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The status of the European Roller in Serbia and the conservation activities in Vojvodina province

Szekeres Ottó,
Riparia Association of Environmentalists
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Range states	Breeding	Migration	Wintering
Albania	yes	No	no
Armenia	yes	No	no
Austria	yes	Yes	no
Azerbaijan	yes	No	no
Belarus	yes	No	no
Bosnia and Herzegovina	yes	No	no
Bulgaria	yes	Yes	no
Croatia	yes	No	no
Cyprus	yes	Yes	no
Czech Republic	extinct	No	no
Estonia	extinct	No	no
France	yes	Yes	no
Georgia	yes	No	no
Greece	yes	Yes	no
Hungary	yes	Yes	no
Italy	yes	No	no
Latvia	yes	Yes	no
Lithuania	yes	No	no
Macedonia, the former Yugoslav Republic of	yes	No	no
Montenegro	yes	No	no
Moldova	yes	Yes	no
Poland	yes	Yes	no
Portugal	yes	Yes	no
Romania	yes	Yes	no
Russia (European)	yes	No	no
Serbia	yes	Yes	no
Slovakia	yes	Yes	no
Slovenia	extinct	No	no
Spain	yes	Yes	no
Turkey	yes	Yes	no
Ukraine	yes	Yes	no

In Serbia the
european roller
(*Coracias garrulus*) is
a regular breeding
species.

- The table is accurate regarding Serbia.

Table 1. European range states of the European Roller. Member states of the EU in bold (BirdLife International 2008).



Country	Breeding pairs.	Quality	Year(s) of the latest estimate	Breeding Population trend in the last 15 years (= 3 generations)	Quality
Albania	10-50	M	2002	decline	P
Armenia	300-650	M	2000-2002	stable	M
Austria	10-18	G	2001-2008	stable	G
Azerbaijan	1000-5000	P	1996-2000	stable	P
Belarus	20-50	M	2008	large decline	M
Bulgaria	2.5-5.5	M	1990-2005	small increase	M
Croatia	0-5	M	2002	large decline	P
Cyprus	2000-4000	P	1994-2000	small increase	P
Czech Republic	0	G	2000	extinct	
Estonia	1-5	G	2003-2007	moderate decline	M
France	800-1000	M	2007	moderate increase	M
Georgia	present				
Greece	200-300	P	1995-2000	small decline	P
Hungary	1000	G	2007	stable	G
Italy	300-400	P	2003	stable	P
Latvia	20-30	G	2005	large decline	M
Lithuania	35-50	G	2007	large decline	G
Macedonia, the Former Republic of Yugoslav	300-1000	P		moderate decline	P
Moldova	50-80	M		large decline	P
Poland	60-80	G	2007	moderate decline	M
Portugal	80-150	M	2001-2005	moderate decline	P
Romania	4600-6500	P	2002	small decline	P
Russia (European)	6000-6500	P	1990-2000	moderate decline	M
Serbia	230-270	G,M	2016	small increase	G,M
Slovakia	1-20	P	2008	large decline	P
Slovenia	0	M	2008	possibly extinct	M
Spain	2000-6000	M	2006	moderate decline	P
Turkey	30 000-60 000	P	2001	moderate decline	P
Ukraine	4000-5000	M	1990-2000	large decline	G
Total EU (27)	13 000 – 25 000			decline	

Population size and trend between 2000-2016 in your country. Please check and update the table if necessary.

*Population size and trend by country (BirdLife International 2008).
Notes: G – Good; M – Medium; P – Poor.*



What are the main threats for rollers in your country?

- Critical: a) the loss of the natural habitats; b) the agriculture is getting more and more intensive; c) the lack of the natural breeding cavities d) lack of old softwood trees.
- High: decrease of food supply (less and less natural possibilities for the rollers to find food)
- Medium: a) hunting; b) illegal bird trading; c) poisoning; d) electrocution e) road kills.
- Long term threats: the loss of the habitat is still a very big problem, for which we still not have a solution.
- The high increase of the agricultural activities have just recently emerged, for which we also do not have a solution.
- Nothing better than in 2008

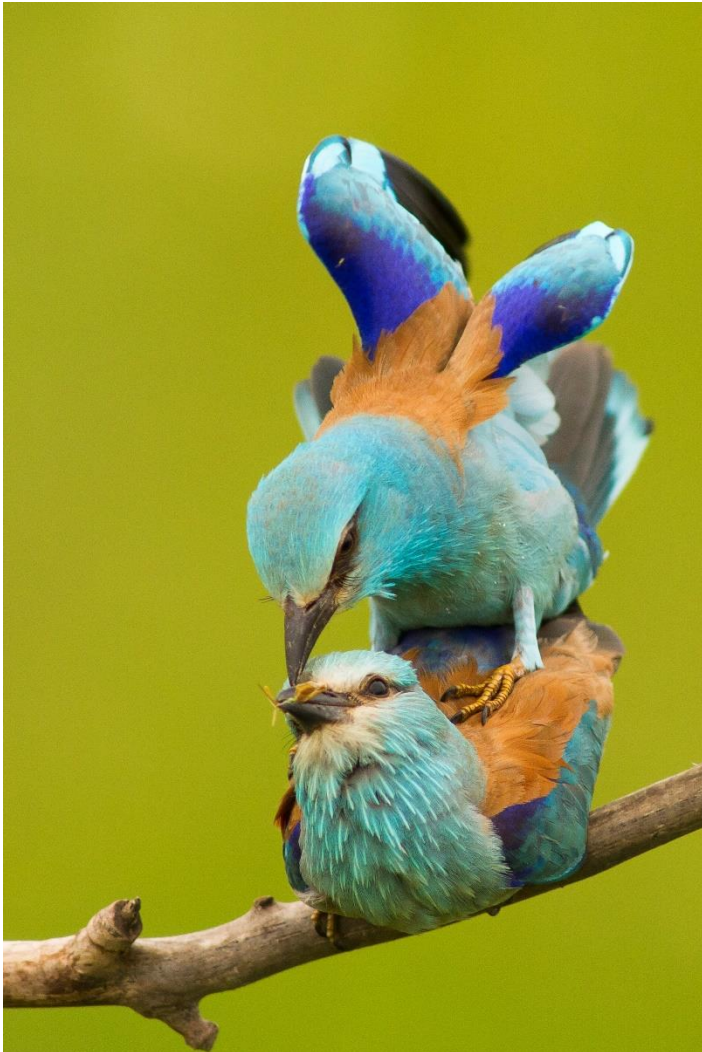


Have there been any changes in your country regarding the policies and legislations relevant to the management of the species? What percentage of the breeding territories are protected?

- The European roller is a strictly protected species in Serbia
- About 25% of the breeding territories are protected



What is the main goal in your country regarding the roller population?



- The main goal in Serbia regarding the roller is to increase the population, and the increase of the breeding area.



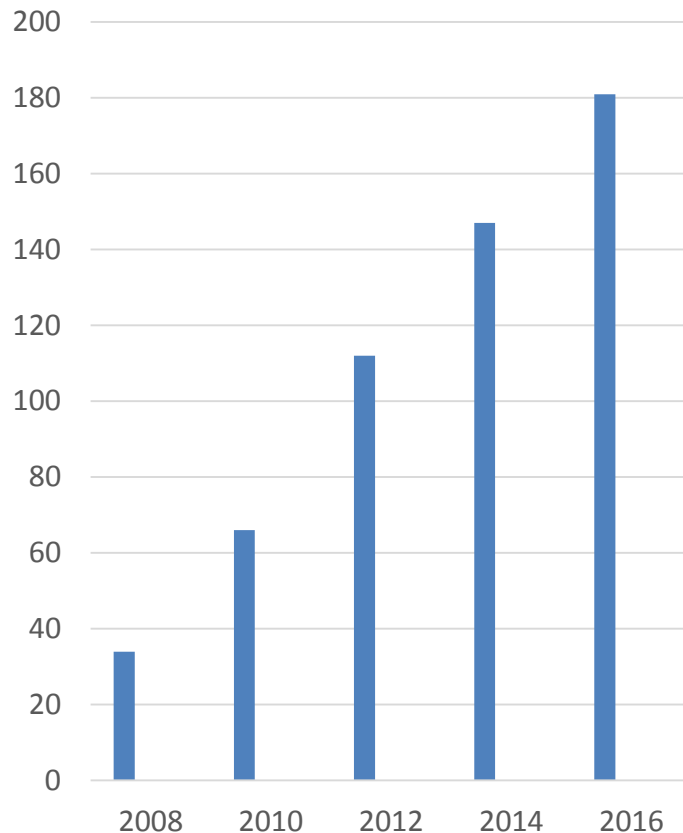
Please list the recent conservation activities (national species action plans, monitoring programmes, habitat restorations, research programmes) that are relevant to the species within your country.

- Recent conservation activities in Vojvodina:
 - A) installing artificial nestboxes
 - B) education
 - C) increasing the protected areas
 - D) restoring the breeding areas of the roller
 - E) monitoring programs
- Activities started in 2003, when the breeding population was under 20 pairs



RESULTS

Breeding pairs in artificial nest boxes in Vojvodina



- Average clutch size in nestboxes: 4,0
- Avg. 3,7 chicks fledged out of nestboxes (calculated from the successful pairs)
- 91% of the breeding pairs were successful
- Over 85% of the chicks, 223 Ad birds ringed
- Colour-ringing since 2010



Please list any new scientific findings that could affect the conservation of the species.

- The future increasing of the breeding area is possible with installing nestboxes not far (10-20 km) from the breeding area borders, because the young birds are preferring the nestboxes near their hatching area.



Please explain your monitoring methods.

- Our monitoring methods started with the installing and controlling of the artificial nestboxes.
- We monitor the breeding success.
- We try to ring as many chicks as we can and also trying to ring the adult breeding rollers.
- Since 2010 we also use colored rings.
- Since 2012 regional groups (NGO s) are working on the conservation, and monitoring programs, but we put all the data in a unified database.
- We are trying to put on maps all the breeding pairs.



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Thank you.

European Roller – status in central Serbia (South of Sava and Danube)

Dimitrije Radišić

Bird Protection and Study Society of Serbia

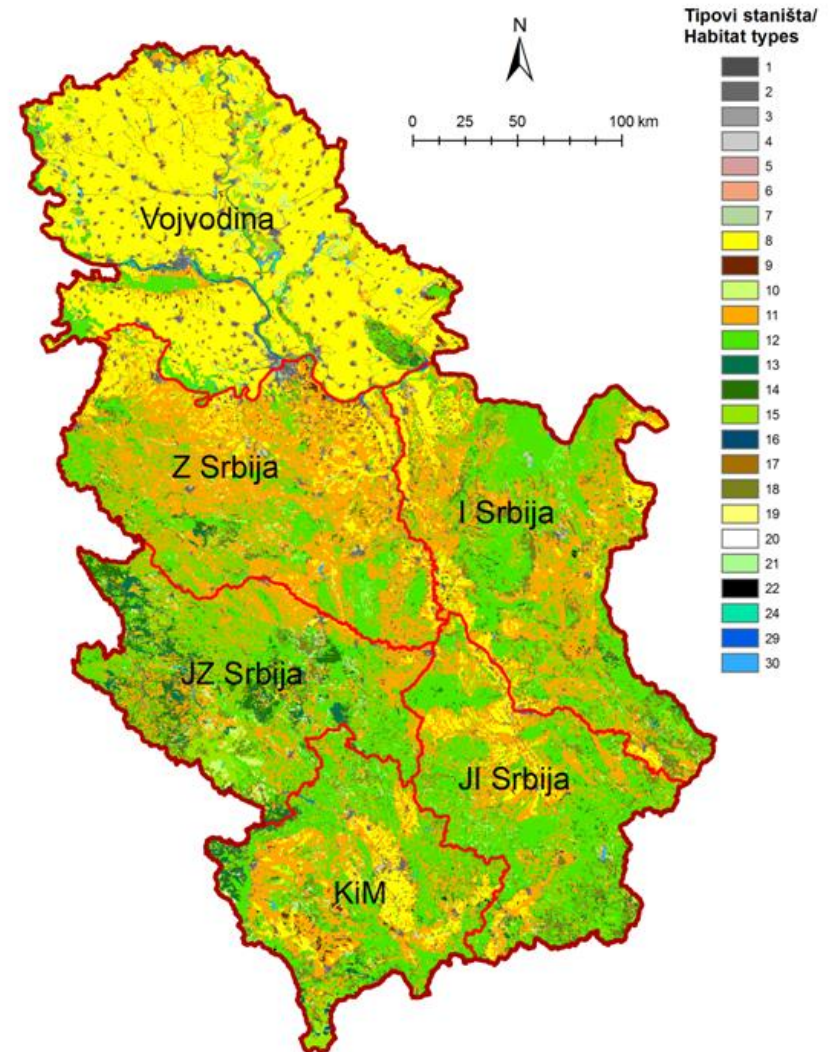


DRUŠTVO ZA ZAŠTITU I
PROUČAVANJE PTICA SRBIJE



Landscapes and Habitats

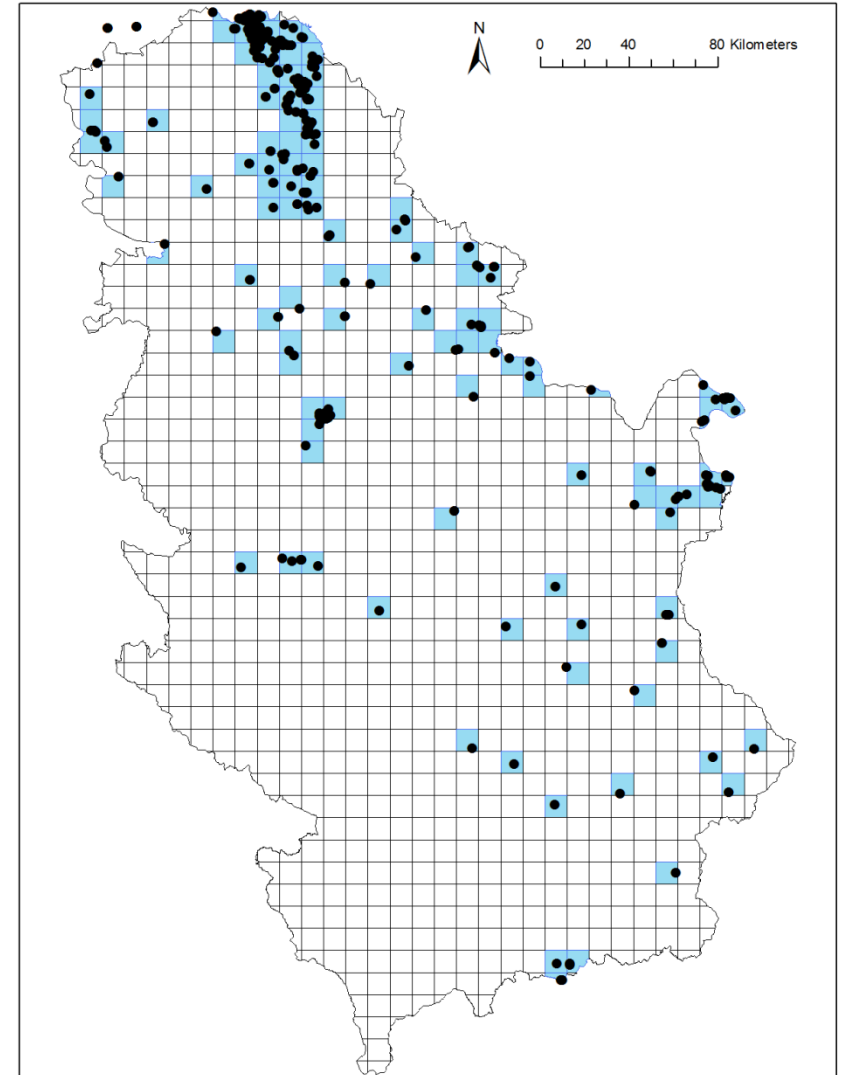
- Different elevation
- Habitat mosaic
- Farmland: 45%
- Heterogeneous farmland: 37%
- Grassland+ Pastures: 6%
- Low intensity agriculture
- Land abandonment





Roller population – hystorical data

- Once very common bird
- Present in lowland, valleys and foothills throughout the country
- Scarce precise data from the end of 19th century and first half of 20th century
- Population decline in second half of 20th century (especially during last 30 years)
- Despaired from many areas
- Local farmers are familiar with the species



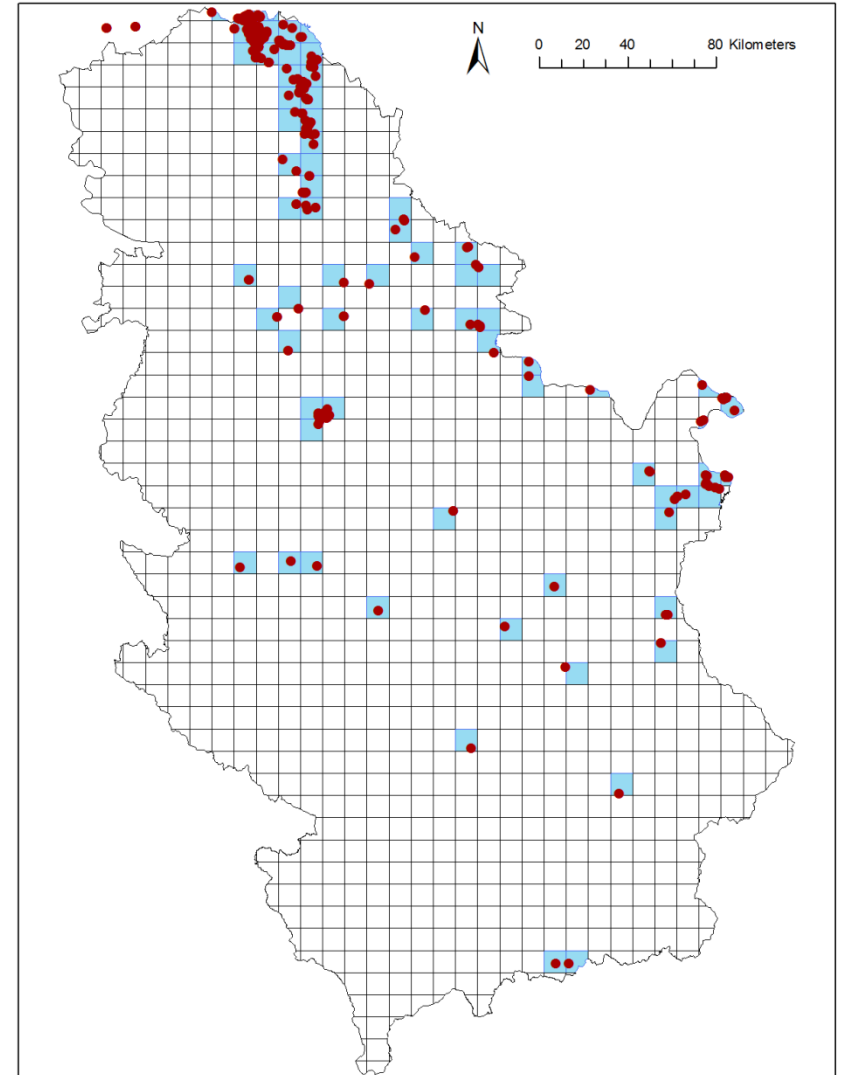
Current situation

- Only three areas with confirmed or probable breeding:

1. Negotinska krajina (E Serbia)
2. Timok valley (E Serbia)
3. Barajevo (Central Serbia)

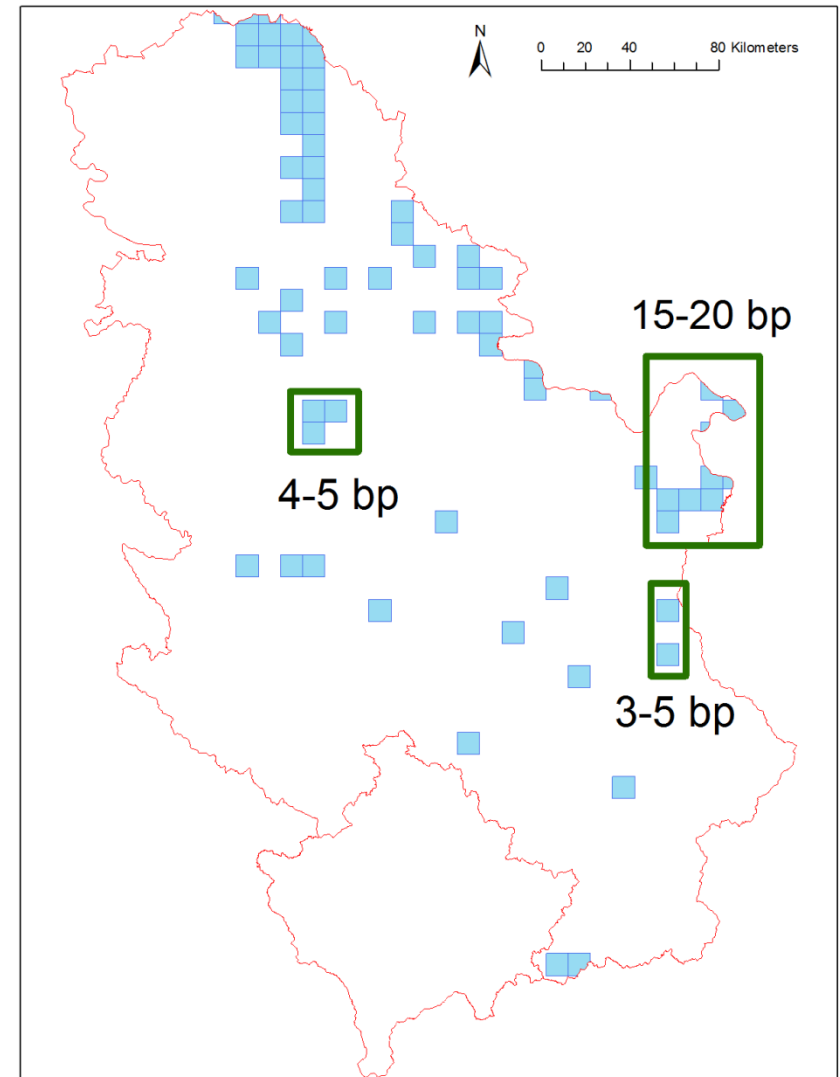
Possible breeding sites:

1. Preševo valley (South Serbia)
2. Ramski pesak (NE Serbia)
3. Donji Milianovac (NE Serbia)
4. Velika i Zapadna Morava Valley



Current situation

- No systematic research or population monitoring
- Negotinska krajina: 15-20 breeding pairs
- Timok valey: 3-5 breeding pairs
- Barajevo: 4-5 breeding pairs
- Total: 25-35 breeding pairs (+5-10 bp at Kosovo)
- Population is probably declining (unknown reason)

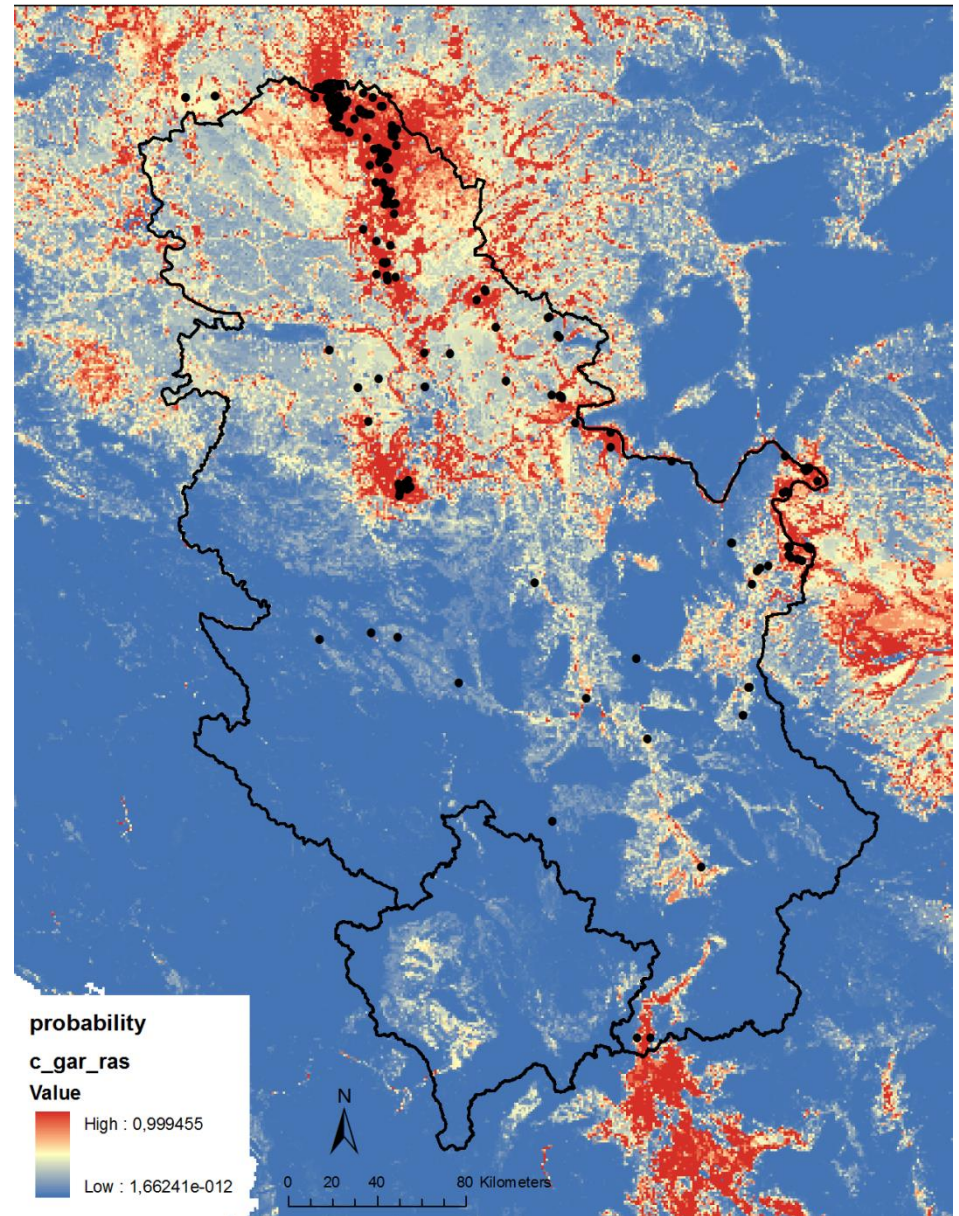


Species distribution modelling

- Goal: finding suitable habitats in Serbia
- Presence points from Serbia, Macedonia, Bulgaria, Romania
- Breeding period: 15.5.-15.8.
- 2000-2016
- Maxent
- Environmental data: topography, climate, land cover
- Background: 50 km buffer around each point
- Suitable habitats – 10 percentile threshold
- GAP analysis – IBA and NPA

Species distribution modelling- Results

- AUC value: 0,816 (good model performance)
- The most important variables: bio1, grassland, bio10
- Total number of suitable cells: 625 (+176 at Kosovo)
- 55 cells within NPA (8%)
- 78 cells within (12%)



Nest boxes

- 10 nest boxes installed in Negotinska krajina in 2011
- 2 were occupied in 2012
- At least one was occupied in 2013 and 2016
- 15 nest boxes installed in Barajevo surrounding since 2014 (still no occupied)



Conclusions

- Roller population in Serbia south of Sava and Danube exists
- Population is small, restricted to few areas, fragmented and declining
- No systematic research, monitoring and conservation measures
- Important for connection of Pannonian and SE Balkan population



Thank you for your attention!

