

## NEW HERPETOFAUNAL DATA FROM CRES ISLAND, CROATIA

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We provide new and supplementary data on the distribution and natural history of reptiles on the island of Cres: *Dalmatolacerta oxycephala* (range extension of an alien introduced population); *Emys orbicularis hellenica* (status of the population in the southwestern parts of Cres); *Hemidactylus turcicus* (first record after 38 years); *Trachemys scripta elegans* (first record on Cres).

**Key words:** *Dalmatolacerta oxycephala*, *Emys orbicularis hellenica*, *Hemidactylus turcicus*, *Trachemys scripta elegans*, Cres Island, Croatia, new records, natural history

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U radu donosimo nove i dodatne podatke o rasprostranjenosti te prirodoslovne podatke o gmazovima na otoku Cresu: *Dalmatolacerta oxycephala* (proširenje areala strane introducirane populacije); *Emys orbicularis hellenica* (status populacije na jugozapadnom dijelu Cresa); *Hemidactylus turcicus* (prvi nalaz nakon 38 godina); *Trachemys scripta elegans* (prvi nalaz za Cres).

**Ključne riječi:** *Dalmatolacerta oxycephala*, *Emys orbicularis hellenica*, *Hemidactylus turcicus*, *Trachemys scripta elegans*, otok Cres, Hrvatska, novi nalazi, prirodoslovlje

The herpetofauna of the Cres-Lošinj Archipelago has undergone several inventories during the last 35 years (BRUNO, 1980, 1988; SEHNAL & SCHUSTER, 1999; RATHBAUER, 2002; TÓTH *et al.*, 2006, 2009 a, b; HILL, 2008; DIEKMANN & DIEKMANN, 2010; BONTE, 2012; TÓTH *et al.*, 2017 a, b).

On Cres, the largest island of the archipelago, surveys have recorded 23 species of amphibians and reptiles (TÓTH *et al.*, 2017b). It is followed by the island of Lošinj, with 14 species (TÓTH *et al.*, 2009b). The surrounding islets are only inhabited by one to three terrestrial reptile species and in one case also by one amphibian species (*Bufo viridis*) (TÓTH *et al.*, 2009a, 2017b).

In the case of Cres, however, the current status and distribution of several additional species, mentioned by BRUNO (1980) remain unconfirmed (e.g. *Bombina variegata*, *Emys orbicularis*, *Hemidactylus turcicus*, *Tarentola mauritanica*, *Lacerta trilineata*, *Podarcis siculus*, *Natrix tessellata*, *Vipera ammodytes*) (TÓTH *et al.*, 2006, 2017b). Interestingly, three of these species were recently recorded from Lošinj or other islets off the coast of Cres (e.g. *L. trilineata*, *P. siculus*, *H. turcicus*) (TÓTH *et al.*, 2017a).

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We herein present data on yet unrecorded or unconfirmed reptile species from Osor and surrounding areas in the southwestern part of Cres. Our data is based on field trips between 1969 and 2013 by Markus Grabert and in May 2018 by Peter Geissler.

*Dalmatolacerta oxycephala* (Dumeril & Bibron, 1839)

TÓTH *et al.* (2006) were the first to record the presence this species on Cres. They found three specimens “on a stone wall bordering the channel that separates Lošinj and Cres” (TÓTH *et al.*, 2006). They stated that the specimens encountered were most likely introduced to this site. DIEKMANN & DIEKMANN (2010) and DIEKMANN (2017) confirmed the presence of an established population along the mentioned wall in Osor. KOŁODZIEJ & PROKOSCH (2018), based on a personal comment of M. SCHWEIGER, stated that there was a further expansion of this species without providing further information.

We can confirm the observations of the latter authors. In May 2018 up to 30 adult and subadult individuals were encountered along a 200 m long part of the old city wall between the channel and the ruins of the former St. Peter Monastery. Among them were egg bearing specimens (see Fig. 1), indicating that this northernmost population shows a reproductive seasonality similar to populations within the natural range (BISCHOFF, 1984). Two additional juvenile specimens were encountered on a house wall at the market square of Osor, demonstrating that the species is currently dispersing within the town of Osor, where it occurs syntopically with *Podarcis melisellensis*.

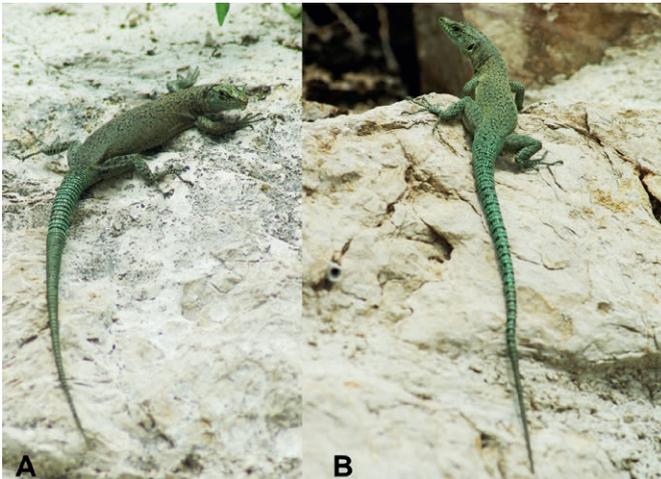


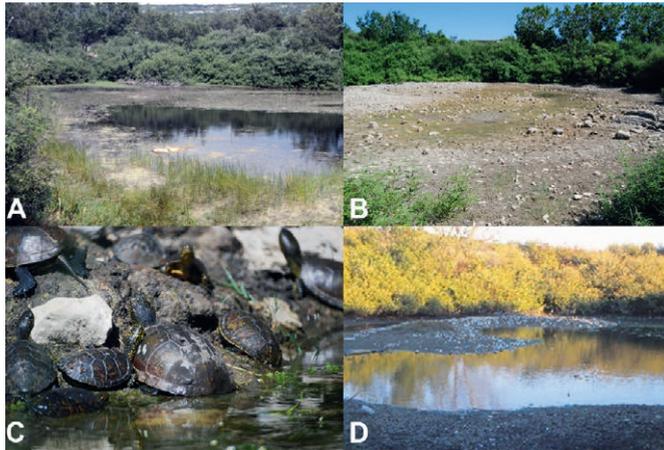
Fig. 1. Adult *Dalmatolacerta oxycephala* (Dumeril & Bibron, 1839) in Osor, May 28<sup>th</sup> 2018: (A) Egg bearing female; (B) Male (photos: P. Geissler).

*Emys orbicularis hellenica* (Valenciennes, 1832)

The European pond turtle was previously known from three different regions on Cres: (1) Merag peninsula (SEHNAL & SCHUSTER, 1999); (2) Lake Vrana (BRUNO, 1980); (3) Zlatuja blato, three larger ponds east of Osor (BRUNO, 1980). According to TÓTH *et*

al. (2006) newer records of this species are lacking from all three localities. RATHBAUER (2002) revisited the ponds near Osor in May 2002, without finding the species.

One of us (M. Grabert) regularly visited the mentioned ponds (about 700 m east of Osor, along the road to Punta Križa) between 1973 and 2013. In all three ponds, *Emys* specimens were present throughout this period of 40 years. Fig. 2C shows an assemblage of basking specimens of different ages in May 2013, indicating that the population reproduces regularly. Interestingly the water level within the ponds faces a strong seasonal fluctuation. In summer the ponds may even dry up completely, as shown in Fig 2.



**Fig. 2.** Seasonal aspects of the *Emys* habitat near Osor: (A) May 1980; (B) June 2012; (C) basking adult and subadult *Emys orbicularis hellenica* (Valenciennes, 1832) in May 2013; (D) September 1997 (photos: M. Grabert).

In May 2018 we were able to encounter four adult specimens (Fig. 3). The pond still had a surface of about 150 m<sup>2</sup> (up to 1m in depth) and was densely covered with *Ranunculus baudotii*. No juveniles were encountered. The adults fit the characteristic traits of the subspecies *Emys orbicularis hellenica* (Valenciennes, 1832) as compiled by FRITZ (1992, 2001). In 2018 the species occurred syntopically with *Hyla arborea*, *Pelophylax ridibundus*, *Natrix natrix* and *Trachemys scripta elegans* (see below).



**Fig. 3.** Male *Emys orbicularis hellenica* (Valenciennes, 1832) near a pond east of Osor, May 29<sup>th</sup> 2018 (photo: P. Geissler).

*Hemidactylus turcicus* (Linnaeus, 1758)

The presence of *H. turcicus* on Cres (Osor, Beli, Punta Križa) was first indicated by BRUNO (1980). However no later surveys were able to provide any confirmation or evidence that the species still occurs at other localities on the island (SEHNAL & SCHUSTER, 1999; SEHNAL & SCHUSTER, 1999; RATHBAUER, 2002, TÓTH *et al.*, 2006, DIEKMANN & DIEKMANN, 2010; TÓTH *et al.*, 2017b; KOŁODZIEJ & PROKOSCH, 2018). TÓTH *et al.* (2006, 2017b) argued that this species might occur on Cres, as it is known from the surrounding islands of Susak (TÓTH *et al.*, 2017a), Plavnik (BRUNO, 1980), and Lošinj (TÓTH *et al.*, 2006, 2009b), but that substantiated records are lacking.

M. GRABERT observed one single adult specimen in May 2003, at the cathedral of Osor (Fig. 4A). In May 2018 we were able to encounter eight specimens (two juveniles and six adults) of *H. turcicus* on five different house walls scattered in different streets of Osor (see Fig. 4B).



**Fig. 4.** Adult *Hemidactylus turcicus* (Linnaeus, 1758) from Osor: (A) observed behind the Cathedral in May 2003; (B) observed on a house wall in the city center, June 1st, 2018 (photos: M. Grabert (A); P. Geissler (B)).

*Trachemys scripta elegans* (Wied-Neuwied, 1838)

On May 29<sup>th</sup> 2018 P. Geissler observed one adult female specimen of *Trachemys scripta elegans* basking on the edge of a pond mentioned in the *Emys orbicularis* account above. This is the first record of this species from Cres. Most likely the observed specimen is a released pet. Further observations are needed, to clarify if there are more specimens present in the ponds near Osor, and if they form a reproducing population. In recent years, stable populations of *Trachemys scripta elegans* have been recorded in several areas of the northern Adriatic region, including on the neighboring island of Krk (VAMBERGER *et al.*, 2008; JELIĆ & JELIĆ, 2015; SCHWEIGER, 2015)

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