



# CONSERVATION OF RED-FOOTED FALCON (*FALCO VESPERTINUS*) IN THE PANNONIAN REGION

2006–2009



Photo: Lóki Csaba



Layman's Report of the LIFE Nature project Nr. LIFE05 NAT/H/000122





## Project data:

Conservation of Red-footed Falcon (*Falco vespertinus*) in the Pannonian Region  
LIFE Nature project (LIFE05 NAT/H/000122)

### Beneficiary:



Körös-Maros National Park Directorate, Hungary

### Partners:



Bükk National Park Directorate, Hungary



Duna-Ipoly National Park Directorate, Hungary



Hortobágy National Park Directorate, Hungary



Kiskunság National Park Directorate, Hungary



MME/BirdLife Hungary – Hungarian Society of Ornithology and Nature Conservation



Environmental Protection Agency of Bihor County, Romania



Milvus Group – Ornithological and Nature Conservation Society, Romania



### Co-financers:



The LIFE Nature fund of the European Commission



Ministry for Environment and Water, Hungary

**Total budget:** 1 546 580 Euro

**Proportion of budget financed by the LIFE Nature fund:** 50 %

**Duration of the project:** 01. 01. 2006 – 31. 12. 2009

## What is Natura 2000?



Natura 2000 is the ecological network of the European Union. It aims to sustain and preserve the diversity of wildlife typical to Europe through the designation of natural sites of community interest. Two principal legal documents of the Union on nature conservation: the so called Bird Directive and Habitat Directive (79/409/EEC and 92/4/EEC) form the basis of designation along with a uniformed series of aspects relevant to all member states. Management and use of Natura 2000 sites are ruled in the scope of national legislation of member states.

## What is LIFE?



The abbreviation LIFE stands for the financial instrument supporting the environmental policy of the European Union. This is actually a financial fund established in 1992 in order to provide support for projects of community interest in the field of environmental protection and nature conservation. The projects to be implemented in the frame of LIFE Nature aim to assist and found more effectively the conservation of Natura 2000 sites, a network to be set up in compliance with the Bird and Habitat Directives.





# Why is it important to conserve Red-footed Falcons?

## Summary

Over half of the Red-footed Falcon population breeding within the boundaries of the EU nests in the Pannonian Bio-geographical Region, and have showed a constant decline in the past decades. Therefore, on the 1st of January 2006 a complex conservation programme was launched with the support of the European Union and in the co-ordination of the Körös-Maros National Park Directorate in order to increase and maintain in the long run the strongly connected Hungarian and Western-Romanian populations of this threatened species. The aim of the programme is to ensure the growth of the population in the Pannonian Bio-geographical Region and found the basis of further conservation works, and thus the long term survival of the species. In the European Union the Pannonian Region is the most important breeding site of the Red-footed Falcon. The breeding population of the area has been affected by unfavourable changes during the recent decades in the background of which mainly direct or indirect human effects can be traced. The survival of this species unique in many respects is threatened by – among others – the reduction in the number and the disappearance of its suitable breeding sites. The situation is similar regarding its feeding grounds. Electrocution caused by electric power lines and collision with motor vehicles, respectively, result in the injury or mortality of the falcons. Their migration journey starting in the autumn is not less risky: in the Mediterranean Region often their masses fall victim to poachers. The aim of conservationists is to discover and prioritize these factors and, through the establishment of a proper strategy, to prevent or cease the sources of danger. Therefore active conservation measures were needed. In the breeding sites the highest importance was to establish and preserve groups of trees suitable for nesting, to place out nest-boxes and to preserve rookeries that provide natural nesting opportunities. Furthermore, research was necessary, in order to extend our knowledge with up-to-date data on the foraging habitat use and migration habits of Red-footed Falcons. This is essential to better understand the life conditions and environmental needs of the birds. While specialists were look-



Photo: Máté Bence

*Male Red-footed Falcon*

ing for the solutions of the problems the general public was also kept informed. The last year of the project was well promoted as the year of the Red-footed Falcon and the Rook. Producers farming in agricultural areas being the habitat of the Red-footed Falcon can especially help a lot. For that reason we contacted them in the relevant regions and also won the co-operation of the responsible ministry. Conservation efforts made in the interest of Red-footed Falcons in the past few years have brought visible results. Within the LIFE project duration the Red-footed Falcon population of the Pannonian Region has gradually started to grow. Besides active conservation this was also due to favourable weather and feeding conditions. Concerning the foraging habitat preferences of Red-footed Falcons, and especially their migration to their wintering grounds, new information was discovered with the help of state-of-the-art scientific instruments. In the interest of a long term conservation of the species we initiated the pooling of international forces. Our professional experiences can thus be extended to the breeding sites beyond the Pannonian Region.



# Rook and Red-footed Falcon

## ROOK

The Rook (*Corvus frugilegus*) breeds in colonies on the groups of trees or groves and makes its nest of thin branches. It may cause damage by turning out seeds of crops sown improperly and shallow, but by feeding on various beetles and worms it also is useful for agriculture. Due to the damage they caused, Rooks were relentlessly persecuted in the last century, thus their numbers have been significantly reduced and more and more rookeries have appeared in urban settlements. The Rook population has dropped by 90% over twenty years, now there are hardly 30 000 breeding pairs in Hungary and only 8 to 9 000 pairs remained in the near-natural habitats of Western-Romania.

The Rook is a key species in respect of the conservation of Red-footed Falcon, as the latter one – similarly to other falcons – does not build a nest. Given that both species breed in colonies, rookeries are the most important natural breeding sites of the Red-footed Falcons.



Photo: Lóki Csaba

Due to the dramatic population decline the Rook is protected in Hungary and cannot be hunted in Romania either during the breeding season. Swarms of Rooks appearing everywhere in the winter are misleading: these birds return to the Russian and Ukrainian steppes in the spring.

## RED-FOOTED FALCON

The Red-footed Falcon (*Falco vespertinus*) is a small sized, migratory bird of prey. It stays in our region from April to October. Males, females and juveniles are all coloured differently. It is listed in the Red List of IUCN among near-threatened species and is also strictly protected both in Hungary and Romania. Its population has fallen by 50% during the past twenty years. At the launch of the comprehensive conservation programme in 2006 there were 558 pairs known in Hungary and 180 pairs in Western-Romania.

Photo: Lóki Csaba



The body of the male Red-footed Falcon is mainly slaty-grey, while females are ochre coloured at the head, breast and belly and their back is striped with black on a blue base.

### Distribution and habitat

Its breeding area ranges from Central-Europe to the eastern border of Kazakhstan. It typically breeds on steppes extending at low altitudes and in surrounding agricultural land. The Pannonian Region is reckoned to be the western border of its breeding area.



### Breeding

The Red-footed Falcon is our only bird of prey that breeds in natural colonies. It does not build a nest, but occupies the empty nests of rookeries. It may also breed solitarily (i.e. individually), mainly in the nests of Magpies. It also likes to occupy man-made nest-boxes or trays designed for the species.

The breeding period lasts for about 7-8 weeks, females and males incubate alike. Both parents feed the chicks, which become able to fly within a month and in a further two weeks they will have become independent. Afterwards they leave the breeding site and return to their nomadic way of life.



Photo: Solt Szabolcs

*Red-footed Falcons belong to late breeders: they lay their 3 to 4 (sometimes 5) brick red eggs in May or June.*

### Feeding

The Red-footed Falcon feeds mainly on insects and eats a lot of grasshoppers, crickets, dragonflies and various beetles. Among vertebrates it preys on small mammals, lizards and the Common Spadefoot Toad and occasionally small-sized birds.

### Autumn roosting period and migration

Red-footed Falcons spend the late summer preparing for their migration. During daytime they feed in small groups that gather for the night at gloaming in common roosting sites. In the evening hours in a tranquil group of trees a couple of thousand of birds can be observed. The birds return to their traditional roosting sites from year to year.

Red-footed Falcons spend the winter in the savannas of the southern part of Africa. In the autumn months – especially the juveniles – may range in large areas before they set out for southwards. In certain years they swamp Western-Europe like an invasion. First-year birds marked in the Pannonian Region have also turned up in Russia, Sweden, Norway, Belgium and the Czech Republic.



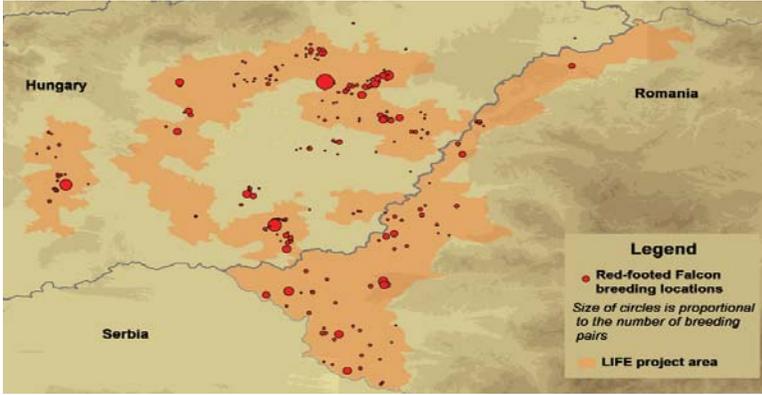
Photo: Marik Pál

*The great majority of the European Union's Red-footed Falcon population breeds on the Pannonian steppes.*



*The Red-footed Falcon is a long-distance migrant: its breeding area in Eurasia (red) and wintering ground in Africa (blue) are separated from each other by over 7000 km.*





Breeding sites of Red-footed Falcon within the project area



Photo: Máté Bence

The Red-footed Falcon is a typical breeding bird of undisturbed steppes.

# Factors threatening the Red-footed Falcons

## Reduction of breeding sites

Due to legal and illegal felling of trees the groups of trees have ebbed away in steppic habitats. In Western-Romania the most important rookeries are forced back into road side alleys. The fall of the Rook population has generated a remarkable lack of nesting places in the suitable Red-footed Falcon habitats. When the programme was launched, the Rook could be hunted in Romania all year round.

## Conversion and deterioration of habitats

The spread of modern agricultural techniques does not favour the diversity of wildlife, neither the Red-footed Falcons.

## Electrocution

The network of medium voltage non-insulated power lines covering the habitats endangers the birds with electrocution.

## Predation by Martens

A Marten appearing in a Red-footed Falcon breeding colony may jeopardize the breeding success of the entire colony by destroying eggs and nestlings.

## Illegal shooting

Our Red-footed Falcons are threatened by illegal shooting primarily on their migration route in the Southern-European countries. However, without knowing the migration routes the implementation of targeted conservation measures is impossible.



Photo: Nagy Attila

In Western-Romania the most important rookeries are forced back into road side alleys



Photo: Máté Bence

Female Red-footed Falcon feeding her fledged chicks





# Project objectives and activities

The upmost objective of the LIFE project was to stop the reduction of the Red-footed Falcon population breeding in the Pannonian Region. In order to achieve this goal we carried out the following activities:

## **To ensure secure breeding sites**

- Breeding colonies were regularly controlled and we brought proceedings against illegal tree felling in 14 cases;
- 3400 nest-boxes were placed out for Red-footed Falcons;
- 34 new groups of trees were planted;
- In Romania we prepared a management plan in order to use road side alleys in a bird-friendly way;
- We held a total of 26 forums to discuss the state of the Rook with farmers;
- We initiated the protection of Rooks in Romania during the breeding season;
- We set up sign boards in 30 sites informing the public about the two species.

## **To provide suitable feeding grounds**

- We have investigated the feeding habits of 49 Red-footed Falcons by radio-telemetry survey in order to base scientifically the habitat conservation measures.
- We proposed a target programme in favour of the Red-footed Falcon to the agricultural subsidy scheme which was built into the scheme for the period between 2009 and 2013 by the responsible ministries of both countries.

## **For a clear sky**

- We secured the co-operation of the electricity suppliers and purchased the material necessary for the insulation of the critical power line sections.

## **To aid successful breeding**

- We constantly monitored the breeding population of both species and made synchronized census in the autumn roosting sites of Red-footed Falcons.
- We constantly monitored and trapped Martins in the threatened breeding colonies.



Photo: Máté Bence

Assessing habitat use by radio-telemetry

## **For the founding of a long-term conservation**

- In order to get information about the extension of feeding grounds around the roosting sites and to map the migration route we tagged 8 adult females with satellite transmitters and a further 20 specimens with geolocators.
- To survey emigration and immigration as well as survival we marked more than 3000 Red-footed Falcons with coloured rings which will make individual identification possible.
- We created a multi-language (Hungarian, Romanian and English) website for the project. The media was continuously informed about the progress of the project and a documentary film was made about the two species.
- We created a mailing list to discuss conservation issues of Red-footed Falcons with foreign experts. We presented the project results to an international conference and, respectively, developed a European Species Action Plan for the conservation of Red-footed Falcon.

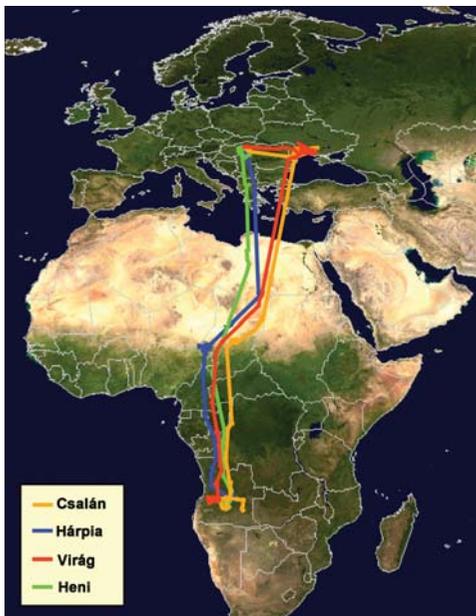




# Results

## Conservation based on new data

- During the breeding season male Red-footed Falcons hunt in a range of 1000 to 4000 ha, while the hunting area of females is only one tenth of that. Their successful hunting depends first of all on the height of the vegetation rather than the type of habitat.
- In the roosting period Red-footed Falcons feed in a district of some 40 to 50 km<sup>2</sup>. At this time they hunt a lot in the air preying on swarming insects.
- In the course of the programme we managed to discover 10 roosting sites of high importance which had been previously unknown to us. The total number of specimens counted in the roosting sites at one time exceeded 9000!
- Based on the data provided by Red-footed Falcons tagged with satellite transmitters we determined their autumn migration route (see the map). It turned out that in October the birds cover 7000 km to their wintering ground in Angola within 2 to 3 weeks, often flying day and night. They are able to fly straight across the Mediterranean Sea and the Sahara without a break, while they can keep an average speed of about 400 km a day during the long journey!



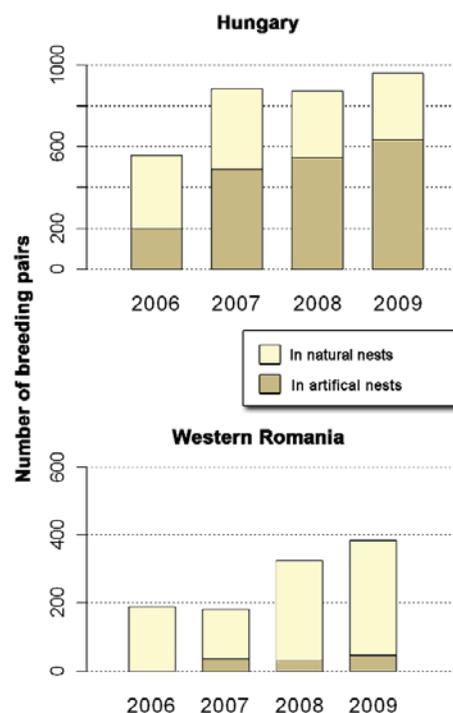
At the first time ever in the world we could follow the journey of Red-footed Falcons tagged with satellite transmitters in the website [www.falcoproject.hu](http://www.falcoproject.hu).

## Growing number of breeding pairs

The man-made nest-boxes mounted on trees have had become important breeding places for the Red-footed Falcon population by the end of the project period. At the launch of the programme there were 558 pairs of Red-footed Falcon recorded in Hungary and 180 pairs in Western-Romania.

During the four years a gradual increase has been experienced in the number of Red-footed Falcons breeding in nest-boxes. Especially apparent are the results in Hungary where the lack of rookeries has previously heavily constrained the number of settling pairs. Between 2007 and 2009 the weather and feeding conditions did also favour the Red-footed Falcons; more than 80 % of the breeding pairs raised successfully an average of 3 nestlings every year.

All of these effects were added to those of the conservation measures and resulted in a significant population growth during the four years (see figure). In 2009 there were already 963 pairs of Red-footed Falcon recorded in Hungary and 383 pairs in Western-Romania.



Changes in the Red-footed Falcon population during the project period





Photo: Palatitz Péter

Man-made nest-boxes replacing Rook nests contributed a lot to the stabilization of the Red-footed Falcon population.

### First steps towards a red-footed-falcon-friendly farming policy

In Hungary between 2007 and 2013, for the improvement of habitats in 2300 ha of Environmentally Sensitive Areas, applicant farmers can get considerable support for making such agricultural activities that are also in compliance with the habitat needs of Red-footed Falcons.

In Romania an experimental agri-environmental support scheme has been introduced for farmers. As a result of our recommendation the Red-footed Falcon was included among the three designated target species.



Photo: dr. Hanyecz Katalin

Extensive grazing of grasslands provides stable feeding grounds for Red-footed Falcons and Rooks.



Photo: Máté Bence

Birds marked by coloured rings can be individually identified



Photo: Solt Szabolcs

Plastic insulation protects birds from electrocution

### Reduced threat of electrocution

In the 4 km surroundings of Red-footed Falcon breeding and roosting sites some 400 km of medium voltage power line section was converted into being bird-friendly. Furthermore, in Romania we made recommendation about which types of bird-friendly pylon heads should be preferred.

### For future natural breeding sites

In Romania, as a result of our recommendation to change the law, since 2007 the Rook is protected during the breeding season.

Consulting with stakeholders we developed a Corvus Conflict Management Plan which was also approved by the responsible ministries and the implementation of which may result in the stabilization of the Rook population in the medium term.

We believe that we managed to make many people aware of the importance of the mutual conservation of these two beautiful and special bird species.



Information materials propagating the "Birds of the year 2009" campaign of MME / BirdLife Hungary



# Conservation after the LIFE project

The project for the conservation of Red-footed Falcons, ran with the support of the European Commission and the Hungarian Ministry for Environment and Water, was ended on 31st December 2009. Our results speak for themselves, but the conservation activities have not yet been finished. Our goal is that the artificial colonies dependent on human care be replaced again by the common homes of Falcons and Rooks: the rookeries.

To reach these goals the project participants will continue the following activities with the co-ordination of MME / BirdLife Hungary:

- Control, maintenance and development of the established nest-box colonies;
- Annual monitoring of the breeding populations of Rook and Red-footed Falcon and, respectively, weekly synchronized censuses held in the autumn roosting sites of Red-footed Falcons;
- Control of rookeries, forcing back illegal tree felling;
- The practical application and implementation of the Corvus Conflict Management Plan;
- The maintenance of co-operation made with regionally responsible electricity suppliers;



Photo: Máté Bence



Photo: Palatitz Péter

- To inform the media constantly and update the project website with latest news and results;
- To continue the international dialogue in the mailing list about the global conservation of Red-footed Falcon;
- Tracking birds tagged with satellite transmitters and recapturing specimens tagged by geolocators if possible and to continue marking with coloured rings that give an opportunity for individual identification of the birds.



Photo: Máté Bence





# Acknowledgements

Finally, on behalf of the authors we thank all colleagues and volunteers for the dedicated work with which they have greatly contributed to the implementation of the project and to reach its goals and without whom our activity targeting the conservation of Red-footed Falcons could not have been successful. They include the employees of project partners and national parks who have participated primarily in field work as well as researchers and graduating students taking part in ringing, tracking and feed surveys. Special thanks go to Bánfi Péter, dr. Erdélyi Károly, Kótymán László, Neidert Dóra and Samuné Kvasz Tünde. We are also grateful for those helping in the dissemination of information.



Photo: Palatitz Péter

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**All support is welcome to the continuation of the project and we are ready to provide detailed information in relation with the programme.**



