

# Serbia and Montenegro (SCG)

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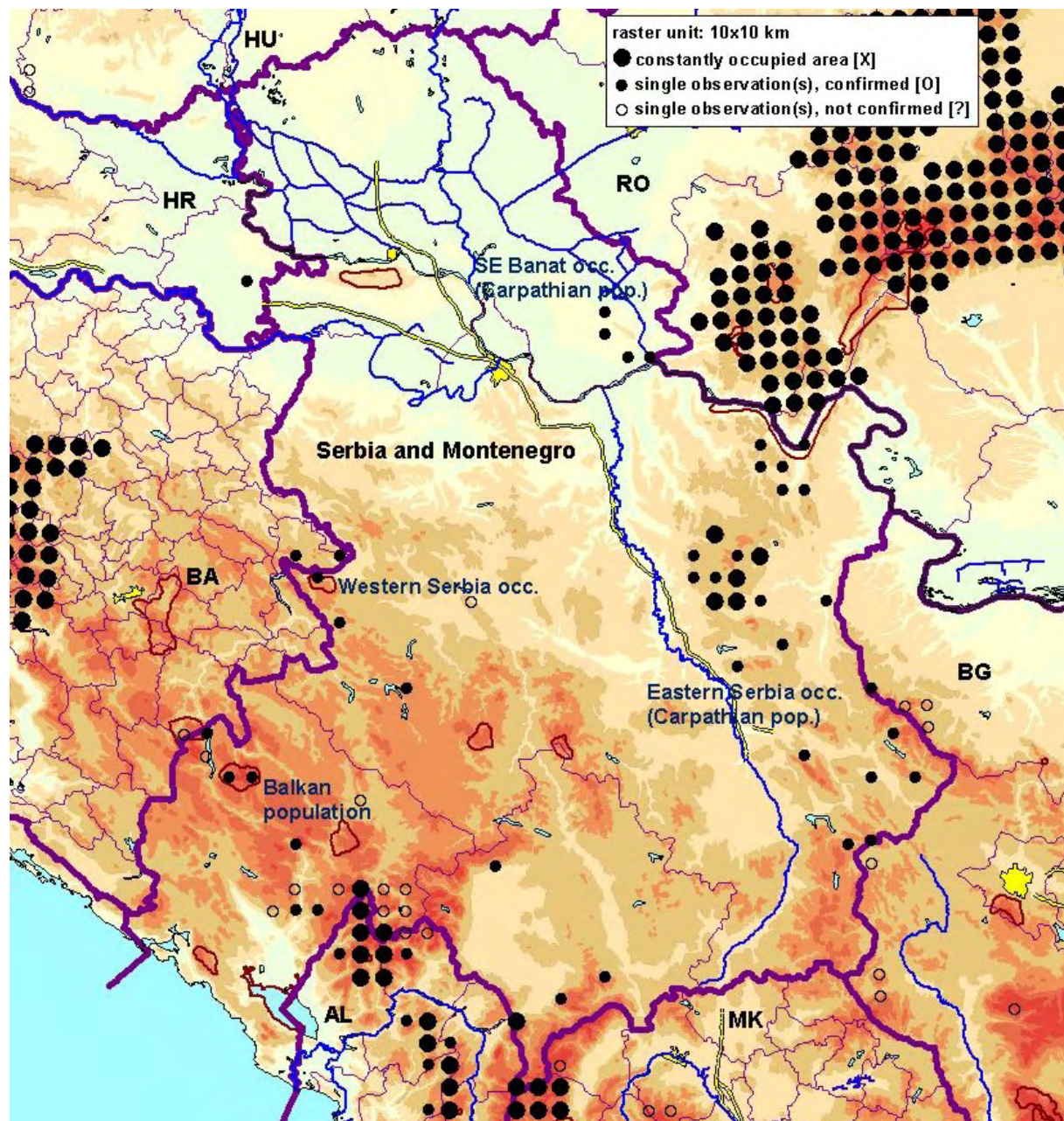
Area: 102'350 km<sup>2</sup>

Forests & Woodland: 28.3 % (2000)

Human population: 10'667'290 (2001)

Population density: 104.3 / km<sup>2</sup>

## 1. Lynx distribution in Serbia and Montenegro in 2001:



## Geographic range of the population(s)

### Carpathian population:

*Eastern Serbia occurrence:* Localized between the Danube river in the north, the Morava river valley in the west, the border with Bulgaria in the east and from the Stara Planina Mts. to the right banks of the Nisava and Jerma rivers in the south. Separated from the Carpathian population by the Danube river.

*Southeastern Banat occurrence:* Southeastern part of Deliblatska Pescara sands, Vrsacke Planine mountains. This is a “micropopulation” recently formed due to the expansion of lynx originating from the Southern Carpathian Mountains. The “population” is increasing but due to the limited space no further expansion is expected.

**Balkan population:** Southern, south-western and western part of Kosovo and Metohija provinces; western, south-western, central and northern Montenegro.

**Western Serbia occurrence:** Western Serbia incl. Tara mountain, Mokra Gora mountain, Zlatar mountain, Uvac gorge. <sup>a</sup>

<sup>a</sup> Origin not clear. Hypothetical, specimens could be descendants of lynx re-introduced in 1973 at Kocevje, Slovenia (from the Carpathian source population). [Keeping in mind that the monitoring in southern Bosnia-Herzegovina is fragmentary at best, it might well be that the re-introduced population has expanded further to the SE than expected. An alternative, but less likely explanation is that the Western Serbia occurrence is a remnant nuclei of the Balkan population. Expansion from the Carpathian population is the third, but least likely possibility. Only a genetic assessment would allow clarifying the origin of these lynx, Eds.]

*Methods:* sightings & signs, unspecific survey, lynx mortality (shooting, car accidents, trapping by snap traps)

## 2. Lynx population(s):

Population	Pop. size (Ø 1996-2001)	Lynx distribution area [km <sup>2</sup> ]				[X] & [X+O] / country area [%]	Pop. density [lynx/100 km <sup>2</sup> ]
		[X]	[O]	[?]	[X+O]		
<b>Carpathian</b> <sup>a</sup>	40	500	2'000	0	2'500	0.5 / 2.4	8
<sup>b</sup>	5	0	400	0	400	0.4	-
<b>Balkan</b>	30	100	900	1'300	1'000	0.1 / 1	-
<b>Western Serbia occ.</b>	5	0	500	100	500	0.5	-
<b>Total</b>	~ 80	600	3'800	1'400	4'400	0.6 / 4.3	-

<sup>a</sup> Eastern Serbia occurrence

<sup>b</sup> Southeastern Banat occurrence

### 3. Population size:

#### 3.1. Estimations

Population	Year	Official estimation	Additional estimation	Accuracy	Tendency
Carpathian	2000		40 <sup>a</sup>	Only data authenticated from different sources or results of personal research and assessments are taken into consideration. As data are not numerous and not a result of permanent monitoring, it was not dared to make annual size estimations.	increasing, expanding <sup>a</sup>
	2000		5 <sup>b</sup>		stable <sup>b</sup>
Balkan	2000		30		decreasing
Western Serbia occ.	2000		5		increasing & expanding
Ø Total 1996-2001			80		

<sup>a</sup> Eastern Serbia occurrence. (In February/March 2003 a lot of new data on lynx presence in Eastern Serbia were discovered. Therefore, the population assessment of 40 specimens could be too modest).

<sup>b</sup> Southeastern Banat occurrence

#### 3.2. Methods and institutions responsible for the estimations

Population	Official estimation	Additional estimation
Ca/Balk/WSo	There is no official estimation.	Collection of trustworthy data from different sources and by different ways.
<i>Institution</i>	Bureau for Nature Protection of both, Serbia and Montenegro, as well as Hunting Unions of Serbia and Montenegro	Institute for Biological Research "Sinisa Stankovic" and Natural History Museum, both from Belgrade

### 4. Legal situation, harvest and losses of lynx:

#### 4.1. International treaties

EU Habitat Directive	Bern Convention	CITES
-	-	ratified 2001

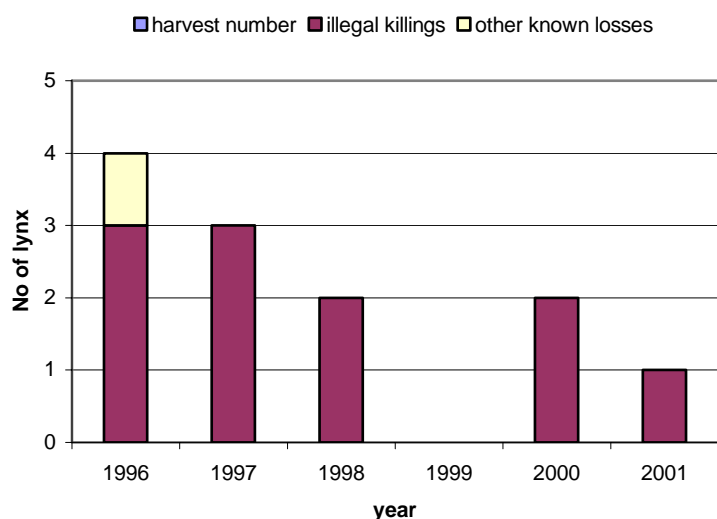
#### 4.2. Legal status

Lynx is completely protected by law.

### 4.3. Harvest numbers and other known losses to the population(s)

Population	Year	Harvest number	Traffic	Other accidents	Illegal killings	Removal problem animals	Diseases	Unknown cause	Orphans	Other	Total	% of population
Carpathian / Balkan / Western Serbia occ. <sup>a</sup>	1996	-	1	0	3	0	0	0	0	0	4	<i>n.d.a.</i>
	1997	-	0	0	3	0	0	0	0	0	3	<i>n.d.a.</i>
	1998	-	0	0	2	0	0	0	0	0	2	<i>n.d.a.</i>
	1999	-	0	0	0	0	0	0	0	0	0	<i>n.d.a.</i>
	2000	-	0	0	2	0	0	0	0	0	2	<i>n.d.a.</i>
	2001	-	0	0	1	0	0	0	0	0	1	<i>n.d.a.</i>
<b>Total 1996-2001</b>		-	1	0	11	0	0	0	0	0	12	-
<b>Yearly Ø</b>		-	0.17	0	1.83	0	0	0	0	0	2	<i>n.d.a.</i>
<b>Known mortality / 100 km<sup>2</sup> [X+O]</b>		-	0.00	0	0.04	0	0	0	0	0	0.05	-

<sup>a</sup> no numbers per population available



Number of known losses to the lynx in Serbia and Montenegro from 1996-2001.

### 4.4. Lynx management

Population	Authority in charge		Management / Conservation Plan
	National level	Regional level	
<b>Ca/Balk/WSo</b>	Bureau for Nature Protection of both, Serbia and Montenegro (under the respective responsible Ministries). Lynx management is under the responsibility of the republic ministries, both bureaus give their opinion and suggestions to them to create appropriate politics.	Hunting Unions of Serbia and Montenegro (and the Federal Hunting Union). They are responsible to conduct the Hunting Law both in Serbia and Montenegro through their net of individual Hunting Societies.	none

## 5. Depredation:

→ There is not enough data as such events are very rare. Attacks on livestock are almost not known. No compensation systems and prevention methods are applied in the country. (Poaching is a regular incident, and is not connected to the very rare attacks on livestock).

## 6. Major threats to the lynx population(s) in the country:

Population	Past (<1996)	Present (1996-2001)	Future (>2001)
<b>Carpathian: Eastern Serbia occurrence</b>	Infrastructure development: Road building Shooting Trapping / snaring Vehicle and train collision Competitors War / civil unrest Transport	Infrastructure development: Road building Shooting Trapping / snaring Vehicle and train collision Competitors Transport	Infrastructure development: Road building Shooting Trapping / snaring Vehicle and train collision Competitors Transport
<b>Carpathian: Southeastern Banat occurrence</b>	Shooting Wildfire Competitors Low densities War / civil unrest	Shooting Trapping / snaring Competitors Low densities	Shooting Trapping / snaring Competitors Low densities
<b>Balkan</b>	Extraction of wood Shooting Trapping / snaring Competitors Limited dispersal Inbreeding Low densities Population fluctuations Restricted range War / civil unrest	Extraction of wood Shooting Trapping / snaring Competitors Limited dispersal Inbreeding Low densities Population fluctuations Restricted range War / civil unrest	Extraction of wood Shooting Trapping / snaring Competitors Limited dispersal Inbreeding Low densities Population fluctuations Restricted range War / civil unrest
<b>Western Serbia occ.</b>	Shooting Trapping / snaring Competitors War / civil unrest	Shooting Trapping / snaring Competitors	Shooting Trapping / snaring Competitors

*Comment: Data are very scarce; for none of the populations specific research has been conducted. The recorded number of losses could be much bigger. Also, access to the Balkan population in Kosovo and Metohija provinces has always been difficult and recently not possible at all. As a consequence of the absence of a nature protection and conservation law, [or its implementation, respectively, Eds.], there are good indications that - in the past and especially in recent times - in Kosovo and Metohija provinces, poaching by local and international groups has been very frequent.*

## 7. Conservation measures:

Conservation measure	Lacking / proposed	Drafted / ratified	Implemented / applied
Management plans	X		
Legislation on a national level			X
Legislation on a regional level			X
Public involvement	X		
Formal education	X		

Conservation measure (cont.)	Lacking / proposed	Drafted / ratified	Implemented / applied
Awareness		X	
Capacity-building / Training	X		
Taxonomy		X	
Population numbers and range			X
Biology and Ecology		X	
Habitat status	X		
Threats	X		
Uses and harvest levels		Eastern Serbia	
Conservation measures			X
Monitoring / Trends	X		
Genetic status	X		
Human attitude / Human dimensions		X	
Maintenance / Conservation	X		
Restoration		Southern Banat	
Corridors	X		
Identification of new protected areas	X		
Establishment of protected areas	X		
Management of protected areas	X		
Expansion of protected areas	X		
Community-based initiatives	X		
Re-introductions	X		
Sustainable use / Harvest management	X		
Recovery management			Eastern Serbia
Disease, pathogen, parasite management	X		
Limiting population growth	Balkan		
Captive breeding / Artificial propagation	X		
Genome resource bank	X		

*Comment: Despite an interesting situation – presence of different lynx nuclei and challenging questions regarding the taxonomy and ecology –, the level of research was recently very low. The economical and political crisis, and the war in and around the country caused chronic lack of funding for scientific work. All recorded data are gathered out of any special lynx project and they are the product of the persistence and enthusiasm of a very few people. A minimum of data collection was maintained throughout this time by some enthusiastic people.*

## 8. Judgement of the status of the population(s) within the country & most urgent actions needed:

Population	Judgement	Most urgent actions needed
<b>Carpathian: Eastern Serbia occ.</b>	vulnerable	<ul style="list-style-type: none"> <li>• Research</li> <li>• Sanctions against poachers</li> <li>• Compensation system</li> </ul>
<b>Carpathian: Southeastern Banat occ.</b>	data deficient	<ul style="list-style-type: none"> <li>• Research</li> <li>• Sanctions against poachers</li> <li>• Compensation system</li> </ul>
<b>Balkan</b>	endangered	<ul style="list-style-type: none"> <li>• Sanctions against poachers</li> <li>• Research</li> <li>• Compensation system</li> </ul>



Population (cont.)	Judgement	Most urgent actions needed
<b>Western Serbia occ.</b>	data deficient	<ul style="list-style-type: none"> <li>• Research</li> <li>• Sanctions against poachers</li> <li>• Compensation system</li> </ul>

## 9. Projects:

→ No current projects.

## 10. Contact:

Population	Name	Address
<b>Carpathian / Balkan / Western Serbia occ.</b>	Milan PAUNOVIĆ	Natural History Museum, Njegoseva 51, P.O. Box 401, 11000 Belgrade e-mail: <a href="mailto:paunmchi@eunet.yu">paunmchi@eunet.yu</a>
<i>Collaborator:</i>	Mirosljub MILENKOVIĆ	Institute for Biological Research, 29. novembra 142, 11000 Belgrade e-mail: <a href="mailto:mikim@ibiss.bg.ac.yu">mikim@ibiss.bg.ac.yu</a>

## Country assessment:

In the 1950s lynx in the area of current Serbia and Montenegro has only been present in the southern and south-western parts (Balkan). It was only in the 1980s when first indications of lynx presence have been noticed in eastern Serbia. The animals very likely originated from the Carpathian Mts. in neighbouring Romania (PAUNOVIĆ, MILENKOVIĆ & IVANOVIĆ-VLAHOVIĆ 2001). The same is most probably true for the Eastern Banat occurrence, where first evidence has been found in 1991 (GRUBAČ 2000). The observations in western Serbia are very recent and were first reported by GRUBAČ (2000). They are assumed to be the result of immigrating animals from Bosnia-Herzegovina (GRUBAČ 2000, PAUNOVIĆ, MILENKOVIĆ & IVANOVIĆ-VLAHOVIĆ 2001). However, there is no (genetic) evidence yet. Especially for south-eastern and western Serbia, as well as for western Montenegro, it would be very important to get more information about the recolonisation processes and the origin of the individuals as these areas belong to the potential range of the critically endangered Balkan population. For the conservation of this population, the spreading of Carpathian lynx (animals from Bosnia-Herzegovina also have Carpathian origin) to western and south-eastern Serbia may provide a boost, but could also cause taxonomic problems (GRUBAČ 2002, see also the Balkan population assessment).

The four occurrences in Serbia and Montenegro are not only separated from each other, but also within the occurrences, the observations are often widely scattered. This is the consequence of several source populations and probably of the lack of adequate monitoring. The border regions in the east, south and west are important areas for the current or potential distribution of lynx, whereas in central and northern Serbia, consisting mainly of lowlands or valleys, the habitat is not very favourable (PAUNOVIĆ, MILENKOVIĆ & IVANOVIĆ-VLAHOVIĆ 2001, PAUNOVIĆ 2002). Although the evidence in the south of the country is somewhat uncertain, lynx indications in neighbouring Bulgaria and Albania match well with the observations in Serbia and Montenegro. Cooperation with these countries (co-ordination of the monitoring) as well as with FYR Macedonia and Bosnia-Herzegovina are recommended to get more reliable information about lynx in the border areas. Afterwards, a common management should be developed for these transboundary occurrences or populations, respectively.

But also within Serbia and Montenegro the monitoring should be improved to enhance the data base. Current information indicate very small distribution areas. However, this conflicts with the estimations on the number of lynx, which would result in surprisingly high densities (Table 2). M. PAUNOVIĆ (pers. comm.) believes that the area of probable distribution is at least twice as large as indicated in the map, and possibly even larger. Alternatively, the population sizes given in Table 3.1 might be overestimated: According to GRUBAČ (2000) the Carpathian part consists of 30 animals. His estimation for the Balkan population was 22-27 for 1990-1999 and presently 12-18

individuals only. He assumes that there was a decrease due to the military intervention in this region in 1999-2000 and that this trend goes on because of the uncontrolled carrying and use of guns (illegal killing of lynx) (GRUBAĆ 2000). Considering the limited distribution area, the scarce data and the assessment of the Balkan population in neighbouring Albania and FYR Macedonia, it is more likely that the number of lynx in southern Serbia and Montenegro was overestimated in the 1990s.

Illegal killings are considered to be the major threat for the lynx in Serbia and Montenegro. Between 1996 and 2001 an average of two cases were reported yearly (Table 4.3), but there might have been at least five (PAUNOVIĆ 2002). Other threats mentioned (Table 6) may rather base on a personal judgement than on hard evidence. Hence, research is considered an urgent conservation action (Table 8). Furthermore, the need for a compensation system is listed, although depredation seems to be very rare (point 5). For lynx, other measures might be more important, but a compensation system would probably reduce the conflict potential between local inhabitants and large carnivores in general.

Political and economic instability have a negative influence on the implementation of management and conservation measures (PAUNOVIĆ 2002). Nevertheless, Serbia and Montenegro must overcome these problems also for the sake of nature conservation. The potential for the lynx is currently good, and the country could in the future play an important role for the conservation of the species in the whole region.

## References:

- GRUBAĆ, B.R. 2000: The Lynx *Lynx lynx* (Linnaeus, 1758) in Serbia. Journal of the Institute for Nature Protection of Serbia, Belgrade 52 (1): 151-173.
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