

MUCBO

Fundació Jardí Botànic de Sóller
Museu Balear de Ciències Naturals



4th Mediterranean Plant Conservation Week

VALENCIA | 23-27 OCTOBER | 2023

Ex situ conservation and propagation of wild plants species from wetlands, ponds, and temporary ponds of the Balearic Islands

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INTRODUCTION

The Sóller Botanical Garden is a conservation garden. The living plant and the seed bank collections are the main basis of the work carried out integrating *in situ* and *ex situ* conservation techniques. This allows us to perpetuate those threatened species in a more controlled environment, to study its conservation biology while they are used for dissemination and enhancement for the community.

The *ex situ* conservation of the flora that forms our ecosystems, the endemic and rare species of each region threatened by climate change are absolutely priority objectives.

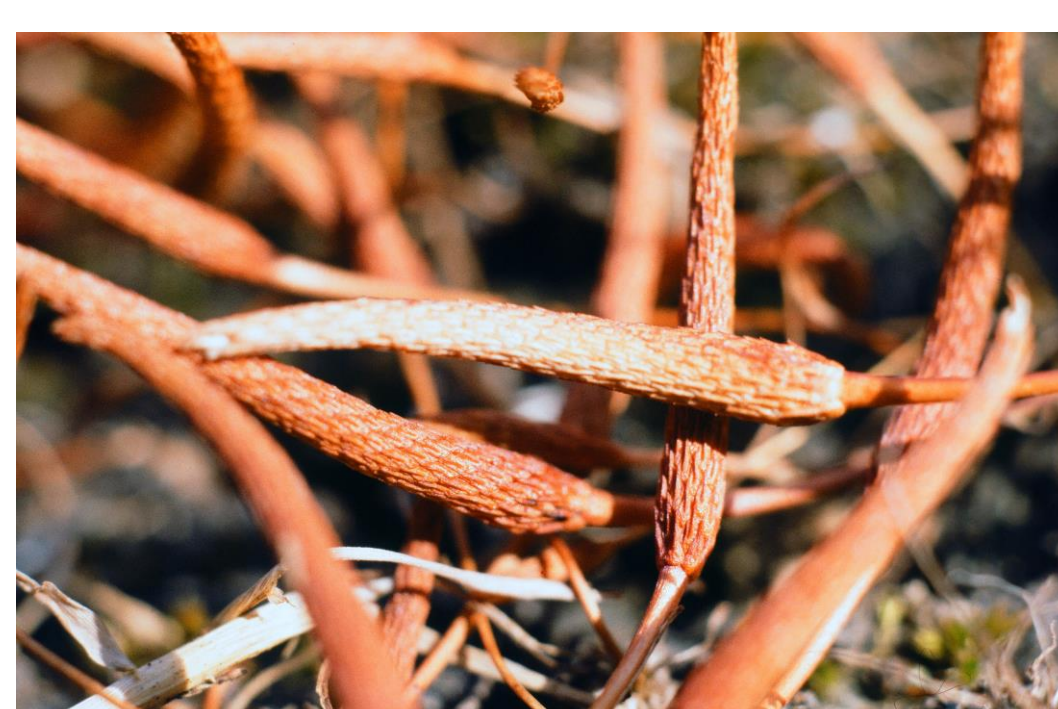
Wetland communities, temporary ponds and microhabitats where the comophytic vegetation of communities that cover thin substrates of shady places, landings of crags and caves, are some of the environments or habitats most threatened by climate change. These environments are included in the Habitats Directive.

These habitats are home to threatened species, endemics and/or rare species which require quite special ecological conditions, which makes them extremely vulnerable.



SPECIES AND HABITATS SELECTION

The species has been selected according to the environments to be considered. The criteria generally established in the Sóller Botanical Garden collections has been maintained, prioritizing endemic, rare and/or threatened species and bearing in mind the origin of each population, avoiding hybridizations and species that may be conflictive or invasive within the Botanical Garden. The structures created for this purpose in its day has also been used, that is, the pools of running water, the ditches, the walls facing north and the water from the natural spring that is available. 59 taxa has been selected of 4 habitats.



Helophytic vegetation: submerged-based aquatic communities. It is almost cosmopolitan, there is no endemism, but it shapes the landscape.

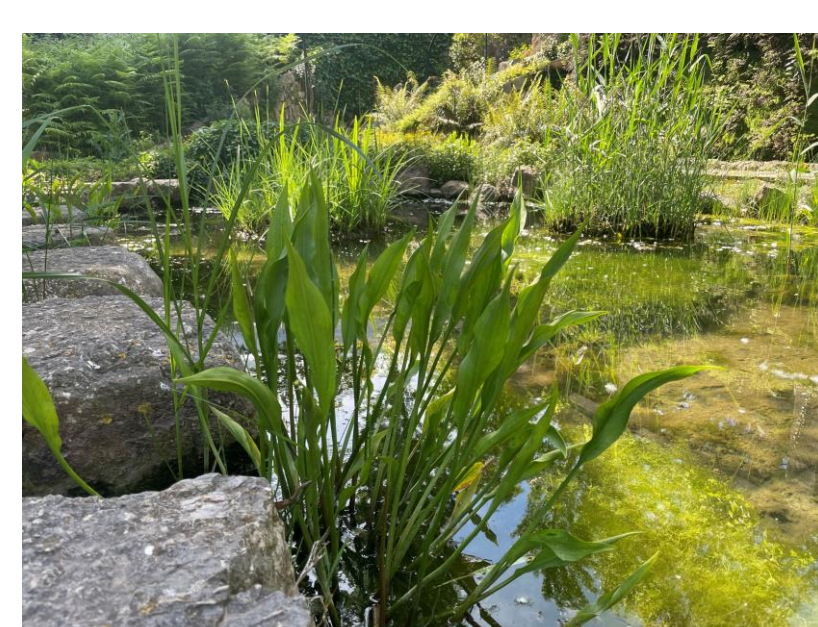
- *Typha* spp.
- *Cladium mariscus*
- *Phragmites australis*
- *Alisma plantago-aquatica*
- *Alisma lanceolata*
- *Juncus fontanesii*
- *Carex hispida*
- *Eleocharis palustris*
- *Equisetum ramosissimum*
- *Limniris pseudacorus*
- *Samolus valerandi*
- *Calystegia sepium*
- *Althaea officinalis*
- *Bolboschoenus maritimus*

Comophytic vegetation of communities that cover thin substrates from shady places to landings of crags, caves and drips:

- *Selaginella denticulata*
- *Asplenium ceterach*
- *Asplenium trichomanes*
- *Asplenium sagittatum*
- *Polypodium cambricum*
- *Arenaria balearica*
- *Bellium bellidioides*
- *Brimeura duvigneaudii*
- *Carex rorulenta*
- *Clinopodium rouyanum*
- *Crocus cambessedesii*
- *Erodium reichardii*
- *Micromeria filiformis*
- *Naufraga balearica*
- *Oxalis ferae*
- *Ranunculus weyerlii*
- *Sedum dasyphyllum*
- *Sibthorpia africana*
- *Soleirolia soleirolii*
- *Solenopsis balearica*
- *Cymbalaria aequitriloba*

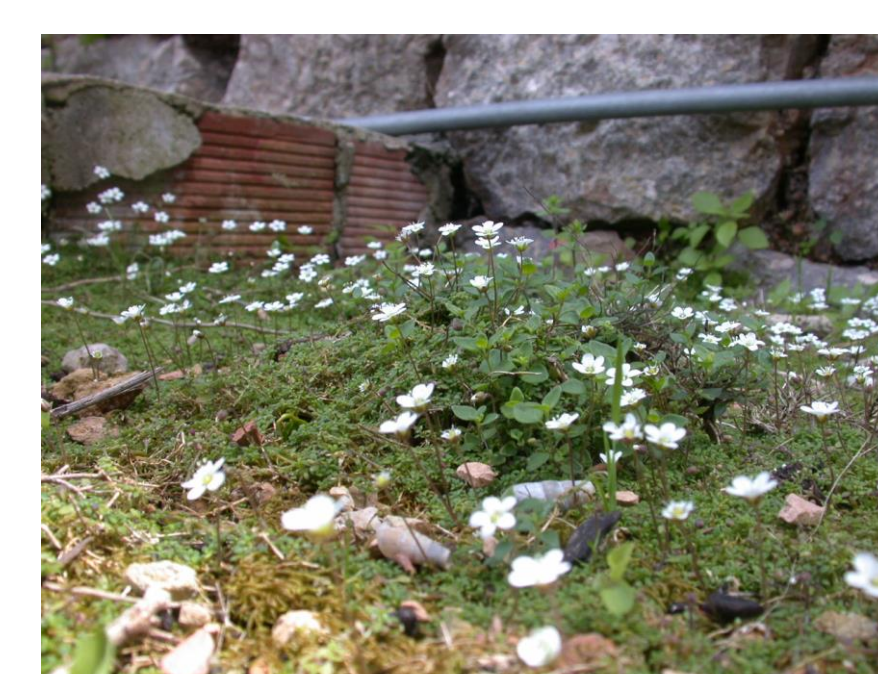
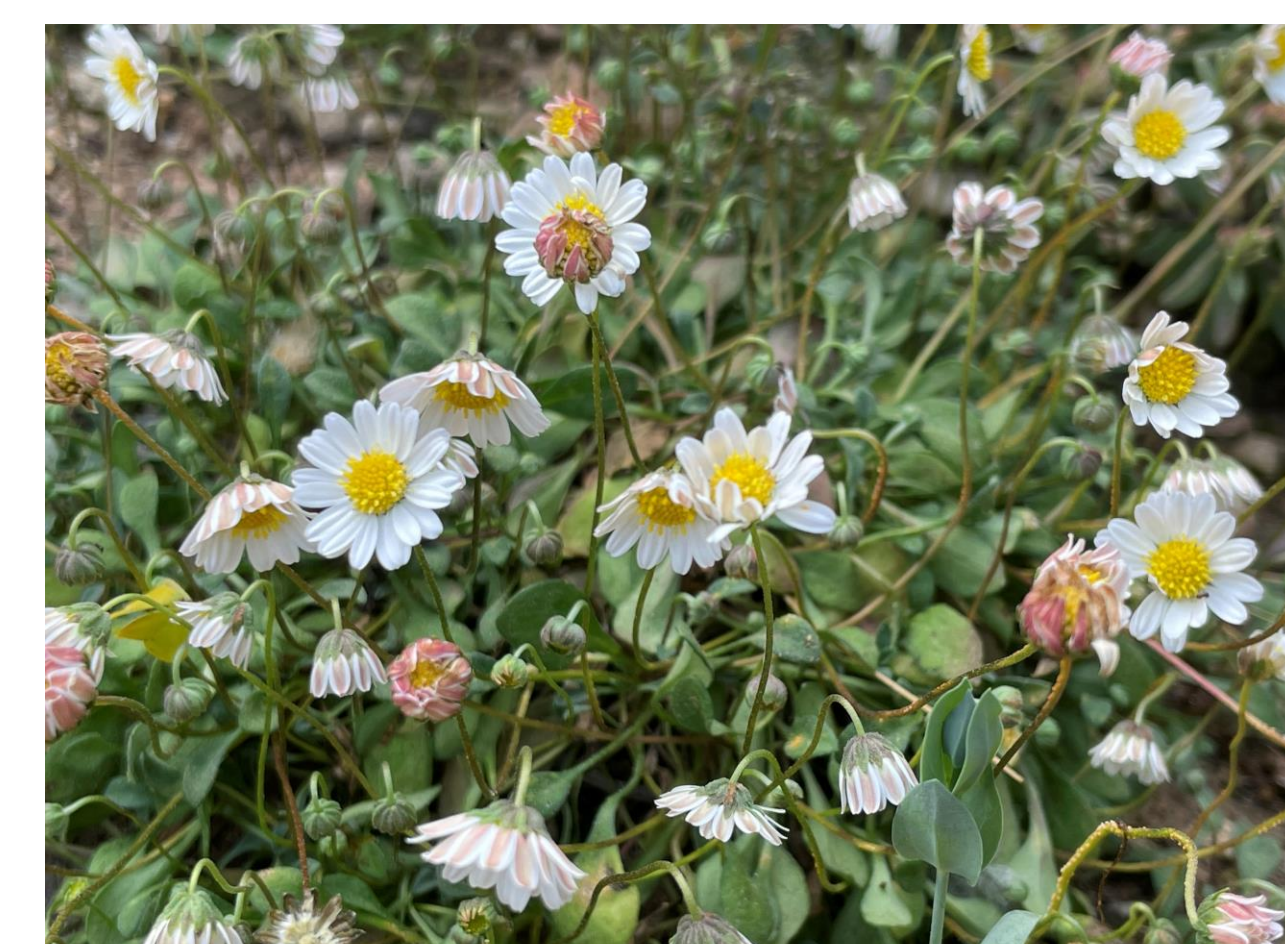
Reeds and wet meadows:

- *Hypericum tomentosum*
- *Hypericum hircinum* subsp. *cambessedesii*
- *Bellium bellidioides*
- *Achillea ageratum*
- *Leucium aestivum* var. *pulchellum*
- *Mentha pulegium*
- *Allium triquetrum*
- *Juncus* spp.
- *Mentha suaveolens*
- *Lythrum junceum*
- *Phyla nodiflora* (only in seedbank collection)
- *Linum maritimum*



Vegetation of temporary ponds and seasonally flooded places:

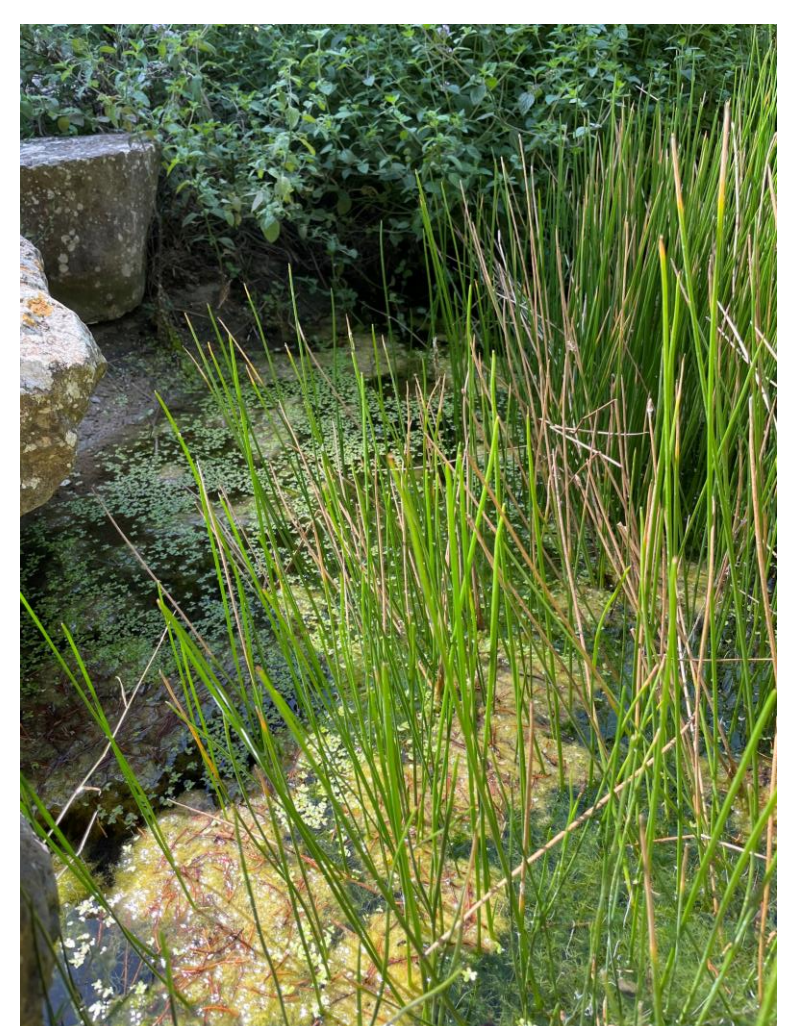
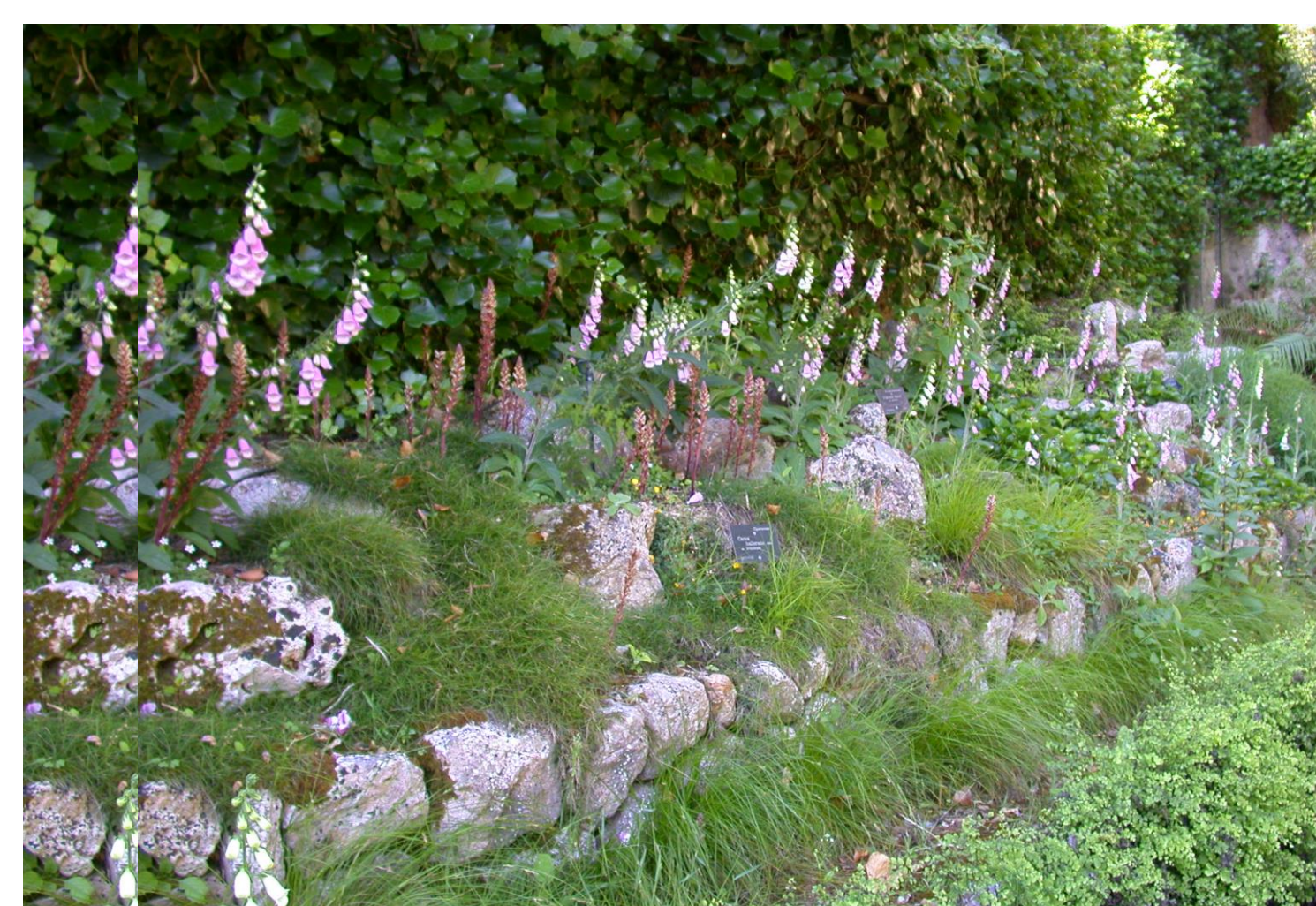
- *Bellium bellidioides*
- *Lythrum hyssopifolia*
- *Mentha pulegium*
- *Hyoscyamus albus*
- *Hypericum tomentosum*
- *Marsilea strigosa*
- *Myosurus minimus*
- *Ranunculus peltatus* subsp. *baudotii*
- *Damasonium bourgaei*
- *Elatine macropoda*
- *Isoetes histrix*
- *Isoetes velatum*
- *Verbena supina*
- *Ophioglossum lusitanicum*



RESULTS

Cultivated taxa and seeds stored in genebank

Taxa	Plant production protocol	Seeds stored
<i>Achillea ageratum</i>	x	x
<i>Alisma lanceolata</i>	x	x
<i>Alisma plantago-aquatica</i>		x
<i>Allium triquetrum</i>	x	x
<i>Althaea officinalis</i>	x	x
<i>Anemone coronaria</i>	x	
<i>Arenaria balearica</i>	x	x
<i>Asplenium ceterach</i>	x	
<i>Asplenium sagittatum</i>	x	
<i>Asplenium trichomanes</i>	x	
<i>Bellium bellidioides</i>	x	x
<i>Bolboschoenus maritimus</i>	x	x
<i>Brimeura duvigneaudii</i>	x	x
<i>Calystegia sepium</i>		x
<i>Carex hispida</i>	x	x
<i>Carex rorulenta</i>	x	x
<i>Cladium mariscus</i>	x	x
<i>Clinopodium rouyanum</i>	x	x
<i>Crocus cambessedesii</i>	x	x
<i>Cymbalaria aequitriloba</i>	x	x
<i>Damasonium bourgaei</i>		x
<i>Digitalis minor</i>	x	x
<i>Elatine macropoda</i>	x	x
<i>Eleocharis palustris</i>	x	
<i>Equisetum ramosissimum</i>	x	
<i>Erodium reichardii</i>	x	x
<i>Helosciadium bermejoi</i>	x	x
<i>Hyoscyamus albus</i>	x	x
<i>Hypericum hircinum</i> subsp. <i>cambessedesii</i>	x	x
<i>Hypericum tomentosum</i>	x	x
<i>Isoetes histrix</i>	x	
<i>Juncus fontanesii</i>	x	
<i>Juncus</i> spp.	x	
<i>Leucium aestivum</i> var. <i>pulchellum</i>	x	x
<i>Limniris pseudacorus</i>	x	x
<i>Linum maritimum</i>	x	x
<i>Lythrum hyssopifolia</i>	x	x
<i>Marsilea strigosa</i>		x (spores)
<i>Mentha pulegium</i>	x	x
<i>Mentha pulegium</i>	x	x
<i>Mentha suaveolens</i>	x	x
<i>Micromeria filiformis</i>	x	x
<i>Myosurus minimus</i>	x	x
<i>Naufraga balearica</i>	x	x
<i>Oxalis ferae</i>		x
<i>Phragmites australis</i>	x	
<i>Polypodium cambricum</i>	x	
<i>Primula balearica</i>		x
<i>Ranunculus weyerlii</i>	x	x
<i>Samolus valerandi</i>	x	x
<i>Sedum dasyphyllum</i>	x	x
<i>Selaginella denticulata</i>	x	
<i>Sibthorpia africana</i>	x	x
<i>Soleirolia soleirolii</i>	x	x
<i>Solenopsis balearica</i>	x	x
<i>Typha</i> spp.	x	x



Project funded by:

