

## **The humid zones of the dunes in northern France: areas of exception with multiple issues at stake**

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### **Abstract**

Wet dune slacks are depressions in dune systems which are flooded during winter and most of spring. In these humid depressions, pioneer vegetation has a great conservation value. But, artificial forest composed of non native species can change the hydrological systems with serious consequences for the ecosystems of wet dunes. Management conservation is very important for the preservation of the pioneer communities characterised by a high species diversity.

Keywords: Dune; Wet slack; Vegetation; Afforestation; Management.

### **Introduction**

The north-west coast of France is mainly covered with dunes of variable extent whose value as part of the national heritage is nowadays fully recognized. To people visiting them, these dunes offer a variety of landscapes including humid zones well-loved by those familiar with them and of the greatest interest to naturalists (Petit-Berghem, 2002). They can be considered as exceptional areas in that they provide privileged sites for endangered plant and animal species. The survival of these species depends on management practices respecting the quality of the environment.

### **The policy of conservation**

The policy of conservation of the peaty depressions has gradually developed in France over the last 10 years. It began in the Nord-Pas-de-Calais region, then spread to upper and lower Normandy. As in the Netherlands, innovatory practices such as reactivating the dynamics of the dune have encouraged the reappearance of groups of plants typical of humid zones (Jungerius *et al.*, 1995). The vegetation in wet dune slack is determined by a poor nutrient supply of the soil. The reactivation of blowouts in coastal dunes can be a measure against the effects of acidification and eutrophication (Van Boxel *et al.*, 1997). Today the exchange of experiments and knowledge contributes further towards precisely-targeted and effective intervention. The technicians' know-how is instrumental in the setting-up of different protocols of intervention and monitoring, and also in

acquiring a better understanding of the response mechanisms of the peat environments to the experiments and management modes applied to them.

### Conflicts for management

If this policy of conservation is approved by actors in the protection of the coast, it is not always understood by those who have a different conception of how to enhance the value of these areas. Conflicts arise or continue due to conceptions and representations of the multiple issues at stake which diverge in their aims. For an understanding of the reality of these issues, a historical framework is necessary to follow the evolution of Man's relation to Nature and the changing ways of thinking over the centuries and during the past few decades. Old maps and written accounts throw light on the occupation of space and on the way it has developed. Not only does a historical perspective show changes in the uses land has been put to, it also reveals the ambivalence of Man and coastal societies where the all-important question of how to enhance the value of these exceptional areas is concerned. Finally, the humid zones must be placed in a wider geographical context, that of the dune system affected by its own dynamics, and also in the broader context of the coastal and inland areas, where the systems of logic and functioning must be envisaged and confronted with those of the humid zones. Telling examples of present issues will be taken from the north of France (Nord-Pas-de-Calais, Picardy, lower Normandy regions) and will be compared with foreign sites (Great Britain, the Netherlands) where similar problems are posed (Owen *et al.*, 2004).



*Fig. 1. Dune woodland (Dune of Marquenterre in the Picardy region, France).  
Author: Y. Petit-Berghem (photograph taken in May 2004)*

## Conclusion

On the north-west coast of France, the main lines of vegetation are correlated with groundwater depth, microtopography, soil profile build-up and substrate acidification. Afforestation has deeply modified the coastal dunes. Lowering of the water levels and stabilisation of the dunes can lead to the slacks becoming dry and progressively invaded by woody plants such as *Salix repens* or *Hippophae rhamnoides* and eventually scrub and woodland. Sufficient water levels must be maintained in the dune slacks to keep the pioneer communities. Today a management policy of conservation is being implemented and, thanks to regulation and the use of technical means adapted to the situation, it has become possible to preserve or restore biodiversity in the species or the landscapes.

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