The lynx in Bulgaria: present conservation status and future prospects

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1. Present status and distribution

The present official conservation status of the lynx is extinct.

1.1. Historical review

The first records for lynx in Bulgaria date back to 1862 (Map 1, Table 1). The last official records for killed lynx are from Pirin Mountains in 1935, near Malnik (Atanasov 1968), and 1941 Nanore reserve Parangolitsa (Spirdonov & Spasoiev 1955). For the period 1862–1941 the recorded cases are 27, covering up to 32 animals, killed, caught or seen. All the records show that the lynx in Bulgaria inhabited mainly the main ranges of Pirin, Rila, Rodopi and Stara Planina (Balkan) Mountains, less in Sredna gora, Lecon and Strandja Mountains. The species was confined to big forest complexes, both deciduous and coniferous, using rock and shrub clearances. The lynx in Bulgaria occupied more diverse habitats than other populations in Europe. It has even been seen in dry vegetation (like Strandja Mountains). Table 1 summarizes the lynx records for the period 1862–1935.

1.2. Current trend/development in the past decades

Current data about lynx presence in Bulgaria are very scarce. During the period 1941–1999 most of the information on observed specimens came from local people. The most interesting fact is that 90% of the information came from the border area between Bulgaria and Yugoslavia – the region of Western Stara Planina, along the border. There are also some reports from Rila Mountains, near Trun (also along the border). The locals, mostly forest guards, shepherds and hunters spoke mainly about observed specimens, but some of these cases were officially proved. From Western Stara Planina there is also additional information about a lynx being killed in 1995 by a local hunter, but it has still not been checked if the skin is available. Some of the conclusions are made from remains – fingerprints or faeces. These are the only data directly received by fieldwork done by the Balkan Wildlife Society. In March 2000 a footprint similar to that of a lynx was seen and photographed. Later on, additional information was received by a local person of an individual seen in November 1999, exactly where Petko Tzvetkov found the track. These are also many other but uncertain data from different parts of Bulgaria. All the records are summarized in Map 2.
<table>
<thead>
<tr>
<th>Year</th>
<th>Observation</th>
<th>Locality</th>
<th>Altitude</th>
<th>Biotope</th>
</tr>
</thead>
<tbody>
<tr>
<td>1882</td>
<td>2 juveniles caught</td>
<td>Rila Monastery, Chernesma</td>
<td>1100 m</td>
<td>In hole</td>
</tr>
<tr>
<td>1886</td>
<td>Observed and killed</td>
<td>Stara Planina (Balkan), village Kras, Kazarlak district</td>
<td>350-400 m</td>
<td>Rock concretions and bushes</td>
</tr>
<tr>
<td>1887</td>
<td>Killed</td>
<td>Stara Planina, near Koprinka village, Samokov district</td>
<td>1000-1200 m</td>
<td>Steep slopes and rock concretions with bushes</td>
</tr>
<tr>
<td>1887</td>
<td>Killed</td>
<td>Rila Mountain, Demirkapiya, Samokov district</td>
<td>2539 m</td>
<td>Dwarf pine forests</td>
</tr>
<tr>
<td>1887</td>
<td>Killed</td>
<td>Stara Planina, place Ticha, Kotel region</td>
<td>600 m</td>
<td>Mixed forest with bushes</td>
</tr>
<tr>
<td>1889</td>
<td>Killed and stuffed in Sofia University</td>
<td>Sredna gora Mountain, village Petrich, Panagyuriste district</td>
<td>500-800 m</td>
<td>Thick oak forest</td>
</tr>
<tr>
<td>1891</td>
<td>2 lynx observed</td>
<td>Sredna gora Mountain, peak Malak Brania,</td>
<td>1000 m</td>
<td>Oak forest and bushes</td>
</tr>
<tr>
<td>1891</td>
<td>Killed</td>
<td>West-Rhodope Mountains, Sutka peak,</td>
<td>2187 m</td>
<td>Virgin coniferous forest</td>
</tr>
<tr>
<td>1894</td>
<td>Tracks of lynx following deer</td>
<td>Rila Mountain, along Shtara river</td>
<td>1300 m</td>
<td></td>
</tr>
<tr>
<td>1896</td>
<td>Live capture</td>
<td>?, Bulgaria, given to Berlin Zoo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1898</td>
<td>1 male killed</td>
<td>Tvardishki Balkan, Place Shishkan Rid</td>
<td>1250 m</td>
<td>Thick high-trie forest with scrub</td>
</tr>
<tr>
<td>1898</td>
<td>1 female killed</td>
<td>Tvardishki Balkan, Place Shishkan dali</td>
<td>1250 m</td>
<td>Rocky slopes with thick forest and scrub</td>
</tr>
<tr>
<td>1899</td>
<td>Killed</td>
<td>Lozen Mountain, German Montatti,</td>
<td>1000 m</td>
<td>Mixed forest with concretions</td>
</tr>
<tr>
<td>1899</td>
<td>Observed</td>
<td>Lozen Mountain, place Urven,</td>
<td>1000 m</td>
<td>Rock slopes with thick forest and scrub</td>
</tr>
<tr>
<td>1900</td>
<td>Killed</td>
<td>Tvardishki Balkan,</td>
<td>1250 m</td>
<td></td>
</tr>
<tr>
<td>1902</td>
<td>Killed</td>
<td>Varbishki Balkan,</td>
<td>800-1000 m</td>
<td>Perennial oak forest</td>
</tr>
<tr>
<td>1905</td>
<td>4 live caught juvenes</td>
<td>Rila Mountain, Tzatsifestyle koliba</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1905</td>
<td>Killed</td>
<td>Rila Mountain, place Smesteno</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1908</td>
<td>Killed</td>
<td>Sredna gora Mountain, Vetrinsko region</td>
<td>800-600 m</td>
<td>Oak forest</td>
</tr>
<tr>
<td>1908</td>
<td>Killed</td>
<td>Rila Monastery</td>
<td>1100 m</td>
<td>Mixed deciduous and coniferous forest</td>
</tr>
<tr>
<td>1908</td>
<td>Tracks</td>
<td>Tzam Kozija, Bonovetz</td>
<td>1450 m</td>
<td></td>
</tr>
<tr>
<td>1911</td>
<td>Observed</td>
<td>Rila Mountain, Brieboz</td>
<td>1200-2400 m</td>
<td></td>
</tr>
<tr>
<td>1911</td>
<td>Observed</td>
<td>Ktiva reka, Smelitiat</td>
<td>1500-2030 m</td>
<td></td>
</tr>
<tr>
<td>1915</td>
<td>Tracks of two lynx found</td>
<td>Rila Mountain, Simpistowo</td>
<td>1740 m</td>
<td>Perennial virgin, coniferous forest</td>
</tr>
<tr>
<td>1930</td>
<td>Killed</td>
<td>Strandura Mountain, Elitchovo district</td>
<td></td>
<td>Thick oak forest</td>
</tr>
<tr>
<td>1975</td>
<td>Killed</td>
<td>Pirin Mountain, near Melnik</td>
<td>600 m</td>
<td></td>
</tr>
</tbody>
</table>

* Stomach full of meat
* In stomach – meat covered with fur from roe and roe deer
There is a good reason for the assumption that some individuals could migrate to enter Bulgaria from the Carpathian population - records received from Eastern Yugoslavia in 1992-1995 along the border to Bulgaria (Mite & Panumovic 1992). It could possibly be done by migrations across the Danube through natural re-colonization of the Carpathian lynx. There is also the probability of migration of lynx from the Balkan population because of the war in Kosovo. Therefore more detailed research is needed to prove the presence or the absence of lynx in that region.

In 1992 the Bulgarian NGO Wilderness Fund made an assessment of the habitat in the Central Balkan (Stara Planina Mountains) and a feasibility study with the assistance of an expert from the French National Hunting Service, aiming at a proposed reintroduction in the area. The results were promising at that time but later on drastic changes in the situation occurred - loss of prey base due to poaching and ineffective game and hunting control and loss of suitable habitats because of inappropriate management of protected areas.

1.3. Legal status / hunting / poaching
In the past the lynx was registered as a subject for hunting. Today the lynx is legally protected throughout the whole year by the Bulgarian Law for Protection of Nature, which assigns a fine of 1000 Lv. (= 1000 DEM) for a killed or 500 Lv. for a captured animal. The species is included in the Bulgarian Red Data Book under the category Extinct.

Although it is legally protected, there are some unofficial data that poachers or hunters had killed several lynx in Western Stara Planina during the last ten years. Due to its extinct status and lack of recent information, any specimen eventually found in Bulgaria is vulnerable to poaching.

2. Prey base
The prey base data is collected from official statistics of the National Forestry Board.

2.1. Status of main wild prey species (roe deer Capreolus capreolus)
The main prey base for the lynx, the roe deer, has been decreasing in numbers for the last 10 years (Fig. 1.).

2.2. Availability of alternative wild prey (hares and capercaillie)
The alternative prey base consists of Lepus europaeus and Tetrao urogallus. After a decrease up to 1997, the hare population showed an increase over the last two years. The capercaillie population remained fairly stable (Fig. 2. & Fig. 3.).

2.3. Information on killing of domestic animals (sheep, goats)
There is no available information on killing of domestic animals by lynx in Bulgaria.

Figure 1. Development of the roe deer population in Bulgaria 1988-1999.

Figure 2. Development of the hare population in Bulgaria 1995-1999.

Figure 3. Development of the capercaillie population in Bulgaria 1988 - 1999.
3. Habitat

The habitat suitable for lynx in Bulgaria has shown extensive fluctuations due to the transitional period in the country, accompanied by law changes, land restitution and a bad economic situation.

3.1. Status and development of forests

All forests in Bulgaria are managed and exploited according to the Forest Law and forest management projects. The organizational structure for management of the forests consists of three levels: the Committee of Forests, 16 Regional Forestry Boards and 164 Forest Enterprises. Until recently, all forests were owned by the state, having been nationalized in 1947. The restoration of ownership rights on municipal (57% of the forests prior to 1947) and private forestland (19% before 1947) will soon be accomplished. In 1990 the total forestland area comprised 3871.4 thousand hectares. The stands of natural origin covered 2295.0 thousand ha (55.8% of the total). The stands of artificial origin covered 1032.1 thousand ha (26.7%). The forested area was 3348.6 thousand ha or 86.5% of the total forestland area. This is 30.16% of the total area of the country (or 0.372 ha of forest per citizen). The coniferous high stem forests represent 33.3% of the total area, while broad-leaved high stem forests are 21.4%.

3.2. Distribution, size, status of protected areas (e.g. national parks)

The distribution of the protected areas is shown on Map 3, compiled by GEF/ARD Biodiversity Project for Bulgaria, 1998.


The protected areas in Bulgaria are: Reserve, National Park, Natural Monument, Supported Reserve, Nature Park and Protected Place. The sizes of the three national parks are as follows: Pirin 44066.7 ha, Rila 107925.7 ha and Central Balkans 73261.8 ha.

4. People and institutions

Several GO and NGO institutions in Bulgaria are directly connected to lynx conservation:

4.1. Governmental organizations (GOs)

- Ministry of Environment and Waters: directly responsible for conservation legislation and control of protected areas, wildlife and pollution. Controls through regional inspectorates.
- Ministry of Agriculture, Forests and Agrarian Reform: the department of the National Forestry Board is directly responsible for the control and management of the forests and hunting.
- Union of Hunters and Fishermen (semi-governmental): a new legislation concerning management is being prepared.

4.2. Non-governmental organizations (NGOs)

There are more than 30 NGOs in Bulgaria concerning wildlife conservation but only 5-15 are really functioning:
- Balkan Wildlife Society
- Wilderness Fund
- Bulgarian Biodiversity Preservation Society - SEMPETREV
- Green Balkan Federation
- Bulgarian Society for Protection of Birds (conducts mammal conservation projects too)
- Union for Protection of Nature, etc.

4.3. Universities / scientists

 Universities:
- Sofia University with related departments, Sofia
- University of Forestry, Sofia
- Veterinarin Institute, Stara Zagora
- Private universities

 Research institutions:
- Institute of Zoology, Sofia, and Institute of Ecology, Sofia. Both institutes are under the management of the Bulgarian Academy of Science
- Institute of Forests, Sofia

Summary

Having in mind the new records about the changes in the conservation status of the lynx in Bulgaria, we propose the following steps:

1. Establishment of a national lynx working group (government and non-government organizations included) to produce a national lynx management plan.
2. Research on cases of lynx recently announced as seen or killed in Bulgaria.
Available literature / reports / statistics
Apart from the in depth report done by Atanassov Nenov, 1964, there are few available sources on lynx in Bulgaria. The available literature is summarized below.


Popov, R. 1953. Materiali za pridvahna na subfozilane vi-
dove or rod Felis [Martenfor study of the subfozilae from genus Felis]. Sp. na Bulg. zoo-gro. dovo, S 1-6 (in Bulgarian).

Spassov, N. 2000. Risip – fanon na Bulgrska gori, nojie bl ne ite ima vori shams [The lynx - fumon of the Bulgarian forests, may be it will have a second chance]. Balkanskii dyaloy, 7 (3–9 march 2000), 13 p. (in Bulgarian).


Spidzov, G. and Spassov, N. 1998. Large Mammals (Macromammalia) of Bulgaria: Lynx. Bulgaria’s Biological Di-
