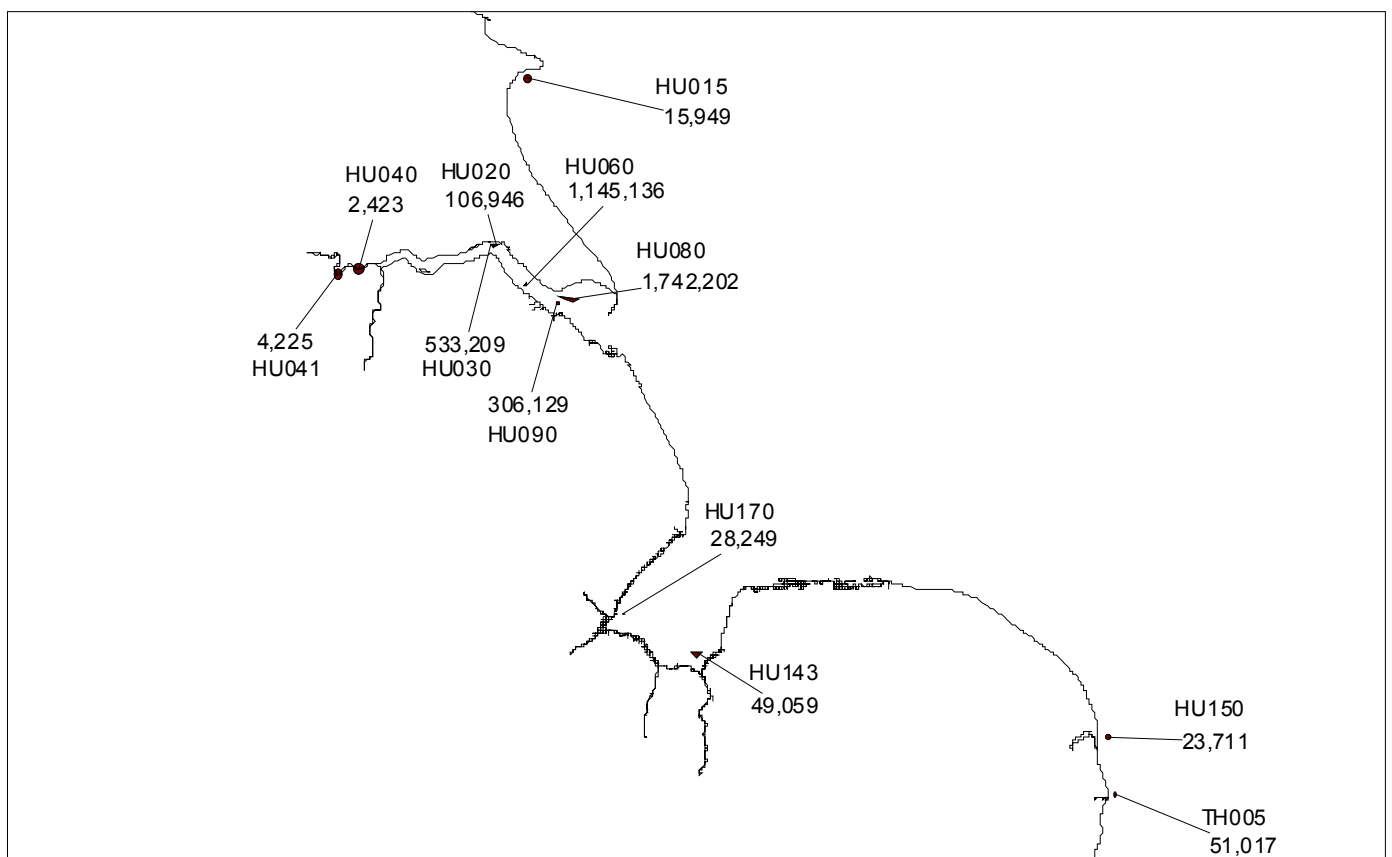


Figure 9: Dumping sites of dredged material in UK in 2001
c. South Eastern Scotland

Marine disposal sites in Southeastern England. Site codes and quantities deposited in tonnes dry weight, in 2001. All tonnages are for dredged material unless otherwise stated.

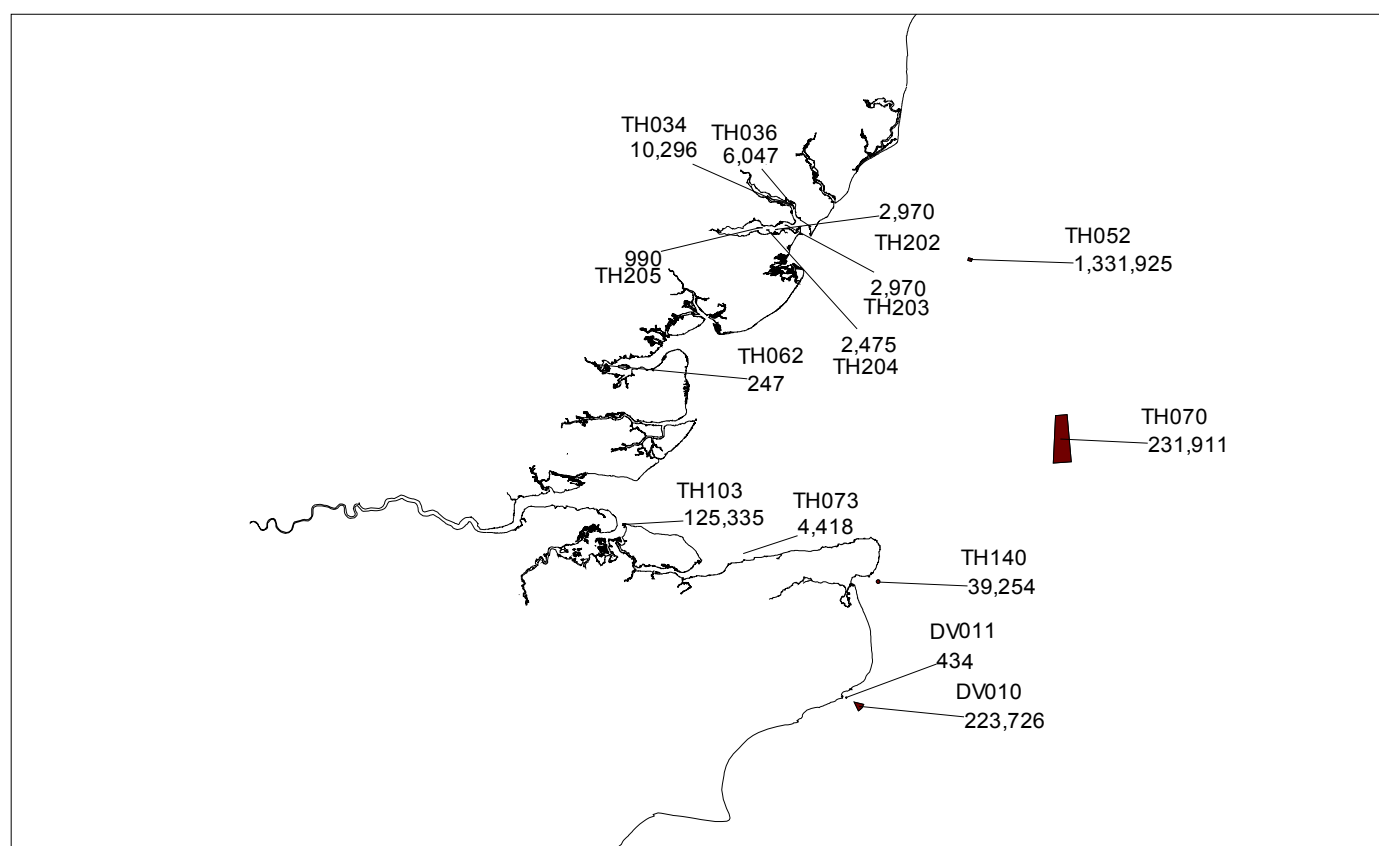


Figure 9: Dumping sites of dredged material in UK in 2001
d. Southern England

Marine disposal sites in Southern England. Site codes and quantities deposited in tonnes dry weight, in 2001. All tonnages are for dredged material unless otherwise stated.

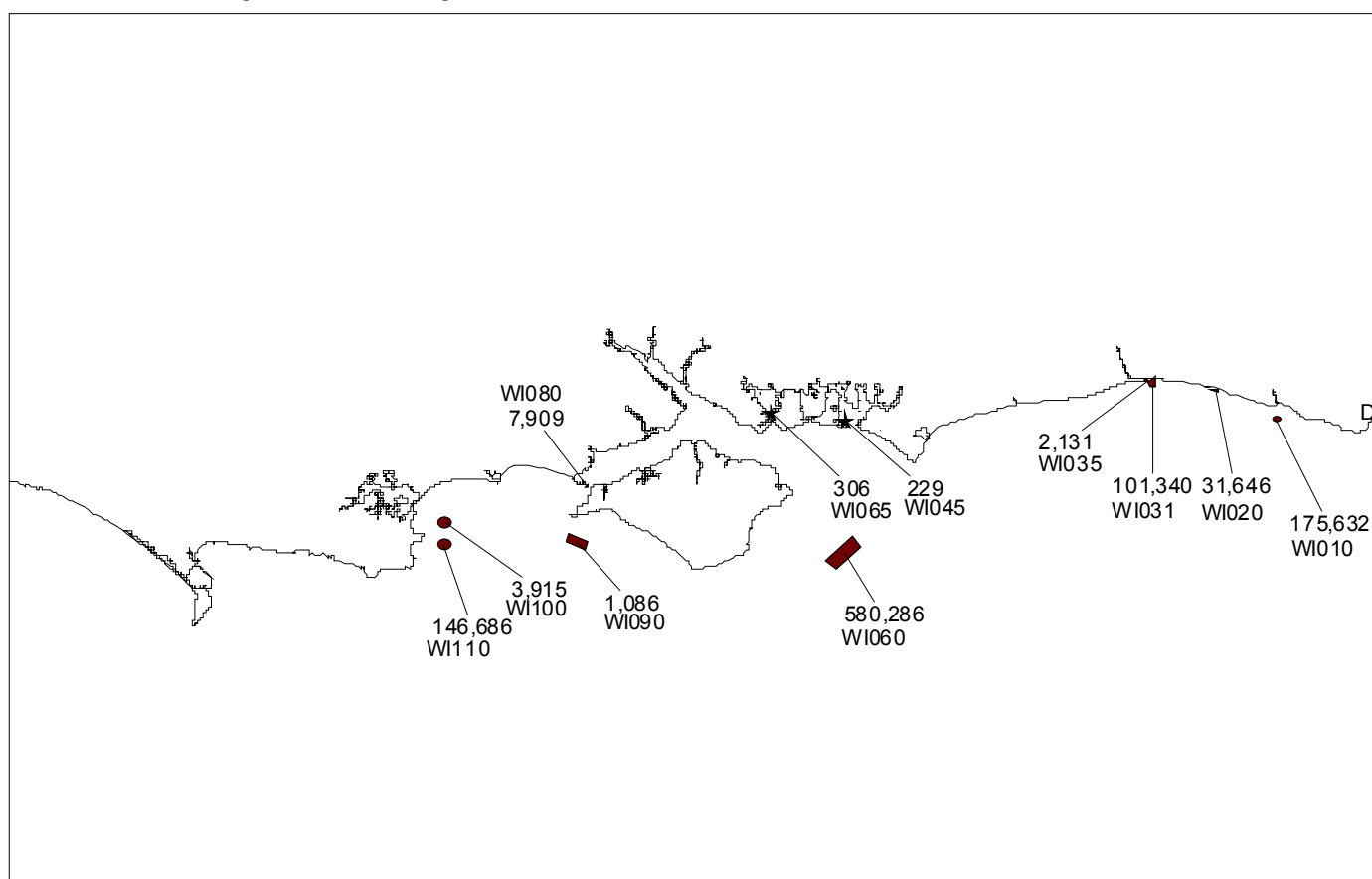


Figure 9: Dumping sites of dredged material in UK in 2001
e. Southwest England and South Wales

Marine disposal sites in Southwest England and South Wales. Site codes and quantities deposited in tonnes dry weight, in 2001. All tonnages are for dredged material unless otherwise stated.

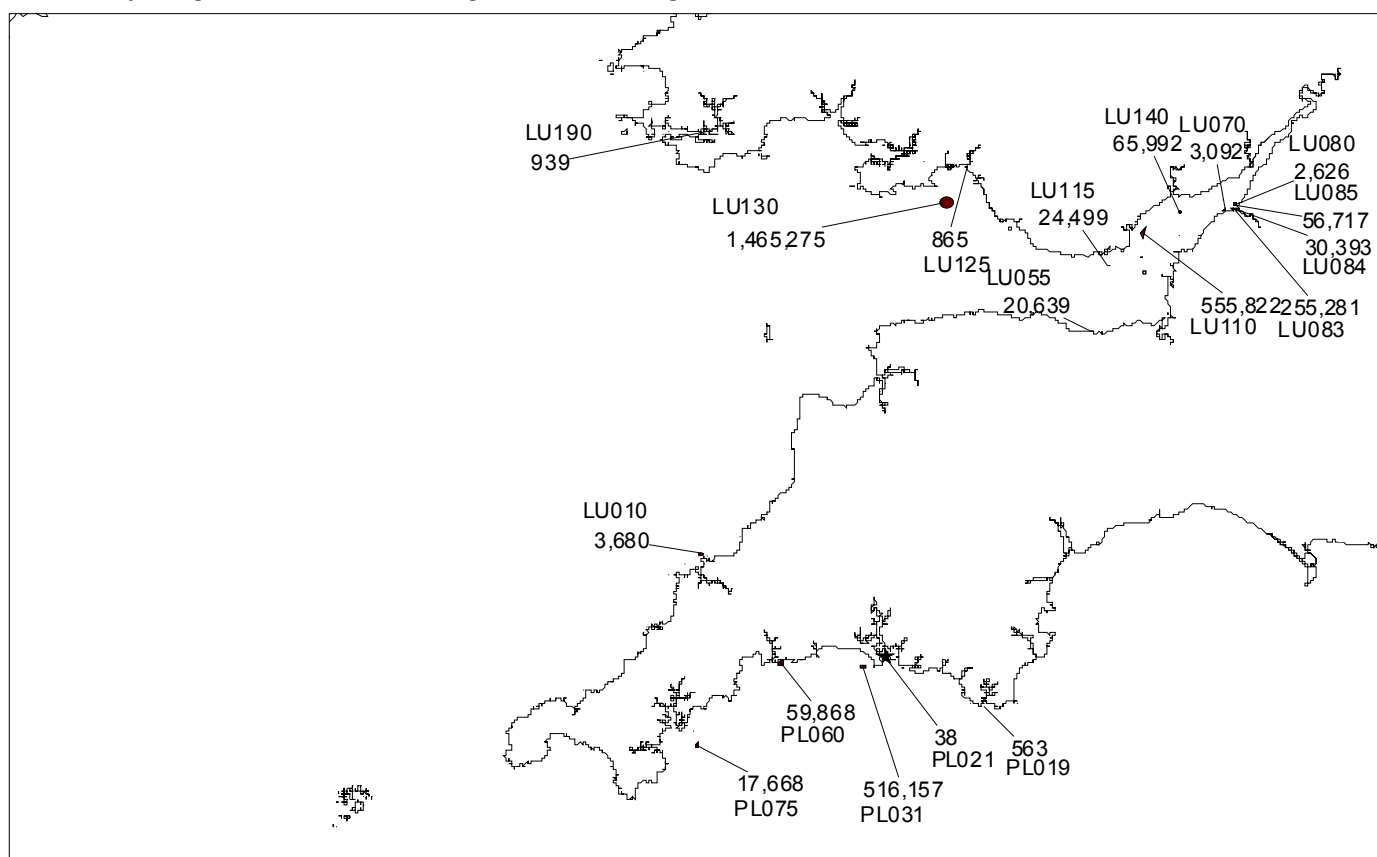
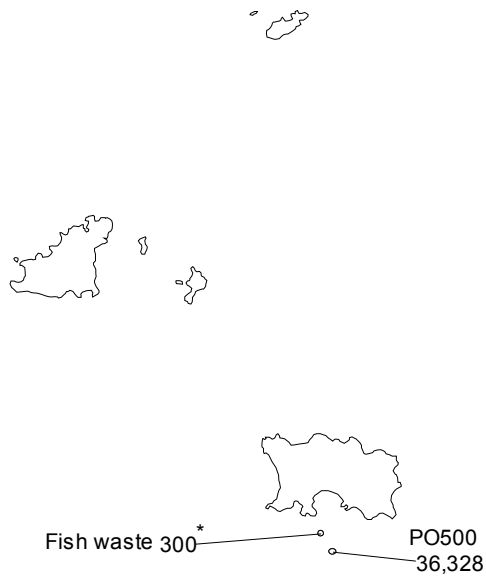


Figure 9: Dumping sites of dredged material in UK in 2001
f. Channel Isles

Marine disposal sites in the Channel Isles. Site codes and quantities deposited in tonnes dry weight, in 2001. All tonnages are for dredged material unless otherwise stated.



*Site code given as DM001, which refers to description on licence - in this case fish waste is allowed to be deposited anywhere outside of 1 nautical mile from the coastline of Jersey.

Figure 9: Dumping sites of dredged material in UK in 2001
g. Irish Sea

Marine disposal sites in Irish Sea. Site codes and quantities deposited in tonnes dry weight, in 2001. All tonnages are for dredged material unless otherwise stated.

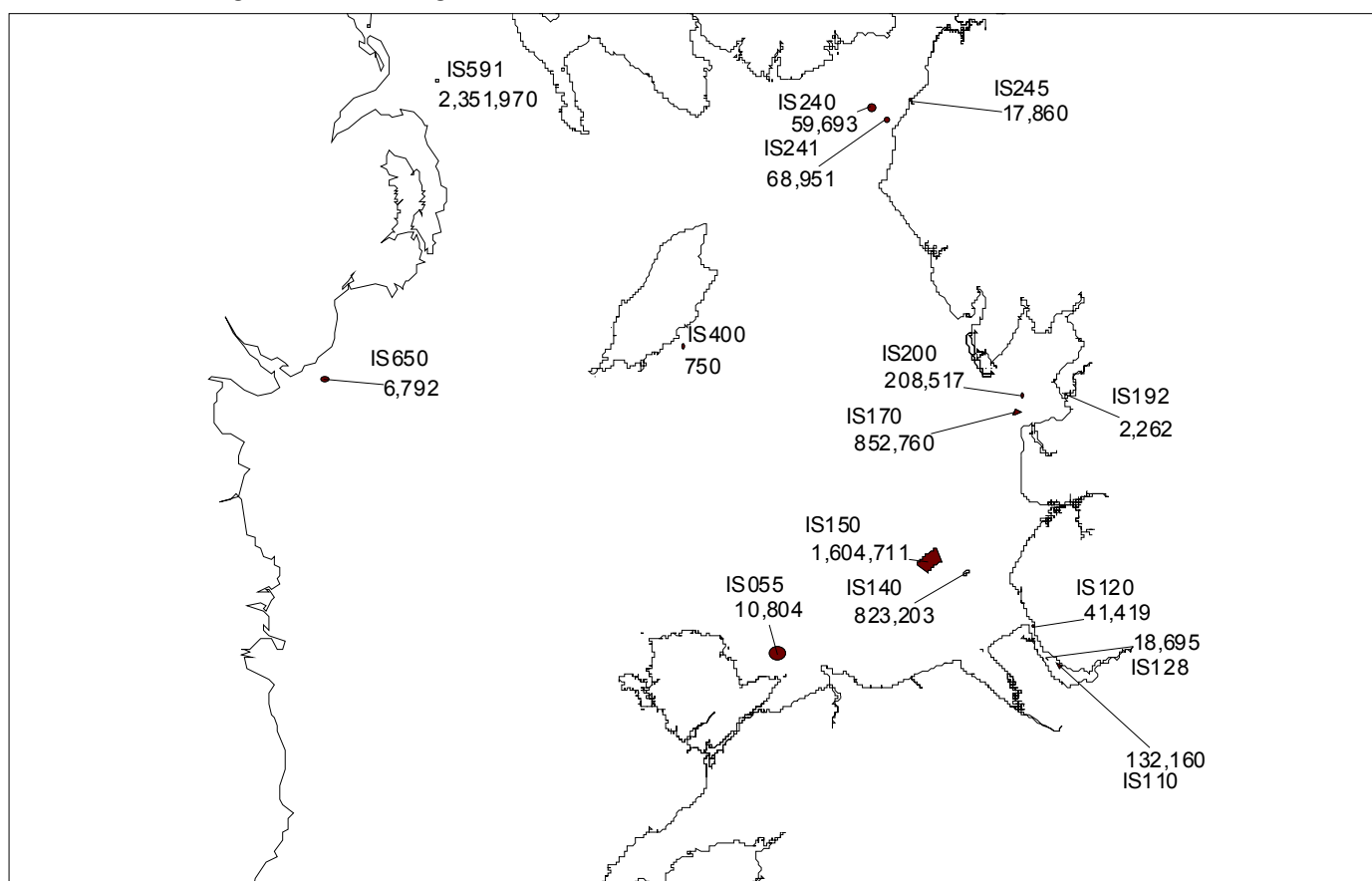


Figure 9: **Dumping sites of dredged material in UK in 2001**
h. Western Scotland

Marine disposal sites in Western Scotland and Northern Ireland. Site codes and quantities deposited in tonnes dry weight, in 2001. All tonnages are for dredged material unless otherwise stated.

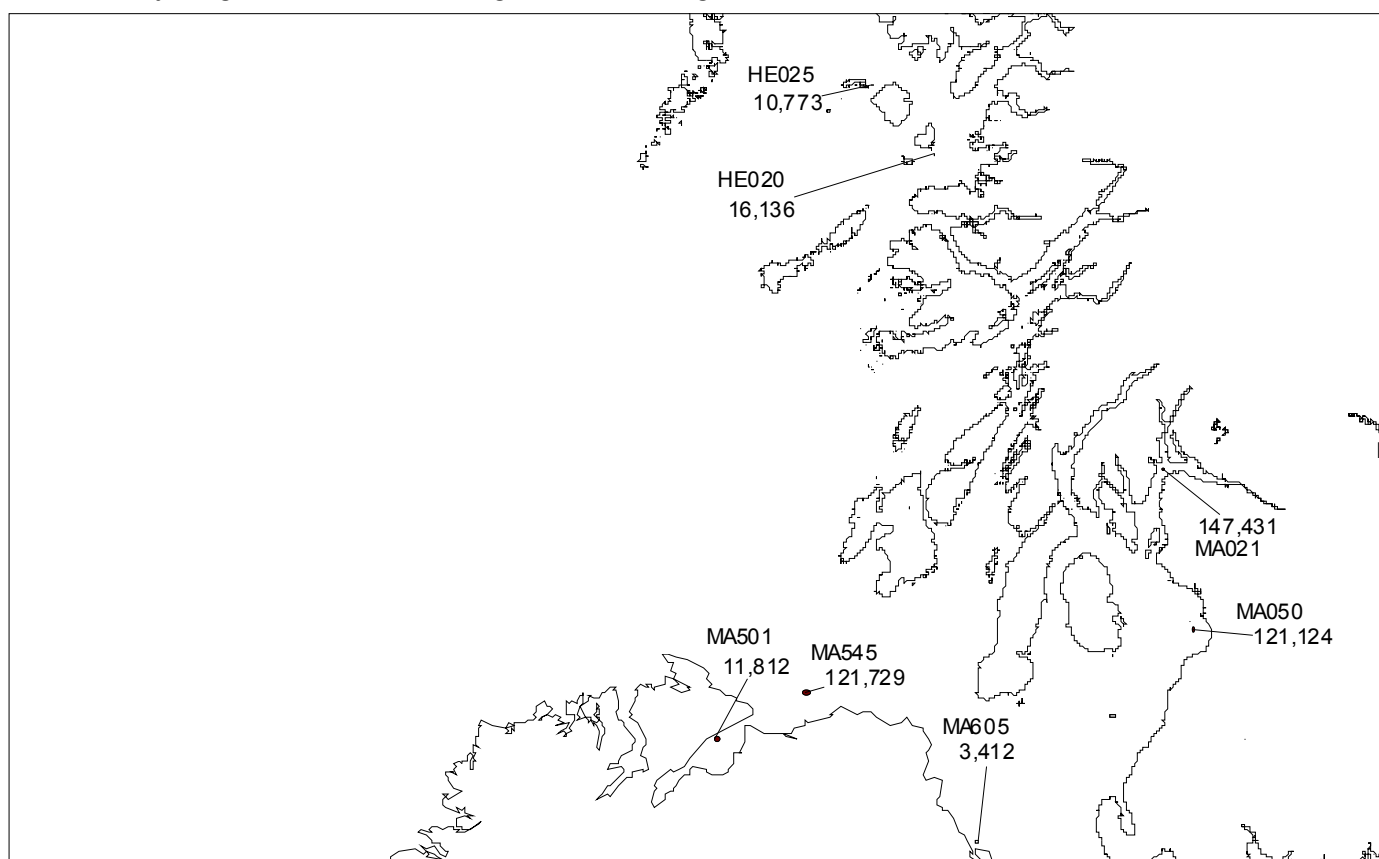


Figure 9: Dumping sites of dredged material in UK in 2001
i. Northern Scotland

Marine disposal sites in Northern Scotland. Site codes and quantities deposited in tonnes dry weight, in 2001. All tonnages are for dredged material unless otherwise stated.

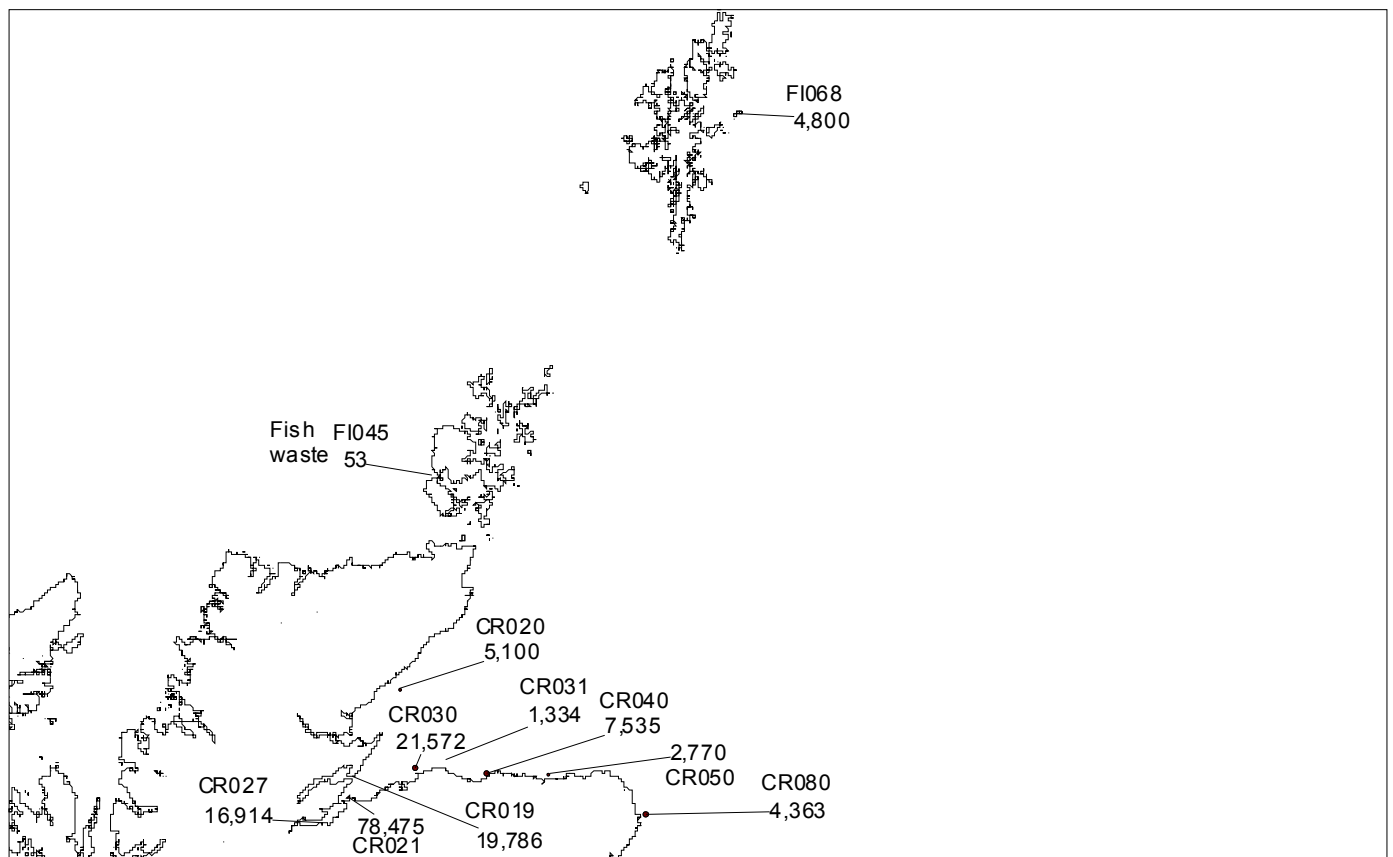
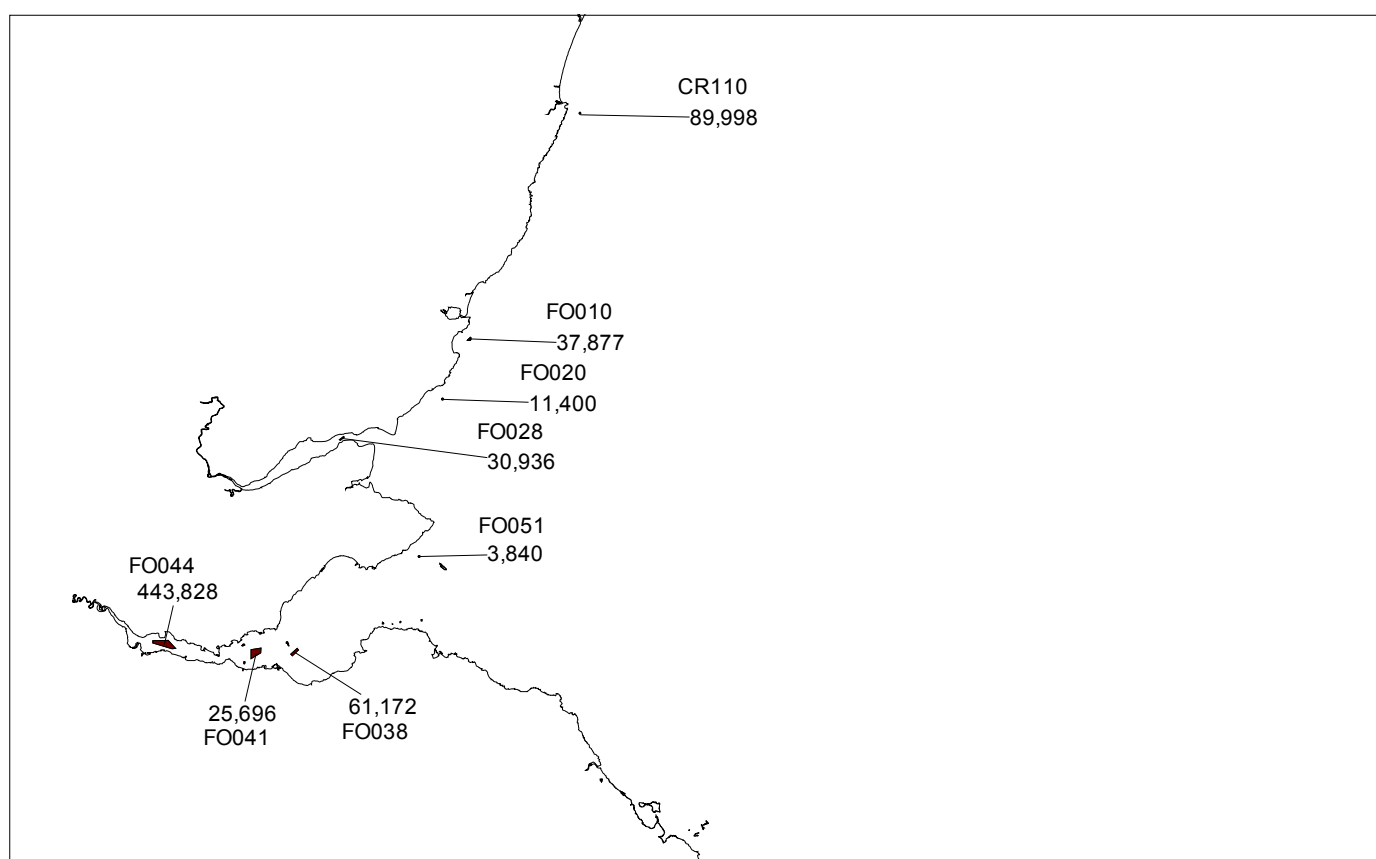


Figure 9: Dumping sites of dredged material in UK in 2001
j. Eastern Scotland

Marine disposal sites in Eastern Scotland. Site codes and quantities deposited in tonnes dry weight, in 2001. All tonnages are for dredged material unless otherwise stated.



Part B: Dumping of wastes at sea in 2002

Report on Dumping Permits Issued in 2002

Table 1:	Overview of permits issued, tonnes licensed and tonnes dumped in 2002
Table 2:	Specific reporting on permits issued in 2002

Report on the Amounts of Wastes Dumped at Sea in 2002

Part I

Table 3a:	Details of deposit sites and dumping methods
Table 3b:	Total loads (methods of determination indicated in Part II)

Part II

General information

Additional information

Footnotes to all tables

Figure 1a:	Dumping sites of dredged material in Belgium in 2002
Figure 1b:	Dumping sites of dredged material in internal waters in Belgium in 2002
Figure 2:	Dumping sites of dredged material in Germany in 2002
Figure 3:	Dumping sites of dredged material in Iceland in 2002
Figure 4:	Dumping sites of dredged material in Ireland in 2002
Figure 5:	Dumping sites of dredged material in the Netherlands in 2002
Figure 6:	Dumping sites of dredged material in Norway in 2002
Figure 7 :	Dumping sites of dredged material in Portugal
	a. Portugal (without the Açores)
	b. Açores (Horta)
	c. Açores (Ponta del Gada)
Figure 8:	Dumping sites of dredged material in the UK in 2002
	a. North Eastern England
	b. Eastern England
	c. South Eastern England
	d. Southern England
	e. South Western England
	f. North Western England
	g. Western Scotland
	h. Northern Scotland
	i. Eastern Scotland

Report on Dumping Permits Issued in 2002

Table 1 Overview of number of permits issued, tonnes licensed and tonnes dumped in 2002

Contracting Party	Number of permits issued for waste category				Number of operations regulated by other means	Tonnes licensed (dry weight)	Tonnes dumped (dry weight)	Notes
	Dredged material	Inert material	Fish waste	Vessels or aircraft				
Belgium	5	0	0	0		35 050 000 TDS/year	27 799 632	(1)
Denmark	8	0	0	0	0	1 943 200	1 790 029	
Germany	15				4	11 800 000 10 700 000	10 629 000	(1) (2) (3)
Iceland	12					533 140	444 783	(1)
Ireland	12		2			2 184 029 160	774 178 160	(1) (2) (3) (4)
The Netherlands	5				numerous	16 605 000 m ³		(1) (2)
Norway	49	7		3		824 428		(1)(2)(3)
Portugal	10	2	NI	2		578 500 72 500	651 224	
Sweden	2	1				18 000 000 0,4 million m ³	375 605	(1) (2)
UK	153		1			39 758 459 200	16 371 840 150	(1) (2) (1) (3)

NI = No information

GP = general permit

Table 2 Specific reporting on permits issued in 2002*

Contracting Party	Number of permits issued * per waste category			Contaminants Material of concern		Tonnes dumped ** (dry weight)	Reasons for classification
	Dredged material	Inert Material	Vessels or aircraft	Type	Level 2 (mg/kg)		
Germany	1			HCB pp-DDE	0,006 0,003	4 250 000	(1) (2)
Norway							(1)
Portugal	NA	2	2			72 500 224	(1)
Sweden	2	1				376 000 71 000 m ³	

* The number of permits in this column includes the operations regulated by other means

** For dredged material the tonnes dumped refer to material exceeding level 2
for inert material - numbers of permits issued in total and tonnes dumped in total

Amounts of Wastes Dumped at Sea in 2002

Table 3a **Details of deposit sites and dumping methods**

OSPAR-codes	categories of waste				origin name of watersystem	dredged material			dredging operation type		total quantity (in metric tonnes)		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft		type of areas dredged			capital	maintenance	dry weight	Tot. org. carbon	notes
						Harbour	Estuary	Sea					
Belgium													
B1	x				Pas van het Zand			x		x	396 179		
B1	x				CDNB Zeebrugge			x		x	1 389 477		
B1	x				Scheur Oost			x		x	1 039 179		
B1	x				Scheur West			x		x	489 280		
B1	x				Pas van het Zand			x	x		825 470		
B1	x				CDNB Zeebrugge			x	x		1 588 290		
B3	x				Pas van het Zand			x		x	687 183		
B3	x				CDNB Zeebrugge			x		x	151 218		
B3	x				Scheur West			x		x	20 206		
B3	x				CDNB Zeebrugge			x	x		208 885		
B6	x				Haven en voorhaven Zeebrugge	x				x	776 890		
B6	x				CDNB Zeebrugge			x		x	973 702		
B6	x				Haven Blankenberge	x				x	16 274		
B6	x				Voorhaven Blankenberge			x		x	544 784		
B6	x				CDNB Zeebrugge			x	x		491 380		
B6	x				Haven en Voorhaven Zeebrugge	x			x		878 559		
B9	x				Toegangsgeul Oostende			x		x	210 609		
B9	x				Haven Oostende	x				x	280 608		
B99	x				Toegang Nieuwpoort			x		x	27 274		
B99	x				Vaar- en havengeul Nieuwpoort	x				x	262 675		
B/int1	x				Drempel van Vlissingen		x			x	349 690		
B/int1	x				Drempel van Borssele		x			x	854 789		
B/int1	x				Pas van Terneuzen					x	356 273		
B/int1	x				Overloop Hansweert		x			x	96 166		
B/int1	x				Drempel van Hansweert		x			x	86 241		
B/int1	x				Overloop Valkenisse		x			x	5 105		
B/int2	x				Drempel van Borssele		x			x	255 839		
B/int2	x				Pas van Terneuzen		x			x	52 065		
B/int2	x				Put van Terneuzen		x			x	237 786		
B/int2	x				Drempel van Hansweert		x			x	124 439		
B/int2	x				Overloop Valkenisse		x			x	9 411		
B/int3	x				Drempel van Borssele		x			x	93 504		
B/int3	x				Drempel van Hansweert		x			x	94 107		
B/int4a	x				Drempel van Hansweert		x			x	4 472		
B/int4a	x				Drempel van Bath		x			x	9 146		
B/int4b	x				Overloop van Hansweert		x			x	59 625		
B/int4b	x				Drempel van Hansweert		x			x	955 193		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
B/int4b	x				Drempel van Walsoorden		x			x	72 777		
B/int4b	x				Overloop Valkenisse (54-58)		x			x	56 092		
B/int4b	x				Overloop Valkenisse (58-62)		x			x	173 432		
B/int4b	x				Drempel van Valkenisse		x			x	299 189		
B/int4b	x				Drempel van Bath		x			x	345 452		
B/int7	x				Drempel van Hansweert		x			x	94 934		
B/int7	x				Overloop Valkenisse (50-54)		x			x	15 488		
B/int7	x				Overloop Valkenisse (54-58)		x			x	3 095		
B/int7	x				Overloop Valkenisse (58-62)		x			x	31 191		
B/int7	x				Drempel van Valkenisse		x			x	358 357		
B/int7	x				Drempel van Bath		x			x	765 606		
B/int8	x				Pas van Terneuzen		x			x	210 808		
B/int8	x				Put van Terneuzen		x			x	756 995		
B/int8	x				Overloop Hansweert (af)		x			x	28 254		
B/int8	x				Overloop Hansweert (op)		x			x	587 165		
B/int8	x				Gat van Ossenissee		x			x	420 627		
B/int8	x				Drempel van Hansweert		x			x	149 644		
B/int8	x				Drempel van Walsoorden		x			x	94 455		
B/int8	x				Overloop Valkenisse (50-54)		x			x	66 962		
B/int8	x				Overloop Valkenisse (58-62)		x			x	13 384		
B/int8	x				Drempel van Valkenisse		x			x	33 670		
B/int9	x				Overloop Hansweert (op)		x			x	110 434		
B/int9	x				Drempel van Hansweert		x			x	1 320 448		
B/int9	x				Drempel van Walsoorden		x			x	89 739		
B/int9	x				Overloop Valkenisse (54-58)		x			x	104 909		
B/int9	x				Overloop Valkenisse (58-62)		x			x	215 843		
B/int9	x				Drempel van Valkenisse		x			x	366 522		
B/int9	x				Drempel van Bath		x			x	380 517		
B/int0	x				Drempel van Zandvliet		x			x	2 405 328		
B/int0	x				Toegangseul Zandvliet + Berendrechtsluizen		x			x	169 655		
B/int0	x				Drempel van Frederik		x			x	998 566		
B/int0	x				Drempel van Lillo		x			x	999 037		
B/int0	x				Toegangseul Boudewijn-Van Cauwelaertssluizen		x			x+	31 330		
B/int0	x				Drempel van de Parel		x			x	87 306		
B/int1bis	x				Drempel van Zandvliet		x			x	65 543		
B/int1bis	x				Drempel van Frederik		x			x	37 317		
B/int1bis	x				Drempel van Lillo		x			x	7 524		
B/int1bis	x				Drempel van de Parel		x			x	474 107		
B/int1bis	x				Drempel van Krankeloon		x			x	455 957		
Total											27 799 632		

OSPAR-codes	categories of waste				origin name of watersystem	dredged material			dredging operation type		total quantity (in metric tonnes)		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft		type of areas dredged					dry weight	Tot. org. carbon	notes
						Harbour	Estuary	Sea	capital	maintenance			
Denmark													
FRB18	x				Lynæs Havn + indsejling	x				x	3 479		
FYN27	x				Indløbet til Bogense Havn	x				x	2 376		
FYN35	x				Thurøbund Yacht- & kutterværft	x				x	27		
NJL01	x				Aså Havn, sejlrende og forhavn	x				x	945		
NJL02	x				Attrup Havn, sejlrende og indsejling		x			x	675		
NJL07	x				Gjøl Havn	x				x	4 278		
NJL10	x				Hou Havn	x				x	2 207		
NJL11	x				Haverslev Havn, sejlrende		x			x	720		
NJL13	x				Hirtshals Havn, sejlrende		x			x	238 317		
NJL20	x				Løgstør Grund		x				22 582		
NJL20	x				Løgstør Havn smat indsejling	x					3 840		
NJL20	x				Rønbjerg indsejling		x			x	1 680		
NJL23	x				Als Odde, sejlrenden til Mariager Fjord		x			x	41 947		
NJL29	x				Hvalpsund Færgeleje, indsejling	x				x	1 620		
NJL31	x				Rønnerhavnen, indsejlingen		x			x	3 983		
NJL33	x				Skagen Havn	x			x		19 325		
NJL33	x				Skagen Havn, Indsejlingen		x			x	26 737		
NJL37	x				Strandby Havn,forhavn, sejlrende	x					2 400		
NJL41	x				Sæby Havn	x				x	7 209		
NJL42	x				sejlrende til Vesterø Havn		x			x	19 913		
NJL42	x				Vesterø Havn, forhavn og indsejling	x				x	4 050		
NJL45	x				Øster Hurup havn	x				x	2 328		
NJL47	x				Østerby Havn, forhavn og indsejling	x				x	3 699		
NJL50	x				Ålbæk Havn		x				6 000		
RIB01	x				Esbjerg Havn, sejlrenden inden for bøje 16	x				x	29 250		
RIB01	x				Grådyb Barre, indsejlingen		x			x	517 500		
RIB02	x				Esbjerg Havn, sejlrenden inden for bøje 16	x				x	29 250		
RIB02	x				Grådyb Barre, indsejlingen		x			x	517 500		
RIB08	x				Grådyb Barre, indsejlingen		x			x	225 000		
RIN05	x				Sælhundeholm Løb		x			x	14 210		
RIN05	x				Thyborøn Færgehavn og sejlrende	x				x	10 260		
RIN05	x				Thyborøn Sdr. Srbejdshavn	x				x	312		
RIN24	x				Sejlrenden til Skaven Havn	x			x		3 106		
RIN25	x				Sejlrenden til Stauning Havn	x			x		7 182		
SJL09	x				Rømø Havn	x				x	10 949		
VSJ48	x				Rørvig Færgehavn og indsejling til lystbådehavn	x				x	540		
AAR01	x				Anholt Havn	x				x	1 657		
AAR07	x				Ebeltoft Færgehavn	x				x	2 977		
Total											1 790 029		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged Harbour Estuary Sea			dredging operation type capital maintenance		(in metric tonnes) dry weight Tot. org. carbon		notes
Germany (1)													
D10	x				Dagebüll harbour	x				x	24 000		
D12	x				Husum harbour	x				x	55 000	5,000	
D13	x				Harbour and outer harbour of Büsum	x				x	26 000	3,900	
D14	x				Elbe estuary / navigation channel; outer port of the lock to the "Nord-Ostsee-Kanal" (Kiel-Canal); inner part of "Nord-Ostsee-Kanal"	x	x			x	4 445 000	84,450	(2)
D15	x				Weser estuary / navigation channel		x			x	888 000	16,880	(3)
D17	x				Jade bay / navigation channel	x	x			x	2 208 000	30,920	(4)
D20	x				Outer harbour of Hooksiel	x				x	9 000		
D21	x				Wangerooge harbour	x				x	7 000		
D22	x				Spiekeroog harbour	x				x	21 000		
D25	x				Baltrum harbour	x				x	3 000		
D30	x				Norderney harbour	x				x	26 000		
D32	x				Norddeich harbour	x				x	32 000		
D34	x				Ems estuary / navigation channel		x			x	2 673 000	26,730	(5)
D36	x				Borkum, Minitrain harbour and approach channel of Borkum island	x				x	3 000		
D41	x				Niedersachsenbrücke Wilhelmshaven (approach channel and seaward mooring berth)	x	x			x	131 000		
D43	x				Bensersiel harbour	x				x	6 000		
D44	x				Langeoog harbour	x				x	42 000		
D45	x				Approach channel of Juist harbour	x				x	13 000		
D49	x				Wyk harbour (Föhr)	x				x	17 000		
Total											10 629 000	167,880	

Iceland													
IS2	x					x			x		19 520		(1)
IS3	x					x			x		3 294		(2)
IS24	x					x			x		18 300		(3)
IS25	x					x			x		4 880		(2)
IS28	x					x				x	31 720		(2)
IS37	x					x			x		6 254		(3)
IS38	x					x			x		121 329		(3)
IS39	x					x			x		124 074		(3)
IS41	x					x			x		54 412		(1)
IS51	x					x			x		8 540		(3)
IS51	x					x				x	29 280		(3)
IS52	x					x			x		12 200		(1)
IS55	x					x			x		10 980		(3)
Total											444 783		

OSPAR-codes	categories of waste				origin name of watersystem	dredged material			dredging operation type		total quantity (in metric tonnes)		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft		type of areas dredged			capital	maintenance	dry weight	Tot. org. carbon	notes
						Harbour	Estuary	Sea					
Ireland													
IRL 6	x				Liffey/Dublin Bay	x			x		9 735		
IRL 6	x				Liffey/Dublin Bay	x	x			x	81 486		
IRL 8	x				Suir/Barrow Estuary		x			x	211 464		
IRL 17	x				Cork Harbour	x	x			x	141 954		
IRL 20	x				Boyne Estuary		x			x	93 913		
IRL 33	x				Shannon Estuary	x	x			x	64 991		
IRL 39	x				Shannon Estuary		x			x	2 637		
IRL 40	x				Shannon Estuary		x			x	2 475		
IRL 41			x		NA						100		
IRL 42			x		NA						60		
IRL 43	x				Killybegs Harbour		x		x		55 007		
IRL 44	x				Shannon Estuary	x				x	15 886		
IRL 45	x				Shannon Estuary	x	x			x	4 265		
IRL 46	x				Irish Sea			x	x		100 100		
Total											774 338		

Netherlands													
NL-6	x				Scheveningen Harbour	x				x	88 633	N.D.	
NL-7	x				IJmuiden Harbour	x				x	1 458 412	N.D.	
NL-8	x				Rotterdam Harbour	x				x	4 750 337	N.D.	
NL-10	x				Eastern Scheldt Harbours	x				x	133 794	3 760	(1)
NL-11	x				Western Scheldt Harbours	x				x	2 919 526	47 257	(1)
NL-13	x				Waddensea West Harbours	x				x	437 772	N.D.	
NL-14	x				Waddensea East Harbours	x				x	507 758	N.D.	
NL-15	x				Ems-Dollard Harbours	x				x	453 873	N.D.	
Total											10 750 105	51 017	

Norway													
N1/Østfold	x				Oslofjord	x				x	144		
N2/Østfold	x				Oslofjord	x				x	360		
N3/Østfold	x				Oslofjord	x				x	1 200		
N4/Østfold	x				Oslofjord	x				x	4 200		
N5/Østfold	x				Oslofjord	x				x	840		
N6/Østfold	x				Oslofjord	x				x	1 020		
N7/Østfold	x				Oslofjord	x				x	2 400		
N8/Østfold	x				Oslofjord	x				x	720		
N9/Oslo Akershus	x				Oslofjord	x				x	561		
N10/Oslo Akershus	x				Oslofjord	x				x	240		
N11/Vestfold	x				Oslofjord	x				x	187		
N12/Vestfold	x				Oslofjord	x				x	187		
N13/Vestfold	x				Oslofjord	x				x	250		
N14/Vestfold	x				Oslofjord	x				x	375		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
N15/Vestfold	x				Oslofjord	x				x	750		
N16/Vestfold	x				Oslofjord	x				x	125		
N17/Vestfold	x				Oslofjord	x				x	250		
N18/Vestfold	x				Oslofjord	x				x	500		
N19/Vestfold	x				Oslofjord	x				x	750		
N20/Vestfold	x				Oslofjord	x				x	930		
N21/Vestfold	x				Oslofjord	x				x	375		
N22/Vestfold	x				Oslofjord	x				x	125		
N23/Vestfold	x				Oslofjord	x				x	187		
N24/Vestfold	x				Oslofjord	x				x	375		
N25/Vestfold	x				Oslofjord	x				x	187		
N26/Vestfold	x				Oslofjord	x				x	11 625		
N27/Telemark	x				Oslofjord	x				x	64		
N28/Vest-Agder	x				Skagerrak	x				x	68 000		
N29/Vest-Agder	x				Skagerrak	x				x	1 250		
N30/Vest-Agder		x			Skagerrak								
N31/Vest-Agder		x			Skagerrak								
N32/Hordaland	x				North Sea	x				x	4 000		
N33/Hordaland	x				North Sea	x				x	480		
N34/Hordaland	x				North Sea	x				x	160		
N35/Hordaland	x				North Sea	x				x	640		
N36/Hordaland	x				North Sea	x				x	11 040		
N37/Hordaland	x				North Sea	x				x	3 200		
N38/Hordaland	x				North Sea	x				x	640		
N39/Hordaland		x			North Sea	x				x			(1)
N40/Hordaland		x			North Sea	x				x			(1)
N41/Hordaland		x			North Sea	x				x			(1)
N42/Sogn & Fjordane				x	North Sea								(2)
N43/Møre & Romsdal	x				Norwegian Sea	x				x	21 300		
N44/Møre & Romsdal	x				Norwegian Sea	x				x	43 875		
N45/Sør Trøndelag	x				Norwegian Sea	x				x	1 600		
N46/Nord-Trøndelag	x				Norwegian Sea	x				x	3 300		
N47/Nord-Trøndelag	x				Norwegian Sea	x				x	160		
N48/Nordland	x				Norwegian Sea	x				x	179 696		
N49/Nordland		x			Norwegian Sea	x				x			(1)
N50/Nordland	x				Norwegian Sea	x				x	66 400		
N51/Nordland		x			Norwegian Sea	x				x			(1)
N52/Nordland	x				Norwegian Sea	x				x	12 160		
N53/Nordland	x				Norwegian Sea	x				x	49 840		
N54/Nordland				x	Norwegian Sea								(3)
N55/Troms	x				Barents Sea	x				x	9 600		
N56/Troms	x				Barents Sea	x				x	40 000		
N57/Troms	x				Barents Sea	x				x	1 200		

OSPAR-codes	categories of waste				origin name of watersystem	dredged material type of areas dredged			dredging operation type		total quantity (in metric tonnes)		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft		Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
N58/Finnmark				x	Barents Sea								(3)
N59/Finnmark	x				Barents Sea	x				x	92 800		
Total											640 268		

Portugal

P/1		x			Caminha	X			X		53 000		
P/2	x				Lisboa	X			X		65 100		
P/3	x				Lisboa	X				x	26 000		
P/4	x				Lisboa	X				x	52 000		
P/5	x				Lisboa	X			X		49 100		
P/6	x				Setúbal	X				x	126 100		
P/7		x			Portimão	X				x	19 500		
P/8	x				Portimão	X				x	32 500		
P/9	x				Portimão	X				x	152 400		
P/10	x				V.R.S.Ant	X				x	45 500		
P/11	x				P.Delgada	X				x	23 900		
P/12	x				P.Delgada	X				x	5 900		
P/13				x	Lisboa								(1)
P/14				x	P.Delgada						224		
P/15				x	P.Delgada								
Total											651 224		

Spain

E/1	x				Pasajes	x				x	NI	NI	
E/2	x				Bilbao	x	x			x	30 435	912,629	
E/5	x				Avilés	x	x		x	x	358 924	5 171,310	
E/6	x				Ferrol	x			x		7 637	85,363	
E/7	x				La Coruña	x			x	x	152 507	12 685,239	
E/10	x				Huelva	x			x	x	3 167 125	NI	
E/12					Cádiz	x			x	x	1 377 027	61 019,521	
Total											5 093 654	79 874,06	

Sweden

SWE/1 Vinga	x	x			Kattegat		x			x	180 000		
SWE/2 Hakefjorden	x				Kattegat		x			x	605		
SWE/3 W. Varberg	x				Kattegat	x				x	195 000		
Total											375 605		

OSPAR-codes	categories of waste				origin name of watersystem	dredged material			dredging operation type		total quantity (in metric tonnes)		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft		type of areas dredged			capital	maintenance	dry weight	Tot. org. carbon	notes
UK													
CR019	x				Cromarty Firth	x				x	0		
CR020	x				Helmsdale River	x				x	0		
CR021	x				Moray Firth			x		x	0		
CR027	x				Beaully Firth	x				x	0		
CR030	x				Moray Firth	x				x	3 577		
CR040	x				Spey Bay/Moray Firth	x				x	2 869		
CR050	x				Grampian Coast	x				x	1 955		
CR060	x				Grampian Coast	x				x	2 120		
CR110	x				Dee River/North Sea	x				x	123 122		
DM001	x				Cumbria Coast	x				x	1 265		(1)
DV010	x				Kent Coast	x			x	x	371 161		
DV011	x				Kent Coast	x				x	0		
DV040	x				Kent Coast	x				x	20 806		
FI040	x				Scapa Flow	x				x	0		
FI045	x				Scapa Flow	x				x	27 840		
FI068	x				Shetland Coast	x			x		5 464		
FO007	x				Grampian Coast	x				x	1 505		
FO010	x				South Esk River	x				x	37 251		
FO020	x				Tayside Coast	x		x		x	14 300		
FO023	x				Firth of Tay	x			x		31 169		
FO024	x				Firth of Tay	x			x		29 336		
FO028	x				Firth of Tay	x				x	60 219		
FO038	x				Firth Of Forth	x				x	0		
FO041	x				Firth Of Forth	x	x			x	108 800		
FO044	x				Firth Of Forth	x				x	433 343		
FO048	x				Firth Of Forth	x				x	0		
FO051	x				Firth of Forth/Fife Coast	x				x	1 260		
HE035	x				North Minch	x				x	18 795		
HU015	x				Humberside Coast	x				x	7 890		
HU020	x				Humber River	x	x			x	80 991		
HU030	x				Humber River	x	x	x		x	653 368		
HU040	x				Humber River	x				x	0		
HU041	x				Humber River	x				x	4 442		
HU060	x				Humber River	x	x	x	x	x	1 813 426		
HU080	x				Humber River	x	x			x	2 062 147		
HU090	x				Humber River	x	x			x	315 080		
HU143	x				Great Ouse River	x	x			x	22 860		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
HU150	x				Yare River	x	x	x	x	x	10 462		
HU170	x				Witham River	x	x	x		x	22 644		
IS040	x				Anglesey Coast	x		x	x	x	168 715		
IS055	x				Conwy River	x				x	0		
IS110	x				Mersey River	x	x			x	144 660		
IS120	x				Mersey River	x	x	x		x	38 418		
IS128	x				Mersey River		x			x	14 389		
IS140	x				Mersey River	x	x	x		x	1 483 036		
IS150	x				Mersey River/Liverpool Bay	x	x	x		x	51 588		
IS170	x				Wyre River	x				x	794 041		
IS180	x				Cumbria Coast	x				x	0		
IS192	x				Lune River	x				x	1 359		
IS200	x				Morecambe Bay	x	x			x	278 324		
IS205	x				Cumbria Coast	x				x	0		
IS240	x				Cumbria Coast	x				x	0		
IS241	x				Cumbria Coast	x				x	39 906		
IS310	x				Solway Firth			x	x		97 110		
IS400	x				Douglas Harbour, Isle of Man	x			x	x	0		
IS420	x				Peel Harbour Isle of Man	x			x	x	200 136		
IS591	x				Lagan River	x	x			x	370 281		
IS650	x				Down Coast	x				x	9 258		
LU010	x				Camel River	x				x	2 084		
LU070	x				Avon River	x	x			x	48 999		
LU080	x				Avon River	x	x			x	45 473		
LU083	x				Avon River	x	x			x	160 422		
LU084	x				Avon River	x	x			x	16 528		
LU085	x				Avon River	x	x			x	47 186		
LU086	x				Avon River	x	x			x	0		
LU110	x				Taff R./Severn Est.	x	x			x	265 911		
LU115	x				Severn Estuary	x				x	27 900		
LU125	x				Neath River	x				x	456		
LU130	x				Neath River/Swansea Bay	x	x	x		x	1 298 484		
LU140	x				Usk River	x	x			x	50 140		
LU168	x				Milford Haven	x	x			x	5 802		
LU169	x				Milford Haven	x	x			x	53 153		
LU190	x				Milford Haven	x				x	0		
MA010	x				Loch Ryan	x	x			x	0		
MA021	x				Firth Of Clyde	x				x	122 923		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
MA030	x				Islay Coast	x				x	9 922		
MA050	x				Firth Of Clyde	x				x	55 249		
MA501	x				Foyle River	x				x	8 571		
MA545	x				Foyle River	x				x	67 497		
MA605	x				Antrim Coast	x				x	2 501		
PL019	x				Salcombe Estuary	x				x	744		
PL021	x				Tamar River	x				x	124		
PL025	x				Tamar River	x				x	0		
PL031	x				Tamar River	x	x	x	x	x	5 122		
PL060	x				Fowey River/Cornwall Coast South	x	x			x	34 689		
PL075	x				Falmouth Harbour/Truro River	x	x		x	x	208		
PO070	x				Teign River	x			x	x	0		
PO090	x				Teign River	x				x	0		
PO500	x				St Helier Harbour, Jersey	x				x	4 369		
TH005	x				Waveney River	x				x	37 193		
TH034	x				Orwell River	x				x	10 035		
TH036	x				Orwell River	x				x	0		
TH037	x				Orwell River	x				x	21 707		
TH052	x				Orwell/Stour Rivers + Essex/Suffolk Coast	x	x	x	x	x	1 641 666		
TH053	x				Orwell River	x				x	15 369		
TH062	x				Blackwater River	x				x	0		
TH070	x				Thames River	x	x			x	0		
TH140	x				Kent Coast	x				x	31 443		
TH207	x				Orwell River	x				x	48 680		
TH208	x				Orwell River	x				x	46 665		
TH209	x				Orwell River	x				x	17 803		
TH210	x				Orwell River	x				x	18 251		
TH211	x				Orwell River						142 344		
TY022	x				Coquet River	x				x	0		
TY025	x				Coquet River		x			x	0		
TY042	x				Northumberland Coast	x				x	184 321		
TY070	x				Tyne River	x				x	115 853		
TY081	x				Tyne River	x				x	77 564		
TY090	x				Wear River	x				x	104 513		
TY130	x				Durham Coast	x				x	11 750		
TY150	x				Tees River/Hartlepool Bay	x	x	x		x	0		
TY160	x				Tees River/Hartlepool Bay	x	x	x		x	859 299		
TY180	x				Esk River	x		x		x	36 325		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
TY181	x				Esk River	x		x			0		
TY190	x				North Yorkshire Coast	x				x	3 056		
WI010	x				Ouse River (E.Sussex)	x			x	x	38 200		
WI020	x				East Sussex Coast	x				x	67 506		
WI031	x				Adur River/Sussex Coast	x	x	x		x	57 137		
WI035	x				Sussex Coast			x		x	3 885		
WI045	x				Chichester Harbour	x	x			x	1 031		
WI060	x				So'ton Water, IoW, Portsmouth	x	x	x	x	x	429 604		
WI065	x				Portsmouth Harbour	x				x	0		
WI080	x				So'ton Water, IoW etc.	x				x	14 631		
WI090	x				So'ton Water, IoW etc.	x				x	91		
WI100	x				Poole Harbour	x				x	0		
WI110	x				Poole Harbour	x	x	x	x	x	20 774		
DM001			x		Jersey						150		(2)
Total											16 371 990		

Amounts of Wastes Dumped at Sea in 2002

Table 3b Total loads (methods of determination indicated in Part II)

OSPAR-codes	in tonnes													in kilogrammes														
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	γ-HCH	DDT	TBT	DBT	other/notes
																												Pesticides
Belgium																												
B/1	0,111	0,040	4,358	13,629	3,023	7,805	4,239	24,325			0,206										0,000					0,010		
B/1	0,556	0,236	25,150	92,678	21,537	50,577	28,623	165,348			1,376										0,000					0,047		
B/1	0,156	0,062	9,186	25,460	4,676	13,094	8,355	41,151			0,270										0,000					0,016		
B/1	0,073	0,029	4,325	11,987	2,202	6,165	3,934	19,375			0,127										0,000					0,007		
B/1	0,231	0,083	90,802	28,396	6,298	16,262	8,833	50,684			0,429										0,000					0,020		
B/1	0,635	0,270	28,748	105,939	24,618	57,814	32,719	189,007			1,572										0,000					0,054		
B/3	0,192	0,069	7,559	23,639	5,243	13,538	7,353	42,193			0,357										0,000					0,017		
B/3	0,060	0,026	2,737	10,086	2,344	5,504	3,115	17,995			0,150										0,000					0,005		
B/3	0,003	0,001	0,179	0,495	0,091	0,255	0,162	0,800			0,005										0,000					0,000		
B/3	0,084	0,036	3,781	13,933	3,238	7,603	4,303	24,857			0,207										0,000					0,007		
B/6	0,443	0,163	13,984	55,625	15,382	30,920	16,703	107,988			1,103										0,000					0,045		
B/6	0,389	0,166	17,624	64,946	15,092	35,443	20,058	115,871			0,964										0,000					0,033		
B/6	0,006	0,003	0,283	0,991	0,260	0,568	0,309	1,676			0,025										0,000					0,001		
B/6	0,000	0,000	2,991	8,117	0,904	3,318	2,114	12,149			0,000										0,000					0,000		
B/6	0,197	0,084	8,894	32,775	7,616	17,886	10,122	58,474			0,486										0,000					0,017		
B/6	0,501	0,184	15,814	62,905	17,395	34,967	18,889	122,120			1,248										0,000					0,051		
B/9	0,040	0,019	20,366	7,013	1,548	3,707	2,148	12,005			0,086										0,000					0,013		
B/9	0,157	0,053	4,630	16,556	6,454	10,916	5,163	38,443			0,505										0,000					0,017		
B/99	0,004	0,000	0,142	0,341	0,067	0,152	0,100	6,600			0,003										0,000					0,000		
B/99	0,116	0,032	3,769	13,947	4,465	89,014	4,349	26,124			0,281										0,000					0,009		
B/int1	0,007	0,002	3,252	10,141	0,035	1,853	1,574	5,945														0,007						0,000
B/int1	0,026	0,004	5,385	22,225	2,735	6,667	4,872	26,498														0,017						0,017
B/int1	0,011	0,002	4,632	10,688	0,036	4,275	1,888	11,401														0,007						0,007
B/int1	0,005	0,000	0,548	2,212	0,014	0,404	0,452	1,635														0,001						0,001
B/int1	0,004	0,000	0,440	1,639	0,013	0,345	0,517	1,466														0,001						0,000
B/int1	0,000	0,000	0,022	0,077	0,001	0,022	0,027	0,107														0,000						0,005
B/int2	0,008	0,013	1,612	6,652	1,084	1,996	1,458	7,931														0,005						0,001
B/int2	0,002	0,000	0,677	1,562	0,003	0,625	0,276	1,666														0,001						0,005
B/int2	0,007	0,001	2,853	6,182	0,819	1,855	0,832	5,945														0,005						0,000
B/int2	0,006	0,001	0,635	2,364	0,005	0,498	0,747	2,115														0,001						0,001
B/int2	0,000	0,000	0,052	0,160	0,024	0,040	0,046	0,169														0,000						0,000
B/int3	0,003	0,005	0,589	2,431	0,299	0,299	0,533	2,899														0,002						0,005
B/int3	0,005	0,001	0,480	1,788	0,014	0,729	0,565	1,600														0,001						0,002
B/int4a	0,000	0,000	0,023	0,085	0,001	0,018	0,027	0,076														0,000						0,000
B/int4a	0,000	0,000	0,054	0,201	0,027	0,072	0,065	0,329														0,000						0,000
B/int4b	0,003	0,000	0,340	1,371	0,009	0,250	0,280	1,014														0,001						0,001
B/int4b	0,048	0,001	4,871	18,149	0,143	3,821	5,731	16,238														0,010						0,010
B/int4b	0,002	0,007	0,335	1,164	0,011	0,291	0,247	1,164														0,001						0,001
B/int4b	0,002	0,007	0,241	0,841	0,008	0,247	0,297	1,178														0,001						0,001
B/int4b	0,005		0,746	2,081	0,026	0,730	1,075	3,295														0,002						0,002
B/int4b	0,009	0,003	1,556	5,385	0,045	1,616	1,586	7,779														0,012						0,003
B/int4b	0,041	0,017	2,038	7,600	1,036	2,729	2,453	12,436														0,014						0,003
B/int7	0,012	0,001	1,210	4,509	0,036	0,949	1,424	4,035														0,002						0,002
B/int7	0,001	0,000	0,095	0,293	0,003	0,072	0,084	0,310														0,000						0,000
B/int7	0,000	0,000	0,022	0,077	0,001	0,023	0,027	0,108														0,000						0,000
B/int7	0,001	0,000	0,192	0,535	0,007	0,201	0,276	0,847														0,000						0,000
B/int7	0,009	0,003	1,553	5,375	0,045	1,613	1,583	7,764														0,012						0,003
B/int7	0,027	0,011	1,329	4,954	0,676	1,779	1,599	8,106														0,009						0,002
B/int 8	0,006	0,001	2,741	6,324	0,021	2,530	1,117	2,530														0,004						0,004
B/int8	0,023	0,004	9,084	19,682	0,076	5,905	2,649	5,905														0,015						0,015
B/int8	0,001	0,000	0,311	0,848	0,004	0,186	0,178	0,186														0,000						0,000
B/int8	0,029	0,001	3,347	13,505	0,088	2,466	2,760	2,466														0,006						0,006
B/int8	0,021	0,000	1,809	6,730	0,042	1,556	0,673	1,556														0,004						0,004
B/int8	0,007	0,001	0,763	2,843	0,022	0,599	0,898	0,599														0,001						0,001

OSPAR-codes	in tonnes													in kilogrammes															
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	γ-HCH	DDT	TBT	DBT	other/notes	
B/int8	0,003	0,000	0,434	1,511	0,014	0,378	0,321	0,378														0,001							0,001
B/int8	0,002	0,000	0,368	1,138	0,010	0,281	0,328	0,281														0,001							0,001
B/int8	0,000	0,000	0,058	0,161	0,002	0,060	0,083	0,060														0,000							0,000
B/int8	0,001	0,000	0,175	0,606	0,005	0,182	0,178	0,182														0,001							0,000
B/int9	0,006	0,001	0,629	2,540	0,017	0,464	0,519	1,877														0,001							0,001
B/int9	0,066	0,007	6,734	25,089	0,198	5,282	7,923	22,448														0,013							0,013
B/int9	0,003	0,000	0,413	1,436	0,013	0,359	0,305	1,436														0,001							0,001
B/int9	0,003	0,001	0,451	1,574	0,016	0,462	0,556	2,203														0,001							0,001
B/int9	0,006	0,001	0,928	2,590	0,032	0,971	1,338	4,101														0,002							0,002
B/int9	0,011	0,003	1,906	6,597	0,055	1,979	1,943	9,530														0,015							0,004
B/int9	0,046	0,019	2,245	8,371	1,142	3,006	2,702	13,699														0,015							0,004
B/int0	4,811	1,275	36,080	141,914	62,539	108,240	40,891	469,039														45,461							0,096
B/int0	0,814	0,139	6,108	24,939	13,403	21,546	6,956	81,774														10,858							0,007
B/int0	2,247	0,230	18,473	63,908	27,960	48,930	16,476	99,857														18,973							0,040
B/int0	2,198	0,325	17,483	65,936	26,974	48,953	20,980	218,789														24,476							0,040
B/int0	0,154	0,016	1,003	4,355	2,444	3,822	1,191	15,696														1,942							0,001
B/int0	0,128	0,010	1,091	4,365	1,310	2,270	1,135	10,477														1,196							0,003
B/int1bis	0,131	0,035	0,983	3,867	1,704	2,949	1,114	12,781														1,239							0,003
B/int1bis	0,084	0,009	0,690	2,388	1,045	1,829	0,616	3,732														0,709							0,001
B/int1bis	0,017	0,002	0,132	0,497	0,203	0,369	0,158	1,648														0,184							0,000
B/int1bis	0,697	0,057	5,926	23,705	7,112	12,327	6,163	56,893														6,495							0,019
B/int1bis	0,219	0,014	3,967	15,047	1,185	5,699	3,146	27,813														0,319							0,018
Total	15,932	3,786	425,436	1162,665	297,245	723,127	335,429	2279,177			9,400										0,000	112,045				0,261			0,358

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OSPAR-codes	in tonnes													in kilogrammes														
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	γ-HCH	DDT	TBT	DBT	other/notes
AAR01	0,000	0,000	0,002	0,007	0,005	0,011	0,005	0,028																				
AAR07	0,001	0,000	0,019	0,076	0,053	0,121	0,053	0,292																				
Total	0,008	0,004	0,345	1,097	0,457	0,767	0,596	2,876																		0		

Germany																												
D10	0,013	0,004	0,349	0,423	0,146	0,475	0,280	2,128	24,000		0,006												0,061	0,045				
D12	0,027	0,017	0,893	1,568	1,476	1,904	0,993	7,609	101,670		0,031	168,58	57,63															
D13	0,013	0,009	0,331	0,741	0,349	0,741	0,419	2,851	10,000		0,030	70,28	18,95															
D14	2,756	3,600	97,789	328,927	120,014	231,138	120,014	1 102,349	177,000	4,223	3,289			4,312	3,245	7,334	2,934	10,890	13,824	7,468	42,094		19,469	1,600	8,312	297,812	72,897	(1) (5)
D15	0,329	0,124	7,018	27,539	9,772	25,762	12,437	90,611	71,000	0,462	0,311			0,711	0,391	0,666	0,338	0,924	1,146	0,640	4,797		0,284	0,098	0,267	24,874	5,508	(2) (5)
D17	0,375	0,265	19,212	68,458	16,342	44,166	26,500	139,124	69,000	1,281	0,994			1,303	0,905	0,994	1,480	2,429	2,010	0,773	9,717		1,215	0,221	0,552	15,458	3,975	(3) (5)
D20	0,005	0,003	0,187	1,443	0,360	0,519	0,583	1,639	30,000	0,003	<0,000			<0,018	<0,009	<0,009	<0,009	0,009	0,005	0,005	<0,065		0,009	0,003	<0,055	0,647	0,146	
D21	0,003	0,000	0,162	0,345	0,211	0,479	0,268	1,480																				
D22	0,009	0,001	0,490	1,172	0,660	1,406	1,022	4,835																				
D25	0,001	0,000	0,061	0,154	0,090	0,189	0,096	0,650																				
D30	0,012	0,001	0,536	1,328	0,920	1,660	0,869	5,441																				
D32	0,015	0,002	0,744	1,710	1,076	2,058	1,108	7,345																				
D34	0,722	0,508	26,731	106,924	29,404	69,501	42,770	219,194	15,000	0,802	0,508			1,016	0,615	1,176	0,829	2,165	2,032	0,909	7,485		2,646	0,107	0,909	56,135	8,554	(4) (5)
D36	0,002	0,000	0,068	0,162	0,115	0,227	0,103	0,647																				
D41	0,037	0,038	3,141	13,871	3,664	7,328	5,169	22,901	<15	0,020	0,016			<0,262	<0,131	<0,131	<0,131	<0,065	<0,065	<0,065	<0,851		0,065	0,026	<0,785	1,701	0,262	
D43	0,003	0,000	0,160	0,359	0,198	0,435	0,230	1,453																				
D44	0,018	0,002	0,997	2,202	1,163	2,825	1,496	9,224																				
D45	0,005	0,001	0,279	0,687	0,350	0,836	0,415	2,935																				
D49	0,011	0,003	0,243	0,338	0,414	0,585	0,232	3,167	32,000		0,008															2,607	0,399	
Total	4,355	4,579	159,392	558,350	186,724	392,235	215,002	1 625,586	529,670	6,790	5,192	238,866	76,577	7,621	5,296	10,310	5,719	16,483	19,082	9,859	65,008		23,689	2,055	10,879	399,295	91,785	

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Netherlands																																							
NL-6	0,048	0,063	2,036	8,965	5,647	9,681	2,226	14,559	23,935	N.A.	0,147	N.D.	N.D.	0	0	0	0	0	0	0	0	N.A.	0	0	N.D.	1	N.D.												
NL-7	0,770	0,358	18,545	47,538	23,439	45,404	22,678	180,875	240,356	N.A.	1,021	N.D.	N.D.	2	1	2	1	3	3	1	13	N.A.	1	1	N.D.	18	N.D.												
NL-8	3,082	1,935	64,331	212,511	113,880	192,040	88,727	745,268	736,675	N.A.	3,262	N.D.	N.D.	18	7	8	6	10	15	6	69	N.A.	9	7	N.D.	636	N.D.												
NL-10	0,043	0,029	1,343	3,716	1,123	2,787	1,372	9,420	8,539	0,125	0,158	N.D.	N.D.	0	0	0	0	0	0	0	1	N.A.	0	0	0	N.D.	N.D.	(1)											
NL-11	1,352	0,582	35,196	104,609	35,478	71,753	32,920	250,172	294,146	1,349	2,461	N.D.	N.D.	2	2	2	2	3	4	3	18	N.A.	2	2	2	N.D.	N.D.	(1)											
NL-13	0,269	0,100	4,996	17,785	10,850	18,946	8,144	54,704	50,387	N.A.	0,573	N.D.	N.D.	1	1	2	1	2	2	1	10	N.A.	1	2	N.D.	12	N.D.												
NL-14	0,093	0,035	3,291	2,426	4,252	15,528	3,909	25,109	34,016	N.A.	0,266	N.D.	N.D.	N.I.	N.I.	N.I.	N.I.	N.I.	N.I.	N.I.	N.I.	N.A.	1	1	N.D.	N.I.	N.D.												
NL-15	0,083	0,118	4,548	19,502	7,704	14,672	8,606	49,568	89,334	N.A.	0,305	N.D.	N.D.	N.I.	N.I.	N.I.	N.I.	N.I.	N.I.	N.I.	N.I.	N.A.	4	4	N.D.	N.I.	N.D.												
Total	5,740	3,220	134,286	417,052	202,373	370,811	168,582	1 329,675	1477,388	1,474	8,193			23	11	14	10	18	24	11	111	0	18	17	2	667													

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OSPAR-codes	in tonnes														in kilogrammes														
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	γ-HCH	DDT	TBT	DBT	other/ notes	
P/9	<5	<3	<100	<400	<300	<500	<125	<1500	NI		<6000	NI	NI									<100	<10	NI	NI	NI			
P/10	<5	<3	<100	<400	<300	<500	<125	<1500	NI		<6000	NI	NI									<100	<10	NI	NI	NI			
P/11	<3	<1,5	<50	<100	<150	<150	<75	<600	NI		<2000	NI	NI									<25	<2,5	NI	NI	NI			
P/12	<5	<3	<100	<400	<300	<500	<125	<1500	NI		<6000	NI	NI									<100	<10	NI	NI	NI			
Total	<44	<25	<840	<2900	<2470	<3700	<1110	<11600			<44600											<710	<71						

UK																											
CR019	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
CR020	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
CR021	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
CR027	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
CR030	0,001	0,000	0,014	0,032	0,077	0,070	0,019	0,312	0,000											0,000					0,000	0,000	
CR040	0,000	0,000	0,013	0,027	0,031	0,039	0,132	0,100	0,000											0,000					0,000	0,000	
CR050	0,000	0,000	0,006	0,020	0,017	0,016	0,020	0,049	0,000											0,000					0,000	0,000	
CR060	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
CR110	0,079	0,036	1,015	4,184	4,188	7,424	2,413	15,070	0,000											3,694					0,000	0,000	
DM001	0,000	0,000	0,025	0,066	0,033	0,057	0,040	0,150	0,000											0,000					0,000	0,000	
DV010	0,089	0,074	5,308	13,757	4,601	10,487	8,115	26,502	0,000											0,500					15,200	1,400	
DV011	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
DV040	0,006	0,001	0,243	0,507	0,209	0,419	0,258	1,056	0,000											0,000					0,200	0,100	
FI040	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
FI045	0,032	0,011	0,257	0,616	1,046	2,575	0,311	2,666	0,000											0,000					0,000	0,000	
FI068	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
FO007	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
FO010	0,005	0,002	0,285	0,916	0,872	0,693	0,678	2,604	0,000											0,000					0,000	0,000	
FO020	0,004	0,002	0,183	0,646	0,646	0,503	0,429	1,379	0,000											0,061					0,000	0,000	
FO023	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
FO024	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
FO028	0,023	0,015	0,626	2,688	1,613	2,853	1,822	7,118	0,000											0,000					0,000	0,000	
FO038	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
FO041	0,021	0,077	1,187	5,611	3,160	5,477	2,614	10,014	0,000											0,000					0,000	0,000	
FO044	0,078	0,582	7,194	32,501	20,714	34,754	15,514	61,708	0,000											7,100					0,000	0,000	
FO048	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
FO051	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
HE035	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
HU015	0,002	0,001	0,145	0,445	0,301	0,462	0,267	1,566	0,000											0,000					0,800	0,100	
HU020	0,027	0,021	2,832	7,030	3,448	8,629	3,232	19,223	0,000											0,500					9,900	1,000	
HU030	0,220	0,167	22,845	56,710	27,817	69,610	26,070	155,078	0,000											3,800					80,400	8,200	
HU040	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
HU041	0,005	0,002	0,138	0,608	0,416	0,654	0,242	1,804	0,000											0,000					0,000	0,000	
HU060	0,644	0,485	63,340	159,878	77,930	190,796	73,384	424,387	0,000											8,700					213,100	35,500	
HU080	0,696	0,526	72,103	178,985	87,796	219,702	82,282	489,452	0,000											11,800					253,700	25,900	
HU090	0,112	0,083	10,959	28,388	13,756	33,718	13,223	75,986	0,000											1,600					36,000	4,000	
HU143	0,014	0,003	0,282	0,730	0,320	0,944	0,406	1,770	0,000											0,000					2,000	0,000	
HU150	0,002	0,000	0,080	0,061	0,128	0,207	0,044	0,312	0,000											0,000					0,100	0,100	
HU170	0,007	0,003	0,381	1,241	0,595	1,021	0,781	3,174	0,000											0,000					2,500	0,100	
IS040	0,016	0,011	1,452	6,178	2,650	3,426	2,109	15,798	0,000											0,000					1,300	0,900	
IS055	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000											0,000					0,000	0,000	
IS110	0,206	0,322	4,943	16,142	12,681	23,805	6,863	71,494	0,000											0,000					17,700	4,200	
IS120	0,015	0,023	0,489	1,134	1,037	1,469	0,410	7,006	0,000											0,100					4,300	0,400	
IS128	0,007	0,009	0,178	0,514	0,304	0,654	0,199	2,780	0,000											0,000					0,500	0,200	
IS140	0,325	0,412	14,323	23,832	16,844	33,551	9,077	156,072	0,000											0,500					49,700	10,900	
IS150	0,007	0,004	0,299	0,795	0,421	0,822	0,442	3,025	18,669											0,000					1,100	0,400	
IS170	0,107	32,106	6,250	20,664	8,235	15,715	8,725	49,492	0,000											0,000					3,100	1,300	

OSPAR-codes	in tonnes													in kilogrammes																
	Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	γ-HCH	DDT	TBT	DBT	other/ notes	
IS180		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
IS192		0,000	0,000	0,010	0,044	0,015	0,034	0,020	0,094	0,000												0,000					0,000	0,000		
IS200		0,065	0,107	2,319	10,669	4,175	10,669	5,567	27,369	0,000												0,000					4,700	0,500		
IS205		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
IS240		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
IS241		0,025	0,006	0,732	2,349	1,061	2,230	1,158	6,085	0,000												0,000					2,100	0,400		
IS310		0,002	0,008	0,573	1,884	0,589	0,837	1,064	2,933	0,000												0,000					0,000	0,000		
IS400		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
IS420		0,014	0,000	0,153	0,216	0,539	2,263	0,194	4,635	0,000												0,000					0,000	0,000		
IS591		0,354	0,110	3,555	28,331	18,358	25,157	18,373	81,290	0,000												0,000					0,000	0,000		
IS650		0,065	0,001	0,063	0,433	0,357	0,246	0,221	2,704	0,000												0,000					0,000	0,000		
LU010		0,001	0,000	0,082	0,072	0,118	0,084	0,059	0,277	0,000												0,000					0,600	0,000		
LU070		0,021	0,235	0,671	2,556	1,254	3,987	1,827	10,846	0,000												0,000					0,400	0,300		
LU080		0,020	0,207	0,623	2,401	1,163	3,700	1,695	10,066	0,000												0,000					0,400	0,300		
LU083		0,070	0,057	2,194	10,146	4,105	13,053	5,978	35,512	0,000												0,000					1,700	1,100		
LU084		0,007	0,006	0,226	1,045	0,423	1,345	0,616	3,659	0,000												0,000					0,100	0,100		
LU085		0,020	0,017	0,645	2,984	1,208	3,839	1,758	10,446	0,000												0,000					0,500	0,300		
LU086		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
LU110		0,185	0,100	5,460	18,041	11,831	17,980	10,818	79,825	0,000												2,400					125,200	17,500		
LU115		0,013	0,011	0,559	1,831	1,053	2,077	1,028	7,141	0,000												0,000					0,600	2,200		
LU125		0,000	0,000	0,007	0,025	0,023	0,032	0,020	0,122	0,000												0,000					0,000	0,000		
LU130		0,477	0,329	20,916	64,911	36,190	77,918	41,254	288,792	0,000												0,000					102,400	11,500		
LU140		0,057	0,022	1,477	4,892	2,506	4,508	2,612	15,617	0,000												0,000					12,200	2,500		
LU168		0,001	0,001	0,079	0,283	0,151	0,259	0,156	0,784	0,000												0,000					0,200	0,100		
LU169		0,008	0,006	0,655	2,069	1,036	2,145	0,957	5,921	0,210												0,000					3,200	0,400		
LU190		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
MA010		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
MA021		0,038	0,019	0,412	6,772	3,188	5,107	0,948	12,387	0,000												2,000					0,000	0,000		
MA030		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
MA050		0,045	0,095	1,091	3,599	9,411	8,944	3,451	18,158	0,000												0,000					0,000	0,000		
MA501		0,004	0,009	0,000	0,253	0,049	0,031	0,059	0,115	0,000												0,000					0,000	0,000		
MA545		0,034	0,068	0,000	1,993	0,386	0,247	0,467	0,900	0,000												0,000					0,000	0,000		
MA605		0,001	0,000	0,017	0,117	0,096	0,067	0,059	0,731	0,000												0,000					0,000	0,000		
PL019		0,000	0,000	0,010	0,044	0,016	0,025	0,027	0,058	0,000												0,000					0,000	0,000		
PL021		0,000	0,000	0,002	0,001	0,001	0,003	0,001	0,005	0,000												0,000					0,000	0,000		
PL025		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
PL031		0,003	0,004	0,241	0,163	0,593	0,617	0,098	1,132	0,000												0,000					1,200	0,200		
PL060		0,014	0,003	0,490	0,759	1,669	0,898	0,625	3,528	0,000												0,000					2,300	0,300		
PL075		0,000	0,000	0,045	0,010	0,178	0,031	0,006	0,174	0,000												0,000					0,000	0,000		
PO070		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
PO090		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
PO500		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
TH005		0,012	0,007	0,373	1,498	1,739	2,146	0,678	4,838	0,000												0,000					7,400	0,200		
TH034		0,005	0,004	0,195	0,849	0,813	0,638	0,415	1,750	0,000												0,300					1,000	0,400		
TH036		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
TH037		0,006	0,002	0,225	0,691	0,221	0,343	0,359	0,963	0,000												0,000					0,000	0,000		
TH052		0,515	0,136	17,472	71,533	25,786	43,839	35,696	111,911	0,000												0,000					35,400	11,300		
TH053		0,004	0,001	0,159	0,489	0,157	0,243	0,254	0,682	0,000												0,000					0,000	0,000		
TH062		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
TH070		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000		
TH140		0,029	0,004	0,305	0,905	0,349	1,436	0,496	1,627	0,000												0,000								

OSPAR-codes	in tonnes													in kilogrammes														
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	γ-HCH	DDT	TBT	DBT	other/ notes
TH209	0,005	0,001	0,185	0,567	0,181	0,282	0,295	0,790	0,000												0,000					0,000	0,000	
TH210	0,005	0,001	0,189	0,581	0,186	0,289	0,302	0,810	0,000												0,000					0,000	0,000	
TH211	0,039	0,010	1,475	4,529	1,449	2,252	2,355	6,315	0,000												0,000					0,000	0,000	
TY022	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000	
TY025	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000	
TY042	0,026	0,008	1,580	3,950	2,370	4,476	3,423	10,006	0,000												0,000					1,300	0,500	
TY070	0,180	0,056	2,125	7,079	9,222	22,643	4,158	60,222	0,000												0,000					41,200	5,400	
TY081	0,132	0,041	1,429	5,013	6,674	16,679	2,896	44,976	0,000												0,000					28,800	3,400	
TY090	0,047	0,013	1,298	3,042	2,066	15,113	1,825	17,361	0,000												0,000					1,500	1,500	
TY130	0,005	0,002	0,182	0,450	0,353	0,805	0,323	1,261	0,000												0,000					0,500	0,300	
TY150	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000	
TY160	0,869	0,961	9,214	133,001	56,085	269,207	27,442	316,479	0,000												0,000				1 177,700	71,100		
TY180	0,017	0,007	0,527	2,484	1,164	2,268	0,883	6,695	0,000												0,000					0,500	0,000	
TY181	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000	
TY190	0,001	0,001	0,040	0,093	0,164	0,200	0,053	0,619	0,000												0,000					5,600	0,300	
WI010	0,007	0,003	0,487	1,454	0,520	0,790	0,680	2,390	0,000												0,000					0,000	0,000	
WI020	0,009	0,004	0,827	2,499	0,919	1,554	1,111	4,424	0,000												0,000					0,800	0,200	
WI031	0,007	0,005	0,605	1,146	0,601	0,757	0,461	2,569	0,000												0,000					4,000	1,200	
WI035	0,000	0,000	0,110	0,105	0,026	0,045	0,087	0,171	0,000												0,000					0,000	0,000	
WI045	0,000	0,000	0,015	0,044	0,031	0,023	0,018	0,063	0,000												0,000					0,000	0,000	
WI060	0,062	0,058	6,517	22,612	14,818	13,715	9,447	40,592	5,389												0,200					97,100	13,600	
WI065	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000	
WI080	0,002	0,002	0,266	0,573	0,437	0,492	0,305	1,600	0,000												0,000					0,500	0,300	
WI090	0,000	0,000	0,002	0,005	0,008	0,005	0,003	0,014	0,000												0,000					0,100	0,000	
WI100	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000												0,000					0,000	0,000	
WI110	0,008	0,005	0,206	0,815	0,632	0,695	0,327	2,045	0,000												0,000					3,900	0,900	
DM001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000																				
Total	6,313	37,738	307,699	1 002,843	521,564	1 261,326	457,104	2 883,848													43,255					2 357,300	243,000	

GENERAL INFORMATION

The continental decimal system is used throughout this report. Empty cells indicate that no information was available. Italic numbers are used when the measured/calculated value was smaller than the actual number given in the cell.

ADDITIONAL INFORMATION

(Referring to Part II of the Format for Annual Reporting on Dumping Operations at Sea adopted at BDC 2001)

1. Deposit site

Belgium

A new dumpsite has been notified for the first time by Belgium (new OSCOM-Code B/99).

Germany

A new dumpsite called "Wittdün (southside), Amrum" in the vicinity of the island of Amrum has been notified for the first time by the Federal German State Schleswig-Holstein (new OSCOM-Code D/49).

Iceland

The following sites were not used in 2002: IS 4, IS 6, IS 18, IS 27, IS 32, IS 33, IS 42, IS 45, IS 50, IS 53, IS 58.

Ireland

The locations of the deposit sites in Ireland are indicated in Part II-Figure 4 and their co-ordinates in Table 1 to that figure.

Norway

Number of deposit sites per county in Norway for 2002 in the OSPAR Convention area:

Number County	2002			
	Dredged material	Inert material	Fish waste	Other waste (ships and bulky waste)
1 Østfold	8			
2 Akershus/Oslo	2			
3 Vestfold	16			
4 Buskerud				
5 Telemark	1			
6 Aust-Agder				
7 Vest-Agder	2	2		
8 Rogaland				
9 Hordaland	7	3		
10 Sogn og Fjordane				1
11 Møre og Romsdal	2			
12 Sør-Trøndelag	1			
13 Nord-Trøndelag	2			
14 Nordland	4	2		1
15 Troms	3			
16 Finnmark	1			1
Total	49	7		3

Portugal

Areas of dumping at sea in 2002:

Code	Areas	Zone	Dumping points		Category of material	Quantity	
			Long. W	Lat. N		1 000 m3	1 000 tonnes
P/1	Caminha	Sea	08° 54' 30''	41° 54' 30''	Clean dredged material (Class 1)	41	53
P/7	Portimão	Sea	08° 38,5' 00''	37° 1,8' 00''		15	19,5
P/2	Lisboa	Sea	09° 09' 30''	38° 41' 00''	Dredged material with traceable contamination (Class 2)	50,05	65,1
P/3	Lisboa	Sea	09° 09' 30''	38° 41' 00''		20	26
P/4	Lisboa	Sea	09° 09' 30''	38° 41' 00''		40	52
P/11	Ponta Delgada	Sea	25° 40' 00''	37° 40' 00''		18,4	23,9
P/5	Lisboa	Sea	09° 20' 00''	38° 33' 00''	Dredged material with low contamination (Class 3)	37,8	49,1
P/6	Setúbal	Sea				97	126,1
P/8	Portimão	Sea	08° 38,5' 00''	37° 1,8' 00''		25	32,5
P/9	Portimão	Sea	08° 38,5' 00''	37° 1,8' 00''		117,2	152,4
P/10	V.R. St. António	Sea	07° 26' 00''	37° 03' 30''		35	45,5
P/12	Ponta Delgada	Sea	25° 40' 00''	37° 40' 00''		4,6	5,9
P/13	Lisboa	Sea	09° 20' 00''	38° 33' 00''	Cables		
P/14	Ponta Delgada	Sea			Ship hull		224 t
P/15	Horta	Sea			Ship hull		

Sweden

The deposit sites for Sweden are as follows:

SWE/1	Vinga	N 57° 38' 11'', E 11° 48' 11''
SWE/2	Hakefjorden	N 57° 41' 11'', E 11° 45' 11''
SWE/3	Varberg	N 57° 06' 9'', E 12° 08' 9''

United Kingdom

DM001 was a deposit site at Harrington Harbour off the North-West coast of England. It covers the deposit of fish waste off the coast of Jersey, Channel Islands.

2. Method of determination

Germany

DDT: from 2002 onwards, the figure given under DDT reflects the "pp-DDT-portion". In the preceding years, the sum of DDT, DDD and DDE components was taken as the basis. Therefore, the quantity given for 2002 is lower compared to the preceding years.

Total PAH: like in the preceding years, the figure under total PAH reflects the sum of PAH₆.

Ireland

In many cases the material dumped at particular sites originates from more than one area. Sediment analysis is carried out by independent laboratories and consequently the limits of detection vary.

The limits of detection requested from laboratories are:

Contaminant	Concentration	Units (dry weight)	Contaminant	Concentration	Units (dry weight)
Hg	0,05	mg kg ⁻¹	CB28	2,5	µg kg ⁻¹
As	1,0	mg kg ⁻¹	CB52	2,5	µg kg ⁻¹
Cd	0,1	mg kg ⁻¹	CB101	2,5	µg kg ⁻¹
Cu	5,0	mg kg ⁻¹	CB118	2,5	µg kg ⁻¹
Pb	5,0	mg kg ⁻¹	CB138+163	2,5	µg kg ⁻¹
Zn	10,0	mg kg ⁻¹	CB153	2,5	µg kg ⁻¹
Cr	5,0	mg kg ⁻¹	CB180	2,5	µg kg ⁻¹

Contaminant	Concentration	Units (dry weight)	Contaminant	Concentration	Units (dry weight)
Ni	15	mg kg ⁻¹	DDE pp	1,0	µg kg ⁻¹
TBT & DBT	0,01	mg kg ⁻¹	DDT pp	1,0	µg kg ⁻¹
			DDD pp	1,0	µg kg ⁻¹
			Dieldrin	1,0	µg kg ⁻¹
			Lindane	1,0	µg kg ⁻¹
			HCB	1,0	µg kg ⁻¹

The limits of detection achieved are :

	Irl 6	Irl 8	Irl 17	Irl 20	Irl 33	Irl 39	Irl 43	Irl 44	Irl 45	Irl 46
Hg (mg kg ⁻¹)	-	-	-	-	0,05	-	-	-	-	0,01
As (mg kg ⁻¹)	-	-	-	-	-	-	1,0	-	-	-
Cd (mg kg ⁻¹)	-	-	-	-	-	-	-	0,006	-	1,0
Cu (mg kg ⁻¹)	-	-	-	-	-	-	-	-	-	-
Pb (mg kg ⁻¹)	-	-	-	-	-	-	1,0	-	-	-
Zn (mg kg ⁻¹)	-	-	-	-	-	-	-	-	-	-
Cr (mg kg ⁻¹)	-	-	-	-	-	-	-	-	-	-
Ni (mg kg ⁻¹)	-	-	-	-	-	-	-	-	-	-
TBT (mg kg ⁻¹)	-	-	0,02-0,07	0,001	0,001-0,02	0,008	0,04	0,006	0,002	0,02
DBT (mg kg ⁻¹)	-	0,001	0,013-	0,001	0,001-0,02	0,007	0,035	0,012	-	0,02
CB28 (ug kg ⁻¹)	2,5-10,0	3,4	1,4-7,0	2,8	1,0-7,0	3,8-4,1	1,0	1,0	7,0	10
CB52 (ug kg ⁻¹)	1,0-4,0	3,4	1,4-7,0	2,8	1,0-7,0	3,8-4,1	1,0	1,0	7,0	10
CB101 (ug kg ⁻¹)	1,0-4,0	3,4	1,4-7,0	2,8	1,0-7,0	3,8-4,1	1,0	1,0	7,0	10
CB118 (ug kg ⁻¹)	2,0-4,0	3,4	1,4-7,0	2,8	1,0-7,0	3,8-4,1	1,0	1,0	7,0-	10
CB138 (ug kg ⁻¹)	1,0-4,0	3,4	1,4-7,0	2,8	1,0-7,0	3,8-4,1	1,0	1,0	7,0	10
CB153 (ug kg ⁻¹)	1,4-4,0	3,4	1,4-7,0	2,8	1,0-7,0	3,8-4,1	1,0	1,0	7,0	10
CB180 (ug kg ⁻¹)	1,0-4,0	3,4	1,4-7,0	2,8	1,0-7,0	3,8-4,1	1,0	1,0	7,0	10
DDE pp (ug)	1,0-4,0	3,4	1,4-7,0	2,8	0,1-5,0	3,8-4,1	0,1	1,0	7,0	10
DDT pp (ug)	1,0-4,0	3,4	1,4-7,0	2,8	0,1-5,0	3,8-4,1	0,1	1,0	7,0	10
TDE pp (ug)	1,0-4,0	3,4	1,4-7,0	2,8	0,1-5,0	3,8-4,1	0,1	1,0	7,0	10
DDT op (ug)	1,0-4,0	3,4	1,4-7,0	2,8	0,1-5,0	3,8-4,1	0,1	1,0	7,0	10
Dieldrin (ug)	1,0-4,0	3,4	1,4-7,0	2,8	0,1-5,0	3,8-4,1	0,1	1,0	7,0	10
g-HCH (ug kg ⁻¹)	1,0-4,0	3,4	1,4-7,0	2,8	0,1-5,0	3,8-4,1	0,1	1,0	7,0	10
HCB (ug kg ⁻¹)	1,0-4,0	3,4	1,4-7,0	2,8	0,1-5,0	3,8-4,1	0,1	1,0	7,0	10

Notes:

Units are all dry weight.

Where ranges are given this indicates that different labs testing sediments from various locations dumped at one dumpsite achieved varying detection limits.

Spain

With regard to the grain size fraction analysed, in all cases it has been smaller than 0,063 mm.

With respect to the methods of determination used, they have been the following ones:

Sample preparation

- Drying of the sample at 60°C during 24h.
- Sieving of the sample with a 2 mm sieve.
- Separation, when done, of the smaller than 0,063 mm fraction, using water and a 0,063 mm plastic sieve.
- Homogenisation and grinding of the sample in an agate mortar.
- Determination of the humidity by drying at 105°C up to constant weight.

Heavy metals analysis

For Cd, Pb, Cu, Zn, Ni and Cu:

- Acid digestion with nitric acid in a microwave oven.
- Quantitative determination by atomic absorption spectrophotometry, in flame or in graphite chamber, depending on the sample concentration.

For As:

- Acid digestion in microwave oven with nitric acid.
- Previous reduction of the sample.
- Determination by hydride generation matched to an atomic absorption spectrophotometer.

For Hg:

- Acid digestion in microwave oven with nitric acid.
- Determination by cold steam technique matched to atomic absorption spectrophotometry.

Poly-chlorinated-biphenyls

- Extraction of homogenised and grinded sample with a methylene chloride:hexane (1:1) mixture.
- Extract concentration and passing through an anhydrous sodium sulphate column.
- Sulphur elimination by purification with powder of copper.
- Extract purification in column, avoiding the organochlorated compounds with a mixture of ethylic ether in hexane at successive concentrations of 6, 15 and 50%, ending with pure hexane.
- Quantitative determination by gas chromatography with electron capture detector, using an HP-S capillary column of 0,22 mm inner diameter.

Polyaromatic hydrocarbons

- Extraction by means of decantation, mixture with acetone:hexane (1:1) and ultrasounds.
- Purification by means of decantation with salt saturated with sodium sulfate.
- Determination using gas chromatography with a 60 mm capillary column, BOD5 and flame ionization detector.
- Confirmation, when necessary, by means of mass chromatography.

Organic matter

For this parameter we have used two types of techniques.

As *volatile solids*:

- Drying of the sample at 105°C, grinding in a mortar and combustion in muffle at 550°C up to constant weight.
- Determination of total quantity as (formula used in our "Recommendations for the management of dredged material in the ports of Spain"):

$$\text{TOC mass (tn)} = \frac{0,35 \times \text{Volatile solids concentration (\%)} \times \text{dumped mass (tn)}}{100}$$

As *Total organic carbon (TOC)*:

- Drying at 105°C, elimination of the inorganic carbon with HCL and determination by means of calcination and detection of CO₂ with an infrared detector (Elementary analysis).
- Determination of the total quantity as:

$$\text{TOC mass (tn)} = \frac{\text{TOC concentration (\%)} \times \text{dumped mass (tn)}}{100}$$

United Kingdom

All analyses of dredged material on <2mm fraction. Methods of determination as specified in reports listed below:

- Allchin, C.A., Kelly, C.A. and Portmann, J.P. (1989) Methods of analysis for chlorinated hydrocarbons in marine and other samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (6), 25 pp.
- Jones, B.R. and Laslett, R.E. (1994) Methods for analysis of trace metals in marine and other samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (11), 29 pp.
- Kelly, C.A., Law, R.J., and Emerson, H.S. (2000) Methods of analysing hydrocarbons and polycyclic aromatic hydrocarbons (PAH) in marine samples. Science Series, Aquatic Environmental Protection: Analytical Methods, CEFAS Lowestoft. (12), 18pp.
- Law, R.J., Fileman, T.W. and Portmann, J.P. (1988) Methods of analysis of hydrocarbons in marine and other samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (2), 25 pp.
- Waldock, M.J., Waite, M.E., Miller, D., Smith, D.J. and Law, R.J. (1989) The determination of total tin and organotin compounds in environmental samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (4), 25 pp.

3. Quality assurance of analyses of dumped material

a. Do the laboratories carrying out the analyses undertake:

Contracting Parties responding "Yes" to this question are indicated under the respective columns with their country abbreviation.

	All	None	Some
(i) the analysis of blank samples and laboratory reference materials with each batch of samples of waste and other material dumped in the maritime area that is analysed by that laboratory;	B, IS, NL, UK		D
(ii) periodic comparative analysis of laboratory reference materials and certified reference materials;	B, IS, NL, UK		D
(iii) the compilation of quality control charts based upon the data resulting from the analyses of the laboratory reference materials and certified reference materials, and the use of those quality control charts to monitor analytical performance in relation to all samples of dumped wastes or other materials;	B, IS, NL, UK		D
(iv) periodic participation in interlaboratory comparison exercises, including, where possible, international comparison exercises;	B, IS, NL, UK		D

Do the laboratories carrying out the analyses undertake:

Contracting Parties responding "Yes" to this question are indicated under the respective columns with their country abbreviation.

	All	None	Some
(v) periodic participation in national and, where possible, international laboratory proficiency schemes, under which: • participating laboratories are asked to analyse samples of substances which are provided by the organisers of the scheme; • the composition of those samples is not disclosed in advance; • the results of the scheme for each participating laboratory are made available to all participating laboratories.	B, NL, UK		D

b. If reporting "Some" in the table above, please indicate which parts of the data set are not subject to the full range of QA procedures.

In Germany, several laboratories, often commercial laboratories, are involved in analyses of dredged material. Most of these laboratories are accredited and apply the QA procedures (i) to (v).

- c. Describe any practical action taken to apply the QA procedures described above (e.g. participation in interlaboratory comparison exercises and international QA/QC schemes).
Belgium has reported that their laboratories follow the EN ISO/IEC 17025.
- d. Are any special difficulties encountered in applying Quality Assurance procedures?
Belgium and the UK have encountered no difficulty.

Quality assurance of analysis of dumped material in Ireland

In Ireland, analysis of sediment is subcontracted by the applicants for Dumping at Sea permits to independent laboratories. The Marine Institute stipulates analytical requirements, including quality assurance criteria, and assesses the sediment chemistry for dumping at sea permits. Analytical requirements include target LoDs and use of CRMs. Results should be reported with the following:

- Summary method details
- Method performance specifications: Limit of detection, Precision, Bias
- Batch QC (CRM) results
- LoD/LoQ used
- Other quality assurance information (e.g. accreditation status)

A national Expert Group on Contaminated Sediments is currently reviewing procedures for assessing contaminated dredge spoil and this will include quality assurance issues. This may include a laboratory approval scheme.

Quality assurance of analysis of dumped material in Norway

Norway has reported that the County Administrations have often filled in information on quality assurance of analyses for dumped material. Reporting in this respect is very inconsistent. In general, well established laboratories are used, but formal quality assurance is often missing.

FOOTNOTES TO ALL TABLES

Table 1

Belgium

- (1) This quantity is the maximum licensed. The average amount aimed at is 26 840 000 TDS/year.

Germany

- (1) This quantity refers to sand.
(2) This quantity refers to silt.
(3) Permits for dredging/dumping of dredged material are issued by the competent authorities of the Federal States (Länder). Permits are not issued for dredging/dumping activities of the German Federal Water and Shipping Directorate (the Directorate does not issue permits for its own activities). However the dredging/dumping activities of the Directorate are governed by national regulations which are in accordance with OSPAR and LC requirements.

Iceland

- (1) According to national law, dumping of vessels and aircrafts is not permitted.

The Netherlands

- (1) Permits issued for dumping of dredged materials in national waters are numerous and are not taken into account in the overview of total amounts licensed in tables 1 and 2 but are specified in table 3.
(2) Permits issued for dumping of dredged materials at sea are licensed in cubic metres (not metric tonnes).

Norway

- (1) Norway granted a permit for dumping 350 tonnes of spoiled minced meat.
(2) Inert material: site numbers (see Table 3a) and amounts in metric tonnes are as follows: 30: 99 00 m/t, 31: 500, 39: 21 920, 40: 8000, 41: 26 000, (39-41 are underwater blocks of rock, origin is underwater explosions), 49: 10 020 and 51: 18 720 (both are blocks of rock, origin unknown).
(3) Dumping of vessels: 2 hulls of wood, 1 hull of plastic. All ships are 0-50 ft long.

Sweden

- (1) The permit was given up to 31 December 2009
(2) The permit was given up to 31 December 2005

UK

- (1) UK licensed tonnages are usually on a wet weight basis. These are the estimated dry weight equivalents.
(2) A significant number of UK dredged material licences are now issued for 3 years, including some with very large tonnages.
(3) An additional 2000 tonnes dry weight of fish waste was licensed for deposit in the sea in 2002. The material was licensed for deposit directly onto the intertidal zone but is not dumping under the terms of the Convention. 658 tonnes of fish waste was deposited under this and previous licences during 2002.

Table 2

Germany

- (1) Although HCB and pp-DDE concentrations exceed action level 2 slightly, disposal in the Elbe estuary was allowed, as no contaminants are added to the estuary. Sediments are dredged and relocated within the same water body. Due to hydrological conditions, mixing of particulate matter between dredging and disposal areas is intensive, and therefore the same material has to be dredged and disposed of repeatedly. The concentrations of HCB and pp-DDE in the dredged material and in suspended particulate matter of the Elbe are very similar. There is no local source for these contaminants in the dredging area, however they originate from the upper reaches of the Elbe.
(2) The average concentration of HCB in dredged material of the Elbe estuary is 7,5 µg/kg in the fine fraction <20 µg/kg. The average concentration of p,p-DDE is 3,8 µg/kg in the fraction <20 µg/kg, the respective action level 2 is 3 µg/kg. The action levels refer to the fraction <20 µm, too.

Norway

- (1) Norway granted a permit for dumping 350 tonnes of spoiled minced meat due to an emergency situation.

Portugal

- (1) The type of inert material is sand and silt (P1) sand, silt and clay (P7). The chemical values are under permit values for this type of material.

Table 3 a

Germany

- (1) For Germany where necessary, the quantities in Table 3a have been converted from cubic metres into tonnes. The following conversion factors (specific gravity) have been used:
in case of silt: 1,2
in case of sand: 1,8
in case of lacking information: 1,5
in cases where no dry weight (DW) was indicated, the DW was estimated to be 50% (in order to calculate the annual load from the concentration given).
- (2) Additional quantity of 5 710 000 tonnes sand, exempt from chemical analysis.
- (3) Additional quantity of 2 860 000 tonnes sand, exempt from chemical analysis.
- (4) Additional quantity of 452 000 tonnes sand, exempt from chemical analysis.
- (5) Additional quantity of 2 811 000 tonnes sand, exempt from chemical analysis.

Iceland

- (1) Samples were analysed for heavy metals and PCB (7 PCBs), values are at or close to base values.
- (2) Due to small amount, no chemical analyses were requested.
- (3) Coarse grained sediments (sand and coarser), and/or bedrock. No chemical analyses were requested.

Ireland

- (1) Of the 12 permits issued for dredged material in 2002, no material was removed/dumped for one permit. In addition, 5 permits issued in 2001 were extended to allow additional dredging/dumping in 2002.
- (2) The quantity licensed does not include that licensed under the 5 permits issued in 2001.
- (3) Permits are issued on a wet weight basis. The dry licensed amounts are calculated using the moisture content of the dumped material to "back calculate" the dry licensed tonnages.
- (4) The actual amounts dumped can vary considerably from the amount licensed, always less, particularly in cases where five-year permits are granted.

The Netherlands

- (1) The Netherlands: the amounts for deposit sites NL-10 and NL-11 (Eastern Scheldt and Western Scheldt Harbours) are based on amounts dumped in 2001.

Norway

- (1) At sites N39 to N41 blocks of rock originated by underwater explosions have been dumped. At sites N49 and N51 the blocks of rock dumped are of unknown origin.
- (2) At site N42 is a plastic vessel dumped with the authorisation of the fire department, and permitted by the Norwegian county administrations.
- (3) The vessels are of wooden origin and 0-50 feet long.

Portugal

- (1) The total quantity in metric tonnes is expressed in wet weight.

UK

- (1) DM001 was a deposit site at Harrington Harbour off the North-West coast of England.
- (2) The DM001 site covers the deposit of fish waste off the coast of Jersey, Channel Islands.

Table 3 b

Germany

- (1) pp-DDD: 26,714; pp-DDE: 10,09.
- (2) pp-DDD: 0,364; pp-DDE: 0,275.
- (3) pp-DDD: 0,618; pp-DDE: 0,508.
- (4) pp-DDD: 0,561; pp-DDE: 0,535.
- (5) The figures for the total load in Table 3b for the sites 14, 15, 17 and 34 have been calculated on the basis of the silt fraction only. The quantity of the associated sand fraction which is exempted from analysis according to § 5.2 of the OSPAR Guidelines for the Management of Dredged Material (Ref. No.: 1998-20) is given as additional information in the footnotes to Table 3a.

Ireland

- (1) For both capital and maintenance dumping at IRL 6, PCB congeners and individual DDTs were predominantly <DL. However, in a small number of cases one or more products were detected. Only the value of detected products are presented in Table 3b.
- (2) In some instances, the material dumped at a particular site can comprise sediment dredged from various dredging locations. Often a contaminant may be detected in the sediment from one location dumped at a dumpsite whilst the same contaminant from another location (dumped at the same site) is below the detection limits. In such cases the amount of the substance dumped is given as a maximum (e.g. < 0,12 tonnes).

The Netherlands

- (1) The Netherlands: the amounts for deposit sites NL-10 and 11 (Eastern Scheldt and Western Scheldt Harbours) are based on amounts in 2001.

Norway

- (1) Site N49 mg/kg dw: Cd: 0,14-0,34; Hg: 0-0,12; Pb: 3-12.
- (2) Site N50 mg/kg dw: Cd: 0,06-0,62; Hg: 0-1,8; Pb: 3-171.
- (3) Site N50: 8 PCB ug/kg.
- (4) Site N53 mg/kg dw: Pb: 5-6.
- (5) Site N53: 3 PCB ug/kg.
- (6) Site N54 mg/kg dw: Cd: 0,03-0,73; Hg: 0,05-1,14; Pb: 8-115.
- (7) Site N54: 1-31 PCB ug/kg.

Portugal

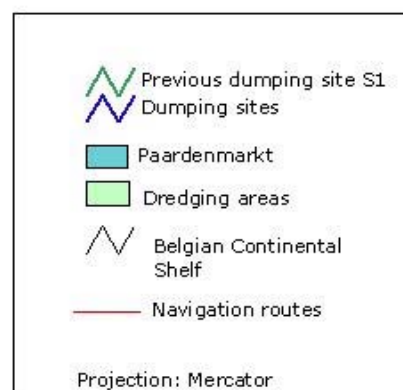
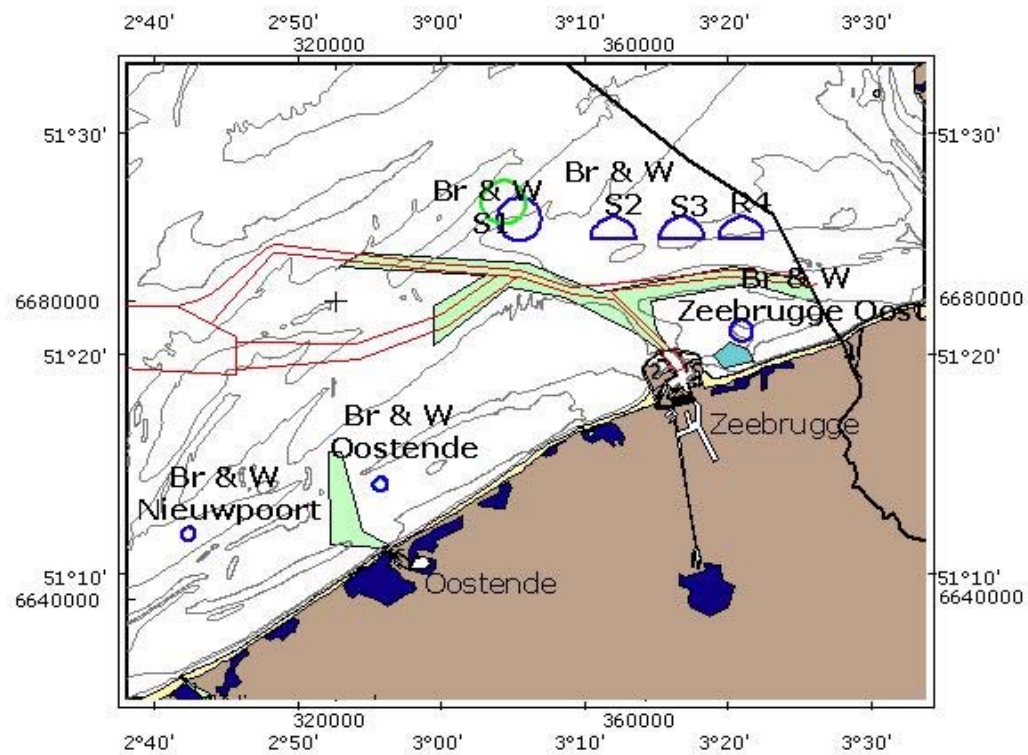
- (1) The values are in mg/kg for metals and µg/kg for organic compounds.

LEGEND TO ALL TABLES

NA	Not applicable
ND	Not determined
NI	No information
DL	Detection limit

Figure 1a - Dumping sites of dredged material in Belgium in 2002

Dumping and dredging sites



Roan

Bot van Knokke

Sch2

17

182,750

M2

WIEFINGEN

Appelzak

Paardemarkt

22

Ruische ligger

2130m

Holleknaal

25

St. Croix

Vissingen

Druppel van Vissingen

Nieuwe IJzer

TOELICHTING

Mandelhaven

Trestans

Hoog platen

kommet een

6

of stortvak

stortvak alleen te gebruiken

stortvak te gebruiken

stortvak alleen te gebruiken

na de vernieuwing

overzicht

STORTPLAATSEN BELGIE

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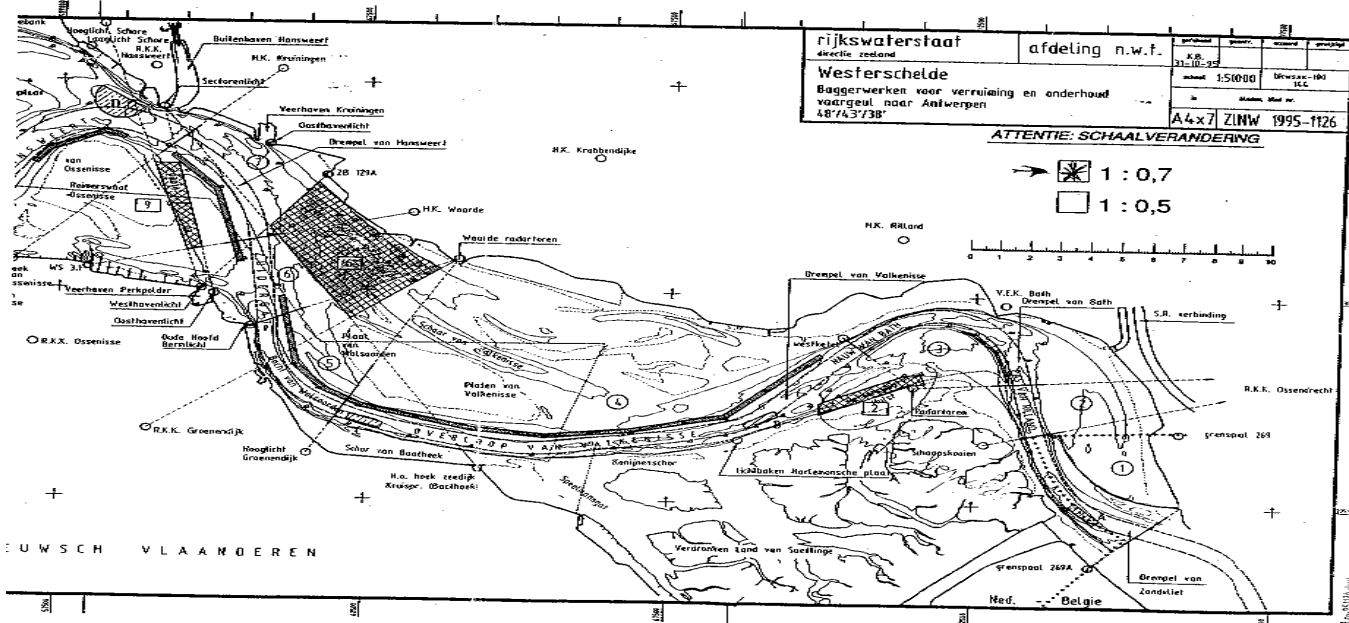
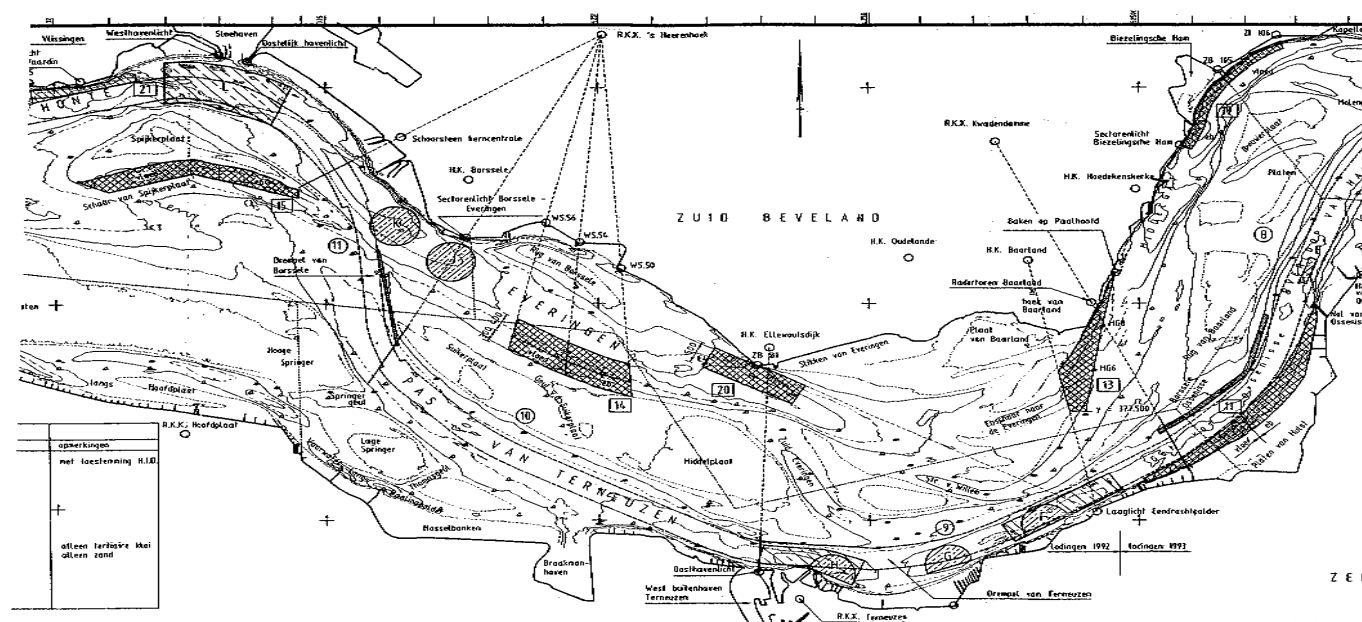


Figure 2: Dumping sites of dredged material in Germany in 2002

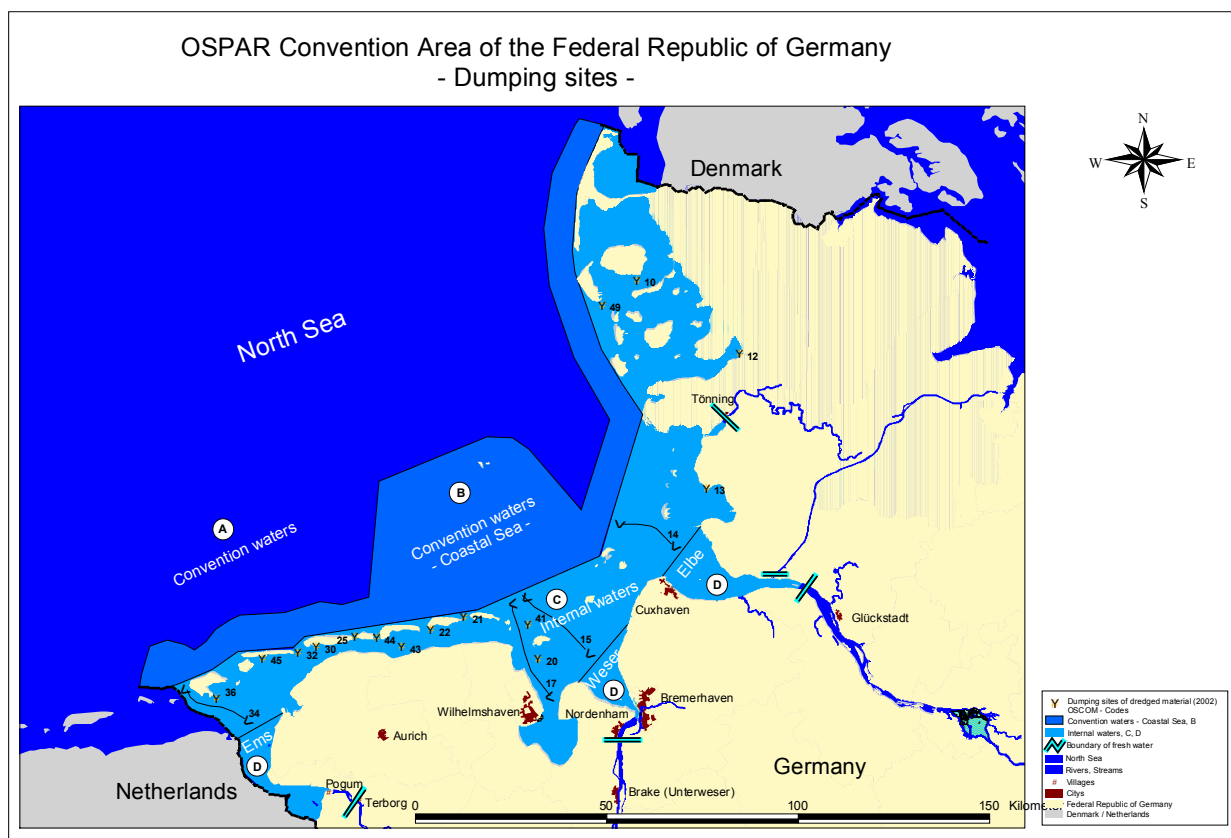
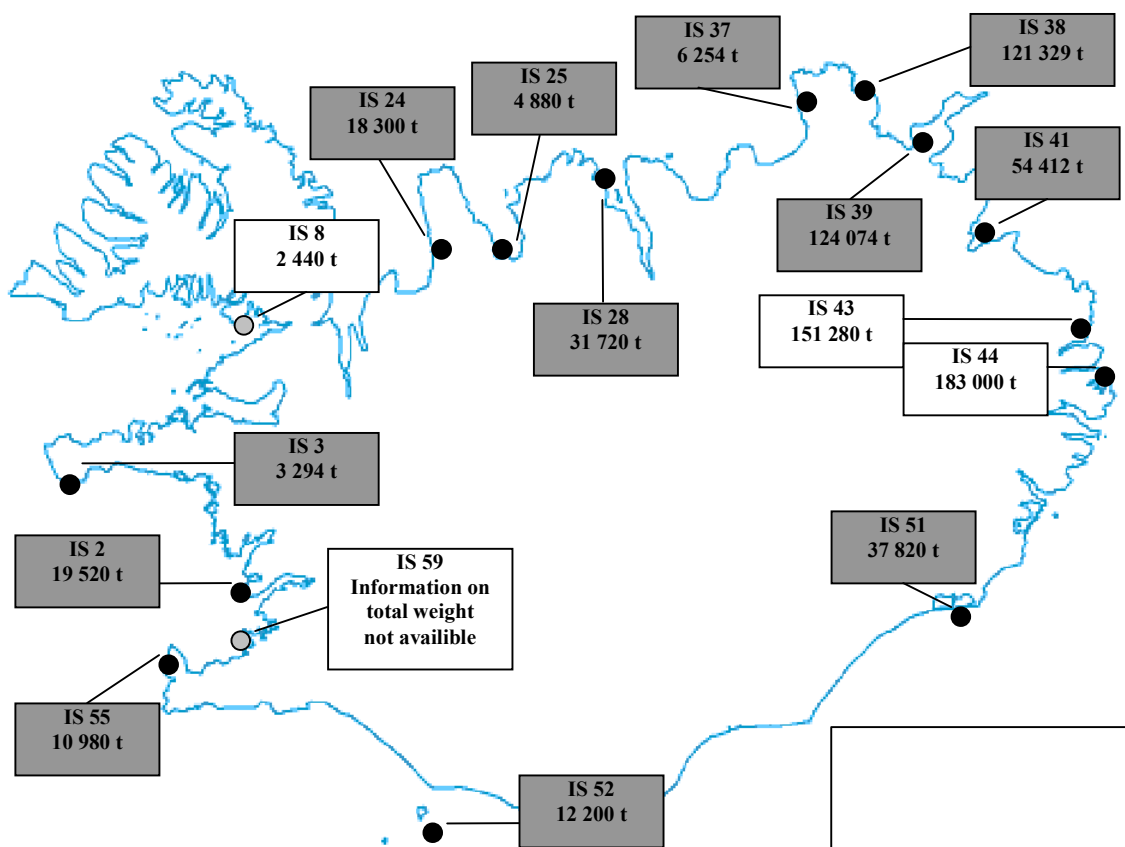


Figure 3: Dumping sites of dredged material in Iceland in 2002



Approximate position of the dumping sites for dredged material used by Iceland in 2002
(OSPAR codes of dumping sites and weights in tonnes dry weight)

Figure 4: Dumping sites of dredged material in Ireland in 2002

Table 1: Co-ordinates of the sites:

Site No.	Latitude	Longitude
Irl 6	53.32	-6.05
Irl 8	52.13	-6.95
Irl 17	51.72	-8.18
Irl 20	53.75	-6.18
Irl 33	52.622	-9.143
Irl 39	52.59	-9.356
Irl 40	52.6	-9.4
Irl 41	53.833	-9.81
Irl 42	51.42	-9.556
Irl 43	54.558	-8.625
Irl 44	52.602	-9.381
Irl 45	52.674	-8.736
Irl 46	53.678	-6.189

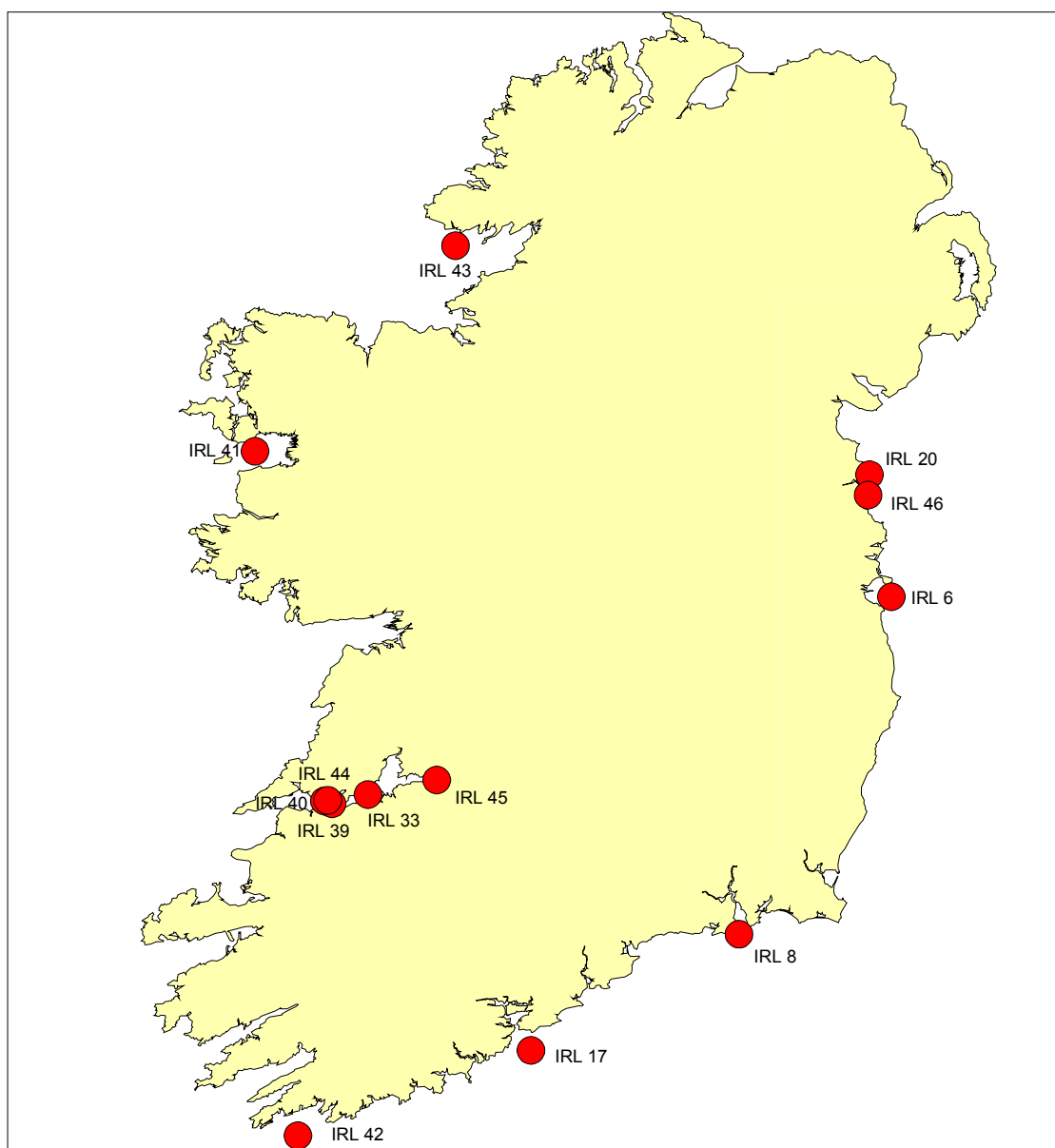


Figure 5: Dumping sites of dredged materials in the Netherlands in 2002

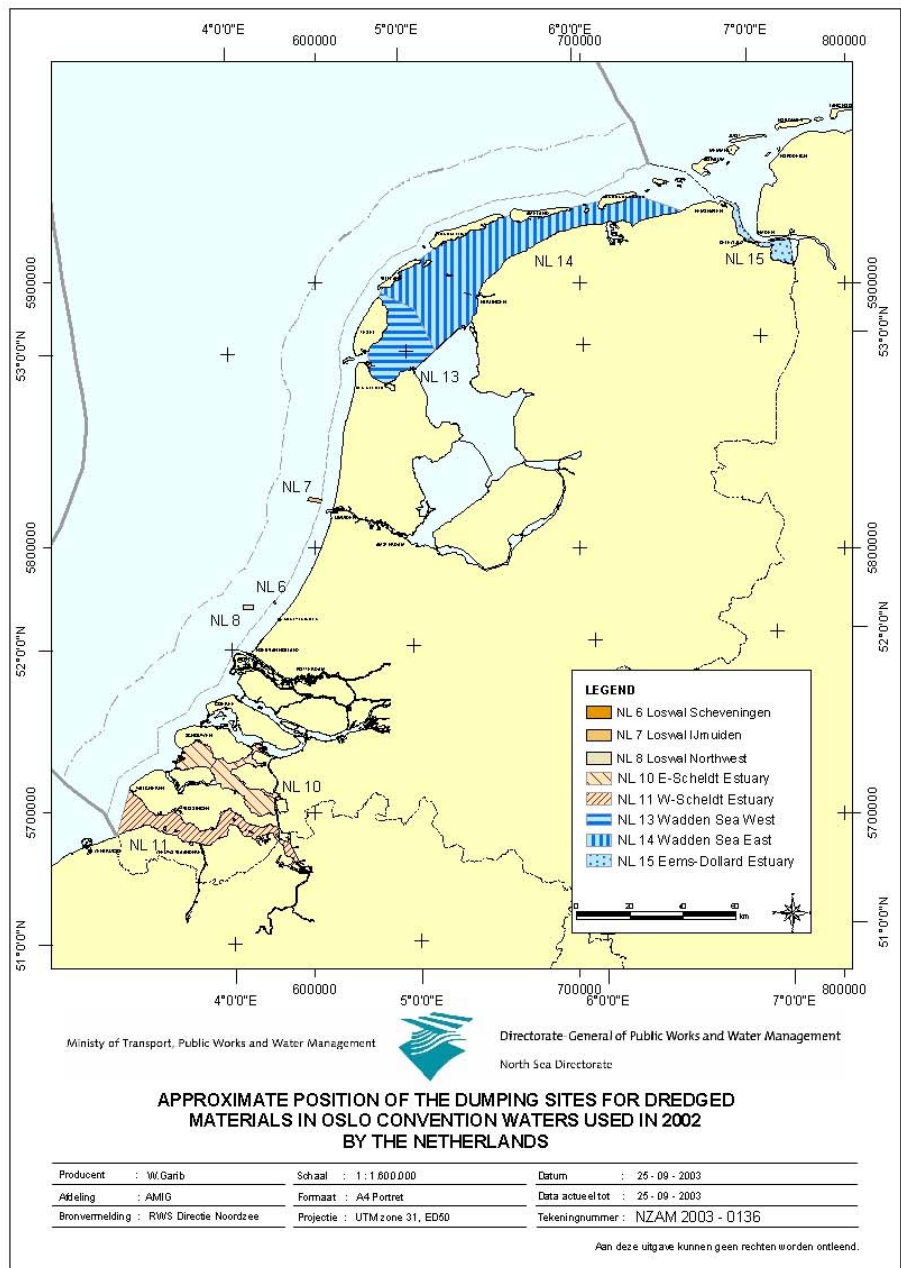


Figure 6 - Dumping sites of dredged material in Norway in 2002

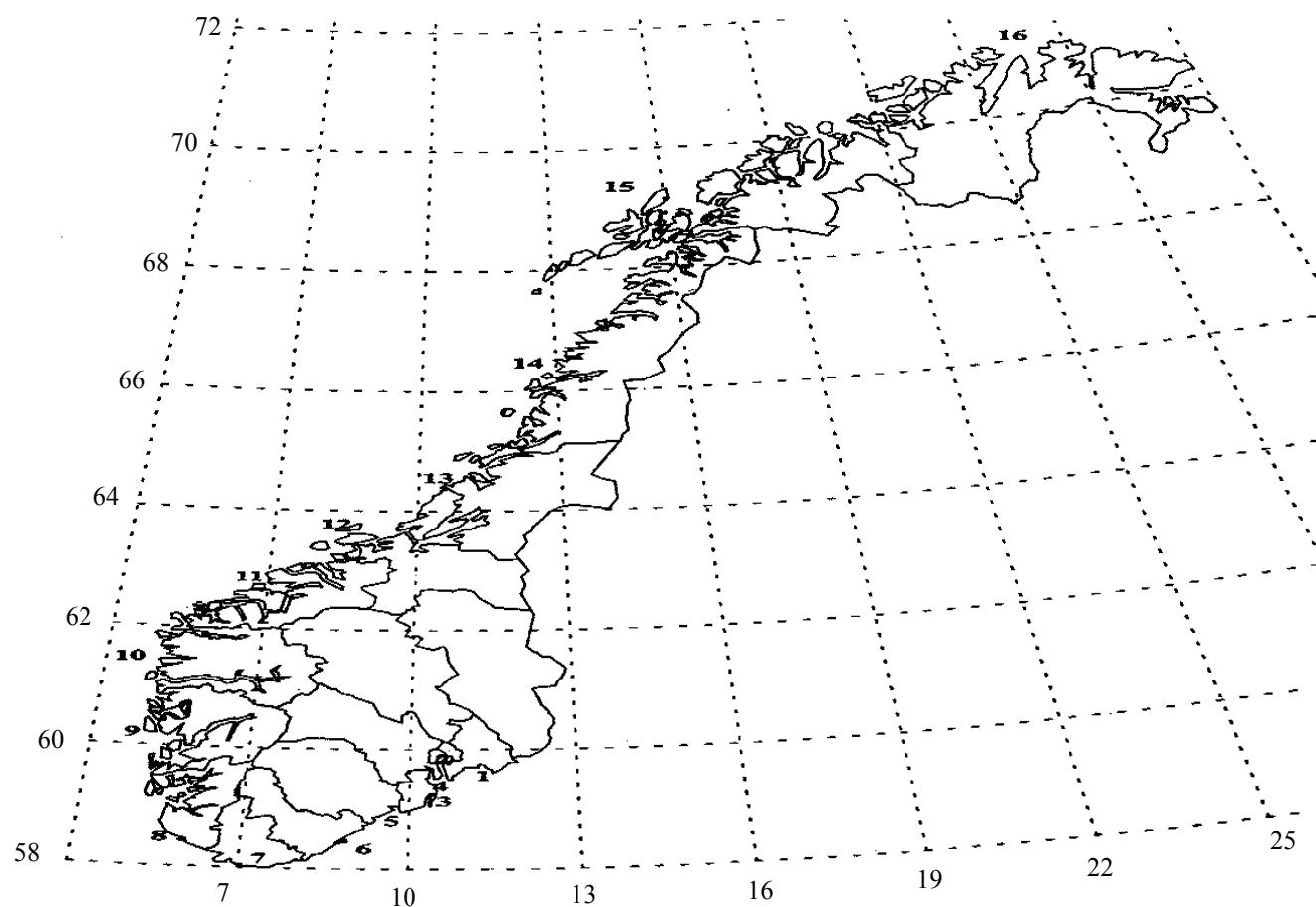
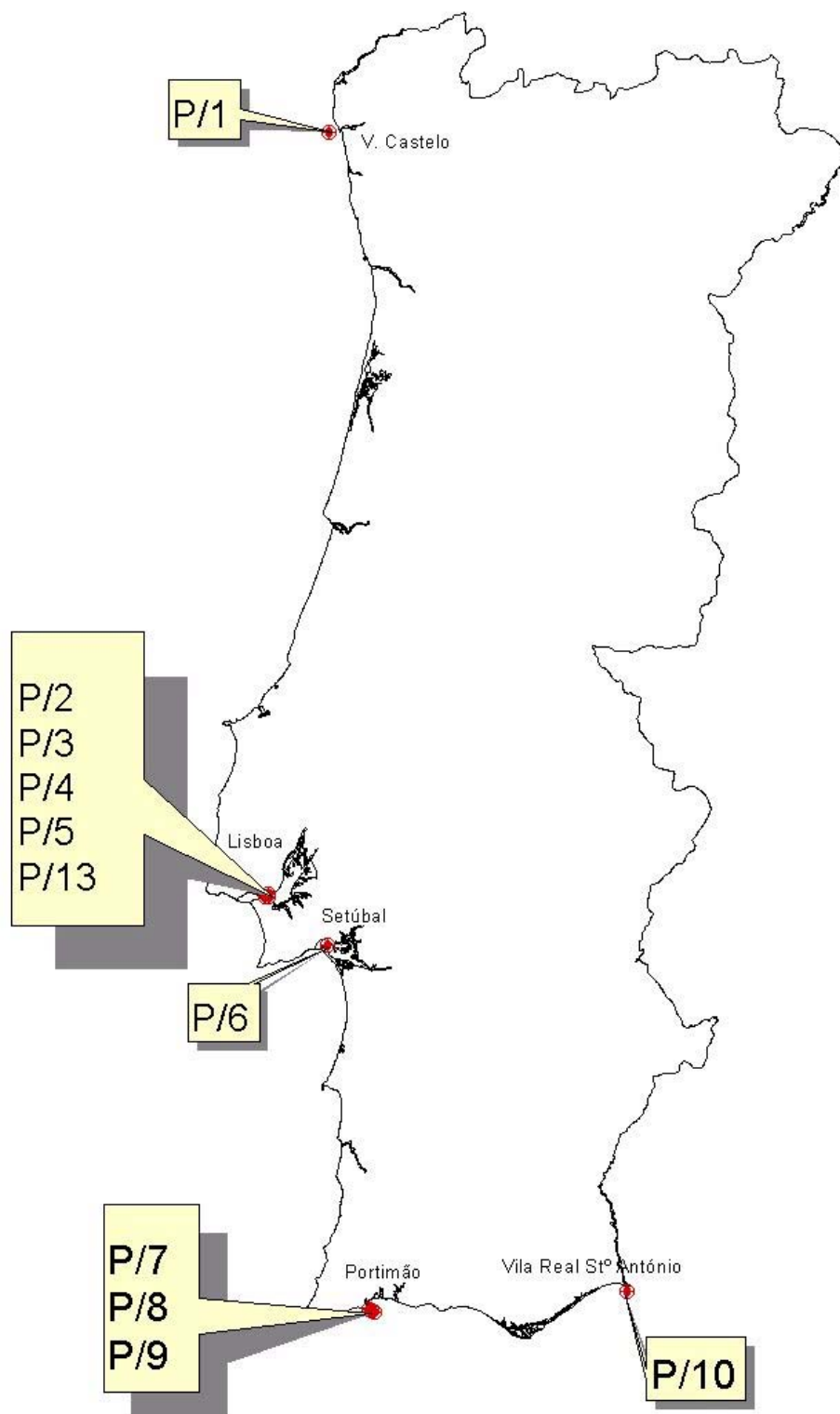


Figure 1. Map of Norway showing latitude (58-72°N, left side) and longitude (7-25°E, bottom). The different counties along the coast are indicated.

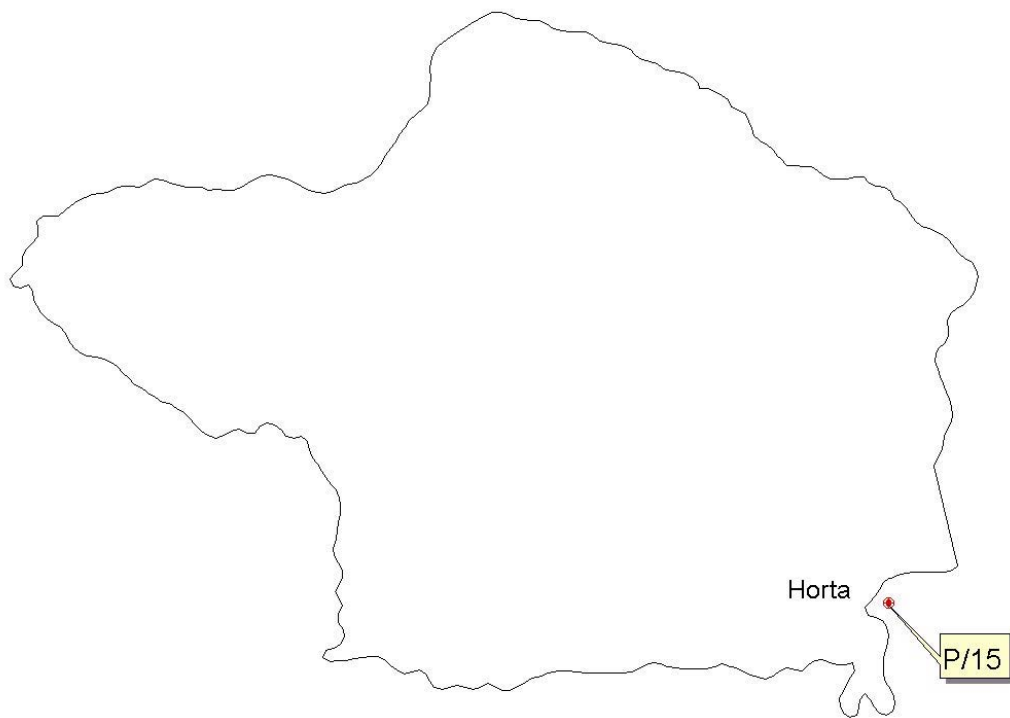
1: Østfold, 2: Akershus/Oslo, 3: Vestfold, 4: Buskerud, 5: Telemark, 6: Aust-Agder, 7: Vest-Agder, 8: Rogaland, 9: Hordaland, 10: Sogn og fjordane, 11: Møre og Romsdal, 12: Sør-Trøndelag, 13 Nord-Trøndelag, 14: Nordland, 15 Troms, 16: Finnmark.

Dredged material:	N/ 1-3, 5, 7, 9, 11-16
Inert material:	N/ 7, 9, 14
Fish waste	
Other waste:	N/ 10, 14, 16 – ships - 2 wooden hulled, 1 plastic hulled

Figure 7a - Dumping sites for dredged material in Portugal in 2002



**Figure 7b - Dumping sites for dredged material in Portugal
(Açores-Horta) in 2002**



**Figure 7c - Dumping sites for dredged material in Portugal
(Açores-Ponta Delgada) in 2002**

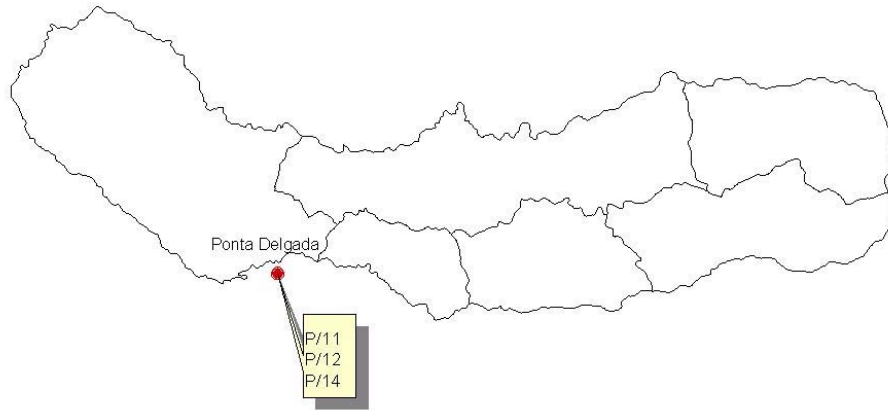


Figure 8 - Dumping sites of dredged material in the UK in 2002
a. North Eastern England

Marine disposal sites in Northeastern England. Site codes and quantites deposited in tonnes dry weight, in 2002. All tonnages are for dredged material unless otherwise stated.

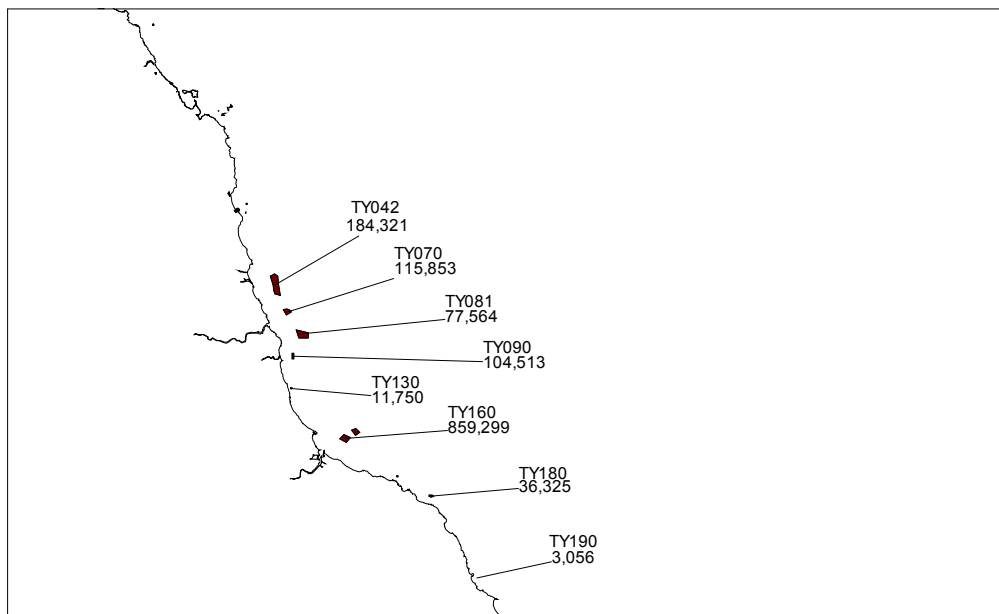


Figure 8 - Dumping sites of dredged material in the UK in 2002
b. Eastern England

Marine disposal sites in Eastern England. Site codes and quantities deposited in tonnes dry weight, in 2002. All tonnages are for dredged materials unless otherwise stated.

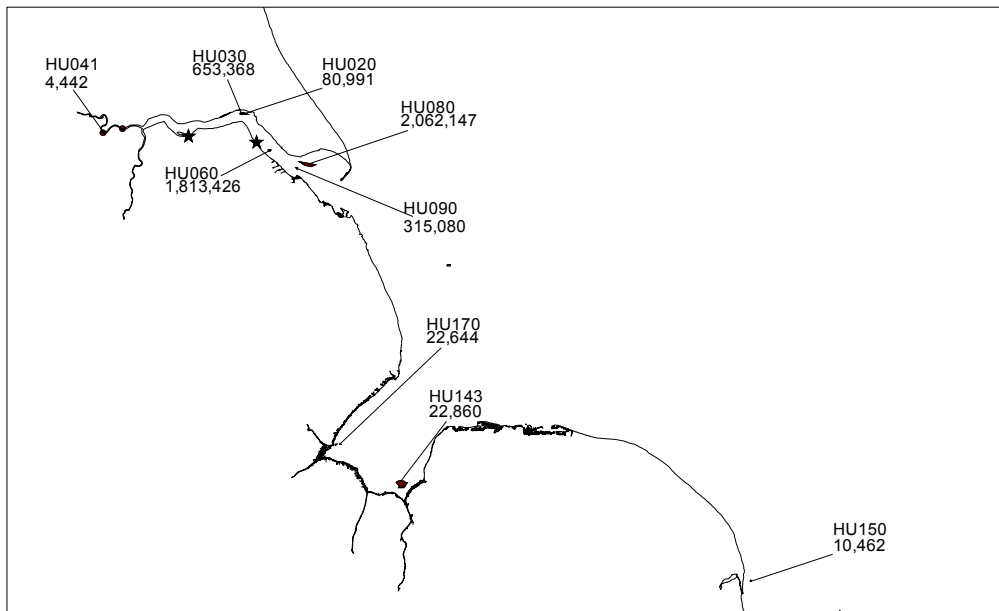


Figure 8 - Dumping sites of dredged material in the UK in 2002
c. South Eastern England

Marine disposal sites in Southeastern England. Site codes and quantities deposited in tonnes dry weight, in 2002. All tonnages are for dredged materials unless otherwise stated.

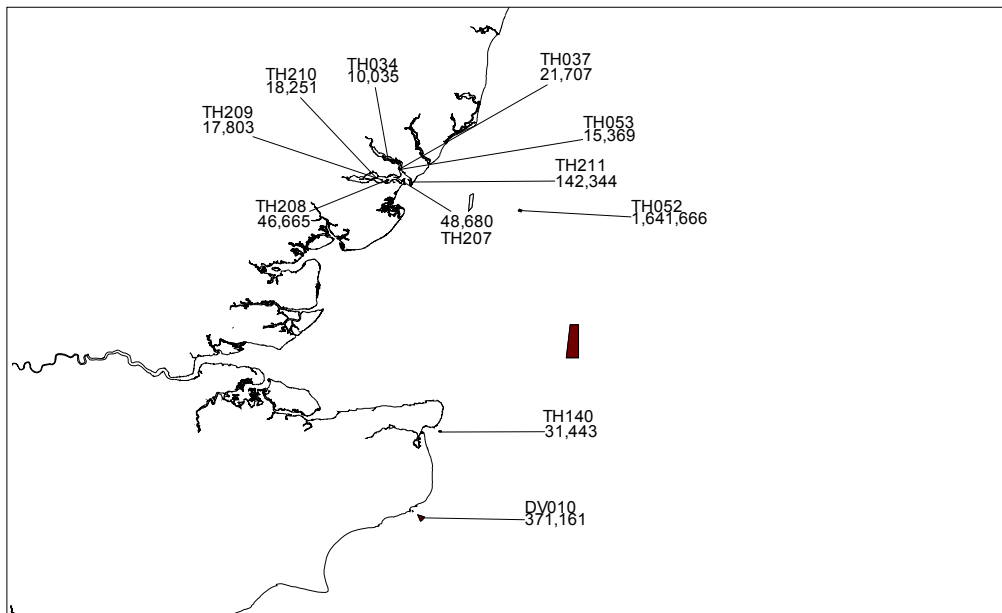


Figure 8 - Dumping sites of dredged material in the UK in 2002
d. Southern England

Marine disposal sites in Southern England. Site codes and quantities deposited in tonnes dry weight, in 2002. All tonnages are for dredged materials unless otherwise stated.

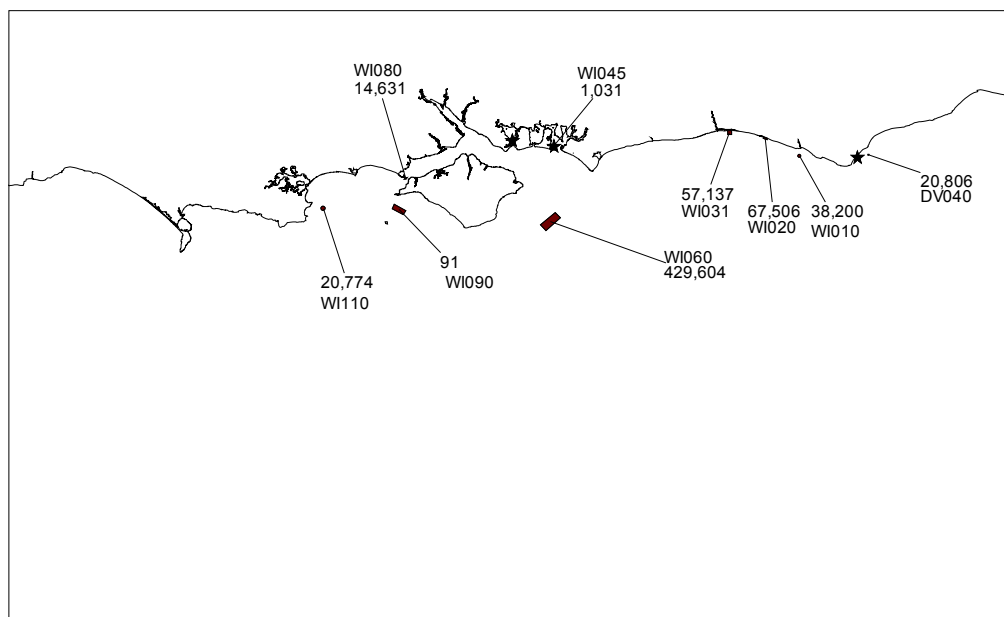


Figure 8 - Dumping sites of dredged material in the UK in 2002
e. South Western England

Marine disposal sites in Southwestern England. Site codes and quantities deposited in tonnes dry weight, in 2002. All tonnages are for dredged materials unless otherwise stated.

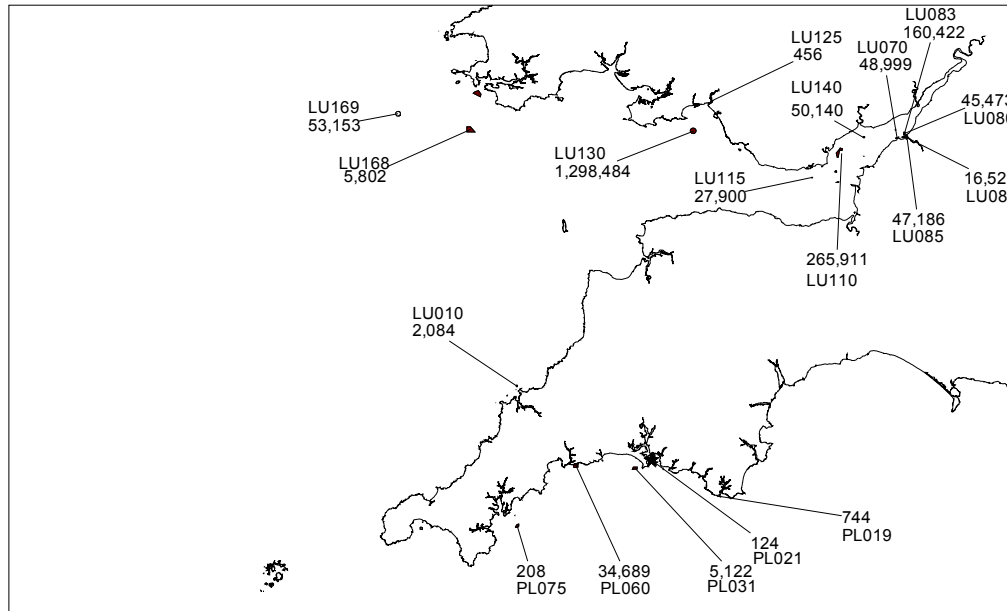


Figure 8 - Dumping sites of dredged material in the UK in 2002
f. North Western England

Marine disposal sites in the Irish Sea. Site codes and quantities deposited in tonnes dry weight, in 2002. All tonnages are for dredged materials unless otherwise stated.

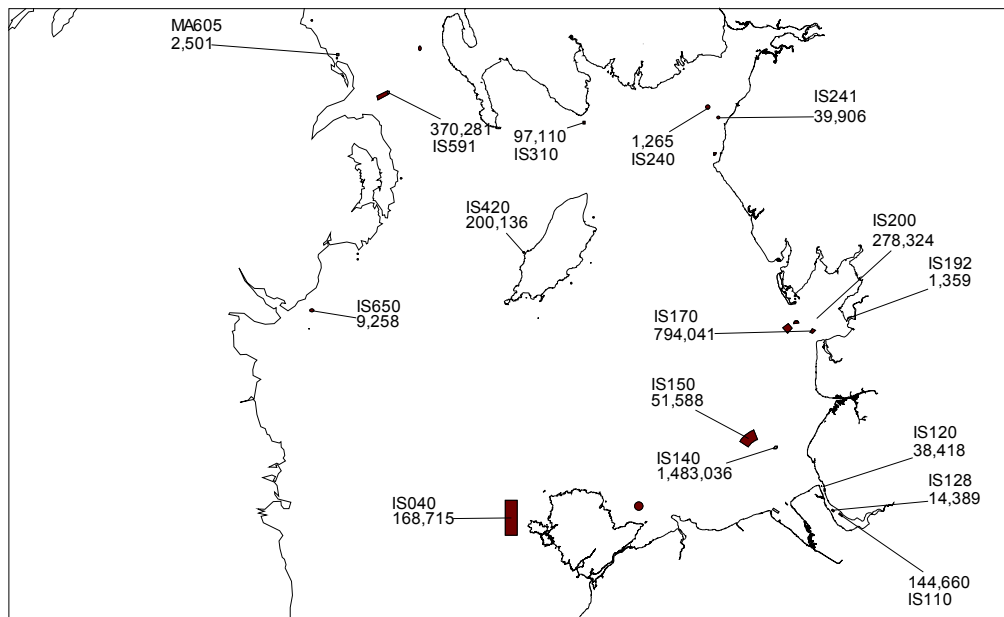


Figure 8 - Dumping sites of dredged material in the UK in 2002
g. Western Scotland

Marine disposal sites in Western Scotland. Site codes and quantities deposited in tonnes dry weight, in 2002. All tonnages are for dredged materials unless otherwise stated.

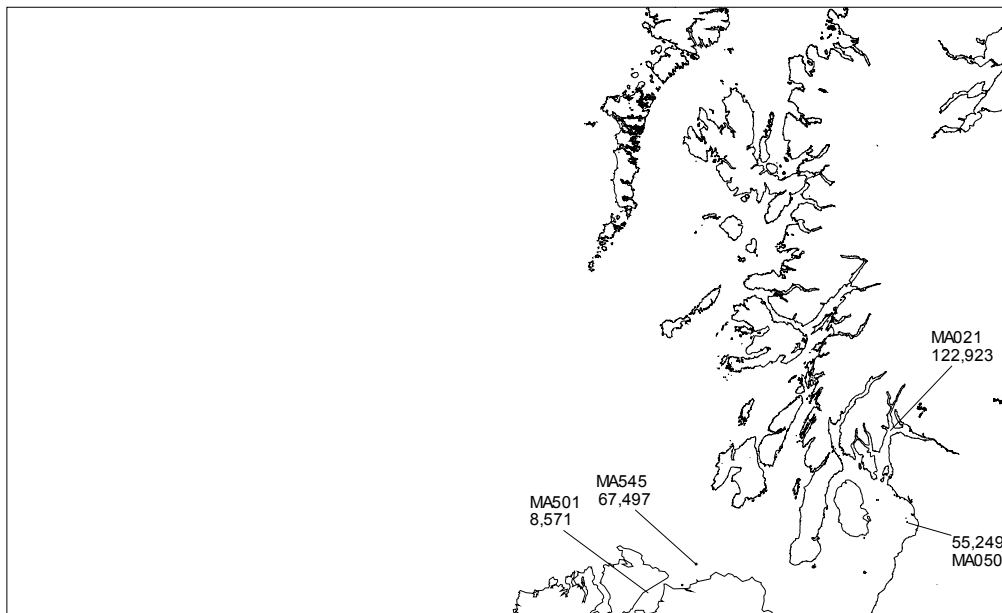


Figure 8 - Dumping sites of dredged material in the UK in 2002
h. Northern Scotland

Marine disposal sites in Northern Scotland. Site codes and quantities deposited in tonnes dry weight, in 2002. All tonnages are for dredged material unless otherwise stated.

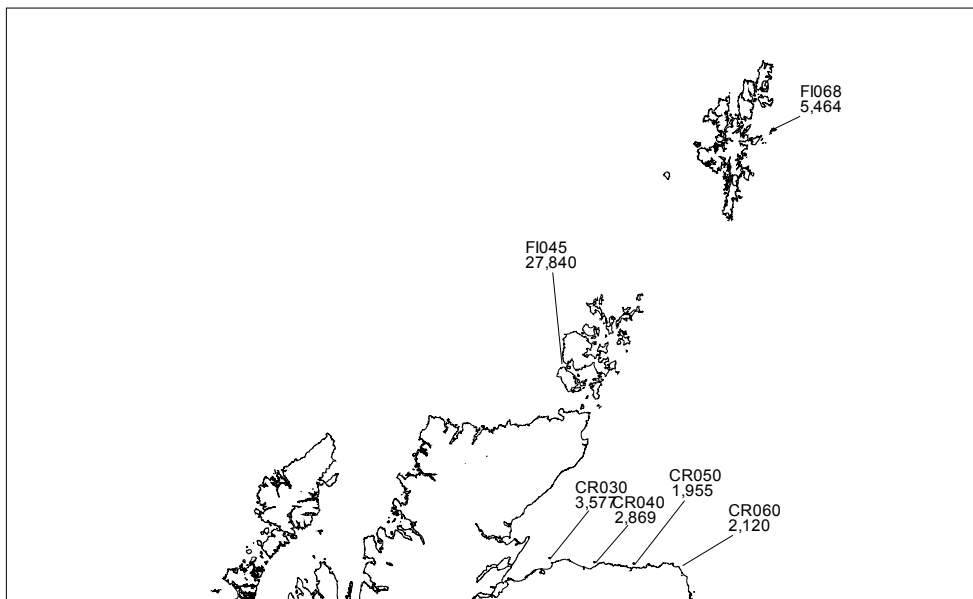


Figure 8 - Dumping sites of dredged material in the UK in 2002
i. Eastern Scotland

Marine disposal sites in Eastern Scotland. Site codes and quantites deposited in tonnes dry weight, in 2002. All tonnages are for dredged material unless otherwise stated.

