

INDICATORS OF BIODIVERSITY IN FORESTS

Various indicators are used to report on the state of biodiversity in the forest environment. They are consequently involved in assessing the sustainability of forests. Such indicators have been defined within the Ministerial Conference for the protection of forests in Europe^[1]; some of which are calculated for Walloon forests.

Quantity of deadwood and large wood

In 2011, all stands combined, the volume of deadwood in Walloon forests averaged 10 m³/ha (4% of the total volume of living wood). From a nature conservation perspective and regardless of other forest functions, the minimum volume of deadwood² that enables the preservation of most saproxylic species is 30 m³/ha for lowland forests³. The Forestry Code (*Code forestier*)⁴ requires that two deadwoods per hectare⁵ be reserved in public deciduous forests; by 2011, their number was estimated at 0.60/ha. Deadwood is a habitat to which almost ¼ of forest species are linked⁶. It plays a role in carbon sequestration and contributes, through the maintenance of soil fertility and productive capacity, to natural regeneration, which is present in almost 23% of the productive stands inventoried. As regards large wood⁷ (living), nearly 80% of the deciduous forests surveyed were lacking them.

Structural diversity of stands and edges

Current forests are dominated by regular woodland. In addition, 60% of the stands are mono- or bispecific, which reduces their stability, their resistance to stress and pests, their role in soil protection and their capacity to support flora and fauna. The species diversity of the herbaceous stratum is also rather low: in 41% of the surveys, less than 7 species are recorded. As regards the composition of forest edges, the three plant belts⁸

are observed in 35% of cases. These staggered edges serve to protect stands from wind and disease, provide favourable habitats and dispersal corridors for many species, and provide feeding grounds for wild ungulates to reduce the pressure of these herbivores on forests and crops.

Adaptation of forestry practices

Since the end of the 19th century, the area of Walloon forest has increased by 20%, but its composition and structure have been gradually modified. As such, 40% (172,000 ha) of the forest area from the 18th century has survived without being transformed by urbanisation, cultivation or coniferous conversion⁹. The Forestry Code requires the identification of these historic forests in the public domain in order to preserve characteristic, rare or sensitive facies. It also sets certain objectives favourable to biodiversity: choice of species adapted to local conditions¹⁰, diversification, limitation of clearcuts, drainage and inputs, etc.

[1] See the report *State of Europe's forests 2015* (Forest Europe, 2015) | [2] Including logging residues or decayed parts of live trees | [3] Müller & Bütler, 2010 | [4] Decree of 15/07/2008 | [5] Minimum diameter: 40cm | [6] SPW - DG03, 2010 | [7] Circumference thresholds: oak, 240 cm - beech, 220cm - other indigenous coniferous trees, 180cm | [8] Forest cover, shrub belt and herbaceous fringe | [9] Kervyn *et al.*, 2014, 2016 | [10] Based on the tree species ecology index and the afforestation guide

Fig. FFH 3-1 Indicators of biodiversity in Walloon forests (2011*)

