

## A contribution to the knowledge on the distribution of *Damasonium polyspermum* Coss. (Alismataceae) in Croatia

### short communication

**Nina Vuković** (Division of Botany, Department of Biology, Faculty of Science, University of Zagreb, Marulićev trg 20/II, HR-10000 Zagreb; [nina.vukovic@biol.pmf.hr](mailto:nina.vukovic@biol.pmf.hr))

**Sven D. Jelaska** (Division of Botany, Department of Biology, Faculty of Science, University of Zagreb, Marulićev trg 20/II, HR-10000 Zagreb, [sven.jelaska@biol.pmf.hr](mailto:sven.jelaska@biol.pmf.hr))

### Sažetak

Vrsta *Damasonium polyspermum* Coss. rasprostranjena je isključivo u Mediteranu, s relativno rijetkom pojavnošću u čitavom arealu. Uspijeva u plitkim, slatkovodnim stajaćicama kod kojih dolazi do značajne fluktuacije razine vode, te se smatra karakterističnom vrstom za mediteranske povremene lokve, rijetka i ugrožena staništa. Ova vrsta je globalno procijenjena kao osjetljiva (VU), dok za nacionalnu procjenu prilikom izrade aktualne Crvene knjige nije bilo dovoljno podataka, pa je vrsta označena kao nedovoljno poznata (DD). Ipak, novija razmatranja ukazuju na to da je vrsta ugrožena (EN) do kritično ugrožena (CR). U Hrvatskoj je do sada zabilježena na svega dva lokaliteta u sjevernoj Dalmaciji. U lipnju 2014. pronašli smo novo nalazište ove vrste, na području Vranskog jezera u sjevernoj Dalmaciji. Zbog vrlo specifičnih ekoloških zahtjeva, koji su odgovorni za mali broj nalaza ove vrste, novi nalazi predstavljaju značajan doprinos poznavanju rasprostranjenosti ove vrste.

**Ključne riječi:** novi nalaz, rijetka i ugrožena vrsta, IUCN

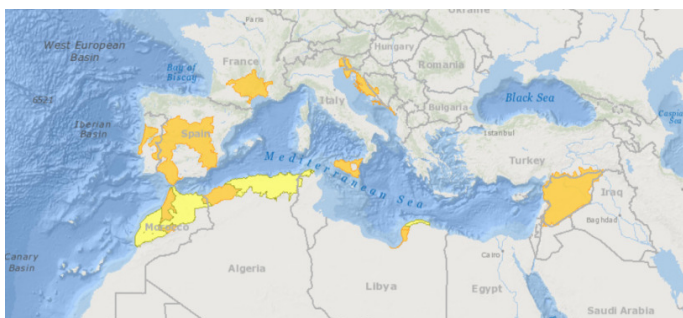
### Abstract

*Damasonium polyspermum* Coss. occurs only in the Mediterranean, and is relatively rare across the whole distributional range. It grows in shallow standing water bodies with significant fluctuations of the water level, and it is considered characteristic for Mediterranean temporary ponds, which are rare and endangered habitats. According to IUCN, *D. polyspermum* is globally vulnerable (VU). In Croatia this species is denoted as data deficient (DD), however, more recently it was proposed to category endangered (EN), to critically endangered (CR). Until this record, there were only two known localities of *D. polyspermum* in Croatia, both in Northern Dalmatia. In June 2014 we have discovered a new locality of *D. polyspermum* in the area of Vrana Lake in Northern Dalmatia. Due to the specific ecological requirements which account for the small number of findings, new localities of *D. polyspermum* represent a significant contribution to the knowledge on its distribution.

**Keywords:** new locality, rare and endangered species, IUCN

### Introduction

*Damasonium polyspermum* is distributed only in the Mediterranean, with rare occurrence in the whole distributional range (de Bélair et al. 2010, Fig. 1). It grows in shallow freshwater ponds and lakes with seasonal fluctuations of the water level, and is considered characteristic for Mediterranean temporary ponds, rare and endangered habitats (Zacharias & Zamparas 2010) listed on the Habitats directive as priority natural habitat type (Anonymous 1992, code \*3170). Due to the high habitat specificity (association with threatened habitats) and rare occurrence, *D. polyspermum* is found globally vulnerable (VU) according to IUCN criteria (de Bélair et al. 2010). In the current Red Book of Vascular Flora of Croatia (Nikolić &



**Figure 1.** Global distribution of *Damasonium polyspermum*. Orange – present, yellow – probably present. Adopted from de Bélair et al. (2010).

Topić 2005), *D. polyspermum* is denoted as data deficient (DD), however, more recent finding by Boršić & Posavec Vukelić (2012) was followed by the proposal to denote it as endangered (EN) to critically endangered (CR).

Prior to this record, *D. polyspermum* was registered in Croatia only in two localities, Jezera on the island Murter (Trinajstić et al. 1995, Pandža 1998) and more recently, pond Bunari near the Na-



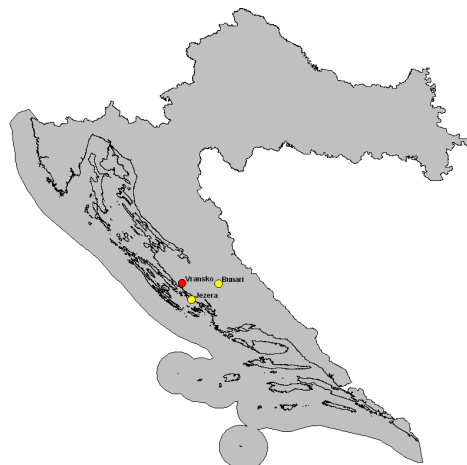
**Figure 2.** Habitus and fruits of *Damasonium polyspermum* in Vrana Lake on 13<sup>th</sup> June 2014 (Photos: N. Vuković).



**Figure 3.** Habitat of *Damasonium polyspermum* on Vrana Lake site 1 dominated by common reed, *Phragmites australis* (Photos: N. Vuković).



**Figure 4.** Habitat of *Damasonium polyspermum* on Vrana Lake site 2 dominated by common water-plantain, *Alisma plantago-aquatica* (Photo: N. Vuković).



**Figure 5.** Distribution of *Damasonium polyspermum* in Croatia. Yellow dots – previous records from the literature, red dot – new record from Vrana Lake.

tional Park Krka (Boršić & Posavec Vukelić 2012). Noteworthy, the record from Jezera was not confirmed in recent times, and the last search was conducted in 2012 (Pandža pers. comm.).

### Materials and methods

Northern part of the Vrana Lake Nature Park was surveyed on 13<sup>th</sup> June 2014. Gauss-Krueger coordinates of *D. polyspermum* populations were recorded using Garmin e-trex GPS device (site 1: 5542840, 4866754; site 2: 5542625, 4866720). The species was photographed on both locations, along with the corresponding habitats.

### Results and discussion

*D. polyspermum* was found in the area which was previously subjected to long lasting floods, but dry at the time of the finding (the flood water had only recently been withdrawn). Two nearby populations were recorded, with altogether around 15 individuals, all fructifying at the time (Fig. 2). One population (site 1, approximately five plants) was recorded on the abandoned macadam road going through a reed bed, while the other population (site 2, approximately ten plants) was recorded on the edge of an abandoned field. The first site was overgrown and dominated by common reed (*Phragmites australis* (Cav.) Trin. ex Steud., Fig. 3), while the other site was mostly covered by common water-plantain (*Alisma plantago-aquatica* L., Fig. 4).

Recorded populations on Vrana Lake represent the third known locality of *D. polyspermum* in Croatia (Fig. 5). Regarding previous findings, there is a possibility that the population from the first known locality (Jezera on the island Murter) no longer persists on the site. Although the site was searched in several occasions, *D. polyspermum* was not confirmed in recent times (Pandža pers. comm.). On the other hand, large number of plants was present on the second finding (pond Bunari) in 2015 (Šegota pers. comm.). Moreover, habitat on this site seems to be in a favourable state, while the population appears to be stable (Šegota pers. comm.).

### Conclusion

Newly found populations on Vrana Lake are extremely small, therefore rather vulnerable and unstable. Although *D. polyspermum* most probably also occurs on other sites around the Lake, a detailed specific search is necessary to get a more accurate overview on its distribution. Considering the association of *D. polyspermum* with rare and endangered habitats, which accounts for the small number of findings, this record represents a valuable contribution to the knowledge on its distribution. Moreover, it offers the opportunity to review the current DD status of this extremely rare species and assign a more appropriate threat level.

### Literature

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