

Optimizing verge mowing management along navigable waterways in Flanders

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Introduction

In Europe the area of semi-natural grasslands reduced dramatically in post-war decades (Stoate *et al.*, 2009). Verges and other small habitat patches can have an importance for the maintenance of semi-natural grassland species (plants: Auestad *et al.*, 2011 and Cousins & Lindborg, 2008; invertebrates: Saarinen *et al.*, 2005) and in improving ecological processes in landscapes dominated by cropland (Tscharnkte *et al.*, 2011). This emphasizes the importance of applying an appropriate management for these landscape elements.

A decade ago, verges along several Flemish navigable waterways (managed by Waterwegen & Zeekanaal NV) were mowed 2 times per year: half June and half September. In Flanders, these dates are part of a legislative regulation. Mowing took place with flail mowers and cutting material was partly removed.

Optimizing mowing management

Recently, verge mowing management was optimized according to vegetation and structure:

- Non-productive verge vegetations: **one cut** per year (half September).
- Productive and species-poor vegetations (figure 1): **two cuts** (half June and half September).
- Moderately productive and species-rich vegetations (figure 2):
 - Without ecologically important early flowering species: **two cuts** per year (half May and half September).
 - With ecologically important early flowering species: **two cuts** per year (half July and half September).
- Broad verges: **differentiated management** (partly one cut, partly two cuts per year).
- Preferably, mowing machinery that produces **coarse-structured** cuttings are used.



Figure 1. Productive and species-poor vegetation.



Figure 2. Moderately productive and species-rich vegetation.



Figure 3. Flail mowers produce fine cuttings that are difficult to remove thoroughly.

Verge mowing can be optimized by performing **future research**:

- Adjustment of cutting dates in the context of climate change.
- Research of mowing date (first cut) to optimize the degree and duration of flowering.
- Expanding the knowledge concerning effects of mowing machinery (figure 3).
 - Research of nutrient leaching to soil and the structures of cutting material.
 - Research of the relation between mowing machinery and the effects on plant propagules and invertebrate density.

References

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