Natura 2000 habitat 9160 : Sub-atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli


(photo Bart Christiaens)

The mixed oak-forests of habitat 9160 are rich in species with mostly pedunculate oak (Quercus robur) as one of the most dominant tree species. Other important tree species are common hornbeam (Carpinus betulus), sycamore (Acer pseudoplatanus), common ash (Fraxinus excelsior) and small-leaved lime (Tilia cordata). Sessile oak (Quercus petraea) may also be present. In general the soil is covered with numerous spring-flowering plants like yellow archangel (Lamium galeobdolon), Adam and Eve (Arum maculatum), wood-sedge (Carex sylvatica), greater stitchwort (Stellaria holostea), strawberryleaf cinquefoil (Potentilla sterilis), oxlip (Primula elatior), wild garlic (Allium ursinum) and violets like early dog-violet (Viola reichenbachiana). Wood anemone (Anemone nemorosa) can be numerous; common bluebell (Hyacinthoides nonscripta) on the contrary is absent or rare as it is a more Atlantic species.

In past centuries these forests have been often managed in a coppice-with-standards regime, very well adapted to this habitat. The forest-structure can be well-developed with many smaller trees and shrubs like common hazel (Corylus avellana). Without management pedunculate oak is often declining because of lack of natural regeneration.

Where to find it ?

This habitat consists of mixed oak forests on hydromorphic soils or soils with high water table (bottoms of valleys, depressions or in the vicinity of riparian forests). The substrate corresponds to silts, clayey and silt-laden colluvions, as well as to silt-laden alterations or to siliceous rocks with a high degree of saturation. Soils are not nutrient-poor nor very acid with often a mull-humus. The soils of this habitat are less suited for European beech (Fagus sylvatica), absent or rare in habitat 9160.

We can find the mixed oak-forests of habitat 9160 widely through Europa from Letland and the south of Sweden to the north of the Iberian peninsula and Slovenia.

Typical species

Next to pedunculate oak and common hornbeam typical plants mentioned in the European habitat description are :

- field maple (Acer campestre)
- small-leaved lime (Tilia cordata)

- greater stitchwort (Stellaria holostea) (photo Kris Decleer)
- strawberryleaf cinquefoil (Potentilla sterilis)
- quaking sedge (Carex brizoides)
- broad-leaved meadow-grass (Poa chaixii)
- slender cock's foot (Dactylis polygama)
- multiflowered buttercup (Ranunculus nemorosus)
- Scotch mist (Galium sylvaticum)

The last 5 species mentioned are rare in Belgium, for sure more rare than habitat 9160 itself.

Typical animals :

- white admiral (Limenitis Camilla)
- silver-washed fritillary (Argynnis paphia)
- hazel dormouse (Muscardinus avellanarius)

- garden dormouse (Eliomys quercinus) (photo Geert Van de Vijver)
- middle spotted woodpecker (Dendrocoptes medius)
- black woodpecker (Dryocopus martius)
- European honey buzzard (Pernis apivorus)
- wood warbler (Phylloscopus sibilatrix)
- European pied flycatcher (Ficedula hypoleuca)

- Eurasian nuthatch (Sitta europaea)
- tawny owl (Strix aluco)
- European pine marten (Martes martes)
- common noctule (Nyctalus noctula) and other bats of forest habitats
- fire salamander (Salamandra salamandra)

- European stag beetle (Lucanus cervus) (photo Chris Van denbempt)
- wood cricket (Nemobius sylvestris)

Managements and threats

A classical woodland management can be compatible with the conservation and development of this habitat if it meets the conditions of a sustainable and multifunctional management and if it takes into consideration the natural characteristics and needs of this type of forest. Cutting trees can be done on an individual base or in small groups. Specific management actions are amongst others : taking care of woodland edges and open spaces, eliminating exotic species, giving light to species suppressed by a thick cover of common hornbeam or sycamore and maximalising dead wood and big trees (circumference >3m). Although coppicing with standards is in many cases the traditional management of these forests it is not the only management option.

In specific situations (places rich in biodiversity, sensitive zones, important potentials) an adapted management is preferable or necessary which concentrates entirely on the nature values to conserve and develop them in a sustainable and qualitative way. In such cases the absence of management can be the choice or a management with specific goals like eliminating an exotic species or coppicing.

This habitat is extremely sensitive to :

- eutrophication from atmospheric deposits and to flush of nutrients from higher located plateaux and nearby fields. Because of these and other disturbances brambles (Rubus spp.) can grow dominant.
- acidification diminishing the species-richness of the forest floor.
- drainage as the hydromorphic soil is typical for this habitat.
- intensive tree cutting on a large scale with soil cultivation, replanting and over-exploitation lead to habitat-degradation with a weak structural development, little old trees and dead wood. Many old coppice-with-standards forests have been treated this way recently.
- fragmentation into small pieces of forest in the landscape
- a too high density of game, for example roe deer, complicates natural regeneration of the populations of tree species.

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