

Restoring the priority habitat “Coastal dunes with *Juniperus* spp.” in Portugal, conservation practices in the Zimbral for LIFE project

Moreira Sá D., Ferreira L., Romão B., Machado M., Pinto Gomes C. & Meireles C.



Habitats Directive

Contribute to ensure the biodiversity in the European Union (EU) through the conservation of natural habitats, wildlife and flora wild species.



<https://www.rtp.pt/noticias>



Species



Habitats



<https://mivaje.com/>

Article 6.

2. Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species (...)

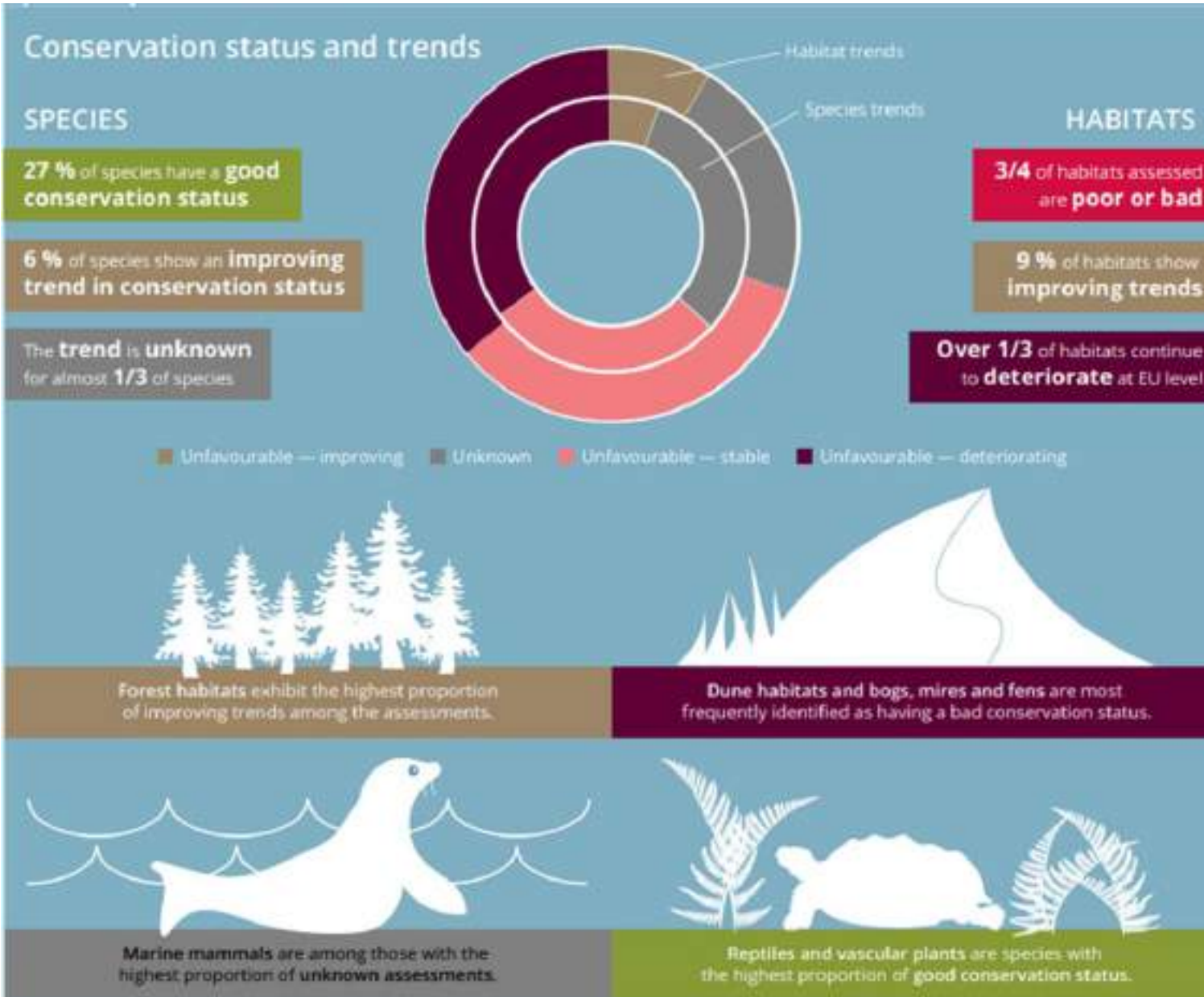
Article 11.

Member States shall undertake surveillance of the conservation status of the natural habitats and species referred to in Article 2 with particular regard to priority natural habitat types and priority species.

Article 17.

1. Every six years from the date of expiry of the period laid down in Article 23, Member States shall draw up a report on the implementation of the measures taken under this Directive. (...)





Species and Habitats of community interest conservation status almost 30 years later

$\frac{3}{4}$ of habitats assessed as unfavourable conservation status

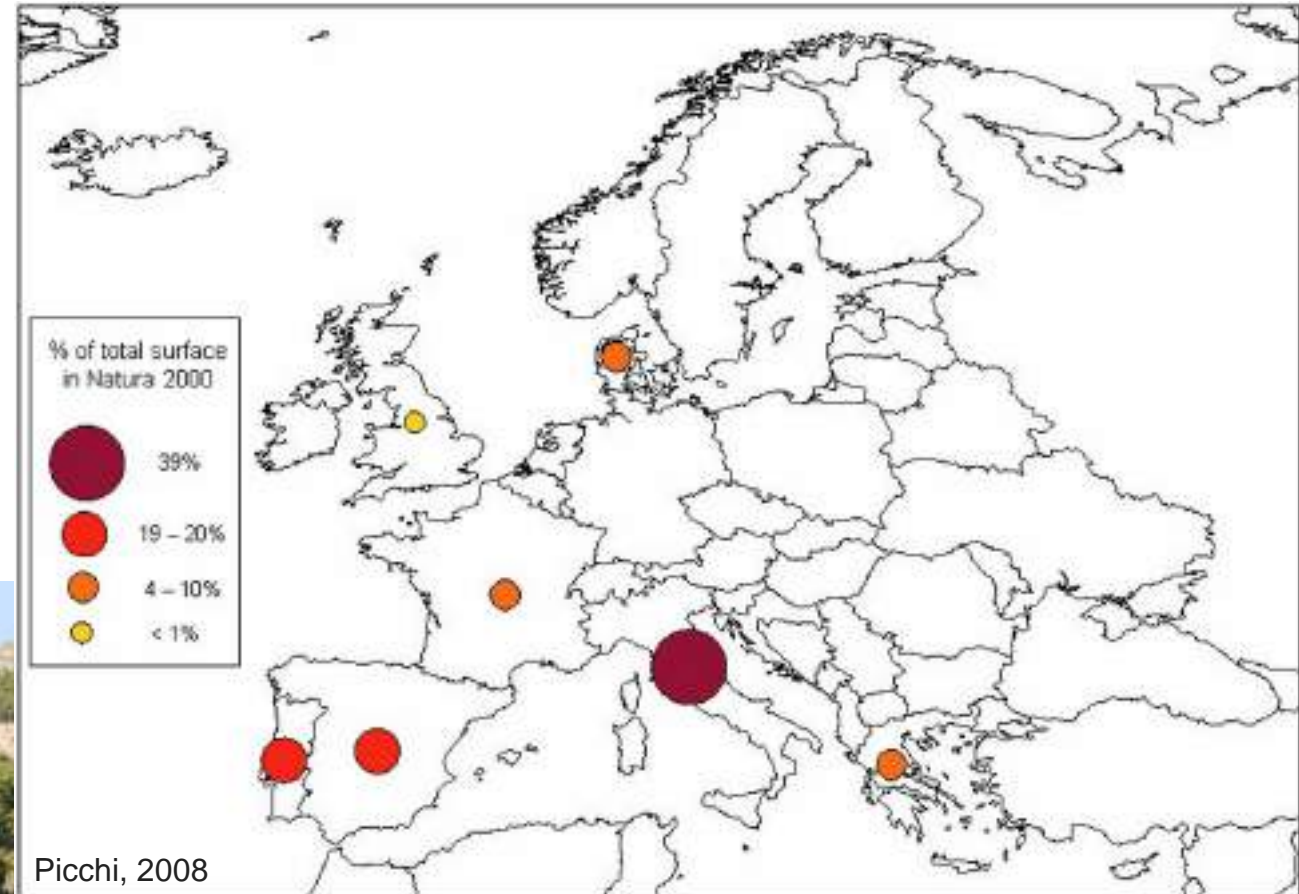
Sand dune habitats
 $\frac{1}{2}$ Unfavourable-Bad

Coastal dunes with *Juniperus* spp. (habitat 2250*)

Juniper formations of Mediterranean and thermo-Atlantic **coastal dune slacks** and **slopes**, and **calcareous dunes**

Plants

Juniperus turbinata, *J. macrocarpa*, *J. navicularis*, *J. communis* and *J. oxycedrus*



Occurrence: **South and Western Europe**

Coastal dunes with *Juniperus* spp.

High conservation value

- **High specific diversity**
- **Prominent and stable** community



Resistant to disturbances

- Contributes to **coastal geomorphological dynamics**

Soil
formation



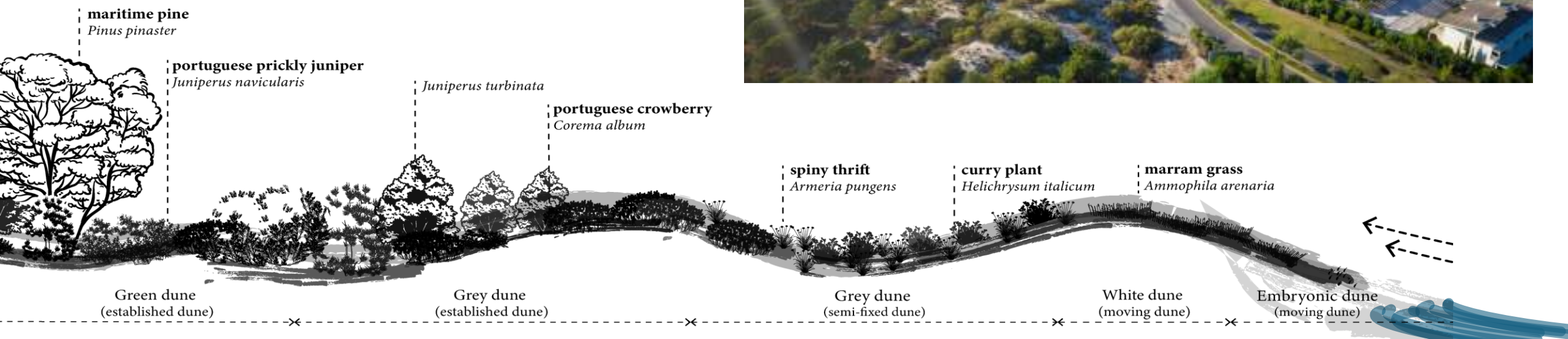
Sand retention
and stabilization

- Provides **refuge, breeding areas** and **food** for wildlife

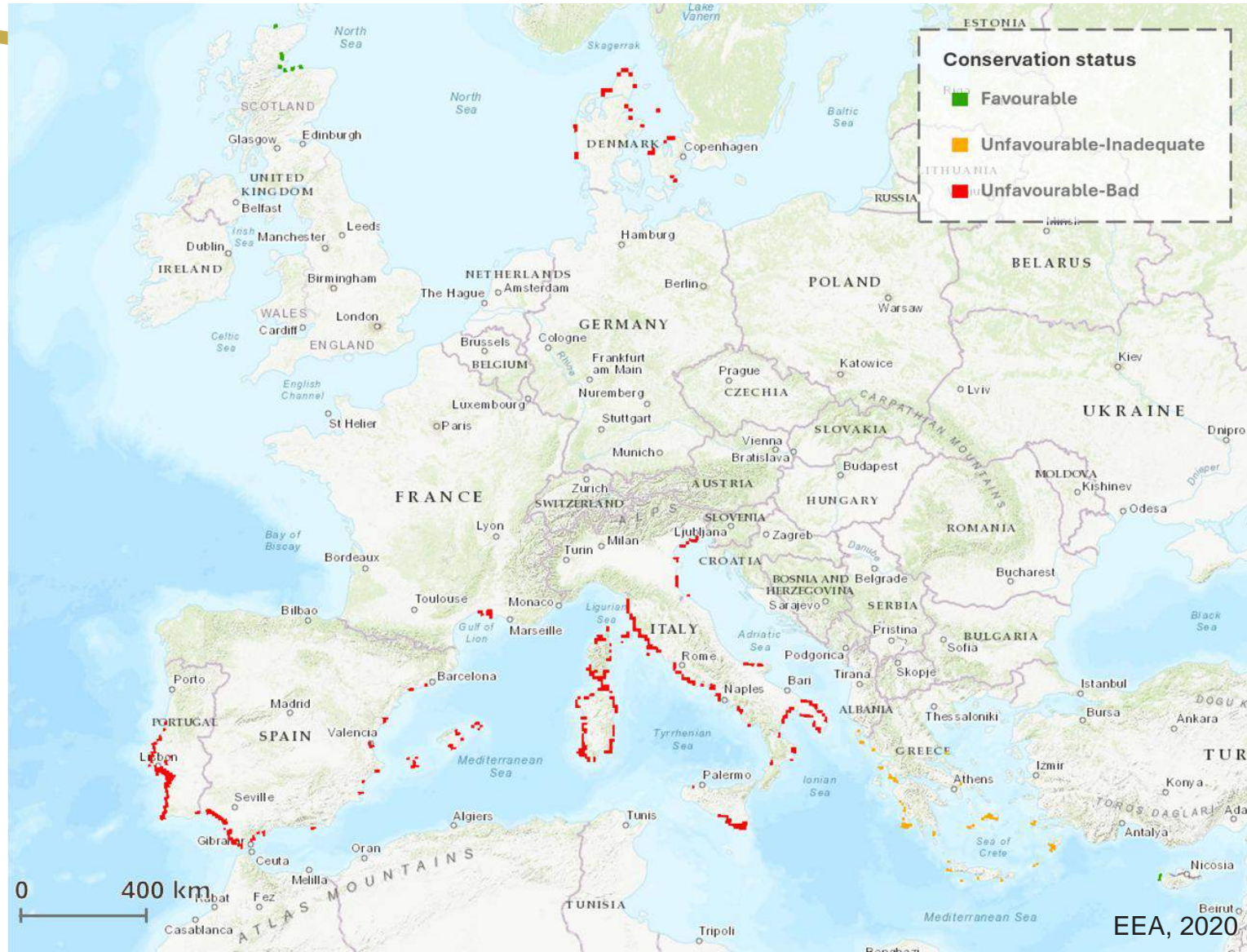


Coastal dunes with *Juniperus* spp.

Threats



Coastal dunes with *Juniperus* spp.



Currently

Unfavourable – Bad

with decreasing tendency



Zimbral
for Life



Objective

Improve the conservation status of priority habitat **2250*** - **Coastal dunes with *Juniperus spp.***, in mainland Portugal, and reverse its current trend of degradation.





DURATION: start 01/10/22
end 30/09/28



Total budget: 3 110 066.08€

Beneficiary Coordinator



Associated Beneficiaries



Associate Partner



Intervention Areas



- 1 Comporta/Galé**
Public domain
- 2 Costa Sudoeste**
Private areas
- 3 Ria Formosa/Castro Marim**
Public domain

Target species



Juniperus turbinata

Habitat 2250* pt1

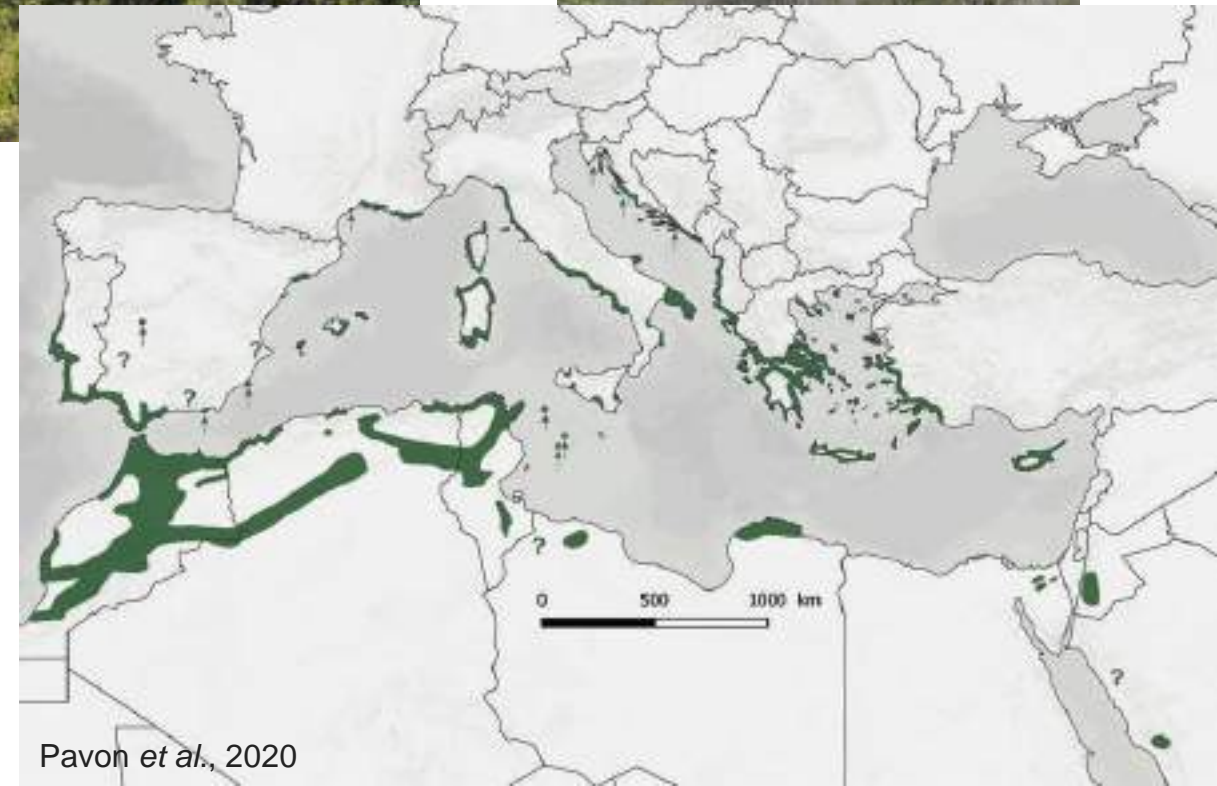


Juniperus navicularis

Habitat 2250* pt2

Juniperus turbinata Guss.

Phoenician juniper (*Juniperus phoenicea* subsp. *turbinata* (Guss.) Nyman)



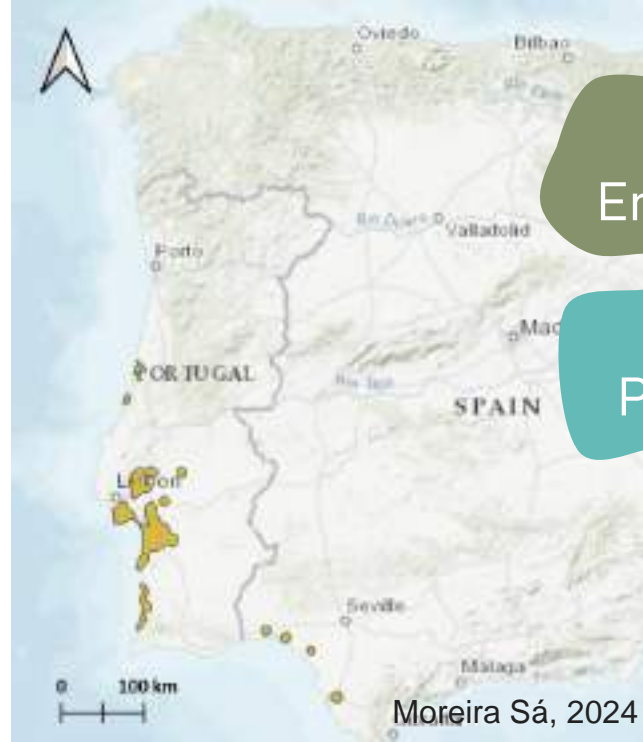
Category “Near Threatened”
Red List of International Union for Conservation of Nature

Juniperus navicularis Gand.

Portuguese prickly juniper



Category “Near Threatened”
Red List of Vascular Flora from Mainland Portugal



Iberian
Endemism

95%
Portugal



Conservation practices

**Plant production,
plantations and
sowing**



**Vegetation
dynamics control**

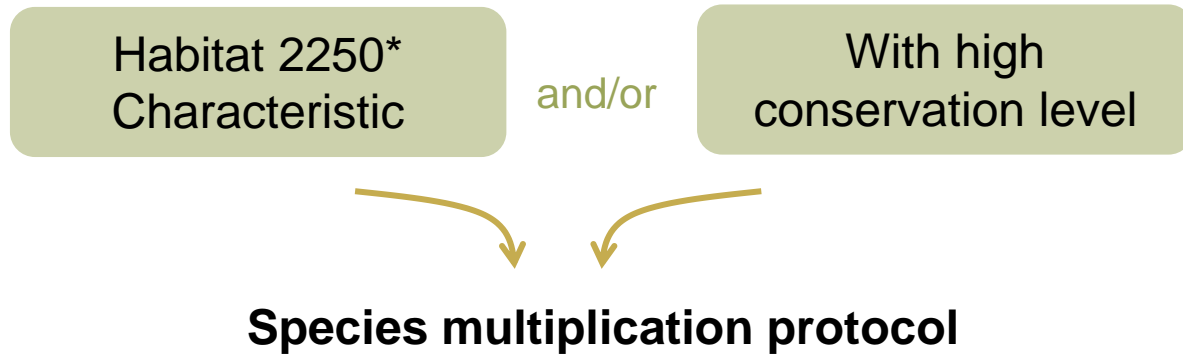
**National Action
Plan**

**Control of invasive
alien species**

Satellite projects

Plant production, plantations and sowing

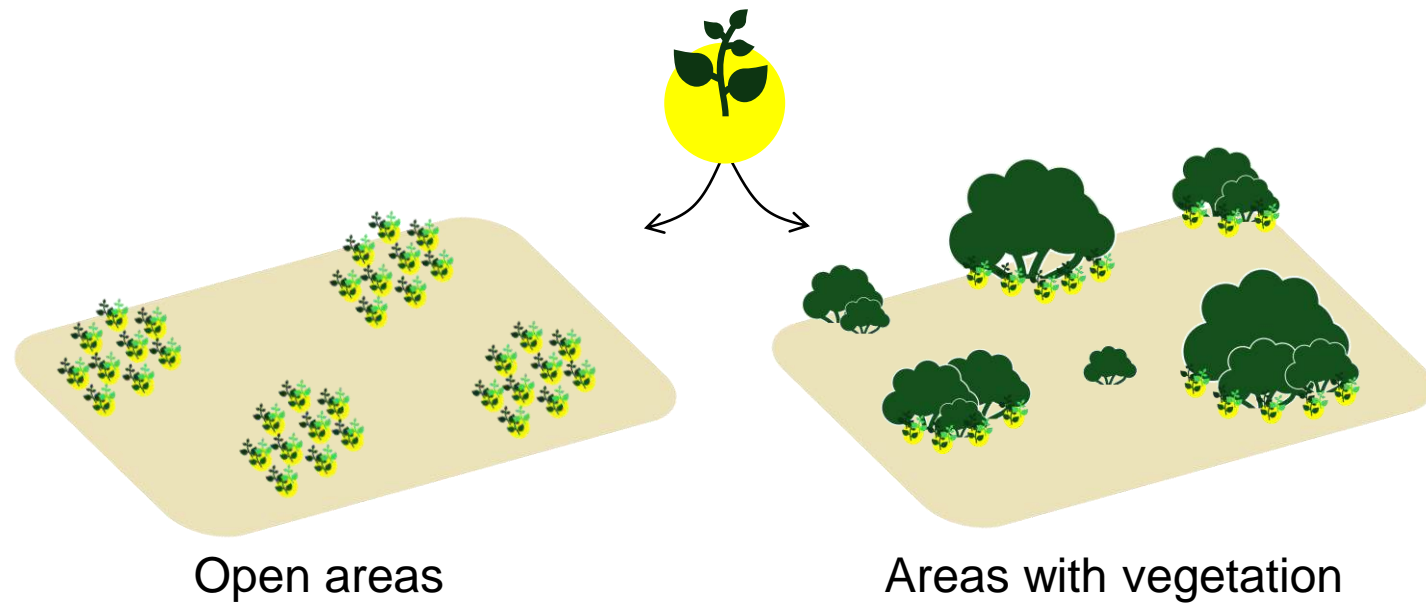
Species:



Species listed for production	
<i>Juniperus navicularis</i>	<i>Armeria</i> spp.
<i>Juniperus turbinata</i>	<i>Avenula hackelii</i>
<i>Corema album</i>	<i>Diplotaxis siifolia</i>
<i>Osyris alba</i>	<i>Ephedra fragilis</i>
<i>Osyris lanceolata</i>	<i>Herniaria algarvica</i>
<i>Phillyrea angustifolia</i>	<i>Heteranthemis viscidehirta</i>
<i>Phillyrea latifolia</i>	<i>Santolina impressa</i>
<i>Pistacia lentiscus</i>	<i>Thymus albicans</i>
<i>Quercus coccifera</i>	
<i>Rhamnus alaternus</i>	
<i>Rhamnus oleoides</i>	
<i>Rubia peregrina</i>	

Plant production, plantations and sowing

Applied nucleation planting method



Nursery effect

**Increase Natural
regeneration**

Less Maintenance

Control of invasive alien species

Carpobrotus edulis and *C. acinaciformis*

Manual removal of specimens



Volunteer work with schools, NGOs, governmental institutions, etc...

Control of invasive alien species

Acacia spp.

Cut and localized application of glyphosate

A. pycnantha *A. longifolia*
A. saligna *A. cyclops*
A. mearnsii



Mostly *Acacia longifolia*



2023



2024

Vegetation dynamics control

Study case: *Retama monosperma*



SAC Ria Formosa/Castro Marim



Retama monosperma occupies more than $\frac{1}{3}$ of the intervention area



Nitrogen-fixing
species



Changes in soil
composition

Vegetation dynamics control

Study case: *Retama monosperma*



*Geranium
purpureum*



Fumaria sp.



Ceratocarpus heterocarpa



Herbaceous layer rich in
**ephemeral annual shadowy
nitrophilous communities**

CARDAMINETEA HIRSUTAE
[*Geranio purpurei-Cardaminetea hirsutae*]



Non-characteristic species

Vegetation dynamics control

Study case: *Retama monosperma*

Full cut of *R. monosperma*

Area of 2 ha



Monitoring:



Floristic
composition



Juniper regeneration, growth
and reproductive effort



Soil chemical
composition

National Action Plan for the Habitat 2250*

Acquire knowledge
at National level

SACs with habitat 2250



Habitat specifics

Cartography



Conservation status



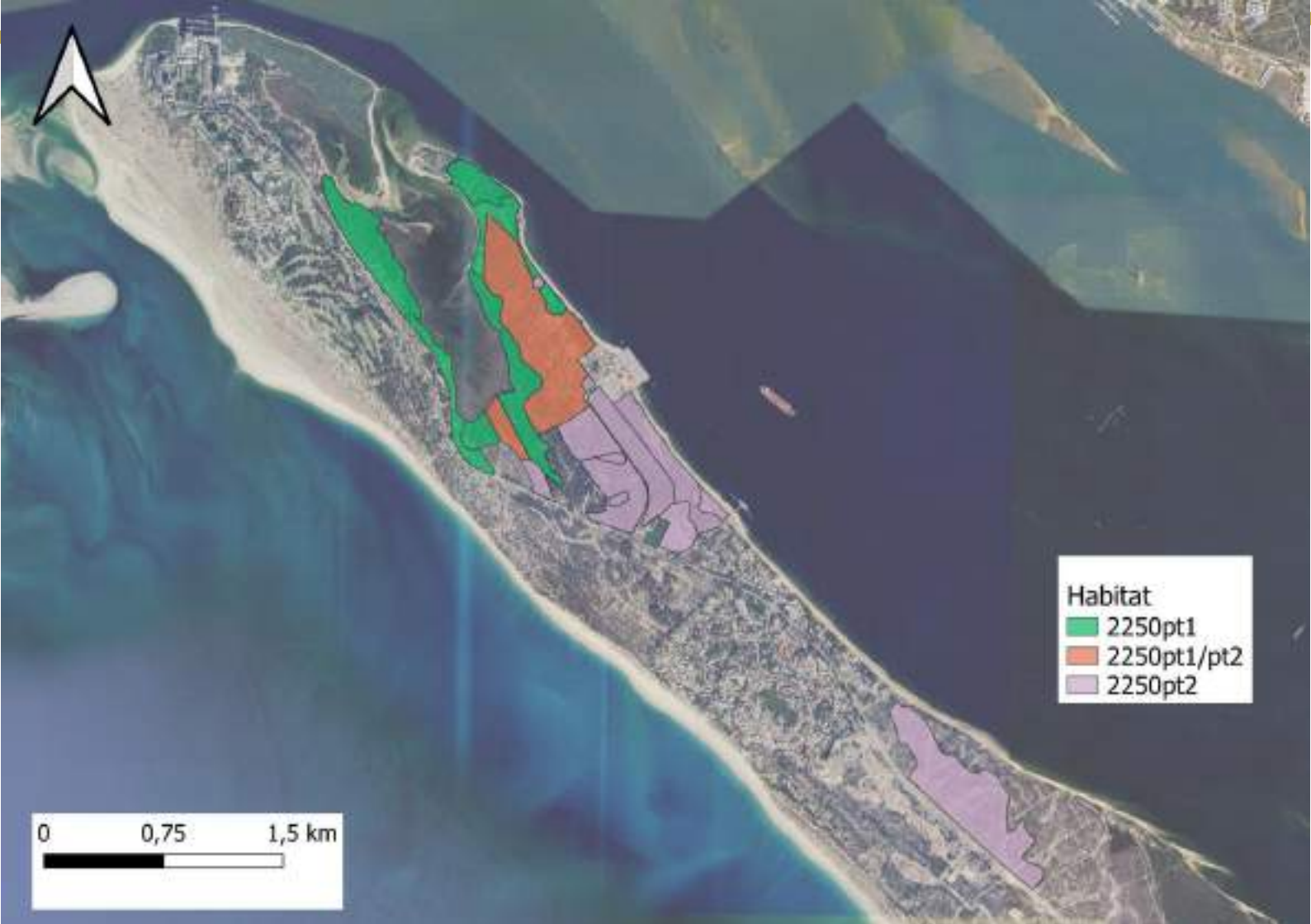
Specifics habitat measures of:

- Management
- Protection

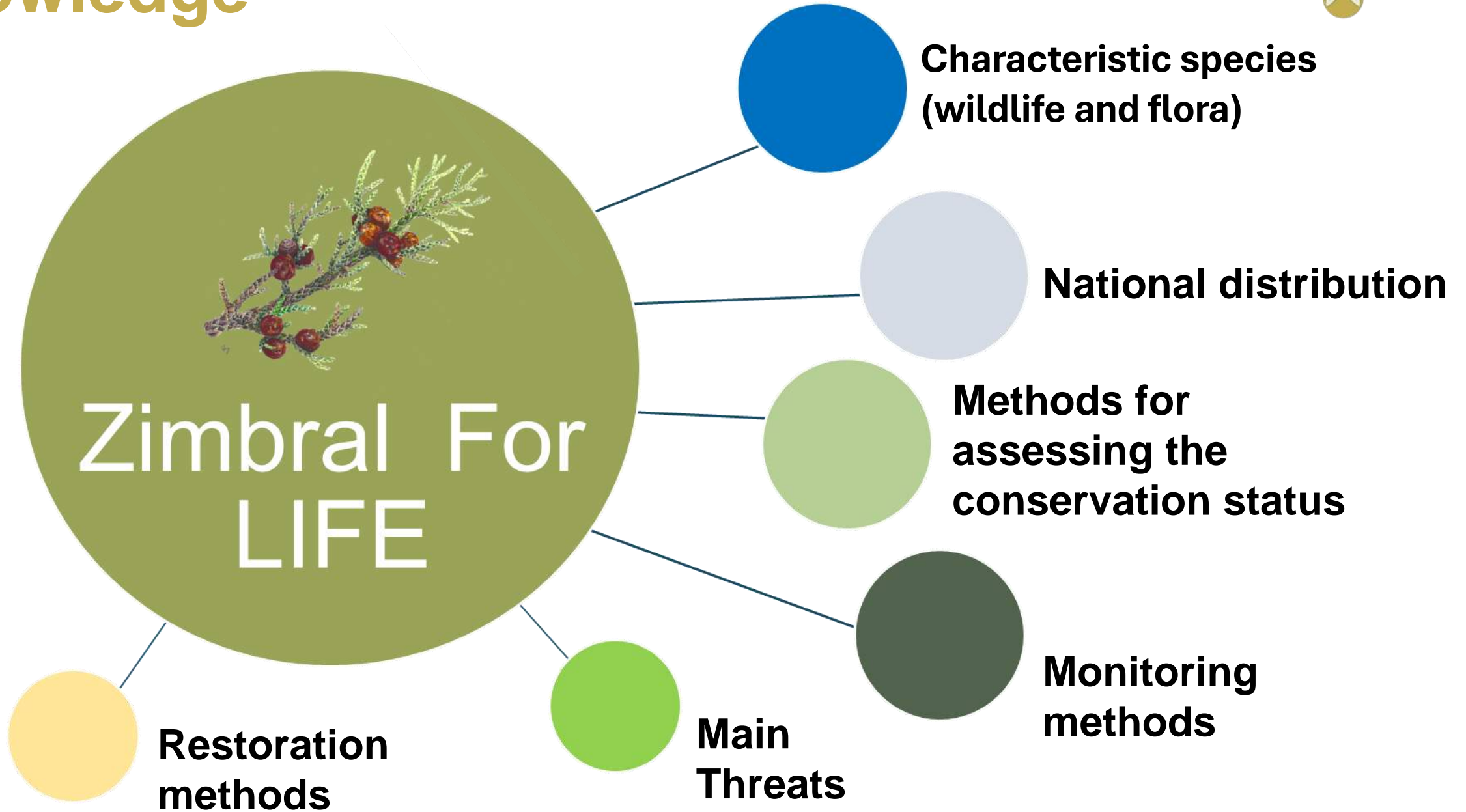


Improve the
conservation status
and define **Conservation**
targets

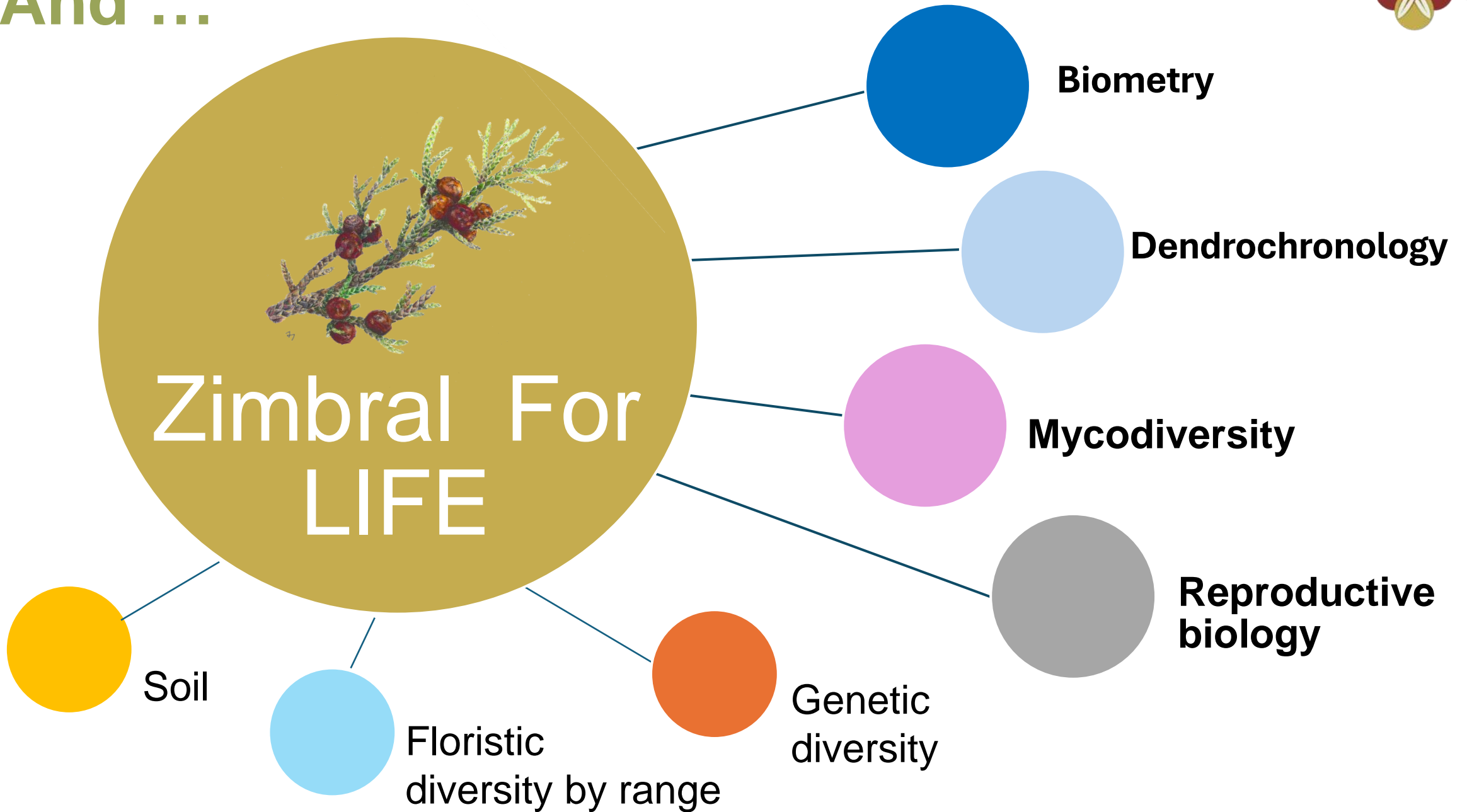
National Action Plan for the Habitat 2250*



Knowledge



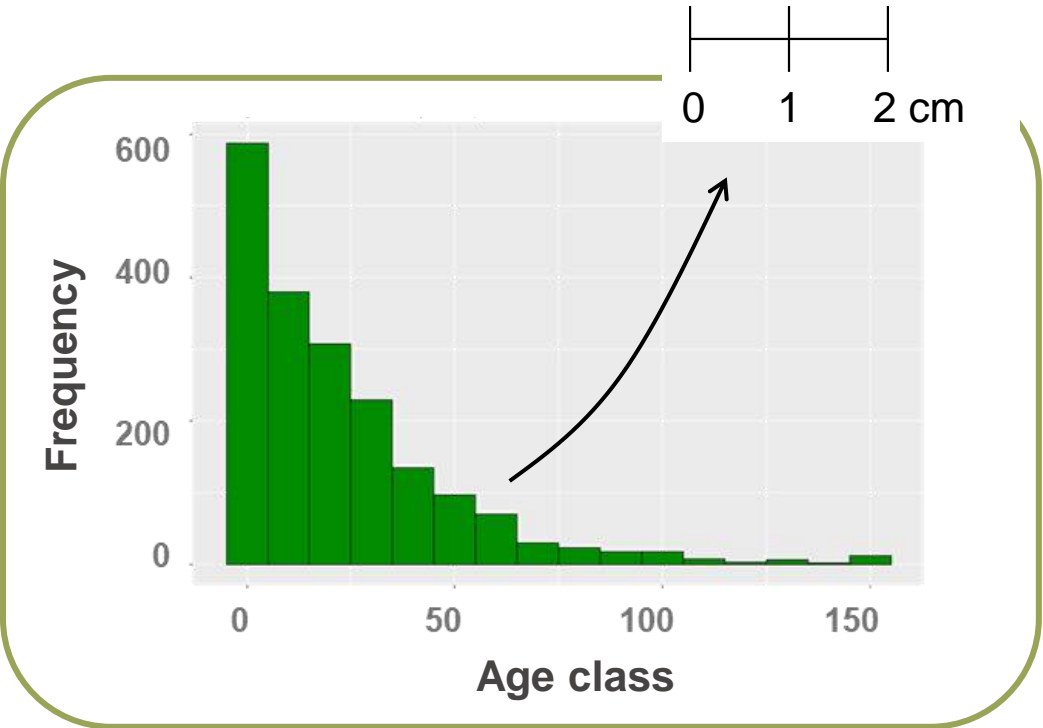
And ...



Dendrochronology: *Juniperus navicularis*



61 years





<https://www.zimbral4life.uevora.pt/>



Follow us!!

Muito obrigado!

zimbral4life@uevora.pt