

IS THE ENDANGERED ISOETES DURIEUI BORY (ISOETACEAE, PTERIDOPHYTA) REALLY RARE IN THE SOUTHWEST OF THE IBERIAN PENINSULA?

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INTRODUCTION

Isoetes durieui Bory is a terrestrial and primitive vascular plant that belongs to the Pteridophyta Division. Its general distribution comprises the west of the Mediterranean region. It is considered a rare species that grows on siliceous soils, always in temporary ponds or humid areas such as riversides (Prada, 1983). In the Iberian Peninsula it is more frequent in the western part. Nevertheless, disjunct areas can be found in Catalonia and even in the Balearic Islands (Prada, 1987). In Andalusia region (south of Spain) it is endangered and catalogued as vulnerable (Ley 8/2003, de 28 de octubre, de la Flora y Fauna Silvestres) and included in the red list (Cabezudo and Talavera, 2005).

MATERIAL AND METHODS

The study area is located in the southwest of the Iberian Peninsula, corresponding to the province of Huelva (Andalusia, Spain), area which is composed of acid soils in the main. The mean annual rainfall is quite high (around 800-900 mm). These two factors are very important for the establishment of different species within the genus *Isoetes*. Records from other references (Cabezudo, 1976; Prada, 1983; Rivera and Cabezudo, 1985; Sánchez Gullón and Rubio García, 1999; Delgado Vázquez and Plaza Arregui, 2010) and web sites (such as www.anthos.es and www.gbif.org, last accessed February 2015) have been compiled, resulting seven 10 x 10 km different cells in the study area. On the other hand, twelve new populations have been found in a field work during 2014. The new voucher samples (see table 1) have been deposited in the herbarium of the Faculty of Sciences of the University of Cordoba (COFC).

MUNICIPALITY	LOCATION	COORDINATE (UTM)	ELEVATION (m)	DATE	LEG.
Aroche	Arroyo de la Helechosa	29SPB69	274	06.V.2014	J. López Tirado
Aroche	Barranco de los Frailes	29SPC60	287	20.V.2014	J. López Tirado
Aroche	Rivera de Peramora	29SPC60	223	15.V.2014	J. López Tirado
Cortegana	Barranco de la Panera	29SPB78	273	02.VII.2014	P. J. Hidalgo Fernández
Cortegana	Rivera de la Fresnera	29SPB78	273	03.VII.2014	J. López Tirado
El Campillo	Afluente de Rivera del Villar	29SQB07	294	28.V.2014	J. López Tirado
Rosal de la Frontera	Afluente de Barranco de Enmedio	29SPC60	273	07.V.2014	P. J. Hidalgo Fernández
Rosal de la Frontera	Barranco de los Vegados	29SPB69	239	17.VI.2014	P. J. Hidalgo Fernández
Rosal de la Frontera	Barranco de Valiño	29SPB69	228	17.VI.2014	P. J. Hidalgo F. and A. J. Sánchez Almendro
Santa Bárbara de Casa	Arroyo de la Corte	29SPB68	322	04.VI.2014	J. López Tirado
Santa Bárbara de Casa	Rivera de Pierna	29SPB59	274	12.VI.2014	J. López Tirado
Valverde del Camino	Afluente de Barranco de la Parrilleja	29SPB95	198	09.IV.2014	J. López Tirado

Table 1.- Data about the new localities of *I. durieui* in the province of Huelva.

RESULTS AND DISCUSSION

Isoetes durieui has been frequently found sharing habitat with *I. hystrix* Bory, being latter more abundant than the target species of this work. In some cases, pure populations of *I. durieui* composed by numerous specimens have been detected. The current distribution of *I. durieui* has been updated with seven additional new cells. Consequently, the occurrence of *I. durieui* has been doubled (10 x 10 km cells) in the province of Huelva (figure 1). Due to the lack of colourfulness and size, genus *Isoetes* usually goes unnoticed. With some experience on the identification of the natural habitat we are able to find out new populations. This fact leads to wonder whether *I. durieui* is really rare in the southwest of the Iberian peninsula.

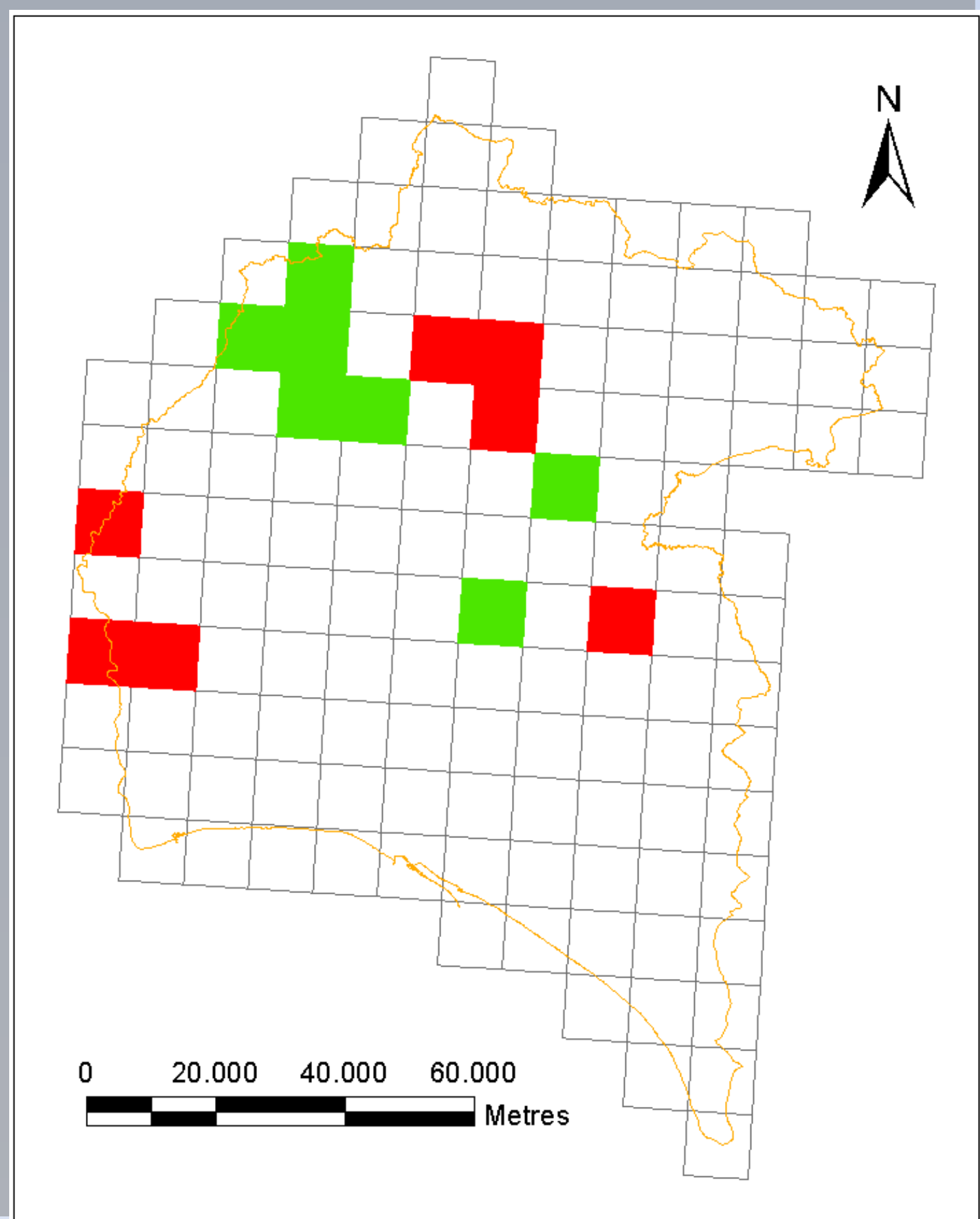
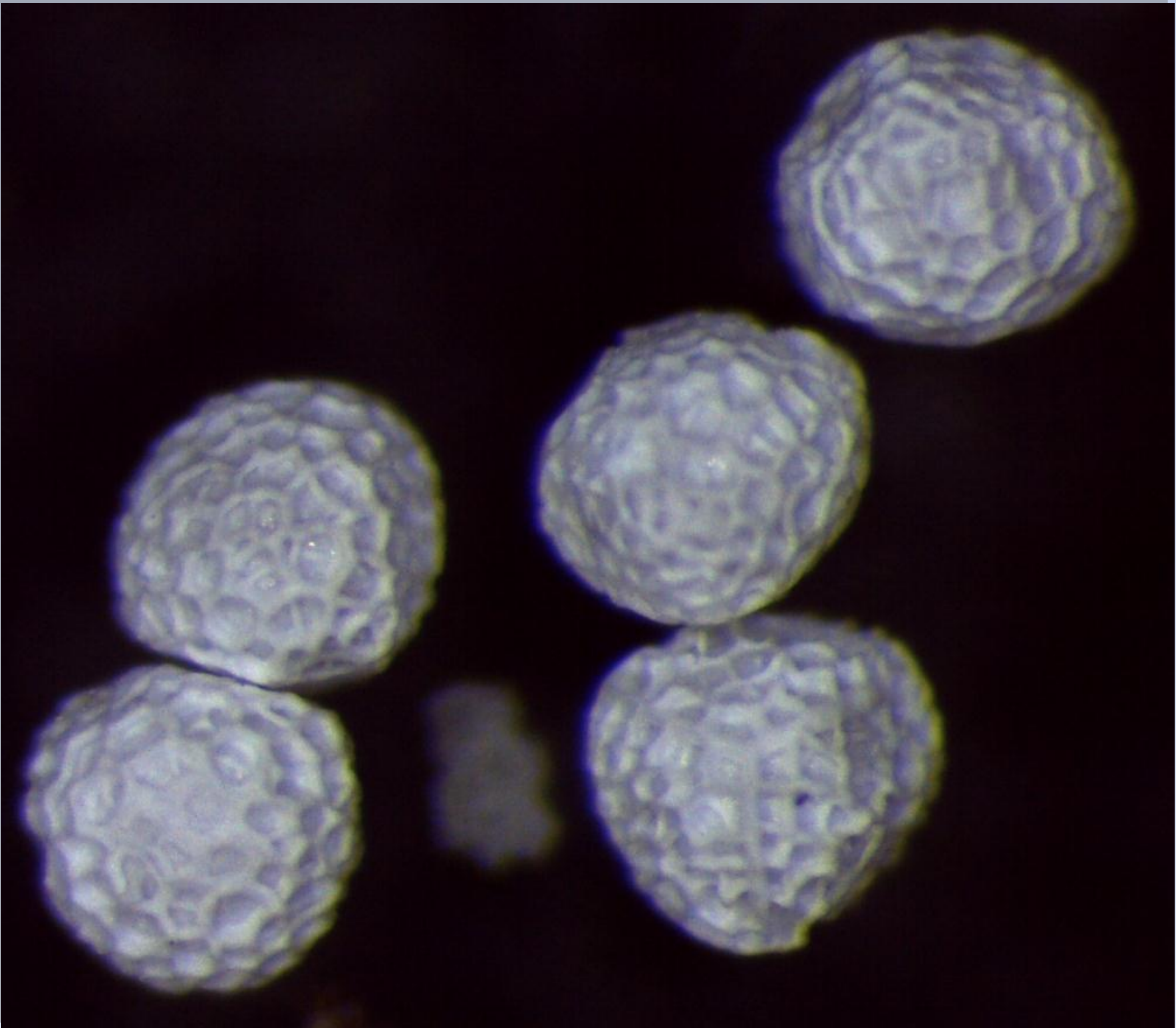


Figure 1.- Current distribution of *I. durieui* in the province of Huelva (Andalusia, Spain). Red cells (10 x 10 km) point out the previously known distribution, whereas the green ones state the new localities.



Aereal part of *Isoetes durieui* Bory



Megaspores of *Isoetes durieui* Bory

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