

# Conservation of the European Roller

IN THE CARPATHIAN BASIN

LAYMAN'S REPORT

LIFE13/NAT/HU/000081



## PROJECT DATA



SZALAKÓTA  
védelmi program  
www.rollerproject.eu

Title: **Conservation of the European roller (*Coracias garrulus*) in the Carpathian Basin**

Project reference: **LIFE13/NAT/HU/000081**

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Coordinating Beneficiary:

**MME BirdLife Hungary**

Projekt management:

**Consulex Kft.**

Associated Beneficiaries:

**MILVUS Group Association**, Romania

**Bükk National Park Directorate**, Hungary

**Kiskunság National Park Directorate**, Hungary

**Dalerd Délalföldi Forestry Close Corporation Ltd.**, Hungary

**Environmental Protection Agency of Satu Mare County**, Romania



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## The LIFE programme

LIFE (L'Instrument Financier pour l'Environnement) is the EU's financial instrument supporting environmental, nature conservation and climate action projects. It was established in 1992 to support nature conservation, environmental and climate projects of community interest. Projects implemented under LIFE Nature foster a more efficient conservation of sites of Natura 2000 network designated under Bird and Habitat Directives (79/409/EEC and 92/4/EEC).

## The NATURA 2000 network

Natura 2000 is the ecological network of the European Union. It aims to conserve natural habitats, wild, native plant and animal species and biodiversity in Europe by designating nature conservation areas of European importance. The designation is based on the criteria of two key pieces of the EU's nature conservation legislation: the Bird Directive and the Habitat Directive and the uniform standard criteria applied to all Member States. Management and use of Natura 2000 sites are regulated by Member States on a national level, different economic, social and cultural activities can be undertaken in them only with a sustainable, environmental approach, while giving priority to nature conservation interests.



# The European roller

European roller is an attractive, bright blue, dove-sized migratory bird.

Typically they are birds of steppe lands, wooded pastures, sand lands varied with groups of white poplar or meadows, but they also breed on the mosaic of grasslands, treelines and extensive agricultural lands.

Rollers arrive to the nesting sites in the end of April and May to breed until the beginning of August. They leave the Carpathian Basin very soon in early September. After having a rest in the Sahel region for a few weeks and crossing the equatorial tropical rainforests, they arrive to the wintering sites in Botswana and Namibia in December.

Literature referred to the European roller as a common breeding species by the middle of the last century not only in the region of the Hungarian Great Plain but also in the area of hills.

Decline of the species population sped up since the 1970's, and the breeding population completely disappeared from Transdanubia by the 1980's. Roller is listed as strictly protected species in Hungary, its theoretical value is 500 000 HUF.

As a result of constant nature conservation efforts the Hungarian population grows continuously, however further actions are required to establish the stable conservation status in the long term.







# Factors threatening European roller

**Loss and transformation of feeding habitats:** Rollers prefer to choose habitats for breeding which are formed by grazing and grassland management or extensive agricultural management. Regime change speeded up the habitat losing processes with breaking up the grasslands. Abandonment of grasslands resulted in the expansion of invasive tree and shrub species and the decrease of the population of rollers and other grassland birds.

**Loss of natural nesting sites:** European rollers are secondary cavity nesting species which means that they use abandoned woodpecker cavities to breed, especially the ones made by green woodpecker or black woodpecker. Loss of alluvial forests suitable for woodpeckers resulted in the loss of proper roller nesting sites, too.

**Migration and wintering:** Besides the unfavourable conditions on their breeding grounds, rollers – these long-term migrants – face further negative effects on their migration route and the wintering sites. Limitless illegal hunting and trapping activities in the Mediterranean coast of Europe and Africa cause significant losses in the population of migratory birds on their flyway.

On their wintering grounds (Botswana, Namibia) another unknown factors (insecticides, hunting, lack of food) may also have negative effects on the species.

**Electrocution:** Rollers hunt from perches, they usually sit on a vantage point ready to pounce on prey. They prefer to use medium voltage pylons, since mostly the poles of the medium voltage lines offer the only suitable hunting spots for the birds above the grasslands. Rollers often get electrocuted on un-insulated pylons when they are landing on the poles head and touch the wire under voltage with their open wings.



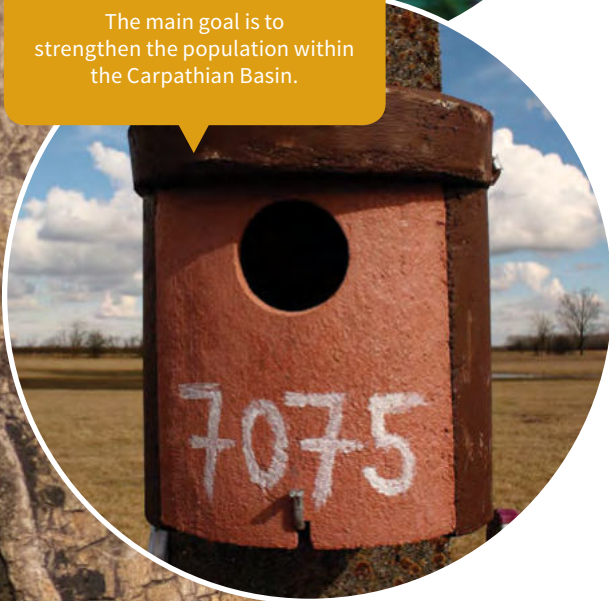








The main goal is to strengthen the population within the Carpathian Basin.



# Project objectives and activities

The main aim of the roller conservation project is to strengthen the population in the Carpathian Basin and ensure its long-term, sustainable conservation.

## MAIN ACTIVITIES:

- Nestbox installation
- Improving breeding and foraging habitat conditions on three characteristic project areas (steppe habitat, wooded pasture, riparian forest)
- Researching migratory and wintering sites to reveal the reasons of migration losses
- Securing long-term species conservation in the frame of “Farmers for Roller Program”
- Promotion of roller-friendly agricultural practices on Natura 2000 sites
- Preparation of the species conservation plan, educational films and scientific publications.







# Activities of project partners and results

## MME BIRDLIFE HUNGARY

Disappearance of nesting sites is one of the most crucial threatening factors that endanger the breeding roller population of the Carpathian Basin. In the last decades intensive nestbox installation works took place to reduce the negative effects and resulted in the stabilisation of the declining trend of the population. The main task was to replace the earlier installed, worn-out wooden D-type nestboxes. Old nestboxes became a source of threat for the individuals: several birds got stuck in the cracks and died, and also a lot of clutches, eggs and juveniles have been destroyed while the nestboxes fell apart. Besides that, the continuous replacement of the bad quality nestboxes and the maintenance works required too much cost and effort.

To resolve the problem of dangerous nestboxes 1280 new, Schwegler nestboxes have been purchased which are guaranteed to last at least 25 years. They have been installed in the area of 3 national parks to ensure secure breeding platform for the birds in the long term, or at least as long as the beneficial effects of further conservation actions prevail.

Monitoring and maintenance of the installed artificial nestboxes resulted in a continuous population growth. By the end of the last breeding season the roller population of the Carpathian Basin showed an increase of 50% (2000-2200 pairs) and a stable core population has been established. This process also supports the expansion of the species to the neighbouring countries.

By using satellite transmitters, we managed to discover the migration routes, resting places and wintering sites of the birds.

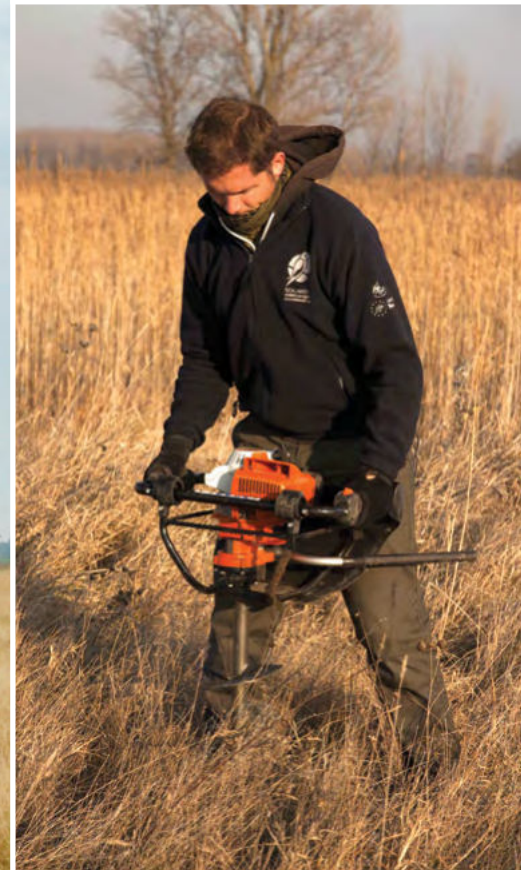




European roller is a long-term migratory species, they spend a relatively short time in the Carpathian Basin, 4 months altogether. They spend the rest of the year with migration and wintering.

Before the project limited amount of data has been provided thanks to the aluminium ringing activities in the past, mostly from the Middle East of North Africa. With the help of the 10 satellite tags purchased in the frame of the project the main migration routes, stopover sites and wintering grounds in the Kalahari Basin, especially in Botswana and Namibia have been revealed.

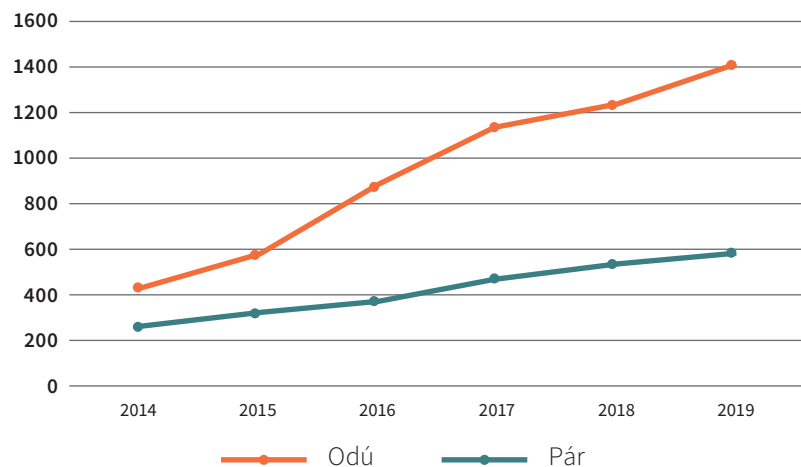
The European Species Action plan of the European roller has been updated in the frame of an international conference in 2017 in Kecskemét with the involvement of nearly 80 conservation specialists from 27 countries. An action plan for the migration routes and wintering sites has also been prepared which was adapted by the CMS in October, 2017. With this, we developed the first “Flyway Action Plan” which can be found in the projects official website ([www.rollerproject.eu](http://www.rollerproject.eu)) among all the project related information. For this purpose it was of high importance to include professionals not only from countries of the European breeding sites but from countries on the migration route (Cyprus, Israel) and the wintering sites (Kenya, South Africa), too.



## BÜKK NATIONAL PARK DIRECTORATE

Bükk National Park Directorate accomplished the development of species conservation actions on 3 Special Protection Areas: Hevesi-sík, Borsodi-sík and Kesznyéten. Although European roller is a species of special importance in the area, their number drastically fell in the last decades. The main goal was to strengthen the local population and support its increasing. Since nesting opportunities and suitable feeding sites are key factors, our activities were focusing on providing these conditions.

The most significant action – regarding its volume and impact – was the habitat reconstruction on Borsodi-sík SPA. The degraded parts have been restored of the salt-oak forest managed by the national park and it has been transformed



A SZALAKÓTA ÁLLOMÁNY ALAKULÁSA 2014-2019 KÖZÖTT

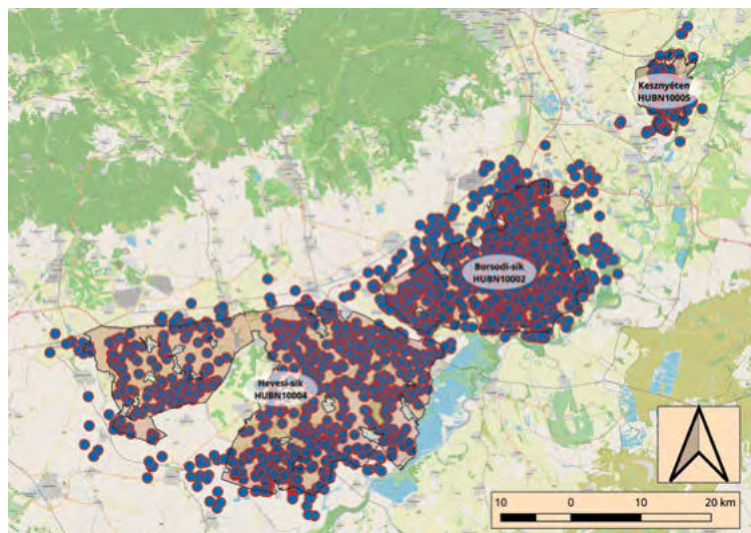
Planting saplings to replace the invasive tree species.





into a proper nesting and breeding habitat for roller. We also aimed to establish forest patches in the area which have been characteristic in the landscape in the past. Reaching suitable size these trees can secure nesting place for the birds in the future. For this purpose the plantations have been performed with native softwood species which are prone to forming cavities. The work started in 2017 near Tiszabábolna, smaller and bigger patches have been formed with the plantation of altogether 24 000 saplings of pedunculate oak, grey poplar, white willow, field maple, narrow-leaved ash and other native species.

The most important action was the habitat restoration on Borsodi-sík SPA



A FÉSZKELŐ SZALAKÓTA-ÁLLOMÁNY A BÜKKI NEMZETI PARK TERÜLETÉN







## KISKUNSÁG NATIONAL PARK DIRECTORATE

Kiskunság National Park implemented several project actions besides the annual monitoring activities in the project.

The main task was to manage general problems of alkali grasslands on a typical roller habitat of the Southern Great Plain region which was realized through a demonstrative, complex habitat reconstruction.

Ancient grassland remnants of Lake Fehér in Szeged lie around the lake system. The project aimed to prevent their deterioration, which started with the elimination of invasive tree species. Since European roller is a bird of steppe lands varied with lonely trees and tree patches, native tree species have been planted in parkland form to the areas cleared from wild olive that will be suitable for nesting in the future.

On the northern side of the lake system the owner of the cca 30 hectares grassland called “Macskási-gyep” created a fish farm in the 1960’s but suspended the management soon. The creation of the dam-system and closing-water constructions required significant earthworks therefore changed the micro-relief of the ancient grassland and caused damages in the natural water management and flora. During the project most of the dam-system and the closing-water constructions have been eliminated, and the channels of the connected working area have been filled with the excavated earth. Removing the dams and connecting the area to the neighbouring grasslands we created contiguous grassland where the management is implemented by the local farmers grey cattle herd. Land-use based on extensive grazing supports the conservation of grasslands and the survival of the connected protected or strictly protected species.





Next to the Roller Visitor Center, visitors can use the new viewing tower as well.



MME uses the building next to the project area since 1996 which belongs to the KNPD. The property is a well-known centre of ornithological studies and conservation education in the Southern Great Plain. One of the project goals was to completely refurbish the building, install modern educational tools and establish space to accommodate larger visitor groups. Guest rooms have also been created for the long-term sustainable maintenance.

The Roller Visitor Centre officially has been opened in November, 2019. They are open to visitors since March, 2020 until November of every year, with a permanent staff.

We are open to the public from March till October.



## DALERD DÉLALFÖLDI FORESTRY CLOSE CORPORATION LTD.

The forestry designated altogether 105,17 hectares to the project purposes and implemented project actions on 60,16 hectares from this. The basic idea was to establish proper habitat conditions for roller through the project activities in the area. The tree species composition of the place offers appropriate breeding opportunities for rollers, since white willows and old poplars with natural cavities can be found here in great numbers. Besides, the grasslands around the flood protection embankment and the meadow in the forested areas offer great foraging habitats to rollers.

To clear the area from invasive tree species the application of chemicals was necessary, in most cases our colleagues used injection technology.

After that, the clear-cutting of altogether 2,5 hectares had been finished and ash-leaved maple and green ash have been eliminated from the rest of the project area

White willow, grey and black poplar saplings were planted on the prepared area to replace the eliminated invasive species. Surface conditions demanded the use of manual hole drill. With the replacement of the dried-out saplings altogether 136 745 trees have been planted in the project area.

The first years the post-plantation care included the manual mowing and mechanical mowing on the clear-cuts 3-4 times a year, which was suspended when the saplings grew strong enough in their 5th year. By then, the young trees developed canopy density with enough coverage to reduce the invasive species competition.







Before, after



Maintenance of the feeding grounds

The systematic monitoring of the planted saplings showed a significant loss by game damage. Besides game damage, draught and missing of regular water coverage were another significant problem which resulted in the change of the species composition on most of the forest fragments: Willow has been replaced by mixed deciduous forest with poplar.

Another crucial task alongside the forest management has been the maintenance of the meadows on altogether 8 hectares. To facilitate the successful roller colonisation 40 artificial D-type nestboxes have been installed in the area.

The promotion of the project actions and result among professionals was another important activity. To achieve this goal we organized 2 events with the Forests of the Great-Plain Association (AEE) Forestry and Environment Committee.



## “MILVUS GROUP” BIRD AND NATURE PROTECTION ASSOCIATION

Milvus Group implemented their roller conservation activities on 15 Special Protection Areas in Western Romania. Limited amount of data was accessible from the region about the species from the past, however the population size and the distribution was not determined.

The regular, immediate occupancy of the earlier installed nestboxes confirmed that the main threat for the European roller in the area is the lack of proper nesting opportunities. The project brought an opportunity to solve this problem: one of the most important project actions focused on the establishment a stable breeding population of roller and their population growth. More than 850 nestboxes were installed in the frame of the project actions aiming for the middle- and long-term conservation of the species. The result is a huge success: the population grew from the known 84 pairs to 217 breeding couples in 5 years.

Tree patches have been established on broad, tree-less grasslands by the plantation of more than 3000 poplar saplings in several counties. The long-term goal is to support the distribution of rollers to these new, safe areas which are rich in prey.

Milvus Group also offered help to the participants of the “Farmers for Roller Program” in the plantation of saplings and building the protective fences around them.

Another conservation action was the insulation of 1000 medium voltage pylons around the most densely populated area by the species. To increase the number of safe nesting opportunities wood-concrete nestboxes have been installed on these insulated power lines.



To prevent illegal logging monthly monitoring was carried out on sample areas where the staff elaborated a monitoring protocol.

More than 1000 adult and juvenile European rollers have been tagged with colour rings besides the normal aluminium ring to earn more data about their site loyalty. This information is crucial for future conservation planning.





## ENVIRONMENTAL PROTECTION AGENCY OF SATU MARE COUNTY

The Environmental Protection Agency of Satu Mare County implemented their project actions on 15 Special Protection Areas in Western Romania.

The main aim of the project was to strengthen the breeding population and establish the long-term conservation, primarily through the provision of nesting opportunities. Suitable foraging habitats have been mapped in the Romanian project area where the lack of trees hindered the possibility of nestbox installation. Therefore we installed altogether 200, 5 meter high wooden poles and placed the D-type nestboxes on them.

To establish natural breeding conditions in the long term, forest patches of 4 hectares have been planted on 50 areas. These consist of native, grey poplar saplings which are prone to forming cavities. The plantations are defended with wooden poles and fence against game damage.

Altogether 40 landowner farmers have been involved in the volunteer network of farmers in the frame of the “Farmers for Roller Program”.

The program provided tree saplings, fence, wooden poles, T-woods and nestboxes for all participants. The organized farmer forums and meetings gave opportunity to the stakeholders to learn about nature friendly agricultural practices. The program also offered help for the participants in the plantation works and the installation of the fences.

Altogether 7 rollers have been equipped with satellite tags in the project area. The tags attached to the back of the individuals provided valuable information about their migration behaviour, the migratory routes and the wintering sites. To prevent illegal logging in the area, the suitable nesting sites have been mapped and listed. These areas have been monitored every month during the project time, and the discovered logging activities have been reported to the concerning authorities. Educational presentations were held in more than 90 schools and the project has been promoted at different forums and events, too. School presentations and stakeholder meetings highlighted the importance of the Natura 2000 network and the significance of lonely trees, tree groups, tree lines that offer potential breeding opportunities for rollers.

30 information boards have been installed in the neighbourhood of the 15 Special Protected Areas involved in the project. They have been placed in the centre of the surrounding municipalities, on squares or near schools and town halls. Passengers are informed in two languages about the European roller and the conservation activities.









# After LIFE

Our work has not come to an end with closing the presented project. Monitoring of the installed nestboxes continues: our volunteers and the national park staffs visit the nestboxes two times in the breeding season and ring the juveniles.

The final aim is to support the independence of the roller population. With the plantation of trees and the conservation of old trees with cavities we hope that the birds leave the artificial breeding platforms and return to breed in natural cavities.

Publication of scientific results and propagation of grassland management methods, the importance of elimination of invasive plant species and the riparian forest management will be ensured.

Mortality caused by power lines will be considered as priority issue in the future as well. We give presentations and exhibitions on our regular events. We continue our international species conservation activities and we continue to actively contribute to the preparation of key documents in species and habitat conservation.

LEARN MORE AND SUPPORT US AT  
[WWW.ROLLERPROJECT.EU](http://WWW.ROLLERPROJECT.EU)  
[WWW.FACEBOOK.COM/ROLLERPROJECT](https://WWW.FACEBOOK.COM/ROLLERPROJECT)

# Acknowledgements

We would like to express our gratitude to the European Union LIFE Nature Fund (LIFE13/NAT/HU/000081) for the financial and moral support, to the Ministry of Agriculture, to the contributing staff of the partners and to all the volunteers who contributed to the conservation of the rollers in this long period.





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