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# FIRST HARD EVIDENCE OF LYNX (*LYNX LYNX* L.) PRESENCE IN BULGARIA

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## ABSTRACT

The last officially registered lynx in Bulgaria was killed in 1941 and is considered extinct from the country. Since then there are only unofficial reports of local people throughout the whole country as none of them was officially confirmed. In the last 15 years more and more reports for seen or illegally killed lynx in Bulgaria are gathered from different sources. In May 2008 we initiated two projects to record animal presence and behaviour by 8 Moultrie camera traps. On 21<sup>st</sup> of November 2008 in 6:38 and 6:39 am a camera trap placed for observation of a badger set registered two photos of adult male lynx. This evidence is equal to quality one level of data reliability, according to the common standards for the interpretation of the monitoring data on a Pan-Alpine level accepted by the Pan-Alpine Conservation Strategy for the Lynx. This is considered the first real proof of lynx presence in Bulgaria. Development of the lynx population through the last years is discussed below.

**Keywords:** camera trap, lynx, Osogovo mountain, recovery

## Introduction

The last officially registered in Bulgaria lynx was killed in 1941 in Rila Mountain, (Parangalitz Reserve) by German soldiers and is considered extinct (8). Since then, there are only unofficial reports of local people throughout the whole country as none of them was officially confirmed. In the last 5 years more and more reports for seen or illegally killed lynx are gathered from different sources (6,7,9,10). The idea for possible presence of the species in Bulgaria is supported by the fact that the lynx has been rapidly recovering in Eastern Serbia (specimens coming from the Carpathian population in Romania across Danube River) along the border with Bulgaria following the natural spread of mountains (1,3,4).

Here, we present the first hard evidence of the lynx presence in Bulgaria (Osogovo Mountain) and other records for the potential recovery of the species in the country.

## Materials and methods

Osogovo Mountain is part of Osogovo – Belasitza mountain range and in broader view – part of the Rilo-Rhodopean massifs. Its total area covers 4223 km<sup>2</sup>, of which only 996 km<sup>2</sup> are located in Bulgaria. The Bulgarian part of the mountain is medium to low in altitude, with highest peak (Ruen) of 2225 m. Its slopes are covered mainly by massifs of unfragmented

and undisturbed beech forests (*Fagus sylvatica*), which provide for big densities of roe deer (*Capreolus capreolus*) and wild boar (*Sus scrofa*). Almost everywhere the beech delineates the upper border of the forest. The highest parts of the mountain (above 1800 m. a.s.l.) are covered with *Juniperus* shrubs and grass vegetation mixed with *Vaccinium* sp. and the lower parts are dominated by *Quercus robur*, *Q. frainetto*, *Q. cerris*, *Q. petraea*, etc sometimes mixed with *Ulmus* sp., *Carpinus* sp., *Fraxinus* sp., *Corylus avellana*, etc. Most of the area is managed by State Hunting Reserve “Osogovo”. It is situated in protected border area, which is a reason for the relatively well conserved habitats and low anthropogenic pressure. On the other side the strict border control till the end of 80-ties determines Osogovo as one of the least studied mountains in Bulgaria.

In May 2008 the Department of Zoology and Anthropology of Biological Faculty, Sofia University initiated the first two research projects in Bulgaria based on camera trapping, funded by the Scientific Research Fund of Sofia University. The first is aiming the recording of different species presence in Osogovo as part of the European network NATURA 2000 and the second is concerned with a study of European badger (*Meles meles* L.) presence and behaviour. For each projects 4 Moultrie Game Spy 4.0 camera traps were provided – two model M-40 (regular flashlight) and two I-40 (infrared flashlight). They were placed in typical forest

habitats and in front of badger sets.

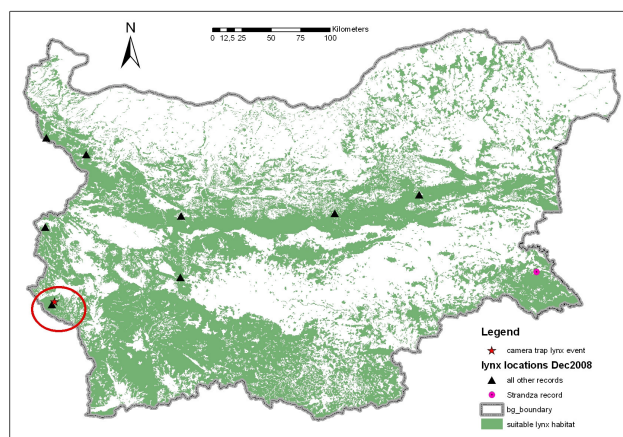
## Results and Discussion

On 21 of November 2008 in 6:38 and 6:39 a camera trap I-40 (with infrared flash) placed for observation of a badger set registered two photos of adult male lynx (**Fig.1, Plate 1**) This evidence is equal to quality 1 level of data reliability, according to the common standards for the interpretation of the monitoring data accepted by the Pan-Alpine Conservation Strategy for the Lynx (2).

A week after the photos, we also found fresh footprints of adult lynx (**Plate 2**) on the snow nearby the camera trap (quality 2 data), most probably of the same animal.

The last 5 years there was sporadical data from Osogovo – big cat like, lynx size claws observed by us on the back of a cow in 2003 (quality 2 data), observations by the locals of „very large cat with short tail and ear tufts”, (quality 3 data), information for lynx tracks found in 2005 by the director of the Hunting Reserve (quality 2 data). The last information from the local people is about two lynx observed together during the breeding season in 2008 which indicates for possible reproduction of the species in the country. This will

provide a chance for a permanent return of this cat in Bulgaria.



**Fig. 1.** Map of Bulgaria indicating Osogovo Mountain (the oval), the location of camera trap lynx record and the recent lynx data (quality 2 and 3)



**Plate. 1** The camera trap photos

The origin of lynx establishing in Osogovo is not yet known. It could be well from the Carpathian population but at the same time the area is only some 100 km from Kosovo which holds part of the Balkan lynx population. Kosovo crisis in 1998 – 1999, the following NATO bombing and later on - the Macedonian crisis in 2001 was proved to be a serious pressure to the fauna and could possibly push specimen from the Balkan population to move to the more undisturbed mountains of South-West Bulgaria. The possible origin could be proved only by genetic analysis of samples

(5).

The first data for the appearance of lynx in Bulgaria from Serbia started from Western Stara Planina Mountain in 90ties with the fall of border fences. Since then, there are more and more evidences collected (**Fig. 1**). On 10<sup>th</sup> of March 2003 large carnivore specialists from Balkani Wildlife Society (Alexander Dutsov *pers. comm.*) found and photographed lynx tracks in the region of Kraishte, near the town of Trun (quality 2 data).

In 2005 a skull of adult lynx was provided to one of the

authors of this paper (D. Zlatanova) as the owner was claiming that the lynx was killed in 1999 in Stara Planina near the town of Etropole, place “Elatzite” (**Plate 3**). The craniometrical measurements of this skull compared to these of the Balkan lynx from Macedonia and the Carpathian lynx from Romania show that this specimen is most probably a dispersing young (2-3 years old) male belonging to the Romanian Carpathian population.



Plate. 2 The found footprints

In March 2005 lynx tracks were photographed and roe deer killed by lynx was found in West Stara Planina (7). In May 2005 there was direct lynx observation reported by a specialist in Strandza Mountain, near the Turkish border and

nearby the same area we recorded lynx vocalisation in March 2006 (12). If lynx presence could be officially proved in Strandza, this would be the most puzzling appearances of all. This presence is only possible if the species had never been extinct from the region. There are no reports of lynx presence in the area between nowadays sightings and Strandza mountain.

There are other quality 2 data reported within the last 10 years (**Fig.1**). Most of the contemporary evidences of lynx sightings are connected with the State Hunting Reserves (managed by State Forestry Agency). The density of wild animals in Bulgaria, game and protected is much higher in the managed hunting areas than in protected zones. Our observations of the State Hunting Reserve "Osogovo" through the years confirm this fact. Due to the well preserved habitats and the rich food base (supported by supplementary feeding) as well as the better safeguarding and more consecutive management (compared to the state forestries or the protected areas) hunting reserves in Bulgaria provide better conditions not only for the quick restoration of the roe deer but of the carnivores following it - like the lynx.



**Plate. 3** Lynx skull from Etropole region of Stara Planina mountain

What possible future could be expected for the lynx in Bulgaria? The species is officially protected by the Bulgarian Biodiversity Act and the poaching is incriminated by the law. Still one of the biggest threats to its survival and the establishment of a stable population is its ‘Extinct’ status. The fact that the lynx is not officially recognized as present

leads to no real implementation of its protection status, and thus to its unpunished physical extermination during the hunting of other species. This makes poaching difficult to prove.

There is an urgent need of official recognition of the species as part of the Bulgarian fauna and thus better

enforcement of the law. More research on the lynx reestablishment in Bulgaria is also needed. This species is not only valuable for Bulgaria but is a priority species for the countries of the European Union and as such is included in many European directives, acts and initiatives, including the NATURA 2000 network which protect the species of European interest.

The presence of this new “old” species is accompanied with a lot of concerns and worries of the local people and game managers that its presence will automatically mean more strict measures and limitations. In fact, with such a flexible species only need support of its favourable conservation status in means of food resources, habitat availability and direct protection from illegal killing. Conserving such priority species as the lynx and the bear would safeguard not only the biodiversity of Bulgaria but will contribute to the biodiversity of Europe.

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