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Restoring a Mediterranean grassland by replacing the natural stone cover and sowing the dominant grass

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► To cite this version:

Léa Saby, Elise Buisson, Olivier Blight, Christel Vidaller, Thierry Dutoit. Restoring a Mediterranean grassland by replacing the natural stone cover and sowing the dominant grass. IAVS - International Association for Vegetation Science, Sep 2023, Coffs Harbour, Australia. hal-04554862

HAL Id: hal-04554862

<https://cnrs.hal.science/hal-04554862>

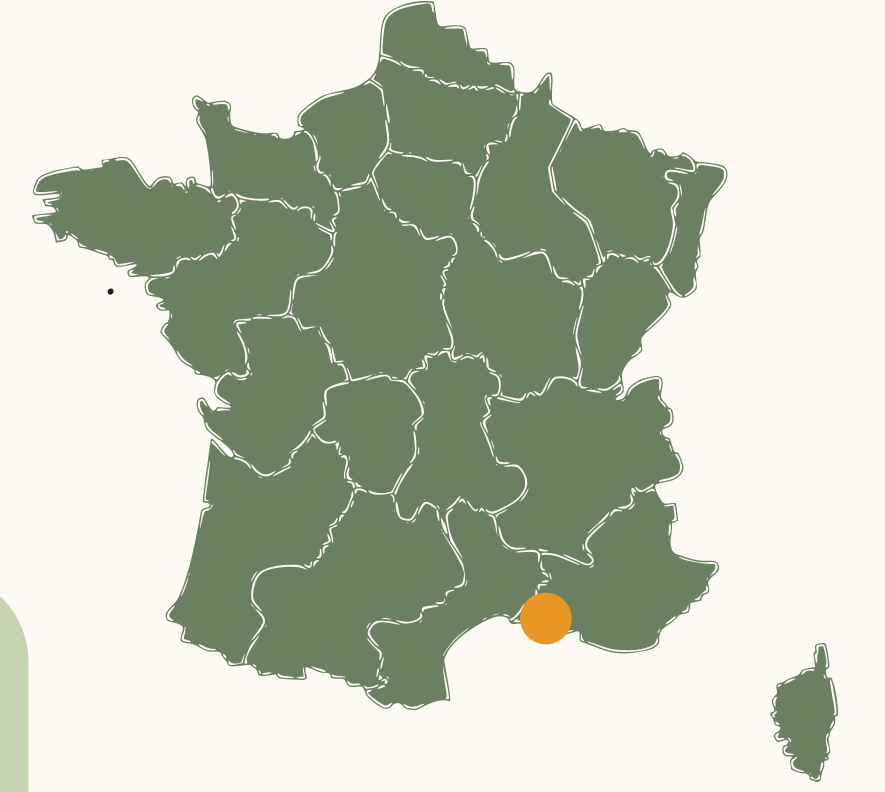
Submitted on 22 Apr 2024

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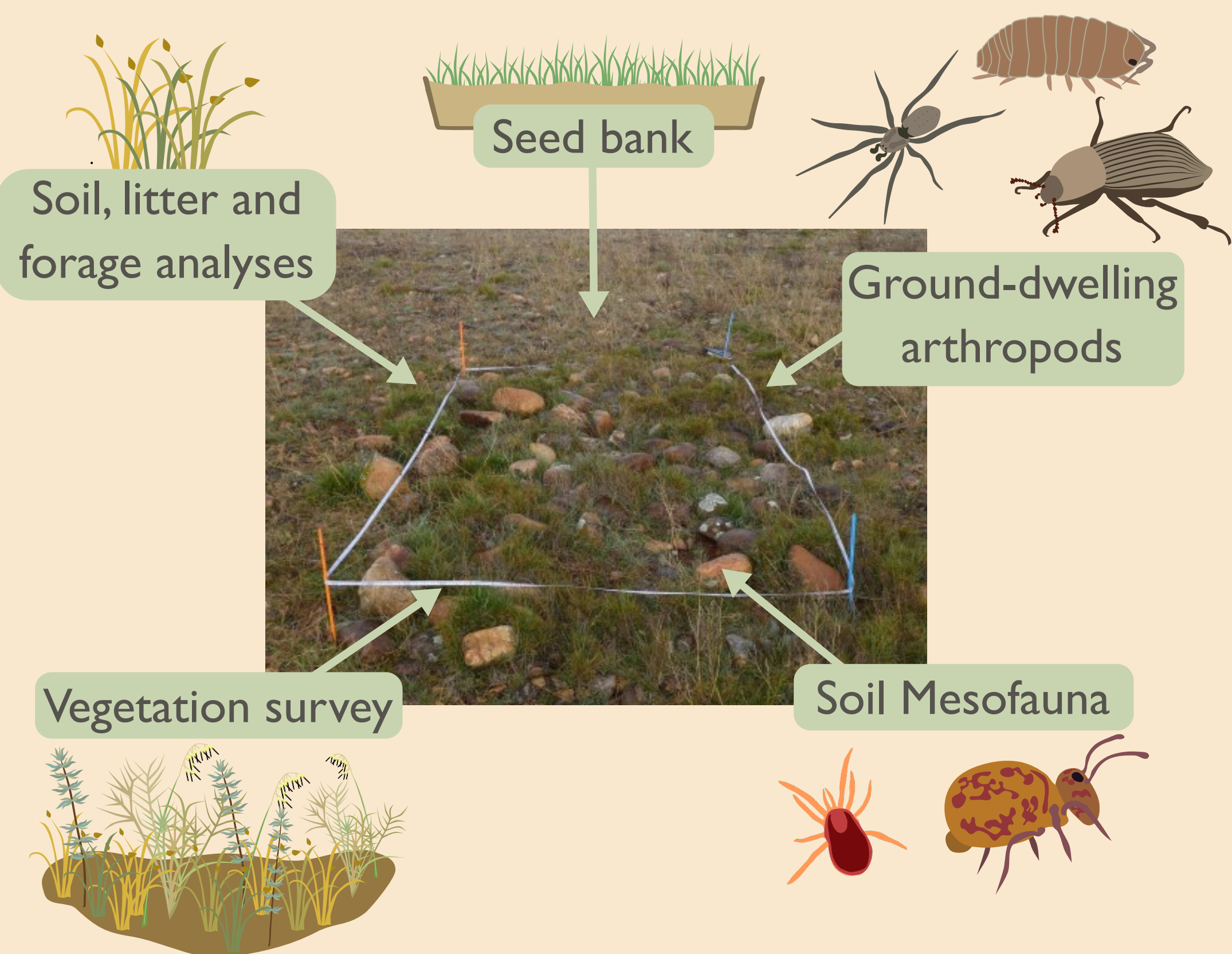
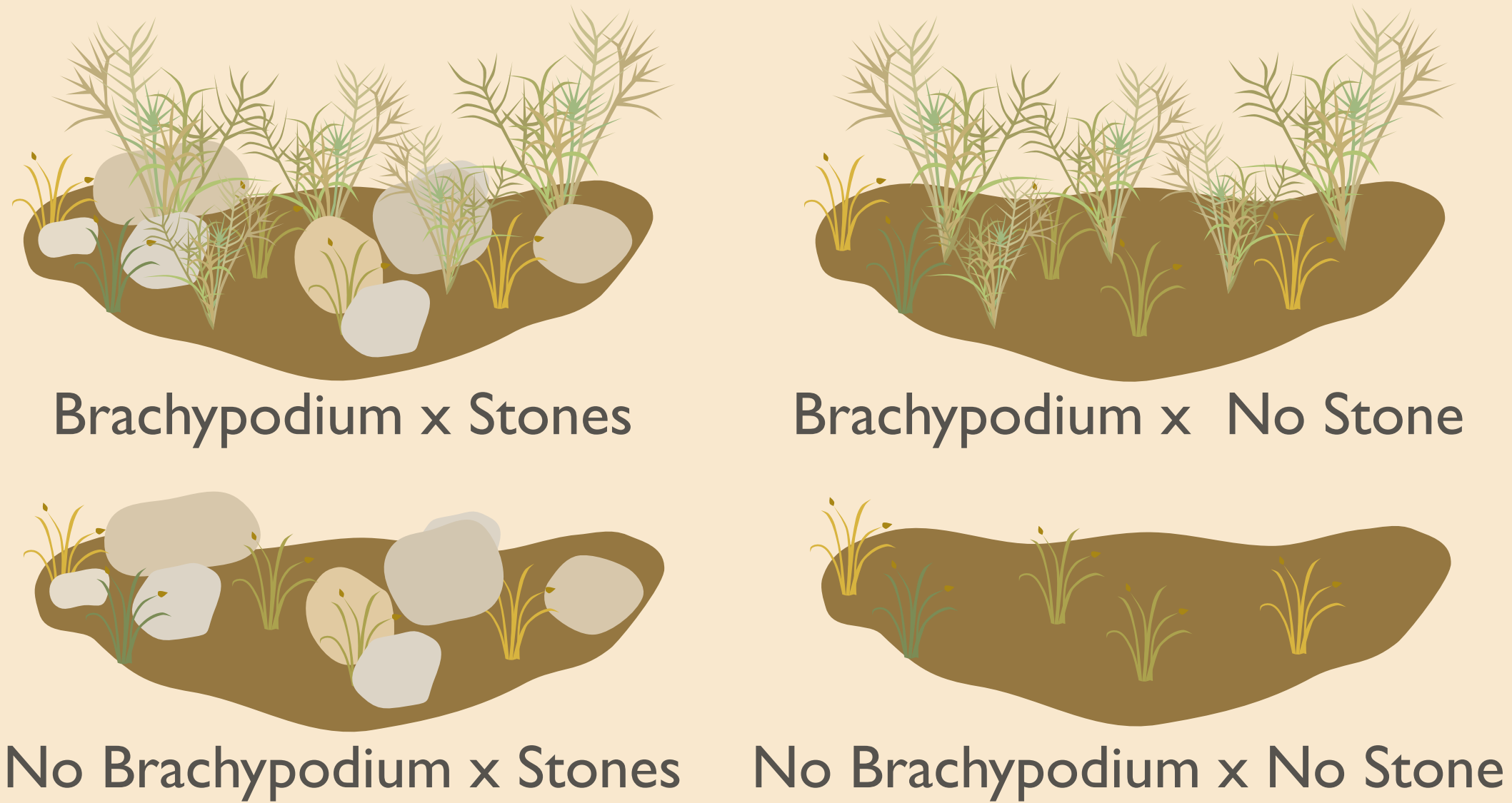
INTRODUCTION

Degradation of grasslands is marked by a decrease in **plant and insect diversity**, biomass and soil composition (Ruan et al., 2021). Such degradation has significant ecological implications for **community stability** and **ecosystem functioning**. Our study focuses on the sub-steppic Mediterranean grassland of the La Crau Plain. The dominant tussock grass species, *Brachypodium retusum*, was re-established after having manipulated the microenvironment by **restoring the natural large stone cover** on the soil surface. **Twenty years** after the experiment was set up, we revisited it with a **multi-component approach** to evaluate the effects of these treatments in the middle term.

METHODS

10 plots per treatment were installed on the abandoned field and **10 unmanipulated plots** were randomly selected on the grassland as a **reference**

4 treatments



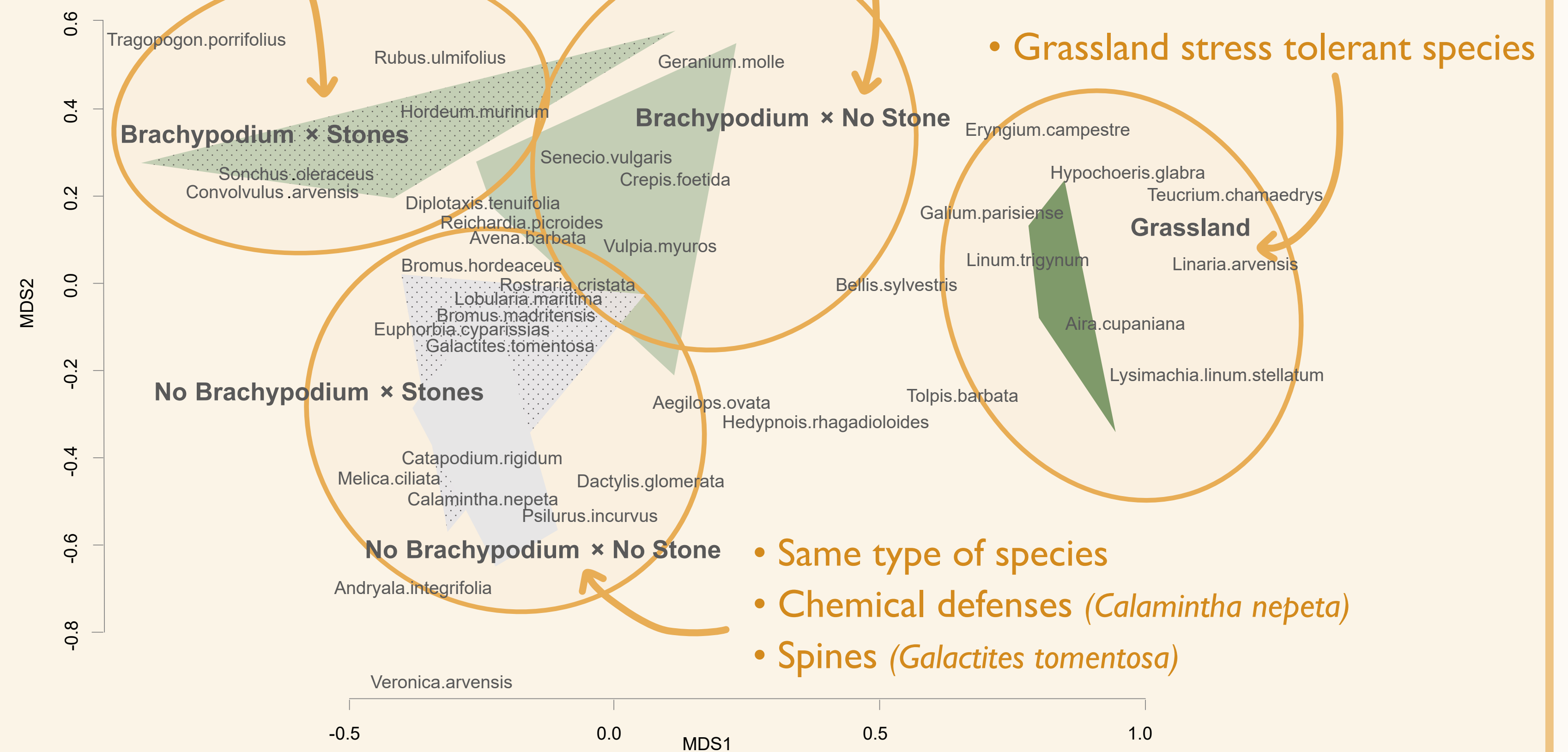
CONCLUSION

The implementation of *B. retusum* and the re-establishment of stones do not meet the restoration objectives. A research perspective would be to replace *B. retusum* by another species, such as *Dactylis glomerata* L., a species also present in the grassland flora but with a lower density and cover because it is more grazed. It will produce less litter mass and biomass and will allow a better absorption of residual fertilizing elements in the soil.

RESULTS

• Palatable slightly mesophilous species
→ Sheltered from grazing

• Less palatable species (*Crepis foetida*, *Diploptaxis tenuifolia*)
• Inaccessible in time (*Senecio vulgaris*)
• Inaccessible in space (*Geranium molle*)



Non-metric multidimensional scaling (NMDS) of plant community composition for each treatment, stress: 0.14; R²=0.42***

We can observe that plant composition is structured according to their strategies to survive grazing

