

## New finding of the red listed *Eleocharis carniolica* Koch in Croatia

short communication / kratko priopćenje

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Šegota, V., Alegro, A. (2016): Novi nalaz ugrožene vrste *Eleocharis carniolica* Koch u Hrvatskoj. *Glas. Hrvat. bot. druš.* 4(1): 30-31.

According to Red book of Croatian vascular flora *Eleocharis carniolica* Koch is considered an endangered species (EN) (Topić 2005). Moreover, the species is protected under the Habitats directive (Anonymous 1992, 2013) and listed in the Ordinance on Strictly Protected Species in Croatia (Anonymous 2013) and Bern convention (Anonymous 1979). It is a species of the amphibic habitats belonging to the class *Isoëto-Nanojuncetea* (Topić 2005, Topić & Vukelić 2009). Although known from number of localities in Croatia in the past, in the last 50 years it was recorded barely twice, on wet meadows at

Vukomeričke gorice (Šegulja 1974) and along Lepeničko jezero Lake (Topić 2002, ZA collection, ID 14793) (Fig. 1). The changes in water level caused by management of this artificial lake have strongly influenced the vegetation along the lake, therefore this finding spot might be destroyed and should be checked. The recently published finding in Istrian peninsula (Vitasović Kosić et al. 2009) should be erased from Flora Croatica Database (Nikolić 2015), due to misinterpretation of the Rossi's (1930) historical data.



Figure 1. Distribution map of the *Eleocharis carniolica* in Croatia.

During the extensive survey of the spruce forests on the Velebit Mt, the species (Fig. 2) was recorded on 27 June 2011 in the Štirovača plateau (44.67956°N, 15.06397°E, 1102 m a. s. l.), within Velebit Nature Park. It grew along the permanent pond near forest road, together with *Alisma lanceolatum* With., *Galium palustre* L., *Agrostis stolonifera* L., *Ranunculus flammula* L., *Juncus effusus* L., *Carex panicea* L., *C. hirta* L., *C. echinata* Murray, *C. flava* L., *C. lepidocarpa* Tausch, *C. pallescens* L., *Lycopus europaeus* L., *Equisetum sylvaticum* L., *Succisa pratensis* Moench, *Potentilla erecta* (L.) Rauschel etc. In addition, this locality is the only finding spot of the rare



**Figure 2.** *Eleocharis carniolica* Koch (Foto: A. Alegro, August 2015).

peat moss *Sphagnum platyphyllum* (Lindb. ex Braithw.) Warnst. (Alegro et al. 2014) and of the forest association *Sphagno-Piceetum* s.l. (Vukelić 2012) in Croatia. After its discovery, the pond has been monitored regularly, and population of the *E. carniolica* appears to be stable. In order to protect this small and highly valuable habitat from the possible disturbance by transport and pollution, in cooperation with the Croatian Forests company, thanks to Prof. Joso Vukelić from Faculty of Forestry in Zagreb, the protective fence along the road was constructed (Fig. 3).



**Figure 3.** New finding spot of *Eleocharis carniolica*: pond in Štirovača (Velebit Mt) protected by fence (Foto: A. Alegro, August 2015).

### Literature

- **Alegro, A., Šegota, V., Szurdoki, E. (2014):** *Sphagnum platyphyllum* (Lindb. ex Braithw.) Warnst. In: Ellis, L.T. et al.: New national and regional bryophyte records, 41., Journal of bryology 36(4): 317-318.
- **Anonymous (1979):** Convention on the Conservation of European Wildlife and Natural Habitats.
- **Anonymous (1992):** Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.
- **Anonymous (2013):** Ordinance on Strictly Protected Species (In Croatian). Official Gazette 144/13.
- **Anonymous (2013):** Council Directive 2013/17/EU of 13 May 2013 adapting certain directives in the field of environment, by reason of the accession of the Republic of Croatia.
- **Rossi, Lj. (1930):** Pregled flore Hrvatskog Primorja. Prirodoslovna istraživanja Kraljevine Jugoslavije 17: 1-368.
- **Šegulja, N. (1974):** Biljni pokrov Vukomeričkih gorica. Doktorska disertacija. Prirodoslovno-matematički fakultet, Sveučilište u Zagrebu.
- **Topić, J. (2005):** *Eleocharis carniolica* Koch. In: Nikolić, T., Topić, J. (eds.): Crvena knjiga vaskularne flore Hrvatske. Ministarstvo kulture, Državni zavod za zaštitu prirode, Zagreb, 318-319.
- **Topić, J., Vukelić, J. (2009):** Priručnik za određivanje kopnenih staništa u Hrvatskoj prema Direktivi o staništima EU. Državni zavod za zaštitu prirode, Zagreb.
- **Vitasović Kosić, I., Britvec, M., Ljubičić, I., Maštrović Pavičić, D. (2009):** Vaskularna flora Istre: ugrožene i rijetke vrste. Agronomski Glasnik 71(3): 199-213.
- **Vukelić, J. (2012):** Šumska vegetacija Hrvatske. Šumarski fakultet, Sveučilište u Zagrebu, Državni zavod za zaštitu prirode, Zagreb.