



Универзитет у Београду
Шумарски факултет

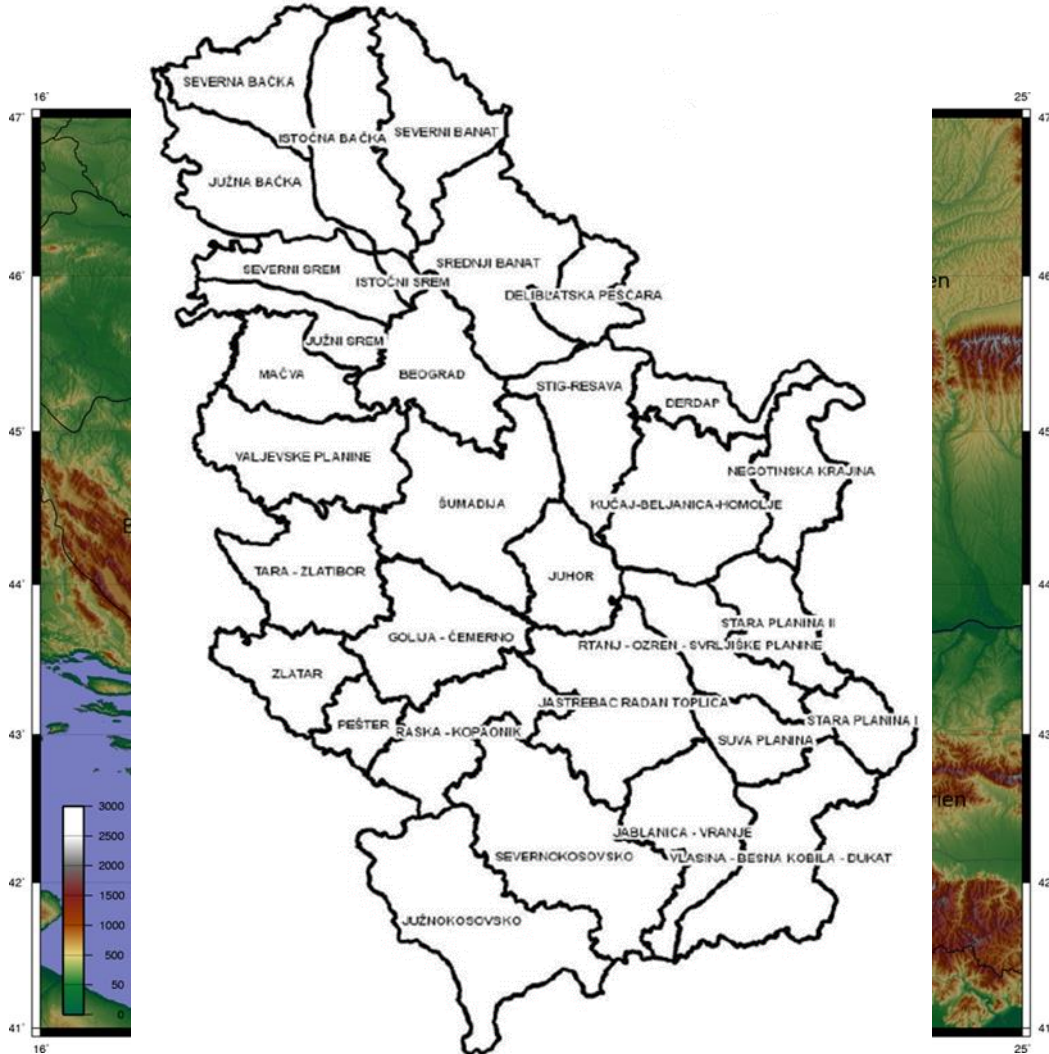
Poaching in Serbia

What we (don't) know

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Introduction



357 hunting grounds
30 hunting regions
95% of the territory

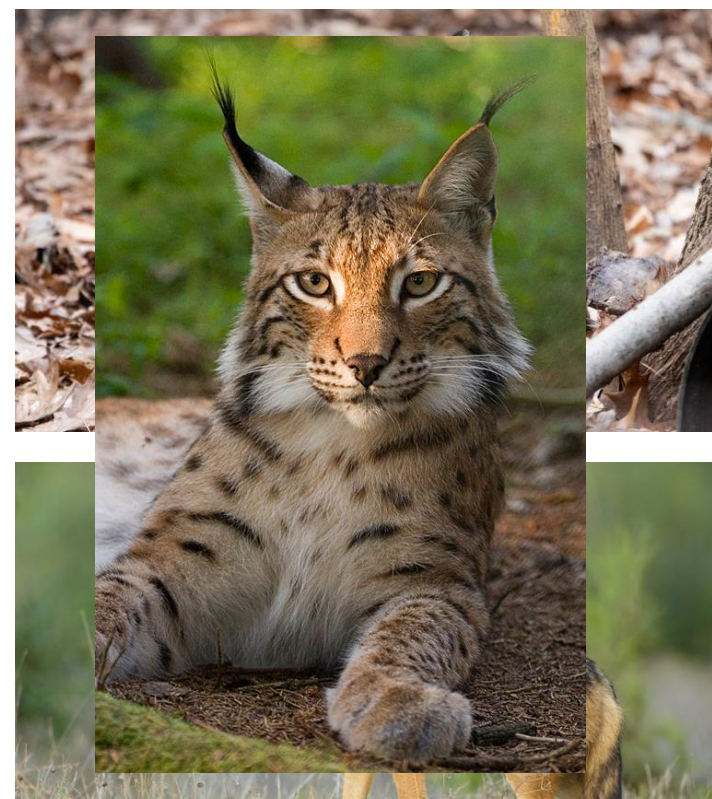


Introduction

Law on game and hunting 2010

62 game species

- 45 can be hunted
(*wolf, jackal, fox*)
- 17 protected
(*bear, lynx*)



Introduction

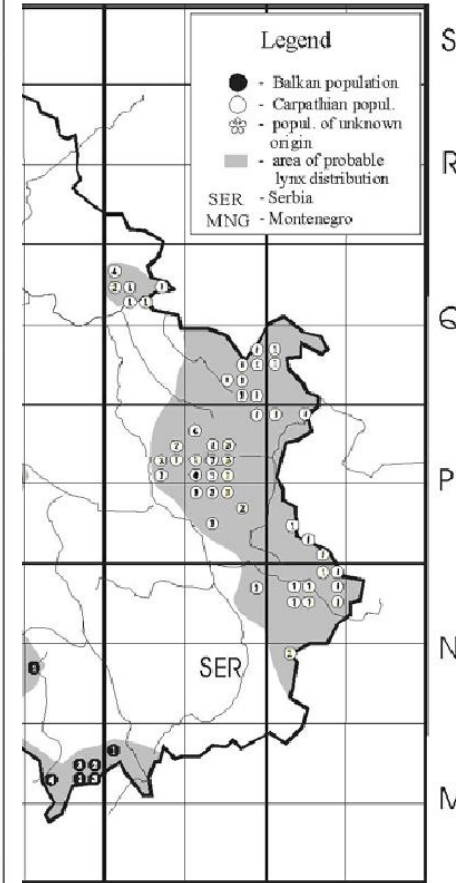
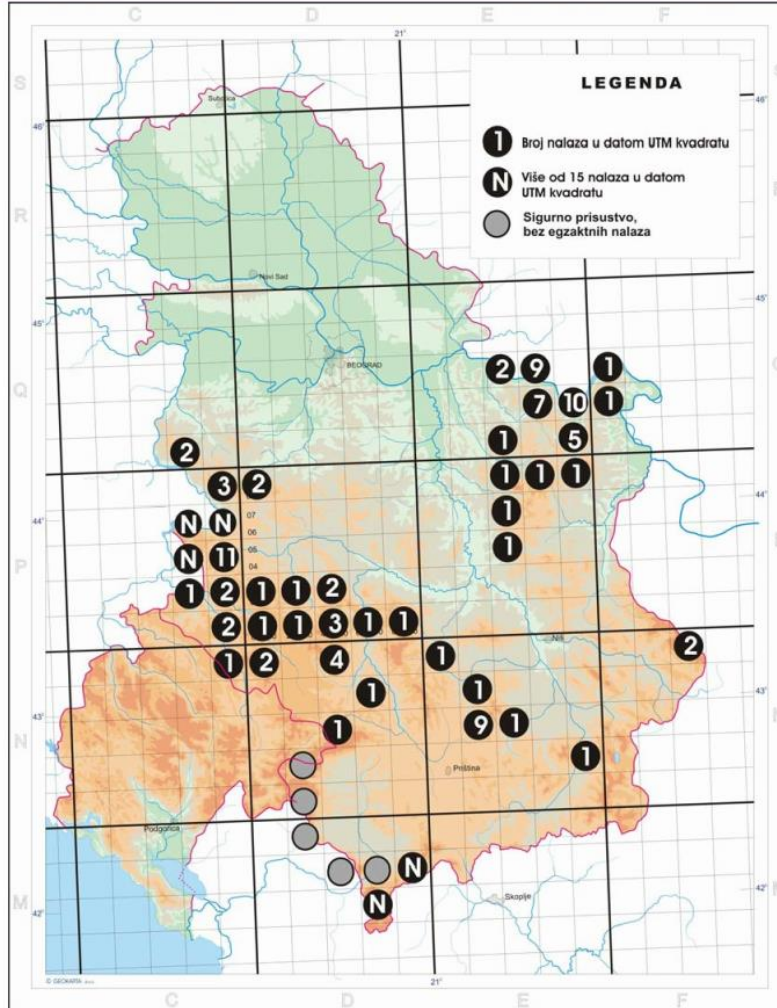
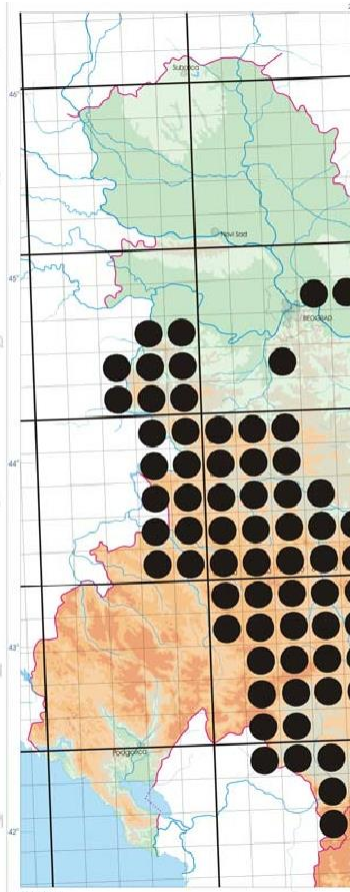


Brown bear abundance
(IUCN Red list, 2019)



Eurasian lynx abundance
(IUCN Red list, 2019)




Game management





Lynx

Brown bear

Game management

Species	Trend	Optimal number	Estimated size	Planned culling	Realized culling	Year	Source
Wolf		1,344	1,520	432	188	2012/13	Lavadinović, 2016
			1,300-1,600		145-276	2011-'17	Statistical yearbook, 2019
			800-900		160-188		Ćirović & Paunović, 2018
Jackal		4,432	9,164	3,739	2,431	2012/13	Lavadinović, 2016
Fox		36,282	43,439	18,484	13,621	2012/13	Lavadinović, 2016

Game management

Species	Trend	Optimal number	Estimated size	Planned culling	Realized culling	Year	Source
Lynx			15			2012/13	Lavadinović, 2016
			8-43			2011-'17	Statistical yearbook, 2019
			90			2018	Ćirović & Paunović, 2018
Brown bear			53-54			2012/13	Lavadinović, 2016
			48-148			2011-'17	Statistical yearbook, 2019
			100			2018	

Game management



Roe deer

Population size - 133,000
Hunters' bag - 11,000
(Statistical yearbook, 2019)

Sex ratio - 1:1
Age classes - 7+
Population coefficient - 0.6

Females
65,000



Fertile females
50,000



Offspring
30,000

Poaching and illegal hunting

Lovokrada

(Stealing in hunting)



Krivolov

(Wrong hunting)



Poaching and illegal hunting

- Illegal hunt by regular hunters during the hunting season on other species
- Illegal hunt by administration staff or their guests
- Illegal hunting tourism
- Illegal hunting by powerful groups above law
- Illegal trophy hunt

Valchev et al., 2006

- Illegal hunting for subsistence
- Illegal hunting to prevent damages
- Ignorance or lack of experience
- Illegal hunting to supply restaurants
- Protest against hunting ground management

Poaching and illegal hunting

~~FOX~~

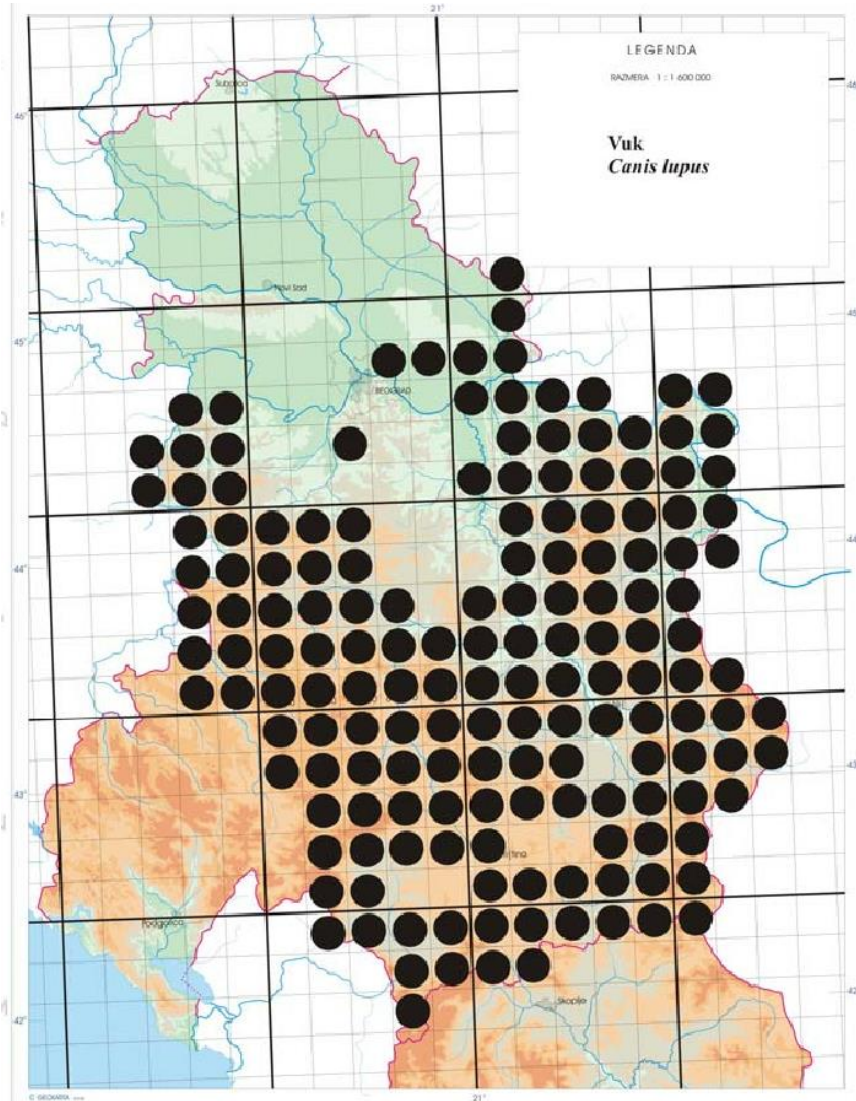
~~JACKAL~~

LYNX ?

WOLF ✓

BEAR ?

Poaching and illegal hunting



WOLF



Poaching and illegal hunting

Three variables – area & staff & hunters:

$$\text{NOC} = 0,0013 * \text{HA}^{0,80} * \text{GK}^{0,71} * \text{M}^{0,22}$$

Lavadinović *et al.*, 2012

Four variables – area & staff & hunters & roe deer abundance

$$\ln y = a + b * x_1 + c * x_2 + d * x_3 + e * x_4$$

(2.43) (0.85) (0.67) (-0.25)

$$y = 2.40 * 1.00^{x_1} * 1.17^{x_2} * 1.00^{x_3} * 0.99^{x_4}$$

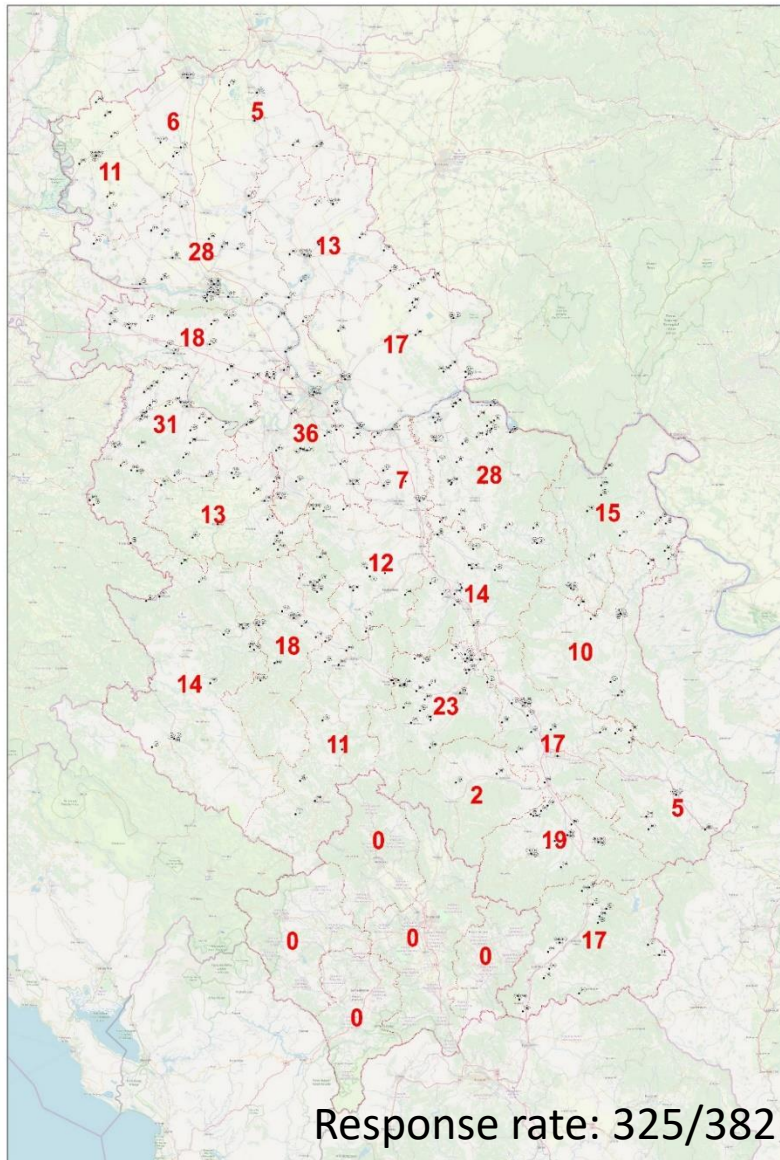
$$R = 0.42$$

$$R^2 = 0.18$$

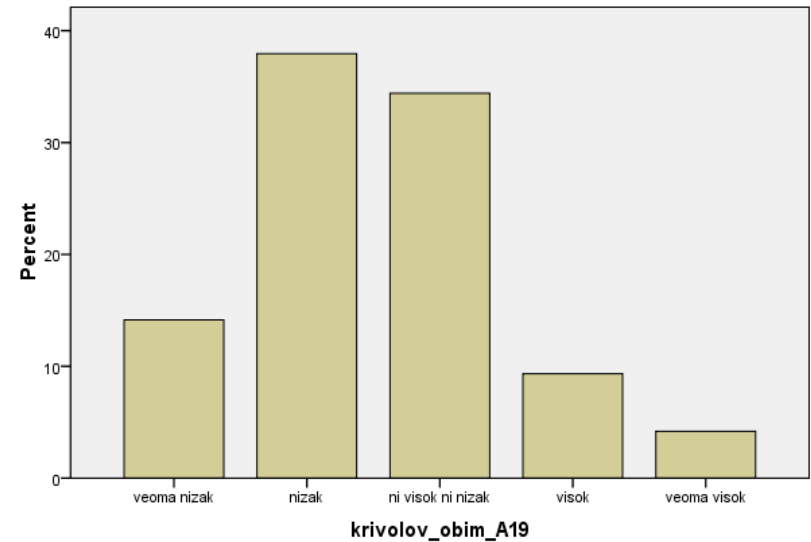
$$F = 4.981^{+0.0011}$$

Lavadinović *et al.*, 2014

Poaching and illegal hunting



krivolov_obim_A19

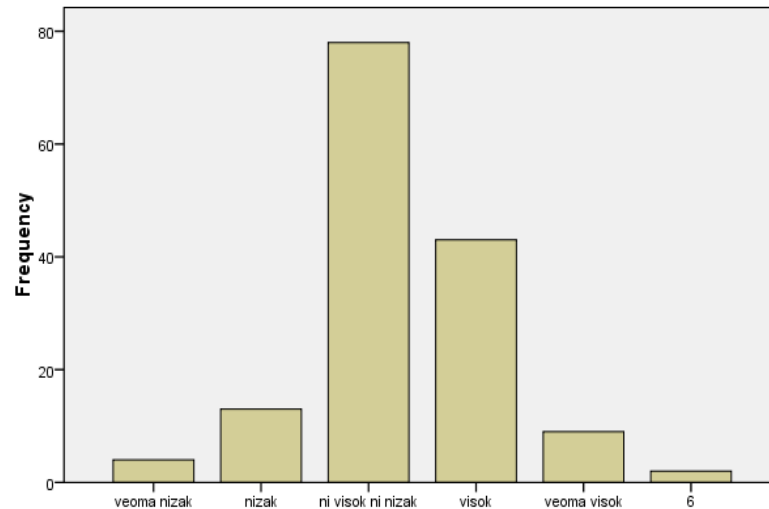


Responses	%
Extreme high	3.7
High	12.9
Neutral	28.3
Low	32.2
None	22.9

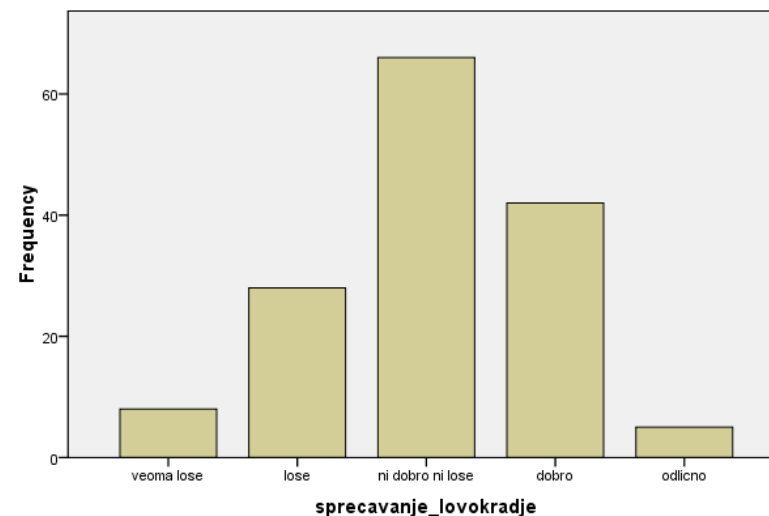
Poaching and illegal hunting



Gamekeepers



sprecavanje_lovokradje



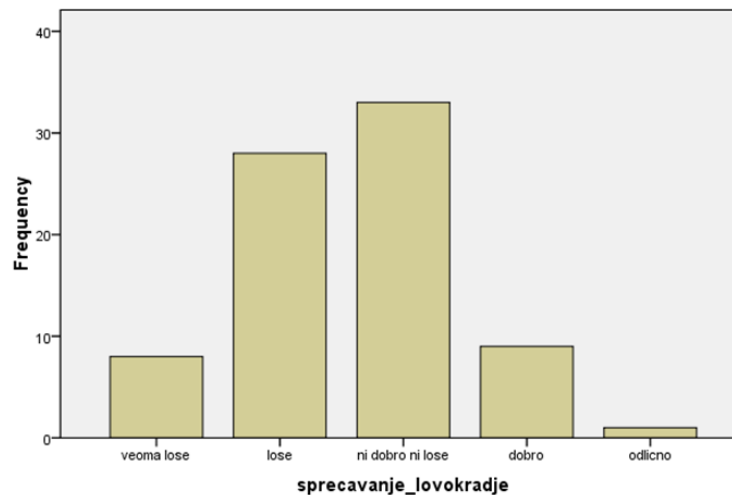
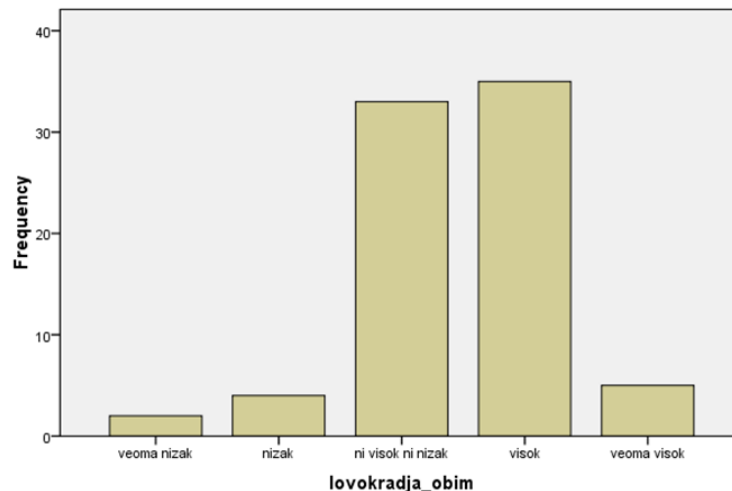
sprecavanje_lovokradje

Poaching and illegal hunting



Hunting ground managers

lovokradja_obim



Conclusion

- Monitoring of large carnivores is poor
- Abundance is increasing
 - but lynx and brown bear abundances are still low
- Poaching in Serbia is intensive
- Various motive and complex issue
- No reliable data on large carnivores poaching
- **We need better monitoring!**

Thank you / Mulțumesc

