

Zelkov@zione - Urgent actions to rescue *Zelkova sicula* from extinction

Project background

The Sicilian Zelkova (*Zelkova sicula*) is an endemic and very rare tree species of south-eastern Sicily. First recognised by the scientific community in 1991, it is a relict species (surviving remnant) of the European Tertiary Flora, belonging to a group of species that disappeared from the whole of continental Europe during the last ice age.

Until very recently, *Z. sicula* was known to exist as only a single population of approximately 230 shrubs, restricted to an area of less than 0.4 ha within the "Bosco Pisano" Natura 2000 site in the Iblei Mountains. At the end of 2009, a second population was unexpectedly discovered in the same mountain range. As with the former population, this newly-discovered population comprises of just a few hundreds trees, distributed over an area of around 0.8 ha, in quite similar environmental conditions. Thanks to its rarity, the species is included in the IUCN Red List of endangered species as 'critically endangered' and is among the "Top 50 Mediterranean Island Plants" on the brink of extinction [IUCN/SSC Mediterranean Islands Plant Specialist Group]. To date, no legal protection measure has been adopted.

A variety of problems threaten its survival, including:

- Geographic isolation and the small size of the populations, which have severely reduced gene flow, promoting a loss of genetic variability;
- Extremely poor and infrequent periods of fruiting and likely seed sterility;
- Water stress in summer-time resulting in the periodical death of the weaker trees (this threat is likely to be exacerbated by climate change);
- Ecological disturbances leading to habitat degradation; and
- A lack of active protection measures.

Project objectives

The main goal of the project is to ensure the survival of *Z. sicula* through in-situ and ex-situ conservation actions. These actions will limit threats to the species and develop management measures in order to reinforce the present populations and establish novel populations in ecologically suitable sites. These management plans will involve public bodies, NGOs and local stakeholders. A key goal of the project is to encourage the regional administrative authorities to plan and implement legal protection measures for *Z. sicula*.

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Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

Regione Sicilia - Dipartimento dell'Ambiente

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Duration of project:

54 months (01/10/2011 - 31/03/2016)

Total budget in euro:

2,334,663.00

EC contribution in euro with %:

1,055,501.00 (45.21 %)

Expected results:

- Improvement of knowledge about the biology and the ecology of the target species aimed at long-term conservation planning;
- The establishment of an emergency irrigation system in the tree population site;
- Erection of some 5.8 km of fencing;
- Habitat enforcement/improvement on a 10-ha area including the current tree site;
- Reinforcement of the natural populations of *Z. sicula* and the rehabilitation of its habitats;
- Establishment of at least five new populations, two within the current Bosco Pisano SCI and three in other forest areas on Sicily;
- Cultivation of at least 200 trees at two scientific research/conservation centres;
- Recognition of the status of protected species at regional level, and beginning the procedure for its recognition as a priority species (Habitats Directive);
- Implementation of a standard procedure for the protection of threatened species in public/private lands; and
- Various awareness-raising and communication activities to increase knowledge of this emblematic species and support for its conservation.