
Title: Hybridization processes in an introduced subpopulation of an endangered plant: Management strategies to guarantee the conservation of *Helosciadium bermejoi* (*Apiaceae*)

Authors: Juan Rita, Miquel Capó, Eva Moragues, Josefina Bota, Joana Cursach

PII: S1617-1381(17)30236-4
DOI: https://doi.org/10.1016/j.jnc.2017.10.006
Reference: JNC 25590

To appear in:

Received date: 12-5-2017
Revised date: 15-9-2017
Accepted date: 24-10-2017

Please cite this article as: { https://doi.org/

# Hybridization processes in an introduced subpopulation of an endangered plant: management strategies to guarantee the conservation of *Helosciadium bermejoi* (*Apiaceae*)

Juan Rita [(1)], Miquel Capó[(1)], Eva Moragues[(2)], Josefina Bota [(1)] and Joana Cursach[(1)]

[(1)] Grup de Recerca en Biologia de les Plantes en Condicions Mediterrànies, Dep. de Biologia, Universitat de les Illes Balears. Cra. Valldemossa km 7,5. E-07122 Palma. Spain

[(2)] Direcció General d'Espais Naturals i Biodiversitat, Conselleria de Medi Ambient, Agricultura i Pesca, Govern de les Illes Balears. C/ Gremi Corredors 10, Polígon Son Rossinyol, E-07009 Palma, Spain

Corresponding author: Juan Rita, jrita@uib.es, +34971173180, ORCID ID 0000-0002-9372-1637

**Abstract**

Translocations are a tool to restore populations of threatened plant species that are being widely used. However, these techniques are not without risks and require rigorous protocols to carry them out and for their subsequent monitoring. In translocation projects, hybridization with other species is one of the most important risks and may threaten the survival of the species we want to protect. Here we present the case of *Helosciadium bermejoi* (L. Llorens) Popper and M.F. Watson, a Critically Endangered plant from the island of Menorca (western Mediterranean). It occurs only in one locality and has been introduced to three new locations during recent years according to its Recovery Plan (2008). Recently, intermediate forms between the endangered species and a native congener, *Helosciadium nodiflorum* (L.) Koch, have been detected. The aims of this study are (i) to elucidate whether these plants originated through a hybridization event and (ii) to provide information about the current conservation status of the species. Exhaustive monitoring of all subpopulations (number of patches and area of occupancy) was performed from September 2015 to June 2016, and the rDNA ITS region and cpDNA rps16-trnK intergenic spacer region were sequenced for several samples of the putative hybrid and its putative parental species. Overall, the entire population of *H. bermejoi* greatly increased from 2010 (last census with available data) to 2015 in terms of both number of patches and area of occupancy: from 110 to 277 patches and from 299.2 to 791.3 $dm^2$. Molecular analysis confirmed the hybrid origin of *Helosciadium* × *clandestinum* Rita, Capó and Cursach and that both *H. bermejoi* and *H. nodiflorum* (L.) Koch can act as donors of