

Symposium 11 : Plant Conservation
***Ex-situ and in-situ joint conservation actions
for threatened Mediterranean island flora***

Bertrand de Montmollin (IUCN/SSC/Mediterranean Plant Specialist Group)



Project summary



Goal : to improve knowledge and conservation of threatened island plants with *in situ* conservation measures supported by *ex situ* techniques

Partners :

- Sóller Botanical Garden Foundation, Balearic Islands
- Conservatoire Botanique National de Corse
- Hortus Botanicus Karalitanus, Cagliari, Sardinia
- Department of Biological Sciences, Catania, Sicily
- Mediterranean Agronomic Institute of Chania, Crete
- Agricultural Research Institute, Cyprus
- Department of Forest, Cyprus
- Mediterranean Plant Specialist Group IUCN/SSC

Project duration : mid-2016 – mid-2019

Budget : 1.9 millions € - 80% funded by the MAVA Foundation



1. Elaboration of conservation priorities and selection of target plant species in the islands



Four criteria **defined, discussed and approved**

Selected taxa

Threat level: 343 taxa

Regional responsibility: 630 taxa

Policy plant taxa: 71 taxa

Wetland plants: 80 taxa

Six local lists of target species

One general list of target species : 735 taxa

436 taxa selected for conservation measures



2. Planning *in situ* and *ex situ* activities



***In situ* activities**

63 management and monitoring plans elaborated for 51 taxa

- Translocations (including reintroduction, reinforcement and introduction)
- Control/removal of invasive species
- Management measures such as erection of protective fences

***Ex situ* activities**

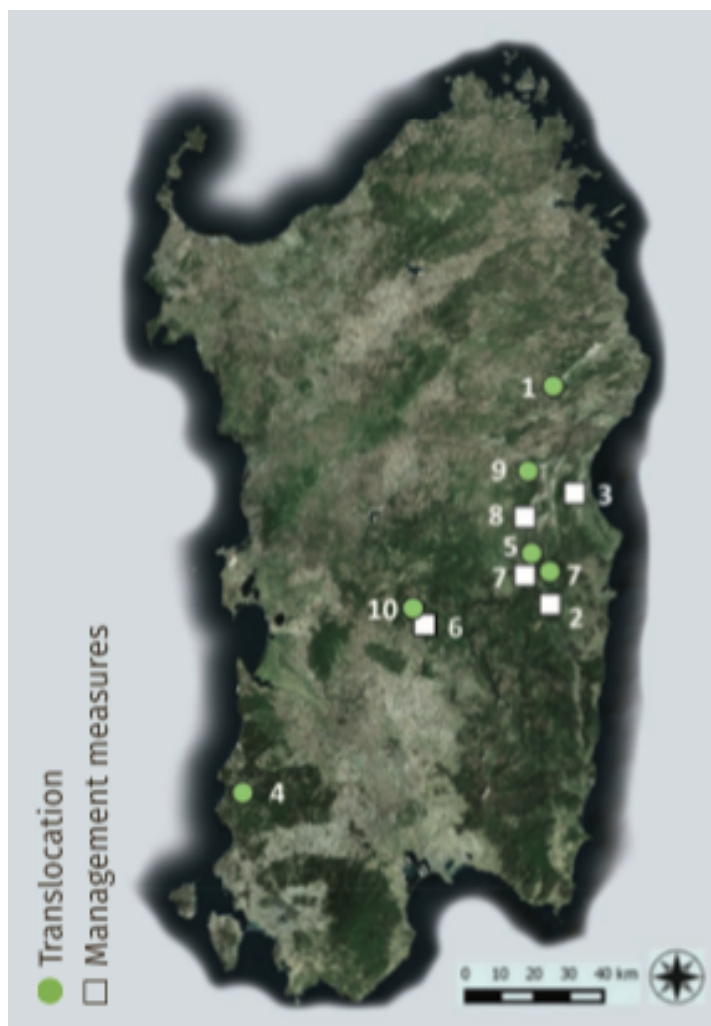
- Seedlots from 429 taxa to be collected and stored
- 27'000 plants (162 taxa) produced for *in situ* conservation actions



3. *In situ* conservation actions

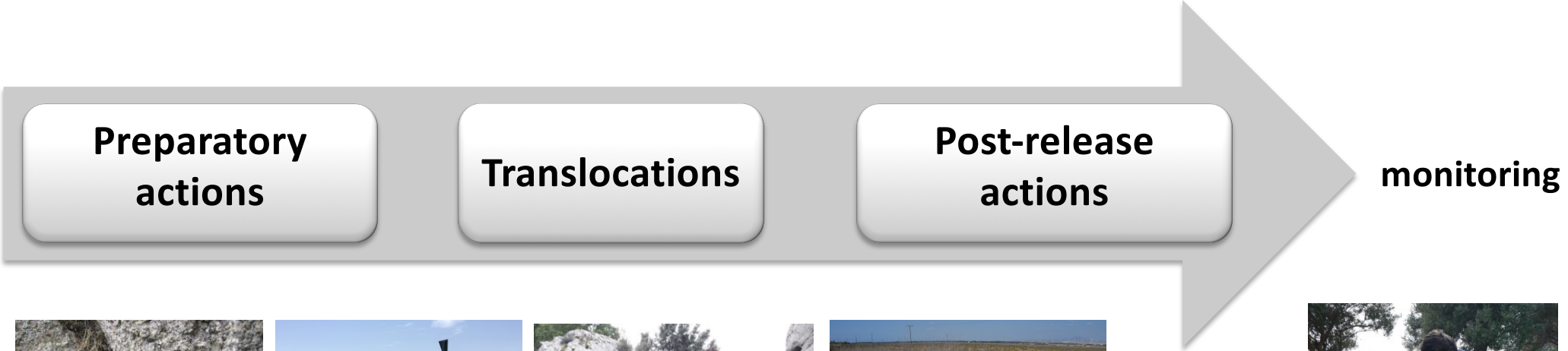


63 conservation actions (~ 10 per island)
63 monitoring plans (~10 per island)



TAXON	LOCALITY	CONSERVATION ACTIONS*
1. <i>Astragalus gennarii</i>	Monte Albo (Lula)	Translocation and protective fence erection
2. <i>Centaurea magistrorum</i>	Monte Luas (Villagrande Strisaili)	Protective fences erection and removal of invasive species
3. <i>Centranthus amazonum</i>	Codula di Luna (Urzulei)	Management action (closure of the path near the population)
4. <i>Dianthus morisianus</i>	Portixeddu (Buggerru)	Translocation and protective fence erection
5. <i>Gentiana lutea</i> subsp. <i>lutea</i>	Monte Genziana (Talana)	Translocations, protective fences erection
6. <i>Ophioglossum vulgatum</i>	Funtanamela (Laconi)	Management actions (protective fences erection and removal of alien species)
7. <i>Rhamnus persicifolia</i>	Rio Is Eras (Talana)	Management measure for the patriarch (artificial river bank)
	Monte Genziana (Talana)	Translocation and removal of alien plants
8. <i>Ribes multiflorum</i> subsp. <i>sandalioticum</i>	Monte Novo San Giovanni (Orgosolo)	Protective fences erection
9. <i>Ribes sardoum</i>	Monte Corراسi (Oliena)	Translocation
10. <i>Senecio morisii</i>	Funtanamela (Laconi)	Translocation, removal of alien plants and protective fences erection

Implementation of the translocations



Management actions were required for over 80% of translocations



4. *Ex situ* conservation actions



740 seed-lots (target : ≥ 100 per island)

457 *taxa* (target : ≥ 20 per island)

410 germination tests (target : ≥ 20 per island)

283 *taxa* (target : ≥ 20 per island)

27'000 plants produced (target : ≥ 1500 per island)

162 *taxa* multiplied (target : ≥ 20 per island)

250 seed-lots duplicated (target : ≥ 50 per island)



5. Monitoring

Mid- and long-term monitoring protocols for translocated taxa were planned/implemented in order to ensure their sustainability.

Care-Mediflora

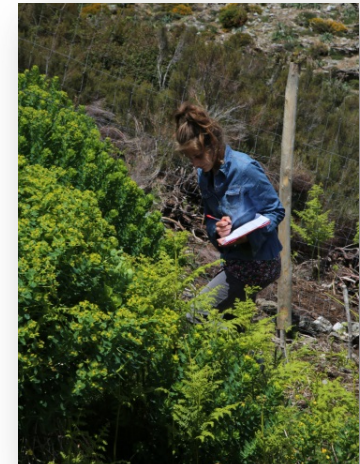
(short-term monitoring plan)

Monthly monitoring
Bi-monthly monitoring

Post – Care-Mediflora

(long-term monitoring plan)

Species-specific protocols



6. Networking and communication

Exchange of experiences within the partnership and among other stakeholders

Common approach



Joint meetings



Collaboration with regional authorities and local stakeholders

Networking and communication

CARE-MEDIFLORA supported the Network of Mediterranean Plant Conservation Centres “GENMEDA”

- ✓ New website: genmeda.net/
- ✓ 3 GENMEDA meetings
- ✓ enlargement of the network to 22 members



Networking and communication

Dissemination of CARE-MEDIFLORA aims and results



PARTNERS

- IUCN Mediterranean Plant Specialist Group – IUCN/SSC
- Sóller Botanical Garden Foundation, Balearic Islands
- Office of the Environment of Corsica Conservatoire Botanique National de Corse
- Hortus Botanicus Karolitanus, University of Cagliari, Sardinia
- University of Catania, Department of Biological, Geological and Environmental Sciences, Sicily
- CHEAM Mediterranean Agronomic Institute of Chania, Crete (Lead Partner)
- Agricultural Research Institute, Cyprus
- Department of Forests, Cyprus

CARE MEDIFLORA

CONTACT

Project Coordination
Bertrand de Montmolin
Mediterranean Plant Specialist Group – IUCN/SSC
bertrand@montmolin.me

Project Communication
Panagiotá Gelsiou
Mediterranean Agronomic Institute of Chania
yiotza@maich.gr

CARE-MEDIFLORA
Conservation Actions for Threatened Mediterranean Island Flora: ex situ and in situ joint actions

<http://www.care-mediflora.eu/>

MAVA CARE-MEDIFLORA is funded (80%) by the MAVA Foundation.



CARE MEDIFLORA

CARE-MEDIFLORA

A conservation project for threatened plants in Mediterranean islands

2016 – 2019

PROJECT SUMMARY



- ✓ CARE-MEDIFLORA co-organised with IUCN-MED the 2nd Mediterranean Plant Conservation Week, Malta, 12-16 November 2018
- ✓ Scientific and other publications are available at the project website

PROJECT WEBSITE: www.care-mediflora.eu



Corsica

Conservation actions implemented by the Office of the Environment of Corsica

In situ

The Office of the Environment of Corsica (OEC) implemented *in situ* conservation actions for 7 taxa in 11 localities in Corsica in collaboration with the local



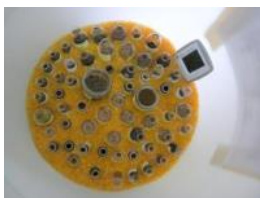
Map with localities of *in situ* actions for 7 taxa (see Table), by Mauro Fois

Taxon	Locality	Conservation actions*
1. <i>Anchusa crispa</i>	Del Sale (Aleria)	Introduction of population
	Gradugine (Prunelli di Fiumorbu)	Introduction of population
	Favona (Sari-Sulinzara)	Fence erection & placement of information signs
2. <i>Astragalus alopecurus</i>	Punta Alta (Fughjichja)	Reinforcement of population, placement of protective cages & fence erection
3. <i>Centranthus trinervis</i>	Trinità di Bunifaziu	Reinforcement of population & control of natural vegetation
4. <i>Elatine brochonii</i>	Chiuvinu (Santu Petru di Tenda)	Control of invasive species
5. <i>Kosteletzkya pentacarpos</i>	Pinia (Ghisunaccia)	Reinforcement of population
	Palo (Serra-di-Fiumorbu)	Control of natural vegetation
6. <i>Ranunculus sylviae</i>	Bucchinera-Cuscionu (Sarra di Scupamena)	Introduction of population
7. <i>Silene velutina</i>	Cornuta Islet (Zonza)	Reintroduction of population, control of natural vegetation & placement of protective cages
	Casetta Bianca (Portivechju)	Reinforcement of population

*Short and long term monitoring of the conservation actions is included.

Ex situ

- 105 germplasm accessions collected from 57 taxa, stored in National Botanical Conservatory of Corsica (CBNC) Seed Bank and 50 duplicated in other seed bank (INRA)
- 40 germination experiments performed for 39 taxa
- Over 1600 plants of 24 taxa produced for *in situ* actions.



Germplasm accessions



Drying place



Germination test



Seed bank

Example of conservation action: Introduction on protected sites of a threatened species in Corsica:



Anchusa crispa Viv.

Anchusa crispa is a rare and endangered species, endemic to Corsica and Sardinia, protected at national level and listed in the Annex II and IV of the Habitats Directive 92/43/EEC. Specific to sandy littoral, it undergoes numerous anthropic impacts linked in particular to the tourist activities. Endangered on the eastern coast of Corsica, it was decided to create two new populations on protected sites belonging to the "Conservatoire du Littoral". The sites of introduction were chosen according to precise criteria (ecological conditions, no threats, property rights...). Despite these optimal conditions, some factors, such as increasing strength and frequency of storms, are difficult to foresee. Thus, the stations created were almost completely destroyed by the storm Adrian in October 2018. Despite this, many seeds produced on the sites in 2018 sprouted in the spring of 2019. For the time the seedlings seem to be maintained. A monthly monitoring carried out by the Territorial Collectivity of Corsica and the CBNC follows the evolution of these new populations. This example demonstrates once again the difficulties encountered in this type of operation and the need to preserve "natural" populations.



Plant production (27/11/2017)



Plantation (29/11/2017)



Plantation (29/11/2017)



Monitoring (28/03/2018)



Plant on 29/11/2017



Plant on 28/03/2018

Collaborators for conservation actions in Corsica

- National and Regional Administration & National and Regional Scientific Committees
- Local authorities (Territorial collectivity; municipalities: Focicchia, Santo Pietro di Tenda, Serra di Scopamene, Zonza; community of municipalities of Alta Rocca)
- Management Bodies of NATURA 2000 sites
- National Institute for Agricultural Research (INRA) of San Giuliano (duplication seed bank)
- Associations (CEN Corse, CPIE Centre-Corse) and private actors (landowners and socio-professionals)

5. *Lessons learnt*

Conservation priorities vary at local level

Important :

- Good planning
- Adequate knowledge on species germination, propagation and growing
- Selection of suitable sites
- Collaboration with local stakeholders
- Long term monitoring to check actions effectiveness





Thanks for your attention
and looking forward to seeing you at the
3rd Mediterranean Plant Conservation Week
(Crete, October 2020)

