Monitoring programme: Non-indigenous species, Biodiveristy - Water column habitats, Biodiveristy - Seabed habitat
Programme topic: Non-indigenous species

SUB-PROGRAMME: NON-INDIGENOUS SPECIES

TABLE OF CONTENTS

REGIONAL COORDINATION

The monitoring of this sub-programme is: **partly coordinated.**

The monitoring of phytoplankton, zooplankton, macrophytes and benthic fauna undertaken as part of the HELCOM COMBINE manual is coordinated and ongoing. Port monitoring has a coordinated and agreed protocol, but the monitoring itself is not ongoing and the ports that should be included in the monitoring are not agreed at Baltic scale. The monitoring is not adapted to serving the core indicator 'Trends in arrival of new non-indigenous species'.

Coordinated monitoring is developed in ports through the Joint HELCOM/OSPAR Task Group on Ballast Water Management Convention Exceptions (TG BALLAST).

Guidelines for extended Rapid Assessment Monitoring of non-indigenous species.

PURPOSE OF MONITORING (Q4K)

Follow up of progress towards:

Baltic Sea Action Plan (BSAP)	Segments	Biodiversity Maritime activities
	Ecological objectives	Thriving and balanced communities of plants and animals Viable populations of species No introductions of alien species from ships
Marine strategy framework directive (MSFD)	Descriptors	D1 Biodiversity D2 Non-indigenous species
	Criteria (Q5a)	1.1 Species distribution 1.7 Ecosystem structure 2.1 Abundance and state characterisation of non-indigenous species, in particular invasive species 2.2 Environmental impact of invasive non-indigenous species
	Features (Q5c)	Biological features: A description of the biological communities associated with the predominant seabed and water column habitats. An inventory of the temporal occurrence, abundance and spatial distribution of nonindigenous, exotic species or, where relevant, genetically distinct forms of native species, which are present in the marine region or subregion.
	Pressures and impacts, MSFD Annex III Table 2 (Q5c)	Biological disturbance: Introduction of non-indigenous species and translocations
	Activities (Q7a, 7b)	Man-made structures: Port Transport: shipping
Other relevant legislation (Q8a)	Ballast Water Management Convention	

Assessment of: (Q4k)

State/Impacts	X	temporal trends, spatial distribution, status classification
Pressures	X	temporal trends, spatial distribution, status classification
Human activities causing the pressures	X	
Effectiveness of measures		

Scale of data aggregation for assessments: (Q10a)

HELCOM assessment unit Level 1: Baltic Sea	
HELCOM assessment unit Level 2: Subbasin	X
HELCOM assessment unit Level 3: Subbasins with coastal and offshore division	
HELCOM assessment unit Level 4: Subbasins with coastal WFD division	

MONITORING CONCEPTS TABLE

Coordination	Elements Q9a (Q5c)	Parameter Q9a (Q5c)	Method Q9c, Q9d	QA/QC Q9e, 9f	Frequency Q9h, 9i	Spatial resolution Q9g, 9i	Link to HELCOM core indicators	Link to MSFD GES characteristics Q5b	Spatial scope Q4i	Monitoring started Q4h	CPs monitoring

Regional (COMBINE)	Non-indigenous species	Species distributional range/pattern	All biological monitoring programs	HELCOM COMBINE manual	Yearly	Whole Baltic Sea (biological monitoring programs)	Trends in arrival of new NIS	2.1.1 Trends in abundance, temporal occurrence and spatial distribution in the wild of non-indigenous species... 2.2.1 Ratio between invasive non-indigenous species and native species in some well studied taxonomic group...	EEZ	Different programs started at different times.	All HELCOM Contracting Parties
Other	Non-indigenous species	Species present (whole community or selected species only)	Port monitoring protocol as part of the HELCOM/OSPAR Joint Harmonised Procedure on granting exemptions to the BWMC, Regulation A-4	Other	Yearly	Ports	Trends in arrival of new NIS	2.1.1	Territorial waters	EE: tested 2012 and 2013. SE: tested in 2013, will start in 2016.	EE, SE (2016)
Other	Non-indigenous species	Selected species present	Registrating releases of NIS	Other	Depends on number of permits	Depends on number of permits	Trends in arrivial of new NIS	2.1.1	Territorial waters	Start in 2016	SE
Other	Non-indigenous species	Species present (whole community or selected species only)	National	Other	Yearly	Coastal water outside nuclear plants	Trends in arrival of new NIS	2.1.1	Coastal water	2011	SE

Other	Non-indigenous species	Species present from benthic communities and easily accesible vagile species	Extended Rapid Assessment Survey (eRAS)	Other	Yearly recommended	Ports and harbors, waterways and canals, and aquaculture sites and other NIS hot spots	Trends in arrival of new NIS	2.1.1	Territorial waters	2009	DE

Brief description of monitoring

Full description in HELCOM COMBINE manual. Detailed information on monitoring frequency and spatial resolution has not yet been collected from all countries but will be added.

Element / parameter	**Phytoplankton, zooplankton, soft bottom benthos, fish, macrophytes**
Method	Biological monitoring is conducted based on HELCOM COMBINE manual. Port monitoring: according to the minimum requirements in the HELCOM/OSPAR Joint Harmonized Procedure, sampling takes place from the docks although if possible, use of a small vessel is encouraged. Stations are fixed sites within the port area. Plankton samples are taken twice a year (spring bloom and summer maximum) together with other samples (benthos, fouling species and epifauna). Sample analysis follows HELCOM COMBINE manual if not specified otherwise in the HELCOM/OSPAR Joint Harmonized Procedure.
QA/QC	QA/QC procedures are currently being discussed for port monitoring. In samples, where such procedures exist (planktons) they are followed. In groups where they don't exist, procedures will be developed (fouling, epifauna and benthos).
Frequency	The frequency of sampling differs between the Contracting Parties and between monitored parameters in the HELCOM COMBINE manual. For exemption purposes, minimum frequency for port monitoring is five years. For MSFD purposes frequency should be increased (annually).
Spatial Scope	**-**
Spatial resolution	Biological monitoring covers all assessment units.

ASSESSMENT REQUIREMENTS

Monitoring requirements and gaps

Monitoring is to be carried out to fulfill assessment requirements of HELCOM ecological objectives that are specified through HELCOM core indicators. The requirements on monitoring can include number of stations, frequency or sampling and replication.

Monitoring requirements	Most of the information concerning non-indigenous species (NIS) is obtained through routine biological monitoring programs as the HELCOM COMBINE manual. These ongoing monitoring programs give data on NIS presence and abundance in phyto-, zooplankton and benthic communities. In some countries also shallow water habitats are covered by regular monitoring and this will give data on NIS (macrophytes, sessile organisms, mobile crustaceans and in some cases fish). The seasonal coverage of monitoring should take into account the lifecycle aspects of different taxonomic groups, e.g. fish monitoring may be conducted annually but phytoplankton with a short generation time should be monitored several times a year to be able to detect new NIS. In addition to routine biological monitoring programs it is important to have NIS monitoring also in port areas because the most important vector for new introductions is shipping and thus recipient area for new NIS are ports and their vicinity. According to the HELCOM/OSPAR Joint Harmonized Procedure, exemptions are valid for maximum of five years and data used for risk assessment cannot be older than 12 months. An intermediate review (as suggested in IMO G-7) is included in the grant based on any new information on the basis of the exemption granted including but not limited to: presence of non-indigenous species, introduction pathways for NIS, changes in physical conditions in the port. For MSFD purposes, more frequent (annual) monitoring would be required. Minimum site requirement in each port is dependent on the size of the port. Further details can be found from the HELCOM/OSPAR Joint Harmonized Procedure.
Gaps	The HELCOM COMBINE manual is the basis for NIS monitoring. However additional monitoring e.g. in ports is needed. There is also a need for modifications in biological monitoring programs, e.g. to change the temporal or spatial coverage, which differs between countries. The data needs for the core indicator 'Trends in arrival of NIS' are not sufficiently covered at the moment in the HELCOM COMBINE manual. Probably monitoring different from the existing port monitoring will be needed for the trend indicator. Most of the new NIS arrive to ports and therefore those areas should be prioritized for monitoring in order to obtain reliable data for this core indicator.

Adequacy for assessment of GES (Q5d)

Monitoring should provide adequate data and information to enable the periodic assessment of environmental status, and distance from and progress towards GES as required by MSFD under Article 9 and 11.

Adequate data?	No

Established methods for assessment?	Yes
Adequate understanding of GES?	Yes
Adequate capacity to perform assessments?	Yes

Assessment of natural variability (Q5e)

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DATA PROVIDERS AND ACCESS

Data access point	HELCOM COMBINE manual HELCOM-OSPAR port survey database AquaNIS database Estonian Environmental Agency and Estonian Marine Institute
Data type (Q10c)	Processed Data sets Data products
Data availability (Q10c)	ICES Database
Data access (Q10c)	Open access
INSPIRE standard (Q10c)	
When will data become available? (Q10c)	HELCOM COMBINE manual data is available. Port data is already available on request. Database upload and download functions are currently being developed.
Data update frequency (Q10c)	Yearly
Describe how the data and information from the programme will be made accessible to the EC/EEA	
Contact points in the Contracting parties	Contact point to national monitoring programmes will be added
Has the data been used in HELCOM assessments?	Yes

Data is used in the following Baltic Sea Environment Fact Sheets (BSEF)	Abundance and distribution of marenzelleria species Abundance and distribution of Round goby Abundance and distribution of the Zebra mussel Biopollution level index Observed non-indigenous and cryptogenic species in the Baltic Sea

REFERENCES

HELCOM/OSPAR Joint Harmonized Procedure

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