



COASTAL CLIFFS: PROTECTING THROUGH PLANT MICRO-RESERVES AN OUTSTANDING HABITAT THREATENED BY URBANISTIC DEVELOPMENT IN THE MEDITERRANEAN BASIN

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Valencian Community

- Eastern side of Spain
- 23.255 Km² (4,6% of Spain)
- approx. 4,9 million inhabitants
(10,6% of Spain)
- 552 km of coastline
(9,2% of Spain)
- 0-1.838 m.o.s.l.



Valencian Community: Special features

The coastline is public property since the Roman Age (inherited from Roman Law).

However the strong urbanistic development during the last 60 years often has reduced this public area to a tiny line of a few meters



Valencian Plant Micro-reserves (PMRs)

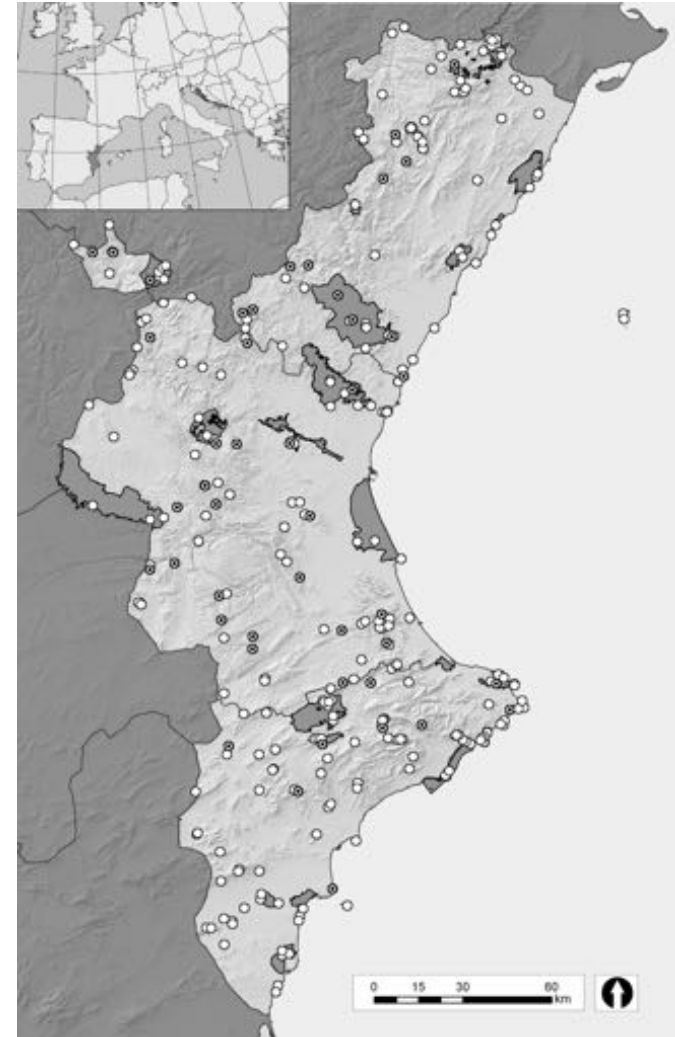
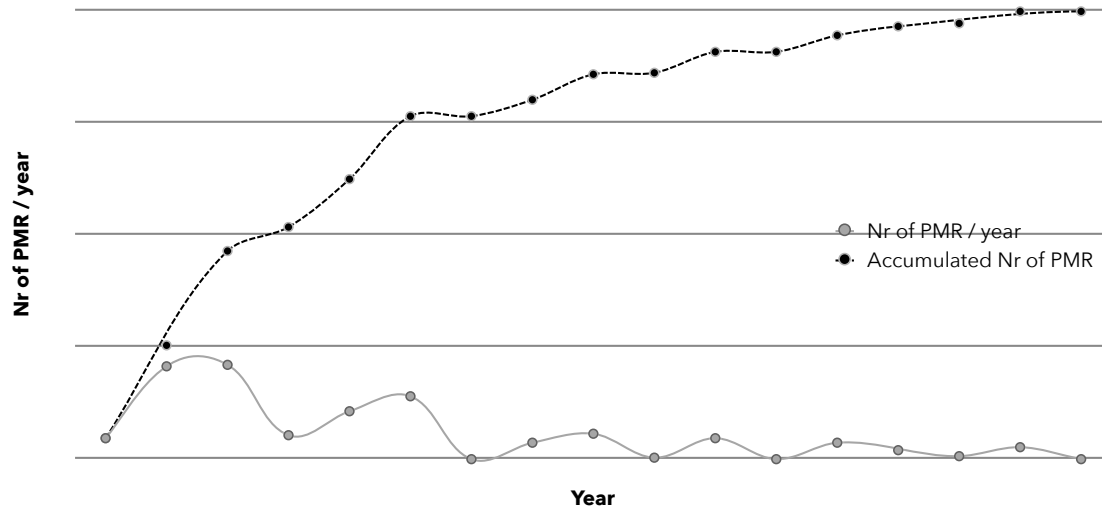
- Legally protected sites (Decree at 1994)
- Up to 20 ha
- Maintenance of traditional activities
- First PMRs declared in 1998



Valencian PMRs: Current data (2018)

-304 PMRs : 238 public + 66 private

-2.362,4 ha (0,1% of regional land) [7,77 ha/MRF]



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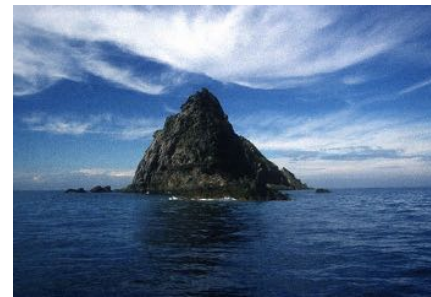
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**Valencian PMRs on
coastal cliffs and small islands**

-29 PMRs (9,54% of PMR amount)

-99,4 ha (4,2% of PMR amount surface) [3,43 ha/MRF]



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Coastal PMRs: Vascular plants

-419 species:

-382 native species + 3 hybrids

-37 exotic



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Endemisms

Valencian absolute endemics: 24 spp.

Other Iberian endemics: 40 spp.

Other native but not endemics: 318 spp.



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***Limonium* spp.**

Spain: >107 species

74 of them at the national Red List

Valencian Community: 29 species:

14 of them in coastal cliffs and islands



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***Limonium* spp. on coastal cliffs and islands**

14 species:

8 absolute Valencian endemics

3 Eastern Spanish endemics

2 Western Mediterranean species (*L. girardianum*, *L. virgatum*)

1 Mediterranean species (*L. echioides*)



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Conservation risk

Strongly threatened (Valencian Catalogue of Threatened Plant Species): 10 spp.

Other threatened species (protected at lower levels): 20 spp.

Not threatened: 399 spp.



Rarity / Rareness

Very rare for the Valencian Community: 30 spp.

Rare for VC: 80 spp.

Not rare / Common or very common species: 318 spp.



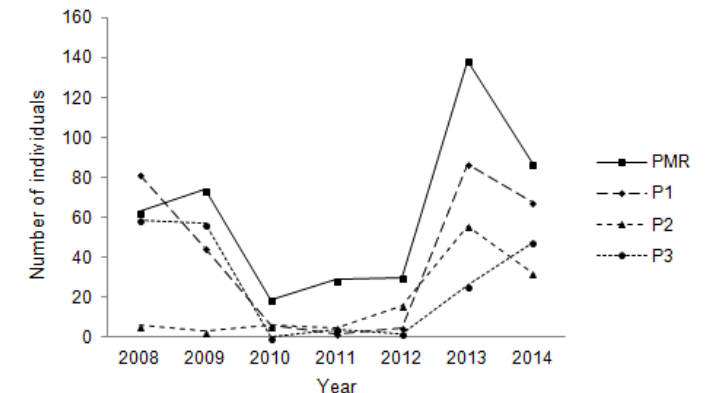
Species with regional recovery plans

Only 3 Valencian species have a legally approved Recovery Plan (passed by the regional Government and published in the Regional Official Gazette). 2 of them (66,7%) live in coastal cliffs:

Limonium perplexum (exclusive Valencian endemic)

Silene hifacensis (Valencian-Balearic endemic)

The unique known population of *Limonium perplexum* protected into a PMR and 2 more PMRs holding successful new, artificial viable populations



Species with regional recovery plans

The whole Iberian populations (out of Balearic islands) of the Valencian-Balearic endemic *Silene hifacensis* protected and managed in 3 PMRs; close to 30 new sites with artificial plantations, under study.

There are very active actions to recover both *L. perplexum* and *S. hifacensis*. At this moment they are reaching the EN-IUCN red-list category, coming from CR



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Main conservation problems into PMRs

- Coastal erosion caused by severe marine storms; collapse risk for the whole habitat. Mainly affecting low cliffs (up to 5-10 m over the sea level)
- Human overfrequentation
- Population isolation of the more endangered species



Main conservation problems into PMRs

Invasive species

Main species:

Opuntia ficus-indica, *O.stricta*

Agave americana, *A. sisalana*

Aloe saponaria

Disphyma crassifolia

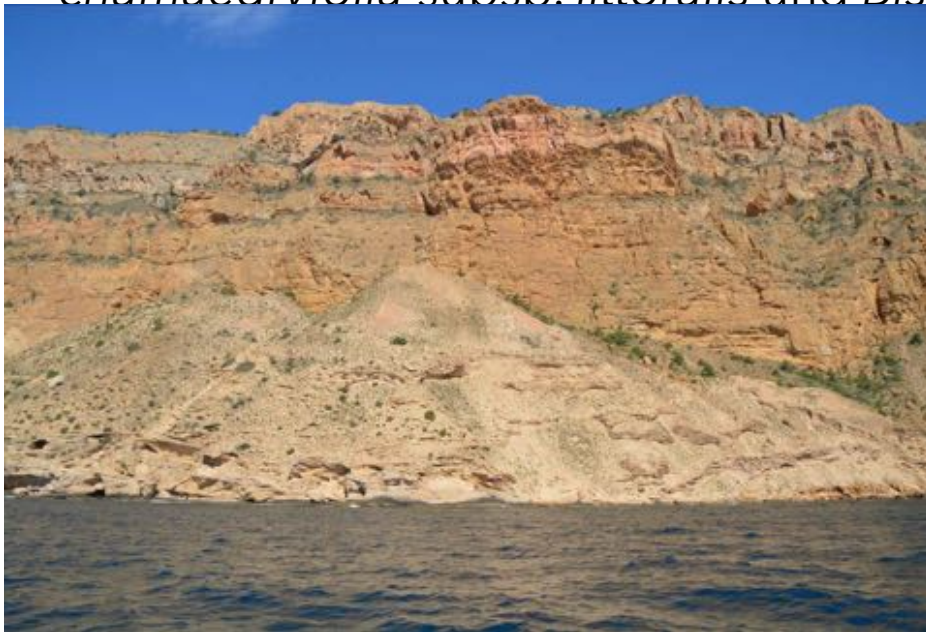
Oxalis pes-capreae



Main successful results

The unique Mediterranean population of the Atlantic coastal shrub *Corema album* protected into a PMR, (=the whole known representation of the endemic plant association *Coremato albi-Juniperetum macrocarpae*,

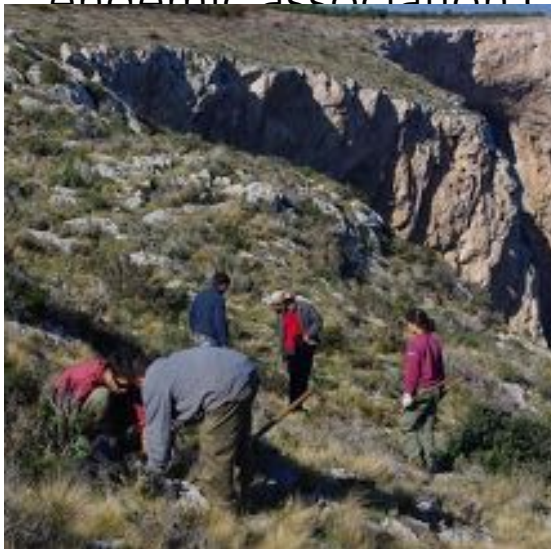
The site also protect a significant part of the known population worldwide for the Valencian endemics *Centaurea aspera* subsp. *geladensis*, *Sideritis chamaedryfolia* subsp. *littoralis* and *Biscutella marinae*.



Main successful results

-The whole populations of *Medicago citrina* (excluded Balearic Islands) protected in 3 PMRs and 2 new populations established in PMRs. The PMRs include all the known representation of the endemic plant association *Medicagini citrinae-Lavateretum arboreae* s.s.

-The unique known population on cliffs of the Valencian endemic *Limonium dufourii* protected and managed in a PMR (=the unique known rélevée of the endemic association *Crithmo maritimi-Limonietum dufourii*)



Expected results (2019)

-The procedure to declare a new PMR to protect the unique viable population known of the Valencian endemic *Limonium irtaensis* -only 12-14 individuals- is going to start by the end of 2018, to get a new protected site in 2019-2020.



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