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Monitoring programme: Biodiversity - Seabed habitats
Programme topic: Benthic community species distribution and abundance

SUB-PROGRAMME: SOFTBOTTOM FAUNA

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REGIONAL COORDINATION

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

- Common monitoring guidelines: [HELCOM COMBINE manual](#) for offshore waters.
- Common quality assurance programme: missing.
- Common database: [ICES Data Centre](#).

PURPOSE OF MONITORING (Q4K)

Follow up of progress towards:

Baltic Sea Action Plan (BSAP)	Segments	Biodiversity Eutrophication
	Ecological objectives	Natural distribution and occurrence of plants and animals Natural oxygen levels Thriving and balanced communities of plants and animals Viable populations of species
Marine strategy framework directive (MSFD)	Descriptors	D1 Biodiversity D2 Non-indigenous species D5 Eutrophication D6 Seafloor integrity
	Criteria (Q5a)	1.1 Species distribution 1.3 Population condition 1.6 Habitat condition 2.1 Abundance and state characterisation of non-indigenous species 6.2 Condition of benthic community
	Features (Q5c)	Biological features: A description of the biological communities associated with the predominant seabed and water column habitats. Information on angiosperms, macro-algae and invertebrate bottom fauna, including species composition, biomass and annual/seasonal variability.
Other relevant legislation (Q8a)	Habitats Directive Water Framework Directive	

Assessment of: (Q4k)

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

Scale of data aggregation for assessments: (Q10a)

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

MONITORING CONCEPTS TABLE

Coordination	Elements <u>Q9a (Q5c)</u>	Parameter <u>Q9a (Q5c)</u>	Method <u>Q9c, Q9d</u>	QA/QC <u>Q9e, 9f</u>	Frequency <u>Q9h, 9i</u>	Spatial resolution <u>Q9g, 9j</u>	Link to HELCOM core indicators	Link to MSFD GES characteristics <u>Q5b</u>	Spatial scope <u>Q4i</u>	Monitoring started <u>Q4h</u>	CPs monitoring
Regional (COMBINE)	Soft-bottom macrofauna	Population size (abundance) Species composition	HELCOM COMBINE manual, <u>Part C</u> <u>Annex C8</u>	<u>HELCOM COMBINE manual</u>	Yearly	3-10 offshore stations per sub- basin and 3-10 stations per coastal water type.	<u>State of the soft-bottom macrofauna communities</u>	1.6.2 Relative abundance and/or biomass	EEZ	1965 SE 1971	All HELCOM Contracting Parties
Regional (COMBINE)	Soft-bottom macrofauna	Population size (biomass)	HELCOM COMBINE manual, <u>Part C</u> <u>Annex C8</u>	<u>HELCOM COMBINE manual</u>	Yearly	3-10 offshore stations per sub- basin	<u>State of the soft-bottom macrofauna communities</u>	1.6.2 Relative abundance and/or biomass	EEZ	1965	All HELCOM Contracting Parties

National	Soft-bottom macrofauna	Size of individuals (length or weight)	National	National	Yearly	1-3 selected stations in offshore and coastal waters per sub-basin	<u>State of the soft-bottom macrofauna communities</u>	1.6.2 Relative abundance and/or biomass	EEZ	1965	FI
								6.2.4 Parameters describing the characteristics of the size spectrum of the benthic community			

Brief description of monitoring

Detailed information on monitoring frequency and spatial resolution has not yet been collected from all countries but will be added.

Element / parameter	Soft-bottom macrofauna/Population size (abundance) Soft-bottom macrofauna/Population size (biomass)
Method	Offshore samples taken by van Veen grabs, while coastal samples taken by Ekman, van Ween, small van Ween, (and some other grabs). Sieve size according to <u>Part C Annex C8 of HELCOM COMBINE manual</u> is 1.0 mm (+ 0.5mm optionally), but some countries take only 0.5 mm samples or even 0.25 mm samples. Number of replicates varies between 3-5.
QA/QC	<u>HELCOM COMBINE manual</u>
Frequency	Yearly in offshore and many coastal sites Every 3rd – 6th year in some coastal sites. In SE, some local stations in the Baltic Sea are monitored every 2nd-3rd year.
Spatial Scope	Monitoring is divided, in practice, to COMBINE monitoring in the offshore and national coastal monitoring programmes, which are restricted to coastal waterbodies. Spatial strategies differ nationally: in the extremes, Sweden has aggregations of stations along the coast, while Finland has evenly distributed stations over the offshore area and coastal stations within waterbodies. National strategies have not been coordinated. Swedeb has 580 stations in the Baltic Sea.

Spatial resolution

All sub-basins

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, the sampling frequency and replication.

Monitoring requirements

An appropriate assessments of state of the soft-bottom macrofauna require 3-6 monitoring stations per HELCOM assessment unit in offshore waters and coverage of several waterbodies per coastal water type. Monitoring is to be carried out during summer months every year if the aim is to detect temporal change or every 3-6 years (if the aim is to assess the state of the area).

Replicate samples (n=3-6) need to be taken in a monitoring location to cover the small scale spatial variation of the fauna communities. Regional coherence of the assessment results also require similar sieve sizes. This has been (almost) achieved in the offshore sampling, whereas coastal sampling methods seem to vary nationally and comparability is weaker. The last 40 years of HELCOM monitoring on soft bottom macrofauna was carried out according to the [HELCOM COMBINE manual](#) and it was agreed to sample in autumn.

Gaps**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? Yes

Established methods for assessment? Yes

Adequate understanding of GES? Yes

Adequate capacity to perform assessments? Yes (but not for all parameters, e.g., not for size of individuals)

Assessment of natural variability (Q5e)

Quantitative, qualitative and expert opinion. Long time series (over 40 years) have shown the natural variability in the data set, which can be taken into account in the assessment.

DATA PROVIDERS AND ACCESS

Data access point	National databases, data reported to <u>ICES Data Centre</u>
Data type (Q10c)	
Data availability (Q10c)	
Data access (Q10c)	
INSPIRE standard (Q10c)	
When will data become available? (Q10c)	
Data update frequency (Q10c)	Every 1-6th years
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, e.g. <u>BSEP 116B</u> Biodiversity in the Baltic Sea.

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