Restoration of dune dynamics, de Kerf, Schoorl - NL

1. Policy Objective & Theme

- ADAPTATION TO RISK: Managing impacts of climate change and safeguarding resilience of coasts/coastal systems
- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space

2. Key Approaches

- Participation
- Socio-economic

3. Experiences that can be exchanged

That new coastal habitats in a fixed shoreline of dunes can be created as an example of dynamic coastal management.

4. Overview of the case

A 50m breach was made in a dune defence wall to recreate a dynamic dune ecosystem behind it without compromising safety aspects against flooding from the sea.

5. Context and Objectives

a) Context

De Kerf (kerf = notch or nick) is located in the dunes of the province of North Holland. It is a breach in the outermost dune ridge that was created in 1997 covering an area of about 5ha. It was dug to allow natural contact again between the sea and the dune area behind the protective dune wall. It was the first time since the building of the sea defences around the Netherlands, following the flood of 1953, that the sea had been allowed through the defences.

The area is protected by the Nature Conservancy Act and is a Nature 2000 area (Special Area of Conservation or SAC). It has no special land use, apart from nature and has always been a relatively quiet part of the dune system in this area. A horse trail in the southern part of the valley was the only ‘infrastructure’ to access the area and the number of visitors was low. These ground water of the dunes was used as a drinking water supply by the water company of the Province of North-Holland.

b) Objectives

The aim of the action was to realise a (experimental) tool for dynamic coastal management. The scheme essentially represented a large scale experiment to allow wind and sea to become the natural forces forming the landscape again, in order to restore a dynamic sea and wind driven dune system. Another aim was to increase the recreational value of the area.

6. Implementation of the ICZM Approach (i.e. management, tools, resources)

a) Management

The initiators of the project were the Dutch NGO Society for Dune Conservation, writers of the initial project plan, and the

National Institute for Coastal and Marine Management which commissioned this plan. The managers of the area are the State Forestry Service. They kept up the subsequent administrative process that eventually resulted in the construction of ‘De Kerf’. The other important stakeholders were the Water Board and the Province of North-Holland.

b) ICZM tools

In 1997, a tidal inlet was created by excavating a valley up to 1.5 m above sea-level. The inlet has a minimum width of 50 m and a maximum width of 300 m. The topsoil of the valley was removed to allow the fresh water to reach the surface and to allow sand drift. About 130,000 m3 sand was removed. To facilitate the expected increasing number of visitors some recreational facilities were created e.g. a viewing point with information panels and a telescope; a cycle path; and two footpaths to the viewing point.

Natural processes are considered to be the best possible management for this area. Management is restricted to minimizing human impact on the area, e.g. by removing rubbish that floats in from the sea, and maintenance of recreational facilities. Several times each year the sea streams into the area resulting in a temporary brackish lake environment. This becomes increasing freshwater before it disappears into the sand. The surface of the ground is enriched by this process. Wind also plays an increasing role with calcium rich sand blown into the area from the beach creating new dune areas.

Before the actual construction of ‘De Kerf’ took place, a monitoring plan had been written. The proposed monitoring programme focused on both abiotic and biotic parameters although success criteria for the development were not precisely defined. Monitoring took place by professionals, students and volunteers. Since the creation of the breach, biodiversity has increased particularly inter-tidal, salt marsh, drifting sands and calcium rich dune grasslands species and those associated with moist dunes. These include a number of fungi that were new to the Netherlands or had previously become extinct. Ground beetles were another group that benefitted. The number of breeding birds is low although 2 pairs of ringed plover (Charadrius hiaticula) bred on the beach for the first time. Other species decreased in common with regional trends.

7. Cost and resources

The costs of ‘De Kerf’ were ca. €505,000, funded by the Ministry of Transport, Public Works and Water Management, the Ministry of Agriculture, Nature and Food Quality, and the Province of

North-Holland.

8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

The goals of the project to create a more dynamic ecosystem with gradients and different nature values were reached. This was done without increasing flood risk and compromising safety. Interestingly, if the area had been designated as an SAC area before creating the new tidal inlet, this project may have been prevented from proceeding.

9. Success and Fail factors

The combined effort, enthusiasm and co-operation of the stakeholders, supported by well organized communication - to each other and the general public - played an important role in realizing ‘De Kerf’. Also strong effective project leaders within the organisations played a key role. Initially, the municipality of Bergen objected because of safety reasons (flooding) although they subsequently supported the scheme once they were reassured that the location would be safe.

10. Unforeseen outcomes

There was an unexpected increase in the number of visitors to the area especially from the beach side, including trespassers. On the boundary of the adjacent water board-owned dunes, a fence has been re-installed to prevent people entering a breeding area for birds. The costs for monitoring exceeded the estimated amount, due to higher costs for aerial photographs and more frequent monitoring.

11. Prepared by

A. H. Pickaver, Coastal & Marine Union (EUCC), The Netherlands

12. Verified by

It has not been possible to verify this case.

13. Sources

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- De Kerf bij Schoorl, Duurzaam herstel van de dynamiek (2004) R. Haring & B. Arens. Geografie 12-15.
- Kijk op De Kerf (2003) Staatsbosbeheer Noord-Holland
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Kijk op de Kerf (2.26 MB)