2nd Mediterranean Plant Conservation Week
"Conservation of Mediterranean Plant Diversity: Complementary Approaches and New Perspectives"
La Valetta, Malta, 12-16 November 2018

Contribution of translocations to enhance the conservation status of the threatened Mediterranean island flora: the CARE-MEDIFLORA project

Giuseppe Fenu
(on behalf of CARE-MEDIFLORA team)

Session 2- In situ plant species conservation: technical aspects, methodology, monitoring

Supported by:

Introduction

Mediterranean islands, within the Mediterranean hotspot, represent a center of plant diversity featured by an endemic richness rate higher than mainland areas.

This plant richness is severely threatened by several physical and biological factors and, consequently, many plants of these islands require urgent protection measures.

Due to this situation, in which extraordinary rates of endemism are associated with an exceptional degree of environmental and human-related threats, some not secondary features are shared by the Mediterranean insular territories. Such similarities and differences represent a great opportunity to join and harmonize methods and methodologies focused on endangered plant conservation in such a peculiar and unique natural laboratories.

Few project aiming to develop knowledge and methodologies in plant conservation islands has been developed and implemented so far.

Care-Mediflora approach

Mediterranean Plant Specialist Group (IUCN/SSC)

Sóller Botanical Garden Foundation, Balearic Islands

Office of the Environment of Corsica - National Botanical Academy of Corsica

Hortus Botanicus Karalitanus, Sardinia

University of Catania, Sicily

Mediterranean Agronomic Institute of Chania, Crete

Agricultural Research Institute, Cyprus

Department of Forests, Cyprus

CARE MEDIFLORA

From *ex situ* to *in situ* conservation approach: based on using ex situ activities as a tool to improve in situ conservation

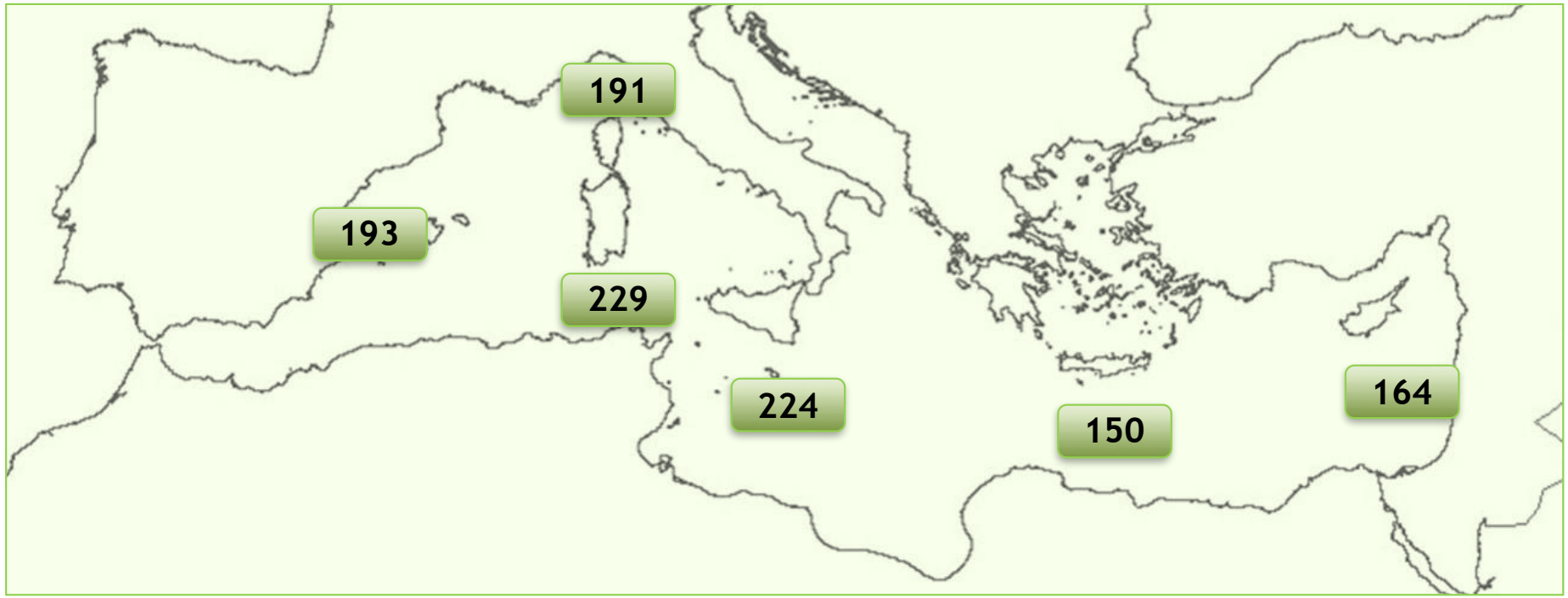
Preliminary stage: selection of plant species using common criteria. As a consequence, four different main criteria were established .

4 criteria

- **Threat degree**
- **Regional responsibility** ✓
- **Policy plant species**
- **Wetland plants**

Target plant species

A list of target plants, for which in situ and ex situ conservation actions were planned; the target plants were mainly selected by the regional responsibility criterion and/or assessed as threatened in the global/ regional IUCN Red Lists.

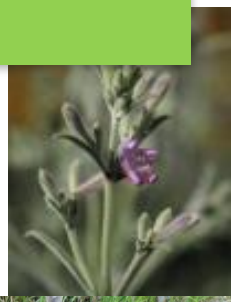


The Care-Mediflora list of target species include 686 taxa

Plant species selected for in situ actions

The list of target plants, for which in situ conservation actions programs were planned, included **168 taxa**, selected by:

- Regional Responsibility Criterion (79.07%)
- Assessed as threatened in IUCN Red List (67.99%)
- Plant listed in the Habitat Directive (23.26%)
- Plant related to wetland habitas (9.30%)











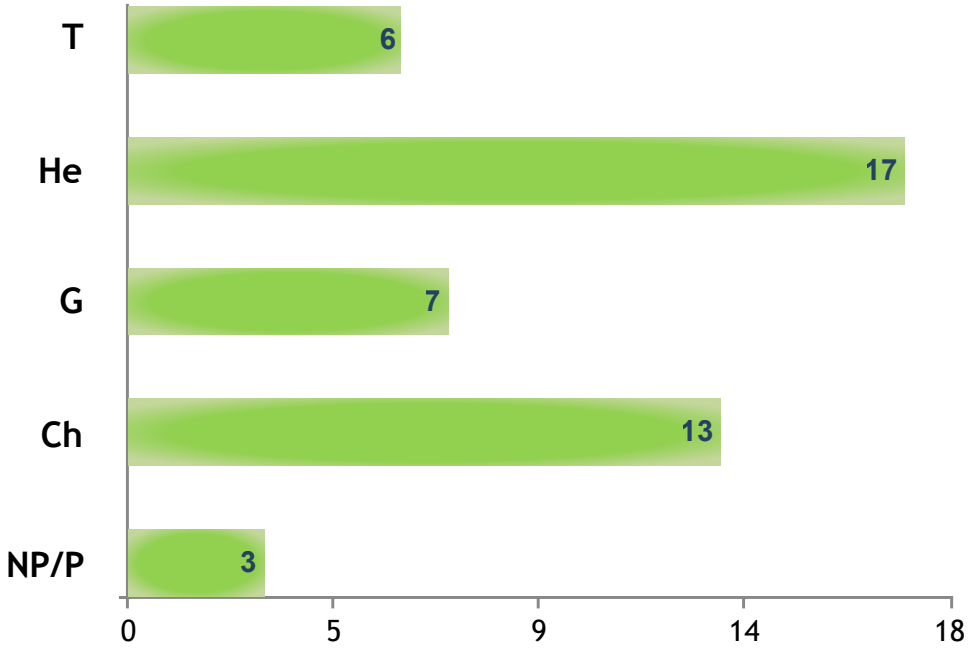

Plant species selected for in situ actions

168 target plants

Balearic Islands	193 taxa	17 taxa	7 translocations on 5 taxa
Corsica	191 taxa	50 taxa	7 translocations on 6 taxa
Sardinia	229 taxa	18 taxa	7 translocations on 6 taxa
Sicily	224 taxa	48 taxa	7 translocations on 6 taxa
Crete	150 taxa	14 taxa	10 translocations on 10 taxa
Cyprus	164 taxa	21 taxa	10 translocations on 10 taxa

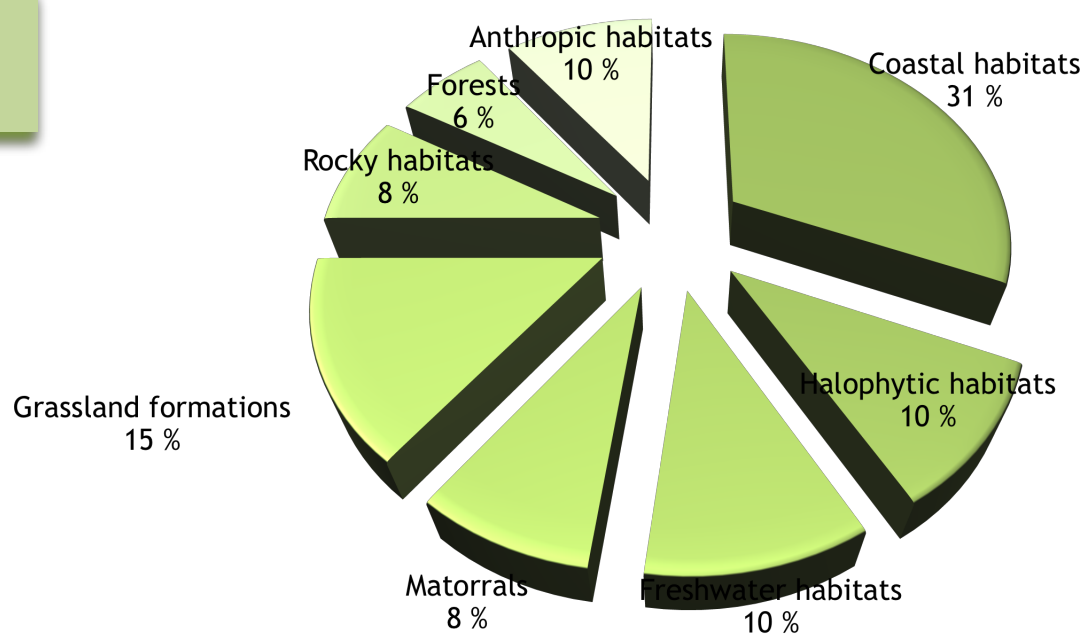
A total of 48 translocations (43 taxa) have been implemented using different methodological protocols

Plant species selected for in situ actions

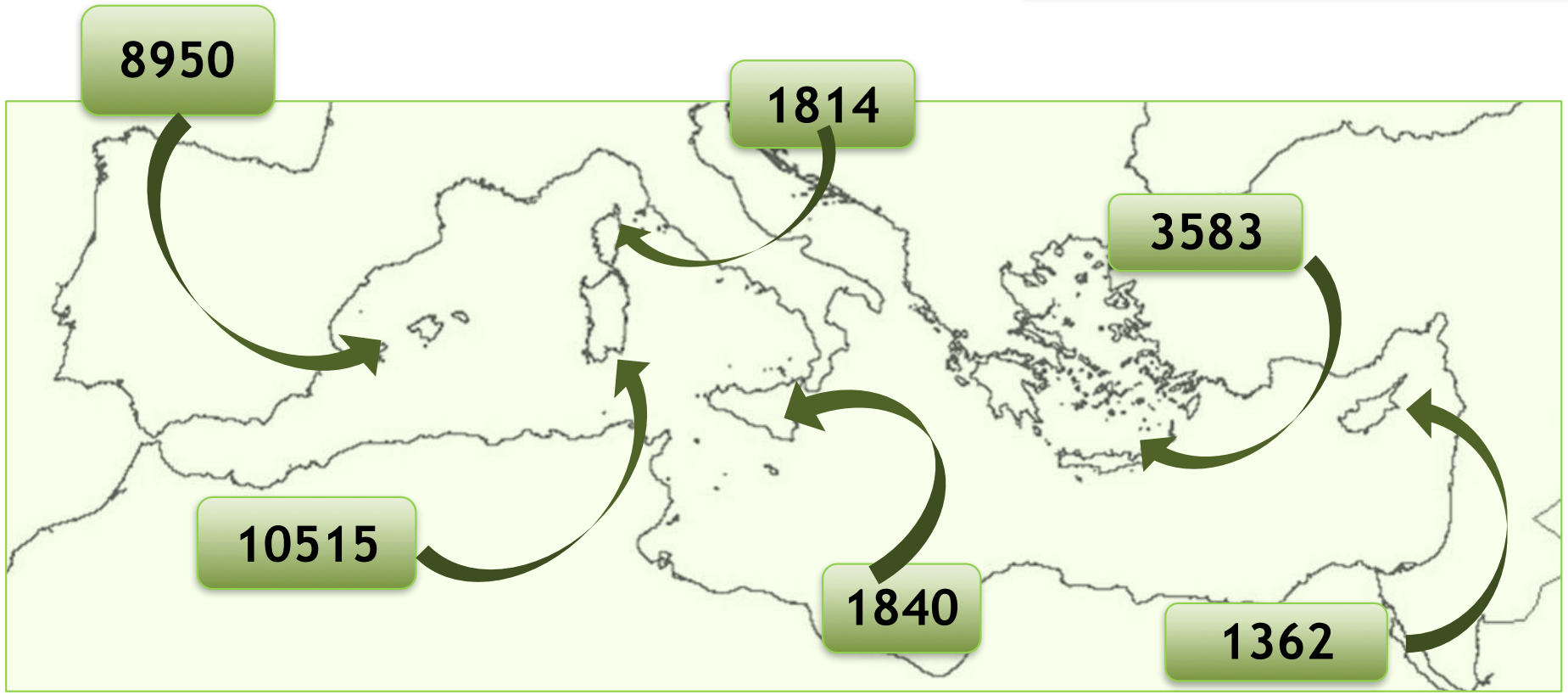


Plants with different biological cycles

Plants growing in different habitats

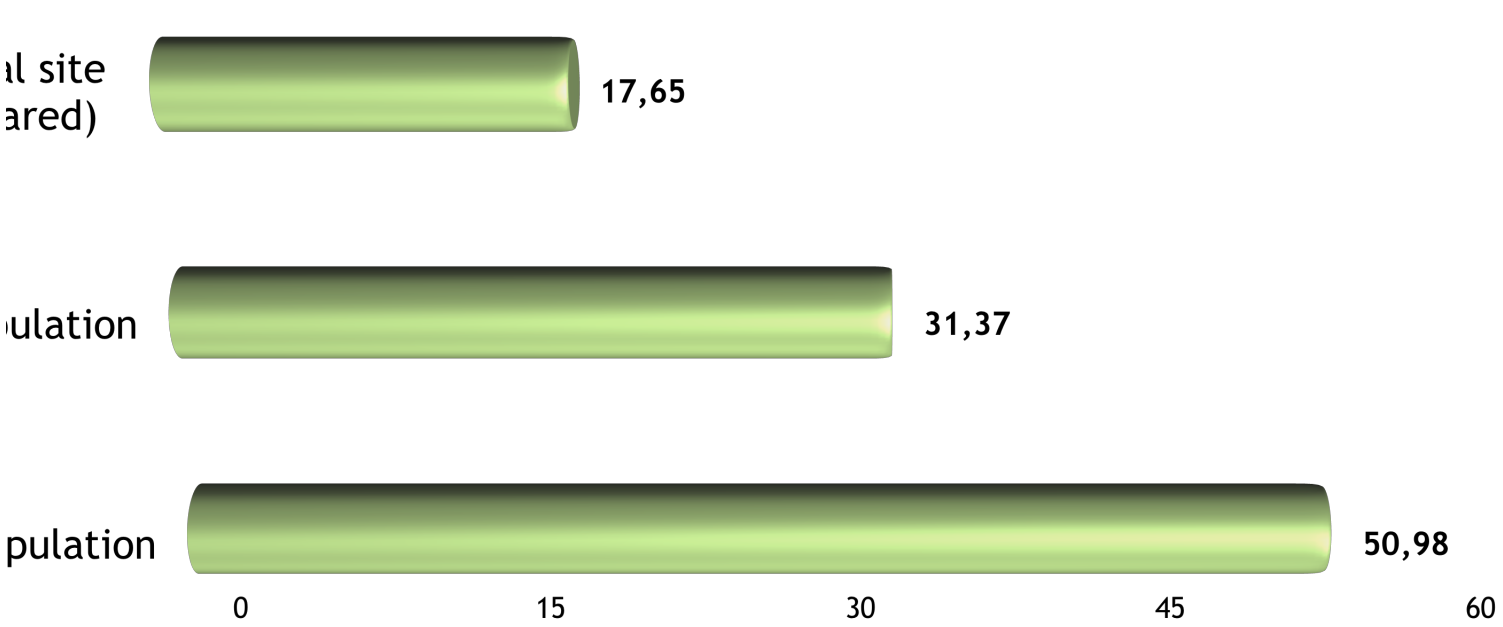


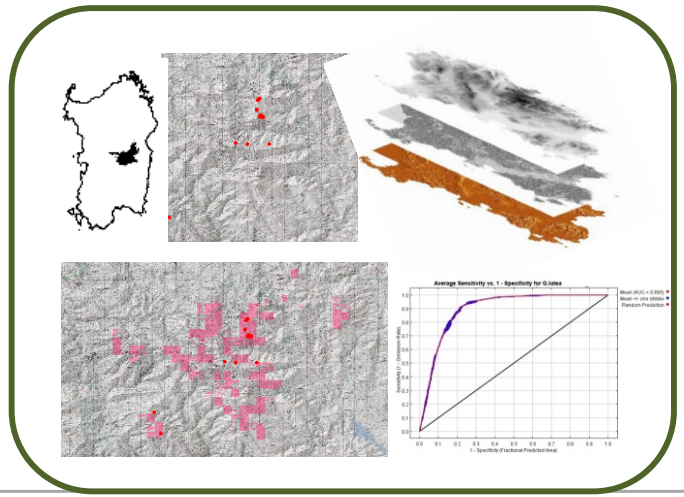
Plant species production






Methods of site selection





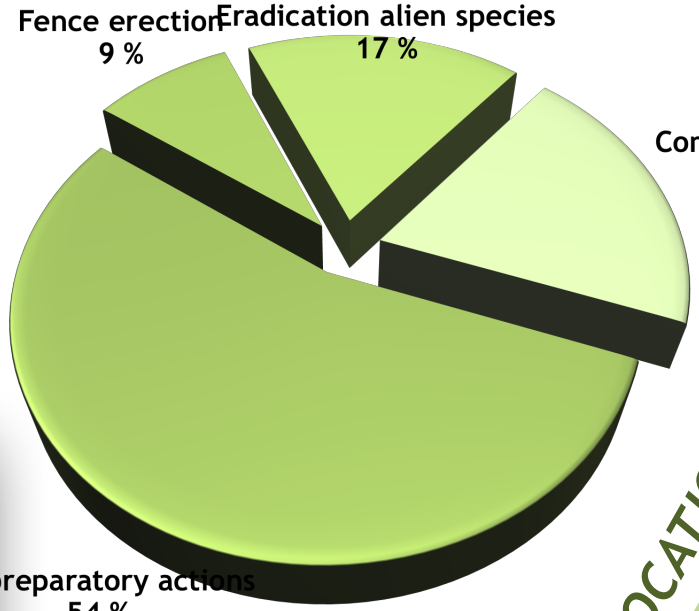
Material transplanted

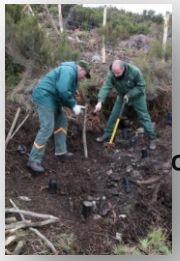



- Seedlings (8.82%)
- Adult plants (13.24%)
- Seeds (32.35%)
- Juvenile plants (45.59%)



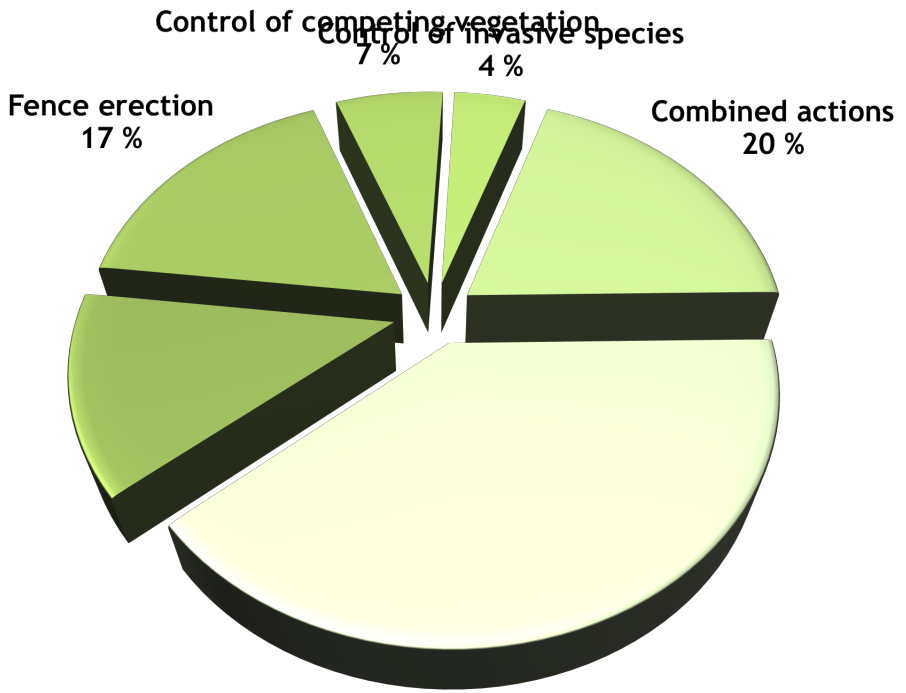

Preparatory actions





TRANSLOCATION

Implementation of the translocations



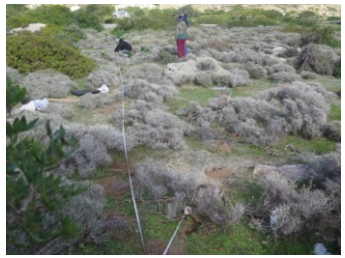
Management actions



Implementation of the translocations








Preparatory actions

Translocations

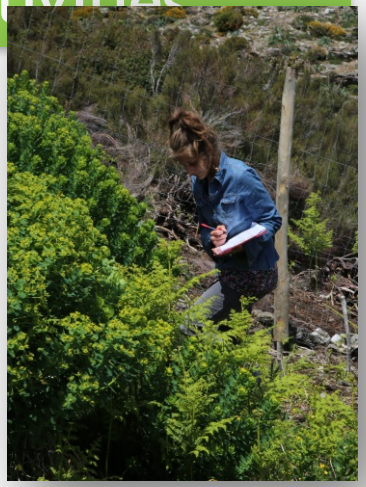
Post-release actions




Management actions were required for over 70% of translocations!!!

Monitoring activities

For each translocation a specific mid- and long-term monitoring protocol was planned/implemented in order to ensure its sustainability. A long-term monitoring plan is necessary to verify the effectiveness of the translocation and, if necessary, to adopt improved solutions.



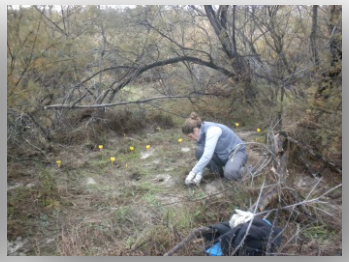
Care-Mediflora
(short-term monitoring plan)

Monthly monitoring
Bi-monthly monitoring

Post – Care-Mediflora
(long-term monitoring plan)

Species-specific protocols



Preliminary considerations

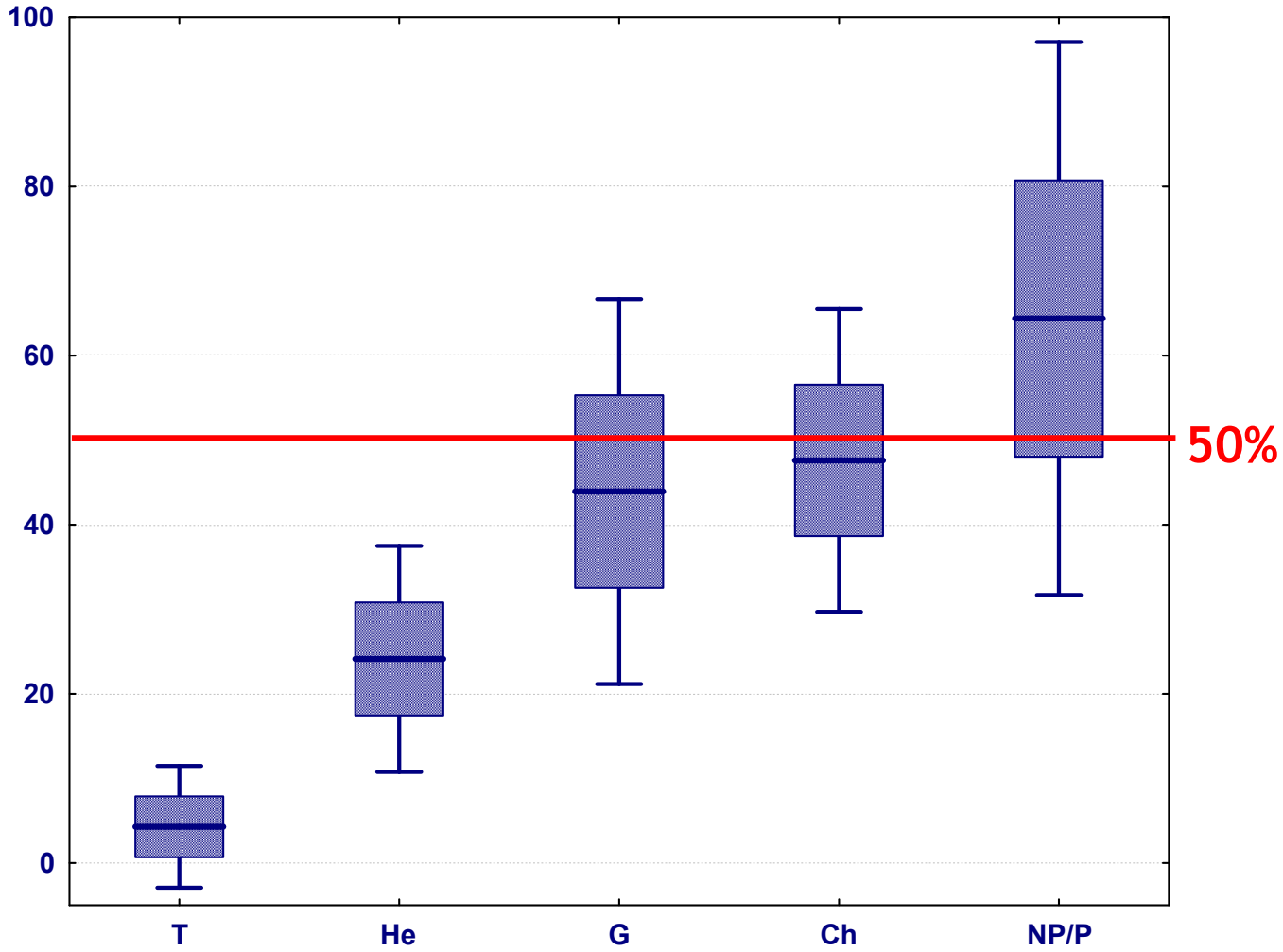
To prevent the extinction risk of known threatened species and to improve their conservation status, translocations have become increasingly important in management worldwide

However, many limits remain in the implementation of these conservation actions (e.g. high both economic and time costs, the limited human resources, the availability of the optimal site, the difficulties on the implementation of these actions on private areas, the high uncertainty of success principally connected to natural stochastic events, etc.)

In Care-Mediflora management actions were required for over 70% of translocations!!!!

Preliminary considerations

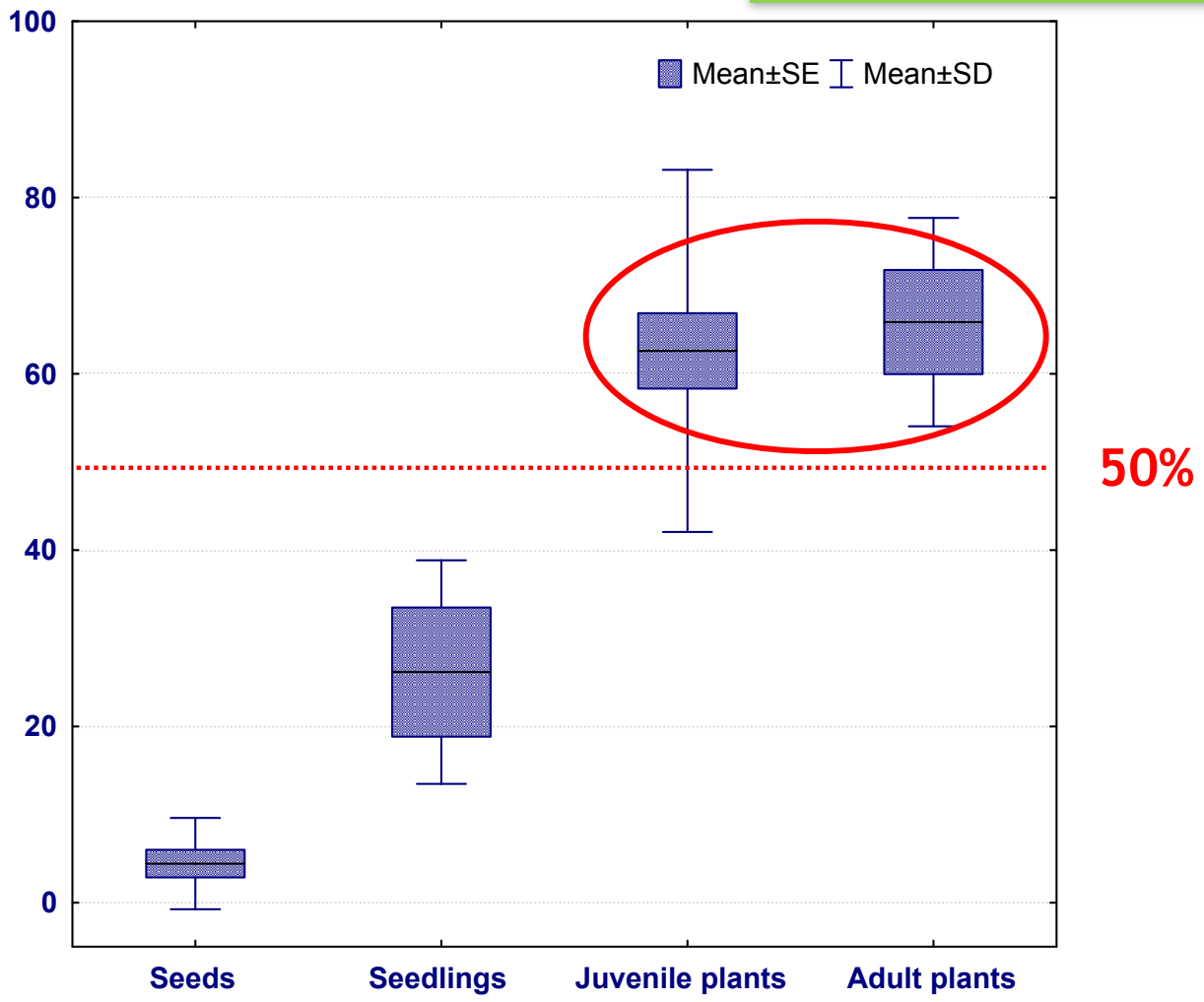
Survivorship rate



After one year, the survival rate seems to be related to the biological form

Preliminary considerations

Survivorship rate



The first data highlight the lack of significant differences between the planting juvenile or adult plants

Activities Capitalization

Common approach has been identified as a crucial starting point in order to develop knowledge and common methodologies among islands.

During several meetings, the experiences are shared among partners to co-develop technical aspects, to refine methodologies and to plan successful in situ conservation actions.

In order to make the translocations more effective, they were implemented in collaboration with the regional authorities and local stakeholders were actively involved in the monitoring activities.

Conclusion remarks

The CARE-MEDIFLORA project represents the first attempt to develop common strategies and an opportunity to join and harmonize methods and methodologies focused on threatened plant conservation in unique natural laboratories such as the Mediterranean islands

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The preliminary results provided important indications for future conservation actions and the sharing of experiences helped to implement the partners' operational capabilities

Centro Conservazione Biodiversità (CCB)
Dipartimento di Scienze della Vita e dell'Ambiente
Università degli Studi di Cagliari
gfenu@unica.it