Monitoring Specifications

Date: 2010-06-14

HD Habitat Type 2130 Fixed Coastal Dunes with Herbaceous Vegetation (Grey Dunes)

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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1 General

1.1 Subject area

Biological Monitoring - Habitats - HD Habitat Type 2130 - Fixed Coastal Dunes with Herbaceous Vegetation (Grey Dunes)

1.2 Definition

1.2.1 EU definition (Interpretation Manual, 2007)

"Fixed dunes, stabilised and colonised by more or less closed perennial grasslands and abundant carpets of lichens and mosses, from the Atlantic coasts (and the English Channel) between the Straits of Gibraltar and Cap Blanc Nez, and the shores of the North Sea and the Baltic. […] The vegetation may be a closed cover of grassland, sparse annual grassland on sand or dominated by mosses and lichen; the content of limestone (Ca2+) may vary greatly and is generally diminishing with age and succession towards brown dune systems (dune heathland)."

1.2.2 National definition

"Fixed dunes, mostly dominated by grass, unwooded or sparsely wooded, with incipient soil formation, located landward of marram grass dunes along the Atlantic, North Sea and Baltic Sea coasts.

Apart from species-rich communities of *Koelerion albescentis* (class of sandy dry grasslands), *Corynephorion* (grey hair-grass sward) and the *Thero-Airion* alliance (ephemeral-rich *Aira* swards), Habitat Type 2130 is also characterised by cryptogam-richness (patchy moss and lichen carpets). Occasional transitions to semi-arid *Mesobromion* grassland and *Trifolio-Geranietea* fringes occur. The lime content varies depending on the parent substrate and increasing decalcification sets in with the gradual transition to brown dunes."

1.2.3 Mapping procedure

Largely fixed coastal dunes, mostly dominated by grass communities, unwooded or sparsely wooded with incipient soil formation and increasing decalcification. The typical vegetation consists of base-rich dry grasslands (*Koelerion albescenti*), grey hair-grass sward (*Corynephorion*) and ephemeral-rich *Aira* swards (*Thero-Arion*), scattered with moss and lichen carpets. This habitat type includes all other grey dune stages with herbaceous vegetation (e.g. marram grass, perennial herbaceous communities) and small vegetation-free areas. It does not include larger areas of flat sand with similar vegetation (e.g.in polders).

Delimitation from other habitat types:

2120: Where marram grass dominates parts of the area, this is indicative of more or less dense undergrowth made up of grey dune mosses or herbaceous plants. Dominant marram grass populations occur in small patches within Habitat Type 2130, particularly on the tops of grey dunes.

2140, 2150: Dwarf scrub plants are absent or only occur in larger numbers in very small patches.

2160, 2170: Sea-buckthorn or creeping willow are absent or scattered with thin coverage across the primarily herbaceous vegetation.

2190: Absence of species indicative of humidity in the slacks between grey dunes.

2130: Position in the immediate vicinity of the coast.

1.3 Competent authority/ies

Hamburg:	BSU, NLPV HH
Mecklenburg-Vorpommern:	LUNG
Lower Saxony:	NLWKN, NLPV NI
Schleswig-Holstein:	LLUR, LKN-SH

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 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 and priority species." In this respect, consideration is also to be given to sites outside HD areas as appropriate.

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.

TMAP [4]

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 2130 with a favourable conservation status or, where applicable, its restoration to such a status:

- Natural habitat dynamics involving denudation and the wind deposition of moderately base-rich to lime-poor sand as a precondition for the emergence and conservation of the habitat type
- Complete zoning of typical vegetation with younger and older developmental stages, including patches of open sand
- Stable or increasing range and overall area
- Natural transitions to white and brown dune habitats
- Biotope-typical species composition with stable populations of the characteristic species
- No or minor impairments, above all due to coastal protection measures and tourism

TMAP

The following targets have been defined for fixed coastal dunes with herbaceous vegetation (grey dunes) (Wadden Sea Quality Status Report 2004):

- Increasing presence of complete natural vegetation development
- Favourable conditions for migrating and breeding birds

2.3 Threats

- Restriction of natural dynamics due to coastal protection measures, resulting in increasing proliferation of woody plants, etc.
- Proliferation of invasive species
- Localised degradation by large rabbit populations, where relevant
- Inputs of nutrients
- Recreational activities
- Land lost to construction projects

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	-	-	-	-
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 2130 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 currently occurs is regarded as a site. In Lower Saxony, small secondary sites on artificially created sandy beaches and in polders are not categorised as sites.

3.1 Description of monitoring network

North Sea

On the North Sea coast, two sites are located in Hamburg, [still to be specified] sites in Schleswig-Holstein and ten sites in Lower Saxony.

Baltic Sea

On the Baltic Sea, 22 sites are located on the Schleswig-Holstein coast and 16 sites in Mecklenburg-Vorpommern.

3.2 Monitoring activities

North Sea and Baltic Sea

Surveying and Evaluation of Grey Dunes (2130)

Methods:

The target variables are the status quo and trends in:

- Occurrence, range and area
- Characteristic structures, functions and species
- Impairment and threat factors

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 mainland coastal sites on the North Sea and Baltic Sea, it is also possible for full-coverage site surveying to be implemented, where appropriate. 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 location in question. 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 2130 Habitat Type
- Biotope types according to the mapping keys issued by the Länder; additionally, on the North Sea, TMAP vegetation types
- Dune and vegetation structure
- Fern and flowering plant species, typical moss and lichen species as well, if possible
- Impairments
- Manifestation of the biotope complex (representation of all characteristic vegetation types/successional stages)
- Range and area
- Selected characteristic animal species (e.g. breeding birds) as well, if possible
- Typical spectrum of structures, species and vegetation types

3.3 Additional parameters

4 Assessment

4.1 Assessment procedures

North Sea and Baltic Sea

Title

HD Habitat Type - Fixed Coastal Dunes with Herbaceous Vegetation (Grey Dunes) (2130)

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 duties 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.

<u>On the assessment of coastal dunes (Habitat Types 2110 - 2190):</u>

Coastal dunes are divided into nine different habitat types that correspond to particular successional stages and frequently form biotope complexes made up of intimate mosaics, which are (ideally) characterised by highly dynamic habitat and vegetation development. In dune areas where there is nothing to restrict the natural processes of accumulation and erosion, it is therefore neither expedient nor actually possible to conserve a particular dune habitat type at a particular place in a particular condition. Rather, favourable conservation status is dependent on the dynamic processes that constantly create new pioneer stages (embryonic shifting dunes or young, still salt-influenced dune slacks) within a larger area, while in other parts of the area the successional process moves on to more mature stages, which may culminate in woodlands (Habitat Type 2180), provided the process is not set in train once again by extreme events. If the different manifestations of all habitat types relevant in a particular case constantly occur to a sufficient degree in a natural dune area of this kind (making up more or less varying proportions of the total area), the habitat types found in this complex are to be assigned the conservation status A.

As a matter of principle, progressive ageing of dunes is to be found in dune areas where natural dynamics are severely restricted - mostly due to coastal protection measures. Even where an individual dune or dune slack still exhibits typical, well developed vegetation (e.g. a lichen-rich grey hair-grass grey dune sward or a bed of common reeds), downgrading is necessary if more immature stages in the relevant area are receding or have now disappeared on account of the general anthropogenic conditions.

In view of this, it would not be expedient to assess individual dunes on their own. When the transects or study areas are specified, care must be taken to ensure that dune areas with largely natural dynamics and fixed, ageing dune areas (where present) are always given adequate consideration.

The assessment matrix for Habitat Type 2130 can be downloaded by clicking on the following link:

Assessment matrix

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.

5 Quality assurance

5.1 Monitoring institutions

- LLUR
- NLPV HH
- LUNG
- NLWKN
- BSU
- 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 2130 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) The monitoring requirements under TMAP were specified in the Wadden Sea Plan (Sylt, 2010) (see also TMAP Manual, section 2).