

## **On the carnivores (Mammalia, Carnivora) of Sredna Gora Mts**

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**Abstract.** This paper provides both, a literature synopsis and new data on the mammalian carnivores in Sredna Gora Mts, Bulgaria. Among the seven methods used for collecting the data, camera trapping was the main one. A total of 10 species were registered, and 3 were assumed to occur in the area.

**Key words:** mammals, distribution, population.

### **Introduction**

Information on the mammalian carnivores (Carnivora) of Sredna Gora Mountains was published by Georgiev (2005, 2006, 2009), Georgiev *et al.* (2018), Ito *et al.* (2018), Kirilov (2020), Peeva (2015, 2017, 2019), Peeva & Raichev (2016), Peeva *et al.* (2021), Raichev (2010, 2011, 2014a, 2014b, 2020, 2021), Raichev & Georgiev (2008, 2009), Raichev *et al.* (2017, 2020). In this paper we provide both, a literature synopsis and new data on this mammalian order in the area.

### **Material and Methods**

Data on the mammalian carnivores of Sredna Gora Mts was collected more than 20 years. A variety of methods were used: tracking, direct observations, camera traps on animal paths, camera traps on bait stations, inquiry of local people and hunters, hunting bag statistics, road kills, records from the Wildlife Rehabilitation Center of NGO "Green Balkans".

### **Results and Discussion**

A total of 10 species were registered, and 3 were assumed to occur in the area.

#### **Canidae**

##### ***Canis lupus* Linnaeus, 1758**

Rare in the area but it can be supposed that at least one or two family groups are permanent residents. Records:

2009 – one adult female (around 8 years old) was shot by hunters north of Hrishteni village.

Recently, single individuals were observed by hunters and farmers during winter time.

## CARNIVORA

### ***Canis aureus* Linnaeus, 1758**

Common and abundant species in the area (Fig. 1). Treated in a frame of program for reducing carnivore population density.



**Fig. 1.** *C. aureus* photographed in the area of Kirilovo village (photo obtained by E. Raichev).

### ***Vulpes vulpes* (Linnaeus, 1758)**

Common and abundant species in the area (Fig. 2). Treated in a frame of program for reducing carnivore population density.



**Fig. 2.** *V. vulpes* photographed in the area of Kirilovo village (photo obtained by E. Raichev and K. Kirilov).

## CARNIVORA

### Mustelidae

#### ***Meles meles* (Linnaeus, 1758)**

Common and abundant species in the area (Fig.3).



**Fig. 3.** *M. meles* photographed in the area of Zmeevo village (photo obtained by E. Raichev and S. Peeva).

#### ***Lutra lutra* (Linnaeus, 1758)**

Common species in the area in the fresh water habitats (Fig. 4).



**Fig. 4.** *L. lutra* photographed in the area of Chatalka dam (photo obtained by E. Raichev and S. Peeva).

## CARNIVORA

### ***Mustela nivalis* Linnaeus, 1766**

A relatively rare species in the area but it can be observed even during the day in most of the villages at low altitudes. Most evidence for the species' presence came from road accidents. Scats were found mainly in anthropogenic habitats – villages, towns, and even at the suburban area of Stara Zagora city. Some records of the species:

29.01.2020 – north of Medvena hill, south of Kolena village, scats in *Juglans regia* plantation, N42 27 28.84 E25 44 2.48, 200 a.s.l.

15.06.2021 – one road killed male found west of Trakia university, coordinates: N42 24 02.33 E25 33 54.40, 282 a.s.l. (Fig. 5).



**Fig. 5.** *M. nivalis* found killed in a road accident near Trakia university in 2021 (photo K. Kirilov).

### ***Mustela putorius* Linnaeus, 1758**

Rare species in the area. Most evidence for the species' presence came from road accidents. A serious declining of its number in the recent years was reported by local hunters and farmers. Some records:

16.09.1996 – one road killed male found in the south part of Stara Zagora city, coordinates: N42 25 23.94 E25 38 39.74, 189 m a.s.l.

17.01.2022 - one road killed male found east of Liaskovo village, coordinates: N42 24 46.66 E25 30 33.02, 302 m a.s.l. (Fig. 6).

## CARNIVORA



**Fig. 6.** *M. putorius* found killed in a road accident east of Liaskovo village in 2021 (photo K. Kirilov).

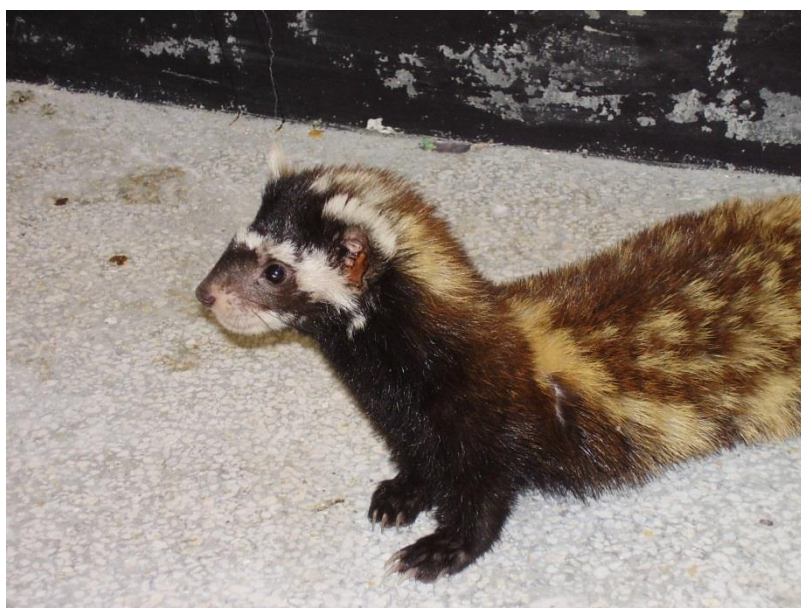
### ***Vormela peregusna* (Guldenstaedt, 1770)**

A rare species in the area. We obtained two records of this species, both on the south slope of the mountains:

1990s – observation of one animal hiding in a hole in the ground in an abandoned small vineyard, area of “Chernia Most”, west of Stara Zagora city, approximate coordinates: N42°25' E25°33', Dilian Georgiev and Ivaylo Klisurov observed.

29.07.2006 – one young male animal was brought by Ilian Stoev at the Wildlife Rehabilitation Center of NGO “Green Balkans” (Fig. 7) which was hit by a car at the road near Podslon village. After the animal was released back in nature at the area of Oryahovitsa village.

No records of this species were reported for the last five years.



**Fig. 7.** *V. peregusna* from the “Green Balkans” Wildlife Rehabilitation Center, 29.07.2006 (photo Dilian Georgiev).

## CARNIVORA

### ***Martes foina* (Erxleben, 1777)**

Very common species in the area, occupying all types of terrestrial habitats. Numerous in the village areas (Fig. 8), and often met even in the city of Stara Zagora.



**Fig. 8.** *M. foina* under a roof structure of a house at Hrishteni village, searching for birds (*Parus major*, *Passer domesticus*) in the holes of the bricks, 21.01.2020, 10:20 p.m. (photo D. Georgiev).

We poorly studied the higher parts of the mountains above 1000 m a.s.l. but during our visits there we found a proper habitat for *Martes martes* (Linnaeus, 1758) – old, mature *Fagus sylvatica* forests. The possible occurrence of the species in this area was checked by the team of Nikolay Kodzhabashev (Forestry University, Sofia), and is a matter of future publications.

South of Stara Zagora city, at the area of the Upper Thracian Plain a fur farm breeding *Neovison vison* (Schreber, 1777) exists and animal escapes are not rare (Koshev 2019). A future spread of this invasive species in the wetlands of Sarnena Sredna Gora can be supposed. Despite all, it must be noted, all of the observations reported were of escaped adults and no litters were found so far.

## **Felidae**

### ***Felis silvestris* Schreber, 1777**

Common species in the area (Fig. 9). However, threats as road kills and hybridization with domestic cats were registered. The high poaching pressure also negatively impacts its population. Some records:

04.04.2018 – road killed animal, south of Kolena village, N42 28 9.13 E25 43 26.61, 229 m a.s.l.



**Fig. 9.** *F. silvestris* photographed passing on badger's path in the area of Ljuliak village (photo obtained by E. Raichev, S. Peeva and D. Georgiev).

By conversations with local hunters in Hrishteni village we gained some information of observations of “big cats with short tails, possibly lynxes” during the hunting season of 2009 (indications for *Lynx lynx* (Linnaeus, 1758)). The species was registered in the nearby ridge of Stara Planina Mts (Zlatanova *et al.* 2009), and its occurrence in Sredna Gora Mts is very possible.

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