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

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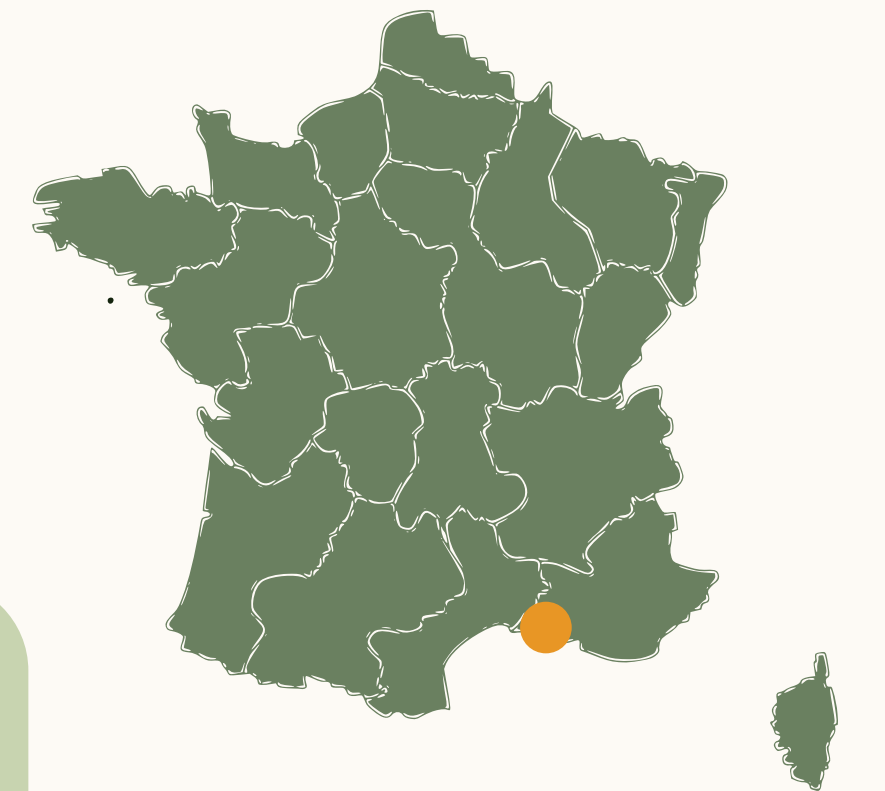
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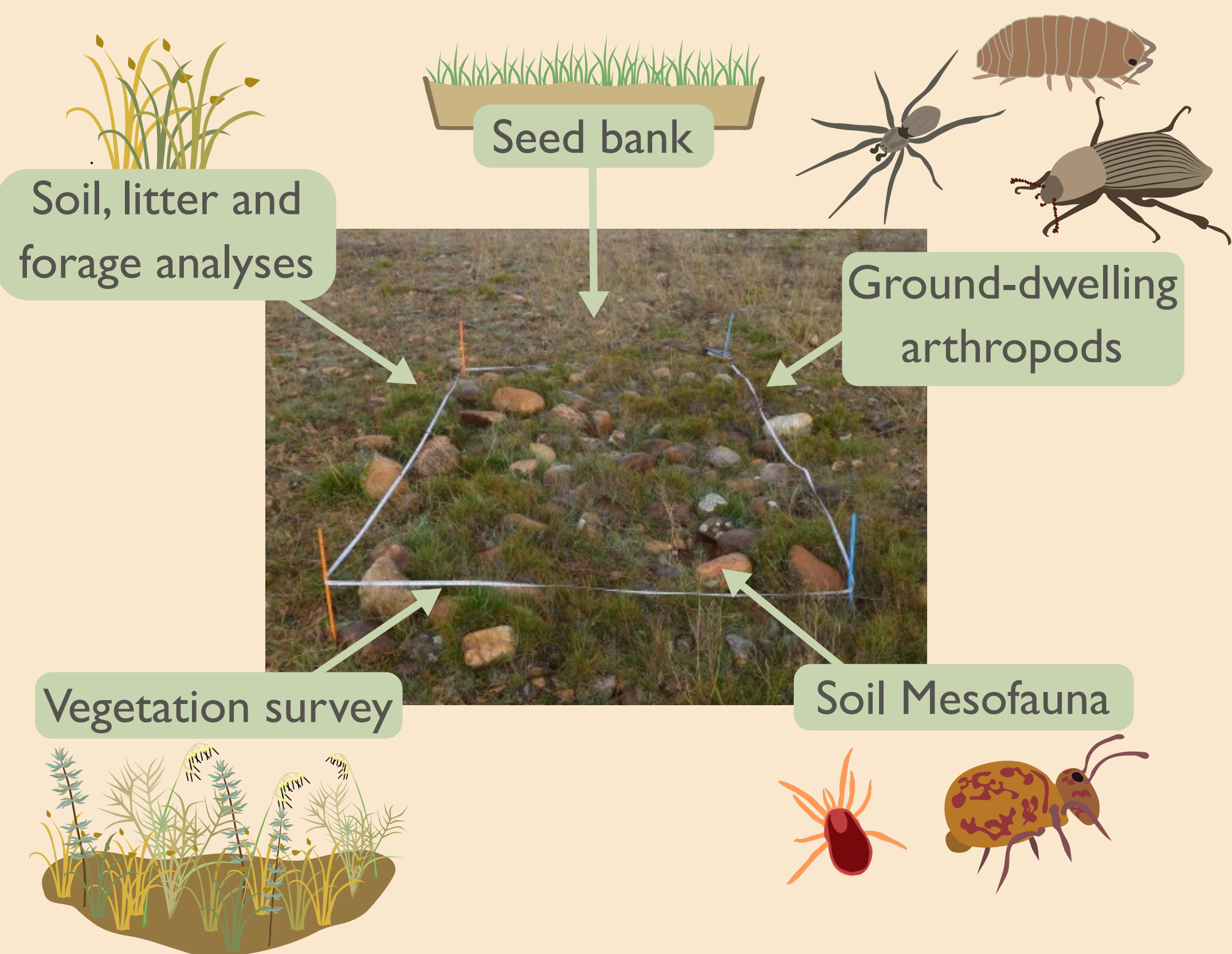
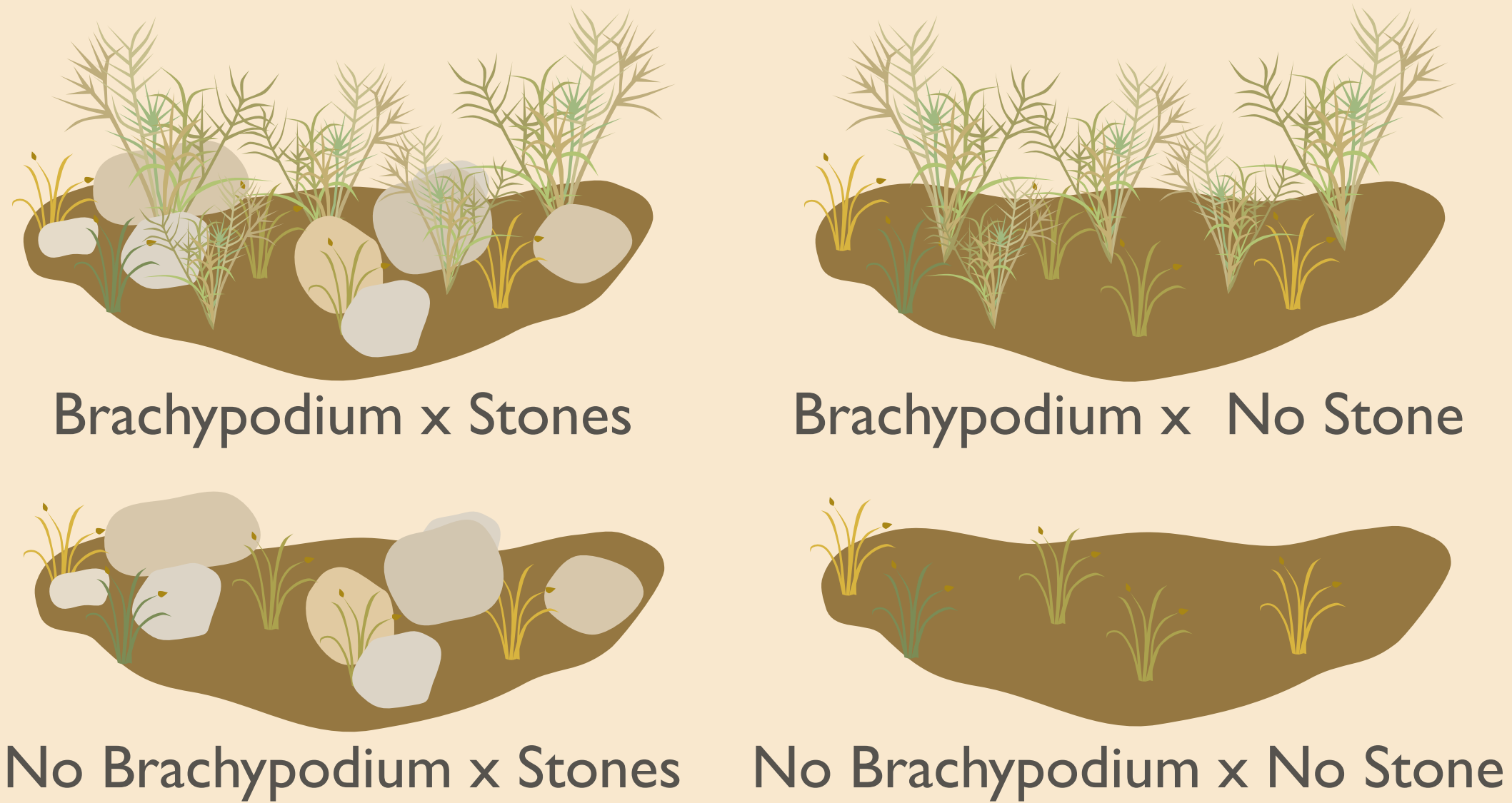
## INTRODUCTION

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



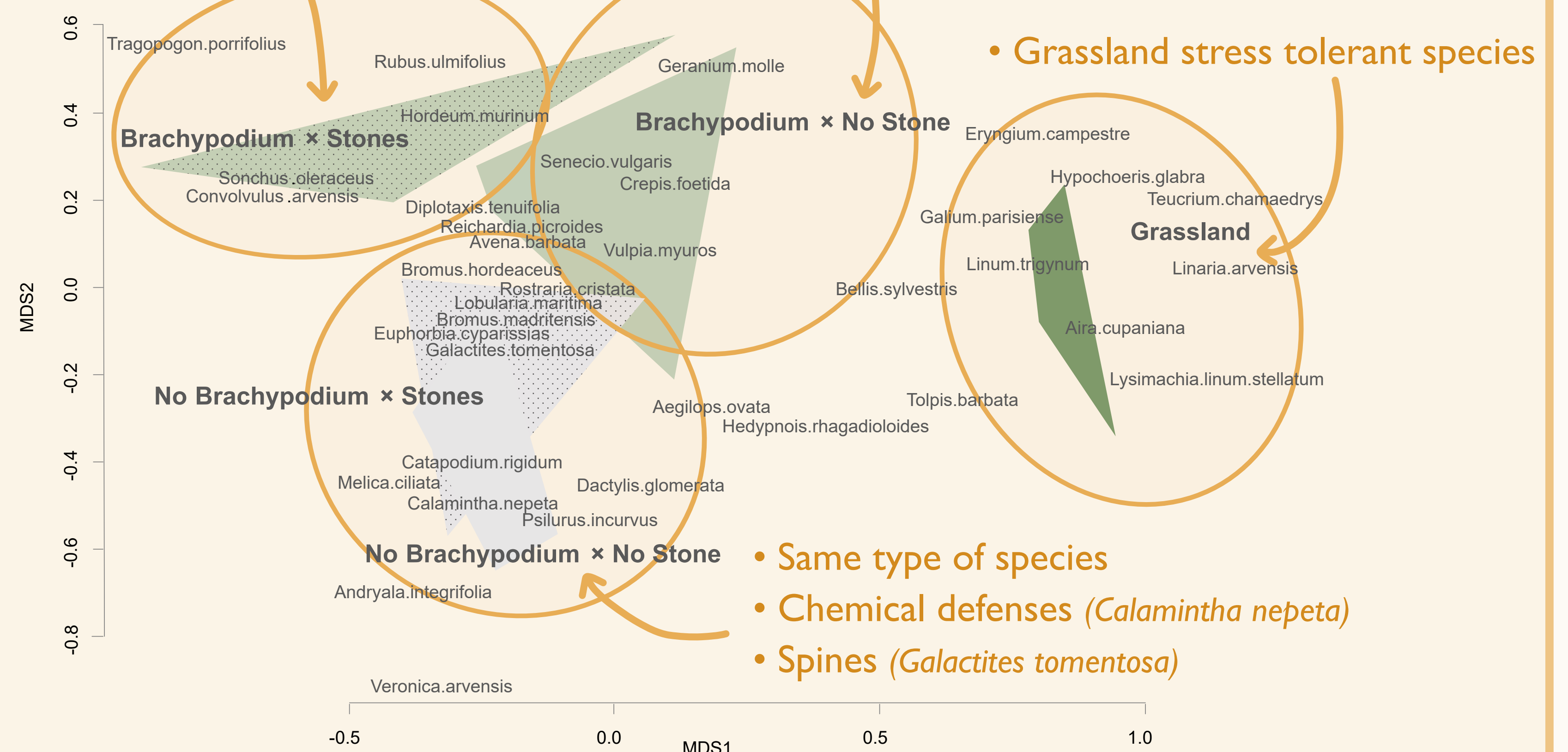
## CONCLUSION

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; R<sup>2</sup>=0.42\*\*\*

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

