Monitoring Specifications

Date: 2010-06-14

HD Habitat Type 1150
Coastal Lagoons

ARGE BLMP - Working Group for the North Sea and Baltic Sea Monitoring Programme

At the 34th North German Environmental Ministerial Meeting held on 17 April 1997, the competent departments of the German Federal Government and of the federal states of Hamburg, Mecklenburg-Vorpommern, Lower Saxony and Schleswig-Holstein agreed to establish a joint working group co-ordinating the monitoring of the marine environment of the North and Baltic Seas (ARGE BLMP Nord- und Ostsee).

Members of ARGE BLMP are:

- Federal Ministry of Food, Agriculture and Consumer Protection
- Federal Ministry of Transport, Building and Urban Development
- Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
- Federal Ministry of Education and Research
- Authority for Urban Development and Environment of the Free and Hanseatic City of Hamburg
- Mecklenburg-Vorpommern Ministry for Agriculture, the Environment and Consumer Protection
- Lower Saxony Ministry for the Environment and Climate Protection
- Schleswig-Holstein Ministry for Agriculture, the Environment and Rural Areas

The Monitoring Manual describes the current measuring programme implemented under BLMP. The monitoring requirements of the different EC Directives (Marine Strategy Framework Directive, Water Framework Directive, FFH, Birds Directive), marine protection conventions (OSPAR, HELCOM, Trilateral Monitoring and Assesment Program) and other bodies of regulations have been taken into account in the Manual. The Monitoring Manual is available free of charge on the BLMP website at www.blmp-online.de/Seiten/Monitoringhandbuch.htm

Editorial information

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Bundesamt für Seeschifffahrt und Hydrographie (BSH)
Sekretariat Bund/Länder-Messprogramm für die Meeresumwelt von Nord- und Ostsee (BLMP)
Bernhard-Nocht-Straße 78
20359 Hamburg

www.blmp-online.de

1 General

1.1 Subject area

Biological Monitoring - Habitats - HD Habitat Type 1150 - Coastal Lagoons

1.2 Definition

1.2.1 EU definition (Interpretation Manual 2007)

"Lagoons are expanses of shallow coastal salt water, of varying salinity and water volume, wholly or partially separated from the sea by sand banks or shingle, or, less frequently, by rocks. Salinity may vary from brackish water to hypersalinity depending on rainfall, evaporation and through the addition of fresh seawater from storms, temporary flooding of the sea in winter or tidal exchange. With or without vegetation from *Ruppietea maritimae*, *Potametea*, *Zosteretea* or *Charetea* (CORINE 91: 23.21 or 23.22).

- Flads and gloes, considered a Baltic variety of lagoons, are small, usually shallow, more or less delimited water bodies still connected to the sea or have been cut off from the sea very recently by land upheaval. Characterised by well-developed reedbeds and luxuriant submerged vegetation and having several morphological and botanical development stages in the process whereby sea becomes land.
- Salt basins and salt ponds may also be considered as lagoons, providing they had their origin on a transformed natural old lagoon or on a saltmarsh, and are characterised by a minor impact from exploitation."

1.2.2 National definition

"Lagoons are expanses of coastal water wholly or partially separated from the sea that are salty/brackish or display a higher degree of freshwater influence (coastal lakes, lagoons) and are at least temporarily influenced by salt water. Often, they are separated from the sea only by narrow beach ridges, less frequently by shingle banks or bars of rock. During winter storm tides, they are affected by influxes of seawater. Lagoons are a characteristic element of equilibrium coasts. The salinity and water volume in lagoons are highly variable."

1.2.3 Mapping procedure

Shallow, dynamically changing coastal waters that are created as a result of natural processes, with alternating salt water and fresh water influences; wholly or partially separated from the sea by sandbanks, beaches or salt meadows; only reached by sea water when storm surges occur, but not extensively inundated or only supplied with additional water via tidal channels at MHT. Their substrates are not completely exposed at low water (subareas exposed during ebb tides are to be allocated to Habitat Type 1140, where applicable). This habitat type also includes temporary waters, provided they contain water for at least several weeks without interruption during the vegetation period. Completely desalinated stagnant waters without any influence from sea water are not to be included in 1150 sites.

In the Baltic Sea region, there are extensive and sometimes richly structured Bodden and sections of Bodden that may be allocated to Habitat Type 1150 (coastal lagoons) on account of their character. The following criteria must be satisfied for this to apply:

- Largely or clearly separated from the sea
- No defining inflow of fresh water from landward feeder streams

The boundaries of this habitat type should be drawn along the mean waterline. It therefore encompasses the water body and the shorelines with their reedbeds, tall herbaceous communities and pioneer communities. Adjoining terrestrial areas do not belong to this habitat type, even if they are occasionally inundated.

Ponds or small anthropogenic waters (e.g. bomb craters, pits dug for dyke building materials, salt pans) are not surveyed as coastal lagoons. Waters to be classified as Habitat Type 1150 should usually be at least 100 - 200 m² in area.

Unlike dyked and/or technically drained primary sites (e.g., in Schleswig-Holstein, Wesseker See, Lister Koog), recently created artificial brackish coastal waters and retention polders (e.g. sluice ponds, waters in dyked former tidal and wind flats or salt meadow areas, flooded gravel pits; e.g., in Schleswig-Holstein, Rantumbecken, Beltringharder Koog, Kronenloch/Wöhrdener Loch) do not belong to this habitat type.

Delimitation from other habitat types:

1130 Estuaries: No river mouth areas, no determining influence from inflows of fresh water.

1.3 Competent authority/ies

Mecklenburg-Vorpommern:	LUNG
Lower Saxony:	NLWKN, NLPV NI
Schleswig-Holstein:	NPV SH, LLUR

1.4 Working group

Ad Hoc Working Group on Habitat Types

2 Monitoring requirements

2.1 Necessity

HD [1]

Article 11 [2]

Comments

Article 11 (monitoring of habitats and all species listed in Annexes II, IV and V) imposes the obligation to monitor the conservation status of all the habitats listed in Annex I HD: "Member States shall undertake surveillance of the conservation status of the natural habitats and species referred to in Article 2 with particular regard to priority natural habitat types." Where applicable, sites outside HD areas are also to be covered.

Article 17 [3]

Comments

Article 17 governs the performance of the reporting obligations. "Every six years […] Member States shall draw up a report on the implementation of the measures taken under this Directive. This report shall include in particular information concerning […] the main results of the surveillance referred to in Article 11."

DocHab 04-03/03 (European Commission, 2006) sets out further substantive standards and guidelines.

WFD [4]

Article 8 in conjunction with Article 6 and Annex IV

Comments

"Member States shall ensure the establishment of programmes for the monitoring of water status in order to establish a coherent and comprehensive overview of water status within each river basin district."

"[F]or protected areas the above programmes shall be supplemented by those specifications contained in Community legislation under which the individual protected areas have been established." (Third indent of Article 8(1))

According to Article 6 in conjunction with Annex IV, the protected areas also include NATURA 2000 areas designated for the conservation of habitats and species, where the maintenance or improvement of water status is an important factor in their protection.

TMAP [5]

Wadden Sea Plan (Stade Declaration, 1997)

Comments

The Trilateral Wadden Sea Plan was adopted at the eighth Trilateral Government Conference between the three countries with coastlines along the Wadden Sea, Denmark, Germany and the Netherlands. It is inspired by the guiding principle of achieving, as far as possible, a natural, self-sustaining ecosystem in which natural processes can proceed in an undisturbed way. The Plan formulates joint conservation targets, including targets for water and sediments, beaches, dunes, salt marshes and marine mammals. Projects and measures are developed to promote the achievement of these targets. Since 1994, the Trilateral Monitoring and Assessment Programme (TMAP) has been the instrument that has enabled the parties to track the progress made towards the achievement of the targets throughout the Wadden Sea. Measurable physical, chemical, biological and socioeconomic variables are examined (cf. CWSS and TMAG, 2004).

2.2 Environmental targets

HD

Maintenance of Habitat Type 1150 with a favourable conservation status or, where applicable, its restoration to such a status:

- Coastal lagoons created and influenced by natural processes, temporarily connected to the neritic zone and with natural habitat dynamics in beach/salt meadow and dune complexes marked by differing levels of halinity, mostly influenced by brackish water.
- Species composition typical of the relevant biotopes with stable populations of the characteristic species
- Stable or increasing range and overall area
- No or minor impairments, above all due to recreational activities, inputs of nutrients and construction measures undertaken for the purposes of coastal protection

TMAP

No specific targets have been defined for coastal lagoons (*Wadden Sea Quality Status Report 2004*).

2.3 Threats

- Restriction of natural dynamics due to coastal protection measures
- Potentially localised over-intensive grazing
- Land lost to construction measures

2.4 Spatial allocation

Comments on BD - coastal waters

This habitat type is covered indirectly by the Birds Directive if it is a habitat for bird species crucial to the value of an EU bird protection area.

	EEZ	12- nm zone	Coastal waters 1)	Transitional waters
MSFD	-	-	-	-
Birds Directive	-	-	x	-
HD	-	-	x	-
WFD	-	-	x	-
HELCOM	-	-	-	-
OSPAR	-	-	-	-
TMAP	-	-	x	-

1) Under the WFD: baseline plus one nautical mile

3 Monitoring concept

The foundation for the network is provided by the Concept for the Monitoring of the Conservation Status of Habitat Types and Species under the Habitats Directive in Germany (*Konzept zum Monitoring des Erhaltungszustandes von Lebensraumtypen und Arten der FFH-Richtlinie in Deutschland*), which was drawn up at the federal level for terrestrial habitat types on the basis of the results of an R+D project (SACHTELEBEN, BEHRENS et al., 2009).

Under the concept, a total census is to be carried out for this habitat type on account of the small number of sites.

The coastal lagoon sites that have been delimited are based on physical regional/geographical and geomorphological units (islands, sections of foreshore). This means every island or section of foreshore on which the habitat type actually occurs is regarded as a site.

3.1 Description of monitoring network

North Sea

On the North Sea coast, [still to be specified] sites are located in Schleswig-Holstein and eight sites in Lower Saxony. This habitat type is not found in the Hamburg Wadden Sea.

Baltic Sea

On the Baltic Sea, [still to be specified] sites are located on the Schleswig-Holstein Coast and [still to be specified] sites in Mecklenburg-Vorpommern.

3.2 Monitoring activities

North Sea and Baltic Sea

Surveying and Evaluation of Coastal Lagoons (1150)

Methods:

The target variables are the status quo and trends in:

- Occurrence, range and area
- Characteristic structures, functions and species

The sampling strategy must make it possible to obtain evidence about the ecological status of the habitat type.

Monitoring concept:

Area-wide surveying of the overall extent of the habitat type to ascertain its range and area. Selection and permanent specification of representative sample areas or transects for the detailed surveying of qualitative parameters (see below).

Basic monitoring and specification of the monitoring network

An area-wide survey of habitat types is carried out in the course of the six-year reporting cycle in order to assess their range and area as characteristic variables. Both on the North Sea and on the Baltic Sea, this survey is carried out using aerial images and the biotope mapping keys issued by the Länder and/or the TMAP typology and the associated mapping key. The primary goal is the uniform identification and assessment of HD habitat types across the different Länder.

Depending on what is known about the changes in certain areas, it may be sufficient to carry out reviews of known sites based on aerial images in alternation with area-wide terrestrial surveys. This is a matter to be decided by the relevant specialist authorities at Land level. In the case of marine habitat types and estuaries, substantive, structural synergy effects between the surveying of habitat types and the monitoring required by the WFD are to be secured.

Representative survey areas along the transects are established and surveyed or the transects surveyed in their entirety in order to record characteristic qualitative variables (characteristic structures, functions and species, impairments) (for general comments on the specification of survey areas, see SACHTELEBEN, BEHRENS et al., 2009). Where a total census is to be carried out, each site must be covered by at least one transect. The transects or the survey areas within the transects represent the various sites in terms of their manifestation, variability and conservation status (selection criteria: topographical, geomorphological and habitat situation, structure and size). The data that are required for the assessment of the criteria mentioned in the assessment matrix (see below) are gathered in these areas. The number of transects and the survey areas specified within the transects must be sufficient to adequately depict the variance of the manifestations and conservation statuses at the qualitative and quantitative levels.

As a rule, the transects run at right angles to the coastline in order to optimise the representation of the sequence of habitats. Depending on the size of the site or the complexes of sites, the survey areas may range in size from single, permanent plots to several large, spatially specified survey areas along transects and transects in their entirety. In the case of small coastal lagoons, it is also possible for full-coverage site surveying to be implemented. The 'structured walks' procedure may be deployed in this context. Where appropriate, the transects encompass all the habitat types found on the relevant section of coast or island. This is the best way of incorporating natural transitions and dynamic changes into the assessment.

The survey areas along the transects or the transects themselves are to be plotted using GPS with the highest possible positional accuracy (approx. 1 - 5 m), so that they can be surveyed again when the mapping procedure is repeated. Where the sites change to a considerable extent, the boundaries of the transects or survey areas must be adjusted as necessary. The length of the transects may be increased in areas where a habitat type is expanding or decreased where a habitat type is shrinking.

Frequency:

The frequency for the surveys of the transects or survey areas ranges from once a year to once per reporting period. In the latter case, the survey cycle is to be intensified as necessary, depending on the actual dynamics of change at the specific location. The concrete specification of the transects and survey areas and, where appropriate, the specification of a different survey cycle are matters to be decided by the relevant specialist authorities at Land level.

The results from the individual survey areas are compiled and the conservation status of the habitat type assessed for the relevant biogeographical region, incorporating the results of the area-wide mapping, in order to carry out an overall assessment of the habitat type site in question (see SACHTELEBEN, BEHRENS et al., 2009).

Parameter:

- Area of the 1150 Habitat Type
- Biotope types according to the mapping keys issued by the Länder; additionally, on the North Sea, TMAP vegetation types
- Flowering plant species, algae species as well, if possible
- Impairment and threat factors
- Impairments
- Manifestation of the biotope complex (representation of all characteristic vegetation types/successional stages)
- Range and area
- Selected characteristic animal species (e.g. breeding and migratory birds) as well, if possible, depending on the size and structure of the coastal lagoons
- Typical spectrum of structures, species and vegetation types
- Water and vegetation structure

3.3 Additional parameters

4 Assessment

4.1 Assessment procedures

North Sea and Baltic Sea

Title

HD Habitat Type - Coastal Lagoons (1150)

Authors

(KRAUSE et al., 2008)

Guideline:

HD

Comments:

Assessment Matrix Drawn up by the Federation-Länder Working Group on Habitats Directive Reporting Obligations for Marine and Coastal Sites within the Framework Laid Down in the 'Pinneberg Schema' (Updated: 27 May 2008)

The assessment matrices for the marine and coastal habitat types listed in Annex I of the Habitats Directive form the basis for the performance of the monitoring and reporting obligations established in Articles 11 and 17 (further to which, the standards specified in European Commission, DG Environment, 2006 are applied). The typical species listed in the matrices under the assessment criterion 'Completeness of the typical species inventory' are intended to reflect the functional structure of a habitat type, since this is not evaluated in any other way. The species lists set out here are not exhaustive. It remains possible for items to be added and deleted in order to take account of more recent findings. The species lists must be adjusted to specific regional circumstances for the mapping of the sites in question. The threshold values cited for some habitat and impairment parameters also have to be specified particularly for individual regions as appropriate.

The inventory of typical species for this habitat type represents one of the essential criteria that have to be assessed to ascertain its conservation status and therefore also to comply with the reporting obligations imposed by Article 17 HD. Nevertheless, no separate species monitoring needs to be carried out on individual characteristic or typical species, while they are to be assessed exclusively as indicators of the conservation status of the habitat type in question. It is necessary for population sizes or levels of coverage to be quantified at least roughly in the study areas, since increases and decreases in the abundances of typical species (and also of species indicative of disruption) are important parameters.

The habitat type profiles and assessment matrices drawn up by the specialist authorities at Land level are used to supplement the assessment of the unique features of this habitat type that are specific to the physical region/Land in question.

Assessment matrix (PDF)

5 Quality assurance

- Quality Assurance Panel

Comments

The participating institutions are striving to build up uniform QA standards.

5.1 Monitoring institutions

- LLUR
- LUNG
- NLWKN
- NLPV NI
- LKN-SH

5.2 Guidance documents

- Council of the European Communities, 1992: Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora; *Official Journal*; L 206: pp. 7-50.
- Drachenfels, O.v., ed., 2008: 'Hinweise zur Kartierung und Bewertung der FFH-Lebensraumtypen in Niedersachsen, mit Anlagen'; duplicated manuscript
- Drachenfels, O.v.; 2004: *Kartierschlüssel für Biotoptypen in Niedersachsen unter besonderer Berücksichtigung der nach § 28a und § 28b NNatG geschützten Biotope sowie der Lebensraumtypen von Anhang I der FFH-Richtlinie: Stand März 2004: 6., völlig überarb. Aufl.*; Naturschutz Landschaftspfl. Niedersachs.; A/4; 240 pp.
- European Commission, DG Environment, 2006: *Assessment, monitoring and reporting under Article 17 of the Habitats Directive: Explanatory Notes & Guidelines: Final Draft.*
- European Commission, DG Environment, 2007: *Interpretation Manual of European Union Habitats.*
- Krause, J., Drachenfels, O.v., Ellwanger, G., Farke, H., Fleet, D.M., Gemperlein, J., Heinicke, K., Herrmann, C., Klugkist, H., Lenschow, U., Michalczyk, C., Narberhaus, I., Schröder, E., Stock, M. and K. Zscheile (2008): *Bewertungsschemata für die Küsten- und Meereslebensraumtypen der FFH-Richtlinie: Ergebnis Bund-Länder-Arbeitskreis "FFH-Berichtspflichten Meere und Küsten": Stand: 27.05.2008.*
- Sachteleben, J., Behrens M. et al., 2009: Konzept zum Monitoring des Erhaltungszustandes von Lebensraumtypen und Arten der FFH-Richtlinie in Deutschland: Ergebnisse des F+E-Vorhabens "Konzeptionelle Umsetzung der EU-Vorgaben zum FFH-Monitoring und Berichtspflichten in Deutschland" (Stand: Oktober 2009); commissioned by the Federal Agency for Nature Conservation.
- State Agency for Nature and Environment of the Land Schleswig-Holstein, 2007: *Hinweise zur Bewertung des Erhaltungszustandes von FFH-Lebensraumtypen in Schleswig-Holstein: 1. Fassung, Juli 2007.*
- State Agency for Nature and Environment of the Land Schleswig-Holstein, 2007: *Steckbriefe und Kartierhinweise für FFH-Lebensraumtypen in Schleswig-Holstein: 1. Fassung, Mai 2007.*
- State Authority for Environment, Nature Protection and Geology of the Land Mecklenburg-Vorpommern, 2010: *Anleitung für die Kartierung von Biotoptypen und FFH-Lebensraumtypen in Mecklenburg-Vorpommern: 2. vollst. überarb. Aufl., Stand: März 2010.*
- TMAP Manual

5.3 Standards

5.4 Current status

6 Literature

7 Activities required to implement the concept

7.1 Changes to the current monitoring programme

HD Habitat Type 1150 must be monitored in accordance with the methodology described in sections 3 and 4.

7.2 Working steps required

- Specification and surveying of study areas or transects
- Data management: GIS and Land databases, updating of Standard Data Forms
- Evaluation with a view to management plans and/or necessary measures

Footnotes

(1) Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

(2) Article 11 (monitoring of habitats and all species listed in Annexes II, IV and V) imposes the obligation to monitor the conservation status of all habitats (listed in Annex I) of Community interest. In consequence, this provision is not limited to NATURA 2000 areas, but habitat types outside the Habitat Directive areas are also to be included in the monitoring as appropriate.

(3) Article 17 governs the performance of reporting obligations. The Habitats Directive imposes binding obligations concerning the submission of reports to the European Commission (Articles 11 and 17).

(4) EC Water Framework Directive; Directive 2000/60/EC. The coastal waters subject to ecological assessment under the WFD extend 1 nautical mile beyond the baseline.

(5) The monitoring requirements under TMAP were specified in the Wadden Sea Plan (Sylt, 2010) (see also TMAP Manual, section 2).