

LANDSCAPE FRAGMENTATION

TERRIT 3

Landscape fragmentation results from the subdivision of a continuous natural habitat by the presence of "ecological barriers" (roads, railways, buildings, intensively managed agricultural plots, etc.). It leads to a decrease in the surface area of this habitat and to an increase in the isolation of the species that live there, thereby contributing to the erosion of biodiversity.

The level of fragmentation of the Walloon territory has been estimated¹ using the Jaeger index² applied to environments favourable to biodiversity³, based on the 2001 and 2007 versions of the Land Cover Map of Wallonia (Carte d'occupation du sol de Wallonie - COSW)⁴. The more ecological barriers that subdivide the territory, the more fragmented the territory and the lower the index.

A contrasting situation in Wallonia

In 2007, the 13 landscape groups in Wallonia⁵ had a highly variable level of fragmentation⁶. The calculation of the median value of the index therefore made it possible to classify Walloon landscape groups into 3 categories, according to an increasing level of fragmentation:

- the Fagne area and Thiérache, Sarts and Rièzes area (2.9% of the Walloon territory) which had a low level of fragmentation (median value of the index > 100 ha);
- the Lorraine cuestas area, the Fagne-Famenne depression area and its southern edge, the Entre-Vesdre-et-Meuse area, the central Ardenne high plateau area, the northeastern Ardenne high plateau area and the Condroz mid-plateau area (61.3% of Walloon territory), which were moderately fragmented (median value of the index between 20 ha and 45 ha);
- the Haine and Sambre area, the Brabant undulating area, the Meuse area, the Hainaut low loamy plateau and lowlands area, and the Brabant and Hesbaye low loamy plateaus area (35.8% of the Walloon territory), characterised by a high level of fragmentation (median value of the index < 5 ha).

A deterioration of ecological connections within initially very little fragmented areas

Between 2001 and 2007, the average level of fragmentation of the Walloon territory increased by 5.4%, with the average value of the Jaeger index moving from 90 ha to 85 ha, whereas the median value of the index remained stable (15 ha). The contrasting evolution of the mean and median is a sign of localised deterioration of ecological connections within areas which were initially barely fragmented. These areas belong to the landscape groups of the northeastern Ardenne high plateau, the central Ardenne high plateau and the Lorraine cuestas area.

Ploughing of permanent grasslands, the primary cause of increased fragmentation

It is primarily the conversion of permanent grasslands into annual crops or temporary grasslands that accounted for the increase in fragmentation between 2001 and 2007, in the territories where it occurred. On the other hand, conversions of parts of annual crops into grass strips, annual crops into permanent grasslands and temporary grasslands into permanent grasslands with or without agri-environmental measures are among the factors explaining the improvement of ecological connections in areas where fragmentation has decreased.

[1] See UCL - CREAT (2010, 2016) for a detailed calculation of the index | [2] Index which takes into account the probability that two points, randomly selected in a region, are connected, i.e. not separated by an "ecological barrier". It is expressed in terms of a surface area (ha), corresponding to a single holding without obstacles. | [3] Scenario in which artificialised and cultivated land, coniferous forests, low stem orchards and water courses are considered as "ecological barriers". | [4] COSW_V1_01 and COSW_V2_07 | [5] → PHYS 7 | [6] → Map 10

Fig. TERRIT 3-1 Fragmentation of landscape groups in Wallonia

