Natura 2000 habitat 7230 : Alkaline fens

Alkaline fens are wetlands with small sedge and brown moss communities in base-rich, often calcareous water. The vegetation produces peat or tufa, and the soils are permanently waterlogged, with the water table at, or slightly above or below, the substratum. Peat-formation, when occurring, is happening under the water level.

Calciphile small sedges (Carex spp.) and other species of the same family (Cyperaceae) usually dominate these mire communities, for example black bog-rush (Schoenus nigricans), broad leaved cottongrass (Eriophorum latifolium), Davall's sedge (Carex davalliana), long stalked yellow sedge (Carex lepidocarpa) and few-flowered spike-rush (Eleocharis quinqueflora).

A brown moss carpet is characteristic and can be prominent with many species like yellow starry fen moss (Campylium stellatum), chalk comb-moss (Ctenidium molluscum) and maidenhair pocket moss (Fissidens adianthoides).

These marshes contain a very varied herbaceous flora with for example blunt flowered rush (Juncus subnodulosus), common butterwort (Pinguicula vulgaris) and many orchids like marsh helleborine (Epipactis palustris), early marsh-orchid (Dactylorhiza incarnata) and fen orchid Liparis loeselii. Rich alkaline fens are especially endowed with spectacular, specialised, strictly restricted species.

Where to find it?

Alkaline fens are present in (almost) all the countries of the European Union, but they are among the habitats that have undergone the most serious decline. They are essentially extinct in several regions and gravely endangered in most. Outside of rich fen systems, alkaline fen communities can occur as small areas in dune slack systems, in transition mires, in wet grasslands, on tufa cones and in a few other situations.

Typical species

The following typical plants are mentioned in the European habitat description :

- black bog-rush (Schoenus nigricans)
- species of sedges (Carex spp.)

- broad leaved cottongrass (Eriophorum latifolium) (photo Yves Adams /Vildaphoto)
- lurid cupola-moss (Cinclidium stygium)
- golden fuzzy fen moss (Tomentypnum nitens)

The following species mentioned is not present in the wild in Belgium :

- Brown bog-rush (Schoenus ferrugineus)

Typical animals :

- narrow-mouthed whorl snail (Vertigo angustior) and Desmoulin's whorl snail (Vertigo moulinsiana). The snail fauna is much richer than in more acid marsh vegetations.

Management and threats

Formerly, hydrological systems that provided natural fens with a large supply of base-rich groundwater were able to stabilize nutrient poor fen vegetations for centuries without any management by man. However, during the past few centuries, almost all fens have been slightly drained and changed into low-productive meadows and pastures that cannot be maintained without management.

External management of the hydrology is very important to maintain alkaline fens. This also means management of the surrounding landscape has to be taken into account. Influx of agricultural fertilizer or polluted water has to be avoided. The specific quality of soil and groundwater has to be maintained. Upward seepage of base-rich and nutrient-poor

groundwater has to be sufficient and continuous. More acid rain water can be drained superficially through small ditches to have maximum impact of base-rich groundwater.

Alkaline fens can be managed by conservation mowing, carried out by hand-mowing on a small scale and with light machinery adapted to this sensitive and rare habitat. Mowing machines have for example specially adapted tyres or broad tracks to minimise pressure on the soil. Cut biomass is gathered and removed. As a minimal management mowing has not to be done every year, every 2 to 5 year can be sufficient. In some cases it can be enough to take away some tussocks of dominating species.

Very extensive grazing can be recommended as an alternative to mowing, but the grazing intensity has to be determined carefully, as alkaline fens appear to be fragile for walking pressure. Without management mostly natural succession will lead to scrub and woodland. Cutting scrub by hand is one solution and for some sites this is the only workable option. But it is extremely labour intensive and recently low ground pressure machines have been used to clear larger areas. In some cases, which have to be well studied scientifically, it can be necessary to remove the topsoil to restore a nutrient-poor situation with enough influx of the right groundwater.

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