OSPAR COMMISSION

Levels and trends in marine contaminants and their biological effects – CEMP Assessment report 2019 – 2020

Monitoring and Assessment Series

2020

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. The Contracting Parties are Belgium, Denmark, the European Union, Finland, France, Germany, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom of Great Britain and Northern Ireland.

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. Les parties contractantes sont : l'Allemagne, la Belgique, le Danemark, l’Espagne, 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, la Suisse et l’Union européenne.

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Levels and trends in marine contaminants and their biological effects – CEMP Assessment report 2019-2020

Executive Summary

This report summarises the 2019-2020 annual CEMP assessment of levels and trends of contaminants and their biological effects. The full assessment is available online in the OSPAR Hazardous Substances Assessment Tool (OHAT): https://ocean.ices.dk/ohat/?assessmentperiod=2020.

There were 11540 time series (of three years or more) in biota, of which 7314 were assessed for trends and 8765 for status; 3539 time series in sediment, of which 2692 were assessed for trends and 3103 for status; and 217 time series in water, of which 99 were assessed for trends and 217 for status.

Récapitulatif

Le présent rapport est un récapitulatif de l'évaluation annuelle de 2019-2020, réalisée dans le cadre du CEMP. Elle porte sur les niveaux et tendances des contaminants et leurs effets biologiques. L'évaluation complète est disponible en ligne, sur le site https://ocean.ices.dk/ohat/?assessmentperiod=2020.

Il existe 11540 séries temporelles (sur au moins trois ans) pour le milieu vivant, dont 7314 ont été évaluées pour les tendances et 8765 pour le statut; 3539 pour les sédiments, dont 2692 ont été évaluées pour les tendances et 3103 pour le statut; et 217 pour l'eau, dont 99 ont été évaluées pour les tendances et 217 pour le statut.

Levels and trends in marine contaminants and their biological effects – CEMP Assessment report 2019-2020

Summary

The 2019-2020 annual CEMP assessment can be viewed on the OSPAR Hazardous Substances Assessment Tool (OHAT). It assessed 11540 time series (of three years or more) in biota, of which 7314 were assessed for trends and 8765 for status; 3539 time series in sediment, of which 2692 were assessed for trends and 3103 for status; and 217 time series in water, of which 99 were assessed for trends and 217 for status.

A breakdown of trends and status by region and determinand is given in Tables 1-6. The assessment methodology is described in the help files on the OHAT.

Regional trends and status were assessed for metals, polycyclic aromatic hydrocarbons, polychlorinated biphenyls, and polybrominated diphenyl ethers in biota and sediment, organotins in sediment, and imposex (VDS) in whelks. The results are summarised in Tables 7-8, with full details available on the OHAT. The regional assessments were extended to consider more metals than before, and to split the polychlorinated biphenyl assessment into non-planar compounds and the mono-ortho compound CB118.

Tables 8-9 indicate whether there are likely to be sufficient stations to conduct regional assessments in the 2023 QSR. For a MIME subregion to be included in the current regional assessment it must contain at least three monitoring stations with reasonable geographic coverage, each station having at least three years of data of which at least one must be in the last six monitoring years (2013-2018). The same conditions will apply for the QSR so, as this will be based on the 2022 CEMP assessment, each station must have at least three years of data including one year in the period 2015-2020. Tables 8-9 give, by determinand group and MIME subregion, the number of qualifying monitoring stations in the current assessment. They also show how many stations are guaranteed to be included in the QSR because they have data collected between 2015 and 2018. The difference is due to stations that were last sampled in 2013 or 2014, and that will not appear in the QSR unless more recent monitoring data are submitted before the 2022 assessment. For biota, the most vulnerable subregion is the Iberian Sea, which will drop out of the regional assessments in the QSR unless more recent monitoring data are submitted. For sediment, only four subregions have more than the bare minimum number of stations required for regional assessments. Looking beyond the QSR, if better regional coverage is a priority, sampling of representative stations needs to begin soon to ensure timeseries of sufficient length are in place for the next OSPAR-wide assessment.

Table 1: Summary of trends in contaminants and biological effects in biota

	Region I			Region II			Region III			Region IV		
	total	down	up	total	down	up	total	down	up	total	down	up
Metals												
Arsenic	24	6	1	99	14	11	69	16	3	22	11	0
Cadmium	24	3	1	152	28	34	86	28	6	58	15	9
Chromium	11	0	1	109	16	11	73	14	7	28	0	7
Cobalt	11	0	1	43	6	4	7	0	1			
Copper	24	8	1	169	30	11	101	20	8	58	1	3
Lead	17	5	0	148	30	23	86	16	7	58	14	5
Mercury	48	6	9	183	20	42	97	11	13	57	10	8
Nickel	11	0	1	118	10	9	75	9	9	35	0	12
Selenium	11	0	1	21	1	5	20	1	2			
Silver	10	3	2	60	11	1	42	12	1	29	2	2
Tin	2	0	0	4	1	1						
Zinc	24	3	4	164	22	25	104	17	9	58	10	5
Organotins												
MBSN+				10	6	0						
DBSN+				17	13	0				1	0	0
TBSN+	1	1	0	27	17	0				7	4	0
TPSN+				3	1	0						
PAH parent compounds												
NAP	1	0	0	50	9	2	13	0	3	14	0	3
ACNLE	2	2	0	12	1	0	6	3	0	2	0	0
ACNE	1	0	0	27	1	1	6	0	0	3	0	0
FLE	2	1	0	29	3	10	10	1	0	12	0	4
PA	3	1	0	71	12	3	40	1	4	47	3	7
ANT	2	1	0	42	7	4	20	3	1	27	4	1
DBT				7	2	1	1	0	0			
FLU	3	2	0	76	14	8	40	4	1	49	13	0
PYR	2	2	0	74	16	4	38	6	3	49	14	1
BAA	2	2	0	55	15	5	32	8	0	48	12	0
CHR	2	0	0	65	17	2	35	9	0	49	18	0
BAP	2	1	0	37	8	1	16	2	0	44	5	1
DBAHA				13	3	0	6	1	0	12	1	1
BGHIP	2	2	0	45	11	0	29	6	0	35	8	0
ICDP	2	1	0	33	8	0	24	2	0	34	6	0
PAH alkylated compounds												
NAPC1				3	3	0						
NAPC2				14	0	0	4	2	1			
NAPC3				18	2	0	4	2	0			
PAC1							1	0	0			
PAC2							1	0	0			
PAC3							1	0	0			
DBTC1				15	1	2	5	0	0			

	Region I			Region II			Region III			Region IV		
DBTC2				12	0	5	5	1	0			
DBTC3				12	1	0	5	2	0			
PAH metabolites												
PA1OH				4	3	0						
PYR1OH				30	2	4	17	0	2			
BAP3OH				3	1	1						
Polybrominated diphenyl ethers												
BDE28	3	2	0	16	4	0	10	3	0			
BDE47	9	4	0	46	28	1	37	23	2	21	5	1
BDE66				2	1	0	5	5	0	14	4	0
BDE85				3	0	1	0	0	0			
BDE99	5	3	0	31	13	1	28	15	1	21	9	1
BD100	8	5	0	42	12	1	30	18	0	20	7	1
BD153	1	1	0	18	3	0	16	9	0	6	0	0
BD154	3	1	0	18	3	1	21	11	0	13	1	0
BD183				2	0	0	1	1	0			
Organobromines (other)												
HBCD	5	2	0	15	5	0						
HBCDA	5	2	0	6	2	0						
HBCDG	3	0	0	2	1	0						
Organofluorines												
PFOS	3	3	0	10	6	0						
Chlorobiphenyls												
CB28	8	5	0	71	34	0	56	18	0	31	14	0
CB52	17	9	0	90	30	1	68	22	4	36	13	0
CB101	19	9	1	124	55	2	71	27	0	48	22	0
CB105	10	7	0	42	17	2	46	14	0	38	13	0
CB118	22	12	1	128	59	3	77	29	2	48	14	0
CB126				3	0	0	1	1	0			
CB138	22	8	1	127	62	4	75	30	2	43	22	0
CB153	22	7	0	137	46	5	76	19	1	48	20	0
CB156	3	2	0	37	14	1	27	2	0	30	16	0
CB169				4	0	1						
CB180	13	3	0	94	31	3	60	15	0	43	13	0
Dioxins												
CDF2T				6	0	0	1	0	0	0	0	0
CDD1N				4	0	0						
TCDD				4	0	0						
Organochlorines (other)												
DDEPP	15	5	0	65	19	1	35	7	4	31	6	0
HCB	15	2	0	42	14	1	27	0	2	2	0	0
HCHA	11	8	0	5	5	0	26	4	1	14	0	0
HCHG	10	4	0	22	12	1	28	9	0	27	11	0
Imposex												

	Region I			Region II			Region III			Region IV		
INTS	0	0	0	5	0	0	0	0	0	0	0	0
VDS	2	1	0	85	39	0	44	9	0	11	4	0
Biological effects (other)												
ALAD				3	0	0						
EROD				39	9	1	29	13	0			
GST				2	1	0						
SFG										17	4	0

Table 2: Summary of trends in contaminants in sediment

	Region II			Region III		
	total	**down**	**up**	**total**	**down**	**up**
Metals						
Arsenic	67	7	3	21	0	3
Cadmium	66	14	2	19	0	4
Chromium	78	11	3	21	3	2
Copper	77	21	3	21	3	1
Lead	79	19	2	21	3	1
Mercury	71	27	0	20	4	0
Nickel	79	12	5	21	1	2
Zinc	70	15	1	20	1	2
Organotins						
MBSN+	29	3	1			
DBSN+	28	14	0			
TBSN+	27	19	0			
PAH parent compounds						
NAP	56	3	1	24	6	0
PA	79	21	0	26	5	2
ANT	73	10	7	25	4	1
DBT	15	1	2	14	5	0
FLU	81	17	0	26	4	2
PYR	79	22	2	26	4	2
BAA	77	13	0	25	2	1
CHR	77	13	2	24	5	3
BAP	77	16	1	25	2	0
BGHIP	76	20	2	25	5	2
ICDP	78	17	1	25	3	1
PAH alkylated compounds						
NAPC1	10	3	0	4	0	0
NAPC2	27	3	0	18	4	0
NAPC3	27	4	0	18	4	0
PAC1	17	2	0	14	2	1
PAC2	17	2	1	14	4	0
PAC3	15	0	1	12	2	1

	Region II			Region III		
	total	**down**	**up**	**total**	**down**	**up**
DBTC1	16	1	2	14	3	2
DBTC2	16	1	0	14	4	0
DBTC3	16	2	2	14	3	1
Polybrominated diphenyl ethers						
BDE28				2	0	0
BDE47	5	0	0	9	1	0
BDE66				3	2	0
BDE85				1	1	0
BDE99	5	0	0	6	3	0
BD100				2	1	0
BD153				5	0	0
BD154				4	1	0
BD183	1	0	0	3	0	0
BD209	7	0	0	3	0	0
Chlorobiphenyls						
CB28	45	12	3	14	1	0
CB52	42	10	2	14	2	1
CB101	50	13	3	14	3	1
CB105	12	3	0	8	0	1
CB118	54	16	1	15	2	2
CB138	55	20	0	18	3	0
CB153	58	14	2	18	1	3
CB156	1	0	0	7	0	0
CB180	46	17	1	14	1	1

Table 3: Summary of trends in contaminants in water

	Region II			Region III		
	Total	**down**	**up**	**total**	**down**	**up**
Metals						
Cadmium	9	4	0			
Lead	24	2	1	1	0	0
Nickel	26	5	0	17	0	0
PAH parent compounds						
BAP	22	3	0			

Table 4: Summary of status of contaminants and biological effects in biota: B = blue, G = green, O = orange (above BAC, but no EAC or equivalent), R = red

	Region I				Region II				Region III				Region IV			
	B	G	O	R	B	G	O	R	B	G	O	R	B	G	O	R
Metals																
Cadmium	2	23	0	1	34	137	0	8	46	72	0	2	41	15	0	3
Copper	10	0	7	0	15	0	94	0	8	0	81	0	7	0	52	0
Lead	13	11	0	1	24	148	0	6	28	101	0	5	18	39	0	2
Mercury	14	13	0	0	12	164	0	0	15	87	0	0	6	53	0	0
Zinc	0	0	17	0	0	0	103	0	0	0	89	0	0	0	59	0
Organotins																
TBSN+					0	6	0	36	0	0	0	2	0	9	0	3
PAH parent compounds																
NAP	0	8	0	0	0	77	0	1	0	29	0	3	0	21	0	0
PA	1	8	0	0	2	86	0	1	2	71	0	0	7	48	0	0
ANT	0	9	0	0	0	80	0	2	0	64	0	4	0	46	0	3
FLU	4	3	0	2	2	74	0	13	7	62	0	4	8	45	0	2
PYR	6	1	0	2	2	76	0	11	3	58	0	12	5	48	0	2
BAA	3	5	0	1	1	76	0	2	2	56	0	2	5	48	0	2
CHR	7	0	3	0	9	0	79	0	19	0	52	0	9	0	46	0
BAP	0	9	0	0	1	73	0	1	8	51	0	1	4	49	0	0
BGHIP	1	8	0	0	1	75	0	0	3	61	0	1	3	51	0	0
ICDP	0	0	9	0	2	0	73	0	13	0	47	0	6	0	48	0
PAH metabolites																
PA1OH					1	0	3	0								
PYR1OH					5	18	13	0	0	14	0	0				
Polybrominated diphenyl ethers																
BDE28	0	5	0	0	1	61	0	0	0	68	0	0	0	2	0	0
BDE47	0	15	0	0	0	82	0	2	0	73	0	1	0	23	0	0
BDE66					0	0	31	0	0	0	23	0	0	0	23	0
BDE85					0	0	12	0	0	0	0	0	0	0	22	0
BDE99	0	15	0	0	0	78	0	1	0	54	0	13	0	23	0	0
BD100	0	14	0	0	0	78	0	3	0	50	0	20	0	23	0	0
BD126	0	0	7	0	0	0	10	0								
BD153	2	5	0	0	0	60	0	2	0	42	0	5	0	23	0	0
BD154	0	7	0	0	0	70	0	2	0	56	0	10	0	23	0	0
BD183	0	0	7	0	0	0	25	0	0	0	17	0	0	0	22	0
BD209	0	0	7	0	0	0	15	0								
Chlorobiphenyls																
CB28	9	14	0	0	34	97	0	19	42	48	0	14	39	14	0	0
CB52	9	13	0	1	11	126	0	11	27	68	0	10	17	37	0	0
CB101	8	14	0	1	7	120	0	31	16	79	0	12	5	42	0	7
CB105	9	0	2	0	4	0	58	0	33	0	47	0	21	0	32	0
CB118	11	4	0	8	4	50	0	103	11	41	0	55	0	14	0	39
CB138	9	14	0	1	0	135	0	19	1	101	0	4	0	49	0	5

	Region I				Region II				Region III				Region IV			
CB153	4	19	0	1	0	152	0	6	0	107	0	0	0	54	0	0
CB156	9	0	2	0	12	0	49	0	50	0	29	0	35	0	16	0
CB180	9	13	0	1	16	134	0	2	29	72	0	2	11	42	0	1
Organochlorines (other)																
DDEPP	10	0	6	0	0	0	86	0	0	0	72	0	0	0	44	0
HCB	12	0	4	0	15	0	53	0	29	0	29	0	17	0	4	0
HCHA	9	0	0	0	8	0	25	0	40	0	17	0	21	0	25	0
HCHG	9	2	0	0	17	24	0	13	42	9	0	12	34	11	0	2
Imposex																
VDS	1	1	0	0	18	45	0	12	4	11	0	31	2	3	0	4
Biological effects (other)																
EROD	0	0	0	0	23	0	15	0	19	0	9	0	0	0	0	0
SFG	0	0	0	0	0	0	0	0	0	0	0	0	1	11	0	11

Table 5: Summary of status of contaminants in sediment: B = blue, G = green, O = orange (above BAC, but no EAC or equivalent), R = red

	Region II				Region III			
	B	G	O	R	B	G	O	R
Metals								
Arsenic	30	0	40	0	17	0	6	0
Cadmium	24	50	0	5	15	7	0	1
Chromium	0	21	0	60	0	2	0	21
Copper	47	15	0	18	11	3	0	9
Lead	15	3	0	63	5	6	0	12
Mercury	14	16	0	51	6	7	0	10
Nickel	40	0	41	0	3	0	20	0
Zinc	22	5	0	46	6	6	0	11
Organotins								
TBSN+	0	0	0	34	0	0	0	5
PAH parent compounds								
NAP	11	42	0	12	1	23	0	2
PA	14	59	0	12	2	17	0	8
ANT	11	67	0	7	4	17	0	5
DBT	0	19	0	0	0	17	0	0
FLU	12	67	0	6	3	19	0	4
PYR	12	70	0	3	3	20	0	4
BAA	11	67	0	6	2	18	0	6
CHR	9	73	0	1	2	20	0	4
BAP	20	61	0	3	3	20	0	3
BGHIP	45	0	38	0	4	0	22	0
ICDP	50	0	34	0	7	0	19	0
Polybrominated diphenyl ethers								
BDE28	0	23	0	0	0	11	0	0

	Region II				Region III			
BDE47	0	52	0	0	0	20	0	0
BDE66	1	23	0	0	0	12	0	0
BDE85	1	20	0	1	0	9	0	1
BDE99	0	36	0	12	0	17	0	1
BD100	0	21	0	10	1	15	0	0
BD153	0	32	0	0	0	12	0	0
BD154	0	27	0	0	2	15	0	0
BD183	3	35	0	0	5	8	0	0
BD209	0	17	0	18	0	5	0	9
Chlorobiphenyls								
CB28	5	59	0	7	4	19	0	1
CB52	2	59	0	8	1	18	0	4
CB101	0	63	0	8	1	21	0	2
CB118	3	29	0	39	1	8	0	15
CB138	3	65	0	2	0	22	0	0
CB153	2	68	0	1	0	25	0	0
CB180	4	65	0	1	1	22	0	0

Table 6: Summary of status of contaminants in water: G = green, R = red

	Region II		Region III	
	G	R	G	R
Metals				
CD	9	0	39	0
PB	20	7	39	0
NI	27	0	49	0
PAH parent compounds				
BAP	20	7		

Table 7: Summary of regional assessments of metals in biota and sediment. The regional trend is indicated by up, down or — (no significant change). The regional status is indicated by blue (below BAC); green (below EAC or equivalent); orange (above BAC, but no EAC or equivalent); R (above EAC or equivalent). Note that some region metal combinations are assessed for status, but not trends and these are only coloured; conversely, other combinations are only assessed for trends (there are no assessment criteria) and these are not coloured.

Region	Subregion	Arsenic	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
Biota												
1	Barents Sea							—				
	West of Iceland											
	Greenland-Scotland ridge	—	—			down	—	—		—		—
	East of Iceland											
	Norwegian Sea	—	—	—	—	—		—	—		—	—
2	Norwegian Trench	down	down	up	—	—	—	—	—		—	—
	Northern North Sea	—	up	down	—	down	—	—	—	—	—	—
	Skagerrak and Kattegat	—	—	down	—	—	—	—	—		—	—
	Southern North Sea	up	up	—		up	—	up	up	up	down	up
	Channel	—	—	up		—	—	up	up		down	up
3	Irish and Scottish West Coast	down	down	—		down	down	—	down		down	down
	Irish Sea	—	down	—	—	—	—	—	—	—	down	—
	Celtic Sea	—	—	—		—	—	—	up	—	—	—
4	Northern Bay of Biscay		—	up		up	—	up	up		—	—
	Iberian Sea	down	—			—	down	down				down
	Gulf of Cadiz											
Sediment												
2	Norwegian Trench											
	Northern North Sea	up	—	—		—	—	down	—			—
	Skagerrak and Kattegat											
	Southern North Sea	down	down	down		down	down	down	down			down
	Channel	—		—		—	—	—	—			
3	Irish and Scottish West Coast	—	up	—		—	down	down	—			—
	Irish Sea	—	—	—		down	—	down	—			—
	Celtic Sea											

Table 8: Summary of regional assessments of polycyclic aromatic hydrocarbons, polychlorinated biphenyls, polybrominated diphenyl ethers in biota and sediment, organotins in sediment and imposex in whelks. The regional trend is indicated by up, down or – (no significant change). The regional status is indicated by blue (below BAC); green (below EAC or equivalent); orange (above BAC, but no EAC or equivalent); R (above EAC or equivalent). The polychlorinated biphenyl assessment is split into non-planar compounds (CB28, CB52, CB101, CB138, CB153, CB180) and the mono-otho compound CB118.

Region	Subregion	PAHs	PCBs		PBDEs	Organotins	Imposex
			non-planar	CB118			
Biota							
1	Barents Sea						
	West of Iceland						
	Greenland-Scotland ridge		—	down	—		
	East of Iceland						
	Norwegian Sea		—	down			
2	Norwegian Trench		—	down			
	Northern North Sea	—	down	down	down		down
	Skagerrak and Kattegat	—	down	down	—		down
	Southern North Sea	—	down	down	down		
	Channel	—	down	down	down		down
3	Irish and Scottish West Coast	—	down	down	down		down
	Irish Sea	—	down	down	down		down
	Celtic Sea	—	down	down			down
4	Northern Bay of Biscay	—	down	down			—
	Iberian Sea	down	down	down	down		
	Gulf of Cadiz						
Sediment							
2	Norwegian Trench						
	Northern North Sea	—	—	—			
	Skagerrak and Kattegat						
	Southern North Sea	—	down	down		down	
	Channel	—					
3	Irish and Scottish West Coast	up	—	up			
	Irish Sea	—					
	Celtic Sea						

Table 9: Number of biota monitoring stations (with three years of data) in each MIME subregion with data in the period 2013-2018 (now) and data in the period 2015-2018 (QSR).

Region	Subregion	Metals		PAHs		PBDEs		PCBs		Imposex	
		now	QSR	now	QSR	now	QSR	now	QSR	now	QSR
1	Barents Sea	11	11	2	2	4	4	8	8	2	2
	West of Iceland										
	Greenland-Scotland ridge	19	16	7	7	8	8	12	10		
	East of Iceland	2	2								
	Norwegian Sea	5	5	1	1	3	3	4	4		
2	Norwegian Trench	17	17			5	5	17	17	3	3
	Northern North Sea	40	17	27	20	13	13	37	30	37	31
	Skagerrak and Kattegat	33	32	17	13	15	15	27	26	19	17
	Southern North Sea	48	47	19	19	28	27	41	40	14	12
	Channel	33	32	28	28	22	22	32	32	21	18
3	Irish and Scottish West Coast	29	26	18	15	24	17	29	19	9	9
	Irish Sea	49	40	33	27	31	27	44	34	17	14
	Celtic Sea	29	28	21	19	13	10	28	22	20	17
4	Northern Bay of Biscay	35	35	31	31			30	30	11	10
	Iberian Sea	24	1	24	1	23	0	24	1		
	Gulf of Cadiz										
5	Wider Atlantic										

Table 10: Number of sediment stations (with three years of data) in each MIME subregion with data in the period 2013-2018 (now) and data in the period 2015-2018 (QSR).

Region	Subregion	Metals		PAHs		PBDEs		PCBs	
		now	QSR	now	QSR	now	QSR	now	QSR
1	Barents Sea								
	West of Iceland								
	Greenland-Scotland ridge								
	East of Iceland								
	Norwegian Sea								
2	Norwegian Trench								
	Northern North Sea	20	14	21	18	18	13	19	16
	Skagerrak and Kattegat			1	0	1	0		
	Southern North Sea	58	57	60	55	34	34	51	46
	Channel	3	3	3	3	3	3	1	1
3	Irish and Scottish West Coast	7	6	8	7	7	5	8	7
	Irish Sea	14	13	17	13	13	13	15	12
	Celtic Sea	2	2	2	1	1	1	2	1
4	Northern Bay of Biscay								
	Iberian Sea								
	Gulf of Cadiz								
5	Wider Atlantic								

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

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