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BEES CHRISTMAS MARKET - SHARING KNOWLEDGE AND PRACTICES ON ECOSYSTEM SERVICES - DECEMBER 17th 2014

Gembloux Agro-Bio Tech
Université de Liège

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biodiversité paysage

Ecological functionality in agriculture

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Facts

- Species diversity is linked to ecosystem services (ES) delivery (Hooper et al., 2005), like pollination (Fründ et al., 2013) and pest control (Martin et al., 2009). However, functional mechanisms are still little understood (Tscharntke et al., 2005).
- New ecological interfaces at field margins attract insect species known to contribute to ES (Haaland et al., 2011).
- Relictual semi-natural elements can bear extinction debts in species diversity (Piqueray et al., 2011), while new elements can support colonization credit (Cristofoli et al., 2010).

Task n°1 : Species assemblages determinism in ecological interfaces and their functional diversity in relation with considered ES

Agricultural matrix

New ecological interfaces

Landscape Elements

Relictual semi-natural elements

Selected families : Syrphidae and Carabidae

Community structure analysis

Functional trait analysis

Ecosystem services analysis

Questions

(1) Species assemblages composition

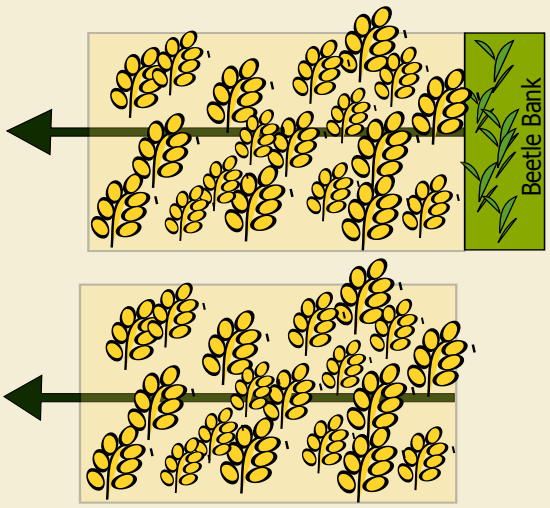
Do landscape elements shelter specific species assemblages with particular functional traits composition?

(2) Extinction debt and colonization credit

- Do relictual landscape elements/new ecological interfaces present extinction debt/ colonization credit ?

- Can the species debt and credit be translated into functional trait or ES debt/ credit?

Task n°2: Evaluation of pollination and pest control services provided by a new ecological interface



What we plan to do...

At plot scale, testing the effect of distance on SE provisioning (pest control and pollination) of new ecological interface (beetle bank) depending on:

1° Presence/Absence of beetle bank
2° Gradient throughout the plot

and using abundance and density data of pests, predators and pollinators (based on correlation)

What we would like to test...

- ES provisoning at landscape scale
- Impact of the surrounding landscape elements
- Which agent contribute to which ES and how
- Quantify predation rate

→ Your ideas are welcome !

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