

EURASIAN LYNX (*LYNX LYNX*) AND ITS CHANCE FOR SURVIVAL IN CENTRAL EUROPE: THE CASE OF THE CZECH REPUBLIC

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Abstract. 4,873 records of Eurasian lynx occurrence in the Czech Republic (CR) were obtained from 1990. During 1990–1994, the occurrence was recorded in 21.7% of the territory of the CR, during 1995–1999 in 35.6% and during 2000–2001 in 20.5%. The Eurasian lynx population was at its peak in 1997–1998 with abundance 100–150 individuals. The current estimate shows only 80–100 animals. Four of the nine radio-telemetrically monitored Eurasian lynx have probably been illegally shot. Hunters' attitude to the Eurasian lynx was examined on the basis of anonymous questionnaires in the areas of Eurasian lynx occurrence. Only 19.2% of the polled hunters believed the Eurasian lynx to play a positive role in ecosystems, 36.9% of them were aware of concrete cases of illegal hunting and 10.3% of them admitted to killing the Eurasian lynx illegally. Poaching turns out to be the most serious cause of the decrease of Eurasian lynx population in the CR. The attitude of students of game management to the Eurasian lynx was more positive.

Key words: *Lynx lynx*, Czech Republic, population changes, poaching

INTRODUCTION

Like in other areas of Central Europe, the Eurasian lynx (*Lynx lynx*) was exterminated in the territory of the Czech Republic in the 18th and 19th centuries (Kratochvíl & Vala 1968; Butzeck *et al.* 1988; Breitenmoser *et al.* 1998; Huber & Kaczensky 1998; Kaczensky 1998; Molinari 1998; Ragni *et al.* 1998; Stahl & Vandel 1998). However, in the second half of the 20th century it began to spread again from the Slovak Carpatians (Kratochvíl 1968; Hell 1974; Červený *et al.* 1996). During 1970–1989 some 22–27 animals were released to replenish the population on both the Bavarian (Bayerischer Wald) and Czech (Šumava Mountains) sides (Červený & Bufka 1996). The Eurasian lynx population was at its top in 1997–1998, when its estimates ranged between 100 and 150 individuals (Červený *et al.* 2001). The growth of the Eurasian lynx population was followed by its spread to the neighbouring countries, Germany and Austria, and the increasing conflicts with livestock breeders and hunters who claimed that their game was suffering increased 'damage' from this predator. Although the Eurasian lynx has been under legal protection in the Czech Republic since 1947 and 1965 (provided for in both hunting and nature protection legislation), respectively, it often falls victim to illegal hunting. The Management Plan of the

Eurasian lynx population in the Czech Republic (dated 1998) divided the Czech Republic into three zones with different level of Eurasian lynx protection, exceptional legal shooting being allowed in two of them (Koubek *et al.* 1997). However, the aforesaid regulations were not observed by hunters. More than 50 skulls of poached Eurasian lynx were received for craniometric examination during the period of 1989–2001 alone (Červený & Koubek 2000). Thus the fate and survival of the Eurasian lynx in the Czech Republic is primarily in the hands of hunters.

MATERIAL AND METHODS

Changes in the abundance of the Eurasian lynx population have been monitored on the basis of regular evaluation and interpretation of all available information. Every year, the number of Eurasian lynx is estimated on the basis of snow tracking in the areas of their regular occurrence (Červený & Bufka 1996; Kunc 1996). Since 1993, questionnaires on actual occurrence of the species have been regularly sent to all the 5,576 hunting districts in the Czech Republic and 39 regional authorities of State Nature Protection (Červený *et al.* 1999). Radio-telemetric monitoring of the Eurasian lynx in the Šumava Mountains has been

carried out since 1996 (Bufka *et al.* 2000). All casual observations, those from the border zones of the neighbouring states including (Hell & Slamečka 1996; Wölfl *et al.* 2001), as well as published information, have also been recorded. Last but not least, information from the annual (spring) game surveys (in relative values), covering the whole Czech territory has also been made use of (Červený *et al.* 2001). Thus on the whole, 4,873 records of Eurasian lynx occurrence were obtained from the beginning of 1990 until the end of 2001. Changes in the Eurasian lynx population were evaluated mainly in the form of maps of the species distribution in standard squares of the RFME system (P6' × M10') mapping network, the size of each square equalling 134.4 km² (11.2 × 12 km; Slavík 1971). Studies of changes in the Eurasian lynx population covered the following periods: 1990–1994, 1995–1999 and 2000–2001. Changes in the number of Eurasian lynx were expressed on the basis of comparisons of relative percent values of the stock from spring surveys, presented in game management statistics.

The attitude of hunters to the Eurasian lynx (the frequency of illegal shooting including) was evaluated on the basis of special anonymous questionnaires, sent to credible respondents in 2001 in the regions of Eurasian lynx occurrence. As a result, opinions of 204 hunters (1.68% of all hunters of the regions concerned), 133 students of game management of secondary forestry schools in the areas of Eurasian lynx occurrence (55.6% of all the students) and 78 students of game management of Forestry Faculties of the universities in Prague and Brno (44.6% of all forestry students) were surveyed.

RESULTS AND DISCUSSION

Changes in the Eurasian lynx distribution that took place in the Czech Republic after 1990 until the present time are shown in Figure 1. In the period of 1990–1994, Eurasian lynx were reported in 136 quadrats (21.7% of the area of the Czech Republic), but stable occurrence was registered only in 61 of these (9.7%). In the period of 1995–1999, records of Eurasian lynx occurrence were made in 260 quadrats (35.6%), and stable occurrence was registered in 73 quadrats (11.6%). Currently, the Eurasian lynx has been reported known only in 129 quadrats (20.5%), and its stable occurrence has been registered in 63 quadrats (10.0%). Eurasian lynx abundance reached the maximum between 1997 and 1998 when the population was estimated at 100–150 individuals (Červený *et al.* 2001); currently there are approximately 80–100 individuals. This decrease in the number of these predators

corresponds to the findings of the population development, as recorded in spring census data based on game statistics (Fig. 2).

From 1996 up till now, nine Eurasian lynx (seven males, two females) have been radio-telemetrically recorded in the Šumava Mountains (Bufka *et al.* 2000). Four of them (three males, one female), making 44.4%, were probably illegally shot when, seeking and establishing their territories, they left the Šumava forest area and entered a more densely populated afforested area of foothills with much more intensive game management.

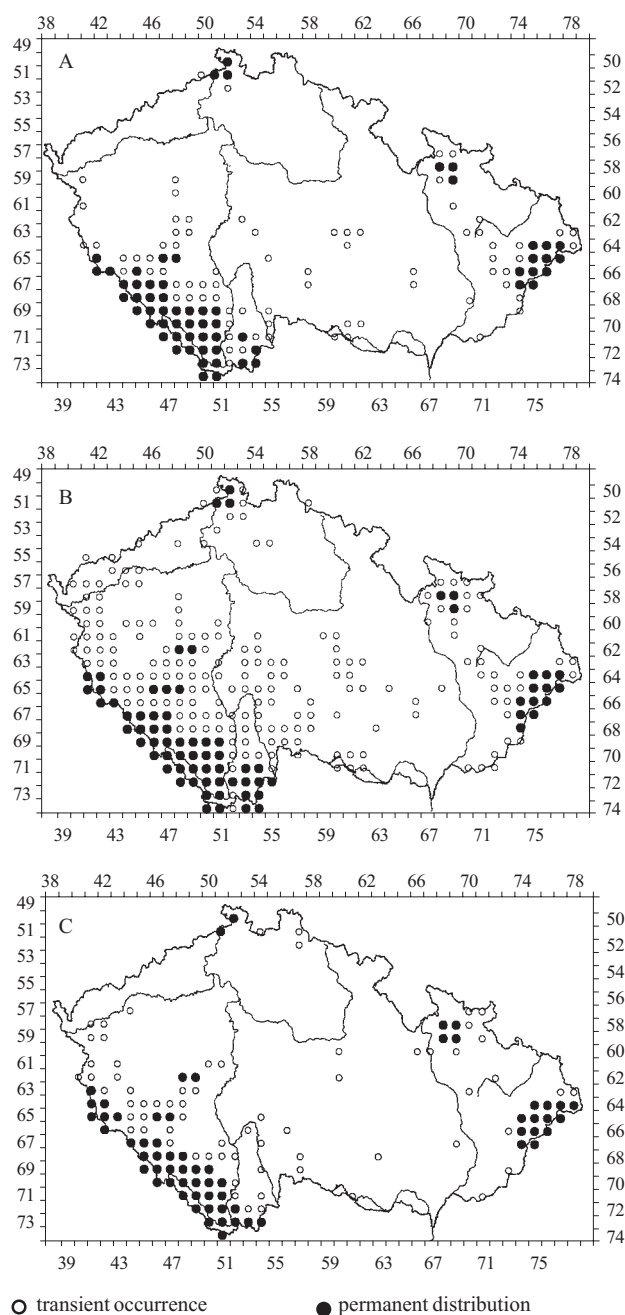


Figure 1. Distribution of the Eurasian lynx in the Czech Republic. A – 1990–1994, B – 1995–1999, C – 2000–2001.

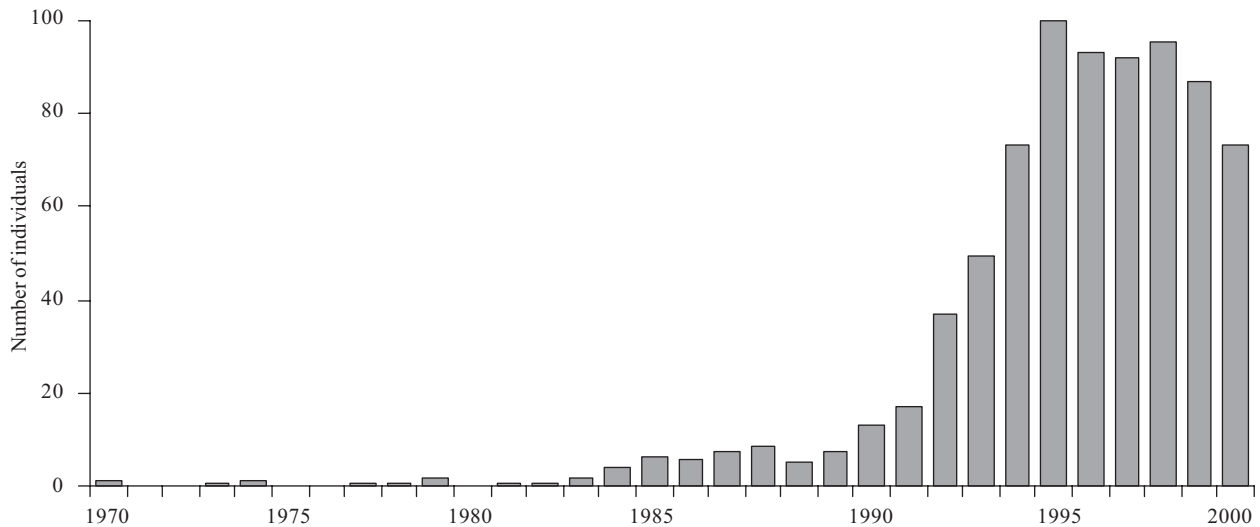


Figure 2. Development of the Eurasian lynx population in the Czech Republic (according to the spring census reported by the hunters).

Table 1. Hunters' and students' attitudes in the Czech Republic to the Eurasian lynx (%).

| Questions | Responses | Hunters | Students | |
|--|---------------------------------------|---------|-------------------|--------------|
| | | | Secondary schools | Universities |
| Does the Eurasian lynx belong in wildlife of the CR? | Yes | 37.8 | 43.6 | 60.3 |
| | In some places only | 45.1 | 43.6 | 35.9 |
| | No | 10.3 | 12.8 | 3.8 |
| The effect of the Eurasian lynx on the wildlife in the CR is: | Positive, or primarily positive | 19.2 | 16.6 | 46.2 |
| | Sometimes positive, sometimes adverse | 50.9 | 50.3 | 42.3 |
| | Adverse, or primarily adverse | 29.8 | 33.1 | 11.5 |
| Does the Eurasian lynx endanger the planned roe deer stock in the CR? | Yes, or primarily yes | 59.2 | 49.7 | 30.8 |
| | No, or primarily no | 40.8 | 49.6 | 69.2 |
| | Don't know | | 0.7 | |
| Should shooting of the Eurasian lynx be permitted in the CR? | Yes, all the year round | 9.3 | 3.1 | 5.1 |
| | Yes, but with regulation | 84.8 | 71.7 | 79.5 |
| | No | 5.9 | 5.2 | 15.4 |
| Do I know an actual case of an illegally shot Eurasian lynx in the CR? | Yes | 36.9 | 23.4 | 16.7 |
| | No | 62.2 | 76.6 | 83.3 |
| | Not indicated | 0.9 | | |
| Have I illegally shot any Eurasian lynx in the CR? | Yes, but only one | 8.3 | | |
| | Yes, several | 1.5 | | |
| | No | 89.7 | | |
| | Not indicated | 0.5 | | |

The attitude of Czech hunters to the Eurasian lynx is illustrated by the data presented in Tables 1 and 2. A more positive attitude was registered among students, particularly among the university ones. A positive response to the question whether the Eurasian lynx should be considered to be a part of the wildlife of the

Czech Republic was received from 37.8% of the polled hunters, 43.6% of secondary school students and 60.3% of university students. A positive role of the Eurasian lynx in the ecosystem was confirmed by 19.2% of hunters, 16.6% of secondary school students and 46.2% of university students. Those believing that the Eurasian

Table 2. Hunters' and students' tolerance to the Eurasian lynx and the reasons for illegal shooting of the Eurasian lynx in the Czech Republic (%).

| Questions | Responses | Hunters | Students | |
|---|---|---------|-------------------|--------------|
| | | | Secondary schools | Universities |
| Where is the Eurasian lynx tolerated? | Large expanses of forests | 26.4 | 18.9 | 46.4 |
| | Mountain areas | 16.1 | 18.9 | 17.9 |
| | Large protected territories | 43.3 | 62.1 | 71.4 |
| | Areas with suitable natural conditions | 9.4 | 13.8 | 21.4 |
| | Elsewhere | 33.9 | 48.3 | 25.1 |
| What are the reasons for illegal shooting of Eurasian lynx? | Damage to game, loss of game | 74.1 | 76.8 | 60.8 |
| | Damage to livestock | 5.9 | 4.5 | 2.6 |
| | Absence of compensation for damage | 4.4 | 3.8 | 2.6 |
| | Eurasian lynx and hunter competing for prey | 6.4 | 3.8 | 28.2 |
| | Trophy, hunting experience | 23.8 | 39.1 | 23.1 |
| | Commercial shooting | 1.9 | 6.8 | 1.3 |
| | Non-availability of shooting permits | 13.2 | 6.1 | 3.8 |
| | Poor information and education on wildlife | 4.9 | 6.1 | 8.9 |
| | Other reasons | 40.1 | 30.1 | 26.9 |

lynx is a threat to the existence of roe deer (*Capreolus capreolus*) standard stock included 59.2% of all hunters, 49.7% of secondary school students and 30.8% of university students. All-year-round shooting of the Eurasian lynx should be permitted in the opinion of 9.3% of the polled hunters, 3.1% of secondary school students and 5.1% of university students. It is interesting to note that 36.9% of hunters, 23.4% of secondary school students and 16.7% of all university students knew about the existing cases of illegal Eurasian lynx shooting. It is of paramount importance that 8.3% of the respondents of the group of hunters admitted illegally shooting one Eurasian lynx themselves, another 1.5% confessed to illegally shooting more than one Eurasian lynx, and still another 0.5% responded that they had shot Eurasian lynx without indicating the number (10% on the whole). Hunters' attitude to the Eurasian lynx in the Czech Republic may be considered as a model example for the whole Central Europe, where the Eurasian lynx was totally exterminated by human activities in the past. Throughout this area, game management has historically been dominated by the cult of trophies and controlled breeding of game ungulates. Such CIC (International Council for Game and Wildlife Conservation) game management conception perceives the Eurasian lynx as an adverse factor. Hence, the state of the Eurasian lynx is paradoxical now: on the one hand, the government declares support to the Eurasian lynx population survival, on the other, hunters considerably restrain its development. Indeed, poaching is the most serious reason for the decrease in the number

of Eurasian lynx in the Czech Republic. Up to now, even some enlightenment of hunters has not proved to be very effective. Strict Eurasian lynx protection is totally inefficient, but reasonable protection is misapplied. The only way to protect (or well manage) the Eurasian lynx is to educate a new generation of game managers and hunters capable of recognizing the real importance of the Eurasian lynx in forest ecosystems.

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APIE GALIMYBES LŪŠIAI IŠLIKTI VIDURIO EUROPOJE REMIANTIS ČEKIJOS RESPUBLIKOS PAVYZDŽIU

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SANTRAUKA

Nuo 1990 metų lūšis Čekijos Respublikos teritorijoje buvo užregistruota 4873 kartų. Per 1990–1994 metų laikotarpį lūšis buvo sutinkama 21,7% Čekijos Respublikos teritorijos, 1995–1999 m. – 35,6%, o 2000–2001 m. šis plėšrūnas buvo paplitęs 20,5% šalies teritorijos. Lūšies populiacija buvo gausiausia 1997–1998 m., kai gyvūnų skaičius šalyje svyravo nuo 100 iki 150. Dabartiniiais skaičiais, Čekijoje gyvena apie 80–100 lūšių. Keturiuos iš devynių radijo telemetriu būdu sekamų lūšių turbūt buvo nušautos neteisėtai. Medžiotojų požiūris į lūšį buvo tirtas anoniminės apklausos būdu tose vietovėse, kur ji yra sutinkama. Apklausa parodė, kad tik 19,2% medžiotojų pripažino teigiamą šio plėšrūno vaidmenį ekosistemose. 36,9% medžiotojų patvirtino, kad jiems yra žinomi neteisėto lūšių medžiavimo atvejai, o 10,3% iš jų prisipažino patys nušovę šiuos plėšrūnus neteisėtai. Brakonieravimas yra pati svarbiausia lūšių nykimo Čekijos Respublikoje priežastis. Kaip rodo apklausos duomenys, jaunimo, studijuojančio medžioklės ūkį, požiūris į lūšį yra pozityvesnis.

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