# Monitoring Specifications

Date: 2010-05-14

# HD Habitat Type 2150
# Atlantic Decalcified Fixed Dunes
# (*Calluno-Ulicetea*)

## 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 2150 - Atlantic Decalcified Fixed Dunes (Calluno-Ulicetea)

## 1.2 Definition

### 1.2.1 EU definition

*Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)

Decalcified dunes of France, Belgium and Britain, colonised by heaths of the alliances *Calluno-Genistion* or *Ulicion minoris*, and of Iberia, colonised by heaths of the alliance *Ericion umbellatae*.

### 1.2.2 National Definition

Largely fixed, decalcified coastal dunes with dwarf shrub heaths that are dominated by common heather (*Calluna vulgaris*). Typical locations are decalcified sands with an acidic raw humus layer (podzolisation). There are also grassy or lichen- and moss-rich formations.

### 1.2.3 Mapping procedure

Dwarf shrub heaths dominated by common heather (*Calluna vulgaris*) on older, already fixed dunes with acidic soils and distinct humus accumulations. Slight sand drifting occurs in places. Coastal heaths are sometimes found in intimate mosaics with crowberry (Habitat Type 2140). While common heather tends to colonise sun-exposed dune slopes, crowberry prefers dune slopes that face away from the sun where the air is humid.

Scattered, small-scale fragments of dune grassland, pioneer phases of dune heath and the sometimes strongly divergent vegetation of near-natural special structures in a dune complex, such as disturbed patches around bird colonies or rabbit burrows, are among the structures that are to be regarded as typical.

Delimitation from other habitat types:

2140: Dominance of *Calluna vulgaris*; individual specimens of *Empetrum nigrum* only.

2190: Only sites outside humid dune slacks.

## 1.3 Competent authority/ies

| | |
|---|---|
| Mecklenburg-Vorpommern: | LUNG |
| Lower Saxony: | NLWKN, NLPV NI |
| Schleswig-Holstein: | LKN-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

"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."

This provision is not limited to NATURA 2000 areas, while habitat types outside Habitats Directive areas are also to be included in the monitoring as appropriate.

#### Article 17 [3]

Comments

"Every six years […], Member States shall draw up a report on the implementation of the measures taken under this Directive. This report shall include […] the main results of the surveillance referred to in Article 11."

Article 17 governs the performance of the reporting obligations in general terms. 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 most important instrument enabling 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 2150 with a favourable conservation status or, where applicable, its restoration to such a status by means of the conservation, restoration and, where applicable, development of:

- Natural habitat dynamics in the surrounding area 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.
- Populations of common heather that are viable on a large scale
- Stable or increasing range and overall area
- Natural transitions to grey dune and white dune habitats
- Biotope-typical species composition with stable populations of the characteristic species
- No or minor impairments, above all due to coastal protection, beach clearance and tourism

#### TMAP

The following targets have been defined for 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 by coastal protection measures, resulting in, among other things, increasing proliferation of woody plants
- Proliferation of invasive species
- Local impairment by large rabbit populations, where present
- Nutrient inputs
- Recreational activities
- Land lost to construction projects

## 2.4 Spatial allocation

Comments on the 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.

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| | 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

## 3.1 Description of monitoring network

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 and BEHRENS, 2009).

Under this concept, a total census is to be carried out for this habitat type on account of the small number of large-scale sites that have been defined. The dune heath sites that have been delimited are based on physical regional-geographical and geomorphological units (islands, sections of foreshore, inshore water bodies subject to the WFD).

**North Sea**

On the North Sea coast, six sites are located in Schleswig-Holstein, while there is one site in Lower Saxony.

**Baltic Sea**

On the Baltic Sea, there are four sites on the Schleswig-Holstein coast and three sites in Mecklenburg-Vorpommern.

## 3.2 Monitoring activities

## North Sea and Baltic Sea

**Surveying and Evaluation of Atlantic Decalcified Dunes (2150)**

**Methods:**

The target variables are the status quo and trends in:

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

**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 plots or transects for the detailed surveying of qualitative parameters (see below).

**Basic monitoring and specification of monitoring network**

An area-wide survey of the habitat type is carried out in the course of the six-year reporting cycle in order to assess its 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.

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 and BEHRENS, 2009). Where a total census is to be carried out, each dune heath 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 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 individual sites should not be less than approx. 1,000 m² in area; the survey areas specified reflect the form and size of the sites delimited in the course of the area-wide mapping. Exception: smaller sites of particular significance and representativity (see selection criteria).

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. Where appropriate, it is also possible for full-coverage site

surveying to be implemented at small sites along the mainland coasts on the North Sea and Baltic Sea. 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 for the relevant biogeographical region assessed, 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 and BEHRENS, 2009).

**Parameter:**

- Area of the 2150 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 (including vitality)
- Impairment and threat factors
- Impairments
- Plant species
- Range and area
- Selected characteristic animal species as well, where possible
- Subcategory of the biotope complex (coastal dynamics involving representation of all characteristic dune stages)
- Typical species spectrum and structural diversity

## 3.3 Additional parameters

# 4 Assessment

## 4.1 Assessment procedures

### North Sea and Baltic Sea

**Title**

HD Habitat Type - Atlantic Decalcified Fixed Dunes (Calluno-Ulicetea) (2150)

**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 inventories of typical species for the habitat types represent one of the main ecological assets that have to be assessed in order to comply with the obligations placed on Member States with regard to reporting to the EU. Nevertheless, although they are to be assessed as indicators of the conservation status of the habitat type in question, no separate species monitoring needs to be carried out on individual typical species. The abundances of typical species and species indicative of disruption are classified in the study areas. Information on trends, etc. may be used optionally for supporting purposes.

On the assessment of coastal dunes (Habitat Types 2110 - 2190):

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 type of this complex is 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 reedbed), 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. Rather, coherent dune areas with uniform general conditions should be delimited in the course of the initial surveys. These delimited areas then form the assessment units.

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

Assessment matrix

# 5 Quality assurance

Comments

The participating institutions are striving to build up and introduce 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.; 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: November 2008)*; 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

- To be specified by the Quality Assurance Panel at the UBA as necessary.

## 5.4 Current status

# 6 Literature

# 7 Activities required to implement the concept

## 7.1 Changes to the current monitoring programme

HD Habitat Type 2150 must be monitored in accordance with the methodology described in sections 3 and 4.

## 7.2 Working steps required

Priorities

- 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).