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Restoration of Dune Habitats along the Danish West Coast

Project objectives

The project aims at restoring threatened and vulnerable coastal dunes and dune heathlands along the Danish West Coast, in order to regain a favourable conservation status. The sites included in this project fall under the Natura 2000 network of protected areas, and cover an area of more than 24,000 ha. The sites are mainly selected for the priority habitat types 2130 (fixed grey dunes) and 2140 (decalcified fixed dunes with *Empetrum nigrum*). The project started in November 2001 and continues to November 2005. It is supported by the European Commission LIFE NATURE- programme.

The main threats to the dune habitats are invasion of non-native species, lack of natural dynamic processes, and eutrophication. The species invading the dune heaths are mainly *Pinus mugo* and *Pinus contorta*. The trees are spreading from the dune plantations established along the Danish West Coast more than 100 years ago. The encroachment of these and other woody species alters the microclimate and hence the conditions for the native biodiversity in the dune heaths. Dense overgrowth and tree encroachment will be removed and dune heath habitats restored on a total of approximately 5700 ha. Furthermore, some of the *Pinus mugo* plantations on the fringes of the dune habitats will be converted back to their original heathland condition.

One of the means of re-establishing natural dynamic processes is restoration of the natural hydrology, by closing drainage dykes and allowing temporary pools and shallow lakes to expand. This is also of great value to the amphibian fauna, and an important component of the project is restoration of 30 breeding localities for amphibians, primarily *Bufo calamita*.

The lack of natural dynamic processes is also sought compensated for by controlled mosaic burning and grazing of the dune heaths. The burnings take place in early spring (February and March), in order to minimise the disturbance to wildlife, and are restricted to small areas (0.2-2 ha) at a time. Typically, areas with old *Calluna vulgaris* and dominated by *Empetrum nigrum* are selected.

The aim is to imitate the natural conditions to which the species of this nature type are adapted, by creating better conditions for the pioneer species and assisting the natural regeneration of characteristic species such as *Calluna vulgaris*. Burning small, interspersed areas at long intervals ensure a mosaic of succession stages and prevent large areas of very uniform dune heath. This is also of great value to the fauna. Cutting and removal of overgrowth is, along with introduction of grazing, a means to counter the ammonium deposition from the atmosphere, which leads to eutrophication of the dune heaths.

The project also has an important element of public information and dissemination. Map tables and information plates are placed on parking lots and other sites in the project area, in order to provide the public with updated information and a better understanding of the nature restoration activities in the area.

IFFN Contribution by

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Visual Impressions of Prescribed Burning in Dune Heath, Denmark

Figure 1. Prescribed burning of dune heath. Great care is taken to take advantage of the topography and wet areas. Photo: Danish Forest and Nature Agency

Figure 2. Prescribed burning of heathland. The area burned is delineated by a mulcher, and a small counterfire along the belt is initiated on the lee side before the fire is started. Photo: Danish Forest and Nature Agency.

Figure 3. The overgrown areas are cleared mechanically or manually, and will eventually be included in the burning rotation in order to prevent new overgrowth. Photo: Danish Forest and Nature Agency.