Bulgaria (BG)

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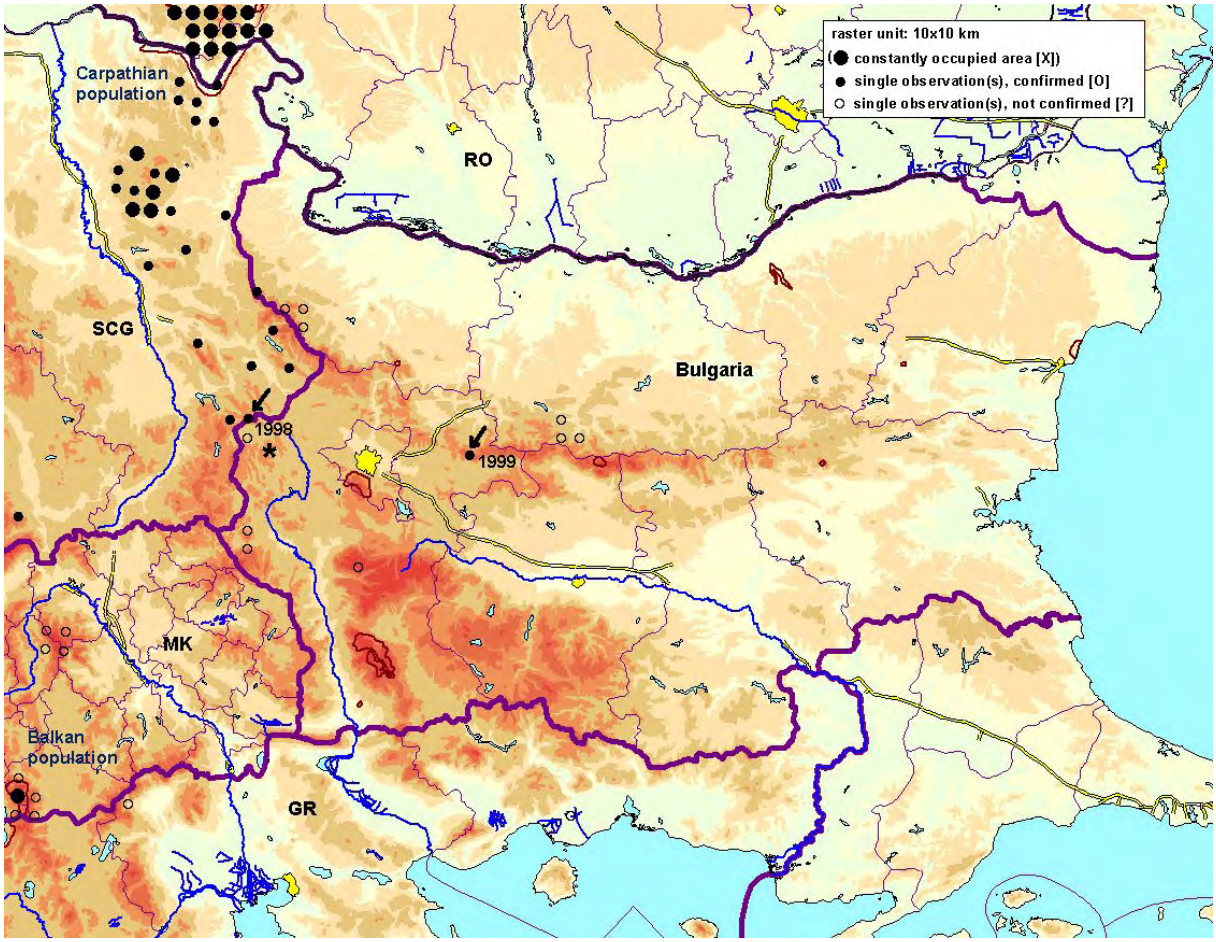
Area: 110'910 km²
Forests & Woodland: 33.4 % (2000)
Human population: 7'707'495 (2001)
Population density: 69.5 / km²

1. Lynx distribution in Bulgaria in 2001:



(* new data from March 2003: lynx tracks)

Geographic range of the population(s)

Carpathian population: Scarce data of lynx presence in the western to central Balkan Mountains probably of origin from the Carpathian population. [a]

Balkan population: Unconfirmed data for lynx presence in south-west Bulgaria (Osogovo, Rui, Kraishte, Maleshevska and Vlahina mountains) of possible origin from the Balkan population. [a]

Methods: sightings & signs, unspecific survey, lynx mortality

2. Lynx population(s):

Population	Pop. size (Ø 1996-2001)	Lynx distribution area [km²]				[X] & [X+O] / country area [%]	Pop. density [lynx/100 km²]
		[X]	[O]	[?]	[X+O]		
Carpathian / Balkan	single individuals	0	200	1'000	200	0 / 0.2	-
Total	*single individuals*	*0*	*200*	*1'000*	*200*	*0 / 0.2*	*-*

3. Population size:

3.1. Estimations

Population	Year	Official estimation	Additional estimation	Accuracy	Tendency
Carpathian / Balkan	1996-2001	**single individuals**		More frequent reports of lynx presence for the last 5 years probably stand for an increase of lynx number and distribution area in Bulgaria, but this still needs to be proved.	**unknown**

3.2. Methods and institutions responsible for the estimations

Population	Official estimation	Additional estimation
Carpathian / Balkan	(no official or additional population estimations)	
Institution	1. Ministry of Environment and Waters; 2. National Board of Forests of the Ministry of Agriculture and Forests	-

4. Legal situation, harvest and losses of lynx:

4.1. International treaties

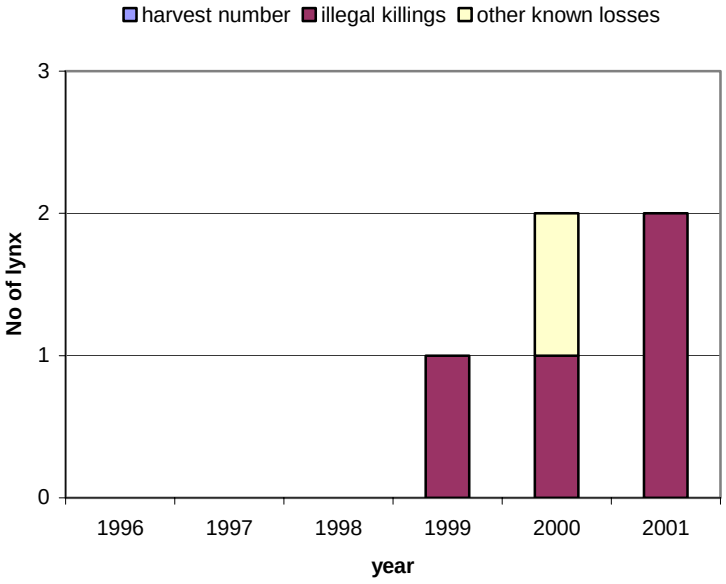
EU Habitat Directive	Bern Convention	CITES
-	ratified 1991	ratified 2001

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	1996	-	n.d.a.	n.d.a.	n.d.a.	0	n.d.a.	0	0	0	*0*	*?*
	1997	-	n.d.a.	n.d.a.	n.d.a.	0	n.d.a.	0	0	0	*0*	*?*
	1998	-	n.d.a.	n.d.a.	n.d.a.	0	n.d.a.	0	0	0	*0*	*?*
	1999	-	n.d.a.	n.d.a.	1	0	n.d.a.	0	0	0	*1*	*?*
	2000	-	1	n.d.a.	1	0	n.d.a.	0	0	0	*2*	*?*
	2001	-	n.d.a.	n.d.a.	2	0	n.d.a.	0	0	0	*2*	*?*
Total 1996-2001		*-*	*1*	*n.d.a.*	*4*	*0*	*n.d.a.*	*0*	*0*	*0*	5	-
Yearly Ø		*-*	*0.17*	*n.d.a.*	*0.67*	*0*	*n.d.a.*	*0*	*0*	*0*	*0.83*	*?*
Known mortality / 100 km² [X+O]		*-*	*0.09*	*n.d.a.*	*0.34*	*0*	*n.d.a.*	*0*	*0*	*0*	*0.42*	-



Number of known losses to the lynx in Bulgaria from 1996-2001.

4.4. Lynx management

Population	Authority in charge		Management / Conservation Plan
	National level	**Regional level**	
Carpathian / Balkan	Ministry of Environment; National Board of Forests, under supervision of the Ministry of Agriculture and Forests.	Regional Inspectorates of the Ministry of Environment, State Forestry Departments.	none

5. Depredation:

5.1. Depredation losses & compensation paid

Population	Year	Sheep	Goat	Reindeer	Other species	Total	Compensation (in Euro)	Compensation other predators
Carpathian / Balkan	1996	1	0	0	0	1	0	n.d.a.
	1997						0	n.d.a.
	1998						0	n.d.a.
	1999	numbers for 1997-2001 are not known					0	n.d.a.
	2000						0	n.d.a.
	2001						0	n.d.a.
Total 1996-2001		*?*	*?*	*?*	*?*	*?*	*0*	n.d.a.

5.2. Regional & seasonal differences

→ Not known.

5.3. Compensation systems

Population	Description	Who is paying?	Procedures to verify lynx kills
Carpathian / Balkan	(Compensation is currently paid for bear and wolf damages only because of the unclear status of the lynx.)	(1. Within the management areas of game stations by the game stations; 2. Within the management areas of forest or stations by the State.)	No procedures established.

5.4. Prevention

Population	Prevention methods	Legal measures	Illegal actions
Carpathian / Balkan	Livestock guarding dogs for sheep and goats	none	none

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

Population	Past (<1996)	Present (1996-2001)	Future (>2001)
Carpathian / Balkan	Shooting Poisoning Competitors Limited dispersal Low densities Other: illegal trophy hunting	Extraction of wood Shooting Wildfire Competitors Prey / food base Limited dispersal Low densities Other: illegal trophy hunting	Extraction of wood Infrastructure development: Tourism / recreation Shooting Trapping / snaring Poisoning Vehicle and train collision Competitors Prey / food base Limited dispersal (?) Low densities (?) Other: illegal trophy hunting

Comment: The most important threats to the lynx in Bulgaria are currently the rapid decrease of prey base (roe deer and chamois) and the poaching of lynx for trophy.

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	not in force		
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		
Community-based initiatives	X		
Recovery management	X		
Disease, pathogen, parasite management	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
Carpathian	data deficient	• Study on dispersal and corridors for migration into the country, trend and threats.
Balkan	data deficient	• Genetic study to clarify taxonomic status, and study on the origin of the current lynx presence in Bulgaria.

Comment: It is urgent to conduct a study on the lynx presence (distribution area) in Bulgaria and the origin of the specimens settled in the country to identify their belonging to one or the other population.

9. Projects:

Population	Title	Duration	Contact
Carpathian / Balkan	Identification of the current conservation status, habitat and prey base availability, and human impact/relationship on the natural recovery of the lynx (*Lynx lynx*), considered as extinct in Bulgaria. (Study proposed but funding not secured yet.)		Diana Zlatanova: zlite@mbox.infotel.bg
Carpathian / Balkan	Field study and elaboration of a National Action Plan for the population of Balkan chamois (*Rupicapra r. balcanica*) in the three National Parks Rila, Pirin and Central Balkan. (Lynx involvement: research on possible lynx presence influencing the chamois population).	2002-2003	Peter Genov, Institute of Zoology, Bulgarian Academy of Science: genov_bg@yahoo.it
Carpathian / Balkan	Research of the wolf (*Canis lupus*) population and its influence on the populations of the other mammal and bird species in Osogovo mountain. (Lynx involvement: research of possible lynx presence and its relation to the wolf as a competitor for prey).	2002	Peter Genov, Institute of Zoology, Bulgarian Academy of Science: genov_bg@yahoo.it

10. Contact:

Population	Name	Address
Carpathian / Balkan	Diana ZLATANOVA	Environmental Education and Research Centre, Sofia Zoo, ul. Srebarna 1, P.O. Box 67, BG-Sofia 1407 e-mail: zlite@mbox.infotel.bg
Collaborator:	Peter GENOV	Institute of Zoology, Bulgarian Academy of Science, ul. Tzar Osvoboditel 1, BG-Sofia 1000 e-mail: genov_bg@yahoo.it

Country assessment:

Officially, the lynx in Bulgaria is considered to be extinct (ZLATANOVA, TZVETKOV & TZINGARSKA-SEDEFCHEVA 2001, DUTSOV, VALCHEV & TSINGARSKA 2002). Until 1940, lynx have inhabited mainly the ranges of south-western Bulgaria: Pirin, Rila, Rhodopi and Stara Planina (ZLATANOVA, TZVETKOV & TZINGARSKA-SEDEFCHEVA 2001). So far, no systematic monitoring exists, data are only occasionally gathered. Nevertheless, especially in recent years,

there were indications of lynx presence mainly reported from local people, and some of them even verified. Around 90% of this information came from the border area to Serbia and Montenegro (Western Stara Planina) (ZLATANOVA, TZVETKOV & TZINGARSKA-SEDEFCHEVA 2001). These findings match well with the data available from the Serbian side of the border (see map). This would however make a Carpathian origin of the Bulgarian occurrences more probable. Astonishing is the confirmed case east of Sofia, from where the only other (unconfirmed) signs are quite far away. However, as these observations are all along the same mountain chain (Stara Planina), they may indicate a further colonisation of the range to the east than expected, yet this needs further investigation.

If we assume that there is no established lynx population in Bulgaria, but only some scattered individuals, the number of illegal killings seems to be extremely high, compared to the same kind of data from e.g. Albania or FYR Macedonia: since 1999, 1-2 lynx per year have become known in Bulgaria (Table 4.3). According to unofficial data, lynx have been killed during the last ten years in Western Stara Planina (ZLATANOVA, TZVETKOV & TZINGARSKA-SEDEFCHEVA 2001). Of course, this is not a good basis for a recolonization of the lynx in Bulgaria. Additionally, the loss of prey base and suitable habitat for lynx has been severe (ZLATANOVA, TZVETKOV & TZINGARSKA-SEDEFCHEVA 2001, DUTSOV, VALCHEV & TSINGARSKA 2002). Considering these conditions, re-introductions, as earlier proposed by the Wilderness Fund (SPASSOV, GEORGIEV & SPIRIDONOV 2001), do not seem to be the most urgent next steps. Bulgaria should, however, prepare for the return of the lynx, either through spontaneous recolonisation or re-introductions. This incorporates improvement of the prey base, public awareness campaigns and clarification of the origin of the lynx occasionally observed.

Genetic analysis of available material is probably one of the most important measures to get started with, because other measures might depend on the results. A natural recolonization from the Carpathians for example seems at the moment to be more likely, whereas an affiliation to the Balkan population would probably require supportive measures (e.g. habitat amelioration) to connect them permanently to other remnants of this population. In both cases, the prey base and habitat should be preserved and illegal killings strictly controlled. Regardless to the origin of the Bulgarian lynx, co-operation with the neighbouring countries is needed in any case.

References:

DUTSOV, A., VALCHEV, K. & TSINGARSKA, E. 2002: Large Carnivores in S.W. Bulgaria. In: Arcturos 2002: Protected Areas of the Southern Balkans – Legislation, Large Carnivores, Transborder Areas. Hellenic Ministry of the Environment, Physical Planning, and Public Works: 95-103.

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