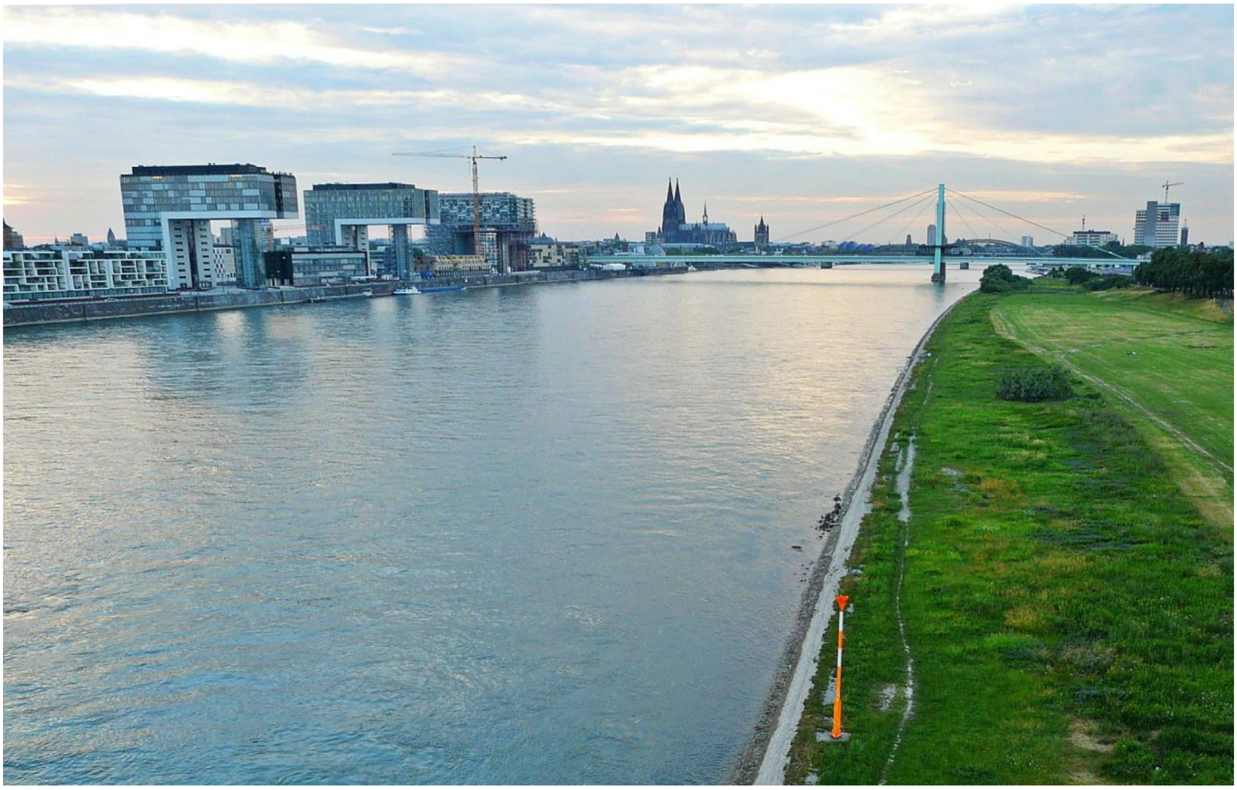
OSPAR COMMISSION

Comprehensive Study and assessment of Riverine Inputs and Direct Discharges (RID)

OSPAR Contracting Parties' RID 2022 Data Report



2024

Monitoring and Assessment Series

OSPAR Contracting Parties' RID 2022 Data Report

15 March 2024

OSPAR Commission
for the Protection of the Marine Environment
of the North-East Atlantic

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Addendum:

National 2022 RID data reports (excel and word files)
https://odims.ospar.org/en/submissions/ospar_rid_data_reports_2022_01/

The latest version of the RID database can be downloaded from the NIBIO GitLab.

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 2022. 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 an overall reduction in flow normalized riverine loads of nutrients and metals, although there are large variations from year to year. Direct discharges of nutrients and metals are also declining in many areas, with some exceptions. For 2022, increase in direct discharges was reported in some areas, but these have no effect on the general trends, since the reported direct discharges are smaller than the riverine inputs in almost all the cases. Only direct discharges from unmonitored areas, including areas downstream of sampling points and discharges directly to the sea are included. The direct discharges upstream of the sampling points are included in the riverine inputs.

The report also gives an overview of the different efforts carried out by both CPs and the RID Data Centre to improve the data quality of the programme. Despite these efforts, the long-term data series still have some gaps and inconsistencies, which is unfortunate. Hence, the Report also gives recommendations on how to handle incomplete or missing datasets. The CPs are asked to scrutinize the historical RID data series, and correct them whenever needed, to improve the data quality in the RID database.

Récapitulatif

Ce rapport présente les résultats de la surveillance entreprise par les Parties contractantes OSPAR dans le cadre du programme sur les apports fluviaux et les rejets directs (RID) au cours de l'année 2022. L'objectif du programme RID est d'évaluer, aussi précisément que possible, tous les apports fluviaux et les rejets directs de polluants sélectionnés dans les eaux de la Convention sur une base annuelle, et de contribuer à la mise en œuvre du Programme conjoint d'évaluation et de surveillance (JAMP). La zone de la Convention OSPAR est divisée en cinq régions principales : les eaux arctiques, la mer du Nord au sens large, les mers celtes, le golfe de Gascogne et la cote ibérique, et l'Atlantique au large.

Les déterminants faisant l'objet d'une surveillance obligatoire sont 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 sur une base volontaire. Les sources de rejets directs peuvent inclure les stations d'épuration des eaux usées, l'industrie et l'aquaculture ; Comprehensive Study on Riverine Inputs and Direct Discharges (RID) – 2019 data report 5 certaines Parties contractantes déclarent également les écoulements urbains. Toutes les Parties contractantes ne déclarent pas leurs rejets directs.

Depuis le lancement du programme en 1990, de nombreuses Parties contractantes font état d'une réduction globale des charges fluviales de nutriments et de métaux normalisées en fonction du débit, bien qu'il y ait de grandes variations d'une année à l'autre. Les rejets directs de nutriments et de métaux sont également en baisse dans de nombreuses régions, à quelques exceptions près. Pour 2022, une augmentation des rejets directs a été signalée dans certaines zones, mais elle n'a aucun effet sur les tendances générales, car les rejets directs notifiés sont inférieurs aux apports fluviaux dans presque tous les cas. Seuls les rejets directs provenant de zones non surveillées, y compris les zones en aval des points d'échantillonnage et les rejets directement dans la mer, sont inclus. Les rejets directs en amont des points d'échantillonnage sont inclus dans les apports fluviaux.

Le rapport donne également un aperçu des différents efforts déployés par les Parties contractantes et le Centre de données du RID pour améliorer la qualité des données du programme. Malgré ces efforts, les séries de données à long terme présentent encore quelques lacunes et incohérences, ce qui est regrettable. Par conséquent, le rapport donne également des recommandations sur la façon de traiter les séries de données incomplètes ou manquantes. Il est demandé aux Parties contractantes d'examiner les séries de données historiques du RID, et de les corriger si nécessaire, afin d'améliorer la qualité des données dans la base de données du 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).

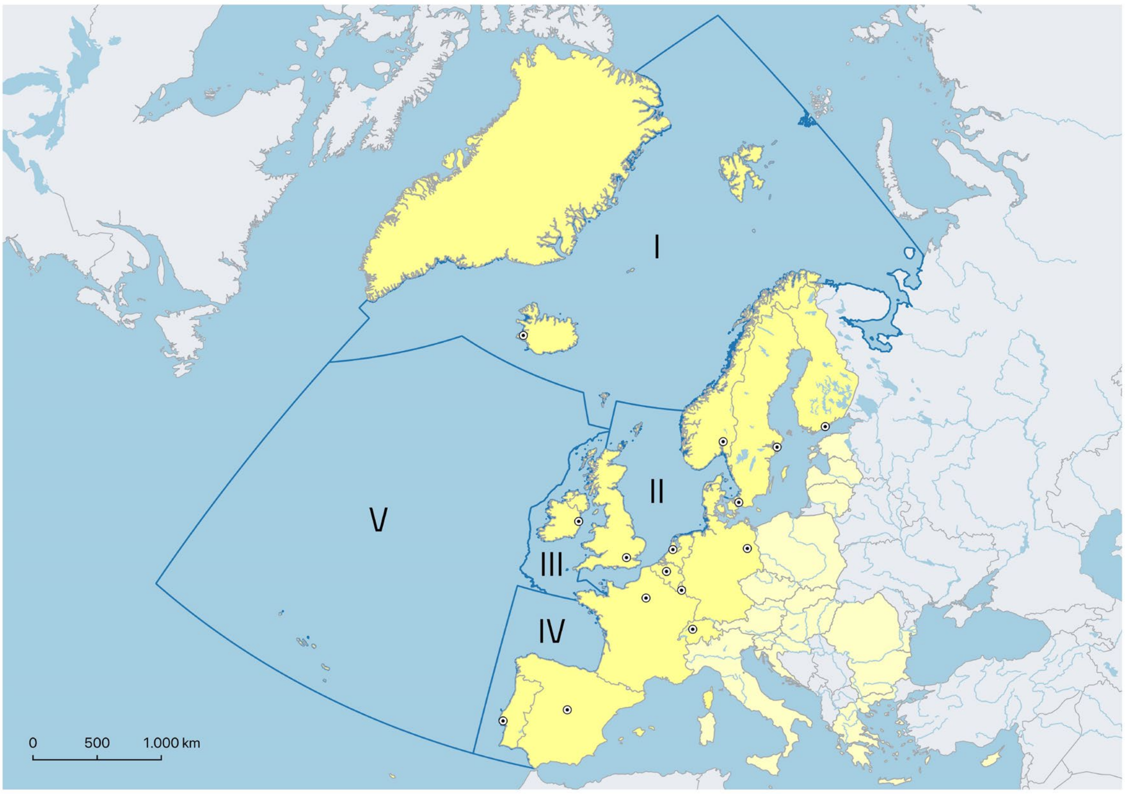

Figure 1. OSPAR Maritime Area and Regions. I: Arctic Waters, II: Greater North Sea, III: Celtic Seas, IV: Bay of Biscay and V: Wider Atlantic.

[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	
- Irish Sea	III	- Atlantic (ESP)	IV
- Atlantic	IV	Sweden	
Germany		- Kattegat (SWE)	II
- North Sea (GER)	II	- Skagerrak (SWE)	II
Iceland		UK	
- Atlantic	I	- North Sea (North)	II
Ireland		- North Sea (South)	II
- Irish Sea	III	- Channel	II
- Celtic Sea	III	- Irish Sea	III
- Atlantic	III	- Celtic Sea	III
Netherlands		- Atlantic	III
- North Sea (NL)	II		

Submission of RID data for 2022

Table 2 provides an overview of the status of 2022 RID data submitted by Contracting Parties by 5 March 2024. All Contracting Parties except Denmark had a deadline of 1 November 2023 for submitting data and text reports. Denmark had a deadline of 1 December 2023. Due to missing data for the river basin community Ems and Elbe, Germany has decided in consultation with the RID data manager not to publish the incomplete data set since it would lead to bias in the presentation of nutrient loads and introduce potential misinterpretation.

Table 2. Overview of submitted 2022 RID information by Contracting Parties

Contracting Party	RID 2022 written report submitted	RID 2022 Data submitted	RID 2022 Data validated	Comments
Belgium				
Denmark				
France				
Germany*				Data delivery is not complete.
Iceland				
Ireland				
Netherlands				
Norway				
Portugal				
Spain				
Sweden**				Data is being validated.
UK				

Green = data submitted; White = no data submitted; Light green = data submitted, validated, correction is needed.

* As agreed on INPUT-2024 meeting, the German data will be imported in the database when data delivery is complete.

** The Swedish data validation takes time as some values need further verification.

Table 3. Overview of information for 2022 on inputs to the OSPAR Maritime Area reported by Contracting Parties

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						
UK						

Green = data submitted; White = no data submitted; Grey = no data will be submitted by this Contracting Party from this source.

Overview tables 1-4 (AA-tables) for 2022 are given in Annex 2.

Preliminary results for reporting year 2022

The preliminary results for reporting year 2022, provided by the Contracting Parties for water discharge, nutrients, heavy metals, and other issues are given in Tables 4-7, respectively.

Table 4. Water discharges in reporting year 2022 as reported by the Contracting Parties

Hydrology	
Contracting Party	**Give a short summary of this year’s results, as compared (in %) to the long-term water discharge average 1991-2020 (If you use another period, please indicate which).**
Belgium	Compared with the LTA 2010-2021 (including the very dry years 2017-2019) discharges to the North Sea, a decrease in the mean flow by 25 % in 2022 is observed. This decrease was remarkably high in the Yser (IJzer) river (OSPAR area 243) and Coastal area (OSPAR area 238) (-50% and -55% respectively).
Denmark	Precipitation in 2022 for the Danish OSPAR catchment area was with 754 mm almost the same as the normal 753 mm (average 1961-1990). Run off from Danish OSPAR catchment was in average 337 mm and 5 % lower than the average 356 mm for 1990-2010. Further, the average air temperature in 2022 in the Danish catchment area to OSPAR with 9.3^{o}C was 1.7^{o}C above the normal for 1961-1990 (7.6^{o}C).
Iceland	Overall water flow in the monitored rivers in Iceland 2022 was around 6% higher than the long-term average.
Ireland	The trend analysis has yet to be done and will be reported at a later stage
Netherlands	The long-term discharge was circa 15% lower than the last 5 years and compared with 1991-2022.
Norway	For Norway as a whole, the weather in 2022 was both warmer and wetter than the 1991-2020 normal. The average temperature was 0.7 °C warmer and the average precipitation 4% higher than the normal. All 20 meteorological stations located nearby the monitoring rivers showed a statistically significant increase in air temperatures from 1980 to 2022. Six of 20 stations showed a significantly increasing trend in annual precipitation over the same time span. Regarding water temperatures, 8 of 13 rivers with long-term data (17-32 years) showed a significant increasing trend. Only one river, Drammenselva, showed a significant increasing trend in water discharge from 1990 to 2022.
Sweden	In general, quite low waterflows (the total to the North-East Atlantic is the 2nd lowest in the time series from 1991)
UK	1990 to 2019 were used for the comparison interval to avoid low-confidence 2020 data due to covid-19 sampling restrictions. Flow values are reported for 24 individual UK reporting areas in 2022, however, only 11 of these were unimpacted by reduced sampling at some sites, particularly in the later part of the year. Of the under-sampled sites, 10 reported flows more than 50% lower than their LTA (and 9 of these lower than any previously reported flow) and the rest were more than 23 % lower. These low flows are expected to reflect the reduced monitoring (increase in unreported unmonitored area compared to previous years), and riverine inputs from these areas are therefore also excluded from reporting at this time. Of the 11 reporting areas monitored with high confidence, 8 were within 25% of their LTA (5 below and three above). Area NI2 was 30% lower while areas E25 and E27 were 30 and 40 % higher, respectively. Overall flow for the UK (and regional seas) cannot be accurately reported at this time due to monitoring limitations in a significant number of reporting areas.

Table 5. Nutrient and sediment loads in reporting year 2022 as reported by the Contracting Parties

Nutrients, sediment etc.	
Contracting Party	**Give a short summary (1-2 sentences) of this year's result, as compared (in %) to the last 10-year average.**
Belgium	Compared with the LTA 2010-2021 discharges to the North Sea, an decrease in load by 31% for Tot-N and 25%¨for Tot-P in 2022 is calculated. Values of Tot-N meet ca -20% for the Scheldt River and river basin. Values of Tot-P show a decrease of 14% in the Scheldt River and 21% in the Scheldt River basin, but a substantial decrease of 49 % in the Canal Ghent-Terneuzen. Nutrient loads to the North Sea decreased annually by 2,31%¨for Tot-N and 2,14%¨for Tot-P since 2000. Overall discharges of SPM to the North Sea decreased of 29% in 2022 compared with the 2010-2021 period. The highest values of recorded for discharges from the coastal area (-43%). Comparison between the increase in pollution load discharges in 2021 (wet year) and the decrease in 2022 (dry year) is according to the strong long-term (2000-2022) correlation observed between water flow and nutrient and SPM load discharges to the marine environment.
Denmark	High flow and nutrients load were observed in February and March 2022 due to record high precipitation in February. In the remaining months flow was lower than normal and flow weighted nitrogen and phosphorus concentration around the lowest ever. The effect on wastewater purification is significant with very high reduction in discharge from all kinds of point sources since mid-1980'ties. The measures against agriculture have reduced nitrogen losses from agriculture markedly at root zone level (nearly 50%), but the losses to inland surface waters and further to coastal areas are delayed and it can take up to 30-100 years in parts of the catchment to the North Sea before the full effect of the measures will be observed. The total nitrogen inputs from Denmark to the North Sea, Skagerrak and Kattegat have significantly been reduced with 44 %, 56% and 51%, respectively during 1990 to 2022. Since late 1980'ties nitrogen discharges from municipal wastewater treatment plans have been reduced with approx. 82 %, from industrial discharges with 94 %, freshwater fish farms with at least 78 %, and there are further marked reductions in discharges from storm water overflows and scattered dwellings. The total phosphorus inputs from Denmark to the North Sea, Skagerrak and Kattegat have significantly been reduced with 50 %, 57% and 60%, respectively during 1990 to 2022. Phosphorus discharges from municipal wastewater treatment are since the late 1980'ties reduced with 90 %, industrial discharges with 99 % and freshwater fish farms with at least 85 % there are further marked reductions in discharges from storm water overflows and scattered dwellings. Diffuse sources are the main contributor of nitrogen with agricultural losses as the main source. Diffuse nitrogen sources constitute 94 % of total inputs to the North Sea, 89% to Skagerrak and 93 % to Kattegat. For phosphorus diffuse losses together with discharges from MWWT, storm water overflows and scattered swellings are the main sources for phosphorus losses. Diffuse phosphorus sources constitute 80 % of total phosphorus inputs to the North Sea, 84 % to Skagerrak and 77 % to Kattegat, and with point sources discharging to fresh water as the second biggest sources to North Sea (18%,) and Kattegat (16 %) while direct point sources input to Skagerrak are the second biggest phosphorus source (9 %).
Iceland	No major changes in riverine nutrient inputs this year from monitored rivers in Iceland.
Ireland	The trend analysis has yet to be done and will be reported at a later stage. In regards to direct discharges, 2022 values were compared to the last 7 years (since 2015). Increases in Nitrogen and Phosphorus of 41% and 12% from the last 7 years were observed in the Atlantic Sea. There was no major change in input of Nitrogen to the Irish and Celtic Seas while there was a large decrease of the input of phosphorus from direct discharges in to the Celtic Sea (41%). Regarding SPM, large decreases of SPM into the Celtic and Atlantic Seas (>50%) while there was an increase on 20% into the Irish Sea. These were compared to an average of the last 7 years (2015-2021).
Netherlands	The trends of riverine inputs from Rhine/Meuse to North Sea are derived on calculations for the years 1990 – 2022 with the combination of the reported yearly loads and flows for OSPAR RID from measurements at Haringvlietsluizen (Meuse and Rhine), Maassluis (Rhine), and Den Oever (Rhine) and Kornwerderzand (Rhine) and Vrouwezand (Rhine). In 1990 the absolute loads for total Nitrogen (N-tot) resp. total Phosphorus (P-tot) from rivers Rhine and Meuse to the North Sea were approximately 330 kiloton resp. 21 kiloton. In 2022 this loads of N-tot resp. P-tot were reduced to approximately 147 kiloton resp. 5 kiloton. The inputs of N-tot compared with period of last 10 years is circa 20% lower.

Norway	In 2022 SPM concentrations in Altaelva during the snow melt flood in June were 50 times higher than the normal monthly mean in this river. High levels of turbidity and SPM were also observed in the urban river Alna during spring snow melt and during high flows in November. The highest concentrations of total phosphorus (Tot-P) and phosphate (PO4) were found in Alna and Orreelva, followed by Glomma and Numedalslågen. The total nitrogen (Tot-N) concentration in Alna and Orreelva is typically higher than in the other rivers, mainly due to urban pollution and agricultural runoff, respectively. Compared to the preceding five-year mean, the 2022 mean was slightly higher in Alna while lower in Orreelva. Silica (SiO2) concentrations in the rivers showed a slight increase in 2022 compared to the mean of the last five-years. None of the rivers had significant increasing trends in SPM concentrations during 1990-2022 (Table 2), whereas three rivers (Otra, Orkla and Vefsna) had decreasing trends. None of the rivers had significant increasing trends in Tot-P concentrations since 1990, whereas three rivers (Otra, Vefsna, Altaelva) had decreasing trends, Direct discharges of nutrients from fish farming have increased steadily during the last two decades. As a result, the total Norwegian inputs to the sea has also increased.
Sweden	In general, comparatively low nutrient inputs in 2022, mainly due to the low waterflow.
UK	Values are compared to the average for 2010-2019, to avoid low confidence data related to monitoring inconsistencies in 2020 and 2021. Of 44 reported riverine nutrient and sediment inputs, only 4 are greater than the average of the last 10 years (LTYA). 14 are within 25 % of the LTYA, including all but two nitrate loads. Highest decreases (by more than 50%) were for NH4-N in E15 and E19, PO4-P in E19, and 5/11 SPM values. Only SPM in E27 increased by more than 50%. Significant increases in industrial inputs for Northern Ireland are due to a change in estimated flow value (see methods), while those for Welsh regions are under investigation. Of 30 reported sewage nutrient and sediment inputs, only 6 are greater than corresponding LTYA, and none by more than 20%. Significant decreases of >50% are mostly for NH4 and SPM inputs.

Table 6. Loads of heavy metals in reporting year 2022 as reported by the Contracting Parties

Heavy metals	
Contracting Party	**Give a short summary (1-2 sentences) of this year's result, as compared (in %) to the last 10-year average.**
Denmark	Riverine and direct inputs on heavy metals are not yet quantified in Denmark. It is expected that within one year it would be possible by combining monitoring result with a new model that can quantify inputs from unmonitored areas.
Iceland	No major changes in most metal inputs this year. However, the average mercury load over the last 5 years is higher than in the years before. The reason for that is unknown.
Ireland	The trend analysis has yet to be done and will be reported at a later stage. Regarding direct discharges, 2022 values were again compared to the last 7 years (since 2015). Metals (Cadmium, Mercury, Copper, Lead and Zinc) inputs from direct discharges had decreased in all sea areas except for Zinc into the Celtic Sea which increased to 12% in 2022 compared to the average from 2015 to 2021.
Netherlands	There are changes in most metal inputs from Rhine and Meuse this year compared: they are much lower compared with last year 2021. In 2011 the absolute loads for Hg resp. Pb resp Zn from rivers Rhine and Meuse to the North Sea were approximately 4,3 ton resp. 0,9 ton resp. 977 ton. In 2022 this loads of Hg resp. Pb resp Zn were reduced to approximately 2,9 ton resp. 0,5 ton resp. 503 ton.
Norway	In 2022, Orreelva had elevated concentrations of lead (Pb), cadmium (Cd), copper (Cu), zinc (Zn), chromium (Cr), and mercury (Hg) compared to the previous five-year period. High concentrations also last year (2021) might indicate that metal contamination in Orreelva has started to increase. In contrast, Alna has shown signs of reduced metal concentrations over the past few years, and in 2022 concentrations of all analysed metals were lower than the preceding five-year mean. In Pasvikelva concentrations of arsenic (As), Pb, Cd, Cu, and nickel (Ni) continued to decrease in 2022, and for most elements this is probably due to the shutdown of the nickel smelter on the Russian side of the border in December 2020. Since 2004, there have been either no trend or decreasing trends in concentrations of Pb, Cd, and Zn in rivers with available long-term data. Most rivers also had downward trends in Cu concentrations, except for Orreelva that showed a significant upward trend. Three rivers showed increasing trends in Ni concentrations: Orreleva, Vefsna and Altaelva. Direct discharges of copper from fish farming have increased steadily during the last two decades. As a result, the total Norwegian inputs to the sea has also increased.
Sweden	In general, comparatively low metal inputs in 2022, mainly due to the low waterflow.
UK	Values are compared to the average for 2010-2019, to avoid low confidence data related to monitoring inconsistencies in 2020 and 2021. Of 44 reported riverine metal inputs, only 4 are greater than their LTYA. These are for E27 inputs of Zn (+60%), Cd (+49%) and Cu (+61%) for E27, and Hg (+25%) in E25. 34% of inputs have decreased by more than 50% with these distributed across the 5 metals reported. Significant increases in industrial inputs for Northern Ireland are due to a change in estimated flow value (see methods), while those for Welsh regions are under investigation. Of 30 reported sewage metal inputs, only 6 are greater than corresponding LTYA, and where these are high percentages the most likely cause is very small values near analytical detection limits. 60% of reported values of decreased by more than 50% compared to the LTYA.

Table 7. Other comments regarding data delivery in year 2021 as reported by the Contracting Parties

Any other comments	
Contracting Party	*Example: Unusual concentrations, specific episodes; missing data, quality issues, new direct sources, problems with hydrological estimates, etc.*
Belgium	Long-term effects of droughts can be illustrated by the Scheldt River over the period 1990-2022. Compared with this, the LTA 1990-2010 of the annual minimum flow is 11,9% higher, but the LTA 2010-2022 (see Fig. 7) is 21,3% lower. In 2022, the annual minimum flow decreased by 41% compared with the 1990-2022 LTA. 2022 is considered a very dry year (precipitation (Belgium): 701 mm; normal: 837 mm).
Ireland	There was an analytical error with the analysis of TP in one laboratory. This impacted the results in 7 rivers, Deel, Maigue, Fergus, Corrib, Moy, Shannon old channel and Shannon tailrace. No TP data has been reported for these rivers in 2022 in Tables 6a, b and c. This also means that there is no total TP values reported for Celtic Sea, Atlantic Sea and All Ireland. No RID data for SPM have been reported for 2022 due to issues with calculations and will be reported at a later stage.
UK	Only 11/39 UK reporting areas had sufficient monitoring for reporting 2022 riverine inputs. Monitoring, analysis and reporting for the 6 Scottish regions (prefixed Sc) continues to be impacted by a 2020 cyber-attack. Monitoring and analysis for the 25 English regions (E1-E22; E28-E29) was temporarily reduced partway through 2022, resulting in non-representative monitoring of the annual cycle of inputs at many riverine stations, only E13, E15,E16 and E19 were sufficiently monitored through the year to be reported. Welsh (regions E23-E27) and Northern Irish (regions NI1&NI2) were monitored and reported normally. Monitoring and reporting for direct discharges in 2022 was in line with previous years, except for the absence of data for Scotland. However, many species are no longer monitored at many direct discharge sites – as has been the case for several years. Decisions to reduce monitoring have been attributed to observation of values consistently below detection limits, therefore unreported direct discharge inputs are treated as zeros. The UK intend to review the validity of this assumption. The extent of unreported riverine inputs means that regional and UK-total values cannot be reported at this time. We aim to investigate methods to robustly estimate UK-totals based on available data, with the goal of re-reporting more complete 2022 data before the next assessment.

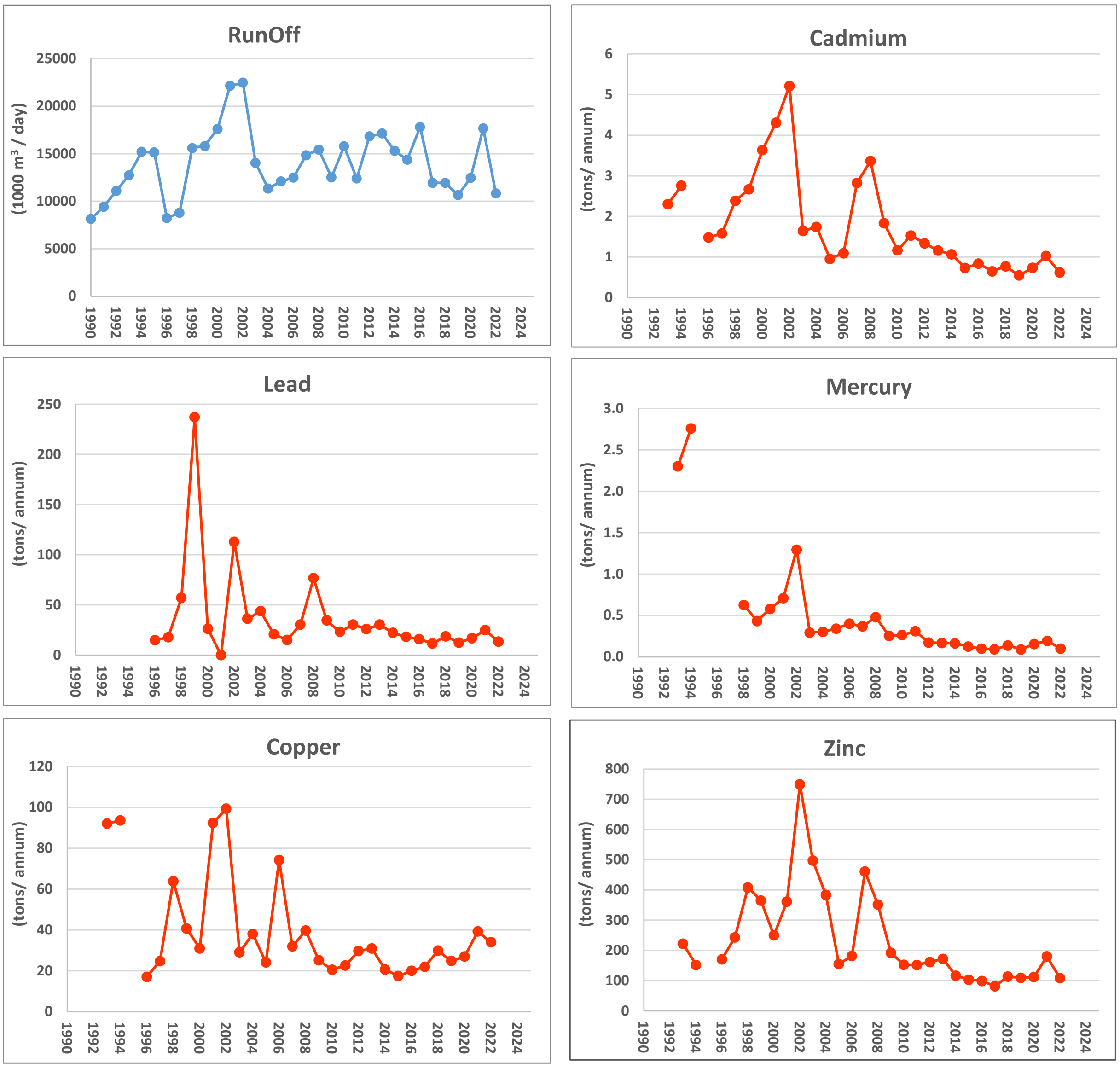

Figure 2a. Riverine inputs of five metals* (tons per annum) from **Belgium** to maritime areas, and total runoff (10^6 m^3 per day).

*Note that since 2004 Belgium has only reported the dissolved phase of metals.

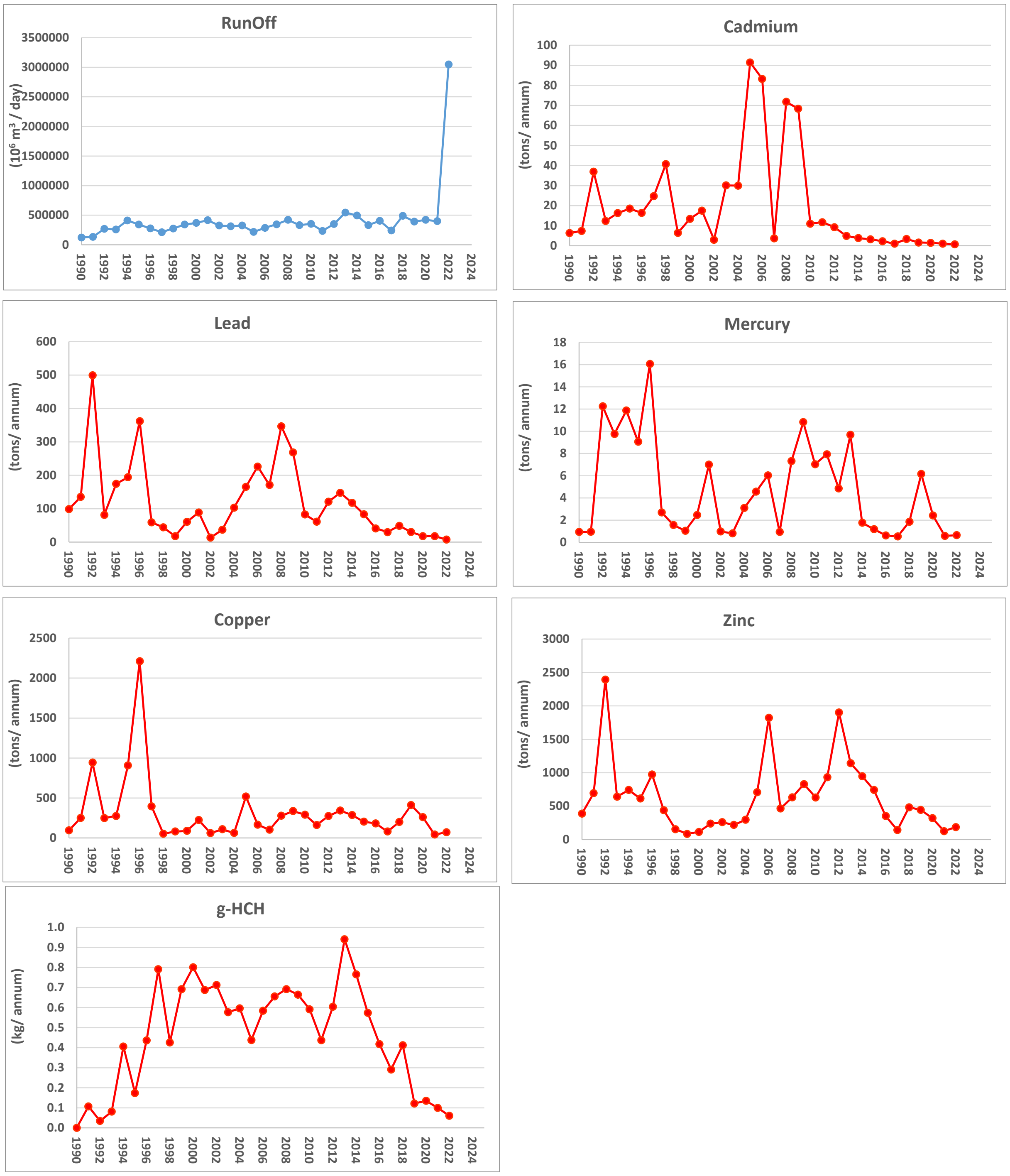

Figure 2b. Riverine inputs of five metals* (tons per annum), PCBs and g-HCH (kg per annum) from **France** to maritime areas, and total runoff (10^6 m^3 per day).

Note, that the value of total runoff for 2022 is being verified.

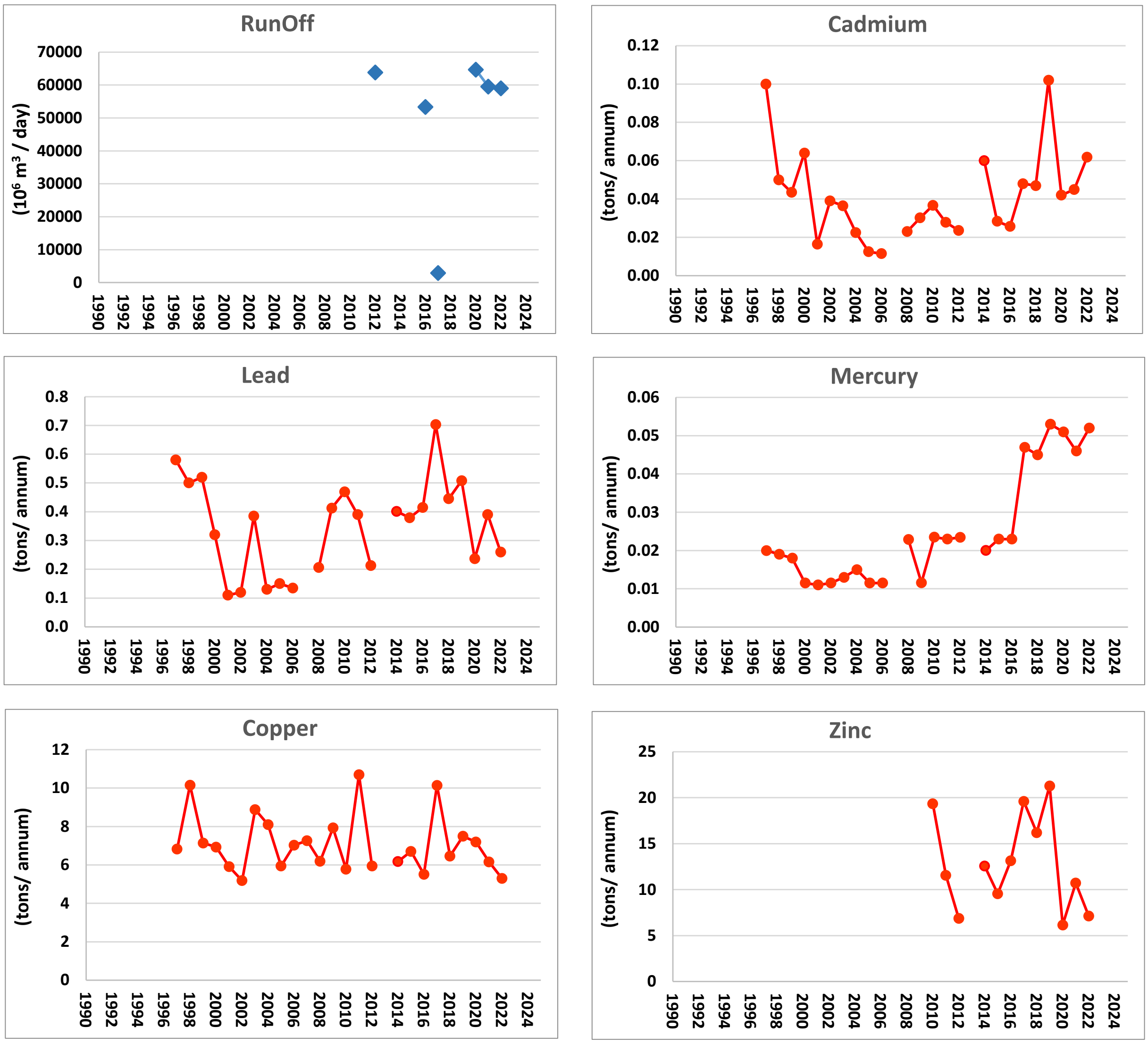

Figure 2c. Riverine inputs (tons per annum) of five metals* from **Iceland** to maritime areas, and total runoff (10^6 m^3 per day).

*Note that since 1990 Iceland has only reported the dissolved phase of metals.

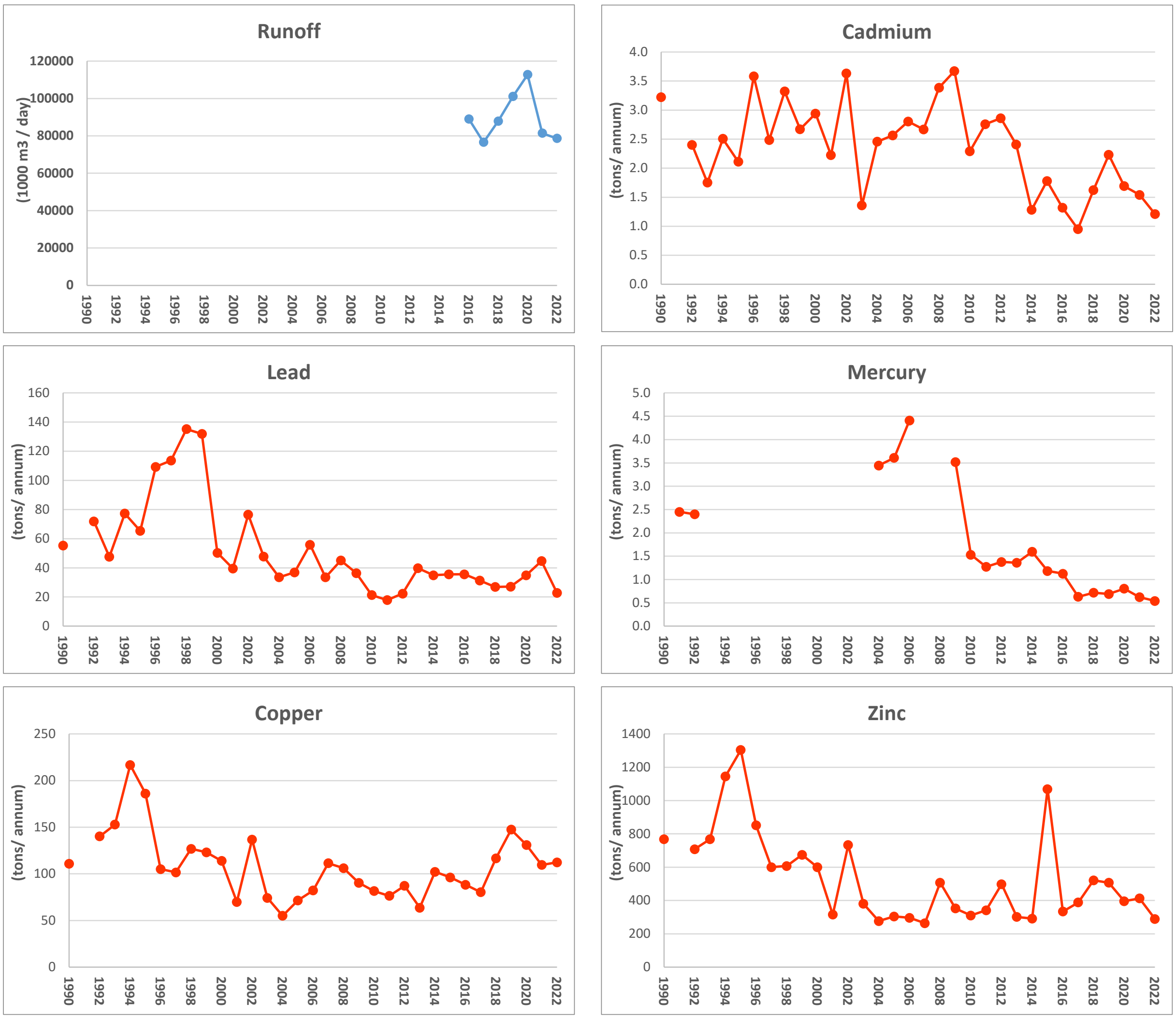

Figure 2d. Riverine inputs (tons per annum) of five metals from **Ireland** to maritime areas, and total runoff (10^6 m^3 per day).

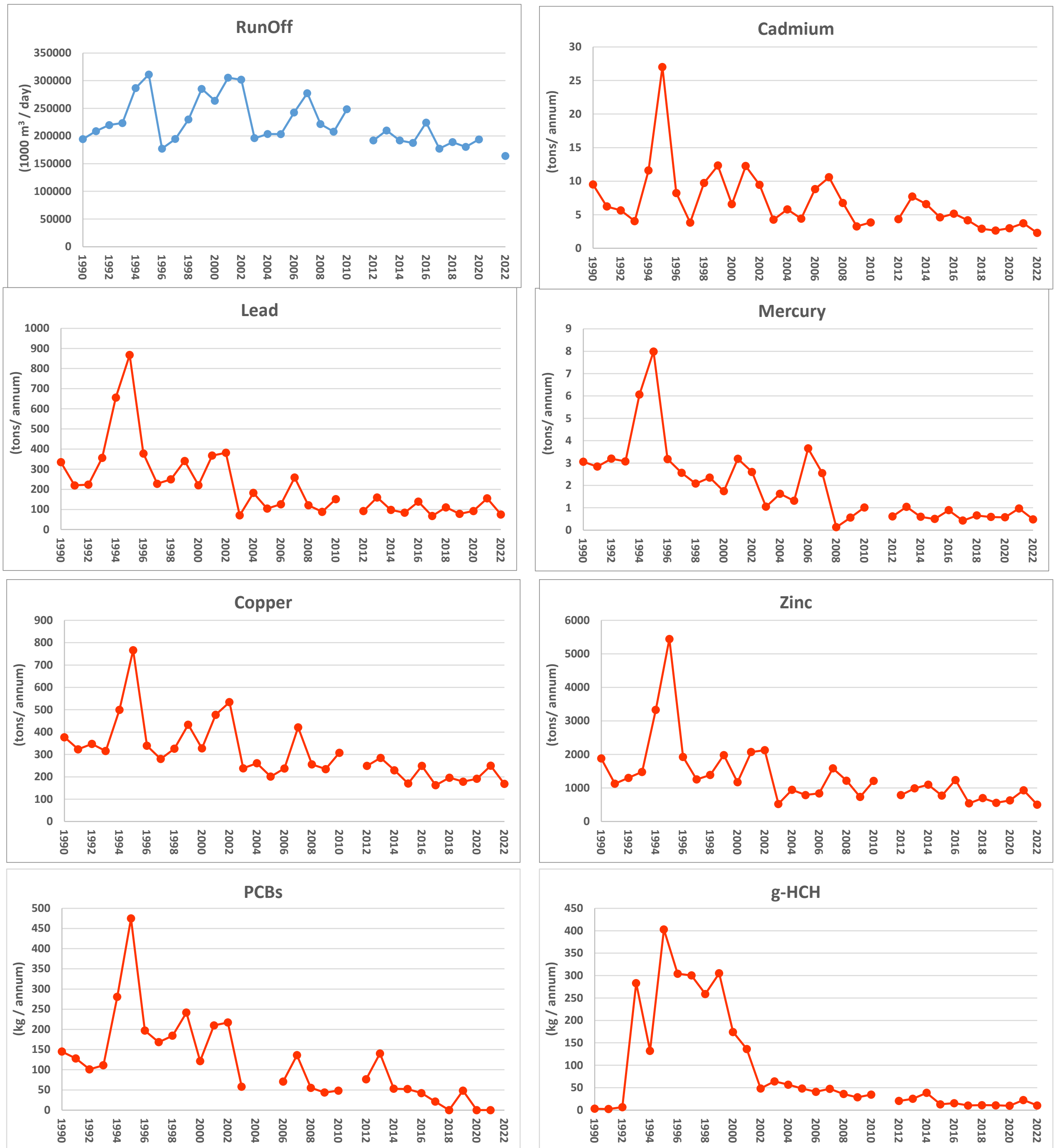

Figure 2e. Riverine inputs (tons per annum) of five metals, PCBs and g-HCH (kg per annum) from the **Netherlands** to maritime areas, and total runoff (10^6 m^3 per day).

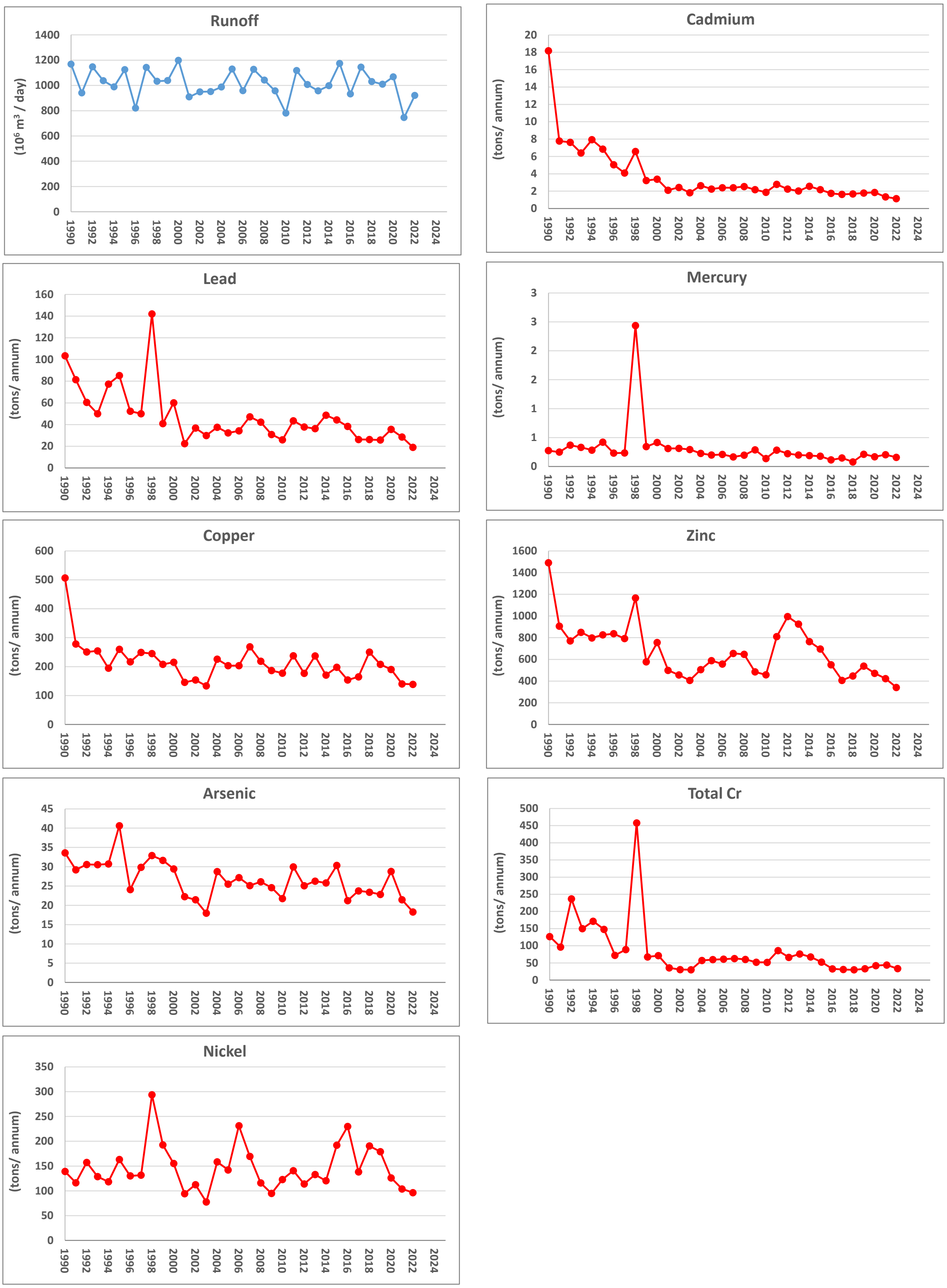

Figure 2f. Riverine inputs (tons per annum) of eight metals from **Norway** to maritime areas, and total runoff (10^6 m^3 per day).

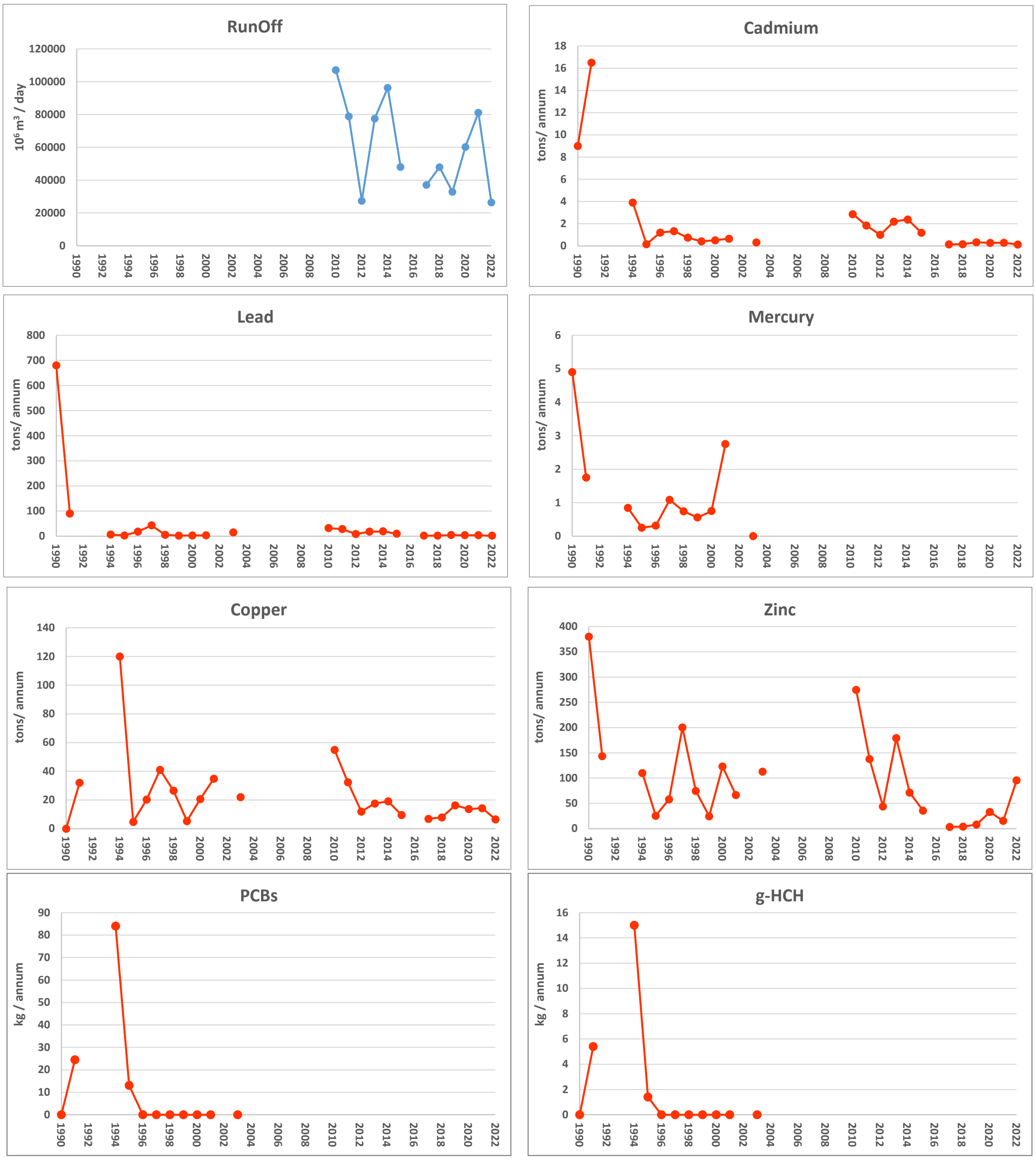

Figure 2g. Riverine inputs (tons per annum) of five metals, PCBs and g-HCH (kg per annum) from **Portugal** to maritime areas, and total runoff (10^6 m^3 per day).

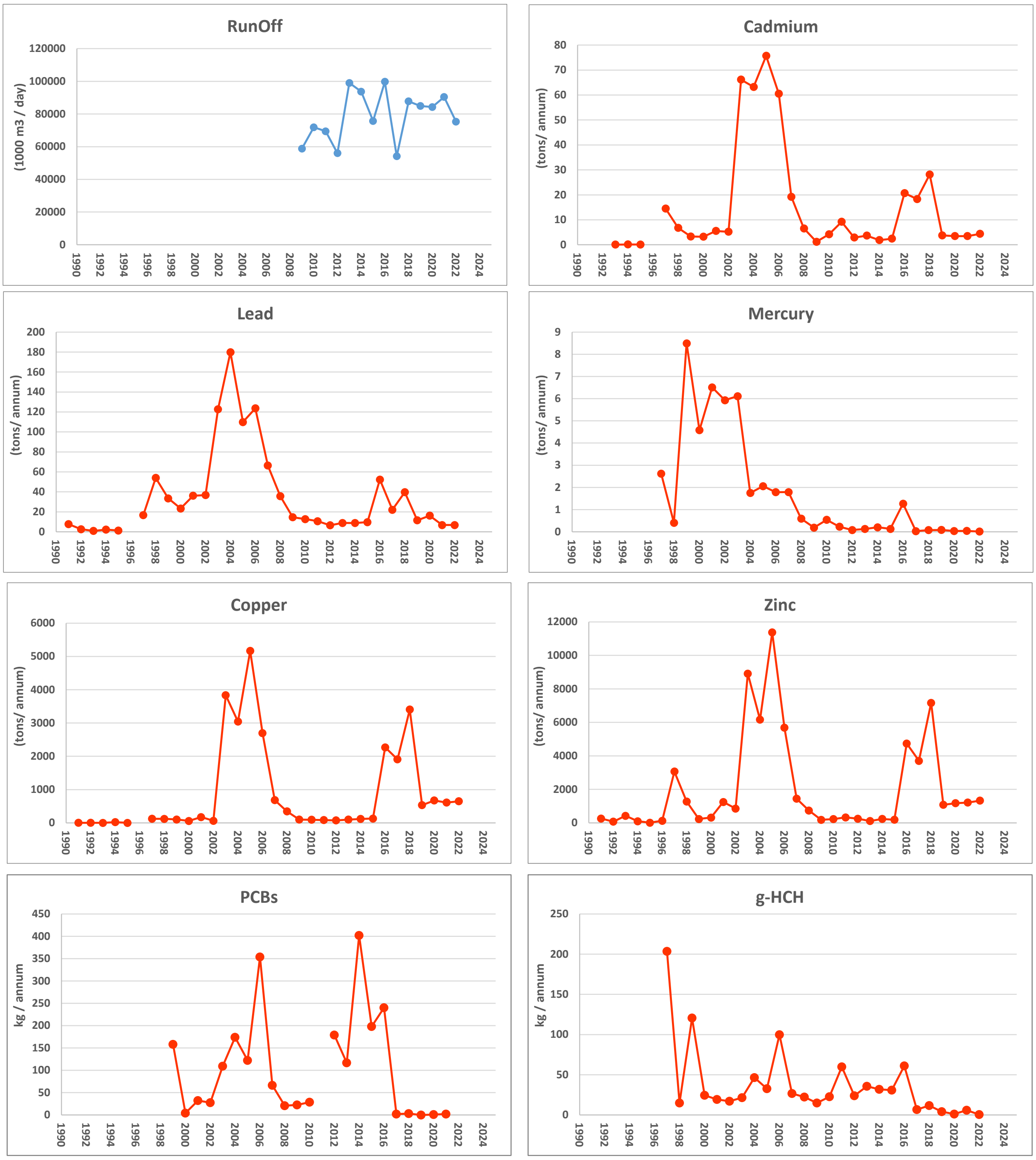

Figure 2h. Riverine inputs (tons per annum) of five metals, PCBs and g-HCH (kg per annum) from **Spain** to maritime areas, and total runoff (10^6 m^3 per day).

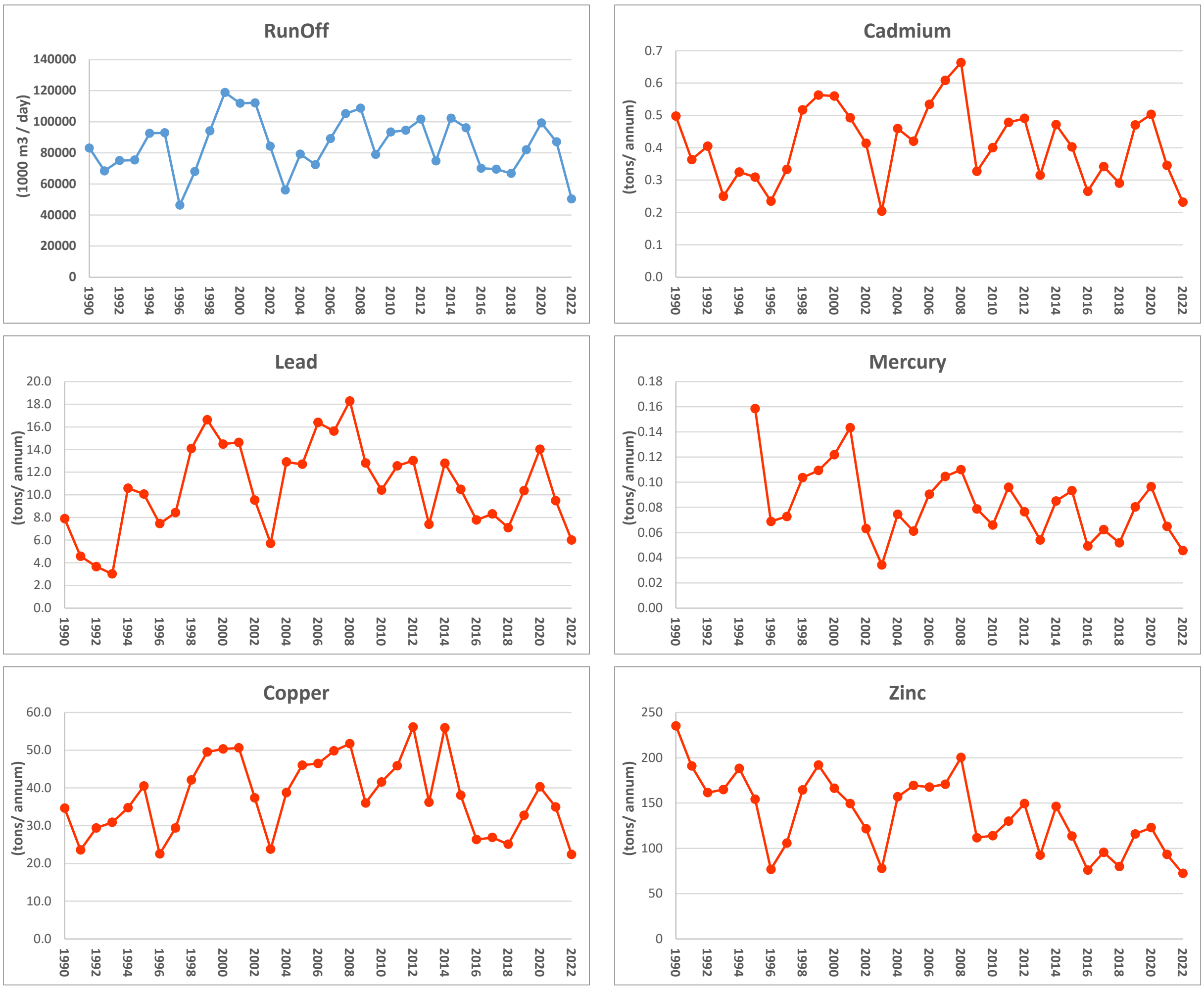

Figure 2i. Riverine inputs (tons per annum) of five metals* from **Sweden** to maritime areas, and total runoff (10^6 m^3 per day).

*Note that since 1990 Sweden has reported acid-soluble phase of metals.

Figure 2j. Riverine inputs (tons per annum) of five metals, PCBs and g-HCH (kg per annum) from the **UK** to maritime areas, and total runoff (10^6 m^3 per day).

Note, that only part of the UK rivers had sufficient monitoring for reporting 2020-2022 inputs.

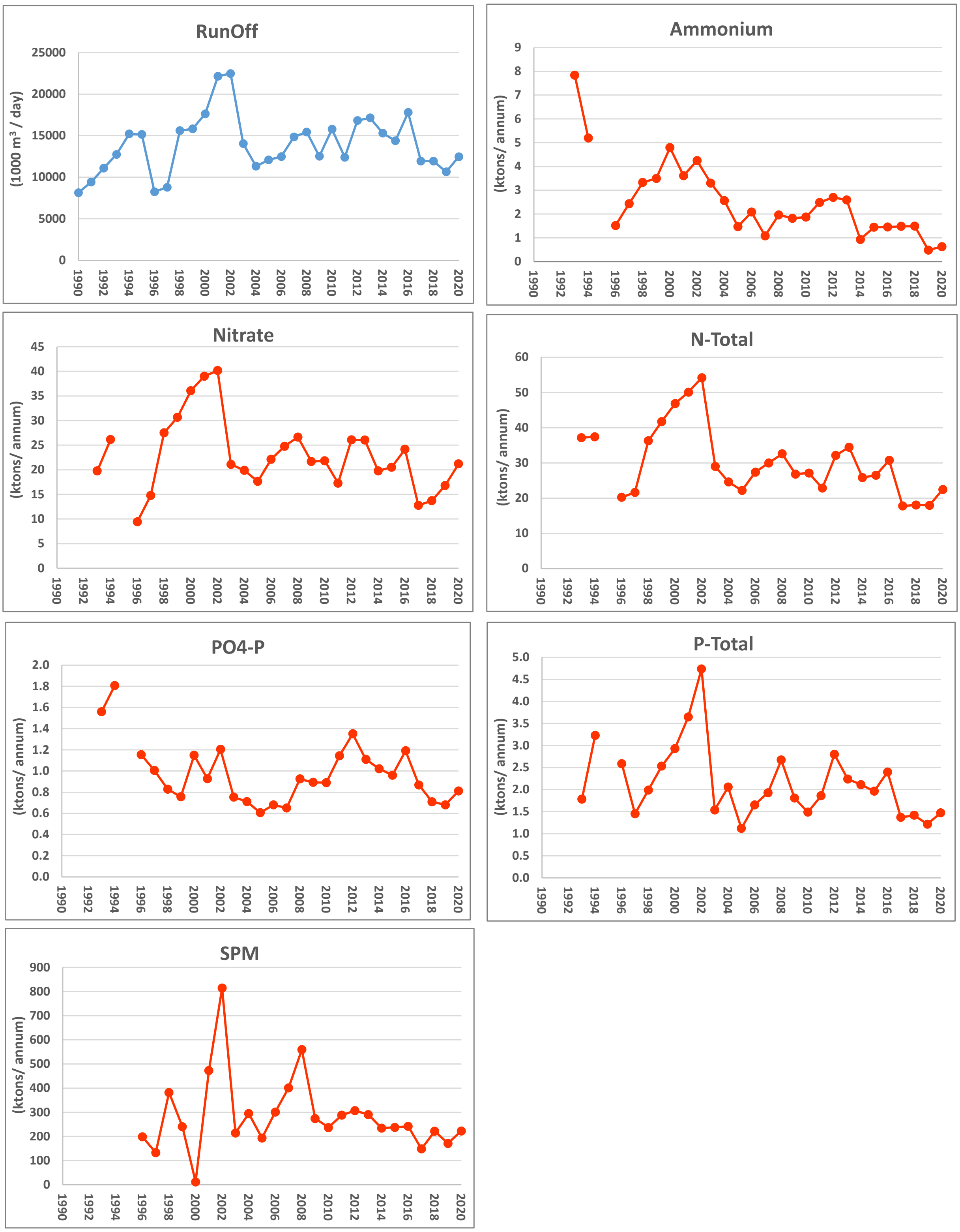

Figure 3a. Riverine inputs (ktons per annum) of nutrients and sediments from **Belgium** to maritime areas.

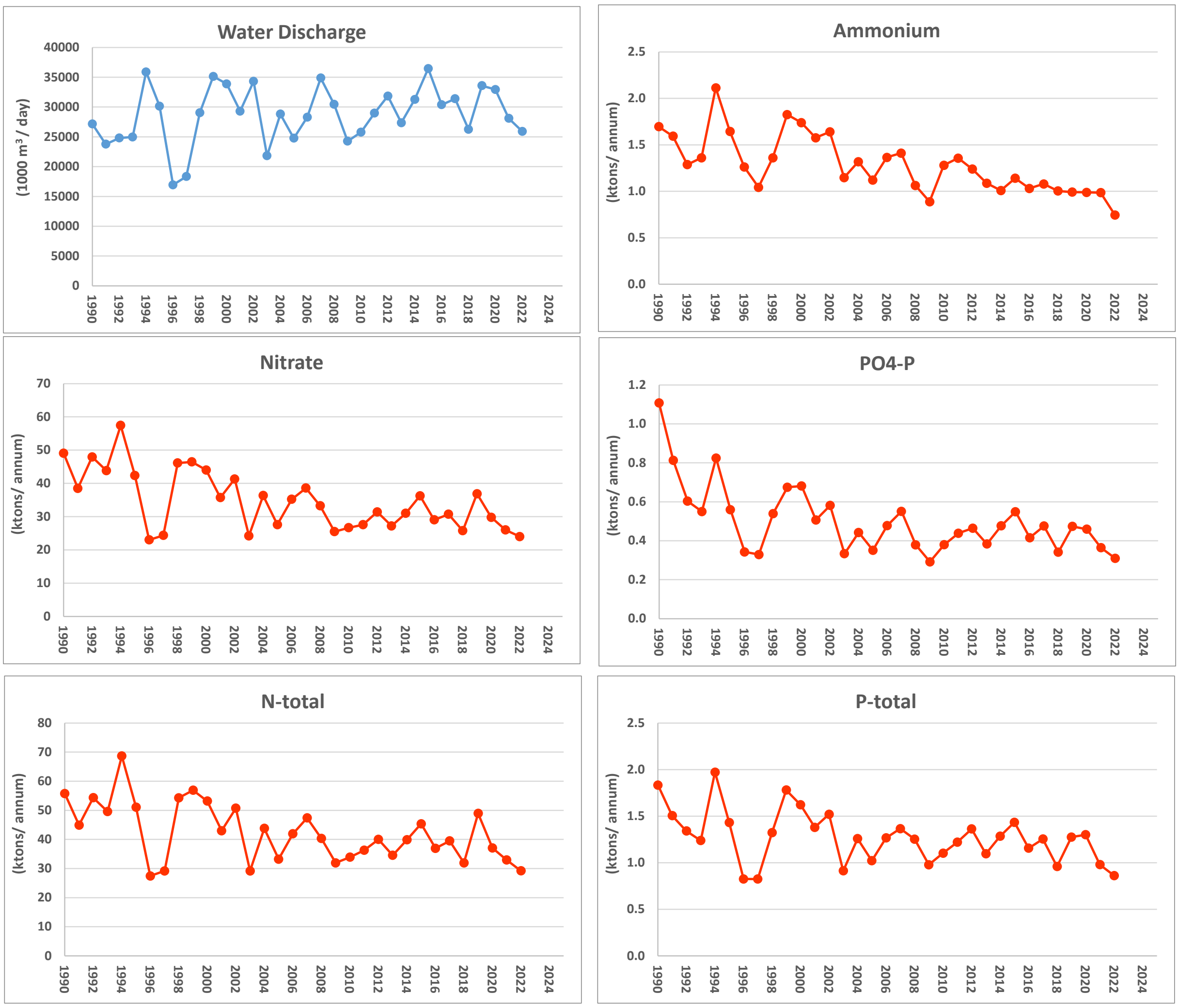

Figure 3b. Riverine inputs (ktons per annum) of nutrients and sediments from **Denmark** to maritime areas.

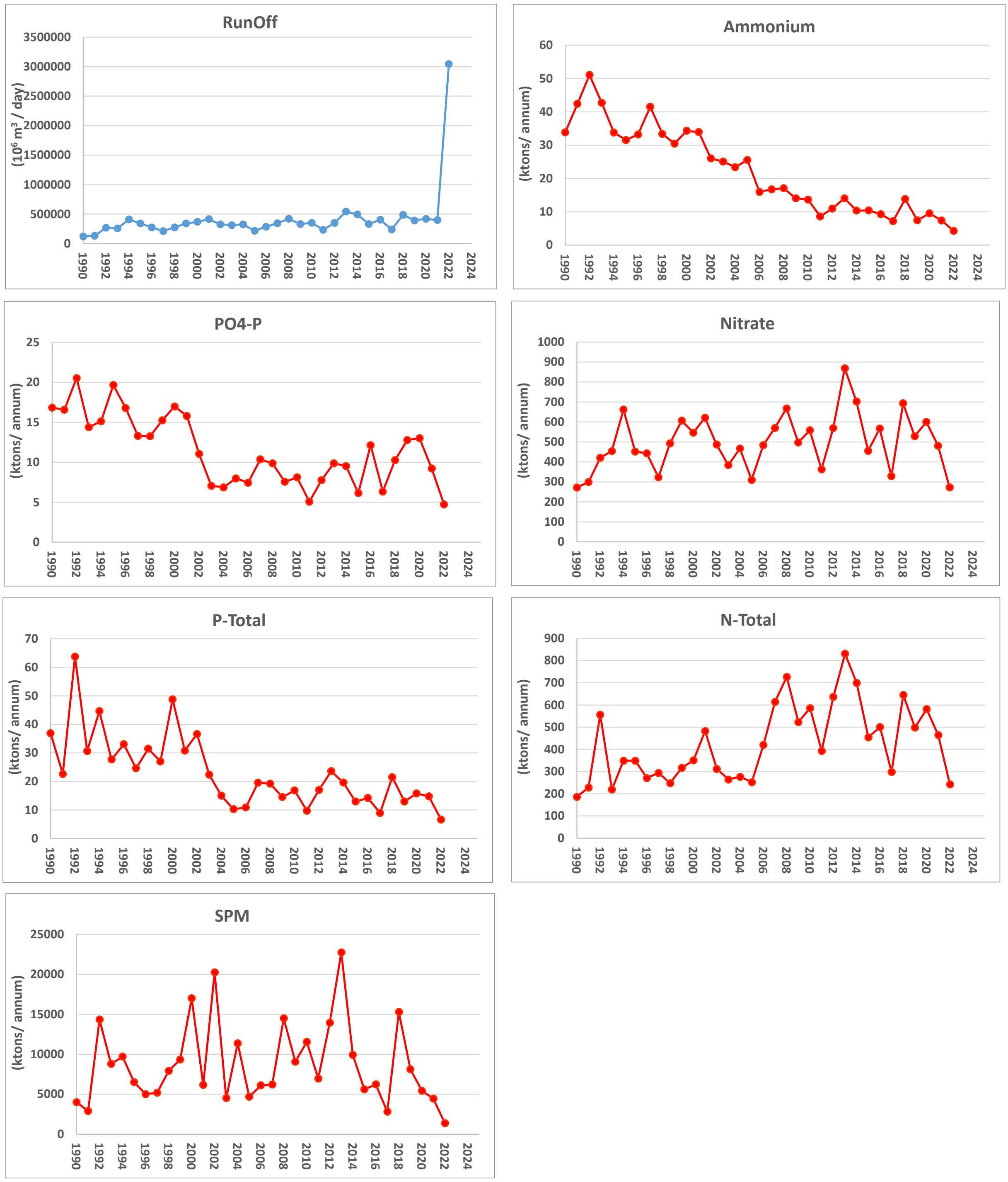

Figure 3c. Riverine inputs (ktons per annum) of nutrients and sediments from **France** to maritime areas.

Note, that the value of total runoff for 2022 is being verified.

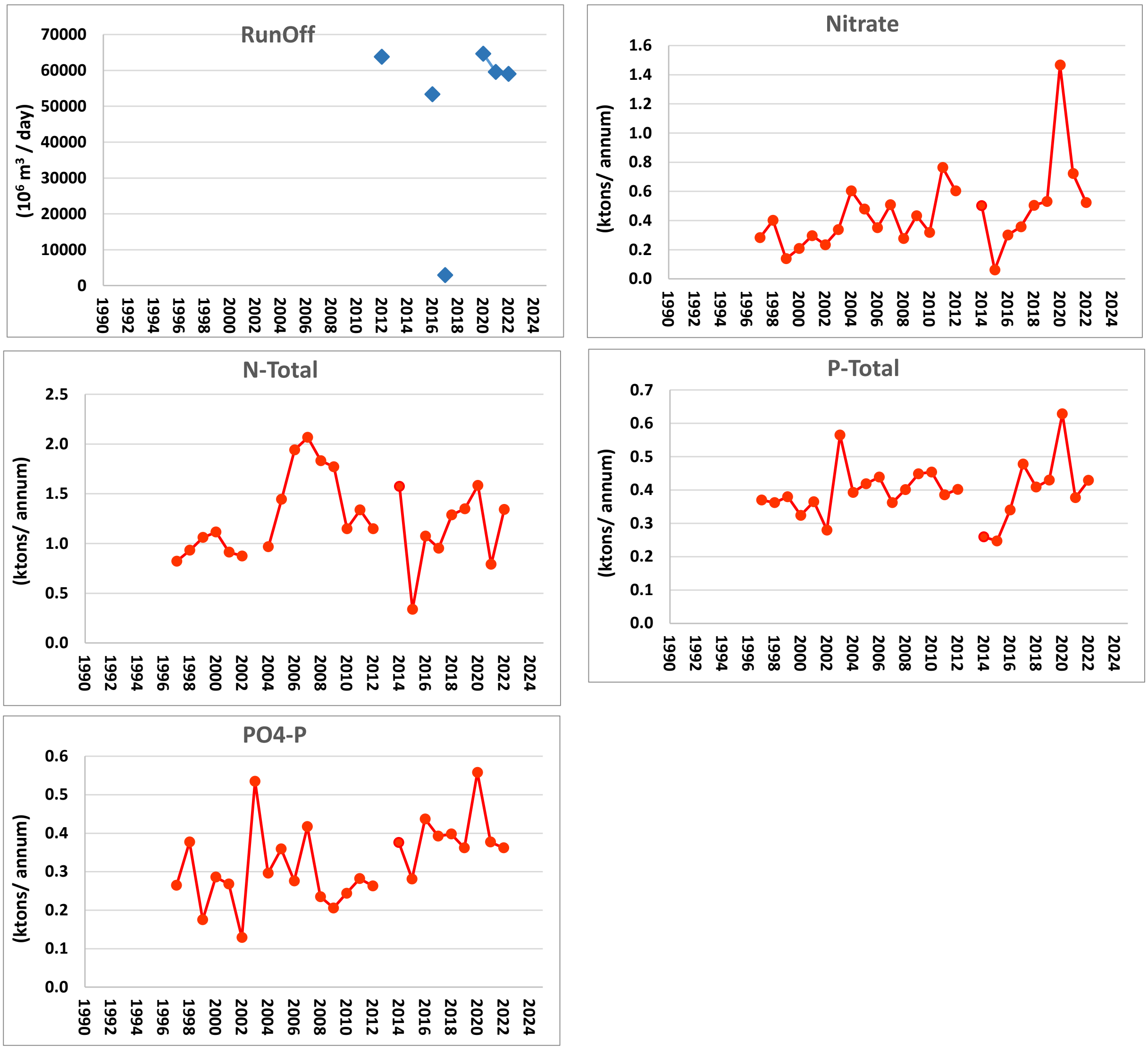

Figure 3d. Riverine inputs (ktons per annum) of nutrients from **Iceland** to maritime areas.

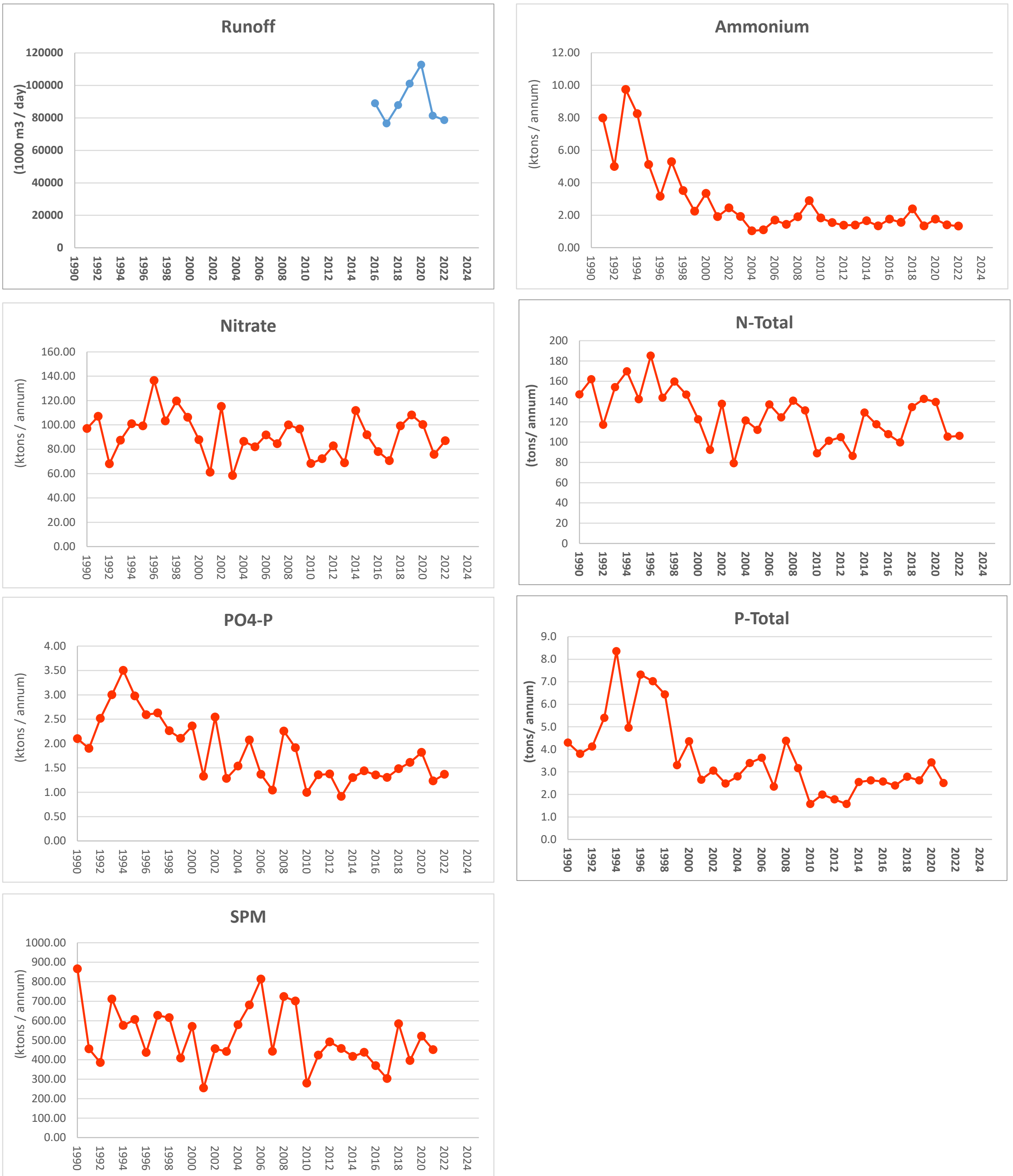

Figure 3e. Riverine inputs (ktons per annum) of nutrients and sediments from **Ireland** to maritime areas.

Figure 3f. Riverine inputs (ktons per annum) of nutrients, sediments, mineral oil, EOX and PAK6 (tons per annum) from the **Netherlands** to maritime areas.

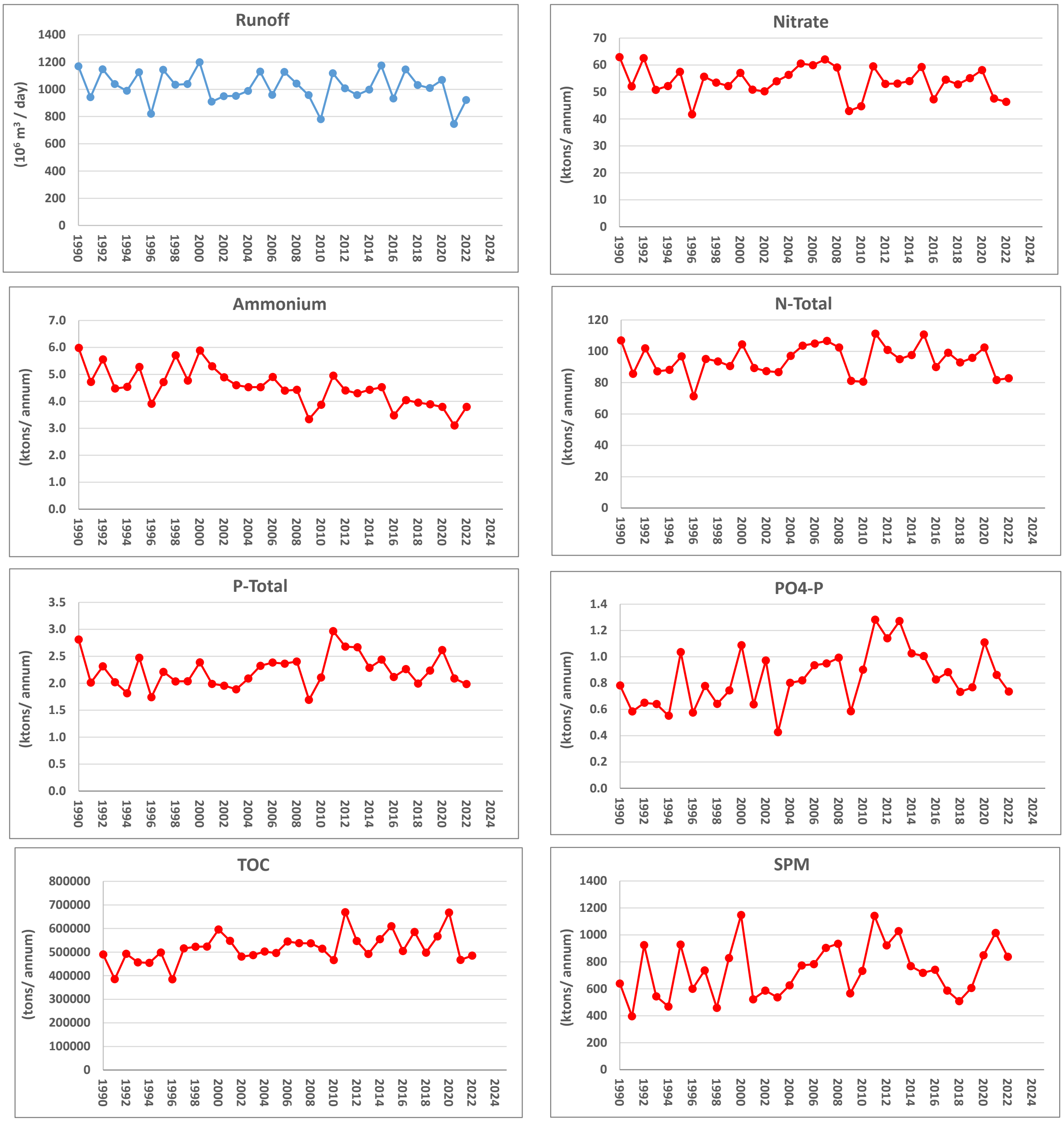

Figure 3g. Riverine inputs of nutrients, sediments (ktons per annum) and TOC (tons per annum) from **Norway** to maritime areas.

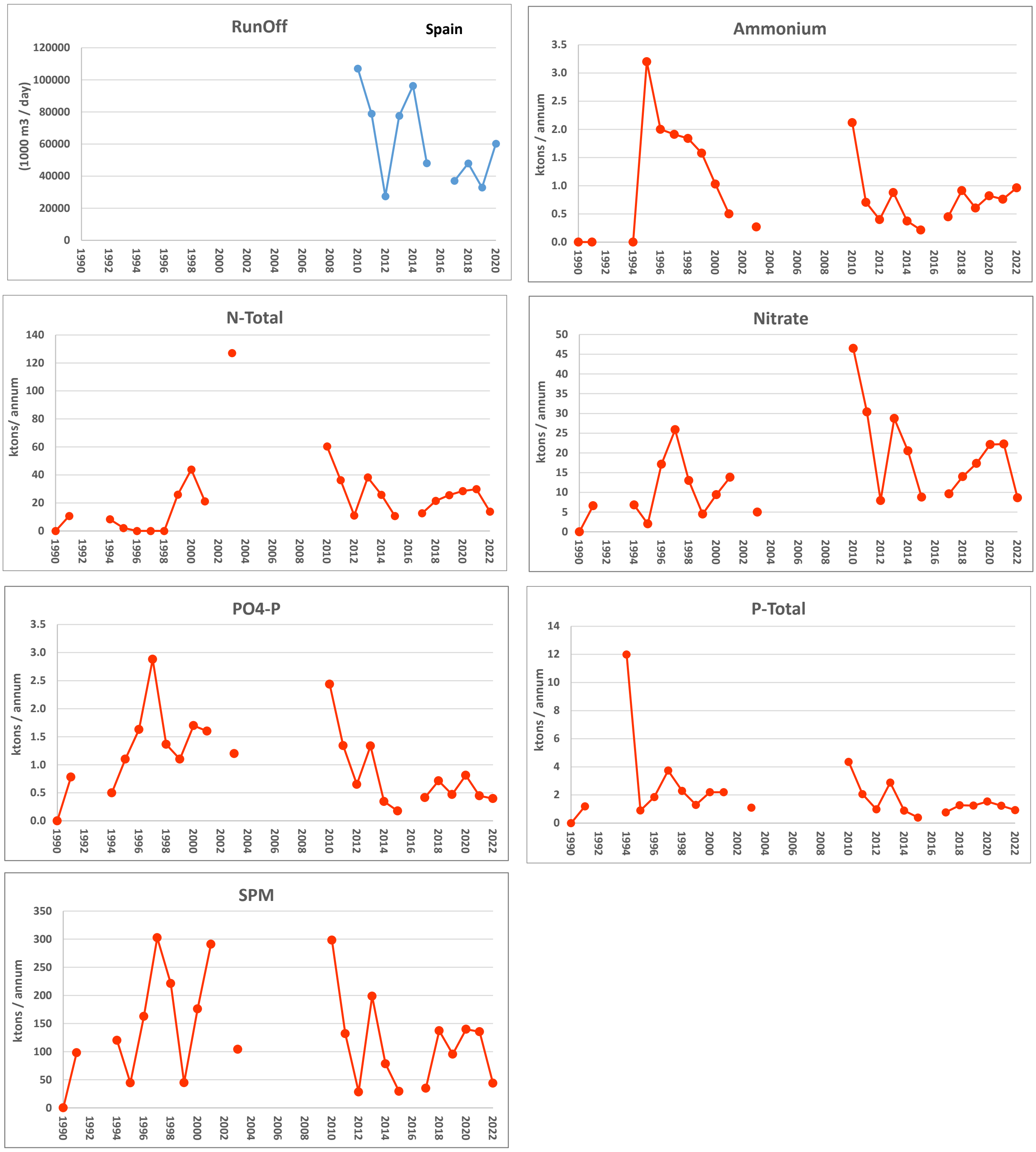

Figure 3h. Riverine inputs (ktons per annum) of nutrients and sediments from **Portugal** to maritime areas.

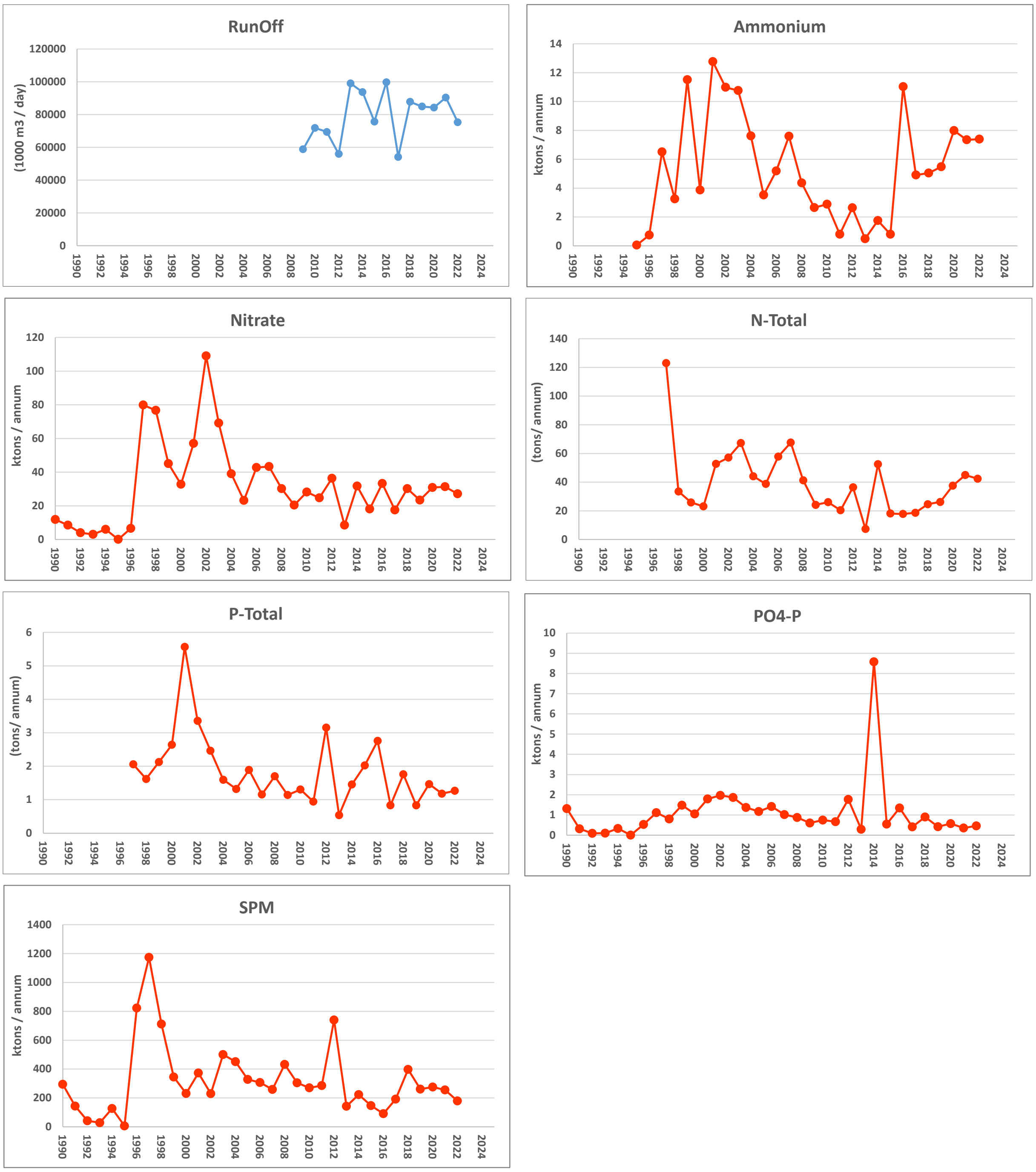

Figure 3i. Riverine inputs (ktons per annum) of nutrients and sediments from **Spain** to maritime areas.

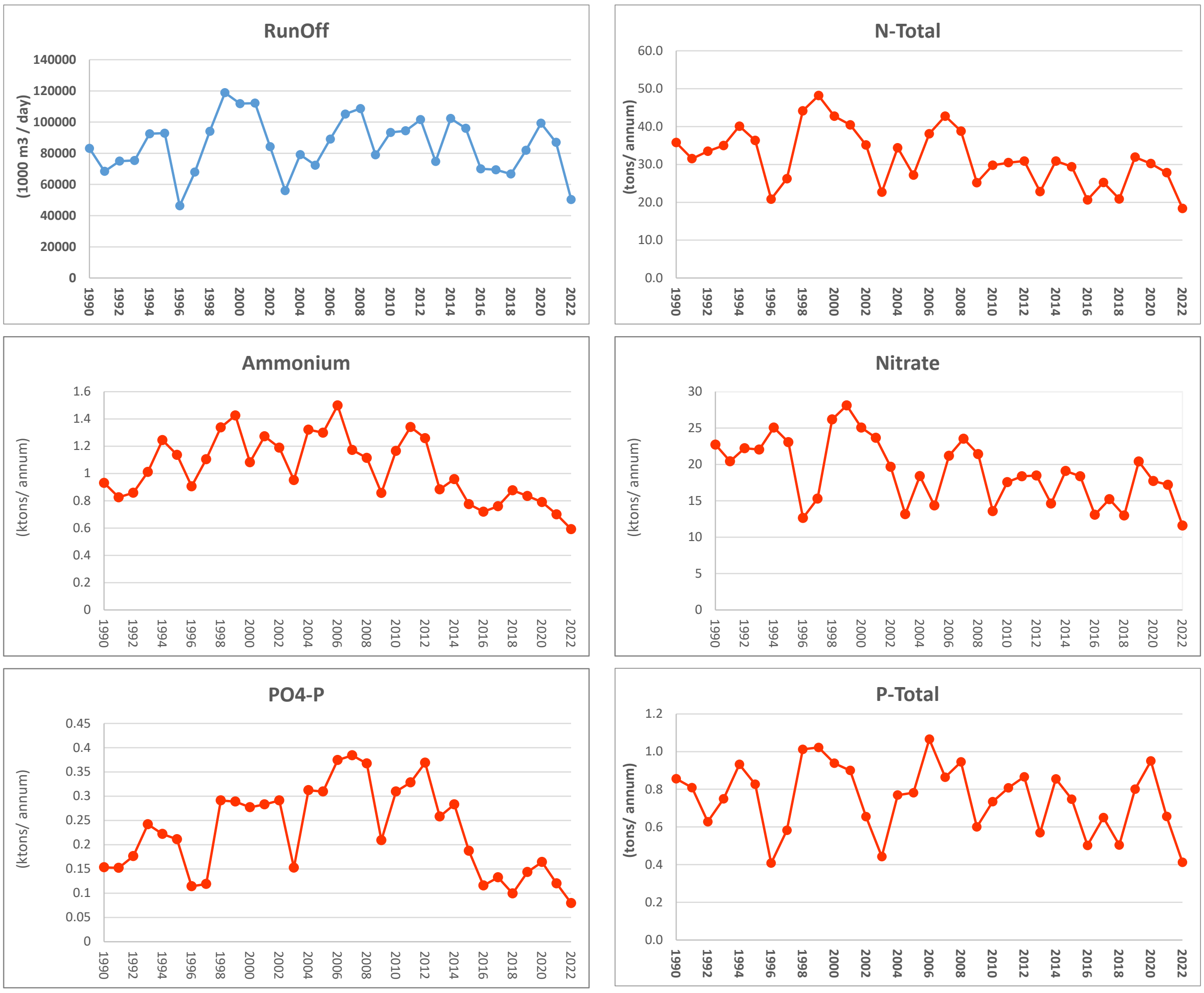

Figure 3j. Riverine inputs (ktons per annum) of nutrients and sediments from **Sweden** to maritime areas.

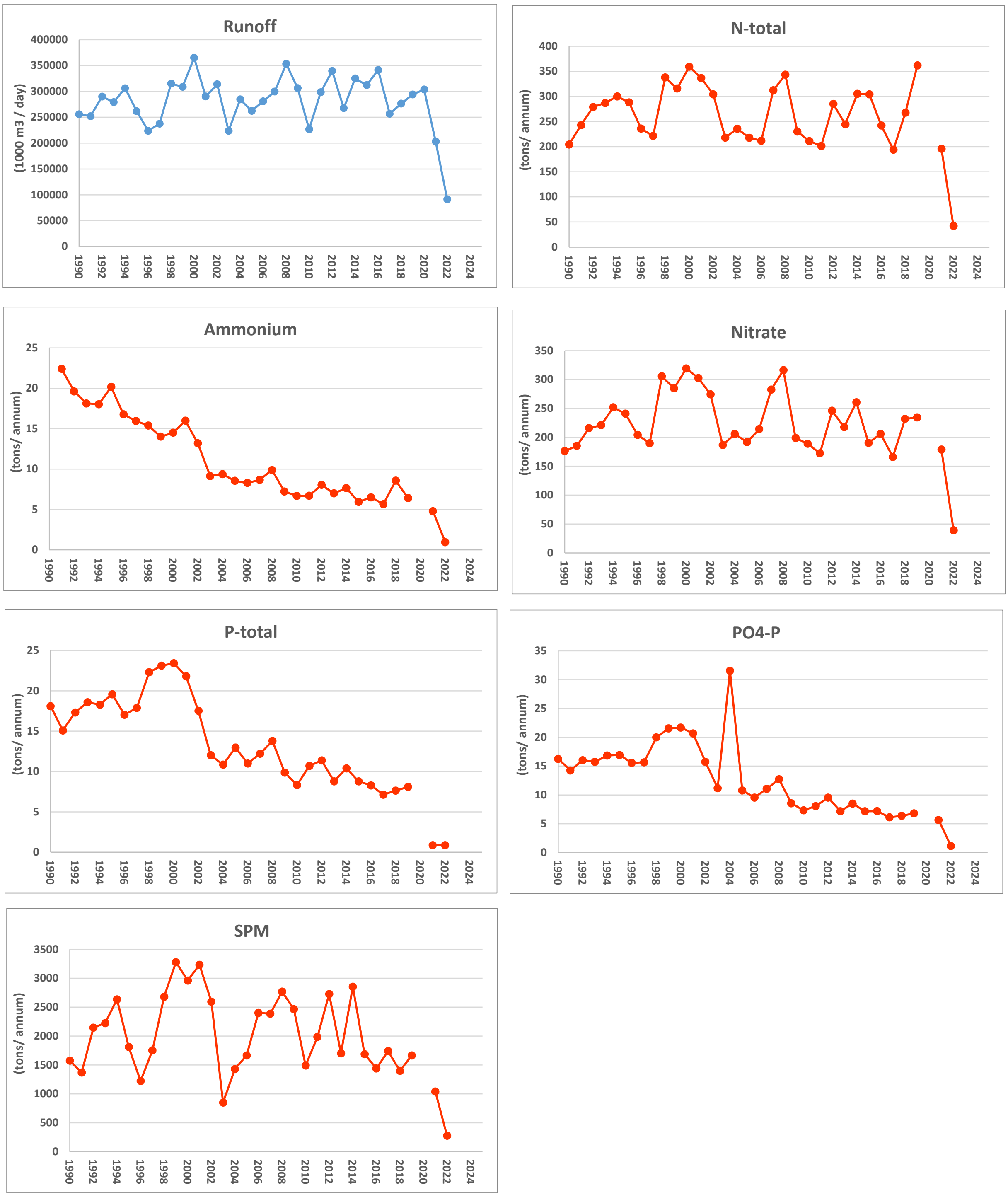

Figure 3k. Riverine inputs (ktons per annum) of nutrients and sediments from **the UK** to maritime areas. Note, that only part of the UK rivers had sufficient monitoring for reporting 2020-2022 inputs.

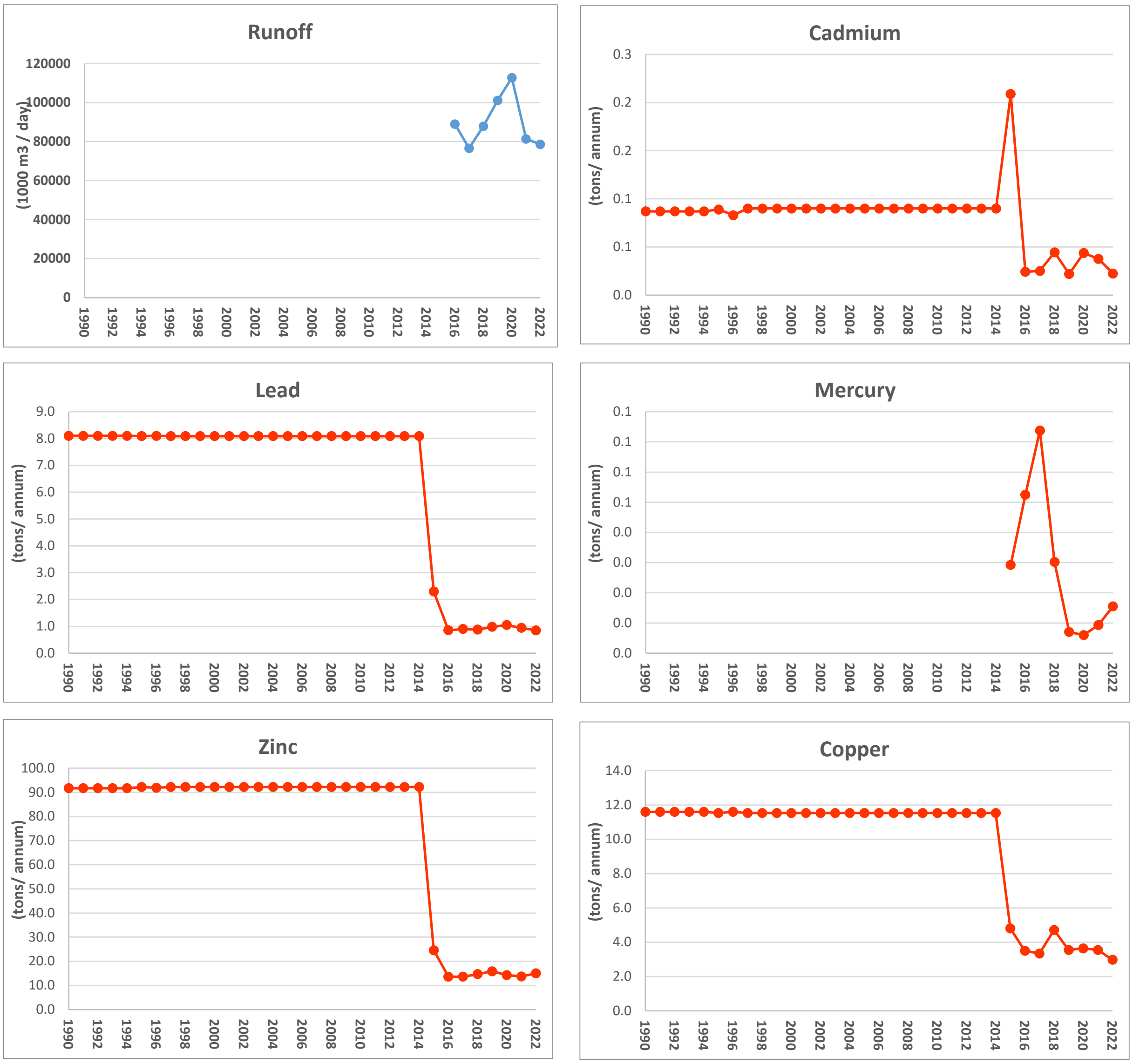

Figure 4a. Direct discharges (tons per annum) of five metals from **Ireland** to maritime areas.

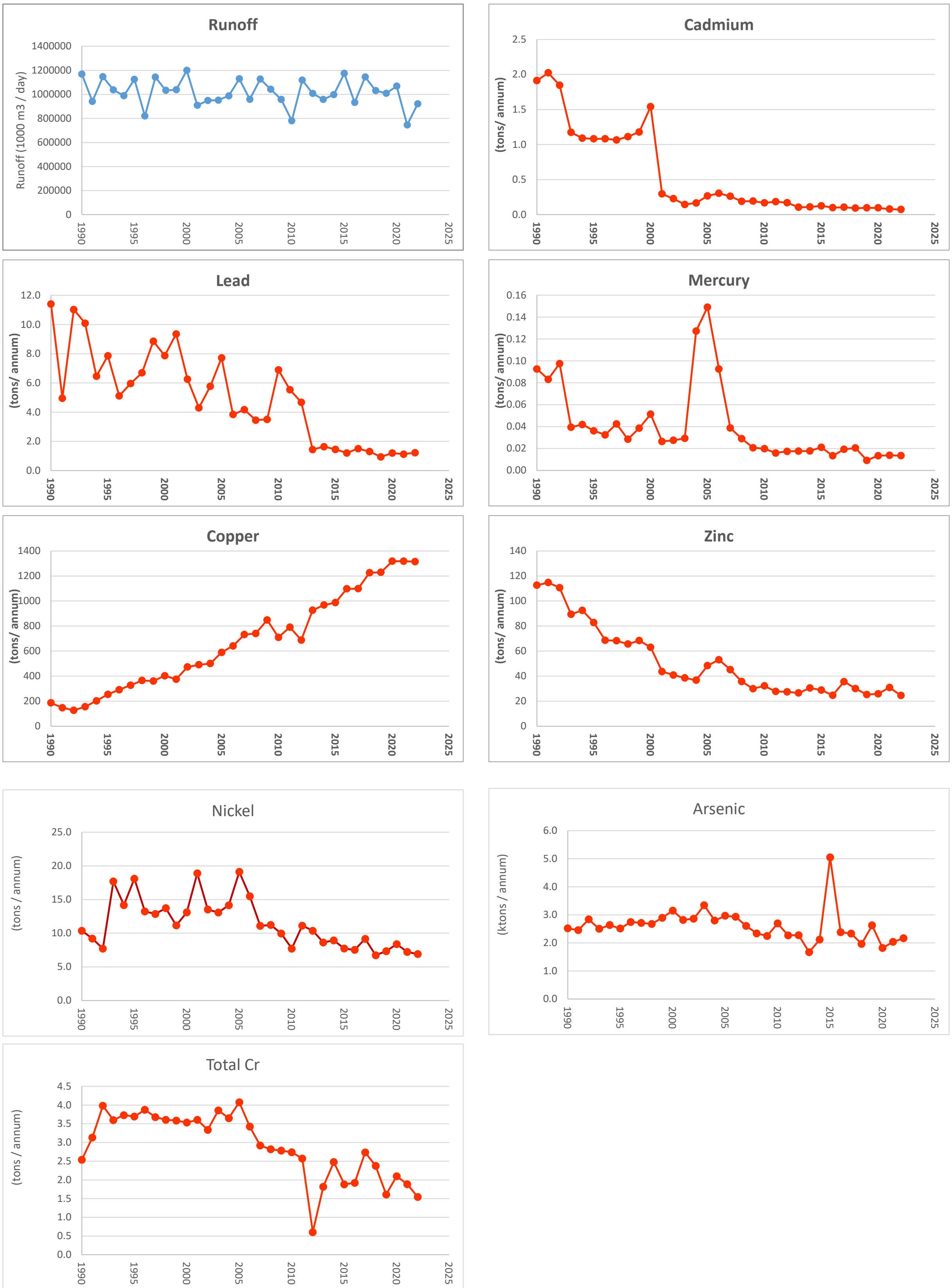

Figure 4b. Direct discharges (tons per annum) of eight metals from **Norway** to maritime areas.

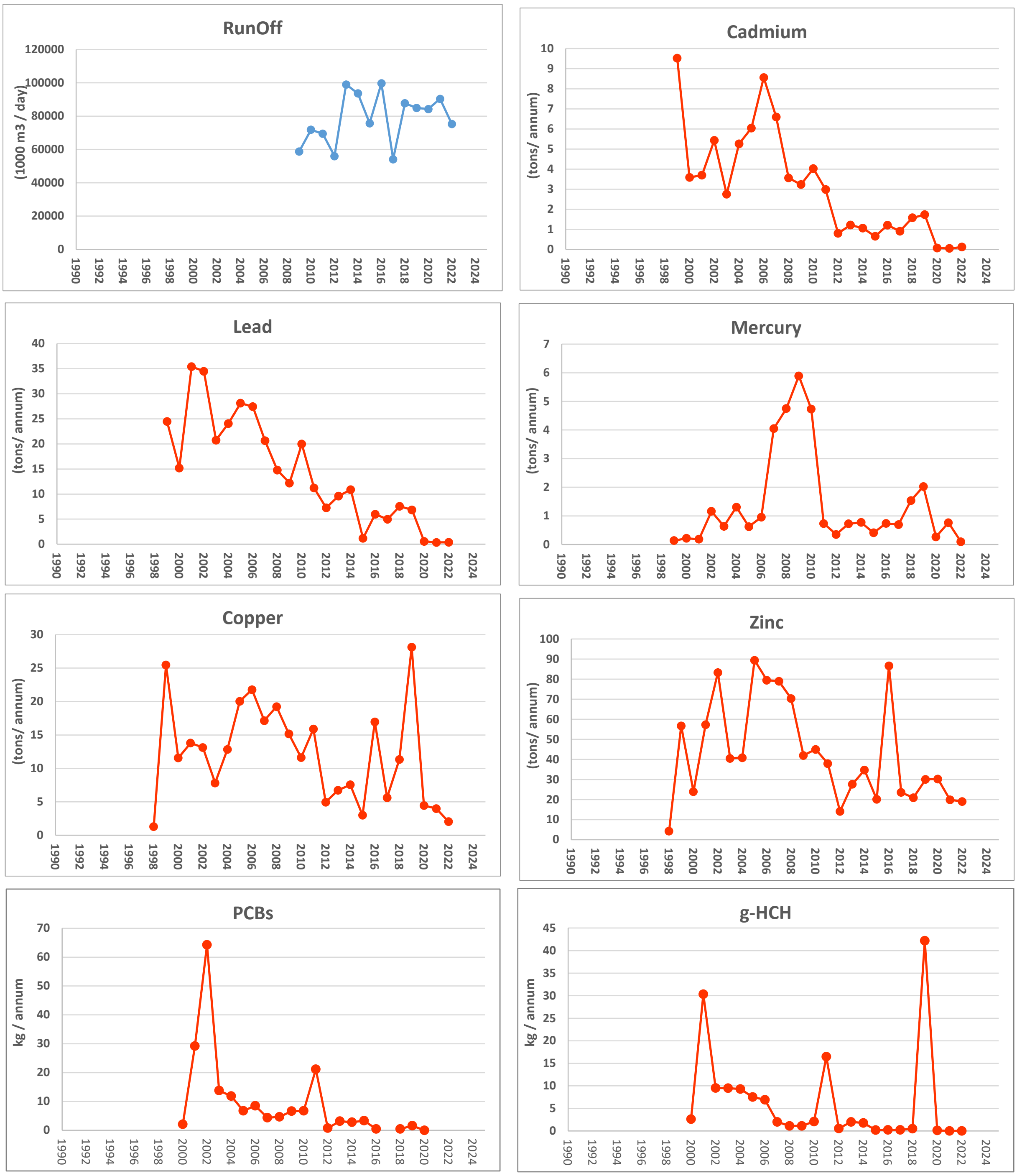

Figure 4c. Direct discharges (tons per annum) of five metals, PCBs and g-HCH (kg per annum) from **Spain** to maritime areas.

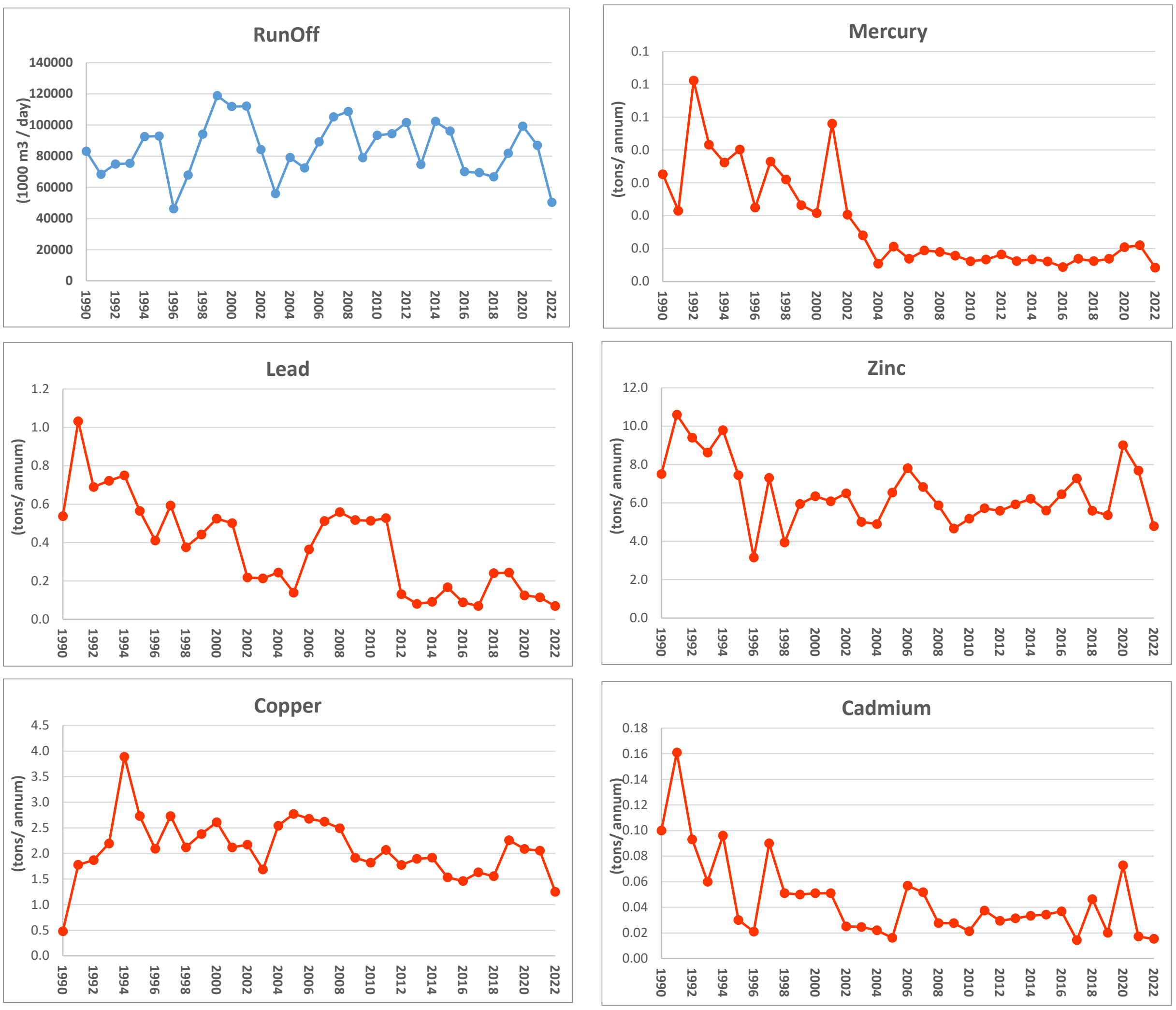

Figure 4d. Direct discharges (tons per annum) of five metals from **Sweden** to maritime areas.

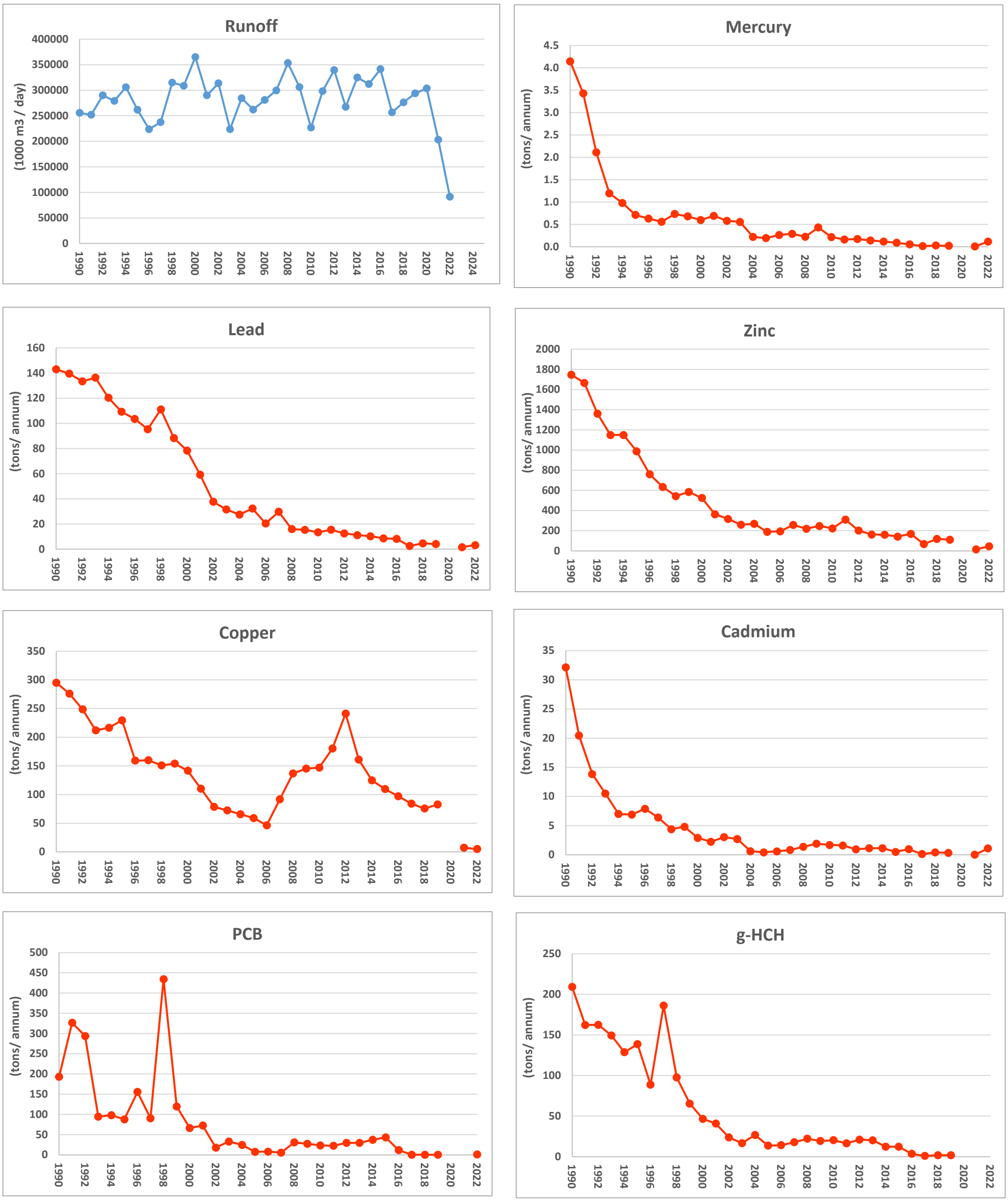

Figure 4e. Direct discharges (tons per annum) of five metals, PCBs and g-HCH (kg per annum) from **the UK** to maritime areas.

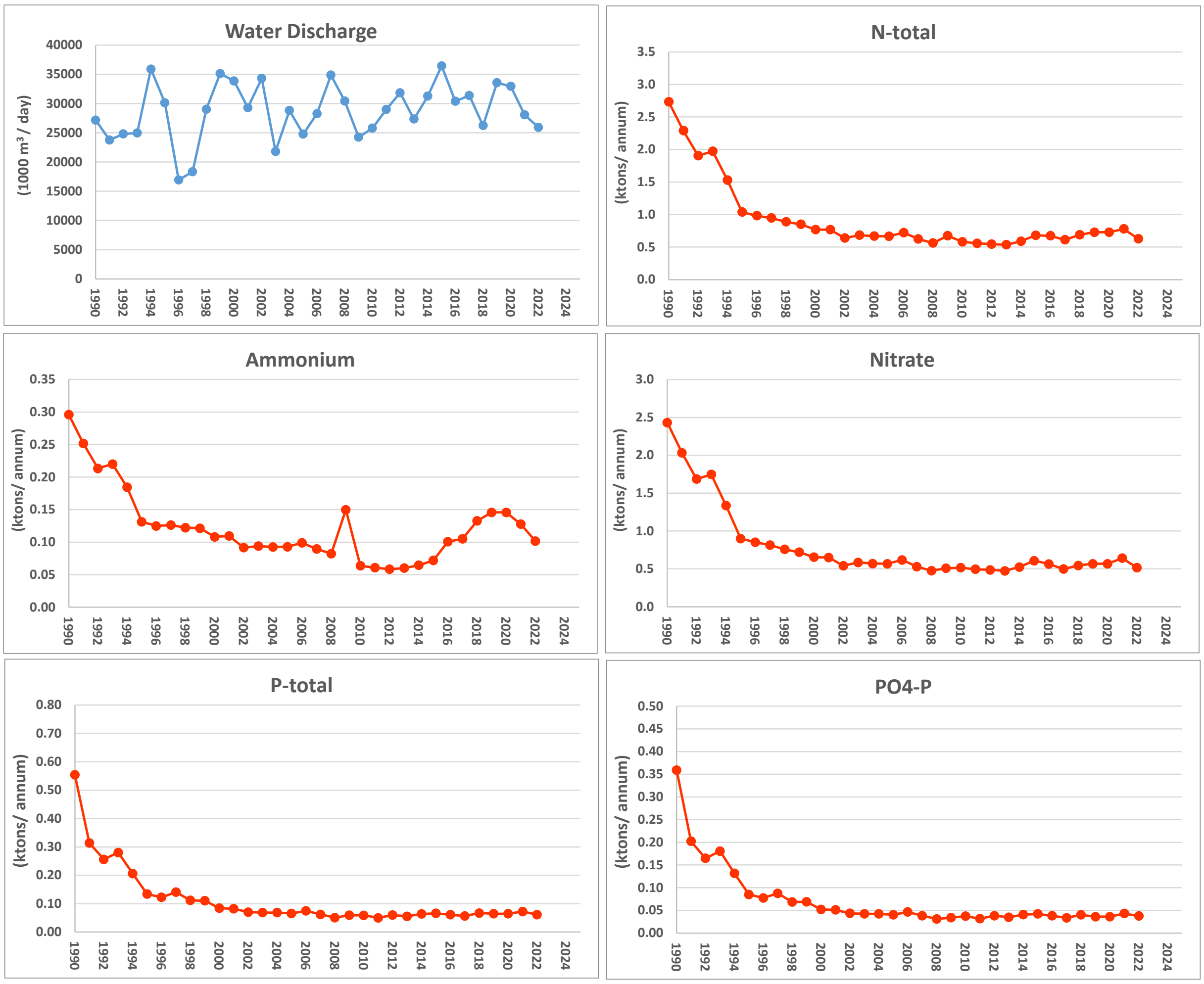

Figure 5a. Direct discharges (ktons per annum) of nutrients and sediments from **Denmark** to maritime areas.

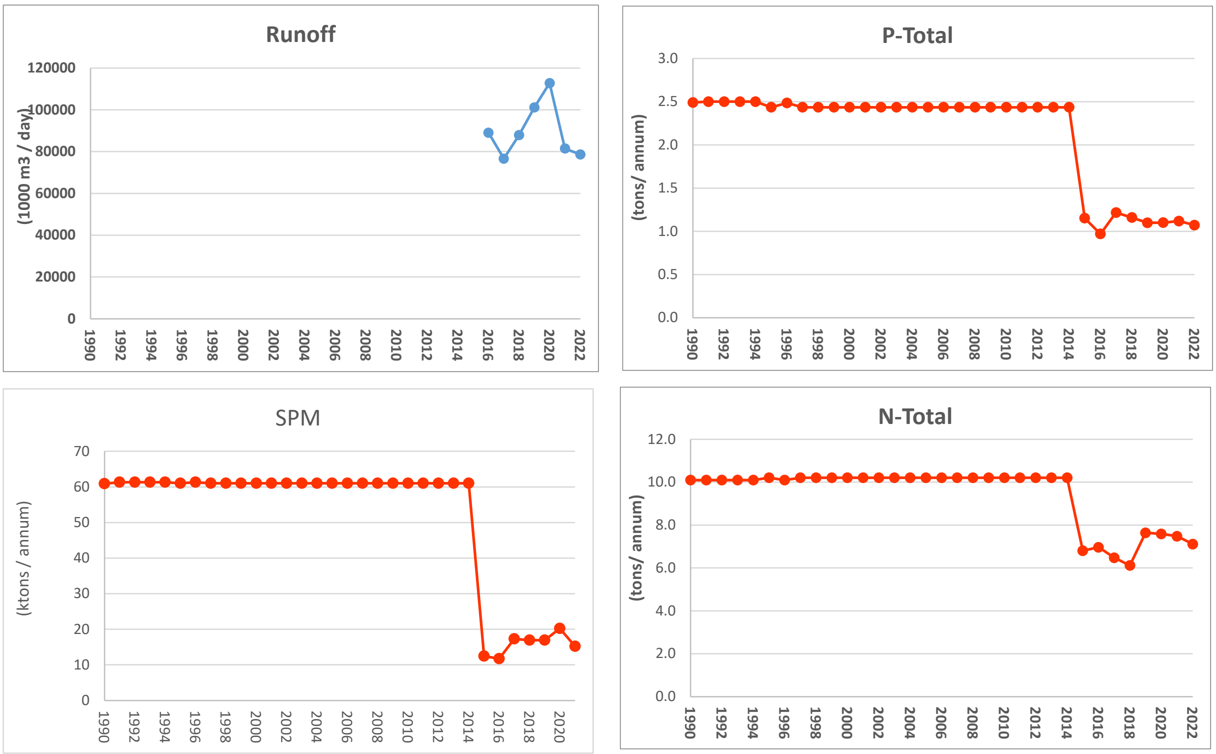

Figure 5b. Direct discharges (ktons per annum) of nutrients and sediments from **Ireland** to maritime areas.

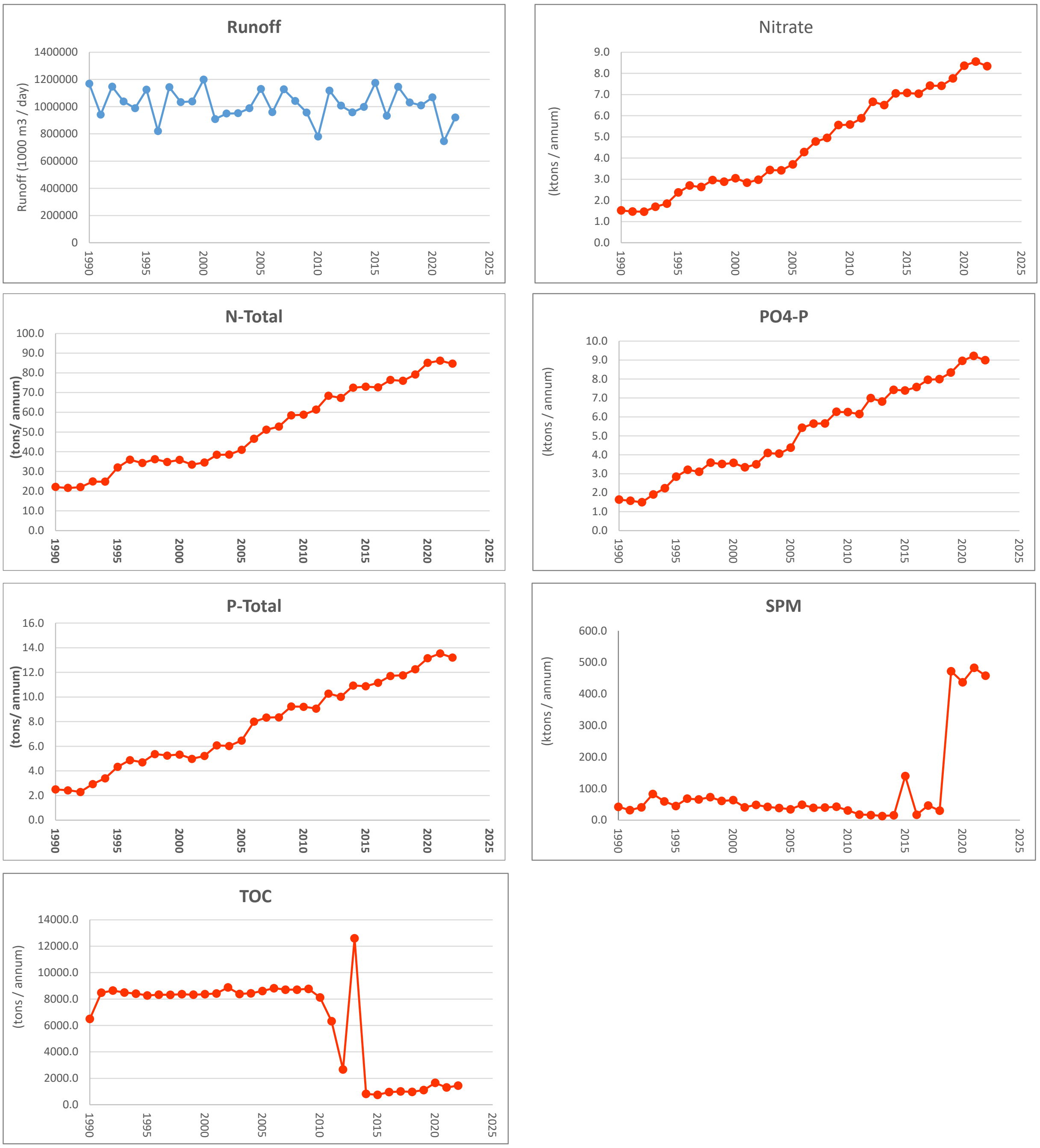

Figure 5c. Direct discharges (ktons per annum) of nutrients and sediments and TOC (tons per annum) from **Norway** to maritime areas.

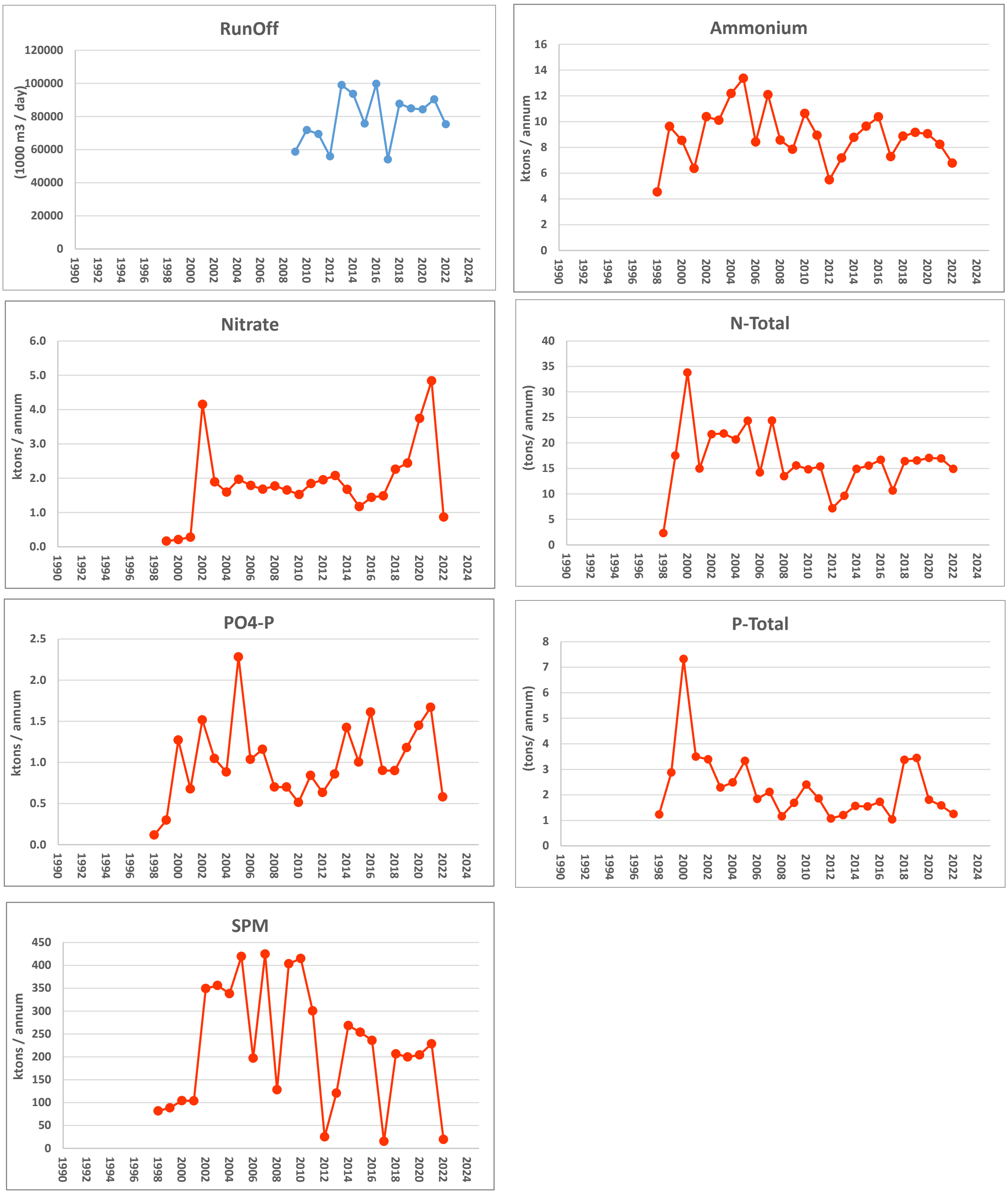

Figure 5d. Direct discharges (ktons per annum) of nutrients and sediments from **Spain** to maritime areas.

Figure 5e. Direct discharges (ktons per annum) of nutrients and sediments from **Sweden** to maritime areas.

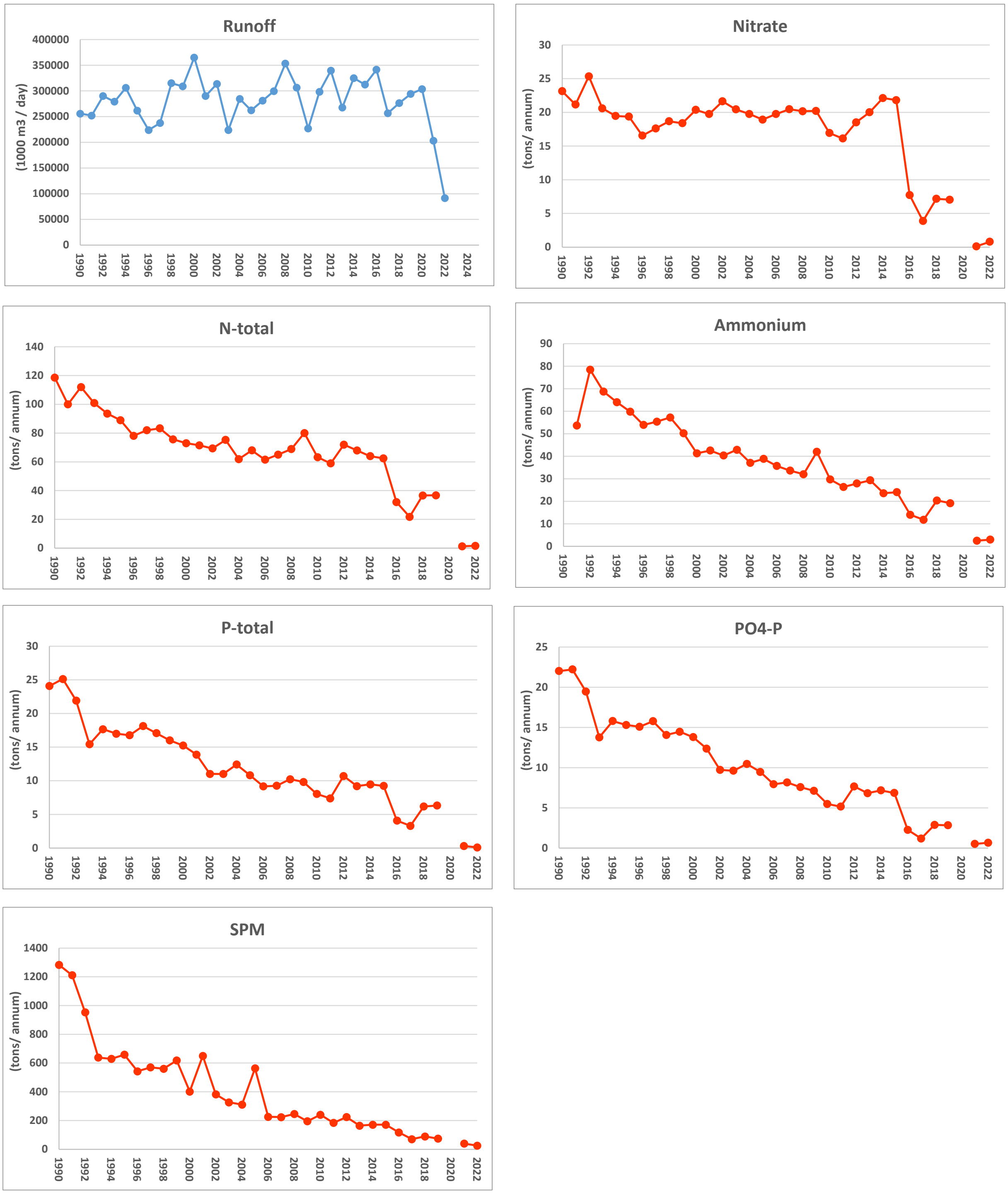

Figure 5f. Direct discharges (ktons per annum) of nutrients and sediments from **the UK** to maritime areas.

Appendix I. Data corrections performed by the RID Data Centre in 2023

The corrections made in 2023 are summarised in Table 8. All the data corrections were validated by the corresponding Contracting Parties.

Table 8. Corrections performed in RID database in 2023.

Contracting Party	Year(s)	Table(s)	Corrections made
Belgium	2021	9	Missing flow data completed.
	2012	6a, 6c	Loads recalculated, corrected
Germany	2020	5a, 5b, 5e, 6a, 6b, 6c	Loads for rivers Ems and Jade are added, sums corrected.
	2021	5a, 5b, 5e, 6a, 6b, 6c	
	2020	9	Flow data for rivers Ems and Jade added.
	2021	9	
	2020	7	Concentrations of Cu, Hg and Cd for river Weser are corrected.

Appendix II. Data requests during 2023

Data requests during 2023 are given in Table 9. All the

Table 9. Corrections performed in RID database in 2023.

Organisation	Data needed	Purpose
Energy, Climate and Environment (ECE), IIASA, Austria	Total loads to maritime areas	Quantifying the impacts of shipping on marine environment in the EMERGE project. emerge-h2020.eu
Economic and Social Research Institute, Ireland	Irish data on riverine loads and direct discharges	Quantifying the impact of environmental enforcement activity on environmental outcomes for the Irish Environmental Protection Agency
Chalmers University of Technology Gothenburg, Sweden	Loads at sub-basin level	Research on input of contaminations of rivers to different sub-basins in different countries.

Appendix III. Possible sources of data error in the RID database

Table 10. Possible sources of data error in the RID database, with suggested solutions.
CP: Contracting Party

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).	CP 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	CP 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)	CP is asked to contact NIBIO to discuss solutions.
	Unit error in some of the data	CP 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.	CP should report such changes in the word reports. CP is asked to assess conversion methods to get consecutive time series; and re-report.

Annex 2. Annual Overview Tables for the reporting year 2022 (AA Tables)

AA Table 1a. 2022

Information Received on Inputs to the Maritime Area of the OSPAR Convention in 2022

Note, that UK delivers the total riverine inputs, not divided between monitored and unmonitored.

AA Table 1b. 2022

Determinands reported by Contracting Parties in 2022

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	+	+	+	+	+	NI	NI	+	+	+	+	+	+	
Denmark														
- direct inputs	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	+	+	+	+	+	+	NI	+	+	+	+	+	+	
Germany														
- 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	
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)	+(4)	+(3)	+(3)	NI	
Netherlands														
- direct inputs	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
- riverine inputs	+	+	+	+	+	+	NI	+	+	+	+	+	+	EOX
Norway														
- direct inputs	+	+	+	+	+	NI	NI	+	+	+	+	+	+	As,Total Cr,Ni,TOC
- riverine inputs	+(3)	+(3)	+(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	+(4)	NI	+(4)	+(4)	+(4)	NI	NI	+(4)	+(3)	+(3)	+(3)	+(3)	+(4)	
Spain														
- direct inputs	+	+	+	+	+	+	+	+	+	+	+	+	+	
- riverine inputs	R+(4)	R+(4)	R+(4)	R+(4)	R+(4)	R+(4)	NI(4)	R+(4)	R+(3)	R+(4)	R+(3)	R+(4)	R+(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	+	+	+	+	+	NI	+	+	+	+	+	+	+	
- riverine inputs	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	

+ : 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. 2022

Direct Discharges to the Maritime Area of the OSPAR Convention in 2022 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	0.05	0.42	0.03	0.47	0.05	NI
		upper	NI	NI	NI	NI	NI	NI	NI	0.05	0.42	0.03	0.47	0.05	NI
	North Sea (DK)	lower	NI	NI	NI	NI	NI	NI	NI	0.01	0.07	0.00	0.08	0.01	NI
		upper	NI	NI	NI	NI	NI	NI	NI	0.01	0.07	0.00	0.08	0.01	NI
	Skagerrak (DK)	lower	NI	NI	NI	NI	NI	NI	NI	0.05	0.02	0.00	0.08	0.00	NI
		upper	NI	NI	NI	NI	NI	NI	NI	0.05	0.02	0.00	0.08	0.00	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
	Irish Sea	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	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
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	0.24	0.06	1.02	NI	NI	NI	NI	NI	1.26	0.13	0.42
		upper	0.00	0.00	0.24	0.06	1.02	NI	NI	NI	NI	NI	1.26	0.13	0.42
	Celtic Sea	lower	0.01	0.02	0.53	0.24	4.92	NI	NI	NI	NI	NI	1.89	0.17	1.76
		upper	0.01	0.02	0.53	0.24	4.92	NI	NI	NI	NI	NI	1.89	0.17	1.76
	Irish Sea	lower	0.01	0.00	2.21	0.54	9.05	NI	NI	NI	NI	NI	3.97	0.76	13.32
		upper	0.01	0.00	2.21	0.54	9.05	NI	NI	NI	NI	NI	3.97	0.76	13.32
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 (NO)	lower	0.00	0.00	346.2	0.00	0.24	NI	NI	16.10	2.10	2.31	20.27	3.38	218.9
		upper	0.00	0.00	346.2	0.00	0.24	NI	NI	16.10	2.10	2.31	20.27	3.38	218.9
	North Sea (NO)	lower	0.03	0.00	403.4	0.83	7.74	NI	NI	19.93	2.53	2.83	25.17	4.17	13.0
		upper	0.03	0.00	403.4	0.83	7.74	NI	NI	19.93	2.53	2.83	25.17	4.17	13.0
	Norwegian Sea (N(	lower	0.02	0.01	559.6	0.12	5.33	NI	NI	26.24	3.41	3.77	33.04	5.53	223.4
		upper	0.02	0.01	559.6	0.12	5.33	NI	NI	26.24	3.41	3.77	33.04	5.53	223.4
	Skagerrak (NO)	lower	0.02	0.00	5.3	0.27	11.16	NI	NI	4.61	0.31	0.08	6.15	0.13	2.5
		upper	0.02	0.00	5.3	0.27	11.16	NI	NI	4.61	0.31	0.08	6.15	0.13	2.5
Portugal	Bay of Biscay and	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	0.11	0.10	2.05	0.39	19.03	0.01	0.00	6.78	0.87	0.58	14.91	1.25	19.7
		upper	0.11	0.10	2.05	0.39	19.03	0.01	0.00	6.78	0.87	0.58	14.91	1.25	19.7
Sweden	Kattegat (SWE)	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
	Skagerrak (SWE)	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
UK	Atlantic	lower	0.66	0.00	0.89	0.17	0.00	NI	NI	0.01	0.09	0.05	0.20	0.02	0.36
		upper	0.66	0.07	0.89	0.17	0.00	NI	NI	0.02	0.10	0.05	0.20	0.02	0.36
	Celtic Sea	lower	0.05	0.00	0.84	1.20	36.64	NI	1.07	0.94	0.43	0.18	NI	NI	2.17
		upper	0.06	0.01	0.84	1.31	36.64	NI	1.07	0.98	0.43	0.18	NI	NI	2.26
	Channel	lower	0.00	NI	0.09	0.02	0.10	NI	NI	0.92	NI	0.19	0.72	NI	4.94
		upper	0.00	NI	0.09	0.02	0.10	NI	NI	0.95	NI	0.20	0.72	NI	5.09
	Irish Sea	lower	0.00	0.00	2.12	0.94	5.04	NI	0.05	0.34	0.27	0.24	0.65	0.08	3.56
		upper	1.39	0.15	2.12	1.29	5.04	NI	0.05	0.37	0.28	0.24	0.65	0.08	3.66
	North Sea (North)	lower	0.00	0.00	0.11	NI	0.85	NI	NI	0.18	NI	NI	NI	NI	3.38
		upper	0.00	0.00	0.11	NI	0.85	NI	NI	0.18	NI	NI	NI	NI	3.39
	North Sea (South)	lower	0.01	0.00	0.32	0.08	1.14	NI	NI	0.49	NI	NI	NI	NI	10.86
		upper	0.02	0.00	1.69	1.45	4.47	NI	NI	0.54	NI	NI	NI	NI	11.23

NI: No information
NA: Not applicable

AA Table 3. 2022

Riverine Inputs to the Maritime Area of the OSPAR Convention in 2022 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	0.62	0.10	33.99	13.24	109.00	NA	NA	1.44	16.21	0.73	17.73	1.42	174.35
		upper	0.62	0.10	33.99	13.24	109.00	NA	NA	1.44	16.21	0.73	17.73	1.42	174.35
Denmark	Kattegat (DK)	lower	NI	NI	NI	NI	NI	NI	NI	0.40	13.16	0.21	16.28	0.46	NI
		upper	NI	NI	NI	NI	NI	NI	NI	0.40	13.16	0.21	16.28	0.46	NI
	North Sea (DK)	lower	NI	NI	NI	NI	NI	NI	NI	0.32	10.11	0.08	12.02	0.36	NI
		upper	NI	NI	NI	NI	NI	NI	NI	0.32	10.11	0.08	12.02	0.36	NI
	Skagerrak (DK)	lower	NI	NI	NI	NI	NI	NI	NI	0.03	0.73	0.02	0.90	0.04	NI
		upper	NI	NI	NI	NI	NI	NI	NI	0.03	0.73	0.02	0.90	0.04	NI
France	Atlantic	lower	0.17	0.28	51.36	1.69	85.00	0.00	NI	2.26	144.05	2.82	97.95	4.05	902.14
		upper	0.85	0.81	52.80	8.85	104.10	0.10	NI	2.28	144.20	2.90	178.06	4.05	904.73
	Channel	lower	0.14	0.00	19.54	2.37	91.33	0.00	NI	1.96	127.98	1.86	66.16	2.59	463.70
		upper	0.26	0.19	19.54	2.68	91.76	0.02	NI	1.96	127.98	1.86	142.62	2.59	464.62
	Irish Sea	lower	0.03	0.00	0.87	0.49	7.60	0.00	NI	0.16	15.43	0.11	6.86	0.21	52.81
		upper	0.03	0.01	0.87	0.49	7.60	0.00	NI	0.16	15.43	0.11	17.34	0.21	52.94
Germany	North Sea (GER)	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
Iceland	Atlantic	lower	0.06	0.05	5.30	0.26	7.15	NI	NI	0.25	0.52	0.36	1.34	0.43	1942.00
		upper	0.06	0.05	5.30	0.26	7.15	NI	NI	0.25	0.52	0.36	1.34	0.43	1942.00
Ireland	Atlantic	lower	0.08	0.00	19.58	0.06	62.93	NI	NI	0.15	8.20	0.26	17.01	NI	NI
		upper	0.36	0.34	27.38	3.38	67.15	NI	NI	0.39	8.64	0.33	17.64	NI	NI
	Celtic Sea	lower	0.45	0.01	57.02	7.33	119.12	NI	NI	0.77	60.63	0.81	69.61	NI	NI
		upper	0.72	0.52	62.09	9.89	120.76	NI	NI	0.90	60.64	0.84	69.62	NI	NI
	Irish Sea	lower	0.38	0.05	29.16	12.35	104.07	NI	NI	0.21	17.91	0.24	19.11	0.38	NI
		upper	0.42	0.16	29.43	12.76	104.42	NI	NI	0.24	17.91	0.25	19.11	0.38	NI
Netherlands	North Sea (NL)	lower	2.28	0.48	168.64	75.25	503.71	10.18	NI	5.56	119.55	3.16	146.77	5.17	1193.55
		upper	2.28	0.48	168.64	75.25	503.71	10.44	NI	5.61	119.55	3.22	146.77	5.17	1230.78
Norway	Barents Sea (NO)	lower	0.02	0.02	19.70	0.70	23.05	NI	NI	0.54	4.74	0.13	10.12	0.32	332.07
		upper	0.02	0.02	19.70	0.70	23.05	NI	NI	0.54	4.74	0.13	10.12	0.32	332.07
	North Sea (NO)	lower	0.26	0.03	17.05	5.33	64.92	NI	NI	0.97	13.53	0.12	22.27	0.40	55.73
		upper	0.26	0.03	17.05	5.33	64.92	NI	NI	0.97	13.53	0.12	22.27	0.40	55.73
	Norwegian Sea (N	lower	0.26	0.05	52.01	4.07	108.85	NI	NI	1.19	13.21	0.23	25.97	0.64	200.79
		upper	0.26	0.05	52.01	4.07	108.85	NI	NI	1.19	13.21	0.23	25.97	0.64	200.79
	Skagerrak (NO)	lower	0.59	0.06	49.98	9.01	144.71	NI	NI	1.08	14.89	0.25	24.45	0.62	248.66
		upper	0.59	0.06	49.98	9.01	144.71	NI	NI	1.08	14.89	0.25	24.45	0.62	248.66
Portugal	Bay of Biscay anc	lower	0.00	NI	0.00	0.00	94.44	NI	NI	0.96	8.61	0.40	13.88	0.93	43.4
		upper	0.26	NI	13.01	3.25	96.53	NI	NI	0.97	8.62	0.40	13.88	0.93	44.4
Spain	Atlantic (ESP)	lower	4.37	0.00	646.94	5.86	1319.68	0.02	NI	7.22	21.03	0.43	36.01	1.22	174.59
		upper	4.41	0.02	650.43	7.78	1339.62	0.84	NI	7.57	33.27	0.48	48.78	1.31	183.63
Sweden	Kattegat (SWE)	lower	0.20	0.04	19.60	5.20	62.20	NI	NI	0.52	10.70	0.06	16.50	0.34	NI
		upper	0.20	0.04	19.60	5.20	62.20	NI	NI	0.52	10.70	0.06	16.50	0.34	NI
	Skagerrak (SWE)	lower	0.03	0.01	2.77	0.80	10.10	NI	NI	0.07	0.90	0.02	1.92	0.07	NI
		upper	0.03	0.01	2.77	0.80	10.10	NI	NI	0.07	0.90	0.02	1.92	0.07	NI
UK	Atlantic	lower	0.01	0.02	20.97	2.51	28.07	NI	NI	0.30	6.45	0.47	11.97	0.78	83.86
		upper	0.33	0.04	20.97	3.10	28.07	NI	NI	0.38	6.45	0.47	11.97	0.78	84.66
	Celtic Sea	lower	0.09	0.02	16.61	5.17	96.10	0.00	0.00	0.32	12.11	0.23	14.84	NI	104.65
		upper	0.82	0.08	17.68	17.56	106.05	0.70	1.66	0.33	12.11	0.23	14.84	NI	114.07
	Channel	lower	0.04	0.01	4.59	1.69	12.59	0.01	0.00	0.07	10.68	0.24	2.80	NI	29.75
		upper	0.04	0.02	4.59	1.70	12.59	5.25	12.59	0.09	10.68	0.24	2.80	NI	30.02
	Irish Sea	lower	0.47	0.01	74.39	19.10	266.97	0.00	0.00	0.20	9.70	0.21	12.49	0.10	50.11
		upper	0.88	0.06	75.39	24.92	267.91	2.54	6.78	0.20	9.70	0.21	12.49	0.10	57.35
	North Sea (North	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
	North Sea (South	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

NI: No information
NA: Not applicable

AA Table 4a. 2022

Sum of Direct (Table 2) and Riverine (Table 3) Inputs to the Maritime area of the OSPAR Convention in 2022 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	0.62	0.10	33.99	13.24	109.00	NA	NA	1.44	16.21	0.73	17.73	1.42	174.4
		upper	0.62	0.10	33.99	13.24	109.00	NA	NA	1.44	16.21	0.73	17.73	1.42	174.4
Denmark	Kattegat (DK)	lower	NI	NI	NI	NI	NI	NI	NI	0.45	13.59	0.24	16.75	0.51	NI
		upper	NI	NI	NI	NI	NI	NI	NI	0.45	13.59	0.24	16.75	0.51	NI
	North Sea (DK)	lower	NI	NI	NI	NI	NI	NI	NI	0.32	10.18	0.09	12.10	0.36	NI
		upper	NI	NI	NI	NI	NI	NI	NI	0.32	10.18	0.09	12.10	0.36	NI
	Skagerrak (DK)	lower	NI	NI	NI	NI	NI	NI	NI	0.08	0.76	0.02	0.98	0.05	NI
		upper	NI	NI	NI	NI	NI	NI	NI	0.08	0.76	0.02	0.98	0.05	NI
France	Atlantic	lower	0.17	0.28	51.36	1.69	85.00	0.00	NI	2.26	144.05	2.82	97.95	4.05	902.1
		upper	0.85	0.81	52.80	8.85	104.10	0.10	NI	2.28	144.20	2.90	178.06	4.05	904.7
	Channel	lower	0.14	0.00	19.54	2.37	91.33	0.00	NI	1.96	127.98	1.86	66.16	2.59	463.7
		upper	0.26	0.19	19.54	2.68	91.76	0.02	NI	1.96	127.98	1.86	142.62	2.59	464.6
	Irish Sea	lower	0.03	0.00	0.87	0.49	7.60	0.00	NI	0.16	15.43	0.11	6.86	0.21	52.8
		upper	0.03	0.01	0.87	0.49	7.60	0.00	NI	0.16	15.43	0.11	17.34	0.21	52.9
Germany	North Sea (GER)	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
Iceland	Atlantic	lower	0.06	0.05	5.30	0.26	7.15	NI	NI	0.25	0.52	0.36	1.34	0.43	1942.0
		upper	0.06	0.05	5.30	0.26	7.15	NI	NI	0.25	0.52	0.36	1.34	0.43	1942.0
Ireland	Atlantic	lower	0.08	0.00	19.83	0.13	63.95	NI	NI	0.15	8.20	0.26	18.26	0.13	0.4
		upper	0.36	0.34	27.62	3.45	68.18	NI	NI	0.39	8.64	0.33	18.90	0.13	0.4
	Celtic Sea	lower	0.46	0.02	57.55	7.57	124.05	NI	NI	0.77	60.63	0.81	71.50	0.17	1.8
		upper	0.73	0.54	62.61	10.14	125.68	NI	NI	0.90	60.64	0.84	71.51	0.17	1.8
	Irish Sea	lower	0.39	0.05	31.37	12.90	113.12	NI	NI	0.21	17.91	0.24	23.08	1.14	13.3
		upper	0.43	0.16	31.63	13.31	113.47	NI	NI	0.24	17.91	0.25	23.08	1.15	13.3
Netherlands	North Sea (NL)	lower	2.28	0.48	168.64	75.25	503.71	10.18	NI	5.56	119.55	3.16	146.77	5.17	1193.5
		upper	2.28	0.48	168.64	75.25	503.71	10.44	NI	5.61	119.55	3.22	146.77	5.17	1230.8
Norway	Barents Sea (NO)	lower	0.02	0.02	365.86	0.70	23.29	NI	NI	16.65	6.84	2.45	30.38	3.71	551.0
		upper	0.02	0.02	365.86	0.70	23.29	NI	NI	16.65	6.84	2.45	30.38	3.71	551.0
	North Sea (NO)	lower	0.30	0.03	420.41	6.16	72.66	NI	NI	20.91	16.05	2.95	47.44	4.57	68.8
		upper	0.30	0.03	420.41	6.16	72.66	NI	NI	20.91	16.05	2.95	47.44	4.57	68.8
	Norwegian Sea (N	lower	0.28	0.06	611.63	4.20	114.19	NI	NI	27.43	16.62	4.00	59.02	6.17	424.2
		upper	0.28	0.06	611.63	4.20	114.19	NI	NI	27.43	16.62	4.00	59.02	6.17	424.2
	Skagerrak (NO)	lower	0.61	0.06	55.31	9.29	155.86	NI	NI	5.70	15.19	0.33	30.60	0.74	251.1
		upper	0.61	0.06	55.31	9.29	155.86	NI	NI	5.70	15.19	0.33	30.60	0.74	251.1
Portugal	Bay of Biscay anc	lower	0.00	NI	0.00	0.00	94.44	NI	NI	0.96	8.61	0.40	13.88	0.93	43.4
		upper	0.26	NI	13.01	3.25	96.53	NI	NI	0.97	8.62	0.40	13.88	0.93	44.4
Spain	Atlantic (ESP)	lower	4.48	0.10	648.99	6.25	1338.71	0.04	0.00	14.00	21.90	1.01	50.92	2.47	194.3
		upper	4.52	0.12	652.48	8.17	1358.64	0.85	0.00	14.34	34.14	1.06	63.68	2.56	203.3
Sweden	Kattegat (SWE)	lower	0.20	0.04	19.60	5.20	62.20	NI	NI	0.52	10.70	0.06	16.50	0.34	NI
		upper	0.20	0.04	19.60	5.20	62.20	NI	NI	0.52	10.70	0.06	16.50	0.34	NI
	Skagerrak (SWE)	lower	0.03	0.01	2.77	0.80	10.10	NI	NI	0.07	0.90	0.02	1.92	0.07	NI
		upper	0.03	0.01	2.77	0.80	10.10	NI	NI	0.07	0.90	0.02	1.92	0.07	NI
UK	Atlantic	lower	0.68	0.02	21.87	2.68	28.07	NI	NI	0.30	6.55	0.52	12.17	0.79	84.2
		upper	0.99	0.10	21.87	3.26	28.07	NI	NI	0.39	6.55	0.52	12.17	0.79	85.0
	Celtic Sea	lower	0.14	0.02	17.45	6.37	132.74	0.00	1.07	1.26	12.54	0.41	14.84	NI	106.8
		upper	0.88	0.09	18.52	18.87	142.69	0.70	2.72	1.31	12.54	0.42	14.84	NI	116.3
	Channel	lower	0.04	0.01	4.69	1.71	12.69	0.01	0.00	1.00	10.68	0.43	3.52	NI	34.7
		upper	0.05	0.02	4.69	1.72	12.69	5.25	12.59	1.04	10.68	0.44	3.52	NI	35.1
	Irish Sea	lower	0.47	0.01	76.51	20.04	272.00	0.00	0.05	0.53	9.97	0.46	13.14	0.17	53.7
		upper	2.27	0.21	77.52	26.22	272.95	2.54	6.83	0.57	9.98	0.46	13.14	0.17	61.0
	North Sea (North)	lower	0.00	0.00	0.11	NI	0.85	NI	NI	0.18	NI	NI	NI	NI	3.4
		upper	0.00	0.00	0.11	NI	0.85	NI	NI	0.18	NI	NI	NI	NI	3.4
	North Sea (South)	lower	0.01	0.00	0.32	0.08	1.14	NI	NI	0.49	NI	NI	NI	NI	10.9
		upper	0.02	0	1.6862	1.4471	4.46858	NI	NI	0.5369	NI	NI	NI	NI	11.2

NI: No information
NA: Not applicable

AA Table 4b. 2022

Sum of Direct and Riverine Inputs to the Maritime area of the OSPAR Convention in 2022 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	0.02	0.02	365.86	0.70	23.29	NA	NA	16.65	6.84	2.45	30.38	3.71	550.97
	upper	0.02	0.02	365.86	0.70	23.29	NA	NA	16.65	6.84	2.45	30.38	3.71	550.97
Atlantic Ocean	lower	0.76	0.02	41.69	2.81	92.02	NI	NI	0.46	14.75	0.78	30.44	0.93	84.64
	upper	1.36	0.44	49.49	6.71	96.25	NI	NI	0.78	15.19	0.85	31.07	0.93	85.44
Bay of Biscay and Iberian	lower	4.65	0.38	700.35	7.94	1518.15	0.04	0.00	17.21	174.56	4.23	162.75	7.45	1139.81
Coast	upper	5.63	0.93	718.29	20.27	1559.28	0.95	0.00	17.59	186.96	4.36	255.63	7.55	1152.42
Celtic Sea	lower	0.61	0.04	75.00	13.94	256.79	0.00	1.07	2.03	73.17	1.21	86.34	0.17	108.58
	upper	1.61	0.63	81.14	29.01	268.37	0.70	2.72	2.20	73.18	1.26	86.35	0.17	118.09
Channel	lower	0.18	0.01	24.23	4.08	104.02	0.01	0.00	2.95	138.67	2.29	69.68	2.59	498.39
	upper	0.30	0.21	24.23	4.40	104.44	5.27	12.59	3.00	138.67	2.30	146.14	2.59	499.74
Irish Sea	lower	0.89	0.06	108.75	33.42	392.73	0.00	0.05	0.90	43.32	0.81	43.07	1.53	119.80
	upper	2.73	0.38	110.02	40.01	394.02	2.54	6.83	0.97	43.32	0.82	53.56	1.53	127.27
Kattegat	lower	0.20	0.04	19.60	5.20	62.20	NI	NI	0.96	24.29	0.30	33.25	0.86	NI
	upper	0.20	0.04	19.60	5.20	62.20	NI	NI	0.96	24.29	0.30	33.25	0.86	NI
North Sea (main body)	lower	3.21	0.61	623.47	94.73	687.36	10.18	NI	28.90	161.99	6.92	224.03	11.52	1450.91
	upper	3.22	0.61	624.84	96.09	690.69	10.44	NI	29.00	161.99	6.98	224.03	11.52	1488.52
Norwegian Sea	lower	0.28	0.06	611.63	4.20	114.19	NI	NI	27.43	16.62	4.00	59.02	6.17	424.21
	upper	0.28	0.06	611.63	4.20	114.19	NI	NI	27.43	16.62	4.00	59.02	6.17	424.21
Skagerrak	lower	0.65	0.07	58.08	10.08	165.96	NI	NI	5.85	16.85	0.36	33.50	0.86	251.12
	upper	0.65	0.07	58.08	10.08	165.96	NI	NI	5.85	16.85	0.36	33.50	0.86	251.12

NI: No information
NA: Not applicable

Annex 3 Statistical information on river catchment areas and monitoring stations

Statistical Information Provided by Belgium:

Discharge area ID	Discharge area	Station code	Station location	Latitude	Longitude	Type
Water quality stations						
243	IJzer	BEVL_VMM_910000	IJzer (Nieuwpoort)	"2,80192	"51,12675	Surface water quality
243	IJzer	BEVL_VMM_856500	Kanaal Plassendale-Nieuwpoort (Nieuwpoort)	"2,75759	"51,13631	Surface water quality
243	IJzer	BEVL_VMM_694000	Ieperleed (Nieuwpoort)	"2,76524	"51,13900	Surface water quality
243	IJzer	BEVL_VMM_680000	Kanaal Plassendale-Duinkerken (Oostduinkerke)	"2,74824	"51,12144	Surface water quality
246	Langeleed					
247	Beverdijk	BEVL_VMM_676000	Beverdijkvaart (Ramskapelle)	"2,76741	"51,12485	Surface water quality
248	Vladslovaart	BEVL_VMM_690900	Vladslovaart (Lombardsijde)	"2,78851	"51,14311	Surface water quality
249	Gent-Oostende Canal	BEVL_VMM_770000	Kanaal Gent-Oostende (Oostende)	"2,94940	"51,22209	Surface water quality
255	Blankenbergse Vaart	BEVL_VMM_877000	Blankenbergsevaart (Blankenberge)	"3,11866	"51,29217	Surface water quality
250	Noordede	BEVL_VMM_865800	Noordede (Bredene)	296119	5122384	Surface water quality
251	Boudewijn Canal	BEVL_VMM_UWWTP18	UWWTP 18 (Brugge)	320998	5125489	Sewage Effluent UWWTP
252	Leopold Canal	BEVL_VMM_6000	Leopoldkanaal (Ramskapelle)	322940	5132546	Surface water quality
256	Lissewege vaart	BEVL_VMM_6010	Isabellavaart (Heist)	323795	5132770	Surface water quality
254	Schipdonk Canal	BEVL_VMM_765007	Afleidingskanaal van de Leie (Zeebrugge)	322864	5132436	Surface water quality
254	Schipdonk Canal	BEVL_VMM_684000	Langgeleed (Koksijde)	274681	5112142	Surface water quality
238	**Coastal Area**					
102	**Schelde**	BEVL_VMM_154100	Zeeschelde (Zandvliet)	424068	5135300	Surface water quality
244	**Gent-Terneuzen Canal**	BEVL_VMM_30000	Kanaal Gent-Terneuzen (Zelzate)	380311	5120761	Surface water quality
245	**Schelde Basin**					
79	**North Sea (B)**					
Water quantity stations						
243	IJzer	BEVL_MOW_IJZ02A	IJzer (Keiem)	285264	5108423	Surface water flow
243	IJzer	BEVL_MOW_KPN03A	Kanaal Plassendale-Nieuwpoort (Slijpe)	283148	5116470	Surface water flow
243	IJzer	BEVL_MOW_LOK02A	Lokanaal (Lo-Reninge)	274222	5098042	Surface water flow
246	Langeleed					Surface water flow
247	Beverdijk	BEVL_VMM_L01_48C	Grote Beverdijkvaart (Nieuwpoort)	268671	5113250	Surface water flow
248	Vladslovaart					Surface water flow
249	Gent-Oostende Canal	BEVL_MOW_KGO03A	Kanaal Gent-Oostende (Varsenare)	312286	5120861	Surface water flow
255	Blankenbergse Vaart					Surface water flow
250	Noordede	BEVL_VMM_L02_442	Ede (Maldegem)			Surface water flow
251	Boudewijn Canal	BEVL_VMM_UWWTP18	UWWTP 18 (Brugge)	320998	5125489	Sewage Effluent UWWTP
252	Leopold Canal	BEVL_MOW_LEK03A	Leopoldkanaal (Damme)	330961	5126149	Surface water flow
256	Lissewege Vaart					Surface water flow
254	Schipdonk Canal	BEVL_MOW_AKL04A	Afleidingskanaal van de Leie (Zomergem)	356522	5110112	Surface water flow
238	**Coastal area**					Surface water flow
102	**Schelde**	BEVL_MOW_ZES00A	Zeeschelde (BE-NL border calc)			Surface water flow
244	**Gent-Temeuzen Canal**	BEVL_MOW_RVG03A	Ringvaart (Evergem)	366871	5108951	Surface water flow
244	**Gent-Temeuzen Canal**	BEVL_MOW_MOE02A	Moervaart (Mendonk)	382486	5114883	Surface water flow
245	**Schelde Basin**					
79	**North Sea (B)**					

Statistical information for Denmark											
ID	River	Catchment area	Countries	Share in catchment area		Population (2022)		LTA*	LTA period	X_coor	Y_coor
		km^2		km^2	%	10^6	%	$10^3\ m^3/d$	a		
	Statistical Information provided by Denmark:										
109	Vid Å	248	DK	248	100	0.01037	100	305.1	1991-2020	8.93005	54.95372
110	Brøns Å	94	DK	94	100	0.00251	100	106.7	1991-2020	8.75441	55.19416
293	Ribe Å	676	DK	676	100	0.02576	100	854.2	1991-2020	8.87690	55.32257
112	Konge Å	427	DK	427	100	0.02994	100	642.2	1991-2020	8.70247	55.39438
294	Sneum Å	223	DK	223	100	0.00862	100	296.4	1991-2020	8.69595	55.49631
295	Varde Å	815	DK	815	100	0.03251	100	1093.4	1991-2020	8.54056	55.64292
104	Skjern Å	1567	DK	1567	100	0.06954	100	2187.9	1991-2020	8.63031	55.93961
115	Storå	1097	DK	1097	100	0.119	100	1510.8	1991-2020	8.34542	56.33497
291	Brede Å	290	DK	290	100	0.00915	100	363.7	1991-2020	8.82534	55.06228
292	Omme Å	622	DK	622	100	0.02041	100	762.9	1991-2020	8.59033	55.92439
296	Grøn Å	559	DK	559	100	0.02243	100	664.3	1991-2020	8.93052	54.92596
	Total	**6612**	**=Total of Danish rivers discharging to the North Sea**					8787.5	1991-2020		
		13782.8	**=Total of monitored+unmonitored catchment areas discharging to the North Sea**								
123	Liver Å	254	DK	254	100	0.0228	100	239.6	1991-2020	9.89825	57.51591
124	Uggerby Å	347	DK	347	100	0.02253	100	377.2	1991-2020	10.10901	57.56910
	Total	**600**	**=Total of Danish rivers discharging to the Skagerrak**					616.8	1991-2020		
		930	**=Total of monitored+unmonitored catchment areas discharging to the Skagerrak**								
118	Karup Å	615	DK	615	100	0.01824	100	637.5	1991-2020	8.98243	56.51410
120	Jordbro Å	110	DK	110	100	0.00395	100	104.1	1991-2020	9.20551	56.53243
121	Skals Å	556	DK	556	100	0.02359	100	403.3	1991-2020	9.49284	56.57312
122	Simested Å	218	DK	218	100	0.00933	100	209.3	1991-2020	9.43032	56.61130
125	Elling Å	123	DK	123	100	0.00522	100	130.9	1991-2020	10.48671	57.47273
126	Voer Å	239	DK	239	100	0.00773	100	263.9	1991-2020	10.43788	57.20831
127	Ger Å	162	DK	162	100	0.01013	100	155.3	1991-2020	10.35155	57.10379
128	Lindeborg Å	319	DK	319	100	0.01918	100	322.0	1991-2020	10.10039	56.94318
129	Haslevgard Å	81	DK	81	100	0.00321	100	65.0	1991-2020	10.22911	56.79567
130	Kastbjerg Å	96	DK	96	100	0.00293	100	73.0	1991-2020	10.10343	56.67610
103	Guden Å	2603	DK	2603	100	0.26836	100	2800.9	1991-2020	9.99211	56.45586
297	Ry Å	285	DK	285	100	0.02152	100	293.5	1991-2020	9.84277	57.26949
	Total	**5402**	**=Total of Danish rivers discharging to the Kattegat**					5458.2	1991-2020		
		13863	**=Total of monitored+unmonitored catchment areas discharging to the Kattegat**								

Statistical Information provided by France

OSPAR region	sub-region	sub-sub-region	Zone name	n°	Zone type	area (km2)	Monitoring area (km2)	Monitoring station code	X (Lambert 93)	Y (Lambert 93)
OSPAR II	Artois-Picardie	Pas de Calais	II-AP-PC-Aa	1	unmonitored area with diffuse inputs	2308				
		Somme	II-AP-SO-Canche	2	tributary river	3895	935.4	1094000	627096.59	7034086.51
			II-AP-SO-Somme	3	tributary river	5916	5619.1	1129000	619178.98	6997248.58
	Seine-Normandie	Normandie	II-SN-NO-Bethune	4	tributary river	2153	1800.3	3209000	588687	6995328
								3214000	563092	6981244
			II-SN-NO-Saane	5	tributary river	1718	300.8	3216000	552767	6977908
		Seine	II-SN-SE-SEINE	6	Main River	64953	64952.8	3174000	571754	6913715
			II-SN-SE-Andelle	7	tributary river	789	756.7	3181000	571334	6914410
			II-SN-SE-Eure	8	tributary river	6023	6023	3193000	569726	6911224
			II-SN-SE-H7	9	unmonitored area with diffuse inputs	2439				
			II-SN-SE-Risle	10	tributary river	2545	1396.6	3221500	534365	6897211
		Nord Cotentin	II-SN-NC-Dives	11	tributary river	1815	1513.4	3231000	469351.44	6902903.17
			II-SN-NC-Douve	12	tributary river without monitoring	1474				
			II-SN-NC-Orne	13	tributary river	2976	2493.4	3237800	453296.93	6900000.91
			II-SN-NC-Seulles	14	tributary river	547	267	3246000	443208.24	6915940.6
			II-SN-NC-Touques	15	tributary river	1311	1210.3	3228000	492554.14	6915350.43
			II-SN-NC-Vire	16	tributary river	2077	1158.9	3246920	431002.12	6910885.88
								3252500	400019	6905292
		Sud Cotentin	II-SN-SC-I6	17	unmonitored area with diffuse inputs	1302				
			II-SN-SC-Selune	18	tributary river	1623	1147.8	3271000	386563.85	6853896.86
								3272685	383604.33	6841489.07
			II-SN-SC-Sienne	19	tributary river	1135	535.3	3266975	373539.97	6885375.92
OSPAR III	Loire-Bretagne	Nord Bretagne	II-LB-NB-Aulne	20	tributary river	4312	1516.4	4179500	174826.6	6811447
			II-LB-NB-Couesnon	21	tributary river	2848	927.7	4163000	368375.8	6830650
			II-LB-NB-J1J2	22	tributary river	4961	447.3	4172060	246947.2	6859836

Statistical Information provided by France (continued)

OSPAR region	sub-region	sub-sub-region	Zone name	n°	Zone type	area (km2)	Monitoring area (km2)	Monitoring station code	X (Lambert 93)	Y (Lambert 93)
OSPAR IV	Loire-Bretagne	Sud Bretagne	IV-LB-SB-Blavet	23	tributary river	4649	2000.6	4194000	235705.70	6767758.00
			IV-LB-SB-J4	24	unmonitored area with diffuse inputs	2868				
			IV-LB-SB-Vilaine	25	tributary river	10144	10143.8	4216000	314947.90	6732499.00
		Loire	IV-LB-LO-Erdre	26	unmonitored area with diffuse inputs	3636				
			IV-LB-LO-LOIRE	27	Main River	110178	110178.2	4134700	408885.10	6706272.00
			IV-LB-LO-Sevre-Nantaise	28	tributary river	4664	2355.6	4146000	360632.00	6683489.00
		Sud Loire	IV-LB-SL-Lay	29	tributary river	4522	1715.6	4155500	370998.50	6605480.00
			IV-LB-SL-Sevre-Niortaise	30	tributary river	4363	3347.1	4160400	394503.50	6587520.00
	Adour Garonne	Charente	IV-AG-CH-Arnoult	31	unmonitored area with diffuse inputs	291				
			IV-AG-CH-Boutonne	32	tributary river	2141	1326.9	5002500	407658.03	6542727.50
			IV-AG-CH-Charente	33	tributary river	7526	7526.3	5006900	416819.84	6532356.00
			IV-AG-CH-Livenne	34	unmonitored area with diffuse inputs	1172				
			IV-AG-CH-Seudre	35	tributary river	988	377.6	5025000	395514.78	6514866.50
		Bassin d'Arcachon	IV-AG-BA-Eyre	36	tributary river	2036	1828.9	5191000	383133.34	6399939.00
			IV-AG-BA-S1	37	unmonitored area with diffuse inputs	2810				
		Gironde côté Dordogne	IV-AG-GD-Dordogne	38	tributary river	14605	14951	5046000	469008.40	6417796.50
			IV-AG-GD-Isle	39	tributary river	8472	6977.9	5029800	448701.62	6442615.00
			IV-AG-GD-P9	40	unmonitored area with diffuse inputs	870				
		Gironde côté Garonne	IV-AG-GG-Dropt	41	tributary river	2672	1222.5	5079100	459458.90	6397156.50
			IV-AG-GG-GARONNE	42	Main River	38227	38226.6	5104000	486212.12	6358047.50
			IV-AG-GG-Lot	43	tributary river	11541	11540.7	5084000	491337.47	6365578.50
			IV-AG-GG-O9	44	unmonitored area with diffuse inputs	3875				
		Côte Landaise	IV-AG-CL-S3S4	45	unmonitored area with diffuse inputs	3105				
		Adour	IV-AG-AD-Adour	46	tributary river	7977	7746.4	5223000	377850.88	6300913.50
			IV-AG-AD-Bidouze	47	tributary river	1041	425.1	5201050	371740.03	6264087.50
			IV-AG-AD-GavesReunis	48	tributary river	5504	5433.9	5201400	368260.84	6280192.00
			IV-AG-AD-Luy	49	tributary river	1367	1168.2	5219000	374107.03	6294744.00
			IV-AG-AD-Nive	50	tributary river	1153	905.8	5198750	339388.30	6264899.50
			IV-AG-AD-Pays-Basque	51	unmonitored area with diffuse inputs	644				

Statistical Information procided by Iceland

River	Catchment area	Long time discharge	Coordinates
Ölfusá	5,676 km^2	379 m3/s (1996-2021)	63,938769°N, 21,00477°W
Þjórsá	7,378 km^2	358 m3/s (1996-2021)	63,931381°N, 20,650181°W
Norðurá	513 km^2	21,4 m3/s (2004-2021)	64,710974°N, 21,601372°W

Statistical Information provided by Ireland

River	Sampling Site Name	Catchment area	Countries	Share in catchment area		Population (1990)		LTA*	LTA-period	Irish Grid East	Irish Grid North	National River Monitoring Programme Site Codes
		km^2		km^2	%	10E6	%	1000 m3/d	a			
Boyne		2695	Ireland	-	-	NI	-	3280	1940-2006	304510	276200	07B04:2200
Tolka										315810	236870	09T01:1150
Liffey		1256	Ireland	-	-	NI	-	1459	1900-2006	310230	234330	09L01:2350
Dodder										317750	231210	09D01:0900
Avoca		652	Ireland	-	0	NI	-	1562.112	1986-2006	323255	174480	10A03:1050
Slaney		1762	Ireland	-	-	NI	-	3208.032	1990-2006	297540	139735	12S02:2350
		6365	**=Total of main Irish rivers discharging to the Irish Sea**									
Barrow		3067	Ireland	-	-	NI	-	3784.32	1996-2006	270975	143585	14B01:3500
Nore		2530	Ireland	-	-	NI	-	3602.016	1972-2006	261755	139150	15N01:2400
Suir		3610	Ireland	-	-	NI	-	5889.024	1972-2006	226835	123216	16S02:2700
									1953-2006			
Blackwater		3324	Ireland	-	-	NI	-	7521.984	1955-2006	204775	98775	18B02:2600
Lee		1253	Ireland	-	-	NI	-	3435.264	1957-2006	160960	71755	19L03:0700
Bandon		608	Ireland	-	-	NI	-	1858	1975-2006	154125	57075	20B02:0900
Deel		486	Ireland	-	-	NI	-	624.672	1982-2006	133890	150760	24D02:1400
Maigue		1052	Ireland	-	-	NI	-	1513.728	1990-2006	147970	143800	24M01:0900
Shannon Old Chan.		11700	Ireland	-	-	NI	-	4499.712	1990-2006	158790	159045	25S01:2600
Shannon Tailrace			Ireland					13307.33	1947-2006	158025	160465	25S01:2900
Fergus		1042	Ireland	-		NI	-	1 598	1956-2006	134885	176840	27F01:0700
		28672	**=Total of main Irish rivers discharging to the Celtic Sea**									
Corrib		3138	Ireland	-	-	NI	-	9011.52	1973-06 excl. 86-90, 92-93	129320	226295	30C02:0460
Moy		2086	Ireland	-	-	NI	-	5405.184	1974-2006	124655	318780	34M02:1200
Erne		4372	Ireland/UK	2572/1800	60/40	NI	-	7 333	1951-2006	188800	361280	36E01:1600
		9596	**=Total of main Irish rivers dischrging to the Atlantic**									

Statistical Information provided by The Netherlands (with assistance from Germany and Belgium):

River	Catchment area	Countries	Share in catchment area		Population (1990)		LTA*	LTA-period
	km^2		km^2	%	10E6	%	1000 m3/d	a
Rhine	185000				55.6**		198720◆	1901-1995
		Switzerland	28000*	15	3	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				7.15 ***		28080 ◆◆	1911-1995
		France	8500	25	0.5			
		Luxembourg	100	0	0.05			
		Belgium	13150	39	2			
		Germany	4300	13	1			
		Netherlands	7400	22	3.6			
Scheldt	22004				~10		9331	1949-1995
		France	6680	30	~2.7	~27		
		Belgium	13324	61	6.9	69		
		Netherlands	2000	9	0.4	4		
Ems	15552						7690	1941-2006
		Germany	13152	85	3.75	85		
		Netherlands	2400	15	0.6	15		

* Catchment areas rounded off to the nearest hundred km2

** Population Rhine catchment per country requires further analysis

*** Population Meuse catchment: rough estimates

◆ Estimated discharge at outlet: 2.300 m3/s * 24 h/d * 3600 s/h

◆◆ Estimated discharge at outlet: 325 m3/s * 24 h/d * 3600 s/h

Information on monitoring stations provided by the Netherlands

Discharge area North Sea	catchment area	branche of river	name location	sampling of concentration	measurement of flow and load (shapefile)	WGS 84 Longitude Lengtegraad O [decimaal graden]	WGS 84 Latitude Breedtegraad N [decimale graden]
Closed Holland coast	Rhine	Noordzeekanaal	IJmuiden	x	x	4.622004	52.46601
Wadden coast	Rhine	Ijsselmeer	Den Oever		x	5.046435	52.93815
		Ijsselmeer	Kornwerderzand		x	5.335833	53.07194
		Ijsselmeer	Vrouwezand	x		5.393138	52.81035
Northern Delta Coast	Rhine/Meuse	Haringvliet	Haringvlietsluis	x	x	4.058327	51.82947
	Rhine	Nieuwe Waterweg	Maassluis	x	x	4.263921	51.90461

Statistical Information provided by Norway

	Waterbody code	River	Catchment area	Countries	Share in catchment area		Population (1990)		LTA*	LTA-period	UTM	UTM	UTM
	ID		km^2		km^2	%	1.00E+07	%	1000 m3/d	[a]	(east)	(north)	zone
Skagerrak	002-1519-R	Glomma (1)	41918	NO	41918	100	0.62	100	61350	1961-1990	621600	6573156	32
	006-71-R	Alna*	69	NO	69						600213	6642144	32
	012-2399-R	Drammenselva (2)	17034	NO	17034	100	0.2	100	28850	1961-1990	556636	6624287	32
	015-33-R	Numedalslågen (3)	5577	NO	5577	100	0.04	100	10200	1961-1990	561346	6551822	32
	016-769-R	Storelva	408	NO	408						534726	6562938	32
	018-127-R	Skienselva (4)	10772	NO	10772	100	0.11	100	23535	1961-1990	498897	6503307	32
	021-28-R	Otra (5)	3738	NO	3738	100	0.03	100	12870	1961-1990	438737	6449755	32
			79516	**=Total of Norwegian rivers discharging to the Skagerrak**									
North Sea	027-92-R	Bjerkreimselva	705	NO	705						325246	6487028	32
	028-16-R	Orreelva (6)	105	NO	105	100	0.01	100	335	1961-1990	299152	6515475	32
	038-11-R	Vikedalseva	118	NO	118						325319	6599745	32
	062-219-R	Vosso	1492	NO	1492						336048	6727293	32
	084-218-R	Nausta	277	NO	277						327402	6826450	32
		Suldalslågen (7)	1457	NO	1457	100	0.003	100	7420	1961-1990			
			4158	**=Total of Norwegian rivers discharging to the North Sea**									
Norwegian Sea	109-54-R	Driva	2487	NO	2487						477383	6948637	32
	121-56-R	Orkla (8)	3053	NO	3053	100	0.02	100	5710	1961-1990	237185	7018935	33
	123-29-R	Nidelva	3110	NO	3110						569352	7030201	32
	151-36-R	Vefsna (9)	4122	NO	4122	100	0.01	100	15655	1961-1990	418710	7292351	33
			12772	**=Total of Norwegian rivers discharging to the Norwegian Sea**									
Barents Sea	196-275-R	Målseva	3239	NO	3239						406570	7660047	34
	212-63-R	Altaelva (10)	7373	NO	7373	100	0.005	100	7495	1961-1990	586586	7759686	34
	234-124-R	Tana	16389	NO	16389						543964	7791926	35
	246-65242-L	Pasvikelva	18404	NO	18404						386937	7709634	36
			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 Spain

Name of river, subarea and discharge area		Nature of receiving water	River	Catchment area	Countries	Share in catchment area		Population (1990)		LTA*	LTA-period
Discharge area	River			km^2		km^2	%	1.00E+07	%	1000 m3/d	a
	Miera	coastal water	Miera	291	Spain	291	100	0.016	100	352	
	Nalón	coastal water	Nalón	4866	Spain	4866	100	0.539	100	6 977	
	Eo	coastal water	Eo	818	Spain	715	87				
CANTÁBRICO-OCCIDENTAL	Asón	estuary									
	Pas	coastal water	Pas	620	Spain	606	97				
	Saja	coastal water	Saja	955	Spain	955	100	0.104	100	1 166	
	Sella	coastal water	Sella	1246	Spain	1246	100	0.035	100	832	
	Allones	coastal water	Allones	516	Spain	516	100	0.049	100	988	1970-2005
	Belelle	coastal water	Belelle	60	Spain	60	100	0.003	100	1 484	1970-2005
	Castro	coastal water	Castro	140	Spain	140	100	0.004	100	167	1970-2005
	Eume	coastal water	Eume	470	Spain	470	100	0.013	100	1 696	1970-2005
	Forcadas	coastal water	Forcadas	68	Spain	68	100	0	100	183	1970-2005
	Grande	coastal water	Grande	283	Spain	283	100	0.002	100	647	1970-2005
	Grande de Jubia	coastal water	Grande de Jubia	182	Spain	182	100	0.004	100	318	1970-2005
	Jallas	coastal water	Jallas	504	Spain	504	100	0.022	100	739	1970-2005
	Landro	coastal water	Landro	270	Spain	270	100	0.017	100	629	1975-2005
	Lerez	coastal water	Lerez	450	Spain	450	100	0.085	100	1249	1970-1999
GALICIA COSTA	Mandeo	coastal water	Mandeo	457	Spain	457	100	0.039	100	771	1970-2005
	Masma	coastal water	Masma	291	Spain	291	100	0.014	100	404	1970-2005
	Mera	coastal water	Mera	127	Spain	127	100	0.007	100	435	1970-2005
	Mero	coastal water	Mero	345	Spain	345	100	0.042	100	456	1984-2005
	Oro	coastal water	Oro	189	Spain	189	100	0.007	100	389	1970-2005
	Sor	coastal water	Sor	202	Spain	202	100	0.007	100	528	1996-2005
	Tambre	coastal water	Tambre	1530	Spain	1530	100	0.059	100	3828	1994-2005
	Traba	coastal water	Traba	122	Spain	122	100	0.004	100	316	1970-2005
	Ulla	coastal water	Ulla	2803	Spain	2803	100	0.104	100	1337	1971-2005
				156	Spain	156	100				
	Umia	coastal water	Umia	440	Spain	440	100	0.052	100	846	1970-2005
	Verdugo	coastal water	Verdugo	334	Spain	334	100	0.021	100	484	1970-2005
GUADALETE-BARBATE	Guadalete	coastal water	Guadalete	3360	Spain	3360	100	0.555	100	413	
GUADIANA	Guadiana	coastal water	Guadiana	67122	Spain	55597	82.8	1.8		8556	1.912 - 1.995
					Portugal	11525	17.2				
GUADALQUIVIR	Guadalquivir	main river	Guadalquivir	63241	Spain	63241	100	4.966	100	3423	1942-88
	Guadiamar	estuary	Guadiamar								
	Guadaira	estuary	Guadaira		Spain						
MIÑO-SIL	Louro	main river									
	Miño	coastal water	Miño	17247	Spain	16347	94.8	0.881		25716	1975-95
					Portugal	900	5.2				
	Artibay	coastal water	Artibay	106	Spain	106	100	0.016	100	NI	
	Asua	estuary	Asua		Spain						
	Barbadún	estuary	Barbadun	135	Spain	135	100	0.02	100	NI	
	Butron	coastal water	Butron	175	Spain	175	100	0.024	100	NI	
	Cadagua	estuary	Cadagua		Spain						
	Deva	coastal water	Deva	531	Spain	531	100	0.146	100	694	
CANTÁBRICO ORIENTAL	Galindo	estuary	Galindo		Spain						
	Ibaizabal	estuary	IbaizabalUrola	342	SpainSpain	342	100	0.082	100	447	
	Lea	coastal water	Lea	81	Spain	81	100	0.01	100	NI	
	Oca	coastal water	Oca	132	Spain	132	100	0.022	100	NI	
	Oria	coastal water	Oria	860	Spain	860	100	0.02	100	740	
	Oyarzun	coastal water	Oyarzun	74	Spain	74	100	0.055	100	166	
	Urola	coastal water									
	Urumea	coastal water	Urumea	266	Spain	266	100	0.176	100	633	
TINTO-ODIEL-PIEDRAS	Tinto	coastal water	Tinto	1727	Spain	1727	100	0.09	100	178	1966-1995
	Odiel	coastal water	Odiel	2417	Spain	2417	100	0.211	100	1 200	1967-1995
	Piedras	coastal water	Piedras	550	Spain	550	100	0.034	100	61	
			Deza		Spain						
			Duero	97670	Spain	78960	80.8	3.093			
					Portugal	18710	19.2				
			Tajo	80190	Spain	55810	69.6	6.459			
					Portugal	24380	30.4				
			Nervión	1764	Spain	1764	100	0.997	100	1 105	
			Furelos		Spain						
			TOTAL	**356726**	**Spain**	**301093**	**84.4**	**20.907**	**NI**	**70553**	
					Portugal	**55515**	**15.6**	**NI**			
					TOTAL	**356608**	**100**				

Statistical Information provided by Sweden

River	Catchment area	Countries	Share in catchment area		Population (1990)		LTA	LTA-period	Longitude	Latitude
	km^2		km^2	%	1.00E+07	%	1000 m3/d	a		
Vege å (95)	498	Sweden	498	100	0.043	100	440	1961-1990		
Rönne å (96)	1890	Sweden	1890	100	0.0903	100	2030	1961-1990	13.1453	56.1217
Stensån (97)	284	Sweden	284	100	0.0065	100	350	1961-1990		
Lagan (98)	6444	Sweden	6444	100	0.1181	100	7410	1961-1990	13.0516	56.5157
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	12.8737	56.6915
Suseån (102)	441	Sweden	441	100	0.0074	100	640	1961-1990		
Ätran (103)	3343	Sweden	3343	100	0.0657	100	5070	1961-1990	12.4947	56.9031
Himleån (104)	214	Sweden	214	100	0.0127	100	330	1961-1990		
Viskan (105)	2201	Sweden	2201	100	0.1236	100	2760	1961-1990	12.3091	57.2393
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	85.2	0.8776		50530	1961-1990	12.0024	57.7639
		Norway	7450	14.8	ni					
	69844	**=Total of Swedish rivers discharging to the Kattegat**								
Bäveån (109)	302	Sweden	302	100	0.0226	100	350	1961-1990	11.9393	58.3471
Örekilsälven (110)	1327	Sweden	1327	100	0.0138	100	2050	1961-1990	11.6859	58.4604
Strömsån (111)	253	Sweden	253	100	0.0056	100	390	1961-1990		
Enningsdalsälven (112)	704	Sweden	704	100	0.0029	100	1360	1961-1990	11.5374	58.8771
	2586	**=Total of Swedish rivers discharging to the Skagerrak**								

Table of monitoring site locations for 2021 provided by the UK

- No monitoring data were available from Scotland in 2021.
- Details on English monitoring sites were not available at the time of data submission to OSPAR

Welsh monitoring sites, including frequency monitored:

Station Number	Station Name	Station NGR	Latitude	Longitude	Number samples per year
3	3-DEE-IRON BRIDGE	SJ4180060100	53.134863	-2.8713792	Data received from England
7	R CLWYD PONT DAFYDD	SJ0442074820	53.261739	-3.4343609	12
7220	ST ASAPH,SDW F.E.	SJ0326575116	53.264189	-3.4517603	4
7312	MOSTYN,SDW F.E.	SJ1705080120	53.311495	-3.246455	4
7314	7314-DEE-CHESTER STW FE	SJ3952066590	53.19294	-2.906683	Data received from England
7322	NEW QUEENSFERRY SDW	SJ3223068420	53.208506	-3.0161664	4
10004	NEATH 500M BELOW ABERDULAIS GS	SS7730299209	51.678203	-3.7759995	12
10079	AFAN SEWAGE TREATMENT WORKS	SS7606687321	51.571096	-3.7896566	4
13001	R OGMORE AT DIPPING BRIDGE	SS8910078400	51.493632	-3.5988582	4
13008	R EWENNY -EWENNY PRIORY BRIDGE	SS9032977386	51.484758	-3.5808469	4
15001	CADOXTON @ BENDRICK ROUNDABOUT	ST1343067690	51.401609	-3.2458732	12
16001	R ELY AT ST FAGANS GS	ST1194476985	51.484936	-3.2695451	12
17001	R TAFF AT BLACKWEIR CARDIFF.	ST1693578275	51.497289	-3.1979877	12
18001	R RHYMNEY AT LLANRUMNEY	ST2140980755	51.520224	-3.1341049	12
20003	R MAWDDACH TY'N Y GROES HOTEL BRIDGE	SH7297023370	52.792898	-3.8853264	12
23533	GANOL STW FE	SH8062077290	53.279104	-3.7919181	4
27575	LLANGEFNI STW FINAL	SH4644874574	53.245911	-4.3027139	4
27844	AFON GOCH (DULAS),PONT DULAS	SH4712087460	53.361841	-4.2988631	12
30001	RIVER TAWE @ MORRISTON RD.BR.	SS6736797989	51.66498	-3.9191438	12
30006	NANT Y FENDROD AT H.M.POINT	SS6730196649	51.652923	-3.9195884	12
30401	RIVER LOUGHOR AT H.M POINT	SN6146108764	51.760374	-4.0087703	12
30470	GOWERTON STW	SS5943197032	51.65445	-4.0334299	4
30874	DAFEN STREAM D/S HALFWAY P.S.	SN5248400346	51.682445	-4.1351809	4
31601	TOWY NANTGAREDIG,NR CARMARTHEN	SN4932220293	51.860819	-4.1895428	12
31619	GWILI AT ABERGWILI ROAD BRIDGE	SN4335921035	51.865842	-4.2764014	4
32001	TAF CLOG Y FRAN GAUGING STATION	SN2380016060	51.81532	-4.5576449	4
32803	W CLEDDAU PRENDERGAST GAUGING	SM9539917693	51.820306	-4.9700845	12
35201	RHEIDOL: PENYBONT BRIDGE	SN5944080327	52.402849	-4.0675474	12
40970	R USK, CHAIN BRIDGE	SO3464005580	51.74509	-2.9480837	12
42075	NASH STW - FINAL EFFLUENT	ST3350084140	51.552211	-2.9605097	4
45360	PONTHIR STW FINAL EFFLUENT	ST3354492610	51.628362	-2.9614818	4
50032	R WYE AT REDBROOK RAILWAY BR.	SO5360709884	51.785681	-2.6739641	12
65007	COG MOORS STW F/E	ST1610069700	51.42008	-3.2079762	4
72796	LLANELLI COASTAL (NEW) STW F.E	SS5420398105	51.662759	-4.1093982	4
74117	SWANSEA STW FINAL EFFLUENT	SS6901093010	51.620623	-3.8935361	4
82002	R.YSTWYTH AT RHYDYFELIN ROAD B	SN5887178796	52.388948	-4.0752596	12
88181	E.CLEDDAU AT CANASTON RB	SN0671715186	51.801823	-4.8046844	12

Northern Irish monitoring sites

Station Code	Type	Name	ING easting	ING northing
10022	River	BURNDENNET RIVER AT BURNDENNET BR	237349	404816
10025	River	FINN (FOYLE) R AT CLADY BR	229249	393998
10028	River	MOURNE R AT STRABANE BR	234502	397548
10170	River	ROE R AT ROE BR	267003	429648
10427	River	LOWER BANN AT THE CUTS	285553	430211
10449	River	BUSH R AT BUSHMILLS	293896	440856
10511	River	LAGAN R AT STRANMILLIS	334064	370894
10541	River	QUOILE R AT QUOILE BR	348770	346428
10948	River	FAUGHAN RIVER U/S OF WIER AT WS /RIVER ABS POINT	248936	420093
11204	River	NEWRY RIVER AT DAMOLLY ROW	308085	328467
50224	WWTW	BALLYRICKARD	348813	370512
50308	WWTW	BELFAST	335088	376845
50206	WWTW	CARRICKFERGUS	343184	388585
50138	WWTW	CRAIGTOWNMORE (NORTH COAST)	284306	438816
50293	WWTW	CULMORE	247510	423020
50251	WWTW	KILKEEL	331138	314503
50228	WWTW	KILLYLEAGH	352934	352686
50211	WWTW	KINNEGAR	338662	378271
50201	WWTW	LARNE SANDY BAY	340610	402220
50247	WWTW	NEWCASTLE	338067	329596
50239	WWTW	NEWRY	308966	324727
50208	WWTW	NEWTOWNABBEY	334631	380137
51369	WWTW	NORTH DOWN AND ARDS	357367	380567
50003	WWTW	STRABANE	234275	399055
50253	WWTW	WARRENPOINT	312932	319373
60001	Industrial	Du Pont (Invista)	248200	422270

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Our vision is a clean, healthy and biologically diverse North-East Atlantic Ocean, which is productive, used sustainably and resilient to climate change and ocean acidification.

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