

LEGAL STATUS AND MANAGMENT OF THE DINARIC LYNX POPULATION

STATUS I UPRAVLJANJE DINARSKOM POPULACIJOM RISA

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Kratak sadržaj – Reintrodukcija euroazijskog risa (*Lynx lynx*) u planine Dinare, 1973. godine, jedan je od rijetkih primjera uspješne reintrodukcije veliki predatora. Danas, populacija dinarskog risa uključuje sve jedinke u Sloveniji, južno od autoceste Ljubljana - Trst, risa u Hrvatskoj, kao i risa u zapadnom dijelu Bosne i Hercegovine. Smatra se da se populacija sastoji od maksimalno 130 jedinki.

Radi se o maloj i ugroženoj populaciji i najvažnije prijetnje za njen opstanak su krivolov, nedostatak plijena i moguće posljedice smanjene genetske raznolikosti. U Sloveniji, Hrvatskoj i Federaciji Bosne i Hercegovine, ris je zaštićena vrsta, a trenutno zakonodavstvo Republike Srpske ne prepoznaje ovu vrstu životinje. Slovenija i Hrvatska imaju svoj koordinirani nadzor i upravljanje aktivnostima, a organizirani monitoring sustav nije prisutan u Bosni i Hercegovini.

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Cilj je da bilateralna suradnja Hrvatske i Slovenije postaje osnova za upravljanje cijelom populacijom risa u ovom dijelu Europe, uključujući pri tom prvenstveno i Bosnu i Hercegovinu ali i Austriju i Italiju.

Ključne riječi: euroazijski ris, *Lynx lynx*, dinarska populacija, zakonski status, upravljanje

Abstract - Reintroduction of the Eurasian lynx (*Lynx lynx*) to the Dinaric Mountains in 1973 is one of the rare examples of successful reintroduction of a large predator. Today, Dinaric lynx population includes all lynx in Slovenia south of highway Ljubljana – Trieste, lynx in Croatia as well as lynx in western Bosnia and Herzegovina. It is considered that the population consists of mostly 130 individuals. Being small and endangered, the most important threats for its survival are poaching, depletion of prey, and possible consequences of reduced genetic diversity. In Slovenia, Croatia and the Federation of Bosnia and Herzegovina, the lynx is a protected species, while the current legislation of the Republic of Srpska does not refer to the lynx at all. Slovenia and Croatia have coordinated their monitoring and management activities, while no organized monitoring system is present in Bosnia and Herzegovina.

The goal is to establish bilateral cooperation between Croatia and Slovenia as a basis for the management of the entire lynx population in this part of Europe, including primarily Bosnia and Herzegovina but also Austria and Italy.

Key words: Eurasian lynx, *Lynx lynx*, Dinaric population, legal status, management

Introduction

Reintroduction of the Eurasian lynx (*Lynx lynx*) to the Dinaric Mountains is one of the rare examples of successful reintroduction of a large predator (7, 35, 3, 33). Reintroduction programs in Germany in early 1970s, Switzerland in mid 1970s (2) and Slovenia in 1973 were pioneer activities in this field; when at the end of the 20th century regeneration of previously destroyed forests and natural recolonization of ungulates inspired the idea of bringing back large predators. And even though at that time experiences with carnivore recovery programs were very limited and the reintroduction programs had deficiencies and did not meet many contemporary requirements (36, 26), lynx populations in these areas still exist as a result of those pioneer reintroductions.

Similarly as in the most of European lynx habitats, combination of habitat loss, depletion of its prey and intensive prosecution (3) led to lynx extinction in the Dinaric Mountains. Last specimens have been killed in Croatia in 1903 (19), in Slovenia (20) and Serbia in 1908, and in Bosnia and Herzegovina in 1911 (24). Autochthonous, Balkan lynx population survived only in remote mountain areas of Albania, Macedonia, Kosovo

and Montenegro (with occasional occurrence in Greece and Bulgaria) (34). Reintroduction to the Dinarides has been initiated and coordinated by a group of Slovenian hunting professionals, what minimized the negative effects of traditional predator – human conflict (26). Six animals (3 females and 3 males) from Slovakian Carpathian Mountains have been released on March 2nd 1973 in Kočevje region, Slovenia. The course and results of the reintroduction have been described in detail by Čop (6, 7, 8), Frković (12, 13, 14), Čop and Frković (10). The newly established population had favorable habitat and prey conditions (8), which were one of the important backgrounds for reintroduction success (1). Reintroduced animals exhibited pronounced population growth and range expansion during initial 15 years, followed by a period of stabilization. In the years after the reintroduction, population monitoring was limited to data received from hunters, foresters and others who directly or indirectly observed lynx presence (7). According to data about spatial distribution of lynx signs of presence and mortality recordings, the expansion into the unoccupied areas of Slovenia, Croatia and Bosnia and Herzegovina came to a halt in the early nineties (9, 10, 15, 26). A decrease in Dinaric lynx population size during the past 10 to 15 years has been reported (34).

The Dinaric Mountain range extends along the Adriatic coast, from the Julian Alps in the northwest all the way to the Šar-Korab massif in southeast, in 645 km spanning areas of Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Kosovo and the Republic of Macedonia. Dinarides are mostly formed of limestone and dolomite, with karst system as the most notable feature. The wide altitudinal range of this ecoregion results in two major forest zones: a conifer zone (with dominating spruce (*Picea abies*), silver fir (*Abies alba*) and black pine (*Pinus nigra*) on the highest elevations (average altitudinal range of 1,200-2,500 m), and a mixed broadleaf zone (characterized by an outstanding diversity of deciduous oak species) that occurs at the medium elevations and lowlands. Mixed fir (*Abies alba*), spruce (*Picea abies*) and beech (*Fagus sylvatica*) forests frequently appear all along the Dinaric Mountains, while mountain peaks and steep slopes are formed of bare rocks. These forests are among the largest and most continuous tracts of forested habitat remaining for large carnivores in Europe, but with high human impact (logging, hunting, poaching, traffic, agriculture...). The main lynx prey in the Dinaric Mountains is roe deer (*Capreolus capreolus*) and red deer (*Cervus elaphus*) with 80% share in the stomach content of lynx from Slovenia and Croatia (27). New studies show that chamois and dormice can also make a considerable share of lynx diet in the Northern Dinarics (31). Reliable and comparable estimates of population densities are lacking for both prey species for the entire range of Dinaric lynx population.

Today, Dinaric lynx population includes all lynx in Slovenia south of highway Ljubljana – Trieste, lynx in Croatia, as well as lynx in western Bosnia and Herzegovina. Based on the current data, the river Neretva presents the Southwest and the river Krivaja the Southeast border of the Dinaric lynx population in Bosnia and Herzegovina. Occasional reports about lynx presence in Eastern part of Bosnia and Herzegovina have

not been confirmed. Rarely, lynx individuals disperse in the area of Slovenian Alps and the border areas with Austria and Italy, but direct connectivity with Alpine lynx population, or in southeast with the Balkan population, have not been confirmed. It is considered that the population consists of mostly 130 individuals, being small and endangered and the most important threats for its survival are poaching, low prey density and possible consequences of reduced genetic diversity (23, 29).

Legal status and management

The presence of lynx in Slovenia, and subsequently in Croatia and Bosnia and Herzegovina, is a result of the successful reintroduction of a recently extinct species. Favorable conditions for the establishment of the new population were (1) vacant habitat with good prey base, and (2) positive attitudes of the hunters which saw the recovering lynx population also as an opportunity to enrich the trophy hunting possibilities in their hunting grounds (21). The latter was also the main motivation for the actual reintroduction by the Slovenian hunters from Kočevje. After the reintroduction in 1973, the lynx was a game species in Slovenia and actual culling started very soon, in 1978. Since 1978 until 1995, total known mortality of lynx in Slovenia was 123 individuals with yearly mortality ranging between 2 and 15 individuals. Peak was reached during the period 1985 until 1991 when on average close to 10.5 killed animals were documented yearly (10). In 1993 lynx became a strictly protected species, Slovenia Forest Service took over the monitoring of the lynx population in 1994, and cull quotas decreased dramatically (21). Total documented mortality of lynx in the period 1995 – 2003 was 20 animals, out of which 14 represented cull (21). Prescribed quotas in 2001 – 2003 were never reached indicating drop in lynx densities and numbers. During the last several years, no quotas for lynx cull were issued. Current official population size estimates for Slovenia range between 20 and 40 individuals.

Since 1993 lynx in Slovenia was a strictly protected species, culling of which could be allowed with a specific decision of the responsible Minister (18). With Slovenia's accession to the European Union, nature conservation legislation has been aligned with the requirements and provisions of the Habitats Directive. Current Decree on Protected Wild Animal Species (Official Gazette 46/2004, last change 36/2009) lays down detailed provisions on protection of animal species and their natural environment. It prohibits all deliberate taking, destruction, collecting, disturbance, habitat damage, trade, transport, possession, display, etc. of the protected animal species. Annex 1 of the Decree lists protected animal species; Annex 2 lists animal species habitats of which are protected. Lynx is listed in both annexes of the Decree. All the damages caused by lynx to the private property are compensated from the national budget.

By June 1974 reintroduced animals have reached Croatia (12) and at that time lynx was still a game species in Croatia. Its legal status has changed in 1982, when lynx became

protected by Decision on the Special Protection of the Lynx, which was based on the 1976 Nature Protection Act. Since 1982 until 1995, yearly hunting quotas have been issued. During that 13 – year period, 7 to 14 hunting licenses have been issued per year and a total of 97 animals have been hunted (13). Frequently, quota has not been reached, even though besides legal hunting, it also included all other mortalities, such as traffic accidents or poaching, with total mortality in that period reaching 211 animals (13). In 1995, Rulebook on the Protection of Certain Mammal Species (Mammalia) listed lynx as a strictly protected species and no quotas have been issued since. Nature Protection Law (1994, 2003) accepted the obligations of Croatia to sign all international conventions and based on the Bern convention lynx was listed as strictly protected. This law also ensures compensation is paid, from the national budget, for domestic animals killed by lynx, while damage on wild prey is not compensated. Since 1995 Lynx management plan for the Republic of Croatia has been implemented (22). It has been produced with participation of various interest groups and revised the same way in 2007. Also, in 2009 a Management Plan for Potential Natura 2000 Sites important for large carnivores has been prepared through a series of facilitated workshop. Lynx monitoring in Croatia has been coordinated by Committee for lynx monitoring since 1982. In 1995 this committee spread its activities to other two large carnivores – bear and wolf. During the 30-year period (1978-2007) a total mortality of 227 lynx has been recorded in Croatia, yearly mortality ranged 1 – 17 animals, with 7.56 animals per year in average (30). Recorded mortality was primarily due to human related causes, while poaching increased from 8% in 1978 – 2000 period, to 81% in the 2000 – 2007 period (30). Current official population size estimates for Croatia range between 40 and 60 individuals.

First specimens from the reintroduced population have been observed in Bosnia and Herzegovina in 1980 on the area of Plješivica and Grmeč (32). In 1984, eleven years after the reintroduction a first lynx was killed in Bosnia and Herzegovina, 185 km from the release site (10). Population has formed in two directions – southeast (Klekovača, Jadovnik, Šator, Staretina, Hrbaljina, Vitorog, Cincar, Malovan, Ljubuša, Raduša, Vran, Čvrstica, Čabulja) and towards central Bosnia (Grmeč, Čemernica, Vlašić, Vranica, Kamenica). The Hunting Law of Bosnia and Herzegovina of 1978 does not mention the lynx, which is logical, as lynx were not present in the country when the law was established (32). Today, the country is decentralized and consists of two governing entities, with different laws. In the Serbian Republic of Bosnia and Herzegovina Hunting Law of 1994 lists lynx as a protected game, while Hunting Law from 2002 and Law on Nature Protection from 2002 and 2008 do not mention lynx at all. However, new Law on Hunting that is being prepared will define lynx as protected game species. According to the Federation Law on Hunting from 2006 lynx is a protected game species. In either of the entities there is no legislation about damage compensation. A uniform methodology of lynx monitoring in Bosnia and Herzegovina is not present, and there is no authority in charge of data collection.

In 2007 a new level of Dinaric lynx population management has been attempted in Slovenia and Croatia. Through implementation of project entitled “Transboundary

cooperation in management, conservation and research of the Dinaric lynx population” (co-financed by European Commission through Interreg IIIA Neighborhood Programme) research and monitoring methods have been improved and synchronized between the two countries. SCALP monitoring methodology has been improved and applied to Croatia (methodology was already implemented in Slovenia), as in Croatia signs of presence (except mortality data) and sightings have not been recorded and verified systematically, but most data was obtained thanks to personal interest of certain hunting professionals and scientists. An information platform has been built within the project. It allows systematic and precise data collection on lynx presence in both countries and gives an insight in current distribution and frequency of appearing. Proposal for common lynx management strategy for Slovenia and Croatia has been prepared through a series of workshops with representatives of various interest groups from both countries. In total, 50 persons from 23 organizations participated in those workshops and all decisions were made by consensus of all participants. Biological, management and sociological factors relevant for reaching lynx population goals have been determined. As a compromise the desired lynx population size in Slovenia and Croatia has been defined at 150 adult individuals, representing about 63% of capacity of habitat where currently lynx is present in both countries (23). It has been agreed that each four years a workshop will be organized with representatives of interest groups from both countries, so results of management in the previous period are presented and analyzed, and then the eventual changes are proposed. All professionals who participate in monitoring and scientific research meet once a year. This was one of the first European examples of a large carnivore population level management, with the ultimate goal of merging the two populations into one Alpine-Dinaric population.

Discussion

Conservation of a large carnivore in a cultural landscape is complex, involving not only ecological knowledge, but also the understanding of human dimensions and the implementation of appropriate legislation, management and monitoring (5). On the international level, Dinaric lynx population is a small, endangered population threatened by illegal killing, limited prey base and genetic homogeneity (23, 29). While connectivity to Alpine population is desired and set as an ultimate management goal, connectivity to the Southeast, to the Balkan population is not desired (23). The Balkan lynx population is the smallest and the most threatened autochthonous Eurasian lynx population in Europe, with an estimated current population size of less than 100 adult individuals (34). Balkan population is autochthonous and the contact with reintroduced Dinaric population may cause introgression of the genetic material of the “common”, Carpathian ecotype into the gene pool of the threatened Balkan ecotype. There is some evidence of genetic differentiation between these two ecotypes (4, 17). Some authors

actually describe different subspecies (25), which has been rebuttal by Gomerčić et al. (16). It is difficult to predict the effect of such introgression, but there are several scenarios that one could expect: outbreeding depression, hybrid vigor, or no effect at all (11). While “mixing” of the populations would increase genetic diversity and thus decrease the danger of inbreeding depression faced by the small Balkan population, it is questionable whether the dangers of the outbreeding depression and loss of the autochthonous ecotype/subspecies don't outweigh the potential benefits. There are no physical barriers among these two populations and it is probably only the matter of time and the critical number of animals when they will get into contact (23). In eventual plans to augment Dinaric population (to increase its viability) the potential problems for Balkan population should be considered and given the priority (23). Occasional reports about lynx presence in Eastern part of Bosnia and Herzegovina have not been confirmed, and it is essential to establish if those individuals came from the Dinaric or from the Balkan lynx population (28). Current status in Bosnia and Herzegovina is one of the most problematic issues of legislation and management of the Dinaric lynx population. Unsynchronized laws in the two entities, the fact that current legislation of Serbian Republic does not list lynx at all, absence of the management plan and poaching are the main threats. The goal is that the already established bilateral cooperation between Slovenia and Croatia becomes the basis for the management of the whole lynx population in this part of Europe, including primarily Bosnia and Herzegovina, but also Austria and Italy.

Conclusions

The list of management implications according to Majić Skrbinšek et al. (23) may represent valid conclusions:

1. A comprehensive study of demographic, population (genetic), ecological parameters (food, habitat, competitors) and conservation needs of lynx in the Dinaric Mountains is lacking.
2. Research the needs to release new animals. Any decision on augmentation should be brought with consensus of relevant professional and political institutions in both countries. Also, priority should be given to the critically endangered Balkan population.
3. Continuation and improvement of monitoring of distribution based on occurrence of population.
4. Coordinated management of prey species, with the aim of increasing their numbers, especially of roe deer in the lynx range.
5. The sanctions for illegal killings (of both lynx and prey species) should be more strict (e.g. permanent confiscation of weapons), the legal process should be more efficient and the hunting guards should have wider rights.

6. Informing and including public in decision making.
7. Education about the use of prevention methods.
8. The permeability of highway Ljubljana-Koper should be increased to ensure the habitat connectivity in the triangle Slovenia – Italy – Austria.

LITERATURE

1. Ballou D. General problems of small (carnivore) populations: Minimum viable population size and inbreeding. Strasbourg: Council of Europe Publishing Environmental encounters. 1998(38):27-40.
2. Breitenmoser U, Baettig M. Wiederansiedlung und Ausbreitung des Luchses (*Lynx lynx*) im Schweizer Jura. *Revue Suisse de Zoologie*. 1992; 99 (1):163-176.
3. Breitenmoser U, Breitenmoser – Würsten C, Capt S. Re-introduction and present status of lynx (*Lynx lynx*) in Switzerland. *Hystrix*. 1998; 10(1):17-30.
4. Breitenmoser-Würsten C., Obexer-Ruff G. Population and conservation genetics of two re-introduced lynx (*Lynx lynx*) populations in Switzerland – a molecular evaluation 30 years after translocation. In Proceedings of the 2nd Conference on the Status and Conservation of the Alpine Lynx Population (SCALP). Amden Switzerland, 2003; 28-31.
5. Breitenmoser U, Breitenmoser – Würsten C, Capt S, et al. Conservation of the lynx *Lynx lynx* in the Swiss Jura Mountains. *Wildlife biology*. 2007; 13(4):340-355.
6. Čop J. Poskus naselitve risa na Kočevskem. *Lovec*. 1973; 12:358-362.
7. Čop J. Propagation pattern of re-introduced population of lynx (*Lynx lynx* L) in Yugoslavia (1973. Slovenia – Kočevsko) and its impact on the ungulate community. In *Atti del convegno Reintroduzione dei predatori nelle aree protette*. Torino Italy, 1987; 83 – 91.
8. Čop J. Spremljanje naselitve risa (*Lynx lynx* L.) v Sloveniji 1973-1993, Research report. Ljubljana: Forestry Institute of Slovenia; 1994.
9. Čop J. Die Raumverbreitung des Luchses nach der Wiedereinbürgerung 1973 in Kočevje, Slowenien, bis 1997. In: *Der Luchs in Mitteleuropa, Schriftenreihe des Landesjagdverbandes Bayern, Band 5*, 1997. pg. 47-57.
10. Čop J, Frković A. The reintroduction of the lynx in Slovenia and its present status in Slovenia and Croatia. *Hystrix*. 1998; 10:65-76.
11. Frankham, R., J. D. Ballou, et al. *Introduction to Conservation Genetics*. Cambridge: Cambridge University Press; 2002.
12. Frković A. Četvrt stoljeća uspješne reintrodukcije risa (*Lynx lynx* L.) u Sloveniju. *Šumarski list*. 1998a; 3-4: 169–173.

13. Frković A. Ponovno naseljavanje i ulov risa (*Lynx lynx* L.) u Županiji primorsko – goranskoj u razdoblju od 1974.-1996. godine. In Zbornik radova Prirodoslovna istraživanja Riječkog područja. Rijeka: Prirodoslovni muzej Rijeka, 1998b; 493-500.
14. Frković A. Ris (*Lynx lynx* L.) u Hrvatskoj - naseljavanje, odlov i brojnost (1974-2000). Šumarski list. 2001; 11-12: 625-634.
15. Frković A. Ris u Hrvatskoj. Rijeka: Upravni odjel za gospodarski razvoj Primorsko-goranske županije, Lovачki savez Primorsko Goranske županije; 2003.
16. Gomerčić T, Sindičić M, Đuras Gomerčić M. et al. Cranial morphometry of the Eurasian lynx (*Lynx lynx* L.) from Croatia. Veterinarski arhiv. (in press)
17. Gugolz D, Bernasconi M V, Breitenmoser-Würsten C, et al. Journal of zoology. 2008; 275 (2): 201 – 208.
18. Koren I, Jonozovič M, Kos I. Status and distribution of the Eurasian lynx (*Lynx lynx*) in Slovenia in 2000-2004 and comparison with the years 1995-1999. Acta biologica Slovenica. 2006; 49(1):27-41
19. Koritnik M. Še nekaj o risu. Lovec. 1974; 67:198-199.
20. Kos F. Ris (*Lynx lynx*) na ozemlju etnografske Slovenije. Glasnik muzejskega društva za Slovenijo. 1928; 1(1-4):57-72.
21. Kos I, Potočnik H., Skrbinšek T et al.. Ris v Sloveniji: Strokovna izhodišča za varstvo in upravljanje. 2. dopolnjena izdaja. Ljubljana: Biotehniška fakulteta Oddelek za biologijo; 2005.
22. Majić A, ed. Plan upravljanja risom u Hrvatskoj. Zagreb: Ministarstvo zaštite okoliša i prostornog uređenja Republike Hrvatske; 2004.
23. Majić Skrbinšek A, Skrbinšek T, Sindičić M et al. Proposal for common lynx strategy for Slovenia and Croatia. Ljubljana, Zagreb: DinaRis projekt; 2008.
24. Mirić D. Ausrottungsgeschichte des Luchses auf der Balkanhalbinsel. In Wotischkowsky U, ed. Der Luchs – Erhaltung und Wiedereinburgerung in Europa. Bernhard: Mammendorf; 1978:19-24.
25. Mirić D. The lynx populations of the Balkan Peninsula. Beograd: Serbian Academy of Sciences and Arts, Separate Editions, 1981,89:1-154.
26. Potočnik H, Skrbinšek T, Kos I. The reintroduced Dinaric lynx population dynamics in PVA simulation, the 30 years retrospection and the future viability. Acta biologica Slovenica. 2009; 52(1): 3-18.
27. Rajković J, Čop J, Kozarić Z, et al. Analiza prehrane risa u Hrvatskoj i Sloveniji. U: Zbornik sažetaka priopćenja 7. Hrvatskog biološkog kongresa; 2000.
28. Sinanović N. Current status of the Euroasian Lynx (*Lynx lynx*) population in Europe, with special overview on the Dinaric population. The V symposium of agriculture, veterinary, forestry and biotechnology: Vlasice; 2007, 62-64.

29. Sinanović N, Sindičić M, Huber Đ. The status and the perspective of Eurasian lynx (*Lynx lynx*) in Bosnia and Herzegovina. The VI symposium of agriculture, veterinary, forestry and biotechnology: Gorazde; 2008, 29-31.
30. Sindičić M, Frković A, Huber Đ, et al. Mortality of reintroduced Eurasian lynx (*Lynx lynx*) in Croatia. Book of abstracts of the 8th conference of the EWDA, Rovinj, Croatia. 87. 2008
31. Skrbinišek T, Krofel M. Analiza kvaliteta habitata, hrana in kompeticija. DinaRis project report. Available from: www.dinaris.org. 2008.
32. Soldo V. The lynx in Bosnia and Herzegovina. In Breitenmoser-Würsten C, Breitenmoser U, ed. The Balkan Lynx Population - History, Recent Knowledge on its Status and Conservation Needs. Bericht: KORA; 2001(7): 6-7.
33. Stanisa C, Koren I, Adamić M. Situation and distribution of the lynx (*Lynx lynx* L.) in Slovenia from 1995-1999. *Hystrix*. 2001; 12(2):43-51.
34. von Arx M, Breitenmoser-Würsten C, Zimmermann F, Breitenmoser U, ed. Status and conservation of the Eurasian lynx (*Lynx lynx*) in Europe in 2001. Bern: KORA Bericht; 2004.
35. Yalden D W. The problems of reintroducing predators. *Symp. Zool. Soc. London*, 1993; 65:289-306.
36. - - - : IUCN/SSC Re-introduction Specialist Group IUCN Guidelines for reintroductions. Gland: IUCN; 1998.

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