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Monitoring programme: Biodiversity - Birds

Programme topic: Birds

SUB-PROGRAMME: MARINE BIRD HEALTH

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REGIONAL COORDINATION

The monitoring of this sub-programme is: **not coordinated**.

- Common monitoring guidelines: missing.
- Common quality assurance programme: missing. National QA/QC exist.
- Common database: missing.

PURPOSE OF MONITORING (Q4K)

Follow up of progress towards:

Baltic Sea Action Plan (BSAP)	Segments	Biodiversity Hazardous substances
	Ecological objectives	Healthy wildlife Viable populations of species No illegal pollution
Marine strategy framework directive (MSFD)	Descriptors	D1 Biodiversity D4 Food webs D8 Contaminants
	Criteria (Q5a)	1.3 Population condition 4.1 Productivity (production per unit biomass) of key species or trophic groups 8.2 Effects of contaminants
	Features (Q5c)	Biological features: A description of the population dynamics, natural and actual range and status of species of seabirds occurring in the marine region or subregion.
Other relevant legislation (Q8a)	Birds Directive	
	Water Framework Directive/Chemical quality	
	CITES	
	Bonn Convention	
	Bern Convention	

Assessment of: (Q4k)

State/Impacts	X
Pressures	
Human activities causing the pressures	
Effectiveness of measures	

Scale of data aggregation for assessments: (Q10a)

HELCOM assessment unit levels

1 - Baltic Sea	
2 - Subbasins	
3 - Subbasins with coastal and offshore division	
4 - Subbasins with coastal WFD division	
Other: coastal zones	X

MONITORING CONCEPTS TABLE

Coordination	Elements <u>Q9a</u> (<u>Q5c</u>)	Parameter <u>Q9a</u> (<u>Q5c</u>)	Method <u>Q9c</u> , <u>Q9d</u>	QA/QC <u>Q9e</u> , <u>9f</u>	Frequency <u>Q9h</u> , <u>9i</u>	Spatial resolution <u>Q9g</u> , <u>9i</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
Semi-regional	White-tailed eagle	Breeding success, Nestling brood size, Productivity	National	National	Yearly	Selected coastal area	<u>White-tailed eagle productivity</u>	1.3.1 Population demographic characteristics 4.1.1 Performance of key predator species using their production per unit biomass (productivity) 8.2 Effects of contaminants	Coastal Waters	1965-1973	EE, DE, DK, FI, LV, LT, PL, RU, SE
Other	White-tailed eagle	Abundance, productivity	National, counting nests and reproductive parameters	National	Yearly	Location of known nests	<u>White-tailed eagle productivity</u>	1.2.1 Population abundance 4.1.1 Performance of key predator species using their production per unit biomass (productivity)	Coastal Waters	1994	EE

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	White-tailed eagle reproduction/ breeding success, nestling brood size and productivity
Method	<p>White-tailed eagles are resident and faithful to their territories throughout their lifetime. These features provide good opportunities for long-term monitoring of populations and breeding performance. Nest sites are checked annually for occupancy and the reproductive output is recorded for each occupied territory. Based on the frequency distribution in the population of occupied nests containing 0, 1, 2 or 3 nestlings, three reproductive parameters are assessed: the proportion of reproducing pairs in the population (Breeding success), the mean number of nestlings per successfully breeding pair (Nestling brood size) and the the mean number of nestlings per checked pair in the population (Productivity).</p> <p>Based on data from nests inspected by climbing the nest tree, and excluding nests checked only from the ground, nestling brood size is a precise standard. Nest trees are climbed for precise assessment of reproductive parameters. Some samples are taken from the ground. In connection with these nest visits, measurements and biological samples are taken. The following parameters are usually measured from the nestlings: wing chord (for estimation of age in days), tarsus width and depth (for estimation of sex, see Helander 1981, Helander et al.2007), weight (for nutritional status) and in some areas feather and blood samples (for chemical analyses and genetic studies). The nestlings are ringed using an international colour ringing programme for identification, according to Helander (2003b). Dead eggs and shell pieces are collected for measurements, investigation of contents and chemical analyses, for studies on relationships with reproduction. Feathers shed from adults are generally collected. All samples collected in Sweden are archived in the National Specimen Data Bank.</p>
QA/QC	National. Regional coordination to be developed for reporting of national metadata.
Frequency	Monitoring is done in the HELCOM Contracting Parties on an annual basis.
Spatial Scope	Coastal waters / TW
Spatial resolution	Eagles presently breed along the coasts and mainland shores of the whole Baltic Sea, and are monitored in a network of national projects with harmonized methodology. Monitoring is made for the entire population. There are sub-regions with small subpopulations: the Gulf of Finland, and especially the Kattegat where the species was brought to extinction in the 1800s but where resettlement is now in progress.

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

White-tailed sea eagle reproductive ability is monitored annually by assessing the frequency distribution of occupied eagle nests containing 0, 1, 2 or 3 nestlings (3 being the maximum in this species). These data are used for the assessment of the three indicators of reproductive ability: breeding success, nestling brood size and productivity. Survey techniques and sampling methods are presented in (Helander 1994b, Helander et al. 2007, 2009). For assessment of nutritional condition of nestlings, weight and winglength (for age) is required.

The core indicator 'Productivity of white-tailed eagle' describes not only biomagnification of contaminants, but also persecution, disturbance of nest sites, food availability and availability of suitable nesting sites. This indicator combines the breeding success and brood size into a single indicator and assesses the reproductive output of the population. It is a useful indicator in studies on relationships between reproduction and anthropogenic pressures and also a vital parameter in assessments of population status in management perspectives. Most Baltic Sea countries are monitoring white-tailed eagle and for assessment purposes monitoring should be done in all areas along the Baltic coast where the species occurs in adequate minimum abundance. In order to include white-tailed eagles that forage specifically in the coastal ecosystem zone and marine area, only breeding pairs in the coastal area should be considered (tentative boundary up to a maximum of 10 km inland from the coastal mean water line, in accordance with the guidelines of EC Nature 2-5, 1993).

Other bird species are currently not being monitored for marine bird health.

Gaps

Besides for the white-tailed eagle, monitoring for marine bird health currently does not exist.

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?	A 5-year mean value against a pre-1950s target level for each reproductive parameter will be used.
Adequate understanding of GES?	Yes
Adequate capacity to perform assessments?	Nationally

Assessment of natural variability (Q5e)

Quantitative. Natural variability in reproductive output is very small for this species.

DATA PROVIDERS AND ACCESS

Data access point	National databases
Data type (<u>Q10c</u>)	Processed datasets
Data availability (<u>Q10c</u>)	National data centres
Data access (<u>Q10c</u>)	Access by request
INSPIRE standard (<u>Q10c</u>)	Species distribution (metadata; no nest site coordinates for protective reasons)

When will data become available? (Q10c)	In 2015
Data update frequency (Q10c)	3-year or 5-year intervals suggested
Describe how the data and information from the programme will be made accessible to the EC/EEA	By request
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. BSEP116B Biodiversity in the Baltic Sea.
Data is used in the following Baltic Sea Environment Fact Sheets (BSEF)	Population development of White-tailed eagle

REFERENCES

Core indicator [Productivity of white-tailed eagle](#)

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