

Plant species diversity in skirt communities: Investigations from Wendland / Lower Saxony

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Transition zones like forest edges run as linear structures through the cultural landscape of Central Europe. They are said to contain a high diversity of plant species because they are influenced by both the adjacent forest and the open landscape next to them.

In Wendland, a north-eastern part of Lower Saxony, the vegetation of the forest edges was investigated and its richness of plant species was compared with that of neighbouring vegetation types.

In summer 2002 21 data sets were collected. Each contains a sequence of 5 parallel plots. The plots are of the same size and shape (1 m × 5 m). They are orientated in parallel extension to the border of the forest. One plot was positioned in the skirt vegetation itself. To the right and the left the other two plots were arranged in a distance of 5 m apart [Figure 1, lower part]. For each plot the total number of plant species (including bryophytes and lichens) was recorded.

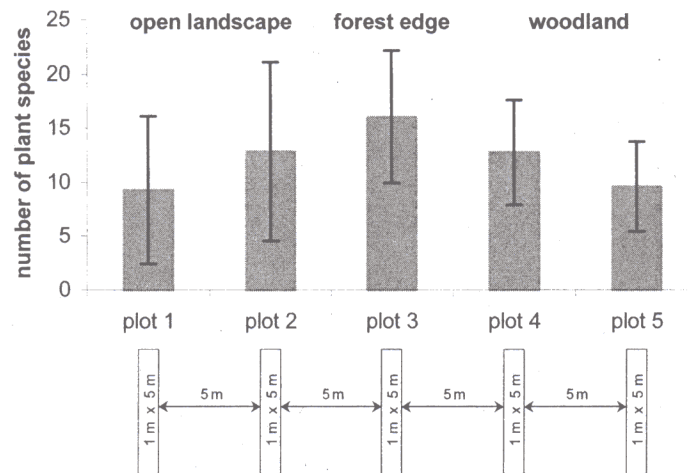


Fig. 1: The diagram shows the mean \pm 1 SD of the number of plant species in skirt vegetation, the open landscape next to it and the woodland it is in contact with. Below the arrangement of plots for the investigation is presented

The mean of the number of plant species per plot was compared. The results indicate the tendency to higher diversity of plant species in the skirt vegetation compared with the adjacent vegetation types such as acres, fallow fields, meadows and pastures. Also, the density of plant species in the forest edges is higher than in the forest in contact. Further analyses indicate that the skirt communities are floristically stronger related with the herbaceous layer of the woodland, whereas the transition from skirt vegetation to the open landscape vegetation types tends to be more sudden.

The possible reasons for the increased plant species diversity of forest edge vegetation such as habitat diversity and vicinism (neighbourhood-effect) are discussed.