


**Demographic structure of *Gypsophila struthium* L.
subsp. *struthium* in three contrasting habitats
in the gypsum outcrops of Sorbas
(Almería, SE Spain)**



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Introduction

- **The biological catalog on gypsum soils not only includes a vascular flora with a high variety of exclusive species, but also lichens and briophytes.**
- **In the Iberian Peninsula, this is most remarkable in the south, particularly in Almería province (Guerra et al., 1995; Mota et al., 1998), which includes one of the most valuable karstic systems on gypseous soil in the Mediterranean area (Calaforra & Pulido-Bosch, 1997).**

Introduction

→ Threat: gypsum quarrying



Objectives

- to examine the population structure of *Gypsophila struthium* L. subsp. *struthium*.
- to document density of established plants and demographic structure in three contrasting habitats.
- to analyse mortality of established plants and recruitment of seedlings.
- to use this information as the basis for long-term population dynamics.

Study area



Vegetation in the study area

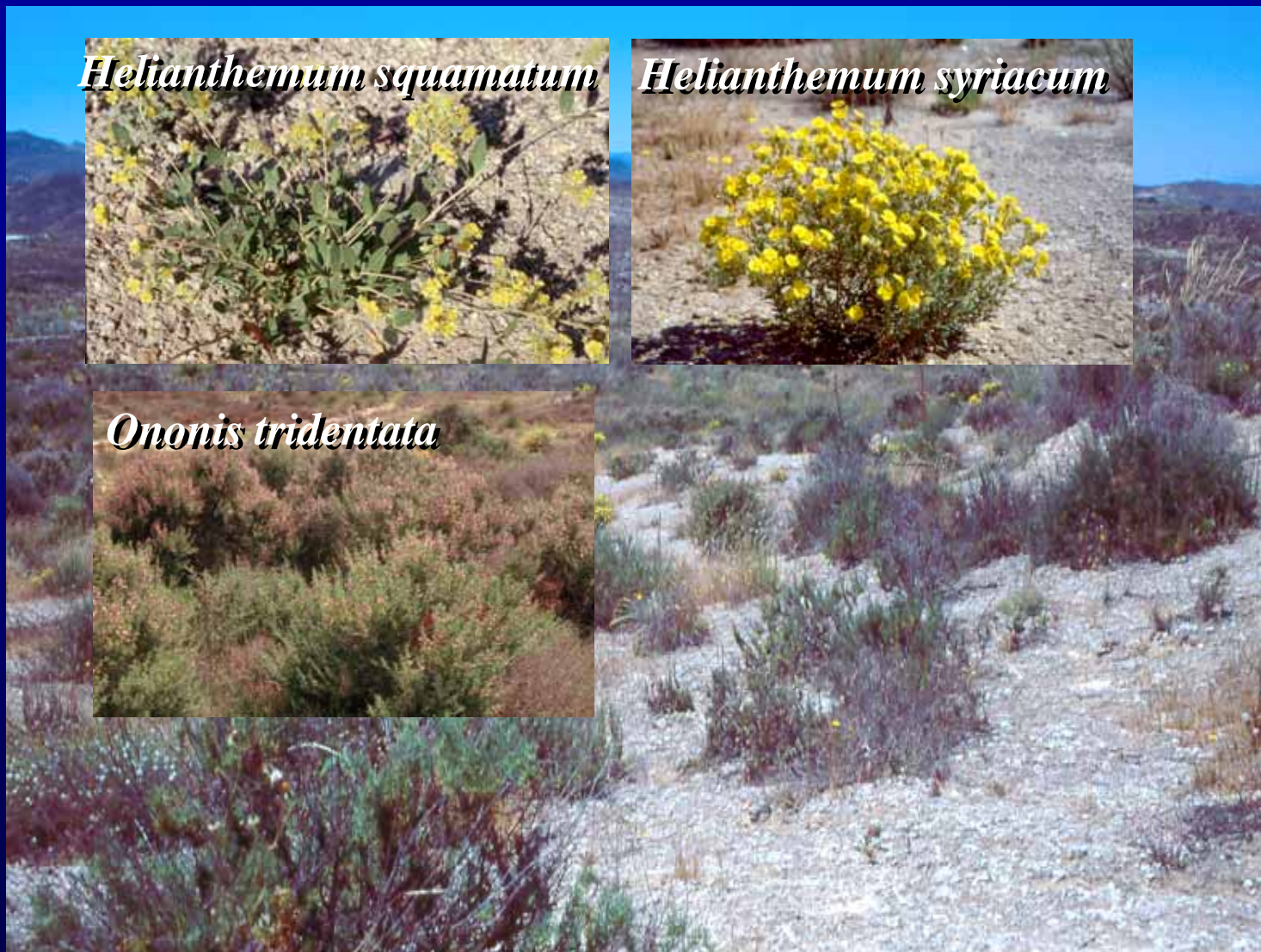
Helianthemum squamatum



Helianthemum syriacum



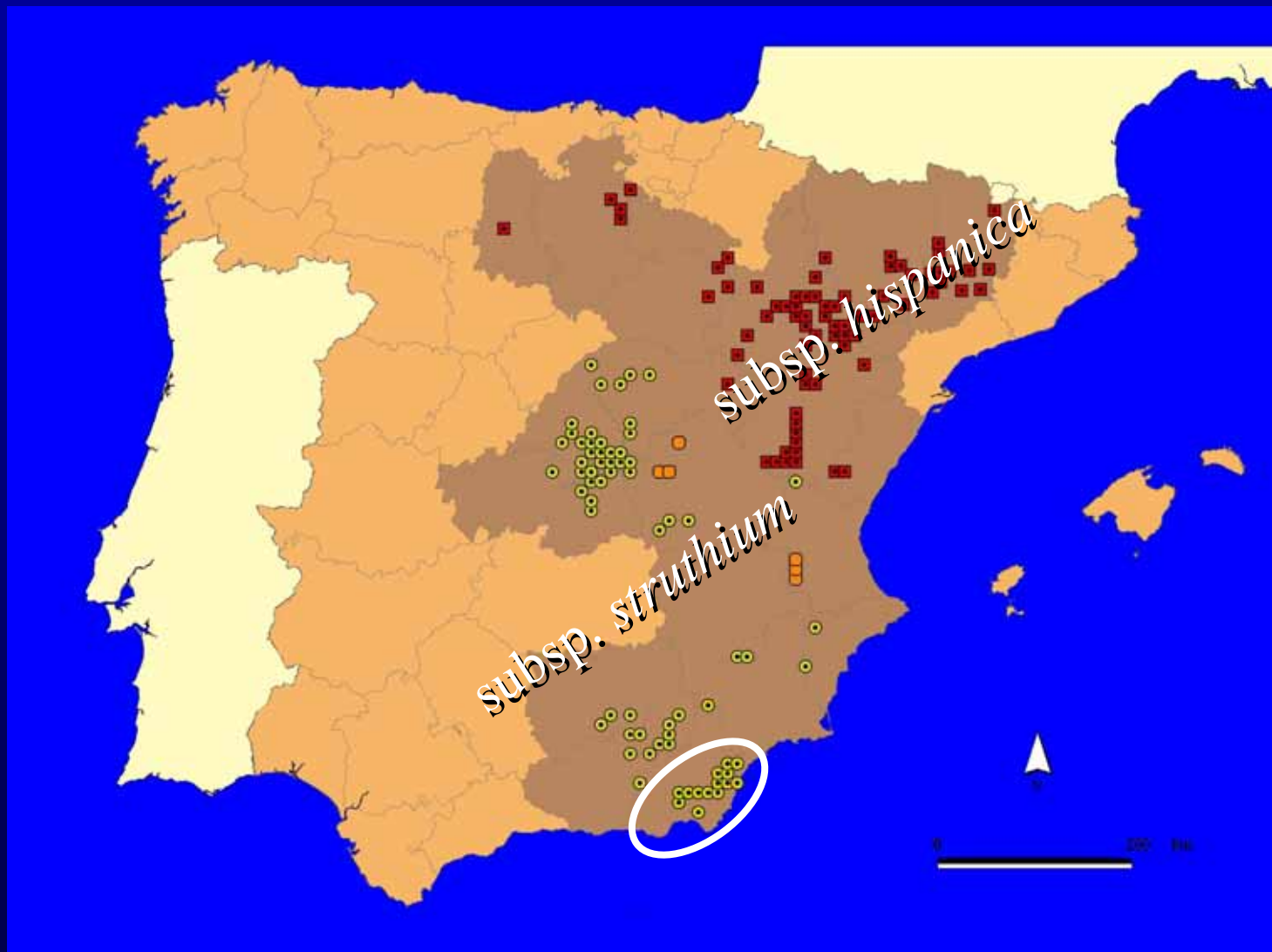
Ononis tridentata



Study species



Study species



Methods

- *Habitats selection*

Unaltered shrublands



Methods

- *Habitats selection*

Abandoned quarry



Methods

- *Establishment of demographic plots (2001)*

10 (10 x 25 m)

Unaltered shrublands



4 (10 x 5 m) + 1 (10 x 10 m)

Abandoned quarry



- **Plots monitoring (2002-2003):** survival, growth, fecundity, seedling emergence and recruitment.

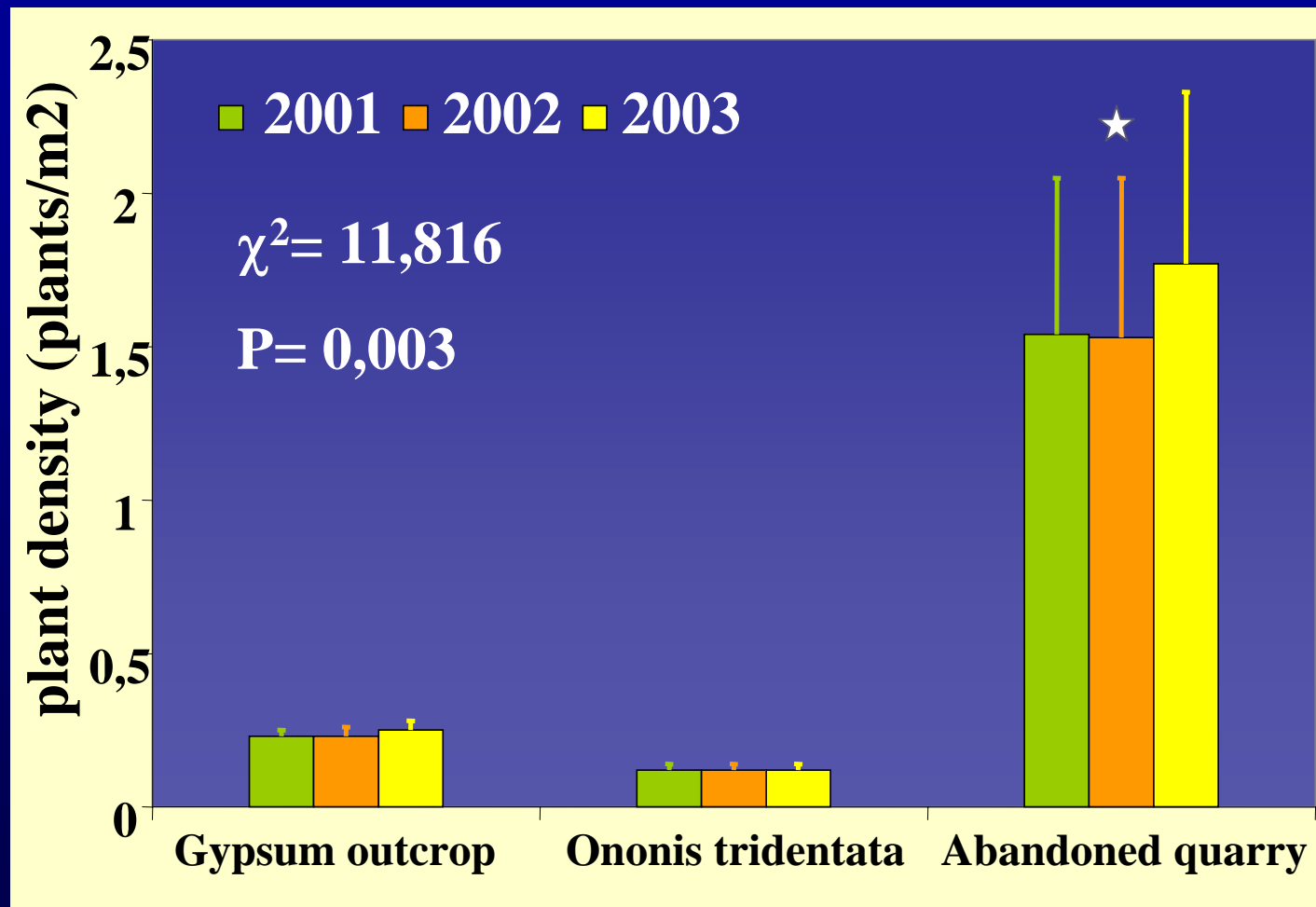
Methods

- *Stage categories*



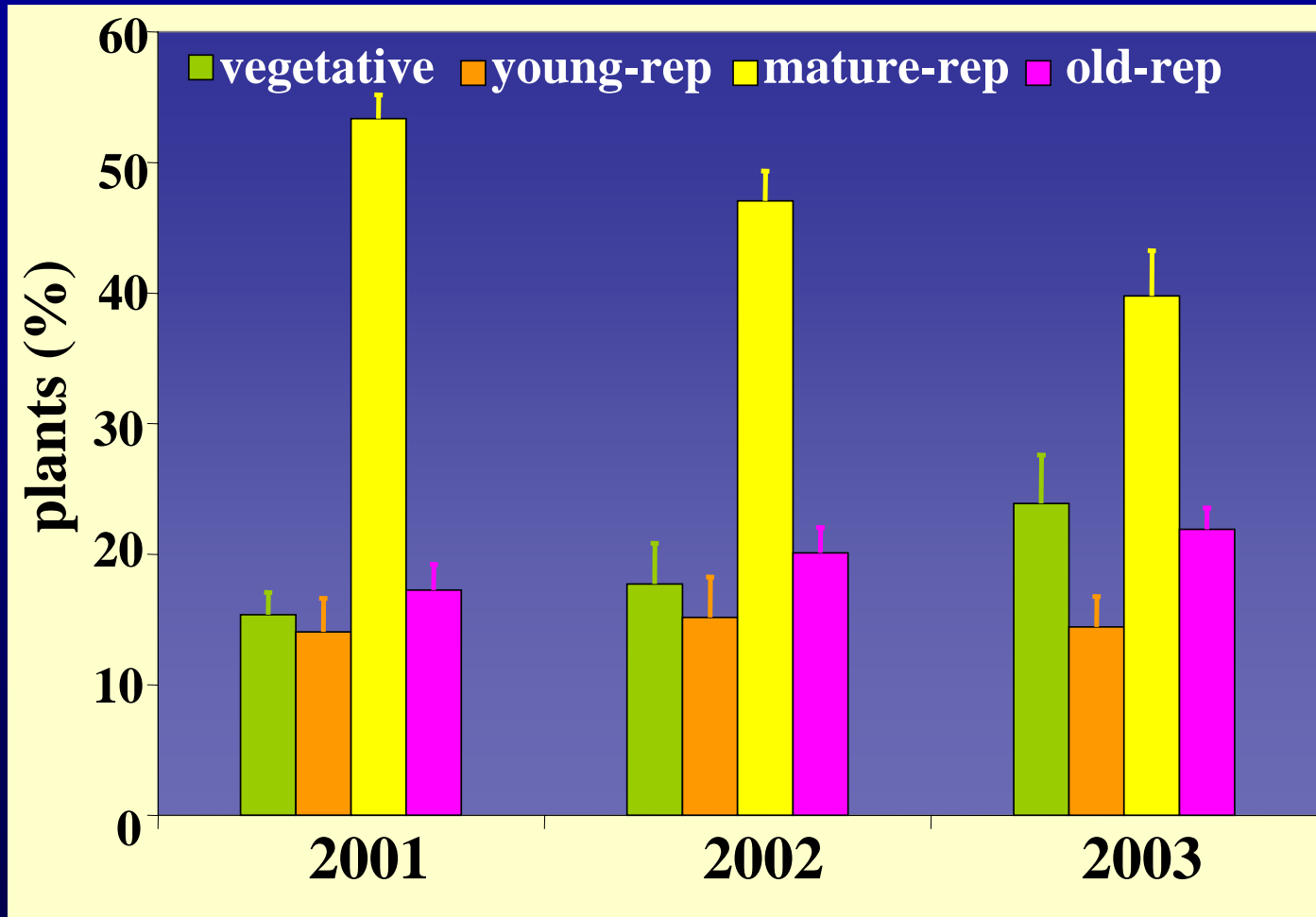
Results

- *Density of established plants*



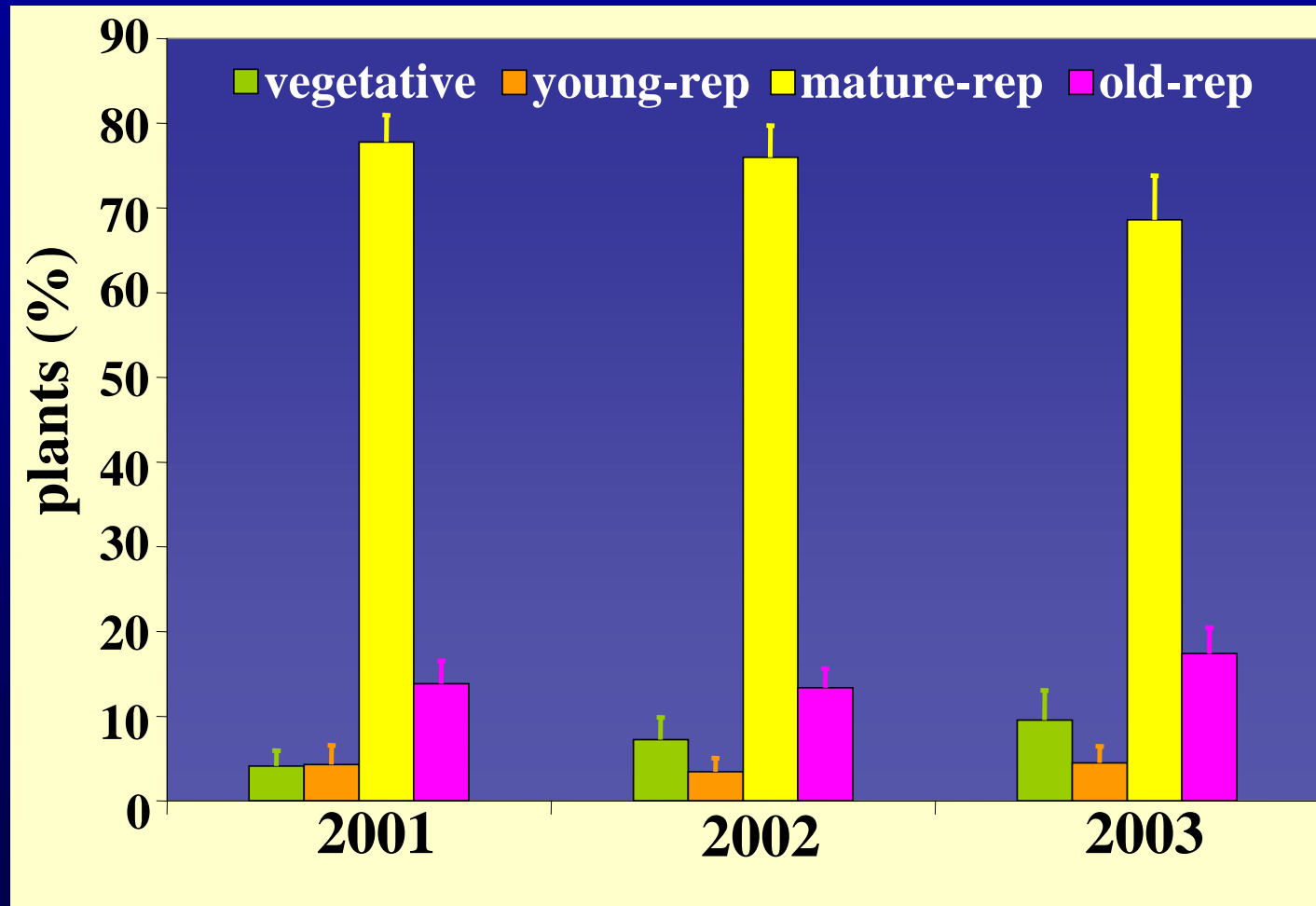
Results

- *Demographic structure: Gypsum outcrop*



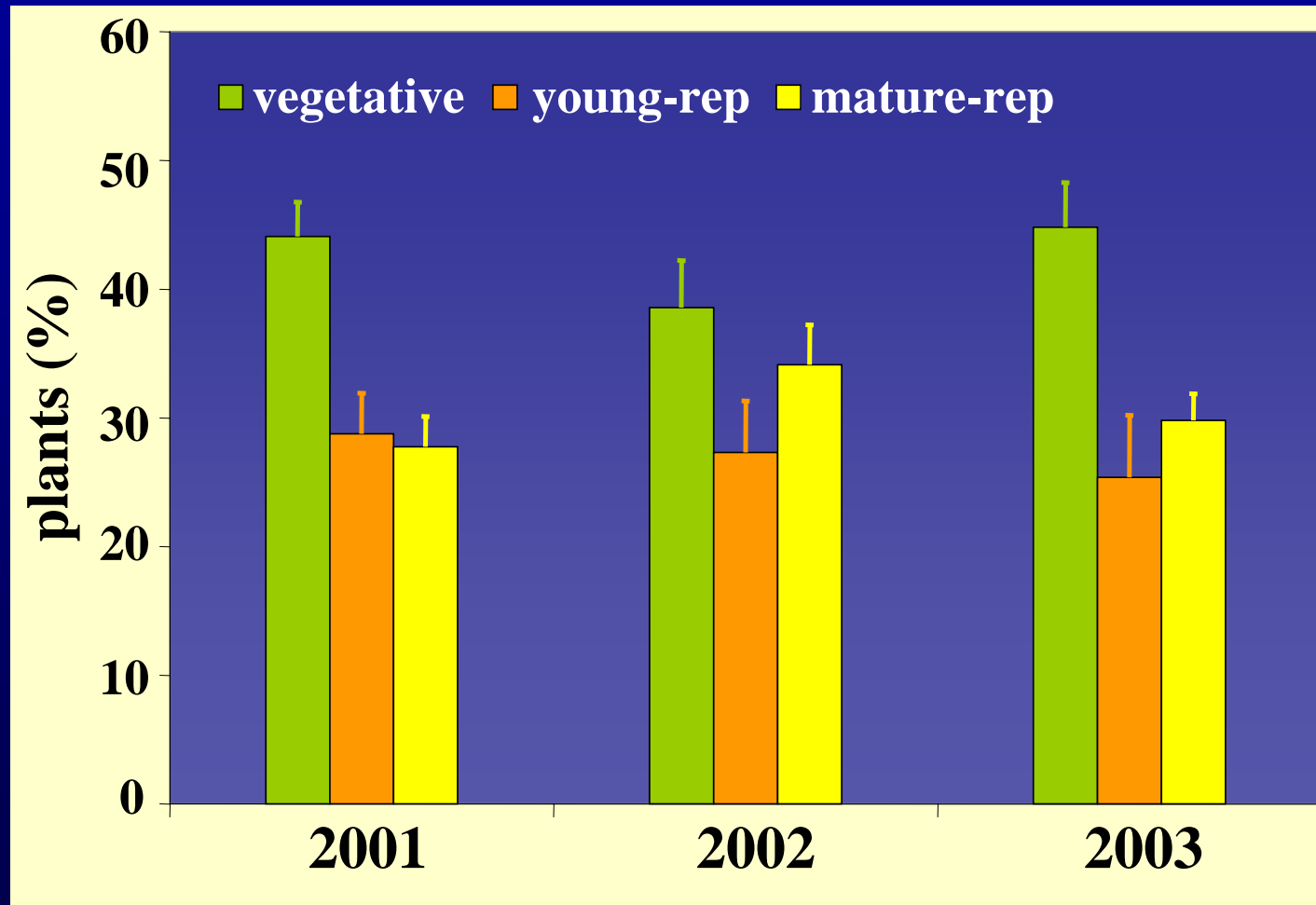
Results

- *Demographic structure: Ononis tridentata*



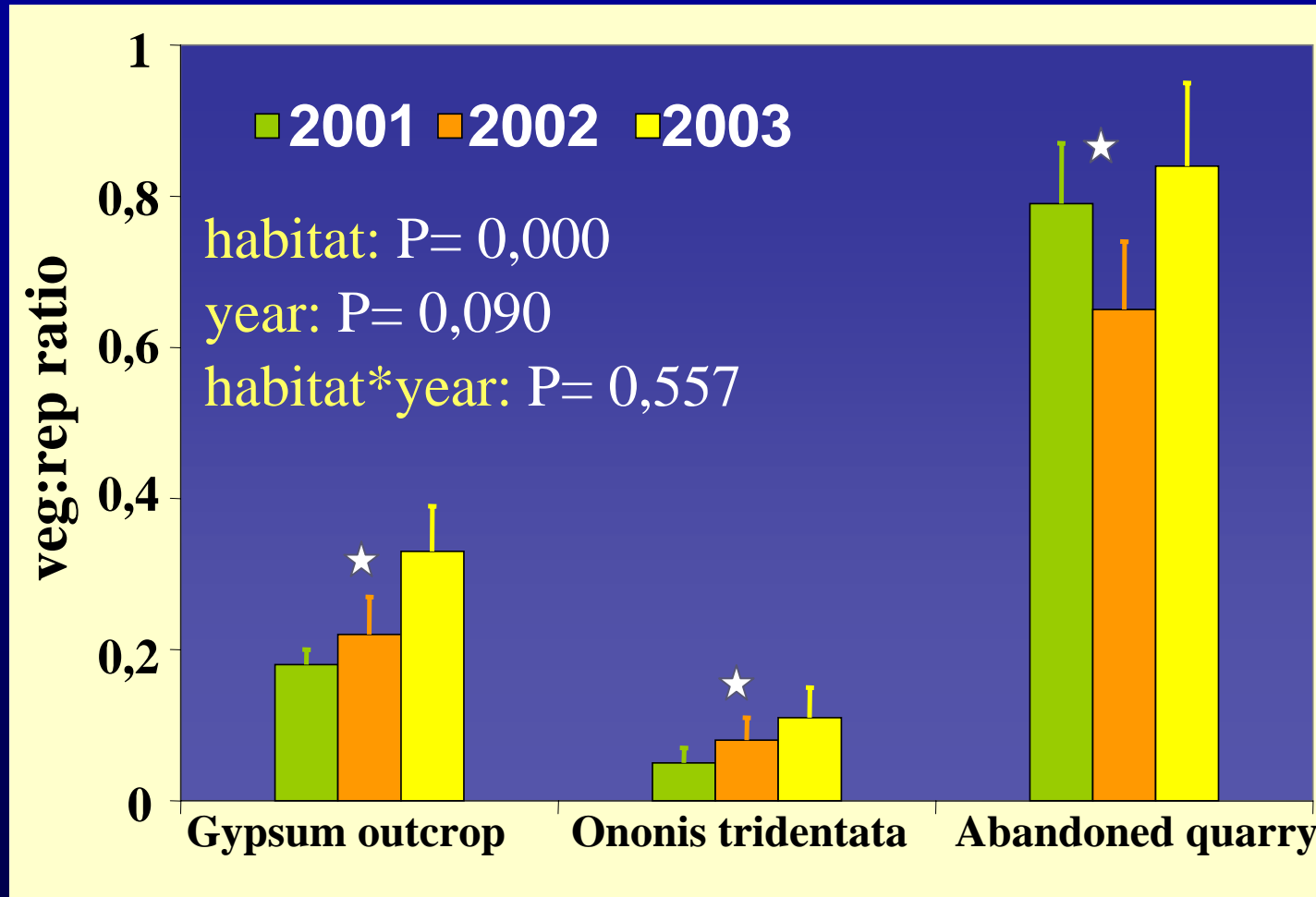
Results

- *Demographic structure: Abandoned quarry*



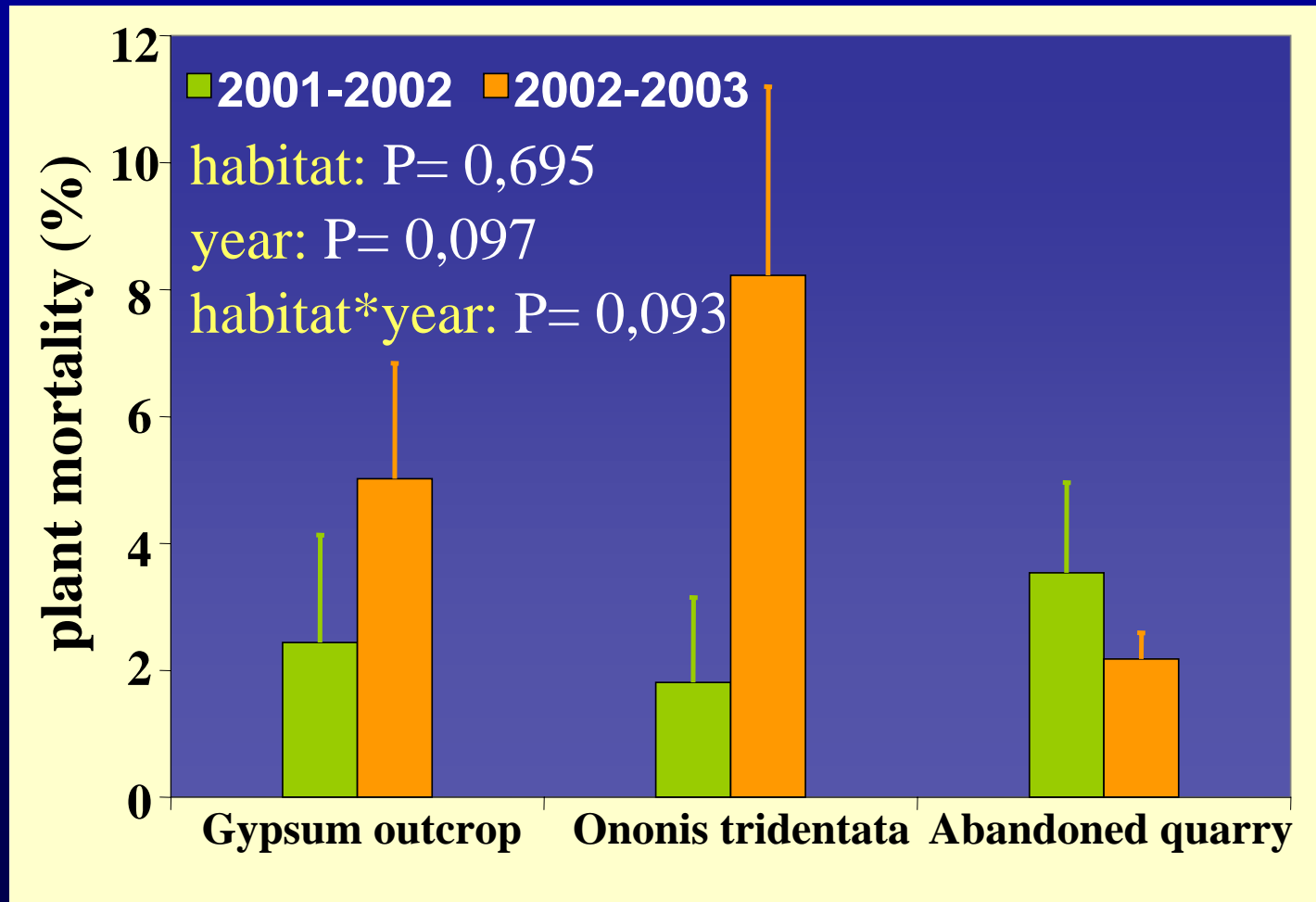
Results

- *Vegetative to reproductive ratio*



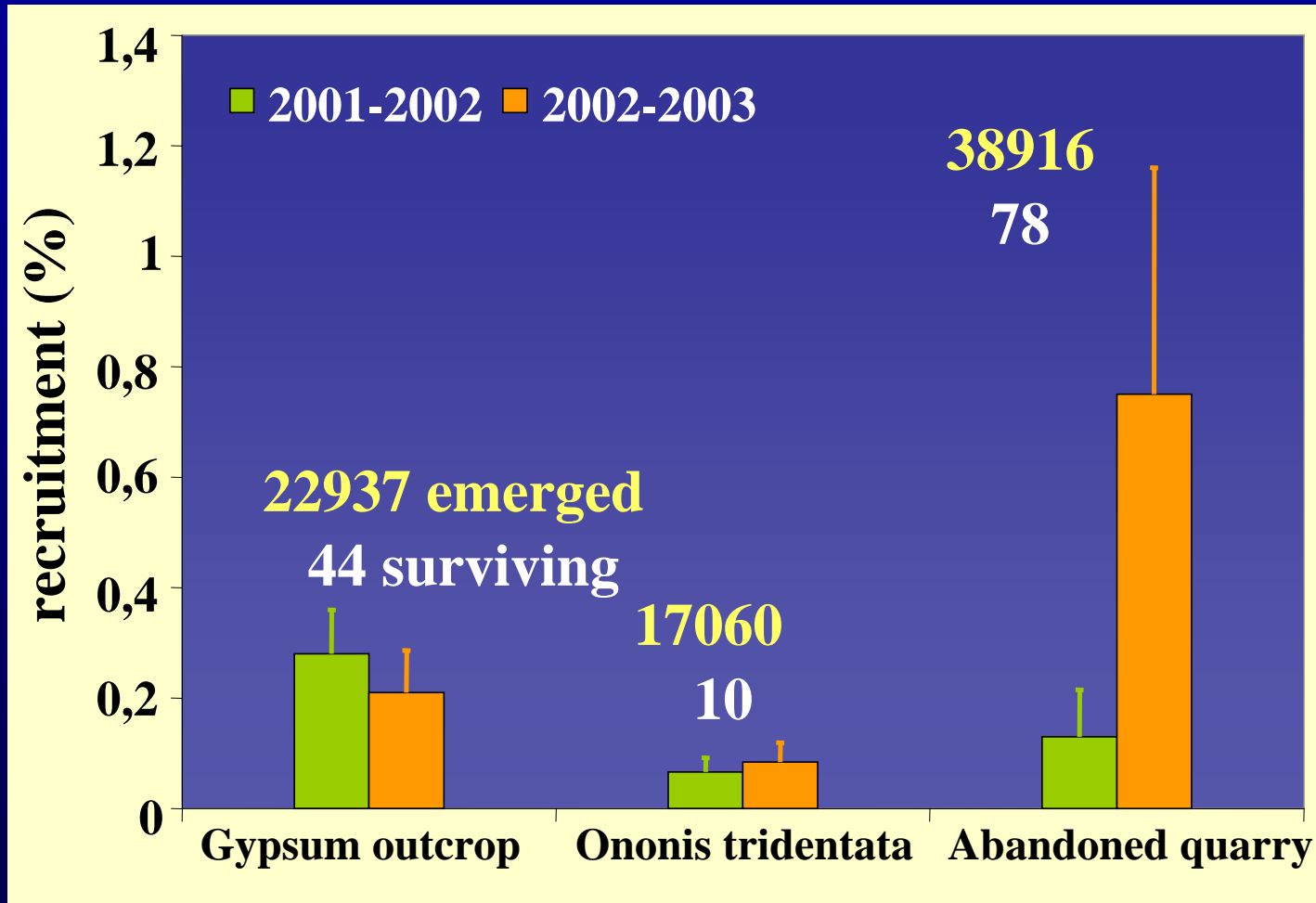
Results

- Plant mortality



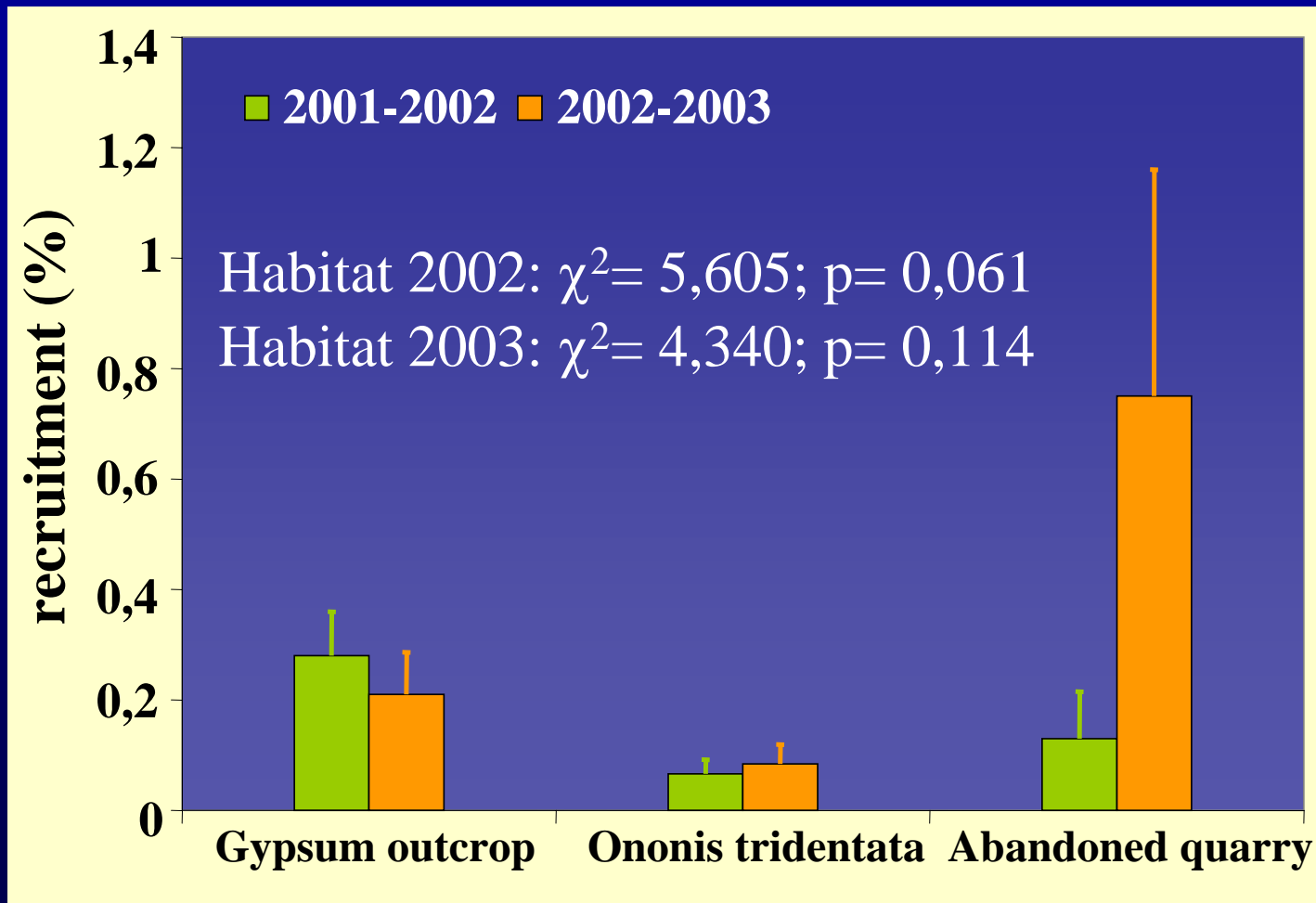
Results

- Seedling recruitment



Results

- Seedling recruitment



Conclusions

- Population structure of *Gypsophila struthium* L. subsp. *struthium* vary depending on habitat. The abandoned quarry is a dynamic or invasive habitat mostly dominated by vegetative and young reproductive plants, while populations are more stable in the unaltered shrublands, where they are mostly represented by mature reproductive plants.
- Population structure also vary among the two unaltered habitats, being less dynamic in the *Ononis tridentata* community which it is not the genuine gypsicolous habitat.
- Survival and fecundity of reproductive plants prevent the decrease of population viability.

Acknowledgements

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