

10 BEACHES AND DUNES

The following guideline on monitoring of beaches and dunes covers only the monitoring by remote sensing techniques. It has to be evaluated in the future if additional techniques have to be included into the TMAP.

10.1 LOCATION AND AREA OF BEACHES AND DUNES

NOTE: A new version of the guideline is currently under preparation

10.1.1 Objectives

The monitoring of dunes (including beaches) is carried out to assess changes in

- location and area of different dune types
- natural dune succession

taking into account climate changes, coastal protection measures, and human utilization (e.g. tourism).

10.1.2 Assessment

The assessment is based on the respective TMAP hypotheses and the ecological targets, as formulated at the 7th Trilateral Governmental Conference (November 1994) for the Cooperation Area (targets on habitat and species).

Targets on Beaches and Dunes:

Beaches and dunes include beaches, primary dunes, beach plains, primary dune valleys, secondary dunes and heathland behind the dunes. The following targets apply:

- increased natural dynamics of beaches, primary dunes, beach planes and primary dune valleys in connection with the offshore zone;
- an increased presence of a complete natural vegetation succession;
- favorable conditions for migrating and breeding birds.

10.1.3 Monitoring areas

- whole Wadden Sea area
- selected areas for ground truth (*to be selected*)

10.1.4 Parameters and Methods

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| a. Parameters: | location and area of different dune succession types |
| b. Frequency: | every 5 years; higher frequency in selected areas if appropriate |
| c. Time of the year: | August/September |
| d. Spatial resolution: | 1 - 5 m |
| e. Sensor: | aerial photography or other techniques (e.g. laser digital TM in NL) (<i>to be elaborated</i>) |
| f. Classification: | (<i>to be specified</i>) (e.g. according to NL guidelines) |
| g. GIS application: | (<i>to be elaborated</i>) |
| h. Products: | GIS maps (1:10,000), tables |

10.1.5 Quality assurance

(to be elaborated)

10.1.6 Reporting requirements

The data should be delivered to the national databases every five years (or if available annually) (according to the national regulations) to be available for a trilateral assessment.

10.1.7 Monitoring authorities

Denmark

- Sønderyllands Amt
- Ribe Amt
- Danmarks Miljøundersøgelser (NERI)

Germany

- Landesamt für den Nationalpark Schleswig-Holsteinisches Wattenmeer
- Ämter für Land- und Wasserwirtschaft Husum und Heide
- Nationalparkverwaltung Niedersächsisches Wattenmeer
- Staatliches Amt für Insel- und Küstenschutz, Norden

The Netherlands

- Rijksinstituut voor Kust en Zee (RIKZ),
- RWS Meetkundige Dienst, Delft

10.1.8 Literature

(to be added)