

NEW OBSERVATIONS OF STOAT (*Mustela erminea* L.) IN BOSNIA AND HERZEGOVINA

Nova zapažanja velike lasice – hermelina (*Mustela erminea* L.) u Bosni i Hercegovini

Željko Sekulić¹, Saša Kunovac²

Abstract

The Stoat occupies a wide range of habitats. It is often found in successional or forest-edge habitats, in the scrub, alpine meadows, marshes, riparian woodlands, hedgerows, and riverbanks that have high densities of small mammals, especially *Microtus* and *Arvicola* voles (KING, 1983). PULLIÄÄNEN, (1999) stated that coniferous and mixed woodlands are preferred, but that many other habitats are used including tundra and the summits of fells and mountains. Dense forests and deserts are avoided (KING, 1983). Although mentioned in all to-day's Laws on Hunting (1893 – 2014) in Bosnia-Herzegovina, there are not so many records of this species or official reports in hunting bag. Considering its geographic range (IUCN 2020), in Bosnia-Herzegovina, the stoat is recorded only in the western and northern parts of the country. In this paper, we presented new localities where the stoat was observed in Bosnia-Herzegovina, as well as types of habitats where it was recorded.

Key words: stoat, observation, habitat

INTRODUCTION - Uvod

Mustela erminea (stoat) is a small carnivorous mammal, belonging to the *Mustelidae* family. In Bosnia-Herzegovina, the stoat is a game species. Its status is determined by Laws on Hunting that were proclaimed for or in Bosnia-Herzegovina since 1893 till nowadays (ANONYMOUS, 1893, 1931, 1947, 1948, 1955, 1977, 2006, 2009 and 2014). Also, the stoat is unprotected game species. It looks weird that in the last few decades we don't have a single confirmation of the presence of this species at certain locality (photo, corp, skeleton, etc.). According to King, 1983., the stoat occupies a variety of habitats. But, in Bosnia-Herzegovina, there is no confirmed presence below (southern and eastern) city of Banja Luka (Chart 1).

¹National Park "Sutjeska", 73311 Tjentište, Republic of Srpska, Bosnia and Herzegovina

²Faculty of Forestry, University of Sarajevo, Zagrebačka 20, 71000 Sarajevo, Bosnia and Herzegovina

METHODS - Metode rada

After observing the stoat at some locality, we collected coordinates and altitudes using the Mobile Mapper CE instrument. Further, we made a detailed analysis of habitat at each locality and wider surrounding (vegetation, anthropogenic influence, etc.). Coordinates later were transferred at the IUCN map of the geographic range of *Mustela erminea*.

RESULTS - Rezultati

The stoat was observed at one locality in Central Bosnia and two localities in eastern Bosnia. All three localities are outside of the known and confirmed presence of the Stoat in Bosnia-Herzegovina. Coordinates and habitat types are presented in table 1:

Table 1. Localities, coordinates, altitude and habitat types where the stoat was observed

Tabela 1: Lokaliteti, koordinate, nadmorska visina i tipovi staništa u kojima je opažena velika lasica

Locality	Coordinates	Habitat type	Altitude
Kopčić, Bugojno Municipality	44° 5'19.37"N	Meliorated marshland with remains of Pedunculate Oak forests	599
	17°25'21.55"E		m.a.s.l.
Trogir (Presjenica), Trnovo Municipality	43°43'52.72"N	Forest (Beech-Sessile Oak)	792
	18°20'8.68"E		m.a.s.l.
Husad (Jeleč, Miljevina), Foča Municipality	43°28'15.90"N	Forest (Beech-Silver fir with Spruce)	1430
	18°34'44.50"E		m.a.s.l.

The Kopčić locality is a plain between the city of Bugojno and Donji Vakuf in Central Bosnia. This former marshland originally had forests from association *Alno – Quercion roboris* (STEFANOVIĆ et al, 1983), with pedunculate oak as a dominant tree species. Today it has only remains of these forests and rest is cultivated land. This locality belongs to the region of Lowland continental hunting grounds in Bosnia-Herzegovina (KUNOVAC et al, 2009).

Locality Trogir is a typical forest habitat, belonging to the region of Hilly hunting grounds of internal Dinaric mountains (KUNOVAC et al, 2009) with Sessile Oak stands which occupy eastern and southern expositions, while Beech (*Fagus sylvatica*) stands are at northern and western sides of slopes (STEFANOVIĆ et al, 1983).

Third locality, Husad plateau near Foča, belongs to Mountainous hunting grounds of internal Dinaric mountains (Kunovac et al, 2009), with typical forest association for this region *Fago-Abietetum*, beech-silver fir (with spruce) (STEFANOVIĆ et al, 1983).

All three localities of new observations of the stoat are presented at chart 1:

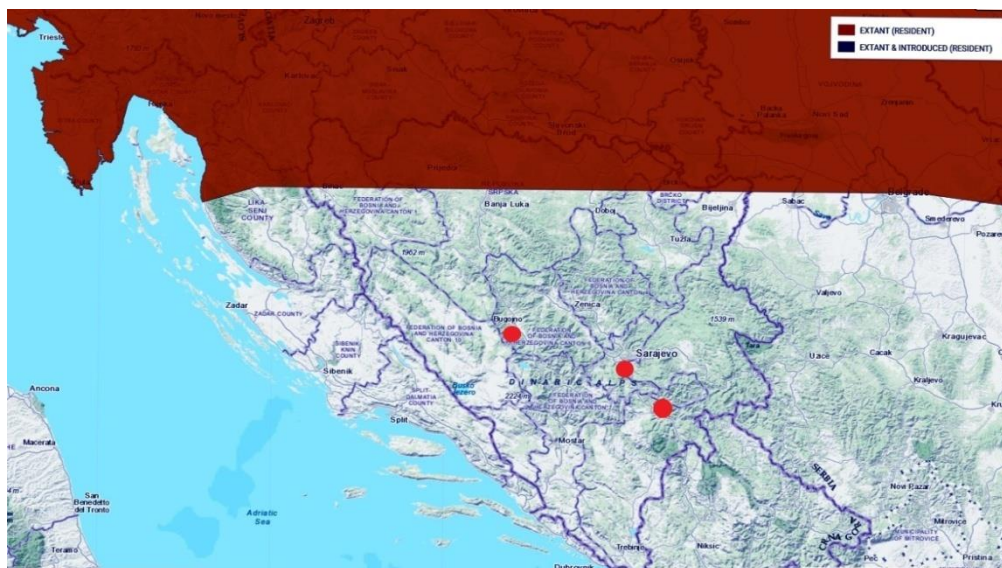


Chart 1. New localities of observations of the Stoat in Bosnia-Herzegovina, within chart of its geographic range according to IUCN 2020.

Karta 1. Lokaliteti novih opažanja hermelina u Bosni i Hercegovini, uz kartu areala ove vrste prema IUCN 2020.

From Chart 1, we can see that all three localities are far outside of the known geographic range of the stoat in Bosnia-Herzegovina. The known geographic range covers only northern and western parts of Bosnia-Herzegovina, mainly lowlands, except some mountainous terrain in western Bosnia-Herzegovina.

New localities are placed in central and eastern Bosnia-Herzegovina, each of them has different habitat structure. Localities in eastern Bosnia are typical forest habitats, but with different forest types. In Central Bosnia, locality is placed in valley of river Vrbas, in typical meliorated land.

New observations of Stoat (Mustela erminea L.) in Bosnia and Herzegovina



Figures 1-2. *Mustela erminea* at Husad plateau; Photo: Željko Sekulić;

Slike 1-2. *Mustela erminea* na platou Husada; Foto: Željko Sekulić;

DISCUSSION AND CONCLUSIONS – *Diskusija i zaključci*

New observations of the Stoat (*Mustela erminea* L.) in Bosnia-Herzegovina go in favor of KING'S (1983), statements about types of habitats which Stoat occupy. In Bosnia-Herzegovina, the stoat is recently registered in three different types of habitats. Those habitats don't differ only in altitude, but in vegetation cover too. However, all habitats have one significant characteristic: an abundance of prey. Small rodents are very common in cultivated land, where they feed on crops, as well in oak and beech forests, where the main food is beech and oak mast. Even at higher altitudes (Husad 1430 m.a.s.l), mixed forests of beech and silver fir (with spruce) provide plenty of food for small rodents, and by them, indirectly to predators such as *Mustela erminea*.

Because the Stoat isn't protected species in Bosnia-Herzegovina, and intensive fur trade till the 70s of last century, it is quite odd that we did not have some observations or confirmations of its presence.

The results of this work suggest that species inventory in Bosnia-Herzegovina needs new revision and much more effort in the future to complete and create detailed maps for each species that inhabit this country.

REFERENCES - *Literatura*

- ANONYMOUS (1893): Zakon o lovu za Bosnu i Hercegovinu. Sarajevo.
- ANONYMOUS (1931): Zakon o lovu Kraljevine Jugoslavije. Beograd.
- ANONYMOUS (1947): Opšti zakon o lovu FNRJ. Beograd.
- ANONYMOUS (1948): Zakon o lovu NR BiH Sarajevo.
- ANONYMOUS (1955): Zakon o lovu NR BiH Sarajevo.
- ANONYMOUS (1977): Zakon o lovstvu SR BiH, (Službeni list SR BiH 7/77) Sarajevo.
- ANONYMOUS (2006): Zakon o lovstvu FBiH, (Službene novine FBiH 4/06) Sarajevo.
- ANONYMOUS (2009): Zakon o lovstvu RS (Službeni glasnik Republike Srpske, br. 60/2009)
- ANONYMOUS (2014): Zakon o izmjenama i dopunama zakona o lovstvu FBiH, (Službene novine FBiH 81/14) Sarajevo.
- DAY M. G. (1968): Food habits of British stoats (*Mustela erminea*) and weasels (*Mustela nivalis*). Journal of Zoology, London 155: 485–497.
- DEBROT S. (1981): Trophic relations between the stoat (*Mustela erminea* L.) and its prey, mainly the water vole (*Arvicola terrestris* Scherman). [In: World Furbearer Conference Proceedings. J. A. Chapman and D. Pursley, eds]. Frostburg, Maryland: 1259–1289.

- ELMEROS, M. (2006): Food habits of stoats *Mustela erminea* and weasels *Mustela nivalis* in Denmark. *Acta Theriologica*, 51, pp. 179–186., <https://doi.org/10.1007/BF03192669>
- ERLİNĞE S. (1981): Food preference, optimal diet and reproductive output in stoats *Mustela erminea* in Sweden. *Oikos* 36: 303–315.
- GARMS H., BORM L. (1981): “Fauna Evrope”, Mladinska knjiga, Ljubljana
- KING C. M. AND MOORS P. J. (1979): On co-existence, foraging strategy and the biogeography of weasels and stoats (*Mustela nivalis* and *M. erminea*) in Britain. *Oecologia* 39: 129–150.
- KING, C. M. (1983): *Mustela erminea*. *Mammalian Species* 197: 1-8.
- KING C. M. (1991): Body size — prey size relationship in European *Mustela erminea*: a test case. *Holarctic Ecology* 14: 173–185.
- KUNOVAC S, MEKIĆ F, VOJNIKOVIĆ S., AVDIĆBEGOVIĆ M., LOJO A., HUKIĆ EMIRA (2009): Rejonizacija i kategorizacija lovišta u FBiH. Šumarski fakultet Univerziteta u Sarajevu i Federalno ministarstvo poljoprivrede, vodoprivrede i šumarstva, Sarajevo.
- LASKA FR. B (1905): *Das Waidwerk in Bosnien und Hercegovina- Klagenfurt*.
- MACDONALD D.W. & BARRETT PRISCILLA (1993): *Mammals of Britain and Europe*; Reprint 2000, Collins Field Guide; HarperCollins Publishers, Hong Kong.
- PULLIÄINEN, E. (1999): *Mustela erminea*. In: A. J. Mitchell-Jones, G. Amori, W. Bogdanowicz, B. Kryštufek, P. J. H. Reijnders, F. Spitzenberger, M. Stubbe, J. B. M. Thissen, V. Vohralík and J. Zima (eds), *The Atlas of European Mammals*, Academic Press, London, UK.
- REID, F., HELGEN, K. & KRANZ, A. (2016): *Mustela erminea*. *The IUCN Red List of Threatened Species* 2016: <https://dx.doi.org/10.2305/IUCN.UK.20161.RLTS.T29674A45203335.en>. Downloaded on 08 April 2020.
- STEFANOVIĆ V., BEUS V., BURLICA Č., DIZDAREVIĆ H., VUKOREP I. (1983): Ekološko-vegetacijska rejonizacija Bosne i Hercegovine, Šumarski fakultet, Univerziteta u Sarajevu, Posebna izdanja No 17., Sarajevo.

SAŽETAK

Hermelin, velika lasica (*Mustela erminea* L.), naseljava različita staništa u Evroaziji. Od četinarskih, mješovitih i listopadnih šuma, šikara, polja, močvara pa do riječnih obala, sve u zavisnosti od prisustva plijena, što su najvećim dijelom miševi i voluharice. Pa ipak, iako se pominje u svim zakonima o lovstvu (1893-2014), koji su donošeni za područje Bosne i Hercegovine, skoro da uopšte nema zvaničnih nalaza ove vrste u našoj zemlji, kao ni prijava odstrela. Ovo čudi kada se uzme u obzir da je hermelin nezaštićena vrsta divljači, te lov na ovu vrstu nije zabranjen. Ako pogledamo kartu rasprostranjenja hermelina (IUCN 2020), u Bosni i Hercegovini, vidi se da je potvrđeno njegovo prisustvo samo sjeverno i zapadno od Banja Luke. U ovom radu smo prezentirali tri nova lokaliteta opažanja hermelina u Bosni i Hercegovini, a sva tri su daleko van areala prema IUCN, (Karta 1). Lokalitet Kopčić, na 599 m.n.v., predstavlja polje i dijelom brežuljaksti dio između Donjeg Vakufa i Bugojna. Ova nekadašnja močvara, danas meliorisana, predstavlja tipičan agrobiotop sa ostacima nekadašnjih šuma lužnjaka i nizijskog brijesta koje pripadaju svezi: *Alno – Quercion roboris*. Dok se, ovaj lokalitet, prema KUNOVAC et al, 2009, nalazi u rejonu kontinentalnih nizijskih lovišta.

Lokalitet Trogir, na 792 m.n.v., u rejonu brdskih lovišta unutrašnjih Dinarida (KUNOVAC et al, 2009), je pod sastojinama zajednice šuma kitnjaka i cera (*Quercetum petraeae - cerris*) iz sveze *Quercion petraeae-cerris*, a alternira sa šumama bukve na hladnijim ekspozicijama.

Treći lokalitet (plato Husada), na 1430 m.n.v, je pod acidofilnim šumama bukve i jele (sa smrčom) (*Fago-Abietetum*), a pripada planinskim lovištima unutrašnjih Dinarida (KUNOVAC et al, 2009). Ova, nova nalazišta hermelina u našoj zemlji, od kojih su dva tipična šumska staništa, ali različitog sastava, a treći predstavlja antropogeno izmijenjeno stanište, zapravo potvrđuju navode KING, 1983., prema kojem hermelin naseljava najrazličitije tipove staništa sa dovoljno plijena.

Corresponding author: Željko Sekulić, National Park “Sutjeska”, 73311 Tjentište, Republic of Srpska, Bosnia and Herzegovina; e-mail address: zeljo.sekulic@gmail.com