

## New records of four-lined snake (*Elaphe quatuorlineata*) in Natura 2000 site Slovenska Istra (SI3000212)

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**Abstract.** The article presents new records of ten specimens (one juvenile, one subadult and eight snake sheddings) of four-lined snake (*Elaphe quatuorlineata*) recorded in a period between May 2002 and March 2011 on seven locations in Natura 2000 site Slovenska Istra (SI3000212). In some locations, the species was observed several times. Data show successful reproduction within the abovementioned Natura 2000 site.

Key words: reptiles, snakes, colubrid snakes, Colubridae, four-lined snake, *Elaphe quatuorlineata*, distribution, reproduction, Natura 2000, Slovenia

**Izvleček.** NOVE NAJDBE PROGASTEGA GOŽA (*ELAPHE QUATUORLINEATA*) V OBMOČJU NATURA 2000 SLOVENSKA ISTRA (SI3000212) – V članku so opisane nove najdbe desetih osebkov (juvenilni in subadultni osebek ter osem kačjih levov) progastega goža (*Elaphe quatuorlineata*) s sedmih lokacij v območju Natura 2000 Slovenska Istra (SI3000212), zabeležene med majem 2002 in marcem 2011. Na nekaterih lokacijah je bila vrsta večkrat opažena. Podatki potrjujejo uspešno razmnoževanje vrste v omenjenem območju Nature 2000.

Ključne besede: plazilci, kače, goži, Colubridae, progasti gož, *Elaphe quatuorlineata*, razširjenost, razmnoževanje, Natura 2000, Slovenija

In Slovenia, the four-lined snake (*Elaphe quatuorlineata*) reaches the northernmost limit of its distribution (Kreiner 2007). Historical finds are known from Robič, Šempeter near Nova Gorica and from the border area with Italy (Tome 1996, Bressi et al. 2004). Records on occurrence of the four-lined snake in the country published in the last 30 years are rare and confined to the Slovenian part of Istria (Škornik 1985, Škornik 1989, Verovnik 1995, Planinc 1997, Bressi et al. 2004, Cafuta 2005, KPSS 2008, Krofel et al. 2009). The species is protected by Decree on protected wild animal species and is considered an endangered species (Rules on the inclusion of endangered plant and animal species in the Red List, 2002). It is also protected by the Bern Convention (Annex II) and the EC Habitats directive (Annexes II and IV). In Slovenia, the only Natura 2000 site that includes four-lined snake is Slovenska Istra (SI3000212).

During the reptile survey in Natura 2000 site Slovenska Istra in a period between May 2002 and March 2011, new finds of the four-lined snake were recorded. Accurate locations are not given due to conservation reasons. Material was identified with identification keys (Tome 1999, Arnold 2002) and by comparing material from snake shedding collection kept by the author of this article. Measurements of the carcass and live animal are given below. In live specimens, errors are possible due to movements.

New records:

- Brič (UTM square VL03). Material: 1 poorly preserved snake shedding of adult found on 14.08.2008, leg. & det. V. Cafuta.
- Koštabona (UTM square VL03). Material: live subadult found on 31.05.2008 (Fig. 1), leg. & det. G. Planinc. Snout-vent length = 88 cm, tail length = 23 cm.
- Labor (UTM square VL03). Material: altogether 3 poorly preserved snake sheddings of adult animals found on 26.08.2006, 18.08.2007 and 24.05.2008; leg. V. Cafuta & G. Planinc, det. V. Cafuta. Due to poorly preserved material, it is not possible to determine whether sheddings belong to one or more individuals. Comment: first find of a well preserved snake shedding in this location dates from 20.07.2004 (Cafuta 2005).
- Puče (UTM square UL93). Material: 1 poorly preserved snake shedding of adult found on 01.04.2007, leg. & det. V. Cafuta.
- Stena near Dragonja (UTM square UL93). Material: 1 poorly preserved snake shedding of adult animal found on 11.05.2002, leg. & det. G. Planinc; 1 snake shedding of juvenile found on 22.07.2010 (Fig. 2), leg. Anonymous, det. A. Dall'Asta & V. Cafuta. Comment: previous finds of adult animals in this location date from 19.03.1983 (T. Trilar, pers. comm.), June 1983 (Škornik 1985) and April 1994 (Verovnik 1995, R. Verovnik, pers. comm.), snake sheddings (not preserved) found on 30.07.1996 (Planinc 1997) and on 05.07.1997 (G. Planinc & T. Brstilo, pers. comm.).
- Sv. Peter (UTM square UL93). Material: Carcass of road-killed juvenile animal found on 07.04.2007 (Fig. 3), leg. & det. G. Planinc & V. Cafuta. Snout-vent length = 28.6 cm, tail length = 6.8 cm.
- Sv. Štefan (UTM square UL93). Material: 1 poorly preserved snake shedding of subadult or adult animal found on 10.03.2011, leg. M. Silan, E. Ostanek & T. Jagar, det. E. Ostanek. Comment: previous find in this location is mentioned in Škornik (1989).

The carcass and snake sheddings are kept by the author of this article. Finds of juvenile (carcass and shedding) and subadult are the first documented proofs of reproduction of the species in Slovenia.

Locations of finds are distributed on the slopes and in the plain of the Dragonja river valley with tributaries. According to the results of the reptile survey in years 2007, 2008 and 2010, conducted by G. Planinc and V. Cafuta (G. Planinc & V. Cafuta, unpublished data), it can be concluded that the four-lined snake is a rare or very elusive snake species in Natura 2000 site Slovenska Istra. However, older and recent data show that the species successfully reproduces within the region and has been observed several times on some locations.

Additional field work should be carried out in the future to acquire detailed knowledge on distribution of the four-lined snake not just in Natura 2000 site Slovenska Istra, but elsewhere as well. Monitoring should be established soon.



**Figure 1.** Subadult four-lined snake (*Elaphe quatuorlineata*) found on 31<sup>st</sup> May, 2008, near Koštabona, SW Slovenia (photo: Griša Planinc).

**Slika 1.** Subadultni osebek progastega goža (*Elaphe quatuorlineata*), najden 31.05.2008 v okolici Koštabone, JZ Slovenija (foto: Griša Planinc).



**Figure 2.** Shedding of a juvenile four-lined snake (*Elaphe quatuorlineata*) found on 22<sup>nd</sup> July, 2010, at Stena near Dragonja, SW Slovenia (photo: Vesna Cafuta).

**Slika 2.** Lev juvenilnega osebka progastega goža (*Elaphe quatuorlineata*), najdenega 22.07.2010 v Steni pri Dragonji, JZ Slovenija (foto: Vesna Cafuta).



**Figure 3.** Carcass of a juvenile four-lined snake (*Elaphe quatuorlineata*) found on 7<sup>th</sup> April, 2007, near Sv. Peter, SW Slovenia (photo: Vesna Cafuta).

**Slika 3.** Kadaver juvenilnega osebka progastega goža (*Elaphe quatuorlineata*), najdenega 07.04.2007 v okolici Sv. Petra, JZ Slovenija (foto: Vesna Cafuta).

## Povzetek

Podatki o pojavljanju progastega goža (*Elaphe quatuorlineata*) v Sloveniji so redki in v zadnjih 30 letih omejeni izključno na območje slovenskega dela Istre. Med majem 2002 in marcem 2011 je bilo med popisom plazilcev v območju Natura 2000 Slovenska Istra na sedmih lokacijah zabeleženih deset najdb progastega goža (juvenilni in subadultni osebki ter osem kačjih levov). Natančne lokacije niso podane zaradi naravovarstvenih razlogov. Na Briču je bil najden en kačji lev dne 14.08.2008, v Koštaboni en subadultni osebki dne 31.05.2008 (dolžina telesa brez repa je znašala 88 cm, dolžina repa 23 cm), v Laborju trije kačji levi dne 26.08.2006, 18.08.2007 in 24.05.2008, v Pučah en kačji lev dne 01.04.2007, v Steni pri Dragonji kačji lev odraslega osebka dne 11.05.2002 in lev juvenilnega osebka 22.07.2010, v Sv. Petru povožen juvenilni osebki dne 07.04.2007 (dolžina telesa brez repa je znašala 28,6 cm, dolžina repa 6,8 cm) ter pri Sv. Štefanu en kačji lev dne 10.03.2011. Najdbe juvenilnih in subadultnih osebkov so prvi dokumentirani dokaz uspešnega razmnoževanja vrste v Sloveniji. Lokacije najdb so v dolini reke Dragonje s pritoki ter na pobočjih, ki se vzpenjajo nad dolino. Vrsta je v omenjenem območju Nature 2000 redka oziroma zelo težko zaznavna in se uspešno razmnožuje. Z nekaterih lokacij so znana redna opažanja vrste. Najdeni kačji levi ter kadaver so v hrambi pri avtorici tega članka.

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## References

- Arnold E.N. (2002): A Field Guide to the Reptiles and Amphibians of Britain and Europe, 2. edition. HarperCollins Publishers, London, 288 pp.
- Bressi N., Dall'Asta A., Dolce S. (2004): Sulla presenza di *Elaphe q. quatuorlineata* (Lacépède, 1789) in Italia nord-orientale. Atti Mus. Civ. Stor. Nat. Trieste 51: 267-270.
- Cafuta V. (2005): Poročilo o delu skupine za plazilce. In: Planinc G. (Ed.): Raziskovalni tabor študentov biologije Dekani 2004. Društvo študentov biologije, Ljubljana, 84 pp.
- KPSS (Krajinski park Sečoveljske soline) (2008): Progasti gož zanesljivo živi tudi na območju KPSS. <http://www.kpss.si/si/novice/zanimiva-opazovanja/progasti-goz-zanesljivo-zivi-tudi-na-obmocju-kpss>.
- Kreiner G. (2007): The Snakes of Europe. All Species from West of the Caucasus Mountains. Edition Chimaira, Frankfurt am Main, 317 pp.
- Krofel M., Cafuta V., Planinc G., Sopotnik M., Šalamun A., Tome S., Vamberger M., Žagar A. (2009): Razširjenost plazilcev v Sloveniji: pregled podatkov, zbranih do leta 2009. Distribution of reptiles in Slovenia: a review of data collected until 2009. Natura Sloveniae 11(2): 61-99.
- Planinc G. (1997): Prispevek k poznavanju favne plazilcev (Reptilia) jugozahodnega dela Slovenije. In: Bedjanič M. (Ed.), Raziskovalni tabor študentov biologije Podgrad '96. ZOTKS, Ljubljana, pp. 121-134.
- Škornik I. (1985): Progasti gož (*Elaphe quatuorlineata*) na Steni pri Dragonji. Proteus 47(5): 205-206.
- Škornik I. (1989): Kače – prezirane in prezrte. Proteus 51(9/10): 348-353.
- Tome S. (1996): Pregled razširjenosti plazilcev v Sloveniji. Annales 9: 217-228.
- Tome S. (1999): Razred: Plazilci (Reptilia). In: Kryštufek B., Janžekovič F. (Eds.), Ključ za določanje vretenčarjev Slovenije. DZS, Ljubljana, pp. 284-305.
- Verovnik R. (1995): Dragonja spet preseneča. Proteus 58(3): 126.