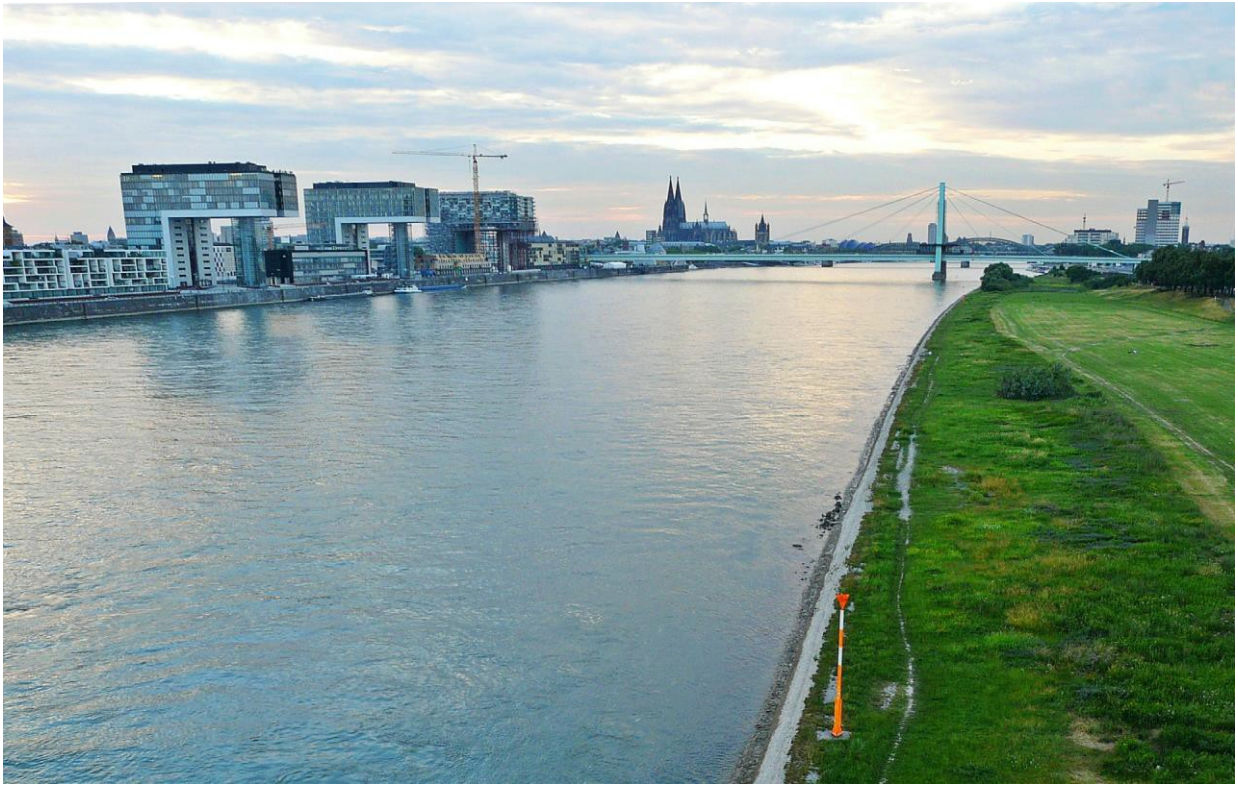
OSPAR COMMISSION

# Riverine Inputs and Direct Discharges to Convention Waters

## OSPAR Contracting Parties' RID 2017 Data Report



2019

Monitoring and Assessment Series

**OSPAR Convention**

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

**Convention OSPAR**

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

**Acknowledgements**

This report has been prepared by Csilla Farkas and Eva Skarbøvik of The Norwegian Institute for Bioeconomy Research.

NIBIO
NORWEGIAN INSTITUTE OF BIOECONOMY RESEARCH

# Contents



National 2017 RID data reports (excel and word files):
https://odims.ospar.org/en/submissions/ospar_rid_data_reports_2017_01_001/

# Glossary

| | |
|---|---|
| **Catchment area** | The area of land delimited by watersheds draining into a body of water (river, basin, reservoir, sea). |
| **Cd** | Cadmium |
| **Cu** | Copper |
| **Direct discharges** | Point sources discharging directly to coastal or transitional waters. |
| **Heavy metals** | Five heavy metals are mandatory in the RID Programme: cadmium, copper, lead, mercury and zinc. |
| **Hg** | Mercury |
| **LOD** | Limit of Detection. The minimum concentration of a compound that can be detected. |
| **LOQ** | Limit of quantification. The minimum concentration of a compound that can be quantified confidently. LOQ is determined by assessing the variability (standard deviation) of replicate measurements of analytes at a concentration near the detection limit. |
| **Main river** | This term is on its way out of the RID Programme, as main and tributary rivers are now exchanged with the term “monitored rivers”. A main river was defined as a river that was monitored at least once a month (12 datasets) every year. Main rivers should be major load bearing rivers. |
| **Monitored area** | The catchment upstream of the RID river monitoring station. |
| **Monitored river** | All rivers that have RID water quality monitoring stations, irrespective of sampling frequency. |
| **Monitoring station** | The site at which water samples are collected for chemical analyses within the RID Programme. |
| **Pb** | Lead |
| **Riverine inputs** | A mass of a determinand carried to the maritime area by a watercourse (natural or man-made) per unit of time. |
| **SPM** | Suspended Particulate Matter |
| **Total inputs** | The sum of inputs as measured in the monitored rivers, and estimated from unmonitored areas and direct discharges. |
| **Total-N** | Total Nitrogen |
| **Total-P** | Total Phosphorus |
| **Tributary river** | This term is on its way out of the RID Programme, as main and tributary rivers are now being exchanged with the term “monitored rivers”. A tributary river would have a separate catchment from a main river and an outlet directly to |

| | |
|---|---|
| | the maritime area or to a main river downstream of a river monitoring point. A tributary river should be a minor load bearing river and can be sampled at a frequency determined by each Contracting Party. |
| **Unmonitored area** | Any land area not covered by a riverine monitoring station. This can include the part of the catchment located downstream of the riverine monitoring station and all unmonitored catchments. Unmonitored areas can have both diffuse and point sources of pollution. If point sources are discharging directly to coastal or transitional waters, they are named "direct discharges" and should be reported as such. |
| **Zn** | Zinc |

# Executive summary

This report presents the results of monitoring undertaken by OSPAR Contracting Parties for the Riverine Inputs and Direct Discharges Programme (RID) during 2017. The purpose of the RID Programme is to assess, as accurately as possible, all riverine inputs and direct discharges of selected pollutants to Convention waters on an annual basis, and to contribute to the implementation of the Joint Assessment and Monitoring Programme (JAMP). The OSPAR Convention area is divided into five main regions: the Arctic Waters, the Greater North Sea, the Celtic Seas, the Bay of Biscay, and the Wider Atlantic.

Determinands monitored on a mandatory basis include nutrients, heavy metals (mercury, cadmium, copper, zinc, and lead), suspended particulate matter, and salinity (in saline waters). Several more determinands can be monitored on a voluntary basis. Direct discharge sources can include sewage treatment plants, industry, and aquaculture; some Contracting Parties also report urban runoff. Not all Contracting Parties report their direct discharges.

Since the programme started in 1990, many Contracting Parties report reduced riverine loads of nutrients and metals, but there can be large variations from year to year, and there are some unexplained peaks. Direct discharges of nutrients and metals are also declining in many areas, with some exceptions.

The report also gives overviews of the efforts to improve the data quality of this programme. Despite these efforts, the long-term data series still have some gaps and inconsistencies, which is unfortunate for the quality of the RID trend assessments. Further efforts to improve the historical RID data series are therefore strongly recommended.

# Récapitulatif

Le présent rapport comporte les résultats de la surveillance réalisée par les Parties contractantes OSPAR dans le cadre du Programme sur les apports fluviaux et les rejets directs (RID) en 2017. Le RID a pour but d'évaluer tous les ans, aussi précisément que possible, tous les apports fluviaux et les rejets directs de polluants sélectionnés dans les eaux de la Convention et de contribuer à la mise en œuvre du Programme conjoint d'évaluation et de surveillance (JAMP). La zone de la Convention OSPAR est sous divisées en cinq régions principales: les eaux arctiques, la mer du Nord au sens large, les mers celtes, le golfe de Gascogne et l'Atlantique au large.

Les déterminants surveillés à titre obligatoire sont notamment les nutriments, les métaux lourds (mercure, cadmium, cuivre, zinc et plomb), la matière particulaire en suspension et la salinité (des eaux salines). Plusieurs autres déterminants peuvent être surveillés à titre volontaire. Les sources de rejets directs peuvent inclure les installations de traitement des eaux usées, les installations industrielles et l'aquaculture; certaines Parties contractantes notifient également les eaux urbaines de ruissellement. Les Parties contractantes ne notifient pas toutes leurs rejets directs.

Depuis le début du programme, en 1990, nombre de Parties contractantes notifient des charges fluviales réduites de nutriments et de métaux mais celles-ci peuvent varier énormément d'une année

à l'autre et certains pics sont inexplicables. Les rejets directs de nutriments et de métaux ont diminué également dans de nombreuses zones, à quelques exceptions près.

Le présent rapport présente également un aperçu des efforts réalisés afin d'améliorer la qualité des données dans le cadre de ce programme. Mais en dépit de ces efforts les séries de données à long terme présentent encore des lacunes et incohérences, ce qui affecte malheureusement la qualité des évaluations des tendances RID. Il est donc fortement recommandé de s'efforcer d'améliorer les séries de données historiques RID.

# Introduction

The Comprehensive Study on Riverine Inputs and Direct Discharges (RID; agreement 1998-5, update 2014-04)[1] is part of the wider Joint Assessment and Monitoring Programme of OSPAR. The purpose of the RID Study is to assess, as accurately as possible, all riverine inputs and direct discharges of selected pollutants to Convention waters on an annual basis. The OSPAR Convention area is divided into five main regions (Figure 1; Table 1).

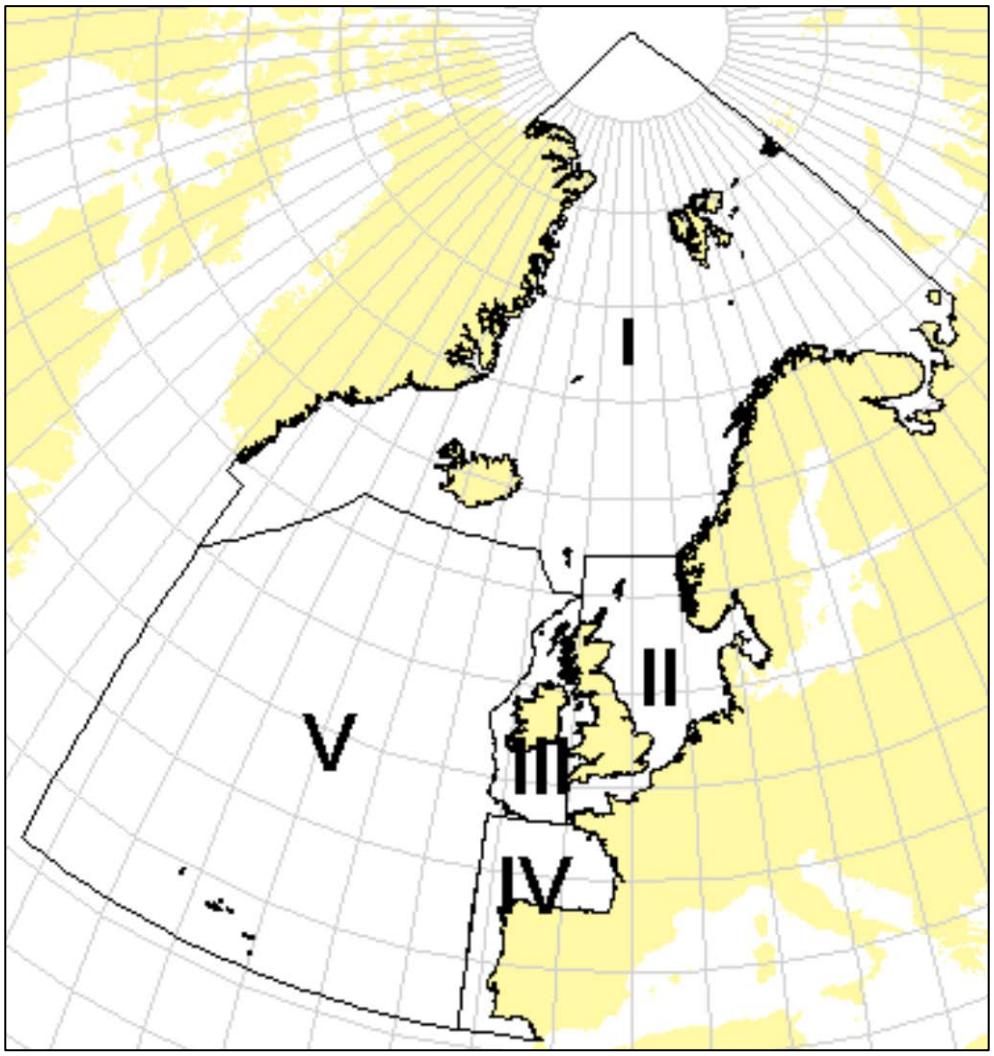



*Figure 1. OSPAR Maritime Area and Regions. I: Arctic Waters, II: Greater North Sea, III: Celtic Seas, IV: Bay of Biscay and V: Wider Atlantic.*

[1] At its Tenth Meeting (Lisbon, 1988) the Paris Commission[1] (PARCOM) adopted the Principles of the Comprehensive Study on Riverine Inputs (PARCOM 10/10/1, § 4.25 (e)). The RID Principles were reviewed in 1998, 2005, and 2014 (agreement 2014-04).

*Table 1. Assignment of countries and sea areas to OSPAR Regions*

| Country / Sea Area | OSPAR Region | Country / Sea Area | OSPAR Region |
|---|---|---|---|
| Belgium | | Norway | |
| - North Sea (BE) | II | - Norwegian Sea (NO) | I |
| Denmark | | - Barents Sea (NO) | I |
| - Skagerrak (DK) | II | - Skagerrak (NO) | II |
| - Kattegat (DK) | II | - North Sea (NO) | II |
| - North Sea (DK) | II | Portugal | |
| France | | - Bay of Biscay and Iberian Coast (PO) | IV |
| - Channel | II | Spain | |
| - Atlantic | IV | - Atlantic (ESP) | IV |
| Germany | | Sweden | |
| - North Sea (GER) | II | - Kattegat (SWE) | II |
| Iceland | | - Skagerrak (SWE) | II |
| - Atlantic | I | UK | |
| Ireland | | - North Sea (North) | II |
| - Irish Sea | III | - North Sea (South) | II |
| - Celtic Sea | III | - Channel | II |
| - Atlantic | III | - Irish Sea | III |
| Netherlands | | - Celtic Sea | III |
| - North Sea (NL) | II | - Atlantic | III |

# Submission of RID data for 2017

Table 2 provides an overview of the status of 2017 RID data submitted by Contracting Parties by 22 February 2019. All Contracting Parties except Denmark had a deadline of 1 November 2017 for submitting data and text reports. Denmark had a deadline of 1 December 2017.

*Table 2. Overview of submitted 2017 RID information by Contracting Parties (green colour: submitted)*

| Contracting Party | RID 2017 written report submitted | RID 2017 Data submitted | RID 2017 Data validated | Comments |
|---|---|---|---|---|
| Belgium | | | | |
| Denmark | | | | Some missing data and the word report will be delivered with a delay. |
| France | | | | France is to re-validate their data for 2017. |
| Germany | | | | |
| Iceland | | | | |
| Ireland | | | | |
| Netherlands | | | | |
| Norway | | | | |
| Portugal | | | | |
| Spain | | | | |
| Sweden | | | | |
| UK | | | | |

*Table 3. Overview of information for 2017 on inputs to the OSPAR Maritime Area reported by Contracting Parties (Green = data submitted; White = no data submitted; Grey = no data will be submitted by this Contracting Party from this source).*

| Contracting Party | Sewage effluents | Industrial effluents | Aquaculture discharges | Other direct discharges | Monitored rivers | Unmonitored rivers |
|---|---|---|---|---|---|---|
| Belgium | | | | | | |
| Denmark | | | | | | |
| France | | | | | | |
| Germany | | | | | | |
| Iceland | | | | | | |
| Ireland | | | | | | |
| Netherlands | | | | | | |
| Norway | | | | | | |
| Portugal | | | | | | |
| Spain | | | | | | |
| Sweden | | | | | | |
| United Kingdom | | | | | | |

Overview tables 1-4 (AA-tables) for 2017 are given in Annex I.

# Status of historical data submission (1990-2016)

In 2017, Contracting Parties were asked to submit excel files with graphs of each constituent from 1990-2016. A result of this exercise has been that several Contracting Parties have found missing or erroneous data in their historical databases, and many are now in the process of correcting these. An overview of the status of the database per 22 February 2019 is provided in Table 4.

*Table 4. Overview of status of the historical data in the RID database (1990-2016). Changes in this table from last year's annual report are marked with light green*

| Contracting Party | Status for data 1990-2016 | Validation pending (1990-2016) | Other remaining tasks |
|---|---|---|---|
| Belgium | All data up to and including 2016 validated and confirmed. | | Belgium and the Netherlands are in discussions on how to deal with the transboundary Channel Gent-Terneuzen to Wester Scheldt.* |
| Denmark | Data 1990-2012 were re-submitted for runoff (Tables 9) in January 2018.<br><br>Riverine loads were re-reported for years 1990 – 2015 in February 2019. | Table 9 (runoff) for 1990-2012 has not yet been validated | NIBIO is to import the corrected tables of riverine loads for 1990 – 2015 in the database. |
| France | All data up to and including 2016 validated and confirmed.<br>There are re-reported tables in Basecamp for years 2010-2012 and Table 9 for all the years, but not summarised (5, 6) or old RID format (9). | | France and NIBIO are to clarify data for 2010-2012.<br><br>Borders for some OSPAR areas in France are to be changed. France and NIBIO to clarify if there will be a need for data re-reporting. |
| Germany | Tables 6c were re-reported for years 2001-2015. | Re-reported data are validated. | No more actions are needed. |
| Iceland | Data from 1990-2015 received, but not all of them in RID format.<br>Table 9 for 2016 was re-reported.<br><br>Riverine loads for 2008-2016 were re-reported in February 2019 but not in RID format. | Table 9 for 2016 is validated. | Historical data needs to be transferred to the correct format; NIBIO and Iceland are in contact. |
| Ireland | Tables 6a and 6c were resubmitted in December 2018 for 1990-2015 and imported in the database.<br><br>Tables 6a and 6c were again resubmitted in February 2019 for years 1997-2001. | Tables 6a, 6c for 1990-2015 sent for validation. | Ireland will re-report historical runoff data?<br><br>NIBIO is to import Tables 6a, 6c for 1997-2001 in the database. |
| Netherlands | All data up to and including 2016 are in the database, but with some errors. | | Netherland will resubmit historical data. Belgium and the Netherlands are in discussions on how to deal with the transboundary Channel Gent-Terneuzen to Wester Scheldt.* |
| Norway | All data up to and including 2016 validated and confirmed. | | No further action needed |
| Spain | All data up to and including 2016 are in the database, but not validated.<br>Tables 5 and 6 and discharge data (Tables 9) are re-submitted for 2011- | Data validation pending for 1990-2010.<br>Tables 5, 6 for 2011-2016 are validated. NIBIO is to send | |

| | | | |
|---|---|---|---|
| | 2016. | Tables 9 for 2011-2016 for validation. | |
| Sweden | All data up to and including 2016 validated and confirmed. | | Sweden will resubmit historical data. |
| UK | Data up to and including 2016 are in the database. | UK is to validate the 2008-2011 and the 2015 data. | |

* Belgium has suggested a solution to this problem. The issue is that the Canal Ghent-Terneuzen is monitored and reported both by Belgium and the Netherlands; the latter at a station located downstream of the Belgian station. To avoid that the inputs are counted twice, Belgium now suggests to report the Belgian inputs only in Table 6a, and exclude them from Table 6c. That way, it will be possible to assess the contribution at the border between Belgium and the Netherlands, but the Belgian contribution will not be counted in the totals. The RID Data Center supports this solution, but it is assumed that former years must be re-reported in this manner.

Apart from the data gaps in Table 4, there are still several smaller or larger errors in the database; many of these have become more visible through the excel charts that the RID Data Centre distributed. In Table 5, the most common sources of data errors are given, with suggested solutions. As a general rule, re-reporting should be done by sending excel tables in the correct format, with the corrected data, to the RID Data Centre.

*Table 5. Possible sources of data error in the RID database, with suggested solutions.*

| Problem | Possible reason | Suggested solution |
|---|---|---|
| **Missing data in the database** | Data do not exist (e.g., because of rota system of river monitoring, or direct discharges are not reported each year). | Contracting Party is asked to fill in the data gaps using interpolation or model estimation techniques. Unmonitored areas should at any rate be estimated. |
| | Data exist, but are not summed up in the summary tables of the database | Contracting Party is asked to re-report the relevant tables, including aggregated (summed-up) data. |
| **Erroneous data in the database** | The value of Zero (0) is put instead of missing data (NI) | Contracting Party is asked to contact NIBIO to discuss solutions. |
| | Unit error in some of the data | Contracting Party is asked to re-report the relevant table(s) with correct data. |
| **Major changes in methods** | Significant changes in measurement methods or detection limits give non-consecutive datasets. | Contracting Party should report such changes in the word reports. Contracting Party is asked to assess conversion methods to get consecutive time series; and re-report. |

In Appendix I a list of other work with the RID Database during 2018 is given.

# Preliminary results for 2017

Graphs for riverine loads and direct discharges (1990-2017) are given in Figures 2a-h and 3a-g, respectively. Based on the submitted written reports by the Contracting Parties, the following conclusions can be given:

**Belgium** reported the lowest water flow for the last 25 years, with subsequent low total nitrogen and total phosphorus loads.

**France** reported that they observed a decline in nitrates, N-total, PO4 and P-total flows between 2016 and 2017. This decline could probably be linked to a decrease in runoff.

**Germany** reported increases in nutrient loads in the Elbe basin compared to previous years, mainly due to an increase in runoff in 2017. On the other hand, the loads were lower in the Rivers Ems and Jade due to lower water discharges there. No significant changes were reported for other rivers or in the direct discharges.

**Iceland** noted that the concentrations of zinc in River Ölfusá were higher than in previous years, particularly in a sample from July 2017.

In **Ireland** the monitored flow in 2017 was 93 % of the long-term average flow. Overall loads have decreased statistically for the entire monitoring period, but reductions have been slowing down in recent years.

**Netherlands** noted a decreasing trend for Tot-N and Tot-P from 1990-2017. The trend is more pronounced for Tot-P than for Tot-N; and for Tot-N there is hardly any trend in the last decade.

In **Norway,** water discharge (1990-2017) has increased significantly in Rivers Glomma, Drammenselva, Skienselva and Orreelva. Most of these rivers also had increases in the loads of TOC (total organic carbon), tot-N and silicate. P loads have increased significantly in Rivers Drammenselva

and Numedalslågen. In River Vefsna in the north, the loads of N and P have decreased significantly. In many of the Skagerrak rivers the fraction of organic nitrogen is increasing. Metal loads and concentrations show mainly downward trends in all Norwegian rivers (1990-2017), but analyses of the short-term period (2004-2017) reveal statistically significant upward trends in zinc concentrations in River Glomma and nickel concentrations in River Altaelva.

**Spain** reports that data availability is not the same every year, and therefore results are not fully comparable between the years.

**Sweden** reported rather low annual water flows in 2017, although quite variable during the year, which have resulted in somewhat lower inputs of most reported variables than normal for both monitored and unmonitored areas. The clearly dominating point source in the Swedish OSPAR area is a sewage plant that serves a large area around Göteborg. Their variation in treatment results between years thus dominates the statistics for the whole area. Another big point source in the area is the pulp and paper industry, Södra Cell Värö. This industry has reported higher emissions of Zn, Cu and Cd.

**UK** reported a decrease in riverine flows compared to the previous year (2016), except in the Atlantic region. The water flow was in general lower than the long term average. Some areas had an extremely dry summer. This resulted in overall lower loads in 2017 than in 2016.

With the exception of Norway, there was no change in the methodology in any of the countries reporting until 21 January 2019. In Norway, there was a decrease in monitored rivers but an increase in monitoring frequency (with the exception of metals, where there has been a decrease from 12 to 4 times a year). The new programme includes monthly monitoring in 20 rivers (instead of 46) of which 11 are “main rivers” from the previous programme. The 20 rivers are monitored monthly (earlier 10-11 rivers were monitored monthly and 36 rivers monitored four times a year).

## Riverine loads 1990-2017

Graphs for water discharges (1990-2017) are given in Figure 2a, and for riverine loads in Figures 2b-2h. The water discharge series (Figure 2a) reveal that many Contracting Parties have missing data. These data are important for the trend assessments, and re-submission of data is therefore highly recommended.

Many Contracting Parties report reduced riverine loads of nutrients (Figures 2b and 2c).

Metal loads vary significantly from year to year. Many countries report reduced riverine loads of metals, although some peaks appear in some of the graphs. It could be interesting if these could be explained by the respective Contracting Parties. For Belgium it should be noted that the metals were reported as total concentrations until 2002, and from 2003 onwards only in the dissolved phase. See also Table II in the introductory note.

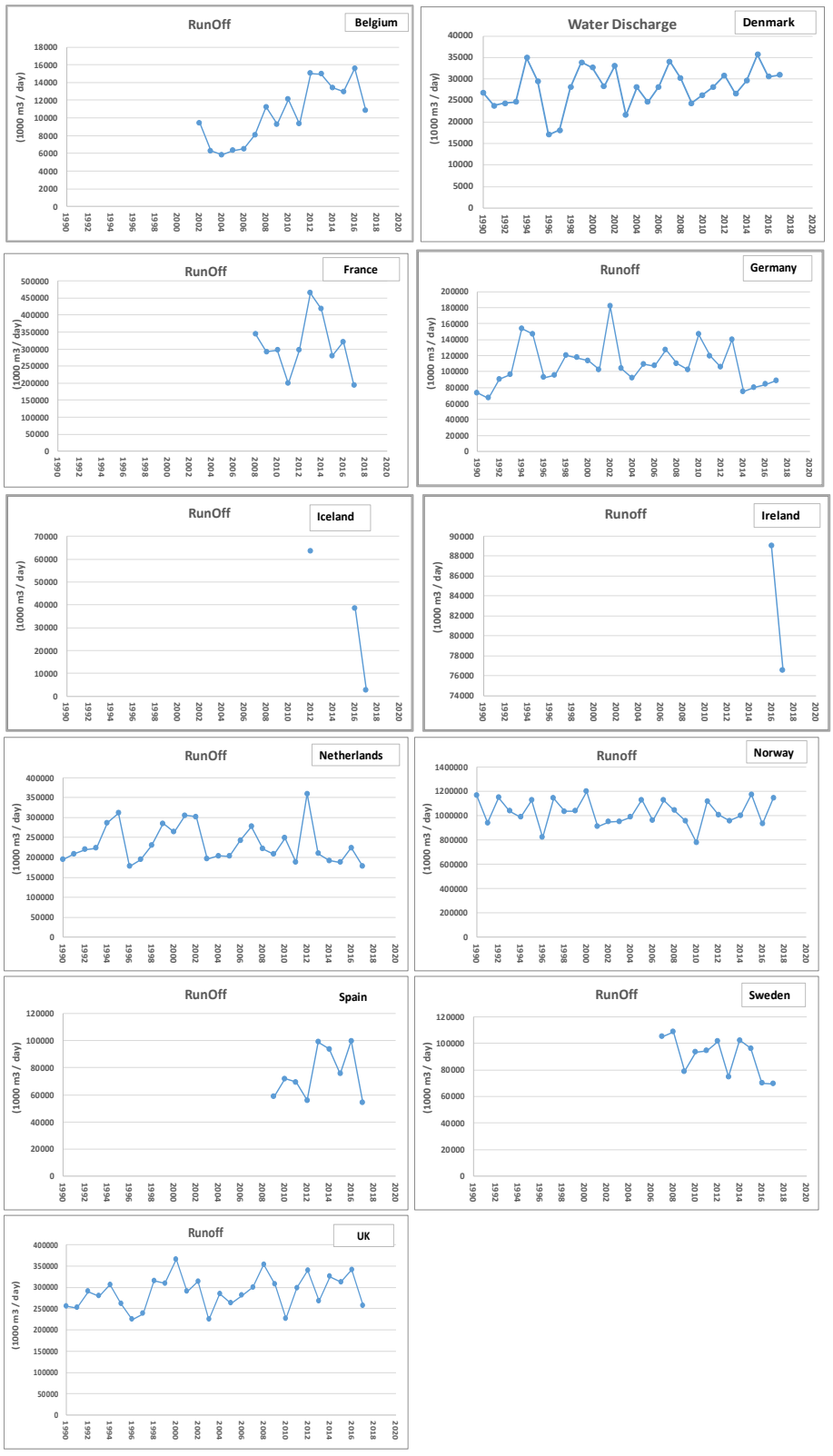



*Figure 2a. Water discharge from eleven Contracting Parties (Belgium, Denmark, France, Germany, Iceland, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

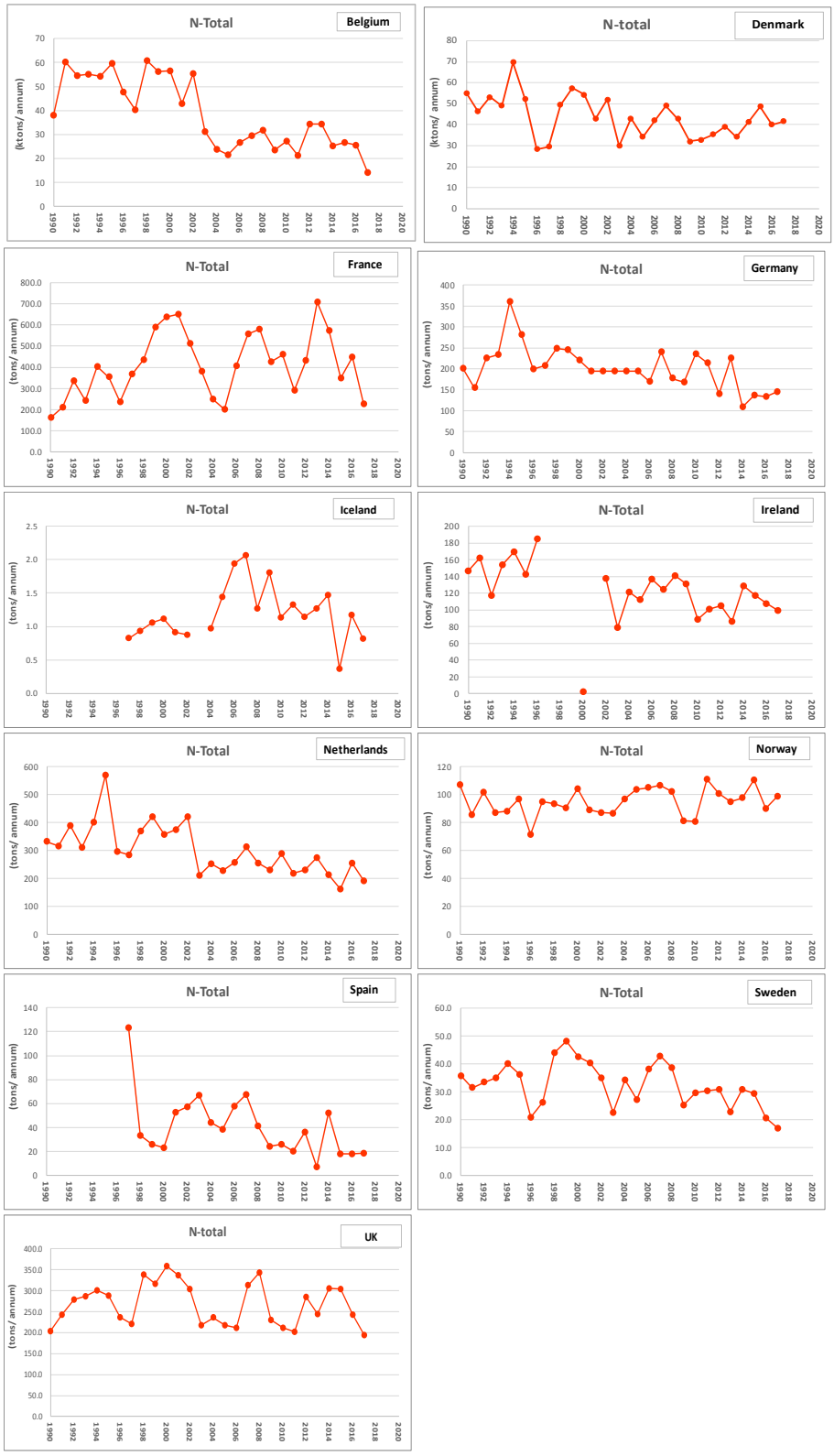



*Figure 2b. Riverine loads of total nitrogen (Tot-N) from eleven Contracting Parties (Belgium, Denmark, France, Germany, Iceland, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

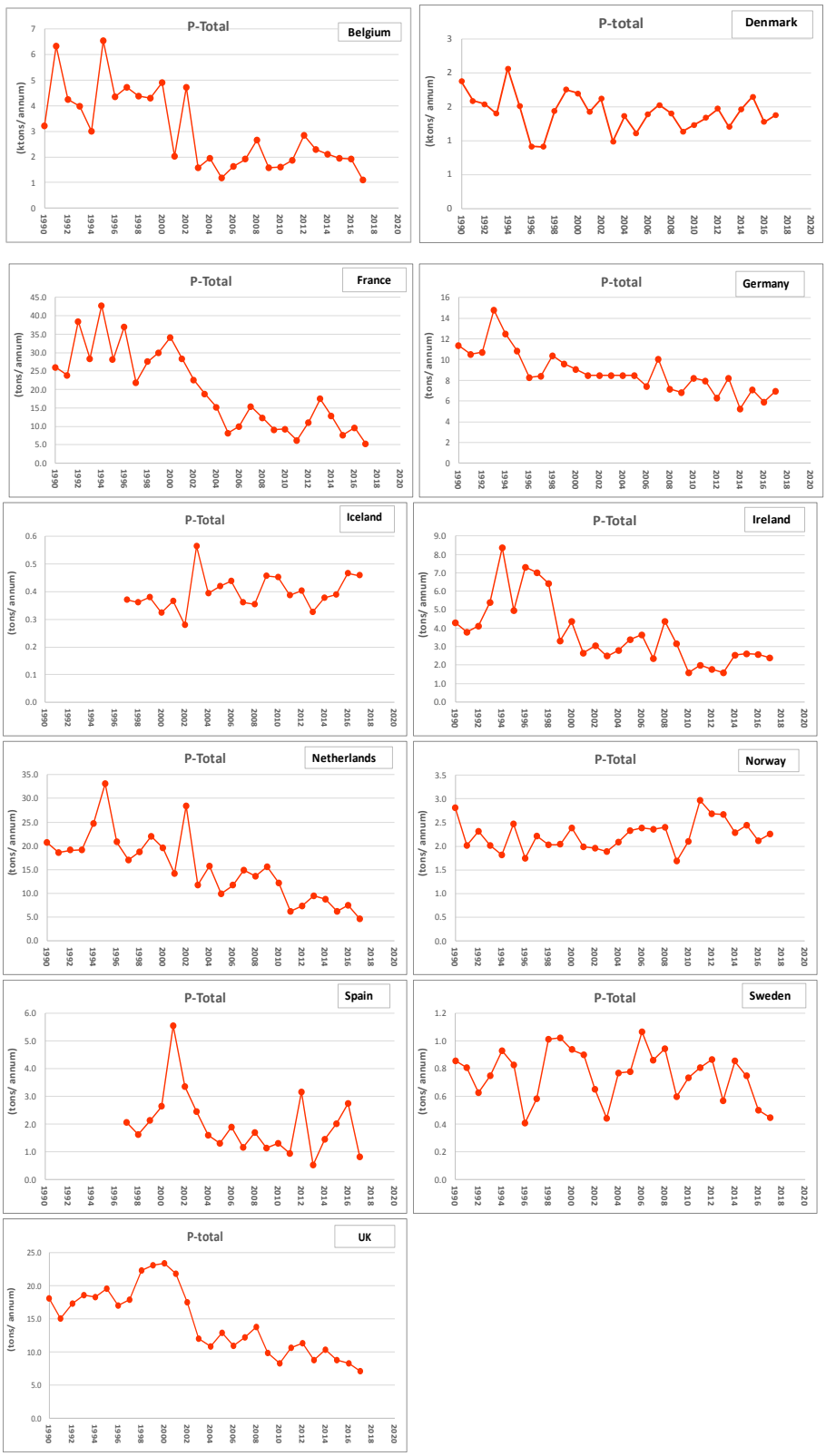



*Figure 2c. Riverine loads of total phosphorus (Tot-P) from eleven Contracting Parties (Belgium, Denmark, France, Germany, Iceland, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

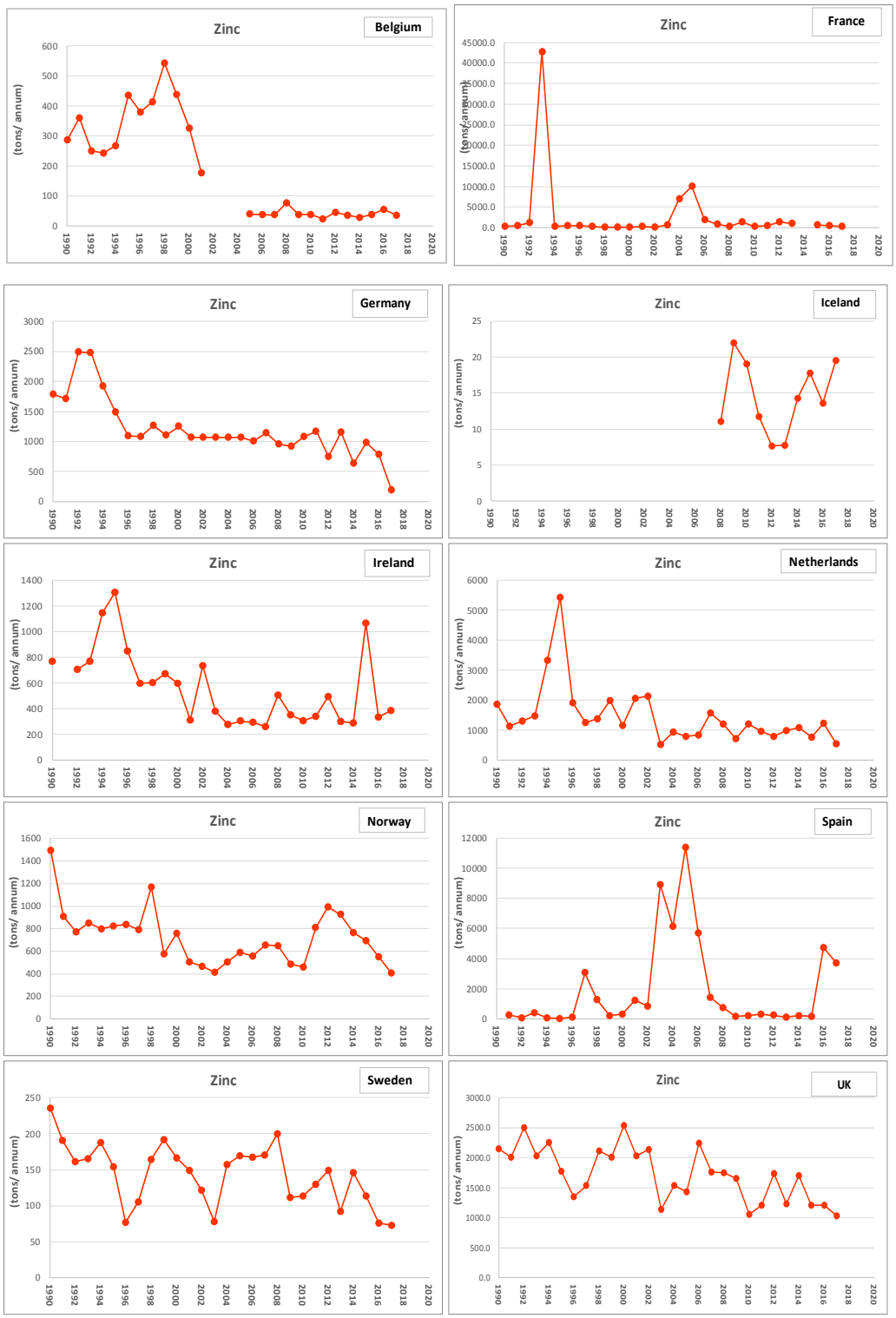



*Figure 2d. Riverine loads of zinc (Zn) from ten Contracting Parties (Belgium, France, Germany, Iceland, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

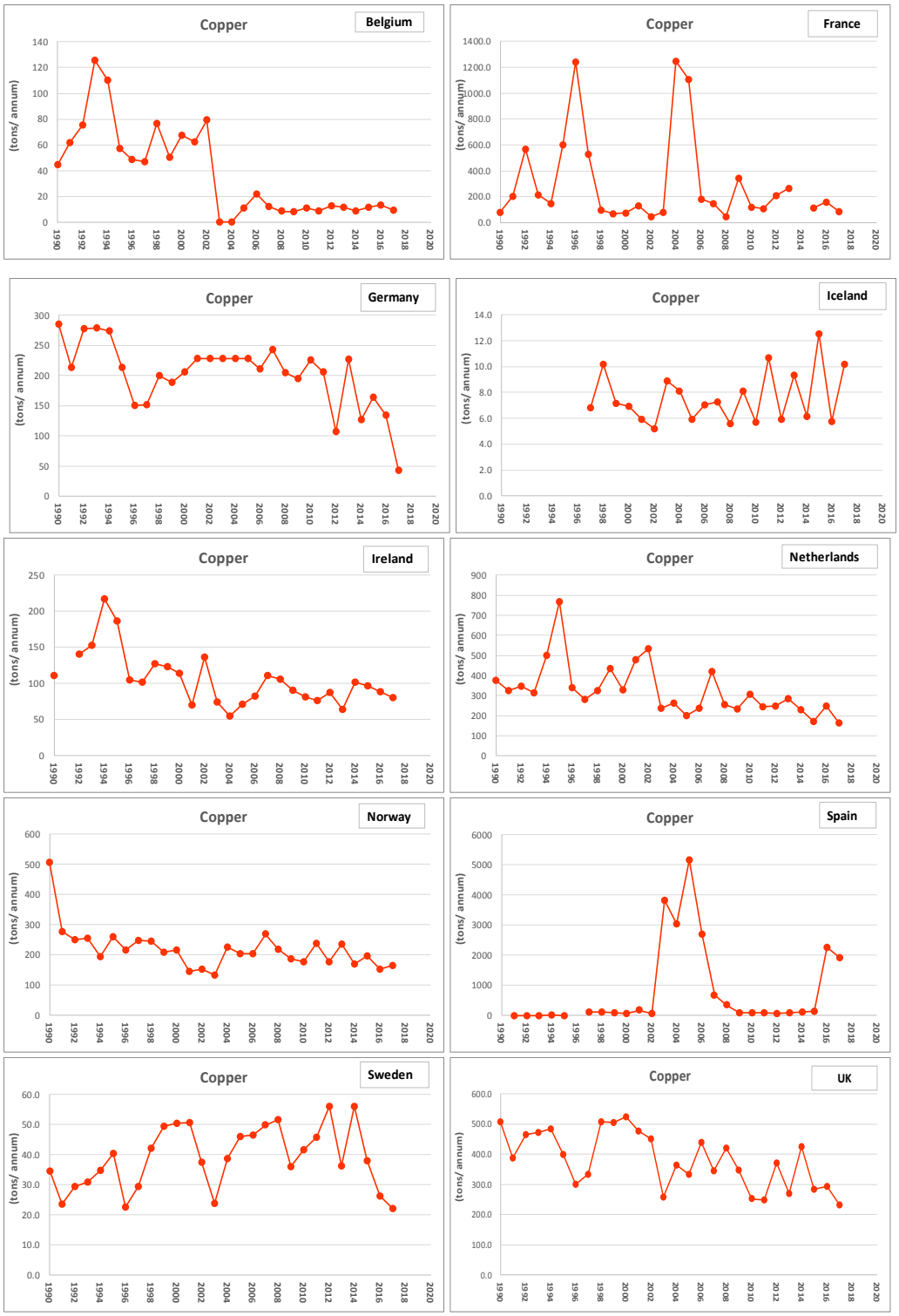



*Figure 2e. Riverine loads of copper (Cu) from ten Contracting Parties (Belgium, France, Germany, Iceland, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

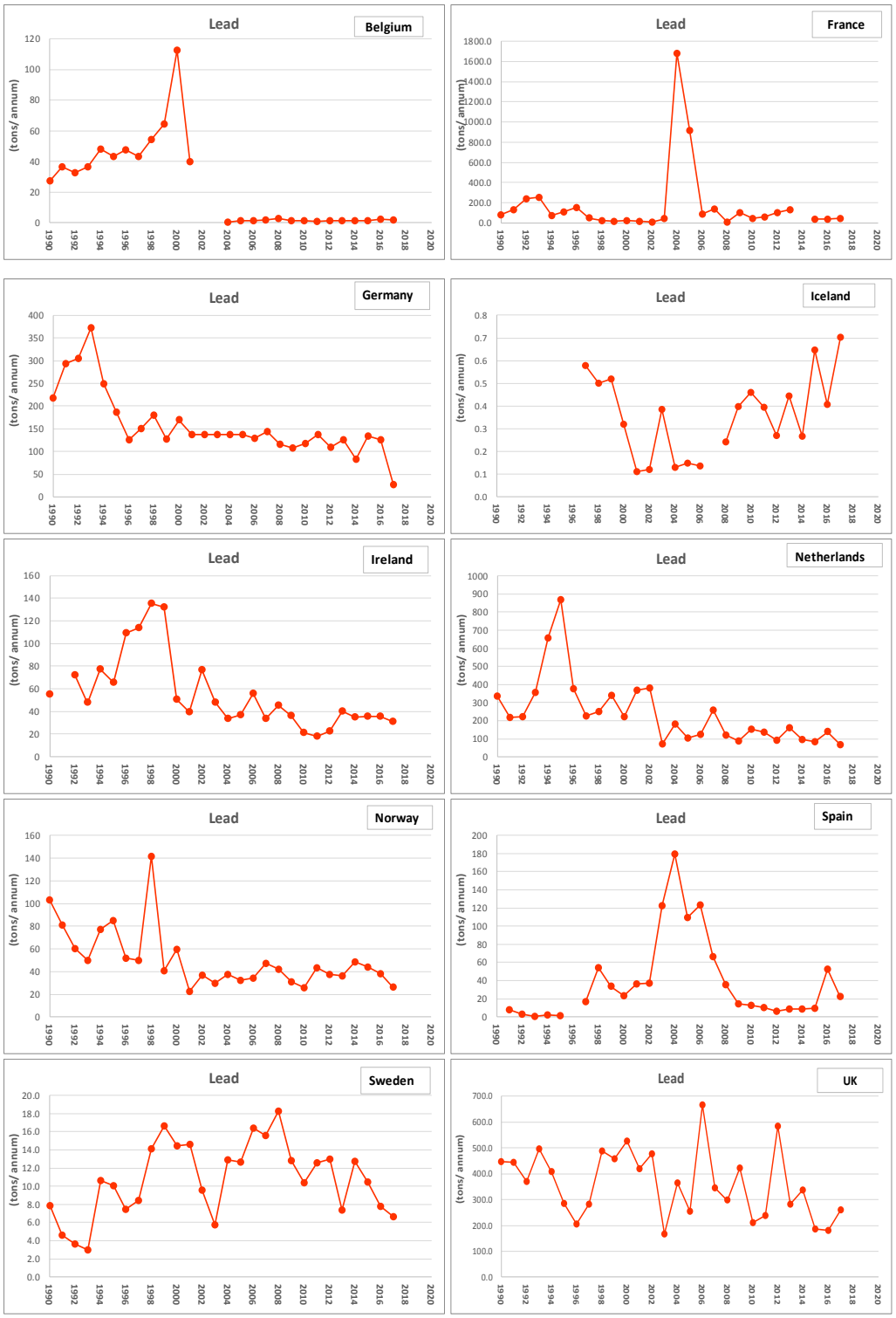



*Figure 2f. Riverine loads of lead (Pb) from ten Contracting Parties (Belgium, France, Germany, Iceland, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

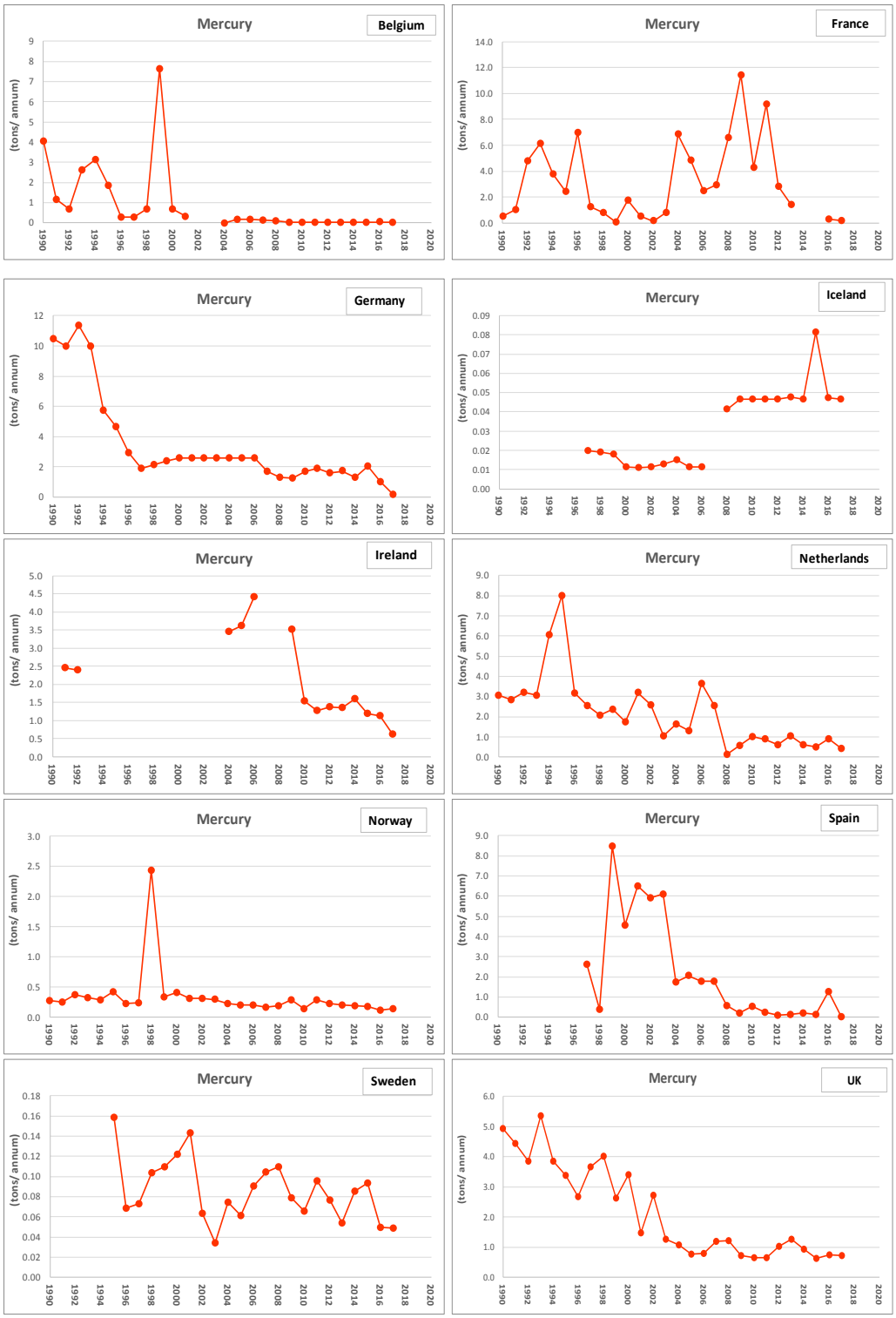



*Figure 2g. Riverine loads of mercury (Hg) from ten Contracting Parties (Belgium, France, Germany, Iceland, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

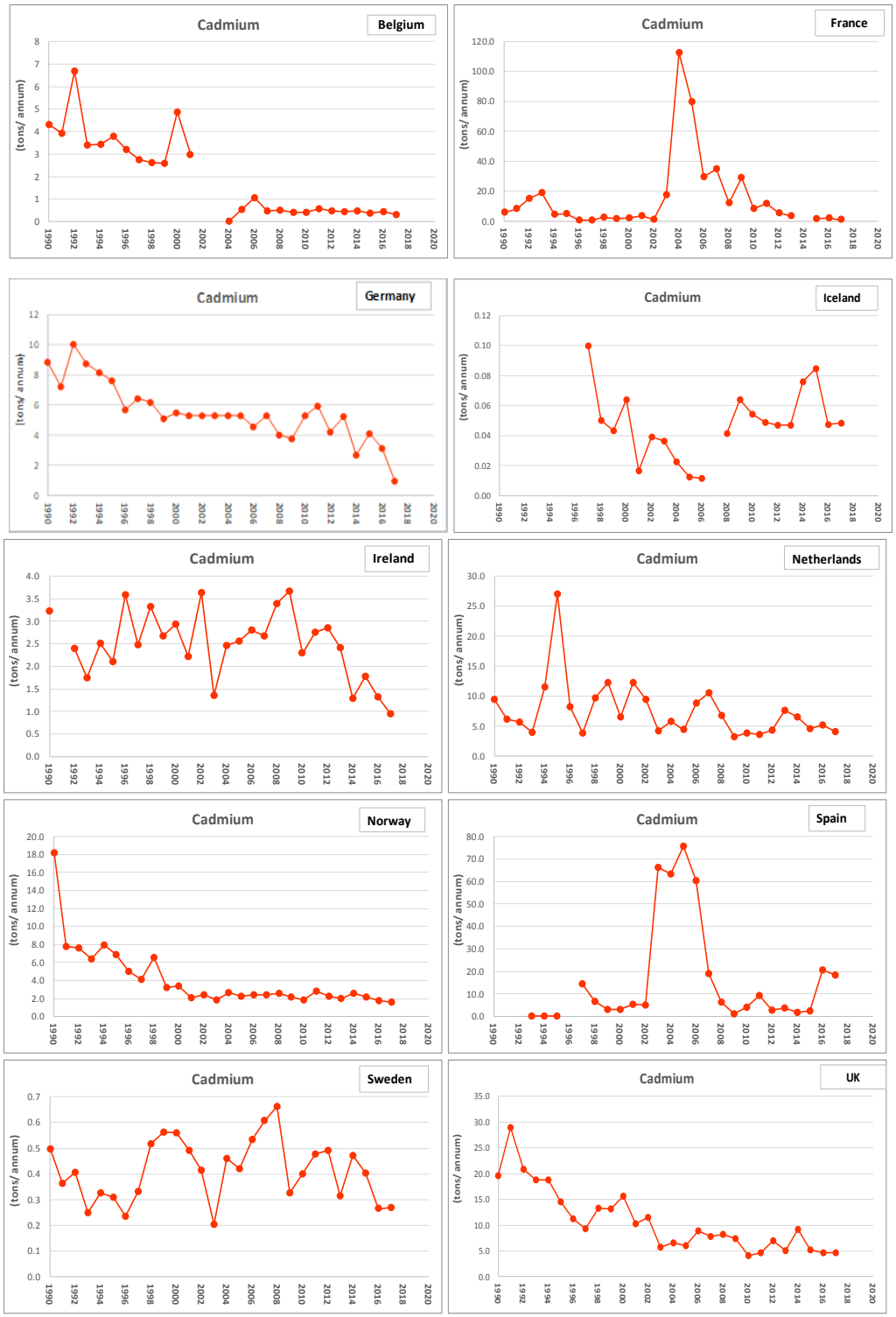



*Figure 2h. Riverine loads of cadmium (Cd) from ten Contracting Parties (Belgium, France, Germany, Iceland, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

## Direct discharges 1990-2017

The charts for direct discharges are shown in figures 3a-3f. For nutrients (figures 3a and 3b), many Contracting Parties report reductions in the direct discharges. However, in Norway the increasing fish

farming industry in the sea has resulted in a steady increase in both Tot-N and Tot-P since 1990. This also includes copper, which is used as an anti-fouling agent on the cages.

Belgium stopped reporting direct discharges after 1995, and Spain started to report direct discharges in 1998.

Sweden has reported that two major treatment plants dominate the direct discharges, and fluctuations in these reported discharges will give fluctuations in the total direct discharges from Sweden.

In some Contracting Parties there are data gaps in the direct discharges. Ireland has extrapolated the direct discharges back in time from 2014.

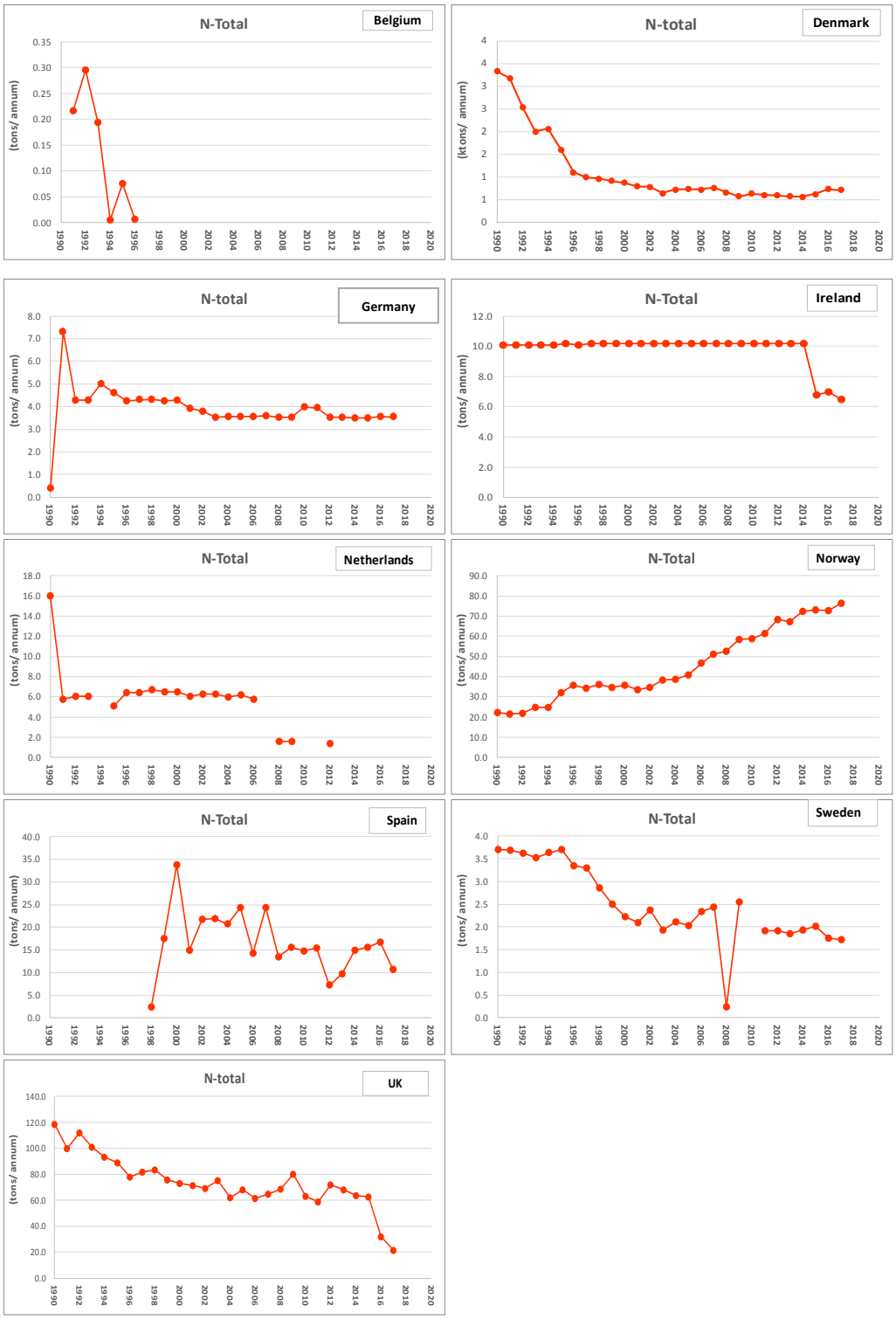



*Figure 3a. Direct discharges of total nitrogen (Tot-N) from nine Contracting Parties (Belgium, Denmark, Germany, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different*

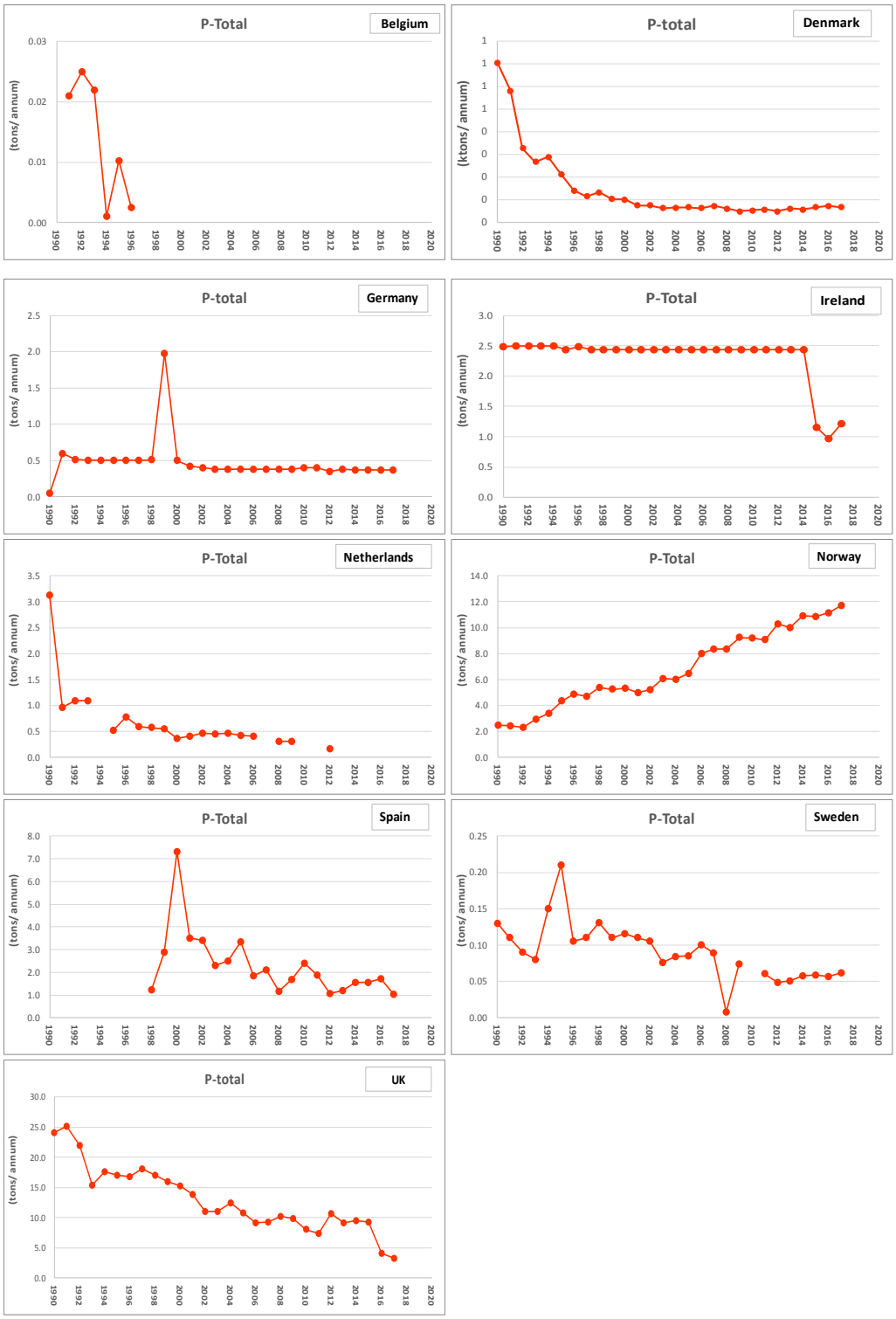



*Figure 3b. Direct discharges of total phosphorus (Tot-P) from nine Contracting Parties (Belgium, Denmark, Germany, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

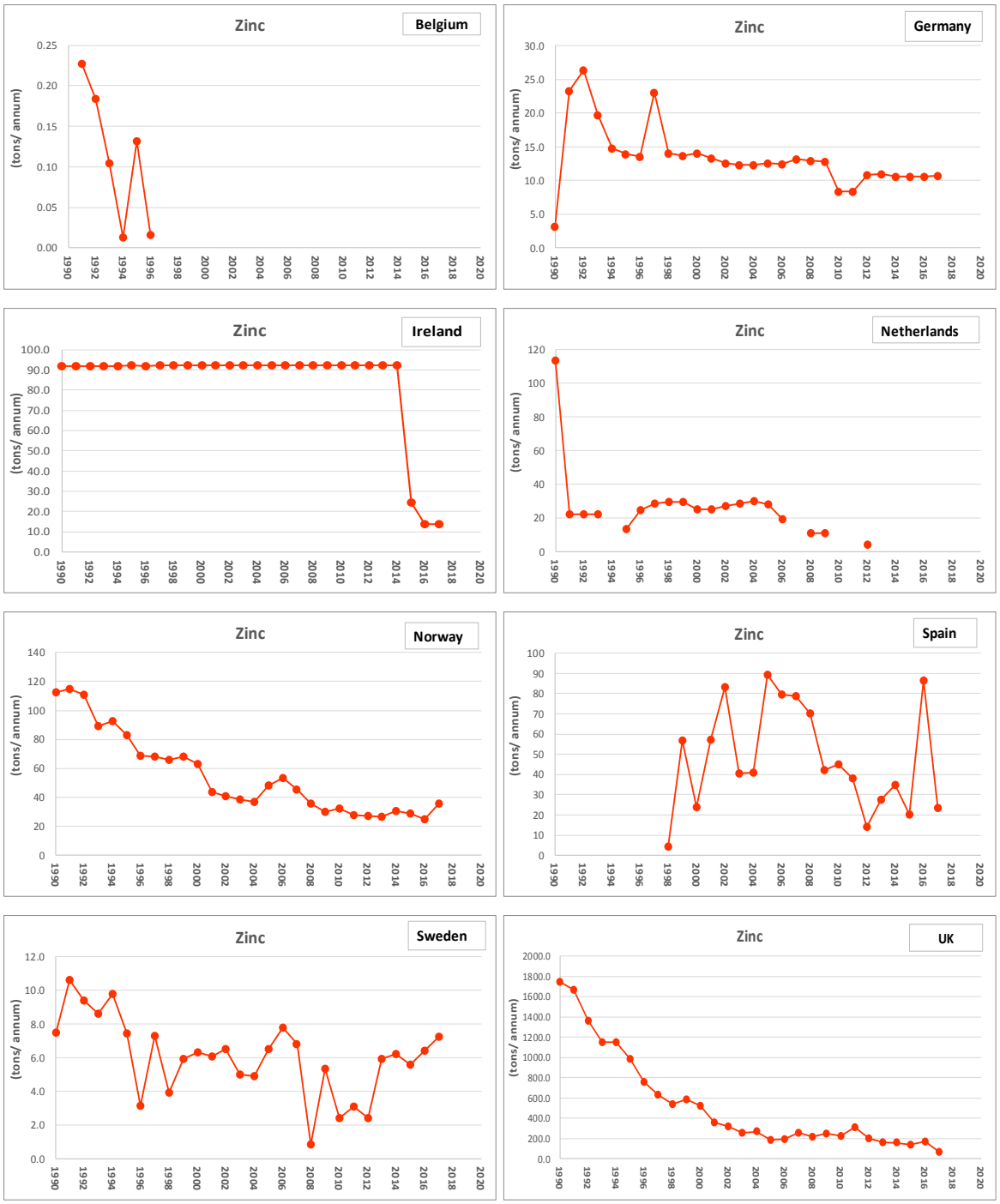



*Figure 3c. Direct discharges of zinc (Zn) from eight Contracting Parties (Belgium, Germany, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*


*Figure 3d. Direct discharges of copper (Cu) from eight Contracting Parties (Belgium, Germany, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*


*Figure 3e. Direct discharges of lead (Pb) from eight Contracting Parties (Belgium, Germany, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

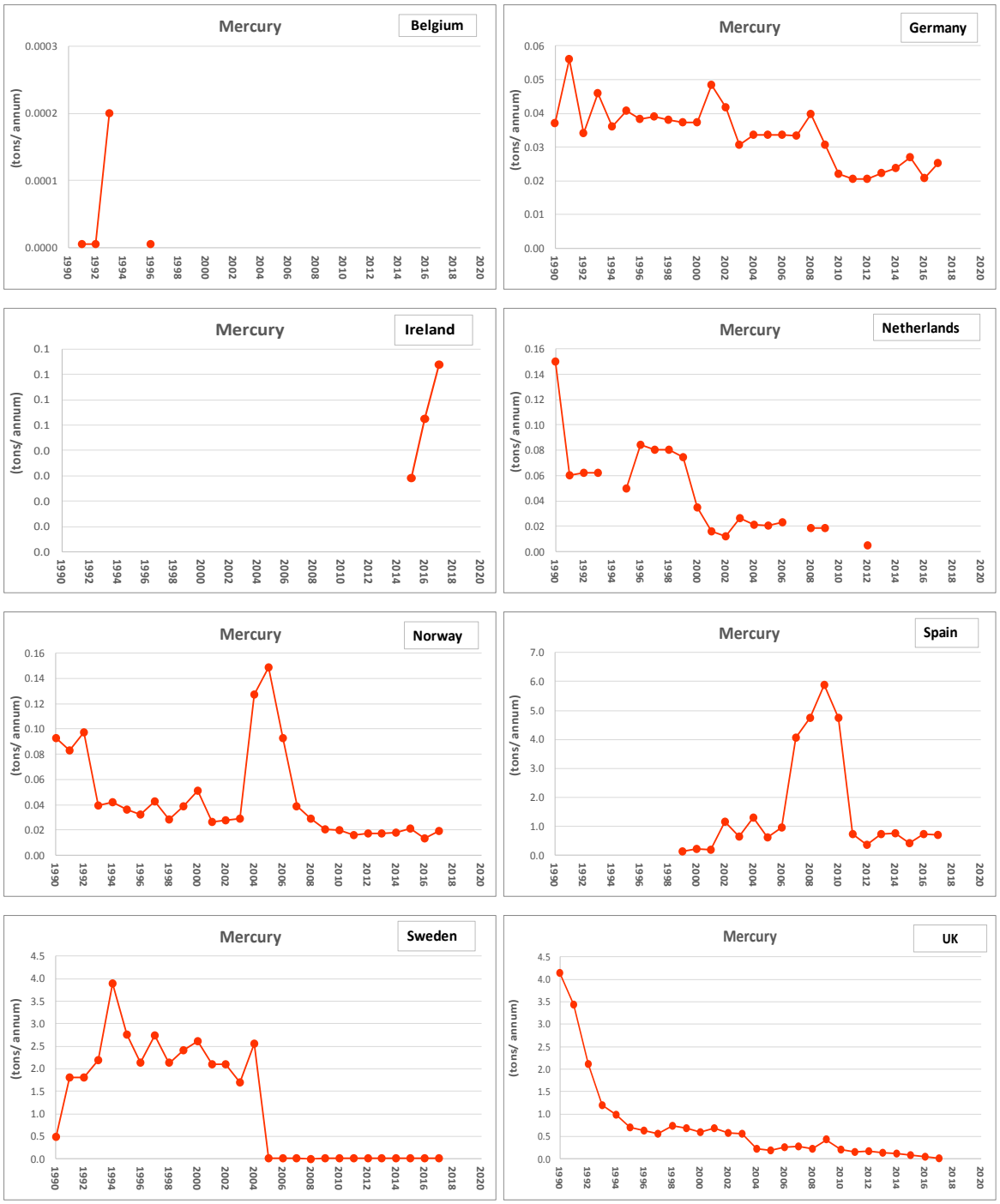



*Figure 3e. Direct discharges of mercury (Hg) from eight Contracting Parties (Belgium, Germany, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

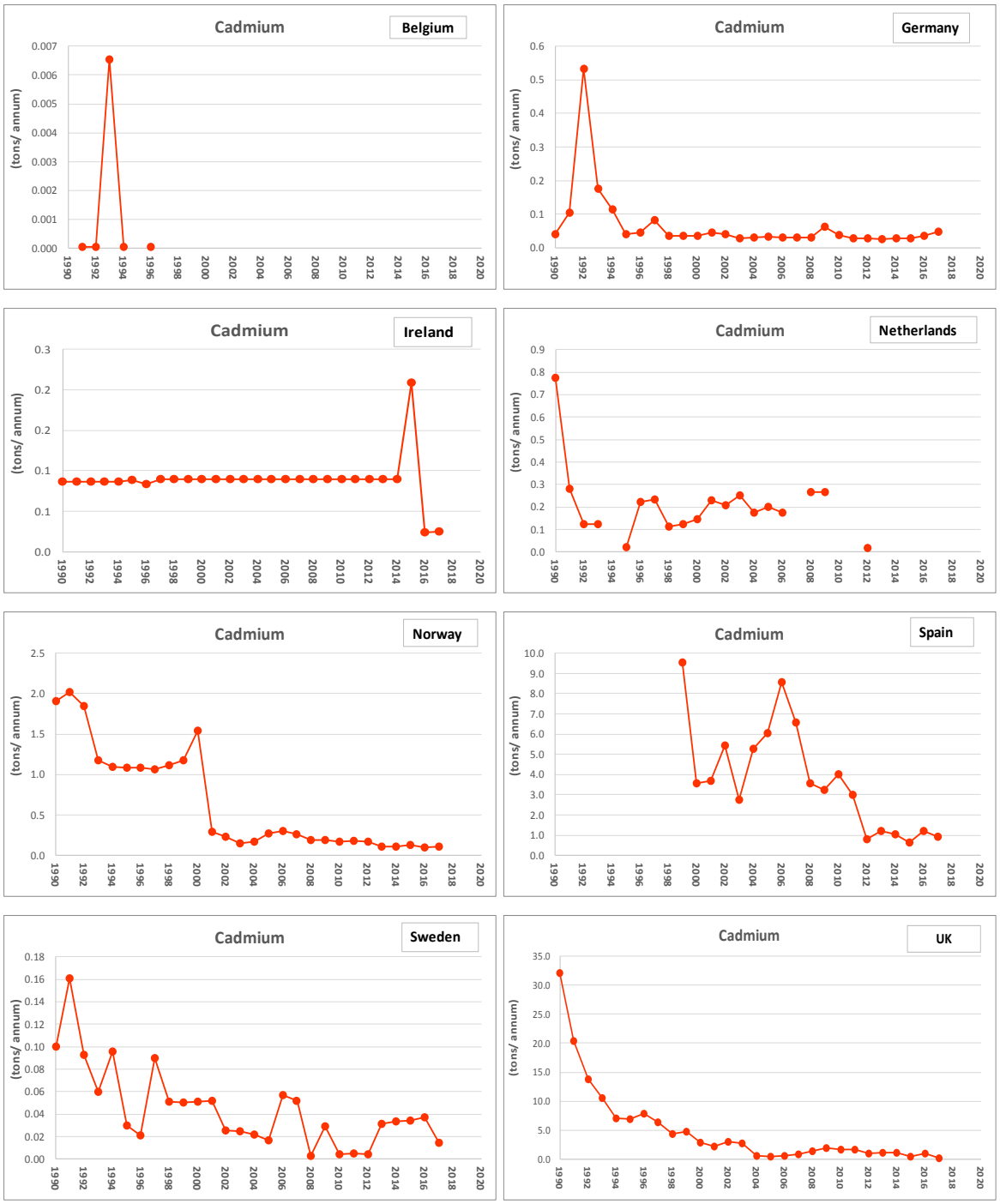



*Figure 3f. Direct discharges of Cadmium from eight Contracting Parties (Belgium, Germany, Ireland, the Netherlands, Norway, Spain, Sweden, and UK) in the period 1990-2017. Note that the scales on the y-axis are different.*

# Appendix I. Data corrections performed by the RID Data Centre in 2018

The corrections made in 2018 were mainly based on the analyses of the graphs of main constituents from 1990-2016 and are summarised in the table below. The corrected Excel Tables (outputs from the database) have been or will be sent to Contracting Parties for verification.

*Corrections, performed in RID database in 2018 in addition to what is mentioned in Table 4.*

| Contracting Party | Year(s) | Table(s) | Corrections made |
|---|---|---|---|
| **Belgium** | 1991-1996 | 5e | Zero values, appearing instead of missing data were corrected. |
| | 2011-2012 | 6c | Zero values, appearing instead of missing PSBs data were corrected. |
| **Germany** | 1990-1995 | 5a, 5b, 5e, 6a,6b,6c, 9 | Suspicious zero values were marked and will be discussed with the Contracting Party whether they should be corrected. |
| **Ireland** | 2009 | 5e | Zero values, appearing instead of missing data were corrected.<br>"NI" appearing in cells where there should not be data, were deleted. |
| | 1991-2008 | 6a, 6c | |
| **Netherlands** | 1990<br>1995-2008 | 5e | Zero values, appearing instead of missing data were corrected. |
| | 1990<br>2004-2005 | 6c | Zero values, appearing instead of missing data were corrected. |
| **Norway** | 1990-2012 | 6c | Shift in data was corrected. Lower, upper and mean appeared in upper, mean and comments, respectively. |
| **Spain** | 1998-1999 | 5e | Zero values, appearing instead of missing data were corrected. |
| | 1990-1998<br>2011 | 6c | Zero values, appearing instead of missing data were corrected. |
| **Sweden** | 1990-2006 | 5e | Zero values, appearing instead of missing data were corrected. |
| **UK** | 1990 | 5e, 6c | Zero value for Ammonium instead of no data |

# Annex I Annual Overview Tables for the reporting year 2017 (AA Tables)

AA Table 1a Information Received on Inputs to the Maritime Area of the OSPAR Convention in 2017

AA Table 1b Determinands Reported by Contracting Parties in 2017

AA Table 2 Direct Discharges to the Maritime Area of the OSPAR Convention in 2017 by Country

AA Table 3 Riverine Inputs to the Maritime Area of the OSPAR Convention in 2017 by Country

AA Table 4a Sum of Direct (Table 2) and Riverine (Table 3) Inputs to the Maritime Area of the OSPAR Convention in 2017 by Country

AA Table 4b Sum of Direct and Riverine Inputs to the Maritime Area of the OSPAR Convention in 2017 by Sea Area

## AA Table 1a. 2017

### Information Received on Inputs to the Maritime Area of the OSPAR Convention in 2017

| Country | Direct Discharges | | | | | Riverine Inputs | |
|---|---|---|---|---|---|---|---|
| | Sewage Effluents | Industrial Effluents | Aquaculture Discharges | Other Discharges | Coastal Areas | Monitored Rivers | Unmonitored Areas |
| Belgium | | | | | | | |
| - North Sea (BE) | NA | NA | NA | NA | | + | NA |
| Denmark | | | | | | | |
| - Skagerrak (DK) | + | + | + | NI | | + | + |
| - Kattegat (DK) | + | + | + | NI | | + | + |
| - North Sea (DK) | + | + | + | NI | | + | + |
| France | | | | | | | |
| - Channel | NI | NI | NI | NI | | + | + |
| - Atlantic | NI | NI | NI | NI | | + | + |
| Germany | | | | | | | |
| - North Sea (GER) | + | + | NI | NI | | + | + |
| Iceland | | | | | | | |
| - Atlantic | NI | NI | NI | NI | | + | NI |
| Ireland | | | | | | | |
| - Irish Sea | + | + | NI | NI | | + | + |
| - Celtic Sea | + | + | + | NI | | + | + |
| - Atlantic | + | + | + | NI | | + | + |
| Netherlands | | | | | | | |
| - North Sea (NL) | NI | NI | NI | NI | | + | NI |
| Norway | | | | | | | |
| - Norwegian Sea (NO) | + | + | + | NI | | + | + |
| - Barents Sea (NO) | + | + | + | NI | | + | + |
| - Skagerrak (NO) | + | + | + | NI | | + | + |
| - North Sea (NO) | + | + | + | NI | | + | + |
| Portugal | | | | | | | |
| - Bay of Biscay and Iberian Coast (PO) | NI | NI | NI | NI | | NI | NI |
| Spain | | | | | | | |
| - Atlantic (ESP) | + | + | + | NI | | + | NI |
| Sweden | | | | | | | |
| - Kattegat (SWE) | + | + | NI | NI | | + | + |
| - Skagerrak (SWE) | + | + | NI | NI | | + | + |
| UK | | | | | | | |
| - North Sea (North) | + | + | + | NI | | + | NI |
| - North Sea (South) | + | + | NI | NI | | + | NI |
| - Channel | + | + | NI | NI | | + | NI |
| - Irish Sea | + | + | NI | NI | | + | NI |
| - Celtic Sea | + | + | NI | NI | | + | NI |
| - Atlantic | + | + | + | NI | | + | NI |

+ = Information available
NI = No information
NA = Not applicable

## AA Table 1b. 2017

### Determinands reported by Contracting Parties in 2017

| Country | Determinands | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cd | Hg | Cu | Pb | Zn | g-HCH | PCBs | NH4-N | NO3-N | PO4-P | N-Total | P-Total | SPM | others |
| Belgium | | | | | | | | | | | | | | |
| - direct inputs | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| - riverine inputs | + | + | + | + | + | NA | NA | + | + | + | + | + | + | |
| Denmark | | | | | | | | | | | | | | |
| - direct inputs | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | + | + | NI | |
| - riverine inputs | NI | NI | NI | NI | NI | NI | NI | + | + | + | + | + | + | |
| France | | | | | | | | | | | | | | |
| - direct inputs | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | |
| - riverine inputs | R+(4) | R+(4) | R+(4) | R+(4) | R+(4) | R+(4) | NI(4) | R+(4) | R+(3) | R+(4) | R+(4) | R+(3) | R+(4) | |
| Germany | | | | | | | | | | | | | | |
| - direct inputs | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| - riverine inputs | +(3) | +(3) | +(3) | +(3) | +(3) | +(4) | +(4) | +(3) | +(3) | +(4) | +(3) | +(3) | +(4) | |
| Iceland | | | | | | | | | | | | | | |
| - direct inputs | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | |
| - riverine inputs | + | + | + | + | + | NI | NI | + | + | + | + | + | + | |
| Ireland | | | | | | | | | | | | | | |
| - direct inputs | + | + | + | + | + | NI | NI | NI | NI | NI | + | + | + | |
| - riverine inputs | +(4) | +(4) | +(4) | +(4) | +(3) | NI | NI | +(4) | +(3) | +(3) | +(3) | +(3) | +(4) | |
| Netherlands | | | | | | | | | | | | | | |
| - direct inputs | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | |
| - riverine inputs | + | + | + | + | + | + | + | + | + | + | + | + | + | Mineral Oil,EOX,PAK6 |
| Norway | | | | | | | | | | | | | | |
| - direct inputs | + | + | + | + | + | NI | NI | + | + | + | + | + | + | As,Total Cr,Ni,TOC |
| - riverine inputs | +(3) | +(4) | +(3) | +(3) | +(3) | NI | NI | +(4) | +(3) | +(4) | +(3) | +(3) | +(3) | As,Total Cr,Ni,TOC |
| Portugal | | | | | | | | | | | | | | |
| - direct inputs | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | |
| - riverine inputs | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | |
| Spain | | | | | | | | | | | | | | |
| - direct inputs | + | + | + | + | + | + | NI | + | + | + | + | + | + | |
| - riverine inputs | +(4) | +(4) | +(4) | +(4) | +(4) | +(4) | +(4) | +(4) | +(3) | +(4) | +(4) | +(4) | +(4) | |
| Sweden | | | | | | | | | | | | | | |
| - direct inputs | + | + | + | + | + | NI | NI | + | NI | NI | + | + | NI | |
| - riverine inputs | +(4) | +(4) | +(4) | +(4) | +(4) | NI | NI | +(4) | +(4) | +(4) | +(4) | +(4) | NI | |
| UK | | | | | | | | | | | | | | |
| - direct inputs | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | |
| - riverine inputs | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | R+ | |

+ : Data provided
R: Estimate given as a range
(3) 70 % of measurements above detection limit
(4) Less than 70 % of measurements above detection limit
NI: No information
NA: Not applicable

## AA Table 2. 2017

### Direct Discharges to the Maritime Area of the OSPAR Convention in 2017 by Country

| Country | Region | | Cd [t/a] | Hg [t/a] | Cu [t/a] | Pb [t/a] | Zn [t/a] | g-HCH [kg/a] | PCBs [kg/a] | NH4-N [kt/a] | NO3-N [kt/a] | PO4-P [kt/a] | N-Total [kt/a] | P-Total [kt/a] | SPM [kt/a] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Belgium | North Sea (BE) | lower | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | upper | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Denmark | Kattegat (DK) | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 0.46778 | 0.0455 | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 0.46778 | 0.0455 | NI |
| | North Sea (DK) | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 0.10577 | 0.0099 | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 0.10577 | 0.0099 | NI |
| | Skagerrak (DK) | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 0.15071 | 0.0123 | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 0.15071 | 0.0123 | NI |
| France | Atlantic | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| | Channel | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| Germany | North Sea (GER) | lower | 0.00 | 0.00 | 1.63 | 0.72 | 8.25 | 0.01 | 0.03 | 1.70 | 1.71 | 0.07 | 3.55 | 0.37 | 1.54 |
| | | upper | 0.10 | 0.05 | 2.36 | 1.51 | 13.25 | 0.27 | 1.84 | 1.70 | 1.71 | 0.07 | 3.55 | 0.37 | 1.54 |
| Iceland | Atlantic | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| Ireland | Atlantic | lower | 0.00 | 0.00 | 0.25 | 0.06 | 1.00 | NI | NI | NI | NI | NI | 0.99 | 0.16 | 1.54 |
| | | upper | 0.00 | 0.00 | 0.25 | 0.06 | 1.00 | NI | NI | NI | NI | NI | 0.99 | 0.16 | 1.54 |
| | Celtic Sea | lower | 0.01 | 0.07 | 0.91 | 0.25 | 3.84 | NI | NI | NI | NI | NI | 1.96 | 0.30 | 4.33 |
| | | upper | 0.01 | 0.07 | 0.91 | 0.25 | 3.84 | NI | NI | NI | NI | NI | 1.96 | 0.30 | 4.33 |
| | Irish Sea | lower | 0.01 | 0.00 | 2.18 | 0.59 | 8.75 | NI | NI | NI | NI | NI | 3.53 | 0.75 | 11.39 |
| | | upper | 0.01 | 0.00 | 2.18 | 0.59 | 8.75 | NI | NI | NI | NI | NI | 3.53 | 0.75 | 11.39 |
| Netherlands | North Sea (NL) | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| Norway | Barents Sea (NC | lower | 0.0 | 0.0 | 286.6 | 0.0 | 0.2 | NI | NI | 13.6 | 1.8 | 2.0 | 17.1 | 2.9 | 7.8 |
| | | upper | 0.0 | 0.0 | 286.6 | 0.0 | 0.2 | NI | NI | 13.6 | 1.8 | 2.0 | 17.1 | 2.9 | 7.8 |
| | North Sea (NO) | lower | 0.1 | 0.0 | 349.1 | 0.9 | 13.7 | NI | NI | 18.5 | 2.3 | 2.6 | 23.4 | 3.8 | 28.4 |
| | | upper | 0.1 | 0.0 | 349.1 | 0.9 | 13.7 | NI | NI | 18.5 | 2.3 | 2.6 | 23.4 | 3.8 | 28.4 |
| | Norwegian Sea ( | lower | 0.0 | 0.0 | 455.8 | 0.1 | 5.8 | NI | NI | 22.7 | 2.9 | 3.3 | 28.6 | 4.8 | 6.7 |
| | | upper | 0.0 | 0.0 | 455.8 | 0.1 | 5.8 | NI | NI | 22.7 | 2.9 | 3.3 | 28.6 | 4.8 | 6.7 |
| | Skagerrak (NO) | lower | 0.0 | 0.0 | 7.1 | 0.4 | 15.9 | NI | NI | 5.5 | 0.4 | 0.1 | 7.3 | 0.2 | 3.8 |
| | | upper | 0.0 | 0.0 | 7.1 | 0.4 | 15.9 | NI | NI | 5.5 | 0.4 | 0.1 | 7.3 | 0.2 | 3.8 |
| Portugal | Bay of Biscay ar | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| Spain | Atlantic (ESP) | lower | 0.009 | 0.005 | 0.906 | 0.194 | 6.816 | 0.176 | NI | 3.5285 | 0.3114 | 0.5146 | 5.14748 | 0.3309 | 3.464 |
| | | upper | 0.09 | 0.007 | 1.137 | 0.261 | 13.32 | 0.351 | NI | 3.5308 | 0.3183 | 0.5192 | 5.18936 | 0.3409 | 3.473 |
| Sweden | Kattegat (SWE) | lower | 0.01 | 0.01 | 1.50 | 0.07 | 6.59 | NI | NI | 0.82 | NI | NI | 1.48 | 0.05 | NI |
| | | upper | 0.01 | 0.01 | 1.50 | 0.07 | 6.59 | NI | NI | 0.82 | NI | NI | 1.48 | 0.05 | NI |
| | Skagerrak (SWE | lower | 0.00 | 0.00 | 0.13 | 0.00 | 0.68 | NI | NI | 0.12 | NI | NI | 0.25 | 0.01 | NI |
| | | upper | 0.00 | 0.00 | 0.13 | 0.00 | 0.68 | NI | NI | 0.12 | NI | NI | 0.25 | 0.01 | NI |
| UK | Atlantic | lower | 0.00 | 0.00 | 50.42 | 0.18 | 24.26 | 0.09 | NI | 0.30 | 0.16 | 0.18 | 8.82 | 1.55 | 3.14 |
| | | upper | 0.02 | 0.00 | 51.74 | 0.63 | 32.65 | 0.77 | NI | 2.45 | 1.39 | 0.77 | 11.24 | 1.92 | 9.27 |
| | Celtic Sea | lower | 0.05 | 0.00 | 6.43 | 0.01 | 1.86 | NI | 0.00 | 1.24 | 0.54 | 0.18 | 0.06 | 0.18 | 7.44 |
| | | upper | 0.06 | 0.00 | 6.44 | 0.09 | 1.88 | NI | 0.17 | 1.44 | 0.55 | 0.19 | 0.06 | 0.19 | 8.66 |
| | Channel | lower | 0.00 | NI | 0.25 | 0.02 | 0.24 | NI | NI | 0.46 | NI | NI | 0.82 | NI | 3.57 |
| | | upper | 0.00 | NI | 0.25 | 0.02 | 0.24 | NI | NI | 0.47 | NI | NI | 0.82 | NI | 3.71 |
| | Irish Sea | lower | 0.01 | 0.00 | 0.28 | 0.25 | 5.69 | 0.00 | 0.00 | 0.19 | 0.24 | 0.03 | 2.66 | 0.08 | 3.14 |
| | | upper | 0.01 | 0.00 | 0.30 | 0.26 | 5.85 | 0.00 | 0.49 | 0.24 | 0.24 | 0.03 | 2.71 | 0.09 | 3.52 |
| | North Sea (North | lower | 0.01 | 0.00 | 18.48 | 0.08 | 14.71 | 0.26 | 0.00 | 5.21 | 1.68 | 0.12 | 4.92 | 0.72 | 5.34 |
| | | upper | 0.04 | 0.01 | 25.70 | 0.63 | 24.58 | 0.58 | 0.02 | 9.85 | 2.93 | 0.89 | 11.38 | 1.88 | 15.99 |
| | North Sea (South | lower | 0.02 | 0.00 | 4.08 | 1.46 | 11.06 | NI | NI | 0.81 | 0.02 | NI | NI | NI | 38.64 |
| | | upper | 0.04 | 0.00 | 4.18 | 1.46 | 12.63 | NI | NI | 0.87 | 0.02 | NI | NI | NI | 38.75 |

NI: No information
NA: Not applicable

## AA Table 3. 2017

### Riverine Inputs to the Maritime Area of the OSPAR Convention in 2017 by Country

| Country | Sea Area | | Cd [t/a] | Hg [t/a] | Cu [t/a] | Pb [t/a] | Zn [t/a] | g-HCH [kg/a] | PCBs [kg/a] | NH4-N [kt/a] | NO3-N [kt/a] | PO4-P [kt/a] | N-Total [kt/a] | P-Total [kt/a] | SPM [kt/a] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Belgium | North Sea (BE) | lower | 0.32 | 0.03 | 9.76 | 1.91 | 35.64 | NA | NA | 1.19 | 10.23 | 0.68 | 14.06 | 1.10 | 129.6 |
| | | upper | 0.32 | 0.03 | 9.76 | 1.91 | 35.64 | NA | NA | 1.19 | 10.23 | 0.68 | 14.06 | 1.10 | 129.6 |
| Denmark | Kattegat (DK) | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 21.578 | 0.734 | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 21.578 | 0.734 | NI |
| | North Sea (DK) | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 18.447 | 0.583 | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 18.447 | 0.583 | NI |
| | Skagerrak (DK) | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 1.561 | 0.063 | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 1.561 | 0.063 | NI |
| France | Atlantic | lower | 0.1 | 0.0 | 42.8 | 7.6 | 75.3 | 0.8 | NI | 2.5 | 118.8 | 1.7 | 49.5 | 2.6 | 272.6 |
| | | upper | 0.7 | 0.3 | 46.0 | 11.1 | 101.9 | 16136.4 | NI | 2.7 | 123.3 | 1.7 | 153.2 | 2.6 | 576.9 |
| | Channel | lower | 0.4 | 0.0 | 39.6 | 36.2 | 189.8 | 8.5 | NI | 2.1 | 126.5 | 1.9 | 104.5 | 2.8 | 532.2 |
| | | upper | 0.6 | 0.0 | 41.1 | 36.4 | 190.9 | 336.9 | NI | 2.1 | 126.5 | 1.9 | 145.1 | 2.8 | 532.8 |
| Germany | North Sea (GER) | lower | 0.94 | 0.17 | 42.75 | 27.36 | 194.40 | 2.27 | 18.13 | 4.74 | 114.51 | 1.80 | 145.11 | 6.96 | 1636.3 |
| | | upper | 0.97 | 0.19 | 42.75 | 27.46 | 194.40 | 28.74 | 28.95 | 4.74 | 114.51 | 1.87 | 145.12 | 6.96 | 1834.2 |
| Iceland | Atlantic | lower | 0.05 | 0.05 | 10.14 | 0.70 | 19.62 | NI | NI | 0.23 | 0.36 | 0.39 | 0.95 | 0.48 | 991.1 |
| | | upper | 0.05 | 0.05 | 10.14 | 0.70 | 19.62 | NI | NI | 0.23 | 0.36 | 0.39 | 0.95 | 0.48 | 991.1 |
| Ireland | Atlantic | lower | 0.14 | 0.05 | 23.36 | 0.99 | 118.41 | NI | NI | 0.21 | 6.77 | 0.30 | 17.71 | 0.58 | 42.3 |
| | | upper | 0.43 | 0.38 | 29.14 | 17.96 | 120.82 | NI | NI | 0.45 | 7.54 | 0.39 | 18.07 | 0.58 | 99.1 |
| | Celtic Sea | lower | 0.21 | 0.13 | 37.77 | 3.84 | 173.49 | NI | NI | 0.89 | 49.83 | 0.72 | 64.90 | 1.29 | 136.1 |
| | | upper | 0.66 | 0.60 | 43.17 | 28.50 | 173.62 | NI | NI | 1.07 | 49.85 | 0.75 | 64.90 | 1.29 | 192.4 |
| | Irish Sea | lower | 0.21 | 0.01 | 13.22 | 3.77 | 95.14 | NI | NI | 0.22 | 13.62 | 0.22 | 16.90 | 0.53 | 62.6 |
| | | upper | 0.25 | 0.10 | 13.91 | 7.50 | 95.14 | NI | NI | 0.26 | 13.62 | 0.23 | 16.90 | 0.53 | 72.8 |
| Netherlands | North Sea (NL) | lower | 4.07 | 0.43 | 162.48 | 67.42 | 537.01 | 10.08 | 18.40 | 6.63 | 136.84 | 3.29 | 190.11 | 4.60 | 1012.3 |
| | | upper | 4.27 | 0.43 | 162.48 | 67.42 | 544.49 | 10.41 | 27.48 | 6.68 | 136.99 | 3.30 | 192.08 | 4.65 | 1103.7 |
| Norway | Barents Sea (NC | lower | 0.10 | 0.02 | 35.81 | 1.17 | 35.60 | NI | NI | 0.68 | 4.93 | 0.17 | 12.35 | 0.39 | 80.2 |
| | | upper | 0.10 | 0.02 | 35.81 | 1.17 | 35.60 | NI | NI | 0.68 | 4.93 | 0.17 | 12.35 | 0.39 | 80.2 |
| | North Sea (NO) | lower | 0.40 | 0.03 | 24.48 | 8.14 | 93.91 | NI | NI | 1.25 | 18.24 | 0.16 | 30.20 | 0.53 | 74.3 |
| | | upper | 0.40 | 0.03 | 24.48 | 8.14 | 93.91 | NI | NI | 1.25 | 18.24 | 0.16 | 30.20 | 0.53 | 74.3 |
| | Norwegian Sea ( | lower | 0.26 | 0.03 | 45.42 | 2.76 | 91.69 | NI | NI | 1.15 | 13.13 | 0.18 | 24.67 | 0.56 | 138.6 |
| | | upper | 0.26 | 0.03 | 45.42 | 2.76 | 91.69 | NI | NI | 1.15 | 13.13 | 0.18 | 24.67 | 0.56 | 138.6 |
| | Skagerrak (NO) | lower | 0.86 | 0.06 | 59.15 | 14.20 | 185.55 | NI | NI | 0.96 | 18.27 | 0.37 | 31.91 | 0.78 | 293.4 |
| | | upper | 0.86 | 0.06 | 59.15 | 14.20 | 185.55 | NI | NI | 0.96 | 18.27 | 0.37 | 31.91 | 0.78 | 293.4 |
| Portugal | Bay of Biscay an | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| Spain | Atlantic (ESP) | lower | 18.27 | 0.00 | 1909.18 | 21.17 | 3697.52 | 1.14 | 0.00 | 4.87 | 17.46 | 0.40 | 17.76 | 0.80 | 190.62 |
| | | upper | 18.35 | 0.06 | 1911.07 | 23.03 | 3703.92 | 12.25 | 4.31 | 4.94 | 17.60 | 0.43 | 19.59 | 0.87 | 192.72 |
| Sweden | Kattegat (SWE) | lower | 0.30 | 0.05 | 23.80 | 7.39 | 76.90 | NI | NI | 0.68 | 14.11 | 0.12 | 22.95 | 0.54 | NI |
| | | upper | 0.30 | 0.05 | 23.80 | 7.39 | 76.90 | NI | NI | 0.68 | 14.11 | 0.12 | 22.95 | 0.54 | NI |
| | Skagerrak (SWE | lower | 0.04 | 0.01 | 3.07 | 0.93 | 18.70 | NI | NI | 0.08 | 1.10 | 0.01 | 2.29 | 0.11 | NI |
| | | upper | 0.04 | 0.01 | 3.07 | 0.93 | 18.70 | NI | NI | 0.08 | 1.10 | 0.01 | 2.29 | 0.11 | NI |
| UK | Atlantic | lower | 0.04 | 0.03 | 21.12 | 2.99 | 41.11 | NI | NI | 0.37 | 5.26 | 0.43 | 5.84 | 1.02 | 79.43 |
| | | upper | 0.58 | 0.16 | 33.64 | 12.18 | 89.59 | NI | NI | 1.05 | 11.58 | 0.72 | 15.20 | 1.49 | 133.46 |
| | Celtic Sea | lower | 0.38 | 0.05 | 32.66 | 18.41 | 196.03 | 0.53 | 0.00 | 0.73 | 29.67 | 0.75 | 24.59 | 0.75 | 232.40 |
| | | upper | 1.04 | 0.13 | 33.45 | 27.80 | 202.58 | 1.03 | 16.27 | 0.79 | 29.67 | 0.76 | 24.59 | 0.76 | 237.90 |
| | Channel | lower | 0.21 | 0.01 | 17.38 | 6.14 | 68.25 | 0.30 | 0.00 | 0.18 | 17.71 | 0.47 | 19.90 | 0.47 | 55.00 |
| | | upper | 0.23 | 0.05 | 17.42 | 6.33 | 68.46 | 1.86 | 42.19 | 0.26 | 17.71 | 0.47 | 19.90 | 0.47 | 57.08 |
| | Irish Sea | lower | 2.24 | 0.27 | 104.60 | 183.30 | 474.38 | 0.99 | 0.41 | 1.96 | 26.62 | 1.56 | 45.99 | 1.64 | 1092.78 |
| | | upper | 2.68 | 0.41 | 108.20 | 189.80 | 488.40 | 8.33 | 91.38 | 2.21 | 29.49 | 1.64 | 50.34 | 1.81 | 1124.20 |
| | North Sea (North | lower | 0.19 | 0.02 | 7.21 | 10.78 | 59.29 | 0.11 | 0.00 | 0.20 | 6.22 | 0.17 | 8.91 | 0.21 | 78.23 |
| | | upper | 0.61 | 0.22 | 24.04 | 19.51 | 125.29 | 2.19 | 68.32 | 1.00 | 26.43 | 0.50 | 35.65 | 0.88 | 187.69 |
| | North Sea (South | lower | 0.55 | 0.01 | 32.87 | 20.63 | 131.18 | 4.16 | 0.00 | 1.26 | 65.73 | 2.38 | 68.40 | 2.38 | 100.14 |
| | | upper | 0.57 | 0.09 | 32.90 | 20.78 | 131.88 | 6.69 | 77.18 | 1.30 | 65.73 | 2.38 | 68.40 | 2.38 | 102.86 |

NI: No information

NA: Not applicable

## AA Table 4a. 2017

### Sum of Direct (Table 2) and Riverine (Table 3) Inputs to the Maritime area of the OSPAR Convention in 2017 by Country

| Sea Area | Region | | Cd [t/a] | Hg [t/a] | Cu [t/a] | Pb [t/a] | Zn [t/a] | g-HCH [kg/a] | PCBs [kg/a] | NH4-N [kt/a] | NO3-N [kt/a] | PO4-P [kt/a] | N-Total [kt/a] | P-Total [kt/a] | SPM [kt/a] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Belgium | North Sea (BE) | lower | 0.3 | 0.0 | 9.8 | 1.9 | 35.6 | NA | NA | 1.2 | 10.2 | 0.7 | 14.1 | 1.1 | 129.6 |
| | | upper | 0.3 | 0.0 | 9.8 | 1.9 | 35.6 | NA | NA | 1.2 | 10.2 | 0.7 | 14.1 | 1.1 | 129.6 |
| Denmark | Kattegat (DK) | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 22.05 | 0.8 | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 22.05 | 0.8 | NI |
| | North Sea (DK) | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 18.55 | 0.6 | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 18.55 | 0.6 | NI |
| | Skagerrak (DK) | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 1.71 | 0.1 | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | 1.71 | 0.1 | NI |
| France | Atlantic | lower | 0.1 | 0.0 | 42.8 | 7.6 | 75.3 | 0.8 | NI | 2.5 | 118.8 | 1.7 | 49.5 | 2.6 | 272.6 |
| | | upper | 0.7 | 0.3 | 46.0 | 11.1 | 101.9 | 16136.4 | NI | 2.7 | 123.3 | 1.7 | 153.2 | 2.6 | 576.9 |
| | Channel | lower | 0.4 | 0.0 | 39.6 | 36.2 | 189.8 | 8.5 | NI | 2.1 | 126.5 | 1.9 | 104.5 | 2.8 | 532.2 |
| | | upper | 0.6 | 0.0 | 41.1 | 36.4 | 190.9 | 336.9 | NI | 2.1 | 126.5 | 1.9 | 145.1 | 2.8 | 532.8 |
| Germany | North Sea (GER) | lower | 0.9 | 0.2 | 44.4 | 28.1 | 202.7 | 2.3 | 18.2 | 6.4 | 116.2 | 1.9 | 148.7 | 7.3 | 1637.8 |
| | | upper | 1.1 | 0.2 | 45.1 | 29.0 | 207.7 | 29.0 | 30.8 | 6.4 | 116.2 | 1.9 | 148.7 | 7.3 | 1835.7 |
| Iceland | Atlantic | lower | 0.0 | 0.0 | 10.1 | 0.7 | 19.6 | NI | NI | 0.2 | 0.4 | 0.4 | 1.0 | 0.5 | 991.1 |
| | | upper | 0.0 | 0.0 | 10.1 | 0.7 | 19.6 | NI | NI | 0.2 | 0.4 | 0.4 | 1.0 | 0.5 | 991.1 |
| Ireland | Atlantic | lower | 0.1 | 0.0 | 23.6 | 1.1 | 119.4 | NI | NI | 0.2 | 6.8 | 0.3 | 18.7 | 0.7 | 43.8 |
| | | upper | 0.4 | 0.4 | 29.4 | 18.0 | 121.8 | NI | NI | 0.4 | 7.5 | 0.4 | 19.1 | 0.7 | 100.6 |
| | Celtic Sea | lower | 0.2 | 0.2 | 38.7 | 4.1 | 177.3 | NI | NI | 0.9 | 49.8 | 0.7 | 66.9 | 1.6 | 140.4 |
| | | upper | 0.7 | 0.7 | 44.1 | 28.7 | 177.5 | NI | NI | 1.1 | 49.8 | 0.7 | 66.9 | 1.6 | 196.7 |
| | Irish Sea | lower | 0.2 | 0.0 | 15.4 | 4.4 | 103.9 | NI | NI | 0.2 | 13.6 | 0.2 | 20.4 | 1.3 | 74.0 |
| | | upper | 0.3 | 0.1 | 16.1 | 8.1 | 103.9 | NI | NI | 0.3 | 13.6 | 0.2 | 20.4 | 1.3 | 84.2 |
| Netherlands | North Sea (NL) | lower | 4.1 | 0.4 | 162.5 | 67.4 | 537.0 | 10.1 | 18.4 | 6.6 | 136.8 | 3.3 | 190.1 | 4.6 | 1012.3 |
| | | upper | 4.3 | 0.4 | 162.5 | 67.4 | 544.5 | 10.4 | 27.5 | 6.7 | 137.0 | 3.3 | 192.1 | 4.7 | 1103.7 |
| Norway | Barents Sea (NC | lower | 0.1 | 0.0 | 322.4 | 1.2 | 35.8 | NI | NI | 14.3 | 6.7 | 2.2 | 29.5 | 3.3 | 88.0 |
| | | upper | 0.1 | 0.0 | 322.4 | 1.2 | 35.8 | NI | NI | 14.3 | 6.7 | 2.2 | 29.5 | 3.3 | 88.0 |
| | North Sea (NO) | lower | 0.5 | 0.0 | 373.5 | 9.1 | 107.6 | NI | NI | 19.8 | 20.6 | 2.7 | 53.6 | 4.3 | 102.7 |
| | | upper | 0.5 | 0.0 | 373.5 | 9.1 | 107.6 | NI | NI | 19.8 | 20.6 | 2.7 | 53.6 | 4.3 | 102.7 |
| | Norwegian Sea ( | lower | 0.3 | 0.0 | 501.2 | 2.9 | 97.5 | NI | NI | 23.9 | 16.1 | 3.5 | 53.3 | 5.4 | 145.2 |
| | | upper | 0.3 | 0.0 | 501.2 | 2.9 | 97.5 | NI | NI | 23.9 | 16.1 | 3.5 | 53.3 | 5.4 | 145.2 |
| | Skagerrak (NO) | lower | 0.9 | 0.1 | 66.3 | 14.6 | 201.4 | NI | NI | 6.4 | 18.6 | 0.5 | 39.2 | 1.0 | 297.1 |
| | | upper | 0.9 | 0.1 | 66.3 | 14.6 | 201.4 | NI | NI | 6.4 | 18.6 | 0.5 | 39.2 | 1.0 | 297.1 |
| Portugal | Bay of Biscay an | lower | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| | | upper | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| Spain | Atlantic (ESP) | lower | 18.3 | 0.0 | 1910.1 | 21.4 | 3704.3 | 1.3 | 0.0 | 8.4 | 17.8 | 0.9 | 22.9 | 1.1 | 194.1 |
| | | upper | 18.4 | 0.1 | 1912.2 | 23.3 | 3717.2 | 12.6 | 4.3 | 8.5 | 17.9 | 0.9 | 24.8 | 1.2 | 196.2 |
| Sweden | Kattegat (SWE) | lower | 0.3 | 0.1 | 25.3 | 7.5 | 83.5 | NI | NI | 1.5 | 14.1 | 0.1 | 24.4 | 0.6 | NI |
| | | upper | 0.3 | 0.1 | 25.3 | 7.5 | 83.5 | NI | NI | 1.5 | 14.1 | 0.1 | 24.4 | 0.6 | NI |
| | Skagerrak (SWE | lower | 0.0 | 0.0 | 3.2 | 0.9 | 19.4 | NI | NI | 0.2 | 1.1 | 0.0 | 2.5 | 0.1 | NI |
| | | upper | 0.0 | 0.0 | 3.2 | 0.9 | 19.4 | NI | NI | 0.2 | 1.1 | 0.0 | 2.5 | 0.1 | NI |
| UK | Atlantic | lower | 0.0 | 0.0 | 71.5 | 3.2 | 65.4 | 0.1 | NI | 0.7 | 5.4 | 0.6 | 14.7 | 2.6 | 82.6 |
| | | upper | 0.6 | 0.2 | 85.4 | 12.8 | 122.2 | 0.8 | NI | 3.5 | 13.0 | 1.5 | 26.4 | 3.4 | 142.7 |
| | Celtic Sea | lower | 0.4 | 0.0 | 39.1 | 18.4 | 197.9 | 0.5 | 0.0 | 2.0 | 30.2 | 0.9 | 24.6 | 0.9 | 239.8 |
| | | upper | 1.1 | 0.1 | 39.9 | 27.9 | 204.5 | 1.0 | 16.4 | 2.2 | 30.2 | 0.9 | 24.6 | 0.9 | 246.6 |
| | Channel | lower | 0.2 | 0.0 | 17.6 | 6.2 | 68.5 | 0.3 | 0.0 | 0.6 | 17.7 | 0.5 | 20.7 | 0.5 | 58.6 |
| | | upper | 0.2 | 0.1 | 17.7 | 6.4 | 68.7 | 1.9 | 42.2 | 0.7 | 17.7 | 0.5 | 20.7 | 0.5 | 60.8 |
| | Irish Sea | lower | 2.2 | 0.3 | 104.9 | 183.6 | 480.1 | 1.0 | 0.4 | 2.2 | 26.9 | 1.6 | 48.7 | 1.7 | 1095.9 |
| | | upper | 2.7 | 0.4 | 108.5 | 190.1 | 494.3 | 8.3 | 91.9 | 2.4 | 29.7 | 1.7 | 53.0 | 1.9 | 1127.7 |
| | North Sea (North | lower | 0.2 | 0.0 | 25.7 | 10.9 | 74.0 | 0.4 | 0.0 | 5.4 | 7.9 | 0.3 | 13.8 | 0.9 | 83.6 |
| | | upper | 0.6 | 0.2 | 49.7 | 20.1 | 149.9 | 2.8 | 68.3 | 10.9 | 29.4 | 1.4 | 47.0 | 2.8 | 203.7 |
| | North Sea (South | lower | 0.6 | 0.0 | 37.0 | 22.1 | 142.2 | 4.2 | 0.0 | 2.1 | 65.7 | 2.4 | 68.4 | 2.4 | 138.8 |
| | | upper | 0.6 | 0.1 | 37.1 | 22.2 | 144.5 | 6.7 | 77.2 | 2.2 | 65.7 | 2.4 | 68.4 | 2.4 | 141.6 |

NI: No information
NA: Not applicable

## AA Table 4b. 2017

### Sum of Direct and Riverine Inputs to the Maritime area of the OSPAR Convention in 2017 by Sea Area

| Sea Area | | Cd [t/a] | Hg [t/a] | Cu [t/a] | Pb [t/a] | Zn [t/a] | g-HCH [kg/a] | PCBs [kg/a] | NH4-N [kt/a] | NO3-N [kt/a] | PO4-P [kt/a] | N-Total [kt/a] | P-Total [kt/a] | SPM [kt/a] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arctic Ocean | lower | 0.1 | 0.0 | 322.4 | 1.2 | 35.8 | NI | NI | 14.3 | 6.7 | 2.2 | 29.5 | 3.3 | 88.0 |
| | upper | 0.1 | 0.0 | 322.4 | 1.2 | 35.8 | NI | NI | 14.3 | 6.7 | 2.2 | 29.5 | 3.3 | 88.0 |
| Atlantic Ocean | lower | 0.2 | 0.1 | 95.2 | 4.2 | 184.8 | 0.1 | NI | 0.9 | 12.2 | 0.9 | 33.4 | 3.3 | 126.4 |
| | upper | 1.0 | 0.5 | 114.8 | 30.8 | 244.1 | 0.8 | NI | 3.9 | 20.5 | 1.9 | 45.5 | 4.2 | 243.4 |
| Bay of Biscay and Iberian Coast | lower | 18.4 | 0.0 | 1952.8 | 29.0 | 3779.6 | 2.1 | 0.0 | 10.9 | 136.6 | 2.6 | 72.4 | 3.7 | 466.7 |
| | upper | 19.2 | 0.4 | 1958.2 | 34.4 | 3819.1 | 16149.0 | 4.3 | 11.2 | 141.3 | 2.7 | 178.0 | 3.8 | 773.1 |
| Celtic Sea | lower | 0.7 | 0.3 | 77.8 | 22.5 | 375.2 | 0.5 | 0.0 | 2.9 | 80.0 | 1.7 | 91.5 | 2.5 | 380.3 |
| | upper | 1.8 | 0.8 | 84.0 | 56.6 | 381.9 | 1.0 | 16.4 | 3.3 | 80.1 | 1.7 | 91.5 | 2.5 | 443.3 |
| Channel | lower | 0.6 | 0.0 | 57.2 | 42.4 | 258.3 | 8.8 | 0.0 | 2.7 | 144.2 | 2.4 | 125.2 | 3.3 | 590.8 |
| | upper | 0.9 | 0.1 | 58.8 | 42.8 | 259.6 | 338.7 | 42.2 | 2.8 | 144.2 | 2.4 | 165.8 | 3.3 | 593.6 |
| Irish Sea | lower | 2.5 | 0.3 | 120.3 | 187.9 | 584.0 | 1.0 | 0.4 | 2.4 | 40.5 | 1.8 | 69.1 | 3.0 | 1169.9 |
| | upper | 2.9 | 0.5 | 124.6 | 198.1 | 598.1 | 8.3 | 91.9 | 2.7 | 43.4 | 1.9 | 73.5 | 3.2 | 1211.9 |
| Kattegat | lower | 0.3 | 0.1 | 25.3 | 7.5 | 83.5 | NI | NI | 1.5 | 14.1 | 0.1 | 46.5 | 1.4 | NI |
| | upper | 0.3 | 0.1 | 25.3 | 7.5 | 83.5 | NI | NI | 1.5 | 14.1 | 0.1 | 46.5 | 1.4 | NI |
| North Sea (main body) | lower | 6.6 | 0.7 | 652.8 | 139.4 | 1099.2 | 16.9 | 36.6 | 41.5 | 357.5 | 11.2 | 507.2 | 21.3 | 3104.8 |
| | upper | 7.4 | 1.1 | 677.7 | 149.8 | 1189.8 | 48.9 | 203.8 | 47.1 | 379.1 | 12.4 | 542.4 | 23.1 | 3517.1 |
| Norwegian Sea | lower | 0.3 | 0.0 | 501.2 | 2.9 | 97.5 | NI | NI | 23.9 | 16.1 | 3.5 | 53.3 | 5.4 | 145.2 |
| | upper | 0.3 | 0.0 | 501.2 | 2.9 | 97.5 | NI | NI | 23.9 | 16.1 | 3.5 | 53.3 | 5.4 | 145.2 |
| Skagerrak | lower | 0.9 | 0.1 | 69.5 | 15.5 | 220.8 | NI | NI | 6.6 | 19.7 | 0.5 | 43.4 | 1.2 | 297.1 |
| | upper | 0.9 | 0.1 | 69.5 | 15.5 | 220.8 | NI | NI | 6.6 | 19.7 | 0.5 | 43.4 | 1.2 | 297.1 |

NI: No information

# Annex IV Statistical information on river catchment areas

**Statistical Information on River Catchment Areas**

| River | Catchment area [km2] | Countries | Share in catchment area [km2] | [%] | Population (1990) [10E6] | [%] | LTA* [1000 m3/d] | LTA-period [a] |
|---|---|---|---|---|---|---|---|---|
| **Statistical Information provided by Belgium:** | | | | | | | | |
| Coastal Area | **2675** | | | | **~0.497** | | **2367** | NI |
| Western | 1689 | *Belgium* | >1082 | NI | >0,305 | NI | 708 | |
| | | *France* | NI | NI | NI | NI | | |
| Middle | 499 | *Belgium* | | | 0.014 | | 501 | |
| Eastern | 487 | *Belgium* | | | 0.177 | | 1158 | |
| Scheldt basin | | | | | | | | |
| Scheldt | **22004** | | | | **~10** | | **11139** | 1949-2008 |
| | | *Belgium (1)* | 13324 | *61* | 6.9 | | | |
| | | *France* | 6680 | *30* | ~2,7 | | | |
| | | *Netherlands (1)* | 2000 | *9* | 0.4 | | | |
| | | *(1) Ghent-Terneuzen canal comprised* | | | | | | |
| *Ghent-Terneuzen canal* | **NI** | | | | | | **1 885** | 1991-2008 |
| | | *Belgium* | NI | | NI | | | |
| | | *Netherlands* | NI | | NI | | | |
| **Statistical Information provided by Denmark:** | | | | | | | | |
| Vid å | 248.3 | *DK* | *248* | *81* | | | 300.5 | 78-07 |
| Brøns å | 94.1 | *DK* | *94* | *100* | | *100* | 107.0 | 74-07 |
| Ribe å | 675 | *DK* | *675* | *100* | | *100* | 756.6 | 33-07 |
| Kongeaen | 426.6 | *DK* | *427* | *100* | | *100* | 627.0 | 90-07 |
| Sneum å | 223 | *DK* | *223* | *100* | | *100* | 283.1 | 66-07 |
| Varde å | 815 | *DK* | *815* | *100* | | *100* | 1048.8 | 69-07 |
| Skjern å | 1558.4 | *DK* | *1558* | *100* | | *100* | 2108.2 | 74-07 |
| Stor å | 1096.7 | *DK* | *1097* | *100* | | *100* | 1427.3 | 71-07 |
| Brede å | 290 | *DK* | *290* | *100* | | *100* | 311.0 | 22-07 |
| Omme å | 612 | *DK* | *612* | *100* | | *100* | 743.1 | 83-07 |
| Grøn å | 563 | *DK* | *563* | *100* | | *100* | 606.2 | 59-07 |
| Total | **10809** | **=Total of Danish rivers discharging to the North Sea** | | | | | **8230** | **71-90** |
| Liver å | 249.8 | *DK* | *250* | *100* | | *100* | 226.4 | 89-07 |
| Uggerby å | 347.5 | *DK* | *348* | *100* | | *100* | 351.3 | 89-07 |
| | **1097** | **=Total of Danish rivers discharging to the Skagerrak** | | | | | **863** | **71-90** |
| Karup å | 626.8 | *DK* | *527* | *100* | | *100* | 635.2 | 86-07 |
| Jordbro å | 110.9 | *DK* | *111* | *100* | | *100* | 110.7 | 80-07 |
| Skals å | 556.4 | *DK* | *556* | *100* | | *100* | 389.7 | 73-07 |
| Simmersted å | 214.9 | *DK* | *215* | *100* | | *100* | 207.6 | 92-07 |
| Elling å | 132.2 | *DK* | *132* | *100* | | *100* | 123.2 | 89-07 |
| Voer å | 238.7 | *DK* | *239* | *100* | | *100* | 247.6 | 89-07 |
| Ger å | 153.8 | *DK* | *154* | *100* | | *100* | 149.6 | 85-07 |
| Lindeborg å | 317.8 | *DK* | *318* | *100* | | *100* | 310.3 | 83-07 |
| Haslevgard å | 75 | *DK* | *75* | *100* | | *100* | 62.3 | 89-07 |
| Kastbjerg å | 96.3 | *DK* | *96* | *100* | | *100* | 70.1 | 76-07 |
| Guden å | 2602.9 | *DK* | *2 603* | *100* | | *100* | 2837.8 | 78-07 |
| Ry å | 285 | *DK* | *285* | *100* | | *100* | 264.7 | 72-07 |
| | **15828** | **=Total of Danish rivers discharging to the Kattegat** | | | | | **5284** | **71-90** |

| River | Catchment area | Countries | Share in catchment area | | Population (1990) | | LTA* | LTA-period |
|---|---|---|---|---|---|---|---|---|
| | [km2] | | [km2] | [%] | [10E6] | [%] | [1000 m3/d] | [a] |
| **Statistical Information provided by France:** | | | | | | | | |
| Coastal area | 2308 | *France* | | *100* | 0.61 | *100* | 2764 | 1989 - 2006 |
| Canche | 3895 | *France* | | *100* | 0.38 | *100* | 4579 | 1961 - 2006 |
| Somme | 5916 | *France* | | *100* | 0.59 | *100* | 3197 | 1963 - 2006 |
| Béthune et Bresle | 2153 | *France* | | *100* | 0.16 | *100* | 2074 | 1998 - 2006 |
| Saane | 1718 | *France* | | *100* | 0.16 | *100* | 2938 | 1996 - 2006 |
| Seine | 64953 | *France* | | *100* | 13.94 | *100* | 44842 | 1974 - 2006 |
| Andelle | 789 | *France* | | *100* | 0.05 | *100* | 691 | 1972 - 2006 |
| Eure | 6023 | *France* | | *100* | 0.60 | *100* | 2246 | 1971 - 2006 |
| Coastal area | 2439 | *France* | | *100* | 0.93 | *100* | 1599 | 1989 - 2006 |
| Risle | 2545 | *France* | | *100* | 0.16 | *100* | 1642 | 1976 - 2006 |
| Dives | 1815 | *France* | | *100* | 0.11 | *100* | 1296 | 1968 - 2006 |
| Douve | 1474 | *France* | | *100* | 0.08 | *100* | 625 | 1989 - 2006 |
| Orne | 2976 | *France* | | *100* | 0.40 | *100* | 2506 | 1984 - 2006 |
| Seulles | 547 | *France* | | *100* | 0.06 | *100* | 346 | 1970 - 2006 |
| Touques | 1311 | *France* | | *100* | 0.10 | *100* | 1037 | 1981 - 2006 |
| Vire | 2077 | *France* | | *100* | 0.15 | *100* | 2246 | 1993 - 2006 |
| Coastal area | 1302 | *France* | | *100* | 0.16 | *100* | 1174 | 1989 - 2006 |
| Sélune et Sée | 1623 | *France* | | *100* | 0.09 | *100* | 1987 | 1994 - 2006 |
| Sienne | 1135 | *France* | | *100* | 0.09 | *100* | 1328 | 1989 - 2006 |
| Aulne | 4312 | *France* | | *100* | 0.52 | *100* | 6653 | 1969 - 2006 |
| Rance et Couesnon | 2848 | *France* | | *100* | 0.27 | *100* | 2160 | 1983 - 2006 |
| Coastal area | 4961 | *France* | | *100* | 0.49 | *100* | 3654 | 1989 - 2006 |
| | **119122** | =Total of rivers discharging in ZONE II | | | 20.10 | | 91 582 | |
| Blavet et Scorff | 4649 | *France* | | *100* | 0.50 | *100* | 5702 | 1982 - 2006 |
| Coastal area | 2868 | *France* | | *100* | 0.32 | *100* | 4558 | 1989 - 2006 |
| Vilaine | 10144 | *France* | | *100* | 0.90 | *100* | 5443 | 2001 - 2006 |
| Coastal area | 3636 | *France* | | *100* | 0.82 | *100* | 2847 | 1989 - 2006 |
| Loire | 110178 | *France* | | *100* | 6.67 | *100* | 73526 | 1868 - 2006 |
| Sèvre Nantaise | 4664 | *France* | | *100* | 0.52 | *100* | 4234 | 1993 - 2006 |
| Lay | 4522 | *France* | | *100* | 0.39 | *100* | 3456 | 1971 - 2006 |
| Sèvre Niortaise | 4363 | *France* | | *100* | 0.42 | *100* | 4752 | 1992 - 2006 |
| Coastal area | 291 | *France* | | *100* | 0.02 | *100* | 239 | 1989 - 2006 |
| Boutonne | 2141 | *France* | | *100* | 0.14 | *100* | 1754 | 1989 - 2006 |
| Charente | 7526 | *France* | | *100* | 0.43 | *100* | 5357 | 1979 - 2006 |
| Coastal area | 1172 | *France* | | *100* | 0.09 | *100* | 446 | 1989 - 2006 |
| Seudre | 988 | *France* | | *100* | 0.06 | *100* | 432 | 1971 - 2006 |
| Eyre | 2036 | *France* | | *100* | 0.03 | *100* | 1814 | 1967 - 2006 |
| Coastal area | 2810 | *France* | | *100* | 0.10 | *100* | 2264 | 1989 - 2006 |
| Dordogne | 14605 | *France* | | *100* | 0.55 | *100* | 21859 | 1997 - 2006 |
| Isle | 8472 | *France* | | *100* | 0.40 | *100* | 6912 | 1971 - 2006 |
| Coastal area | 870 | *France* | | *100* | 0.09 | *100* | 647 | 1989 - 2006 |
| Dropt | 2672 | *France* | | *100* | 0.21 | *100* | 1989 | 1989 - 2006 |
| Garonne | 38227 | *France* | | *100* | 2.24 | *100* | 40003 | 1966 - 2006 |
| Lot | 11541 | *France* | | *100* | 0.35 | *100* | 12614 | 2000 - 2006 |
| Coastal area | 3875 | *France* | | *100* | 0.75 | *100* | 10983 | 1989 - 2006 |
| Coastal area | 3105 | *France* | | *100* | 0.15 | *100* | 2501 | 1989 - 2006 |
| Adour | 7977 | *France* | | *100* | 0.37 | *100* | 7690 | 1920 - 2006 |
| Bidouze | 1041 | *France* | | *100* | 0.04 | *100* | 938 | 1989 - 2006 |
| Gaves réunis | 5504 | *France* | | *100* | 0.32 | *100* | 17453 | 1925 - 2006 |
| Luy | 1367 | *France* | | *100* | 0.10 | *100* | 1814 | 1966 - 2006 |
| Nive | 1153 | *France* | | *100* | 0.12 | *100* | 3197 | 1968 - 2006 |
| Coastal area | 644 | *France* | | *100* | 0.10 | *100* | 1825 | 1989 - 2006 |
| | **263040** | =total of rivers discharging in ZONE IV | | | 17.19 | | 247 250 | |
| **Statistical Information provided by Germany:** | | | | | | | | |
| Ems | 15552 | | | | | | 7690 | 1941-2006 |
| | | *Germany* | 13152 | 85.00 | 3.75 | 85 | | |
| | | *Netherlands* | 2400 | 15.00 | 0.6 | 15 | | |
| Weser | 46306 | *Germany* | - | - | 9.0 | - | 31541 | 1941-2003 |
| Elbe | 148268 | | 148268 | 100 | 25.11 | - | 74500 | 1926-2003 |
| | | *Germany* | *96932* | *65.38* | *19.09* | *76.03* | | |
| | | *Czech Republic* | *50176* | *33.84* | *5.97* | *23.78* | | |
| | | *Austria* | *920* | *0.62* | *0.05* | *0.20* | | |
| | | *Poland* | *240* | *0.16* | *NI* | *NI* | | |
| Eider | 2065 | *Germany* | - | - | 0.159 | - | 2391 | 1974-2006 |

| River | Catchment area | Countries | Share in catchment area | | Population (1990) | | LTA* | LTA-period |
|---|---|---|---|---|---|---|---|---|
| | [km2] | | [km2] | [%] | [10E6] | [%] | [1000 m3/d] | [a] |
| **Statistical Information provided by Ireland:** | | | | | | | | |
| Boyne | 2695 | Ireland | - | - | NI | - | 3280 | 1940-2006 |
| Liffey | 1256 | Ireland | - | - | NI | - | 1459 | 1900-2006 |
| | | | | | | | | 1956-2006 |
| Avoca | 652 | Ireland | - | 0 | NI | - | 1562.112 | 1986-2006 |
| Slaney | 1762 | Ireland | - | - | NI | - | 3208.032 | 1990-2006 |
| | 6365 | **=Total of main Irish rivers discharging to the Irish Sea** | | | | | | |
| Barrow | 3067 | Ireland | - | - | NI | - | 3784.32 | 1996-2006 |
| Nore | 2530 | Ireland | - | - | NI | - | 3602.016 | 1972-2006 |
| Suir | 3610 | Ireland | - | - | NI | - | 5889.024 | 1972-2006 |
| | | | | | | | | 1953-2006 |
| Blackwater | 3324 | Ireland | - | - | NI | - | 7521.984 | 1955-2006 |
| Lee | 1253 | Ireland | - | - | NI | - | 3435.264 | 1957-2006 |
| Bandon | 608 | Ireland | - | - | NI | - | 1858 | 1975-2006 |
| Deel | 486 | Ireland | - | - | NI | - | 624.672 | 1982-2006 |
| Maigue | 1052 | Ireland | - | - | NI | - | 1513.728 | 1990-2006 |
| Shannon Old Chan. | 11700 | Ireland | - | - | NI | - | 4499.712 | 1990-2006 |
| Shannon Tailrace | | Ireland | | | | | 13307.33 | 1947-2006 |
| Fergus | 1042 | Ireland | - | - | NI | - | 1 598 | 1956-2006 |
| | 28672 | =Total of main Irish rivers discharging to the Celtic Sea | | | | | | |
| | | | | | | | | 1973-06 excl. |
| Corrib | 3138 | Ireland | - | - | NI | - | 9011.52 | 86-90, 92-93 |
| Moy | 2086 | Ireland | - | - | NI | - | 5405.184 | 1974-2006 |
| **Erne** | 4372 | **Ireland/UK** | 2572/1800 | 60/40 | NI | - | 7 333 | 1951-2006 |
| | 9596 | **=Total of main Irish rivers dischrging to the Atlantic** | | | | | | |
| **Statistical Information provided by The Netherlands (with assistance from Germany and Belgium)** | | | | | | | | |
| Rhine | 185000 | | | | 2) 55.6 | | 4) 198720 | 1901-1995 |
| | | Switzerland | 1) 28000 | 15 | 3.0 | 6 | | |
| | | France | 24000 | 13 | 3.7 | 7 | | |
| | | Luxembourg | 2500 | 1 | 0.3 | 1 | | |
| | | Germany | 105900 | 57 | 32.5 | 65 | | |
| | | Netherlands | 21000 | 11 | 10.9 | 21 | | |
| | | Belgium | 700 | 0 | | | | |
| | | Austria | 2500 | 1 | | | | |
| | | Liechtenstein | 300 | 0 | | | | |
| | | Italy | 100 | 0 | | | | |
| Meuse | 33500 | | | | 3) 7.15 | | 5) 28080 | 1911-1995 |
| | | France | 8500 | 25 | 0.50 | | | |
| | | Luxembourg | 100 | 0 | 0.05 | | | |
| | | Belgium | 13150 | 39 | 2.00 | | | |
| | | Germany | 4300 | 13 | 1.00 | | | |
| | | Netherlands | 7400 | 22 | 3.60 | | | |
| Scheldt | 22004 | | | | ~10 | | 9331 | 1949-1995 |
| | | France | 6680 | 30.00 | ~2.7 | ~27 | | |
| | | Belgium | 13324 | 61.00 | 6.9 | 69 | | |
| | | Netherlands | 2000 | 9.00 | 0.4 | 4 | | |
| Ems | 15552 | | | | | | 7690 | 1941-2006 |
| | | Germany | 13152 | 85.00 | 3.75 | 85 | | |
| | | Netherlands | 2400 | 15.00 | 0.6 | 15 | | |
| **Statistical Information provided by Norway:** | | | | | | | | |
| Glomma (1) | 41918 | Norway | | 100.00 | 0.62 | 100 | 61350 | 1961-1990 |
| Drammenselva (2) | 17034 | Norway | | 100.00 | 0.2 | 100 | 28850 | 1961-1990 |
| Numedalslågen (3) | 5577 | Norway | | 100.00 | 0.04 | 100 | 10200 | 1961-1990 |
| Skienselva (4) | 10772 | Norway | | 100.00 | 0.11 | 100 | 23535 | 1961-1990 |
| Otra (5) | 3738 | Norway | | 100.00 | 0.03 | 100 | 12870 | 1961-1990 |
| | **79039** | **=Total of Norwegian rivers discharging to the Skagerrak** | | | | | | |
| Orreelva (6) | 105 | Norway | | 100.00 | 0.01 | 100 | 335 | 1961-1990 |
| Suldalslågen (7) | 1457 | Norway | | 100.00 | 0.003 | 100 | 7420 | 1961-1990 |
| | **1562** | **=Total of Norwegian rivers discharging to the North Sea** | | | | | | |
| Orkla (8) | 3053 | Norway | | 100.00 | 0.02 | 100 | 5710 | 1961-1990 |
| Vefsna (9) | 4122 | Norway | | 100.00 | 0.01 | 100 | 15655 | 1961-1990 |
| | **7175** | **=Total of Norwegian rivers discharging to the Norwegian Sea** | | | | | | |
| Altaelva (10) | 7373 | Norway | | 100.00 | 0.005 | 100 | 7495 | 1961-1990 |
| | **95149** | **Total catchment for main rivers discharging to all four regions** | | | | | | |
| | **126706** | **Total catchment for tributary rivers discharging to all four regions** | | | | | | |
| | **221855** | **Total catchment for monitored rivers** | | | | | | |
| **Statistical Information provided by Portugal:** | | | | | | | | |
| Tejo | 80149 | Portugal | 24380 | 30.8 | 2.89 | 32.0 | 15900 | 50 |
| | | Spain | 55769 | 69.2 | 6.14 | 68.0 | 34800 | 50 |
| Douro | 97600 | Portugal | 18600 | 19.1 | 1.76 | 43.5 | 22500 | 50 |
| | | Spain | 79000 | 80.9 | 2.28 | 56.5 | 40900 | 50 |
| Miño/Minho | 17000 | Portugal | 900 | 5.3 | 0.07 | 7.9 | 6000 | 15 |
| | | Spain | 16100 | 94.7 | 0.86 | 92.1 | 29000 | 15 |

1) Catchment areas rounded off to the nearest hundred km2
2) Population Rhine catchment per country requires further analysis
3) Population Meuse catchment: rough estimates
4) Estimated discharge at outlet: 2.300 m3/s * 24 h/d * 3600 s/h
5) Estimated discharge at outlet: 325 m3/s * 24 h/d * 3600 s/h

| River | Catchment area | Countries | Share in catchment area | | Population (1990) | | LTA* | LTA-period |
|---|---|---|---|---|---|---|---|---|
| | [km2] | | [km2] | [%] | [10E6] | [%] | [1000 m3/d] | [a] |
| **Statistical Information provided by Spain:** | | | | | | | | |
| Oyarzun | 74 | Spain | 74 | 100 | 0.055 | 100 | 166 | |
| Urumea | 266 | Spain | 266 | 100 | 0.176 | 100 | 633 | |
| Oria | 860 | Spain | 860 | 100 | 0.020 | 100 | 740 | |
| Cadagua | | Spain | | | | | | |
| Asua | | Spain | | | | | | |
| Galindo | | Spain | | | | | | |
| Ibaizabal | | Spain | | | | | | |
| Urola | 342 | Spain | 342 | 100 | 0.082 | 100 | 447 | |
| Deva | 531 | Spain | 531 | 100 | 0.146 | 100 | 694 | |
| Artibay | 106 | Spain | 106 | 100 | 0.016 | 100 | NI | |
| Lea | 81 | Spain | 81 | 100 | 0.010 | 100 | NI | |
| Oca | 132 | Spain | 132 | 100 | 0.022 | 100 | NI | |
| Butron | 175 | Spain | 175 | 100 | 0.024 | 100 | NI | |
| Barbadun | 135 | Spain | 135 | 100 | 0.020 | 100 | NI | |
| Nervión | 1764 | Spain | 1764 | 100 | 0.997 | 100 | 1 105 | |
| Pas | 620 | Spain | 606 | 97 | | | | |
| Eo | 818 | Spain | 715 | 87 | | | | |
| Saja | 955 | Spain | 955 | 100 | 0.104 | 100 | 1 166 | |
| Nalón | 4866 | Spain | 4866 | 100 | 0.539 | 100 | 6 977 | |
| Miera | 291 | Spain | 291 | 100 | 0.016 | 100 | 352 | |
| Sella | 1246 | Spain | 1246 | 100 | 0.035 | 100 | 832 | |
| Masma | 291 | Spain | 291 | 100 | 0.014 | 100 | 404 | 1970-2005 |
| Oro | 189 | Spain | 189 | 100 | 0.007 | 100 | 389 | 1970-2005 |
| Landro | 270 | Spain | 270 | 100 | 0.017 | 100 | 629 | 1975-2005 |
| Sor | 202 | Spain | 202 | 100 | 0.007 | 100 | 528 | 1996-2005 |
| Mera | 127 | Spain | 127 | 100 | 0.007 | 100 | 435 | 1970-2005 |
| Forcadas | 68 | Spain | 68 | 100 | 0.000 | 100 | 183 | 1970-2005 |
| Grande de Jubia | 182 | Spain | 182 | 100 | 0.004 | 100 | 318 | 1970-2005 |
| Belelle | 60 | Spain | 60 | 100 | 0.003 | 100 | 1 484 | 1970-2005 |
| Eume | 470 | Spain | 470 | 100 | 0.013 | 100 | 1 696 | 1970-2005 |
| Mandeo | 457 | Spain | 457 | 100 | 0.039 | 100 | 771 | 1970-2005 |
| Mero | 345 | Spain | 345 | 100 | 0.042 | 100 | 456 | 1984-2005 |
| Allones | 516 | Spain | 516 | 100 | 0.049 | 100 | 988 | 1970-2005 |
| Grande | 283 | Spain | 283 | 100 | 0.002 | 100 | 647 | 1970-2005 |
| Castro | 140 | Spain | 140 | 100 | 0.004 | 100 | 167 | 1970-2005 |
| Jallas | 504 | Spain | 504 | 100 | 0.022 | 100 | 739 | 1970-2005 |
| Tambre | 1530 | Spain | 1530 | 100 | 0.059 | 100 | 3828 | 1994-2005 |
| Furelos | | Spain | | | | | | |
| Deza | | Spain | | | | | | |
| Traba | 122 | Spain | 122 | 100 | 0.004 | 100 | 316 | 1970-2005 |
| Ulla | 2803 | Spain | 2803 | 100 | 0.104 | 100 | 1337 | 1971-2005 |
| | 156 | Spain | 156 | 100 | | | | |
| Umia | 440 | Spain | 440 | 100 | 0.052 | 100 | 846 | 1970-2005 |
| Lerez | 450 | Spain | 450 | 100 | 0.085 | 100 | 1249 | 1970-1999 |
| Verdugo | 334 | Spain | 334 | 100 | 0.021 | 100 | 484 | 1970-2005 |
| Miño | 17247 | Spain | 16347 | 94.8 | 0.881 | | 25716 | 1975-95 |
| | | Portugal | 900 | 5.2 | | | | |
| Duero | 97670 | Spain | 78960 | 80.8 | 3.093 | | | |
| | | Portugal | 18710 | 19.2 | | | | |
| Tajo | 80190 | Spain | 55810 | 69.6 | 6.459 | | | |
| | | Portugal | 24380 | 30.4 | | | | |
| Guadiana | 67122 | Spain | 55597 | 82.8 | 1.800 | | 8556 | 1.912 - 1.995 |
| | | Portugal | 11525 | 17.2 | | | | |
| Piedras | 550 | Spain | 550 | 100 | 0.034 | 100 | 61 | |
| Odiel | 2417 | Spain | 2417 | 100 | 0.211 | 100 | 1 200 | 1967-1995 |
| Guadaira | | Spain | | | | | | |
| Tinto | 1727 | Spain | 1727 | 100 | 0.090 | 100 | 178 | 1966-1995 |
| Guadalquivir | 63241 | Spain | 63241 | 100 | 4.966 | 100 | 3423 | 1942-88 |
| Guadiamar | | | | | | | | |
| Guadalete | 3360 | Spain | 3360 | 100 | 0.555 | 100 | 413 | |
| **TOTAL** | **356726** | **Spain** | **301093** | **84.4** | **20.907** | **NI** | **70553** | |
| | | **Portugal** | **55515** | **15.6** | **NI** | | | |
| | | **TOTAL** | **356608** | **100** | | | | |

| River | Catchment area | Countries | Share in catchment area | | Population (1990) | | LTA* | LTA-period |
|---|---|---|---|---|---|---|---|---|
| | [km2] | | [km2] | [%] | [10E6] | [%] | [1000 m3/d] | [a] |
| **Statistical Information provided by Sweden:** | | | | | 2005 | | | |
| Vege å (95) | 498 | Sweden | 498 | 100 | 0.0430 | 100 | 440 | 1961-1990 |
| Rönne å (96) | 1890 | Sweden | 1890 | 100 | 0.0903 | 100 | 2030 | 1961-1990 |
| Stensån (97) | 284 | Sweden | 284 | 100 | 0.0065 | 100 | 350 | 1961-1990 |
| Lagan (98) | 6444 | Sweden | 6444 | 100 | 0.1181 | 100 | 7410 | 1961-1990 |
| Genevadsån (99) | 225 | Sweden | 225 | 100 | 0.0046 | 100 | 350 | 1961-1990 |
| Fylleån (100) | 359 | Sweden | 359 | 100 | 0.0092 | 100 | 650 | 1961-1990 |
| Nissan (101) | 2682 | Sweden | 2682 | 100 | 0.0834 | 100 | 3690 | 1961-1990 |
| Suseån (102) | 441 | Sweden | 441 | 100 | 0.0074 | 100 | 640 | 1961-1990 |
| Ätran (103) | 3343 | Sweden | 3343 | 100 | 0.0657 | 100 | 5070 | 1961-1990 |
| Himleån (104) | 214 | Sweden | 214 | 100 | 0.0127 | 100 | 330 | 1961-1990 |
| Viskan (105) | 2201 | Sweden | 2201 | 100 | 0.1236 | 100 | 2760 | 1961-1990 |
| Rolfsån (106) | 723 | Sweden | 723 | 100 | 0.0281 | 100 | 1030 | 1961-1990 |
| Kungsbackaån (107) | 310 | Sweden | 310 | 100 | 0.0404 | 100 | 410 | 1961-1990 |
| Göta älv (108) | 50230 | Sweden | 42780.00 | 85.20 | 0.8776 | ni | 50530 | 1961-1990 |
| | | Norway | 7450.00 | 14.80 | ni | ni | | |
| | **69844** | **=Total of Swedish rivers discharging to the Kattegat** | | | | | | |
| Bäveån (109) | 302 | Sweden | 302 | 100 | 0.0226 | 100 | 350 | 1961-1990 |
| Örekilsälven (110) | 1327 | Sweden | 1327 | 100 | 0.0138 | 100 | 2050 | 1961-1990 |
| Strömsån (111) | 253 | Sweden | 253 | 100 | 0.0056 | 100 | 390 | 1961-1990 |
| Enningsdalsälven (112) | 704 | Sweden | 704 | 100 | 0.0029 | 100 | 1360 | 1961-1990 |
| | **2586** | **=Total of Swedish rivers discharging to the Skagerrak** | | | | | | |
| **Statistical Information provided by the United Kingdom:** | | | | | | | | |
| Ness (SC2b) | NI | - | - | - | NI | - | 7 600 | NI |
| Conon (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Baeuly (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Findhorn (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Shin (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Helmsdale (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Naver (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Thurso (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Brora (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Oykel (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Nairn (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Carron (Sutherland) (SC2 | NI | - | - | - | NI | - | NI | NI |
| Wick (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Halladale (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Hope (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Alness (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Cassley (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Fleet (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Berriedale Water (Sc2b) | NI | - | - | - | NI | - | NI | NI |
| Borgie (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Forss Water (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Loch of Stenness (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Glass (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Strathy (Sc2b) | NI | - | - | - | NI | - | NI | NI |
| Mickle Burn (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Dunbeath Water (SC2b) | NI | - | - | - | NI | - | NI | NI |
| Spey (SC3) | NI | - | - | - | NI | - | 5 600 | NI |

UK cont.

| River | Catchment area | Countries | Share in catchment area | | Population (1990) | | LTA* | LTA-period |
|---|---|---|---|---|---|---|---|---|
| | [km2] | | [km2] | [%] | [10E6] | [%] | [1000 m3/d] | [a] |
| Dee (Grampian) (SC3) | NI | - | - | - | NI | - | NI | NI |
| Don (SC3) | NI | - | - | - | NI | - | NI | NI |
| Deveron (SC3) | NI | - | - | - | NI | - | NI | NI |
| Ythan (SC3) | NI | - | - | - | NI | - | NI | NI |
| Ugie (SC3) | NI | - | - | - | NI | - | NI | NI |
| Bervie Water (SC3) | NI | - | - | - | NI | - | NI | NI |
| Lossie (SC3) | NI | - | - | - | NI | - | NI | NI |
| Tay (SC4) | NI | - | - | - | NI | - | 14 000 | NI |
| Earn (SC4) | NI | - | - | - | NI | - | NI | NI |
| North Esk (Tayside) (SC4 | NI | - | - | - | NI | - | NI | NI |
| South Esk (Tayside) (SC4 | NI | - | - | - | NI | - | NI | NI |
| Eden SC4) | NI | - | - | - | NI | - | NI | NI |
| Lunan Water (SC4) | NI | - | - | - | NI | - | NI | NI |
| Dighty Water (SC4) | NI | - | - | - | NI | - | NI | NI |
| Tweed (SC5) | NI | - | - | - | NI | - | NI | NI |
| Forth (SC5) | NI | - | - | - | NI | - | 4 300 | NI |
| Whiteadder Water (SC5) | NI | - | - | - | NI | - | NI | NI |
| Leven (Fife) (SC5) | NI | - | - | - | NI | - | NI | NI |
| Almond (SC5) | NI | - | - | - | NI | - | NI | NI |
| Esk (Lothian) (SC5) | NI | - | - | - | NI | - | NI | NI |
| Tyne (SC5) | NI | - | - | - | NI | - | 3 900 | NI |
| Allan Water (SC5) | NI | - | - | - | NI | - | NI | NI |
| Devon (SC5) | NI | - | - | - | NI | - | NI | NI |
| Carron (Falkirk) (SC5) | NI | - | - | - | NI | - | NI | NI |
| Avon (SC5) | NI | - | - | - | NI | - | NI | NI |
| Eye Water (SC5) | NI | - | - | - | NI | - | NI | NI |
| Water of Leith (SC5) | NI | - | - | - | NI | - | NI | NI |
| Tweed (E1) | NI | - | - | - | NI | - | NI | NI |
| Coquet (E1) | NI | - | - | - | NI | - | NI | NI |
| Wansbeck (E1) | NI | - | - | - | NI | - | NI | NI |
| Blyth (E1) | NI | - | - | - | NI | - | NI | NI |
| Tyne (E2) | NI | - | - | - | NI | - | NI | NI |
| Derwent (E2) | NI | - | - | - | NI | - | NI | NI |
| Team (E2) | NI | - | - | - | NI | - | NI | NI |
| Wear (E3) | NI | - | - | - | NI | - | NI | NI |
| Skerne (E5) | NI | - | - | - | NI | - | NI | NI |
| Tees (E5) | NI | - | - | - | NI | - | NI | NI |
| **Tot.N.Sea (N) catch.** | 50000 | | | | | | 89300 | 1960 to 1990 |
| Aire (E8) | NI | - | - | - | NI | - | NI | NI |
| Derwent (E8) | NI | - | - | - | NI | - | NI | NI |
| Don (E8) | NI | - | - | - | NI | - | NI | NI |
| Ouse (E8) | NI | - | - | - | NI | - | NI | NI |
| Wharfe (E8) | NI | - | - | - | NI | - | NI | NI |
| Ancholme (E8) | NI | - | - | - | NI | - | NI | NI |
| Trent (E8) | NI | - | - | - | NI | - | 7800 | NI |
| Idle (E8) | NI | - | - | - | NI | - | NI | NI |
| Welland (E9) | NI | - | - | - | NI | - | NI | NI |
| Nene (E9) | NI | - | - | - | NI | - | NI | NI |
| Ouse (E9) | NI | - | - | - | NI | - | NI | NI |
| Witham (E9) | NI | - | - | - | NI | - | NI | NI |
| Glan (E9) | NI | - | - | - | NI | - | NI | NI |
| Hundred Foot River (E9) | NI | - | - | - | NI | - | NI | NI |
| Ten Mile River (E9) | NI | - | - | - | NI | - | NI | NI |
| Bure (E10) | NI | - | - | - | NI | - | NI | NI |
| Wensum (E10) | NI | - | - | - | NI | - | NI | NI |
| Stour (E10) | NI | - | - | - | NI | - | NI | NI |
| Gipping (E10) | NI | - | - | - | NI | - | NI | NI |
| Waveney (E10) | NI | - | - | - | NI | - | NI | NI |
| Yare (E10) | NI | - | - | - | NI | - | NI | NI |
| Colne (E11) | NI | - | - | - | NI | - | NI | NI |
| Chalmer (E11) | NI | - | - | - | NI | - | NI | NI |
| Blackwater (E11) | NI | - | - | - | NI | - | NI | NI |
| Thames (E12) | NI | - | - | - | NI | - | 6700 | NI |

UK Cont.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Beam (E12) | NI | - | - | - | NI | - | NI | NI |
| Beverley Brook (E12) | NI | - | - | - | NI | - | NI | NI |
| Brent (E12) | NI | - | - | - | NI | - | NI | NI |
| Crane (E12) | NI | - | - | - | NI | - | NI | NI |
| Ingrebourne (E12) | NI | - | - | - | NI | - | NI | NI |
| Lee (E12) | NI | - | - | - | NI | - | NI | NI |
| Ravensbourne (E12) | NI | - | - | - | NI | - | NI | NI |
| Roding (E12) | NI | - | - | - | NI | - | NI | NI |
| Wandle (E12) | NI | - | - | - | NI | - | NI | NI |
| **Tot.N.Sea (S) catch.** | 62000 | | | | | | 32300 | 1960 to 1990 |
| Medway (E13) | NI | - | - | - | NI | - | NI | NI |
| Stour (E13) | NI | - | - | - | NI | - | 1130 | NI |
| Rother (E13) | NI | - | - | - | NI | - | NI | NI |
| Adur (E14) | NI | - | - | - | NI | - | NI | NI |
| Ouse (E14) | NI | - | - | - | NI | - | NI | NI |
| Cuckmere (E14) | NI | - | - | - | NI | - | NI | NI |
| Arun (E14) | NI | - | - | - | NI | - | NI | NI |
| Itchen (E15) | NI | - | - | - | NI | - | NI | NI |
| Test (E15) | NI | - | - | - | NI | - | NI | NI |
| Blackwater (E15) | NI | - | - | - | NI | - | NI | NI |
| Frome (E16) | NI | - | - | - | NI | - | NI | NI |
| Stour (E16) | NI | - | - | - | NI | - | NI | NI |
| Avon (E16) | NI | - | - | - | NI | - | 1330 | NI |
| Axe (E17) | NI | - | - | - | NI | - | NI | NI |
| Dart (E17) | NI | - | - | - | NI | - | NI | NI |
| Exe (E17) | NI | - | - | - | NI | - | 1360 | NI |
| Gara (E17) | NI | - | - | - | NI | - | NI | NI |
| Otter (E17) | NI | - | - | - | NI | - | NI | NI |
| Teign (E17) | NI | - | - | - | NI | - | NI | NI |
| Cober (E18) | NI | - | - | - | NI | - | NI | NI |
| Erme (E18) | NI | - | - | - | NI | - | NI | NI |
| Fal (E18) | NI | - | - | - | NI | - | NI | NI |
| Fowey (E18) | NI | - | - | - | NI | - | NI | NI |
| Gara (E18) | NI | - | - | - | NI | - | NI | NI |
| Lynher (E18) | NI | - | - | - | NI | - | NI | NI |
| Par (E18) | NI | - | - | - | NI | - | NI | NI |
| Plym (E18) | NI | - | - | - | NI | - | NI | NI |
| Porthleven (E18) | NI | - | - | - | NI | - | NI | NI |
| St Austel (E18) | NI | - | - | - | NI | - | NI | NI |
| Tavy (E18) | NI | - | - | - | NI | - | NI | NI |
| Tamar (E18) | NI | - | - | - | NI | - | 1940 | NI |
| **Tot.Channel catch.** | 22000 | | | | | | 16500 | 1960-1990 |
| Camel (E19) | NI | - | - | - | NI | - | NI | NI |
| Hayle (E19) | NI | - | - | - | NI | - | NI | NI |
| Menalhyl (E19) | NI | - | - | - | NI | - | NI | NI |
| Red River (E19) | NI | - | - | - | NI | - | NI | NI |
| Taw (Yeo) (E19) | NI | - | - | - | NI | - | NI | NI |
| Taw (2) (E20) | NI | - | - | - | NI | - | NI | NI |
| Torridge (E20) | NI | - | - | - | NI | - | NI | NI |
| Parrett (E21) | NI | - | - | - | NI | - | NI | NI |
| Tone (E21) | NI | - | - | - | NI | - | NI | NI |
| Bristol Avon (E22) | NI | - | - | - | NI | - | NI | NI |
| Severn (2) (E22) | NI | - | - | - | NI | - | 9100 | NI |
| Wye (E23) | NI | - | - | - | NI | - | 6200 | NI |
| Usk (E23) | NI | - | - | - | NI | - | NI | NI |
| Rhymney (E23) | NI | - | - | - | NI | - | NI | NI |
| Ely (E23) | NI | - | - | - | NI | - | NI | NI |
| Afon Lwyd (E23) | NI | - | - | - | NI | - | NI | NI |
| Ebbw Fawr (E23) | NI | - | - | - | NI | - | NI | NI |
| Taff (E23) | NI | - | - | - | NI | - | NI | NI |
| Cadoxton (E24) | NI | - | - | - | NI | - | NI | NI |
| Neath (E24) | NI | - | - | - | NI | - | NI | NI |
| Ogmore (E24) | NI | - | - | - | NI | - | NI | NI |
| Thaw (E24) | NI | - | - | - | NI | - | NI | NI |
| Tawe (E24) | NI | - | - | - | NI | - | NI | NI |
| Ewenny (E24) | NI | - | - | - | NI | - | NI | NI |
| Nant Y Fendrod (E24) | NI | - | - | - | NI | - | NI | NI |
| Thaw Kenson (E24) | NI | - | - | - | NI | - | NI | NI |
| Dafen (E25) | NI | - | - | - | NI | - | NI | NI |

UK Cont.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| W Cleddau (E25) | NI | - | - | - | NI | - | NI | NI |
| Tywi (E25) | NI | - | - | - | NI | - | 3700 | NI |
| Taf (E25) | NI | - | - | - | NI | - | NI | NI |
| Loughor (E25) | NI | - | - | - | NI | - | NI | NI |
| **Tot.Celtic S. catch.** | 32000 | | | | | | 36400 | 1960-1990 |
| Teifi (E26) | NI | - | - | - | NI | - | NI | NI |
| Ystwyth (E26) | NI | - | - | - | NI | - | NI | NI |
| Rheidol (E26) | NI | - | - | - | NI | - | NI | NI |
| Mawddach (E26) | NI | - | - | - | NI | - | NI | NI |
| Dyfi (E26) | NI | - | - | - | NI | - | NI | NI |
| Glaslyn (E26) | NI | - | - | - | NI | - | NI | NI |
| Afon Goch (2) (E27) | NI | - | - | - | NI | - | NI | NI |
| Clwyd (E27) | NI | - | - | - | NI | - | NI | NI |
| Cefni (E27) | NI | - | - | - | NI | - | NI | NI |
| Conwy (E27) | NI | - | - | - | NI | - | NI | NI |
| Dee (E27) | NI | - | - | - | NI | - | 3020 | NI |
| Nant Glywdyr (E27) | NI | - | - | - | NI | - | NI | NI |
| Alt (E28) | NI | - | - | - | NI | - | NI | NI |
| Mersey (E28) | NI | - | - | - | NI | - | 3540 | NI |
| Weaver (E28) | NI | - | - | - | NI | - | NI | NI |
| Darwen (E29) | NI | - | - | - | NI | - | NI | NI |
| Douglas (E29) | NI | - | - | - | NI | - | NI | NI |
| Ribble (E29) | NI | - | - | - | NI | - | NI | NI |
| Kent (E29) | NI | - | - | - | NI | - | NI | NI |
| Lune (E29) | NI | - | - | - | NI | - | 3020 | NI |
| Wyre (E29) | NI | - | - | - | NI | - | NI | NI |
| Leven (E29) | NI | - | - | - | NI | - | NI | NI |
| Derwent (E30) | NI | - | - | - | NI | - | NI | NI |
| Eden (E30) | NI | - | - | - | NI | - | 4320 | NI |
| Nith (SC1) | NI | - | - | - | NI | - | NI | NI |
| Annan (SC1) | NI | - | - | - | NI | - | NI | NI |
| Dee (Solway) (SC1) | NI | - | - | - | NI | - | NI | NI |
| Esk (Solway) (SC1) | NI | - | - | - | NI | - | NI | NI |
| Cree (SC1) | NI | - | - | - | NI | - | NI | NI |
| Bladnoch (SC1) | NI | - | - | - | NI | - | NI | NI |
| Water of Luce (SC1) | NI | - | - | - | NI | - | NI | NI |
| Urr Water (SC1) | NI | - | - | - | NI | - | NI | NI |
| Lochar Water (SC1) | NI | - | - | - | NI | - | NI | NI |
| Newry (NI2) | NI | | | | NI | - | NI | NI |
| Quoile (NI2) | NI | | | | NI | - | NI | NI |
| Lagan (NI2) | NI | | | | NI | - | NI | NI |
| **Tot.Irish Sea catch.** | 35000 | | | | | | 48400 | 1960-1990 |
| Clyde (SC2) | NI | - | - | - | NI | - | 4 000 | NI |
| Awe (SC2) | NI | - | - | - | NI | - | NI | NI |
| Leven (Loch Lomond (SC | NI | - | - | - | NI | - | NI | NI |
| Ayr (SC2) | NI | - | - | - | NI | - | NI | NI |
| Irvine (SC2) | NI | - | - | - | NI | - | NI | NI |
| Kelvin (SC2) | NI | - | - | - | NI | - | NI | NI |
| Stinchar (SC2) | NI | - | - | - | NI | - | NI | NI |
| Doon (SC2) | NI | - | - | - | NI | - | NI | NI |
| Water of Girvan (SC2) | NI | - | - | - | NI | - | NI | NI |
| White Cart Water (SC2) | NI | - | - | - | NI | - | NI | NI |
| Garnock (SC2) | NI | - | - | - | NI | - | NI | NI |

UK cont.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Etive (SC2) | NI | - | - | - | NI | - | NI | NI |
| Eachaig (SC2) | NI | - | - | - | NI | - | NI | NI |
| Black Cart Water (SC2) | NI | - | - | - | NI | - | NI | NI |
| Gryfe (SC2) | NI | - | - | - | NI | - | NI | NI |
| Add (SC2) | NI | - | - | - | NI | - | NI | NI |
| Lochy (SC2a) | NI | - | - | - | NI | - | 5 400 | NI |
| Ewe (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Shiel (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Leven (Lochaber) (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Morar (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Inver (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Carron (Wester Ross (SC | NI | - | - | - | NI | - | NI | NI |
| Gruinard (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Broom (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Kirkaig (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Ling (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Laxford (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Abhainn Ghriomarstaidh | NI | - | - | - | NI | - | NI | NI |
| Aline (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Loch Linnhe (SC2a) | NI | - | - | - | NI | - | NI | NI |
| Bush (NI1) | NI | | | | NI | | NI | NI |
| Bann (NI1) | NI | | | | NI | | 7900 | NI |
| Roe (NI1) | NI | | | | NI | | NI | NI |
| Faughan (NI1) | NI | | | | NI | | NI | NI |
| Burn Dennet NI1 | NI | | | | NI | | NI | NI |
| Mourne (NI1) | NI | | | | NI | | NI | NI |
| Finn (NI1) | NI | | | | NI | | NI | NI |
| **Tot.Atlantic catchm.** | 42000 | | | | | | 49700 | 1960-1990 |

***) LTA = Long-term average**

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**OSPAR's vision is of a clean, healthy and biologically diverse North-East Atlantic used sustainably**

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