

OSPAR Fact Sheet:  
D5 - Nutrient Concentrations

No.	Topic	Question	Summary Information	OSPAR FACT SHEET ELEMENT
<b>Question 4: About the sub-programme</b>				
4g	Sub-Programme ID	Provide a unique identifier for sub-programme.	Use sub(region) and MS code (e.g. BALDE) <u>plus</u> MS-defined alpha-numeric code (e.g. MADIT-D08-01)	Not addressed in this OSPAR fact sheet.
4h	Temporal scope	Provide the start date of the sub-programme (past or future) and, if appropriate, an end date, or indicate the programme is ongoing	Start date: YYYY	1995
			End Date: YYYY, 9999 (ongoing)	9999
4i	Spatial scope	Indicate the coverage of the sub-programme according to the four jurisdictional zones of MSFD Marine Waters (or outside this, either landward or beyond marine waters if appropriate, e.g. for pressures).	Select all relevant from List: Monitoring zones	To be completed by individual Contracting Parties.
4j	Description_Spatial Scope	Briefly describe the rationale for the geographic scope of the programme (e.g. in relation to relevant environmental characteristics, such as distribution of a species or habitat, to pressures or to relevant activities and measures).	Free text or URL web link or section in paper report	The programme covers OSPAR maritime area, divided into suitable assessment units. COMP 2013 para 2.11 "Contracting Parties should divide their waters in the OSPAR maritime area into suitable assessment units based on the relevant physical features. This process of characterisation could be undertaken in accordance with the Annex II to the Water Framework Directive. Guidance on this typology is given in Section 3." The Eutrophication Monitoring Programme (EMP) is related to the Comprehensive Procedure that contains a screening procedure to inform risk-based monitoring. There is a differentiation in monitoring effort (spatial and temporal intensity and frequency) depending on eutrophication status. Monitoring programme is designed on a risk-based approach, so that monitoring effort is concentrated on 'at-risk' areas. Monitoring is conducted as recommended by the OSPAR Common Procedure (i.e. in accordance with the OSPAR Agreement on a Eutrophication Monitoring Programme) [F] [F] <a href="http://www.ospar.org/documents/dbase/decrecs/agreements/05-04e_eut_mon_prog.doc">http://www.ospar.org/documents/dbase/decrecs/agreements/05-04e_eut_mon_prog.doc</a>
4k	Purpose	For what purpose is this sub-programme aimed at collecting data and information?	Select all relevant from List: Monitoring purpose	Environmental state and impacts; Pressures (see fact sheets on OSPAR RID and CAMP monitoring); Effectiveness of measures
4l	Links to programmes of other directives & conventions	If monitoring for other Community legislation or international agreements is contributing to your MSFD programme (as indicated in Question 8a), give details as follows:	Free text (for programme name and description) and URL web link(s) or indicate Not relevant (to this sub-programme).	OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention)
		<ul style="list-style-type: none"> <li>Name of other programme</li> </ul>		OSPAR Contracting Parties implement the Eutrophication Monitoring Programme (EMP) Agreement (reference number: 2005-4 (as updated in 2013) supersedes the Nutrient Monitoring Programme adopted by OSPAR 1995 (Reference number 1995-5)) [F], which is part of the OSPAR 'Co-ordinated Environmental Monitoring Programme' (CEMP) [FF] It is carried out primarily to assess the extent to which the objectives of the OSPAR Eutrophication Strategy have been met
		<ul style="list-style-type: none"> <li>A specific URL web link(s) to where the information required for each part of Question 9 can easily be found and is directly relevant for your marine waters.</li> </ul>		<a href="http://www.ospar.org/documents/dbase/decrecs/agreements/05-04e_eut_mon_prog.doc">http://www.ospar.org/documents/dbase/decrecs/agreements/05-04e_eut_mon_prog.doc</a>
4l	Links to programmes of other directives & conventions	<ul style="list-style-type: none"> <li>Describe how the existing monitoring will contribute to MSFD needs including how it is integrated into your MSFD programme.</li> </ul>	Free text (for programme name and description) and URL web link(s) or indicate Not relevant (to this sub-programme).	OSPAR Contracting Parties implement the Eutrophication Monitoring Programme (EMP) Agreement (reference number: 2005-4 (as updated in 2013) supersedes the Nutrient Monitoring Programme adopted by OSPAR 1995 (Reference number 1995-5)), which is part of the OSPAR 'Co-ordinated Environmental Monitoring Programme' (CEMP). It is carried out primarily to assess the extent to which the objectives of the OSPAR Eutrophication Strategy have been met. The core marine environmental monitoring activity under the JAMP is the OSPAR CEMP. The CEMP is currently focussed on monitoring of the concentrations and effects of selected contaminants and nutrients in the marine environment as follows: <ul style="list-style-type: none"> <li>nutrients in sea water;</li> <li>eutrophication effects. Monitoring, in the form of repeated measurements of nutrient concentrations at key locations provides the basis for assessing progress towards good environmental status and the evaluation of the effectiveness of actions being taken to protect the sea. The CEMP also includes a pre-CEMP covering components which the Contracting Parties are preparing to monitor in a co-ordinated manner through the development of monitoring guidance, quality assurance procedures and/or assessment tools. Currently the pre-CEMP includes the following components: <ul style="list-style-type: none"> <li>ocean acidification parameters pH, Total Alkalinity, Dissolved inorganic carbon, pCO<sub>2</sub>.</li> </ul> </li> </ul>

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<b>Question 9: Methodology</b>				
9a	Elements monitored	Which elements (ecosystem components, pressures from MSFD Annex III) are monitored?	List the specific elements (e.g. particular species or contaminants) <u>within</u> the broad categories reported under Question 5c.	Pressure: nutrient enrichment
9b	Parameters measured	What parameters of the elements are measured?	Choose from the List: Monitoring parameters, e.g. concentration in sediment, population size, intensity of pressure [full list to be developed].	Winter dissolved inorganic nitrogen (DIN); the sum of NH <sub>4</sub> -N, NO <sub>2</sub> -N and NO <sub>3</sub> -N; Winter dissolved inorganic phosphate (DIP); · NH <sub>4</sub> -N (µmol l <sup>-1</sup> ); · NO <sub>2</sub> -N (µmol l <sup>-1</sup> ); · NO <sub>3</sub> -N (µmol l <sup>-1</sup> ); · PO <sub>4</sub> -P (µmol l <sup>-1</sup> ); · SiO <sub>4</sub> -Si (µmol l <sup>-1</sup> ). Monitoring of winter DIN, DIP and Si should be in conjunction with salinity measurements (see Common Procedure, §§ 4.26 and 4.29). Salinity – supporting parameter
9c	Monitoring method	What is the method used for monitoring (data collection) in the field and, where appropriate, any subsequent laboratory processing?	Provide a reference to a published method or, if unpublished, describe the method used.	JAMP Eutrophication monitoring guidelines on nutrients [F] <a href="http://www.ospar.org/documents/dbase/decrecs/agreements/13-04e_guidelines_monitoring_nutrients.doc">http://www.ospar.org/documents/dbase/decrecs/agreements/13-04e_guidelines_monitoring_nutrients.doc</a>
9d	Method alteration	Describe the methods used if they deviate from the published method provided.  If this field is left blank it is assumed the method used is according to the published method given in Q9c.	Free text or URL web link or section in paper report	OSPAR EMP: <a href="http://www.ospar.org/documents/dbase/decrecs/agreements/05-04e_eut_mon_prog.doc">http://www.ospar.org/documents/dbase/decrecs/agreements/05-04e_eut_mon_prog.doc</a> ; (See JAMP guidelines in 9c)
9e	Quality Assurance (QA)	In addition to a specified method, is there any additional Quality Assurance used?	Select one from List: Monitoring QA	See Guidelines Sections 8 and 9.3 for analytical QA.
9f	Quality Control (QC)	What type of Quality Control is used?	Select one from List: Monitoring QC	
9g	Spatial resolution (density) of sampling	What is the proportion of the geographic scope (given in Q4i) which is covered by sampling?	Approximate proportion (%)	100% [F] [F]: In a 6-yr MSFD cycle all waters are sampled, because even areas not at-risk are subject to periodic checks as part of OSPAR COMP.
		What is the density of sampling within the proportion given above?	Approximate number of samples expected to be taken from the assessment area (No./year)	The spatial resolution of nutrient monitoring is informed by the EMP screening procedure based on identifying areas with consistently low nutrients, as set out in the Comprehensive Procedure. The screening procedure enables a risk-based monitoring programme to be established. There is a differentiation in monitoring effort (spatial resolution) depending on eutrophication status. The monitoring programme is designed on a risk-based approach, so that monitoring effort is concentrated on 'at-risk' areas, referring to areas where there are eutrophication problems. Monitoring is less frequent in area where there are no eutrophication problems.
9h	Temporal resolution (periodicity) of sampling	What is the temporal frequency of the sub-programme?	Select one from List: Monitoring frequency	Demand driven data collection. Monitoring is at frequencies recommended by the OSPAR Common Procedure (OSPAR Eutrophication Monitoring Programme Agreement) [F] - COMP recommendations: (1) Non-problem areas – about every three years during winter; (2) Potential problem areas and Problem areas – annually during winter when algal growth is at a minimum and during monitoring of direct and indirect effect.
9i	Description_Sub-programme	Where the information for Questions 9a-9h varies within the sub-programme (e.g. spatially or temporarily), provide details. This could include, for example:	Free text or URL web link or section in paper report	

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<b>Question 10: Monitoring data</b>				
10a	Aggregation of data	At which scale can the data from the sub-programme be aggregated for environmental assessments?	Select one from List: Monitoring data aggregation scale	Other - see 10b for supporting text.
10b	Description_DataAggregation	If the data cannot be aggregated (beyond the national scale), give reasons?		OSPAR Common Procedure guidance [F] on aggregation paragraphs 1.2, 3.3, 3.4 and 3.5 [F] OSPAR Agreement Reference number: 2013-8; <a href="http://www.ospar.org/v_measures/get_page.asp?v0=13-08e_common_proc_eutrophication.doc&amp;v1=5">http://www.ospar.org/v_measures/get_page.asp?v0=13-08e_common_proc_eutrophication.doc&amp;v1=5</a>
10c	Access to data	Nature of data/information to be made available:	Select one or more from List: Data type	Unprocessed/raw data
		What method/mechanism will be used to make the data available?	Select from List: Data access mechanism	OSPAR Contracting Parties prefer to make data available via the use of existing data stream with a yearly data submissions mechanisms: through ICES <a href="http://ocean.ices.dk/HydChem/HydChem.aspx?plot=yes">http://ocean.ices.dk/HydChem/HydChem.aspx?plot=yes</a> and WISE WFD <a href="http://water.europa.eu/">http://water.europa.eu/</a> . This has the benefit of additional QA checks.
		Will the EC/EEA have use rights?	Select one from List: Data access rights	Open access [F] [F] To ICES database
		How frequently are the data expected to be updated thereafter?	Select one from List: Monitoring frequency	OSPAR recommends Contracting Parties submit their data annually.
		When will the data first become available?	Date: MM/YYYY	06/2014 [F] [F] data are updated annually in the ICES database
10d	Description_DataAccess	How frequently are the data expected to be updated thereafter?	Select one from List: Monitoring frequency	Annually
		Describe how the data and information from the programme will be made accessible to the EC/EEA, indicating whether this is in place already or under development.	Free text or URL web link or section in paper report	Monitoring data reported by Contracting Parties to OSPAR under the Coordinated Environmental Monitoring Programme (of which the Eutrophication Monitoring Programme is a part) are managed on behalf of OSPAR by ICES.