

*Theme 2: Partnership projects for conserving plant diversity*

# A review of plant reintroduction practice

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2 - Trento Natural History Museum, Italy



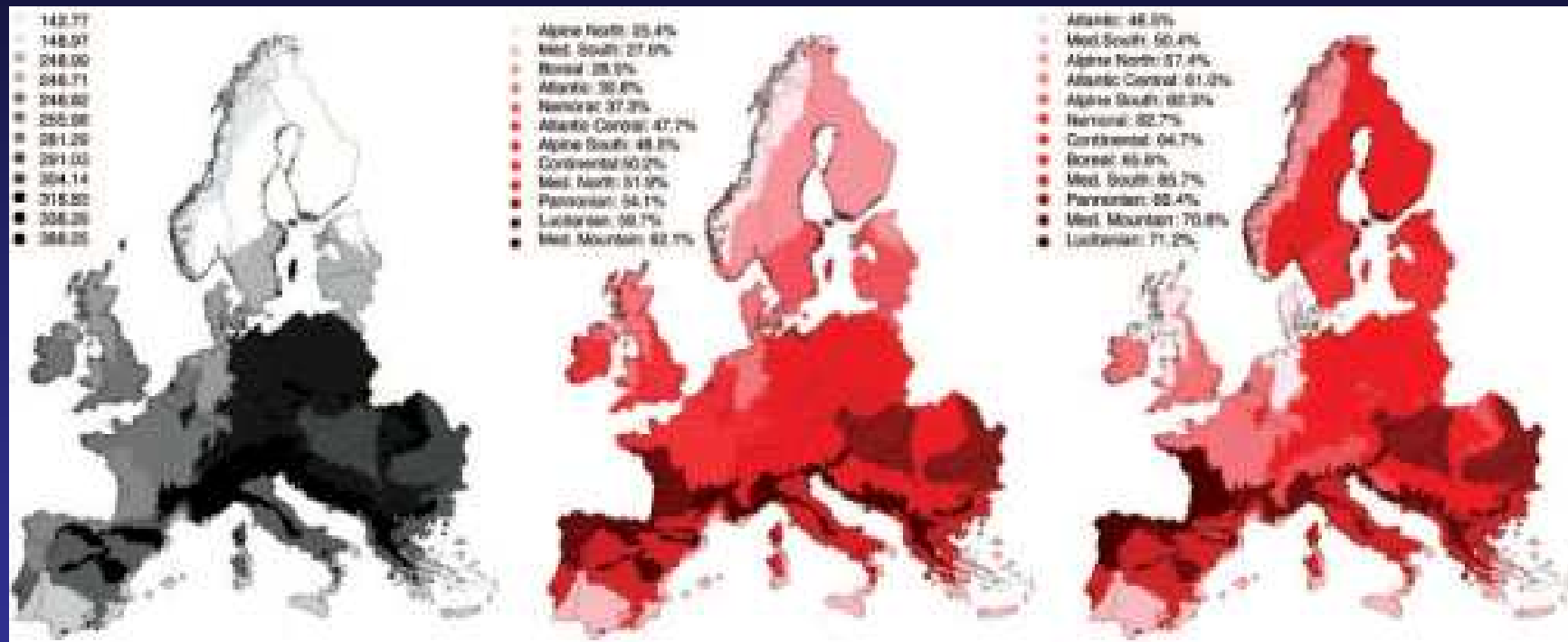
## European Union: threatened plants <10%



Australia	14.4 %
USA	29.0 %
Seychelles	31.2 %
Mauritius	39.2 %

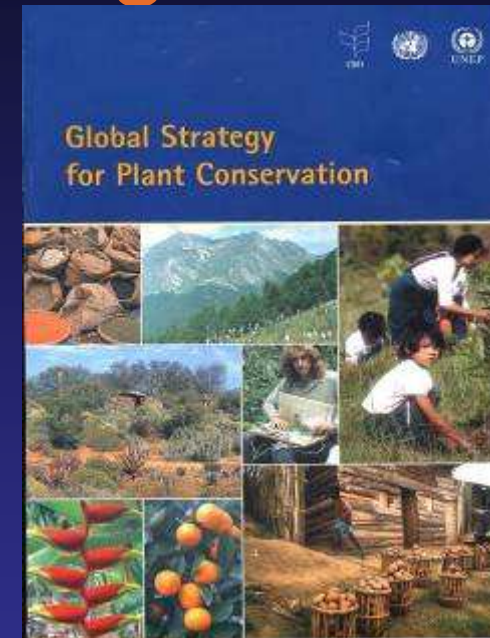
1997 IUCN Red List of Threatened Plants

# European plants under threat



According to well credited projections (PNAS, 2005) **climate change might cause the extinction of >60% of plant species by 2080** in the southern European mountains, such as the Pyrenees, the Alps, the Apennines and the Balkans.

# EPCS & GSPC targets:



## EPCS:

- 2) Conserving plant diversity:
- 2.02 Recovery programmes on 50 priority species
- 2.07 Integrated *in & ex situ* guidelines

## GSPC:

- 8) 10% of threatened sp. in recovery & restoration prg.



# Lack of specific EU/National (?) legislations



EU-LIFE+ 2007-2013

BUDGET: approx. 2 billion €

- *Species re-introduction:*

Projects and actions to reintroduce species are subject to the following conditions:

- they are justifiable and have a high chance of success;
- they target areas where the causes of extinction of the species have been eliminated;
- the removal of individuals for re-introduction is only considered if that would not endanger the captive or wild source populations;
- they target areas whose habitats meet the conditions necessary for the survival of a viable population of the species;
- they establish and document a prior agreement between all parties involved (e.g. between the competent authority for the donor population and the manager of the area of reintroduction);
- they target only areas where the attitude of the local population towards the planned reintroduction is favourable or there is a reasonable expectation that local acceptance can be achieved during the project;
- they only reintroduce animals / plants that belong to the closest and most similar population available (in terms of genetics, ecology, etc...) to that previously occurring in the area;
- they include a feasibility study, a preparatory phase, a re-introduction phase and a follow-up phase.

Projects and actions to reintroduce species outside existing Natura 2000 sites and which target species for which Natura 2000 designation is foreseen are subject to the following additional condition:

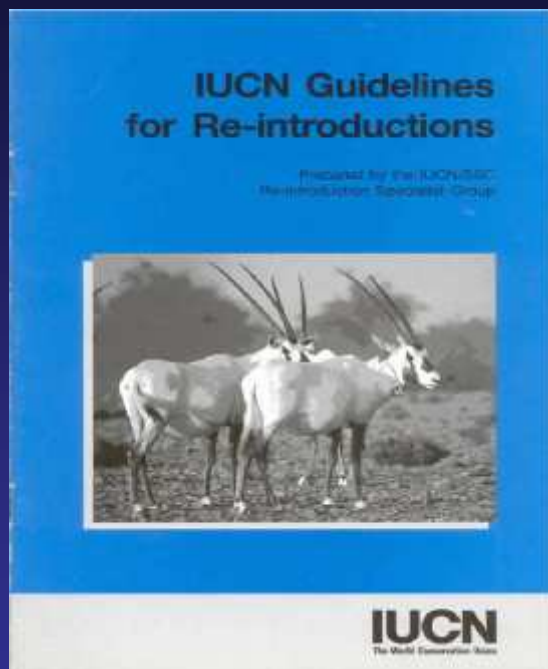
- they include a commitment from the Member State to designate the core reproductive and feeding areas of the re-introduced population as Natura 2000 sites before the end of the project (provided the reintroduction has been successful); the competent authority for Natura 2000 site designation must be an active participant (beneficiary or partner) in the project; land purchase is possible in this context;

For further guidelines on re-introduction can be found in the following document:  
<http://www.iucnsscrg.org/images/Englishlines.pdf>

**LACK of  
EU detailed  
standard  
operating  
protocols**

**AVAILABLE ONLY  
VERY GENERAL  
GUIDELINES**

# IUCN GENERAL GUIDELINES FOR ANIMAL/PLANTS



1995 - Guidelines for Re-introductions  
(printed in 1998)



IUCN - SSC RSG (Reintroduction Specialist Group)

# MANUALS, OPERATING PROTOCOLS, WEB SITES



### SID: Databases

<http://www.kew.org/data/sid/sidsearch.html>

**Seed Information Database Search Results**

*Storage Behaviour*: 100% Seed Weight Seed Dispersal Germination Literature Cited

*APG Class*: EUDICOTS - CORE EUDICOTS  
*APG Order*: Caryophyllales  
*APG Family*: CARYOPHYLLACEAE  
*Keew Family*: CARYOPHYLLACEAE  
*Genus*: Silene  
*Species*: *Epithem. acutula*  
*Life Form*: cham.

*Storage Behaviour*  
*Storage Behaviour*: Orthodox  
*Storage Conditions*: 100 % viability following drying to mc's in equilibrium with 15 % RH and freezing for 1 month at -20°C at RBG Kew, WP.  
[Top](#) [Interpreting the storage behaviour data](#)

**Germination**  
 1. 100 % germination; germination medium = 1 % Agar; germination conditions = 21 °C, 12/12; (RBG Kew, Wakehurst Place)  
[Top](#) [Interpreting the germination data](#)



Standard operating protocols "CPS",  
Swiss Commission for Wild Plant  
Conservation (S. Botanical Society),  
1997 – [www.cps-skew.ch](http://www.cps-skew.ch)





# SCIENTIFIC LITERATURE

Jour. Eur. Orch.  
33 (1): 395 – 404. 2001.



Elisabetta Sgarbi, Carlo Del Prete, Liliana Ronconi and Daniele Dallai

**Asymbiotic micropropagation of wild Italian orchids: from seed to plant in a project for *in situ* reintroduction.**

*Journal of Applied Ecology*  
1997, 34,  
547–565

ESSAY REVIEW

**Translocations of native species in the UK: implications for biodiversity**

KATHY H. HODDER and JAMES M. BULLOCK

*Biological Conservation* 89 (1999) 235–243

## Developing the Science of Reintroduction Biology

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*Conservation Biology* Volume 21, No. 2, 303–312  
© 2007 Society for Conservation Biology

*Biological Conservation* 91 (1999) 1–8

**Have substock plantings successfully established populations of rare grassland species into reintroduction sites in western Victoria?**

J.W. Morgan\*

**Re-establishment of the extinct native plant *Filago gallica* L. (Asteraceae), narrow-leaved cudweed, in Britain**

T.C.G. Rich<sup>a,\*</sup>, C. Gibson<sup>b</sup>, M. Marsden<sup>c</sup>



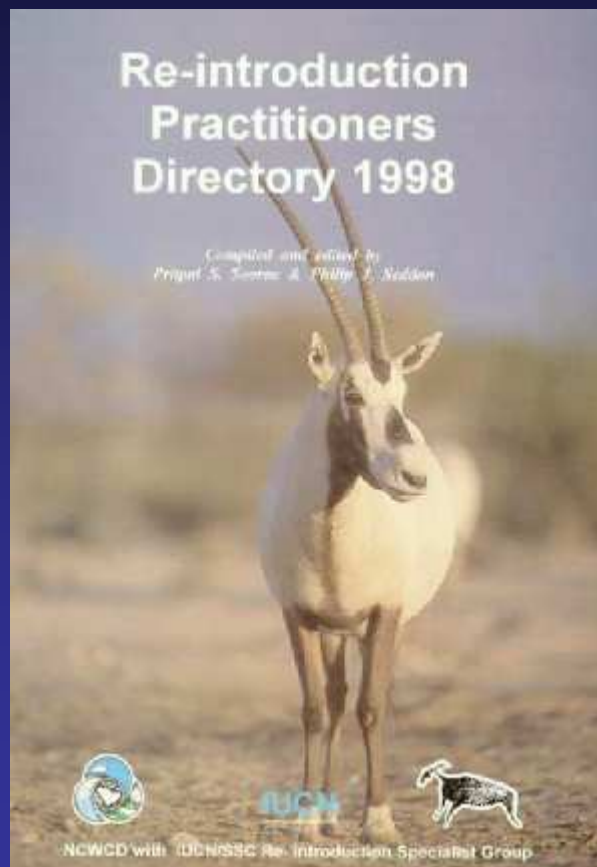
*Conservation Genetics* 5: 49–61, 2004.  
© 2004 Kluwer Academic Publishers. Printed in the Netherlands.

**Inbreeding and reintroduction: Progeny success in rare *Silene* populations of varied density**

Susan R. Kephart




# DIRECTORY PROJECTS



1998, Plant Conservation Alliance,  
Restoration directory,  
[www.ser.org/about.asp](http://www.ser.org/about.asp)



# NEW 2007 IUCN DIRECTORY PROJECT



RSG Home  
RSG Secretariat  
Downloads  
RSG Contacts

## IUCN/SSC Re-introduction Specialist Group (RSG)

### RE-INTRODUCTION PROJECTS DATABASE - 2007

The RSG is developing a Re-introduction Projects Database which will comprise of factsheets and will be made available on-line to re-introduction practitioners, researchers, students and interested individuals as a resource on re-introduction projects occurring worldwide. To complete this ambitious project we need re-introduction practitioners or people with available information to submit this to the RSG.

You can download an EXCEL worksheet in which information can be inserted by clicking this link: [SPECIES SUBMISSION SPREADSHEET](#). An example of the Re-introduction Projects Fact Sheet can be seen by clicking this link: [PROJECTS FACT SHEET](#).

The species submission factsheet should be e-mailed to Pritpal Soorae, RSG Program Officer ([click for e-mail](#)).

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T			
1	Taxonomic Details								Species Status			Re-introduction Site				Stage of Project (put 'X' in one or more boxes)							
2	Kingdom	Phylum	Class	Order	Family	Genus	Species	Sub-Species	Common name(s)	CITES	IUCN	Known status in the wild	Location	Country	Region	Type of Project	Feasibility	Implementation	Post-Release Monitoring	Historic			
	U	V				W				X				Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	Project details												For Further information Contact:										
2	Project Start Date / Year	Project Summary (<100 words)				Selected Literature References				Selected Websites				Name	Title	Organization	Postal Address	City	Country	Tel	Fax	E-mail	Date updated

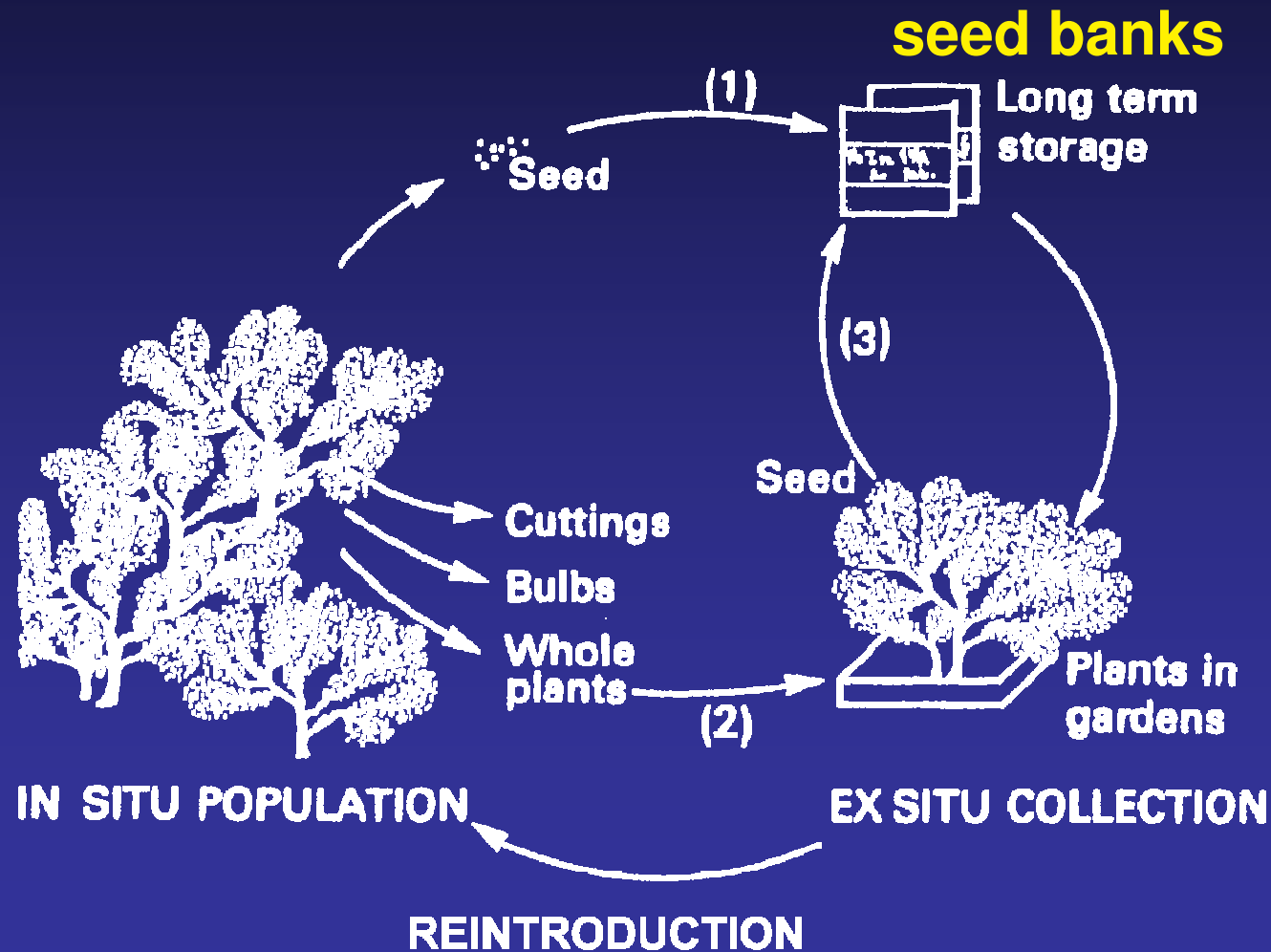


## The way forward

the Urgency and Complexity of this issue  
require an integrated approach addressing:

- **Legislation** (legal framework needed at EU and national level, listing general principles);
- **Co-operation** (between scientists and land managers);
- **Conservation priorities** (greater need first);
- **Science** (employing a multidisciplinary ecosystem approach including models).

# THE "REINTRODUCTION CYCLE"





## THE ITALIAN CONTRIBUTION


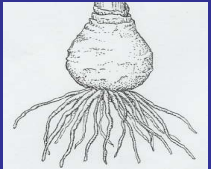


Italian National  
Inventory is  
ongoing  
(started 2005)


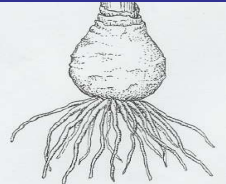
50 cases  
recorded and  
documented

[www.societabotanicaitaliana.it](http://www.societabotanicaitaliana.it)

# TENTATIVE GUIDELINES - 1

	SPECIES	THREATS	SITE	MANAGEMENT
<p><i>I Preliminary STAGE</i></p> 	<ul style="list-style-type: none"> <li>Assess conservation status</li> <li>Build up stock of local germplasm</li> </ul>	<ul style="list-style-type: none"> <li>Identify specific threats and limiting factors</li> </ul>	<ul style="list-style-type: none"> <li>Analysis at population level</li> <li>Restore disturbed area</li> </ul>	<ul style="list-style-type: none"> <li>Devise recovery plan</li> <li>Make reference to general principles and international agreements</li> </ul>
<p><i>II Preliminary STAGE</i></p> 	<ul style="list-style-type: none"> <li>Assess ecology and climate</li> <li>Develop cultivation protocols</li> </ul>	<ul style="list-style-type: none"> <li>Identify and agree with local stakeholders possible actions to remove threats</li> </ul>	<ul style="list-style-type: none"> <li>Select reintroduction site</li> <li><i>Ecosystem approach</i></li> </ul>	<ul style="list-style-type: none"> <li>Long term management agreement</li> <li>Put in place general restoration procedures</li> </ul>

## TENTATIVE GUIDELINES - 2

	SPECIES	THREATS	SITE	MANAGEMENT
<p><b>III Operational STAGE</b></p> 	<ul style="list-style-type: none"> <li>Assess MVP</li> <li>✓ Metapopulation approach</li> </ul>	<ul style="list-style-type: none"> <li>Remove selected threats</li> </ul>	<ul style="list-style-type: none"> <li>Promote natural ecosystem regeneration processes</li> </ul>	<ul style="list-style-type: none"> <li>Specifically timed management programme</li> <li>Multiyear outplanting approach</li> </ul>
<p><b>IV Monitoring STAGE</b></p> 	<ul style="list-style-type: none"> <li>Monitoring reproductive fitness (new plants successfully established, genetic variability)</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring threats, mitigation if needed or possible (climate change)</li> </ul>	<ul style="list-style-type: none"> <li>Confirm ecosystem functioning provided</li> </ul>	<ul style="list-style-type: none"> <li>Adaptive management</li> <li>Success evaluation</li> <li>Results dissemination</li> </ul>



LA STORIA

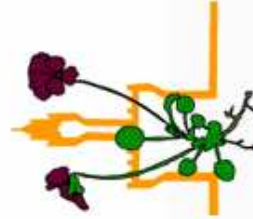
LA SOCIETÀ

L'ATTIVITÀ

LA GALLERIA

LA BIBLIOTECA

LINK



## Archivio delle reintroduzioni

**Il gruppo di Conservazione della Natura, in collaborazione con il Gruppo Orti Botanici e Giardini Storici, sta progettando il censimento delle azioni di reintroduzione a carico della flora spontanea note in Italia. Il fine è quello di ordinare, classificare e rendere note queste azioni, anche con l'intento di definire linee guida per azioni future.**

A tutt'oggi sono giunte poche schede compilate, anche se si ritiene che siano molti i casi avvenuti in Italia. Molte esperienze sono reperibili presso enti territoriali (parchi, riserve, comuni, ecc.), nell'ambito di progetti di intervento (es. Life), ma sono difficili da individuare.

Si sollecita quindi a segnalare esperienze (riempendo le apposite schede) o indicare enti e istituzioni che si sono occupati, in passato, di reintroduzione, che saranno in un secondo tempo contattati dal coordinatore del Gruppo di Conservazione.

Per il 101° congresso SBI si è predisposto un poster ([poster.pdf](#) [2.16 MBI] e [testo.pdf](#)) sull'argomento, per tenere viva l'attenzione sulla materia.

Entro fine anno (dicembre), è previsto anche un incontro sul tema a Pavia. In base anche alle indicazioni e segnalazioni raccolte, si deciderà, come consiglio del gruppo, se posticipare l'incontro alla primavera 2007, per avere maggiore materiale da valutare.

**Si riportano di seguito i seguenti documenti:**

- [Invito a partecipare al censimento dei casi di reintroduzione della flora spontanea italiana \(2007\)](#)
- [Iniziativa per la realizzazione di un Archivio nazionale delle](#)

[archivio articoli](#)
[versione stampabile](#)
[invia questa pagina ad un amico](#)

### Altri argomenti correlati

**Countdown 2010**  
Contributions of the Italian Botanical Society (S.B.I.) to the 2010 targets for save plant biodiversity

**INCONTRO TECNICO:**  
Reintroduzioni della flora spontanea italiana, censimento e linee guida

**Iniziative per l'implementazione in Italia delle categorie e dei criteri IUCN (2001)**

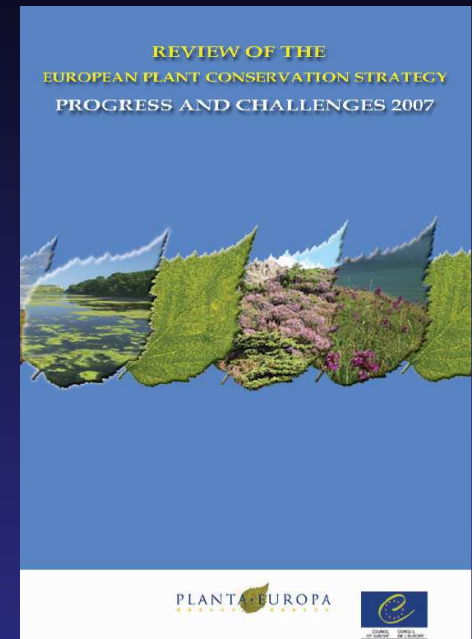




# NEW EPCS targets

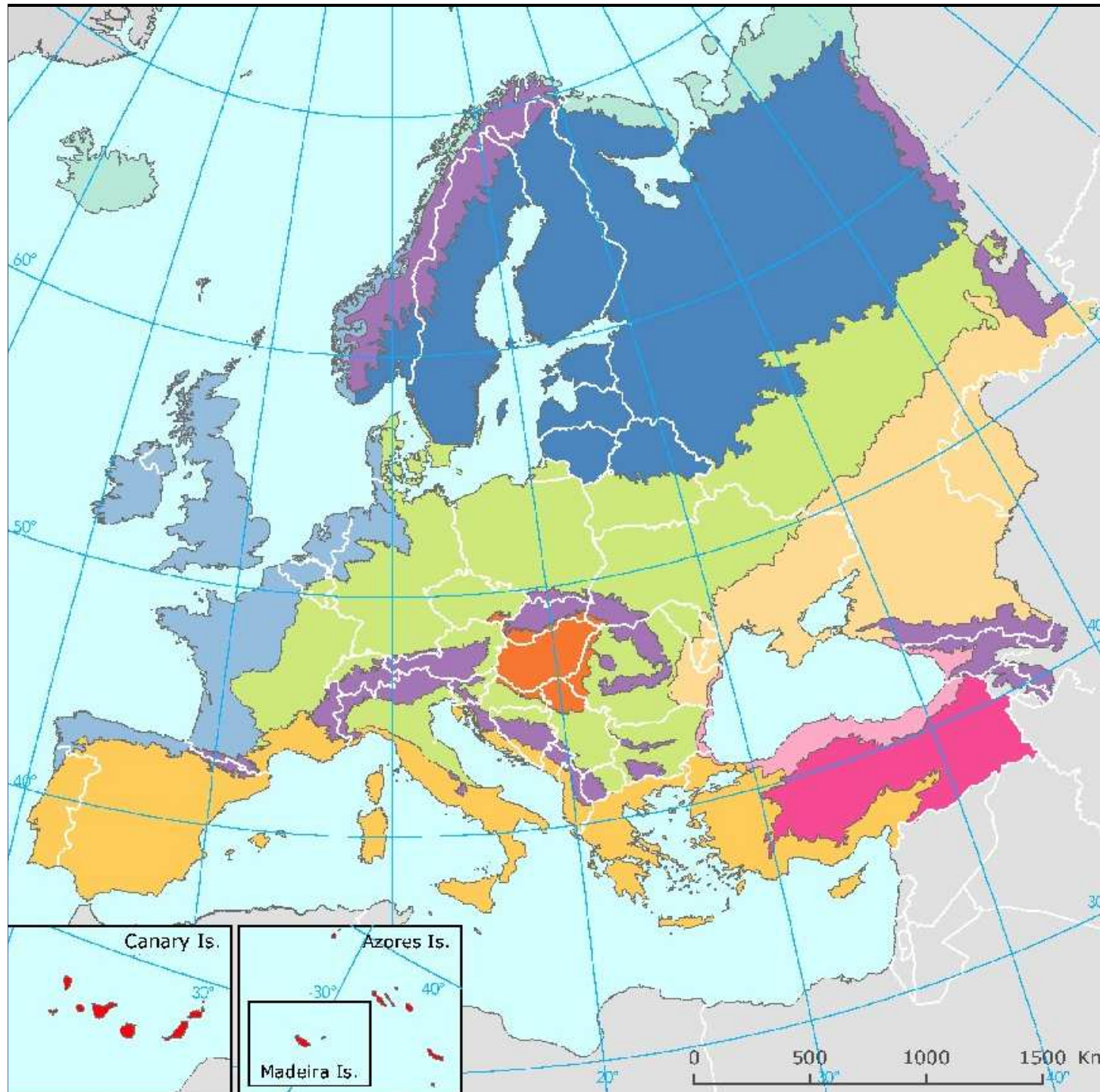


## 2) Conserving plant diversity



what	by	who
Detailed guidelines for reintroduction	2009	PE members & other conservation inst.
Reintroduction pilot projects on 10 priority species for the 11 european biogeographical region (110)	2013	
Lobbing for adoption of new legislation	2010	EU, regional level

# 110 proposed reintroduction pilot projects



**Indicative map of the European biogeographical regions, 2005**

- Alpine
- Anatolian
- Arctic
- Atlantic
- Black sea
- Boreal
- Continental
- Macaronesia
- Mediterranean
- Pannonian
- Steppic
- Outside data coverage
- Country border





*Silene  
elisabethae*  
THANKS YOU  
FOR YOUR  
ATTENTION !