







The status of the European Roller in Austria

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Population size and trend in Austria



Country	Breeding pairs.	Quality	Year(s) of the latest estimate	Breeding Population trend in the last 15 years (= 3 generations)	Quality
Albania	10-50	Μ	2002	decline	Р
Armenia	300-650	Μ	2000-2002	stable	М
Austria	2 (2016)	G	2001-2016	decline	G
Azerbaijan	1000-5000	Р	1996-2000	stable	Р
Belarus	20-50	М	2008	large decline	Μ
Bulgaria	2.5-5.5	М	1990-2005	small increase	Μ
Croatia	0-5	М	2002	large decline	Р
Cyprus	2000-4000	Р	1994-2000	small increase	Р
Creek Denuklie	0	C	2000	outingt	

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

Main threats:

Medium:

- Road kills: Important Mortality Factor
- Urban Development/Urbanization
 - Disappearing of non productive pieces of land (tracks..)



Critical: > Reduced Genetic variability

Main threats:

Long term threats without solution (yet)
 Land consolidation/ Loss of Habitat diversity
 Disappearing of non productive pieces of land (tracks...)

Threats that started fairly recently

Low proportion of breeders: Reduced Genetic Variability

Solved threats/ threats that got better
 Competing species for nestsites
 Reduced loss of solitary trees and hedges
 Increased Proportion of Grassland

> Improved land management





Changes in regarding the policies and legislations relevant to the management of the species? What percentage of the breeding territories are protected?

Legislation: No – Roller is well protected by legislation of the federal state styria

100% of breeding terretories (since 1990) are protected by NATURA 2000 site





1951 1970

What is the main goal regarding the roller population?

Minimum Viable Population in AUT/SLO (> 25 BP)

 \rightarrow In cooperation with SLO

Recent Conservation Activities in Austria

- Habitat conservation, restoration & management
 - Adequate Habitat management of leased land by association LEIV
 - Contractual nature conservation targeting roller:
 - ÖPUL (national Programm): 100 ha
 WVP (nature conservatin authority) 350 ha
 BEP (nature conservatin authority) 50 ha

Training the state

² 150 ha within area used by rollers



Recent Conservation Activities in Austria

Installation of nestboxes

Protection of nestboxes against predation

Nest-cameras



Distibution of breeding attempts

100%

80%

60%

40%

20%

0%

Start Tables

Recent Conservation Activities in Austria



- adverse weather
- Feeding rates > 40/min

Breeding Success













DOERR SNAPSHOT

Monitoring methods in Austria

Ringing scheme (2003):

- Field observations
- Nest-cameras







New scientific findings relevant for conservation

- no exchange with other populations
- 1-3y birds represent the majority of adults (0,67 %)
- 3-6y adults highest portion of breeders (1y: ~23%, 2y: ~38%)
- 1y birds have significantly lower return rates than >= 2 ys birds

Since the population < 20 adults:
 → nr. of nonbreeders is > 50%





New scientific findings: Inbreeding depression

Problems in Austria:

- **Decrease** is well documented
- No genetic exchange with other populations
- Inbreeding has been observed

Inbreeding depression might be the reason why the European Roller is not recovering in Austria!



Decrease of European Roller breeding pairs between 1950 to 2014.

Genetic Rescue → Relocation of individuals from neighbouring populations could counteract inbreeding depression.



Genetic rescue of the Austrian Roller

Research Questions:

- (1) Present genetic diversity
- (2) Has genetic diversity changed?
- (3) Genetic rescue: Can we find the most closely related population? -> a potential donor
- (4) Is there any genetic structure across the species' large distribution range?





Genetic diversity decline in the Austrian Roller



mtDNA diversity decrease of the European roller in Austria. The population is monomorphic in 2014 (Kadletz et al. unpubl.)



Goals and actions from the last ISAP (2008) that are now considered completely In Austria

- ✓ Development of National SAP
- Protection of priority areas (NAT2000)
- ✓ Site Management Plans
- Monitoring schemes (nBP, breeding success)
- ✓ Filling Knowledge Gaps
- Best practice Agro-Environmental measures
- ✓ Raising Awareness of value

New objectives that should be incorporated in the new ISAP

 Incoporation of Genetic-aspects in case of isolated/ relict populations (AUT, POL?, Baltic states?) and adequate actions

