

FYR Macedonia (MK)

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Area: 25'333 km²

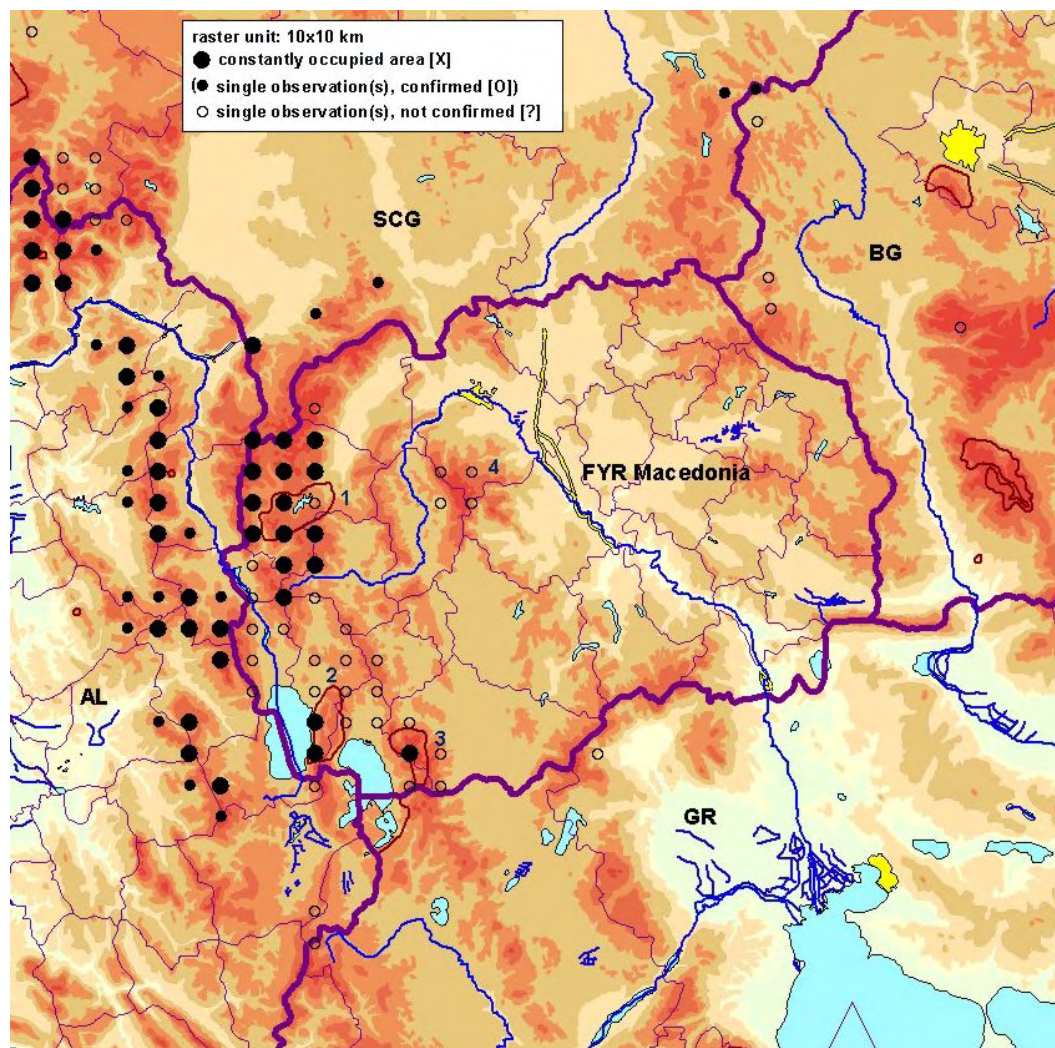
Forests & Woodland: 35.6 % (2000)

Human population: 2'046'209 (2001)

Population density: 80.8 / km²



1. Lynx distribution in FYR Macedonia in 2001:



Geographic range of the population(s)

Balkan population: 1. Mavrovo NP (~30 individuals), 2. Galicica NP (1-3 individuals), 3. Pelister NP (1-3 individuals), (4. Jakupica Mts.).

Methods: sightings & signs, unspecific survey

2. Lynx population(s):

Population	Pop. size (Ø 1996-2001)	Lynx distribution area [km ²]				[X] & [X+O] / country area [%]	Pop. density [lynx/100 km ²]
		[X]	[O]	[?]	[X+O]		
Balkan	~35	1'700	0	2'600	1'700	6.7	2.06
Total	~35	1'700	0	2'600	1'700	6.7	2.06

3. Population size:

3.1. Estimations

Population	Year	Official estimation	Additional estimation	Accuracy	Tendency
Balkan	1999	35			decreasing
	2000	35			
Ø 1996-2001		35			

3.2. Methods and institutions responsible for the estimations

Population	Official estimation	Additional estimation
Balkan	Survey and continuous field monitoring.	-
<i>Institution</i>	National park management and independent NGO inquiry	-

4. Legal situation, harvest and losses of lynx:

4.1. International treaties

EU Habitat Directive	Bern Convention	CITES
signed	ratified 1998	ratified 2000

4.2. Legal status

Lynx has been fully protected by law since 1973.

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
Balkan	1996	-	0	0	0	0	0	0	0	0	0	0
	1997	-	0	0	0	0	0	1	0	0	1	2.86
	1998	-	0	0	0	0	0	0	0	0	0	0
	1999	-	0	0	0	0	0	0	0	0	0	0
	2000	-	0	0	0	0	0	0	0	1 ^a	1	2.86
	2001	-	0	0	0	0	0	0	0	0	0	0
Total 1996-2001		-	0	0	0	0	0	1	0	1	2	-
Yearly Ø		-	0	0	0	0	0	0.17	0	0.17	0.33	0.94
Known mortality / 100 km² [X+O]		-	0	0	0	0	0	0.01	0	0.01	0.02	-

^a deaths from waste consumption

4.4. Lynx management

Population	Authority in charge		Management / Conservation Plan
	National level	Regional level	
Balkan	Ministry of Agriculture and Forestry	National Parks, Hunting Associations	none

5. Depredation:

5.1. Depredation losses & compensation paid

→ No depredation losses due to lynx in FYR Macedonia from 1996-2001.

5.2. Regional & seasonal differences

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5.3. Compensation systems

Population	Description	Who is paying?	Procedures to verify lynx kills
Balkan	Cash payment; amount depending on the value of the animal.	Ministry of Agriculture	Examination by national park authorities or forestry police.

5.4. Prevention

→ There are no prevention methods applied in the country.

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

Population	Past (<1996)	Present (1996-2001)	Future (>2001)
Balkan	Extraction of wood Infrastructure development: Tourism / recreation Inbreeding Restricted range Recreation / tourism War / civil unrest Other: Feeding at urban waste collection centres	Extraction of wood Infrastructure development: Tourism / recreation Prey / food base Inbreeding Restricted range Recreation / tourism War / civil unrest Other: Feeding at urban waste collection centres	Extraction of wood Infrastructure development: Tourism / recreation Competitors Prey / food base Inbreeding Restricted range Recreation / tourism Other: Feeding at urban waste collection centres

7. Conservation measures:

Conservation measure	Lacking / proposed	Drafted / ratified	Implemented / applied
Management plans	X		
Legislation on an international level	X		
Legislation on a national level			X
Legislation on a regional level			X
Public involvement	X		
Formal education	X		
Awareness	X		
Capacity-building / Training	X		
Taxonomy	X		
Population numbers and range	X		
Biology and Ecology	X		
Habitat status	X		
Threats	X		
Conservation measures		X	
Monitoring / Trends	X		
Genetic status	X		
Human attitude / Human dimensions	X		
Maintenance / Conservation	X		
Restoration	X		
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		
Recovery management	X		

Conservation measure (cont.)	Lacking / proposed	Drafted / ratified	Implemented / applied
Disease, pathogen, parasite management	X		
Limiting population growth	X		
Captive breeding / Artificial propagation	X		
Genome resource bank	X		

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

Population	Judgement	Most urgent actions needed
Balkan	vulnerable	<ul style="list-style-type: none"> • Raising of public awareness in lynx habitats • Enforcement of the hunting law • Habitat conservation • Public education

9. Projects:

→ No current projects.

10. Contact:

Population	Name	Address
Balkan	Miso HRISTOVSKI	St. Kozle 88/2/3, MK-1000 Skopje e-mail: hristovskim@hotmail.com
<i>Collaborator:</i>	Dragan ANGELOVSKI	Bul. Jane Sandanski 76/1, MK-1000 Skopje e-mail: angelovski@mt.net.mk

Country assessment:

As no distribution map was available, information from HRISTOVSKI (2001) and MELOVSKI & HRISTOVSKI (2002) were used. The maps in these two reports though greatly differ. Therefore, we only considered an area constantly occupied by lynx if so indicated in both references. The symbol for single, not confirmed observations [?] was set where only the ARCTUROS (2002) report indicated lynx presence. It seems that lynx in FYR Macedonia is currently restricted to three isolated national parks only. The two parks in the south however host a very small part of the population, whereas around 95% of the animals are located in and around Mavrovo NP (HRISTOVSKI 2001). Only ten years ago, lynx is supposed to have covered the whole western range of FYR Macedonia, thus there has been a strong decline since (HRISTOVSKI 2001). Especially (but not only) outside the national parks, illegal woodcutting and illegal killing of animals (large carnivore and their prey species) is widespread (HRISTOVSKI 2001, MELOVSKI & HRISTOVSKI 2002). Although the contacts did not put it into the list of major threats (Table 6), law enforcement is considered an urgent conservation measure (Table 8). As a matter of fact, there have not been any known losses of lynx due to illegal acts (Table 4.3). Nevertheless, MELOVSKI & HRISTOVSKI (2002) mention that at least 20 lynx have been illegally killed between 1990 and 1999. According to this, and to statements in the above-mentioned reports, we indeed believe illegal killing to be an important threat to the lynx in FYR Macedonia.

There is obviously not much known about other threats, too; some of those mentioned seem to be rather anecdotic (e.g. death due to waste consumption).

Information on population numbers published in the ARCTUROS (2002) report also greatly differs from the data offered by our contact (Arcturos: 50-60 individuals with positive trends against 30-35 animals with decreasing tendency, this survey). The main current nucleus is in the Mavrovo NP which is 740 km². Even taking the pessimistic estimation, the resulting population density would be surprisingly high: 30 animals are considered to live in this range, hence around 4 lynx per 100 km² (2 lynx per 100 km² for the whole population across the entire range). Considering that ecological impoverishment is a problem (see 6. Major threats), it is hard to believe that there is such good lynx abundance, let alone even better. Between 1993 and 2000, park wardens from Mavrovo NP reported 8 lynx sightings (3 dead animals, 3 observations, twice lynx tracks; HRISTOVSKI 2001), rather few considering the observation density in a national park. GRUBAČ (2002) estimated the Macedonian population also to consist of 35-40 animals, however including the Jakupica Mts. in the north-central part of the country (indicated by [?]) in the distribution map).

Compared to the former inquiry (when no population estimation was possible at all; BREITENMOSER *et al.* 2000) there is now more information available on the situation of lynx in FYR Macedonia. But still, there are many uncertainties, as seen above. The monitoring needs to go on and to be improved. The population is clearly very fragile, but nevertheless of crucial importance for the entire Balkan population (see population report and reports for the neighbouring countries). Especially the information base outside national parks needs to be improved and measures taken to merge the isolated distribution patches. A connection with the occurrences in Albania, and therefore international co-operation, must receive high priority. Within FYR Macedonia, law enforcement to protect both the predator and its prey species should be pushed and further habitat degradation strictly limited. Even if the political and economic situation seems not be favourable for nature conservation, we think that the charismatic lynx could act as a flagship species not only for habitat and species recovery programmes, but to build coalitions to conserve the natural heritage of this region.

References:

- ARCTUROS 2002: Protected Areas of the Southern Balkans – Legislation, Large Carnivores, Transborder Areas. Hellenic Ministry of the Environment, Physical Planning, and Public Works: 228 pp.
- BREITENMOSER, U., BREITENMOSER-WÜRSTEN, CH., OKARMA, H., KAPHEGYI, T., KAPHEGYI-WALLMANN, U., & MÜLLER, U. M. 2000: Action Plan for the Conservation of the Eurasian Lynx (*Lynx lynx*) in Europe. Nature and environment No. 112, Council of Europe Publishing, Strasbourg: 1-70.
- GRUBAČ, B.R. 2002: Contributions on the Balkan Lynx *Lynx lynx martinoi* (Mirić, 1978) in Macedonia and Montenegro. Journal of the Institute for Nature Protection of Serbia, Belgrade 53 (2): 37-47.
- HRISTOVSKI, M. 2001: On the status of the Balkan lynx in the former Yugoslav Republic of Macedonia. The Balkan Lynx Population - History, Recent Knowledge on its Status and Conservation Needs. Ed. by Ch. Breitenmoser-Würsten and U. Breitenmoser, KORA Bericht No. 7: 8-11.
- MELOVSKI, L. & HRISTOVSKI, S. 2002: Large Carnivores in the "Republic of Macedonia". In: Arcturos 2002: Protected Areas of the Southern Balkans – Legislation, Large Carnivores, Transborder Areas. Hellenic Ministry of the Environment, Physical Planning, and Public Works: 81-93.