

Wilderness on the border (Project ID #21910254)

FIELD REPORT 2019-2020

Monitoring of the Red-footed Falcon in the Jászság Region, Hungary



MME BirdLife Hungary, Red-footed Falcon Protection Workgroup



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Figures: Sándor Piross (volunteer)

MME, 20.10.2020.

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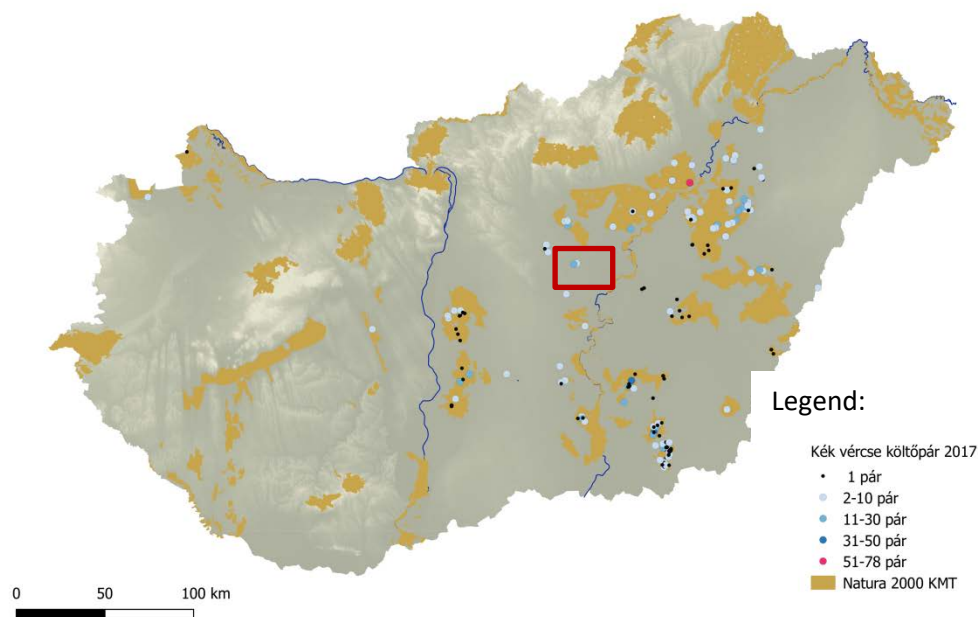
Introduction

The target species, the Red-footed Falcon and its' conservation has some special attributes. The falcons do not build nest themselves but depend on Rook for their colonial breeding. The species compete with modern agriculture, as his main habitats are former grasslands already partly converted to diverse farmland habitats. Gregariousness of these small falcons during the entire lifecycle increases the impact of all threats to the whole population. Moreover the EU population of the species is an edge population compared to the core /eastern/ distribution of the species.

The Carpathian Basin holds the largest population of Red-footed falcon in the European Union. Therefore the conservation status of the species in the region is also directly affecting the whole EU population.

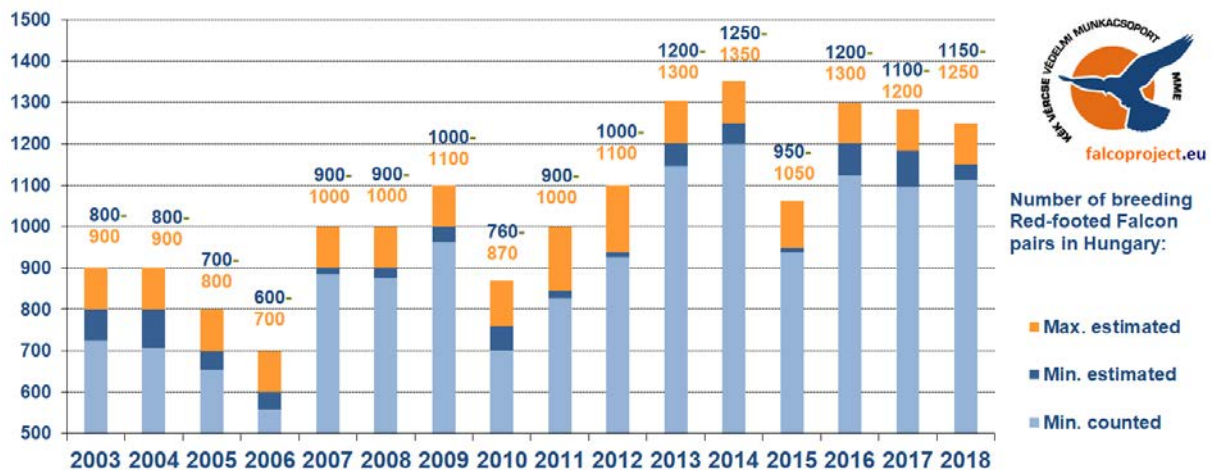
The Red-footed Falcon is a typical lowland bird in the Carpathian Basin. The westernmost metapopulation is located in the AT-SK-HU border area. In Hungary the closest meta-populations are East from the Danube river, except a recently re-settled population in the Sárvíz-völgye from the main breeding sites of the Hungarian Great Plain, therefore one of the possible source population for the recolonisation of the Slovakian breeding population.

The Jászság Research Area



Distribution of the Red-footed Falcon and the targeted population in Hungary

The success of previous projects of MME and its partners gave the background for a viable Red-footed Falcon population in the Carpathian Basin, however in the long term the actions and means involved to save this species listed in Annex I. of EU Birds Directive and strictly protected by the Hungarian Law made the falcons highly dependent from the conservation efforts. For example more than 80% of the core population of Hungary breeds in artificial nests, and these are mainly 8-15 years old. The yearly maintenance of several thousands of nest boxes requires an increasing effort from the members of the national workgroup. Meantime due to the lack of nest sites and unfavourable habitat changes in the last decade the Red-footed falcon has almost extinct from Slovakia.



The populations size of the Red-footed in Hungary before the project period

Source: Database of MME Red-footed Falcon Conservation Workgroup and the relevant Hungarian National Park Directorates

In recent years the population of Red-footed Falcons depends mainly on food and nest-site availability. The artificial nests are occupied in large number also by Kestrels *Falco tinnunculus* causing nest site limitation in some regions where the provision of new nesting platforms is not secured. The abundance of food sources is highly variable due to the multi-annual cycle of some insect- and small vertebrate species /mainly Field Vole and Spade-foot toad/ and also affected by the annual weather and the timing of agricultural works through availability.

Project information

Project goals

- Maintain the two nestbox-colonies installed for Red-footed Falcons in the Jászság Research Area (if possible increase the number of artificial nests from other funds).
- Organize the regular monitoring of the breeding sites from May to July.
- Organize the weekly monitoring roosting sites in the region from late August to early October.

Project period Field season of 2019 and 2020 (from April to October)

Project area Southern-Jászság (see the area highlighted on the map in the introduction chapter)

Actions

- Maintenance of the nest-boxes in the Jászság region of Hungary
- Monitoring of the breeding of the falcons in the area on regular basis
- Organize research camps from 1st of July to 25th of July for the colour ringing, health monitoring, food availability monitoring of the falcons.
- Organize counts and ringings at the pre-migratory roosting sites in the Jászság region from mid-August to the first week of October.
- Build the monitoring database, analyse and publish the data to help the awareness raising of local stakeholders and to transfer knowledge at different levels /from public to academic/.

Expected results

The number of breeding falcons will increase by 10% each year. The evaluation of breeding success together with the monitoring of prey availability helps to involve local farmers to the feeding site management.



Male and female Red-footed Falcons and one of its' main prey the Field Vole

Photo: Peter Palatitz

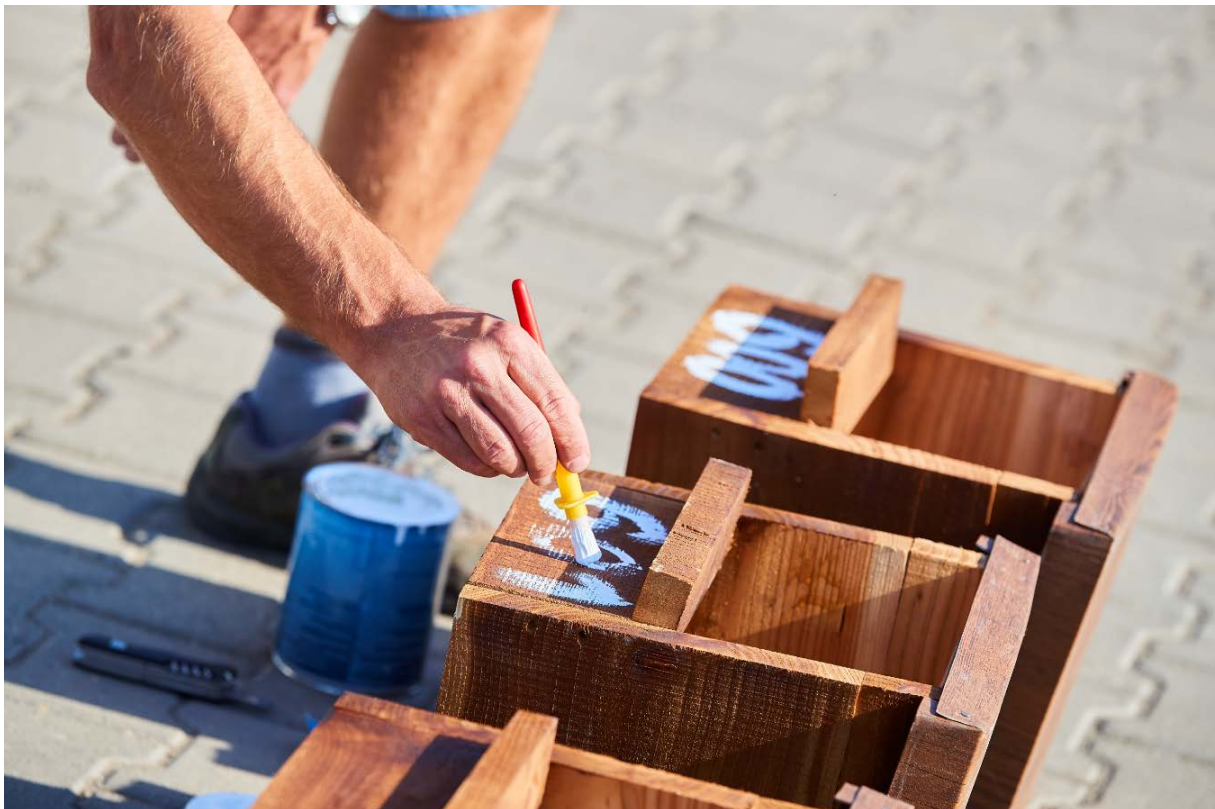
Field works, data collection and volunteer camp 2019

2019

MME staff is running the study site of Jászág since 2002, however the continuous research work has been established in 2015 when the RFF working group decided to focus on specific Research Areas in Hungary (Jászág, Heves, Kardoskút).

The financing of this work needs projects each year, as no continuous monetary support is available. MME BirdLife Hungary is able to partly contribute to the works, however the **Wilderness on the border project of Visegrad Fund** made possible to run the study site in 2019/2020.

We monitored two breeding colonies in the project site. We removed 24 old nest boxes, unsafe for breeding with the help of volunteers and we completed the previously available 100 nest boxes to 114 boxes in the beginning of 2019. Thus altogether 38 new artificial nests have been installed. The smaller colony (Kistelep) offered 27 nestboxes to the falcons, while the larger (Nagytelep cca. 2 km from the previous) comprised 87 artificial nests.



Painting the ID number of nest boxes

Photo: Zsolt Molnár (volunteer)



New homes for falcons and allies

Photo: Zsolt Molnár (volunteer)

We organized weekly monitoring at the two colonies according to the permits of the National Authority. We recorded the occupying species, number of eggs and chicks. Based on the data we estimated the laying date and the approximate date of ringing.

Results:

Altogether 45 pairs of Red-footed Falcons in 2019

2019	Nagytelep	33
2019	Kistelep	12

Basic parameters of the studied RFF population in 2019

Parameter	Mean	Standard deviation
Nr. of eggs	3,67	0,48
Nr. of hatched chicks	3,18	0,94
Nr. of fledged chicks	3,09	1,00

During the ringing with colour-rings we take several biometric measurements, we effectuate the health check of chicks and we try to catch the parents of the brood. Sometimes the social parents (ie. those who care the actual brood) are not the only genetic parent of each chick. The research of the reproduction system of these raptors, therefore includes the DNA sampling of all possible individuals within the colony. For this reason (and also for the virological check) we take blood samples from the individuals for further evaluation.

Age group of ringed Falcons in the studied colonies in 2019 and the availability of blood samples

Blood sample	2cy	3cy	adult	pull	Sum
no		1	1		2
yes	1	1	13	141	156
Sum	1	2	14	141	158

Ringing usually take place in July, this is the highest workload of the staff. To avoid overheating of the animals we have to work from sunrise to 10 a.m. and start again from 4 p.m. until sunrise, every single day of the week. In the same period we catch small mammals with live-traps to estimate the food availability. This would be impossible without the help of volunteers and a camp, or protected shelter where people can hide from summer sun in the noon period to rest.

We rent a building from the municipality of Jászalsószentgyörgy for July 2019 and organized a 3 week long ringing camp for 34 volunteers to help our work. We could pay special attention for the dissemination toward the next generation, as we hosted 7 children 4-12 years old. We provided food, travel reimbursement but obviously we didn't pay salary for the participants. The signed attendance sheet can be found as Annex 1 of this report.



Red-footed Falcon chick ringed before fledging in 2019

Photo: Detti Nagy (volunteer)

The autumn roost count started by 21.08.2019 and we managed to count migrating falcons at one or two roost sites weekly until the last week of September.

Roost site count data in the Jászság region, 2019

Hét sorszáma / Week no. 2019	Példányszám / No. of counted birds	Aktív gyülekezők száma / Number of roosting sites
34	115	1
35	220	1
36	286	1
37	415	1
38	121	1
39	0	0



Attempt to catch Falcons with mist net and lure bird at the roost-site with volunteers, autumn 2019

Photo: Sándor Piross

Field works, data collection and volunteer camp 2020

2020

This year took a very special condition for our project and life in general, the COVID-19 pandemic. We tried to mitigate the effect on our work with success.

We monitored two breeding colonies in the project site. We completed the previously available 114 nest boxes to 119 boxes in the beginning of 2020. The smaller colony (Kistelep) offered 31 nestboxes to the falcons, while the larger (Nagytelep cca. 2 km from the previous) comprised 88 artificial nests.



X-mas tree for falcons and allies

Photo: Zsófia Nyerjék-Sümegi (volunteer)

We organized weekly monitoring at the two colonies according to the permits of the National Authority. We recorded the occupying species, number of eggs and chicks. Based on the data we estimated the laying date and the approximate date of ringing.

Results:

Altogether 50 pairs of Red-footed Falcons in 2020

2020	Nagytelep	36
2020	Kistelep	14

Basic parameters of the studied RFF population in 2020

Parameter	Mean	Standard deviation
Nr. of eggs	3,88	0,53
Nr. of hatched chicks	2,82	1,30
Nr. of fledged chicks	2,52	1,43

During the ringing with colour-rings we take several biometric measurements, we effectuate the health check of chicks and we try to catch the parents of the brood. Sometimes the social parents (ie. those who care the actual brood) are not the only genetic parent of all the chicks in the clutch. The research of the reproduction system of these raptors, therefore includes the DNA sampling of all possible individuals within the colony. For this reason (and also for the virological check) we take blood samples from the individuals for further evaluation.

Age group of ringed Falcons in the studied colonies in 2019 and the availability of blood samples

Blood sample	3cy	adult	pull	Sum
no	0	2	4	6
yes	1	13	122	136
Sum	1	15	126	142

Ringing usually take place in July, this is the highest workload of the staff. To avoid overheating of the animals we have to work from sunrise to 10 a.m. and start again from 4 p.m. until sunrise, every single day of the week. In the same period we catch small mammals with live-traps to estimate the food availability. This would be impossible without the help of volunteers and a camp, or protected shelter where people can hide from summer sun in the noon period to rest.

The COVID-19 caused special conditions for this monitoring year. We mainly managed the work with 3 people and we rent a small bungalow from the municipality of Jászboldogháza for them. When the quarantine restrictions allowed us, we organized an open day for the volunteers with special health measures, in open air and separated housing. By this way 14 volunteers could help our work. The signed attendance sheet can be found as Annex 1 of this report.



Red-footed Falcon chicks ringed before fledging in 2020

Photo: Peter Palatitz

The autumn roost count started by 19.08.2020 and we managed to count migrating falcons at one or two roost sites weekly until the first week of October.

Roost site count data in the Jászság region, 2020

Hét sorszáma / Week no. 2020	Példányszám / No. of counted birds	Aktív gyülekezők száma / Number of roosting sites
34	100	2
35	84	2
36	109	2
37	175	1
38	58	1
39	263	1
40	240	1



Taking blood samples, June 2020 (the falcon is in the special immobilizer tube)

Photo: Peter Palatitz

In summary the Visegrad Fund contributed to maintain two artificial colonies, where special research has been conducted to establish the long term conservation of Red-footed Falcon. The Fund made possible also to involve altogether 48 volunteers in the two years, who helped the professional staff to increase the number of nesting sites, and also to increase the efficiency of falcon captures and ringing (especially near the migratory roost site).

The overall scientific output will be published in scientific journals; here we only present the most important descriptive statistics to help the evaluation of the monitoring results (Annex II.)

Annex I. Attendance sheet of the volunteer camp



„A madárbarát Magyarországiért!”

Magyar Madártani és Természetvédelmi Egyesület/BirdLife Hungary

Budapest, 1121 Költő u. 21. • Telefon: 1 275 6247 • Fax: 1 275 6267 • E-mail: mme@mme.hu • Honlap: www.mme.hu

Adószám: 19001243-2-43 • Bankszámlaszám: 11712004-20011215

„Wilderness on the border”

Visegrad project 21910254

supported by
• Visegrad Fund
• •

List of participants

Event:

Date:

Falatik Péter	Falatik Péter
Falatikné Fajka Diana	Falatikné Fajka Diana
Falatik Beatrix	Falatik Beatrix
Székely György	Székely György
Kurucz Zsuzsanna	Kurucz Zsuzsanna
Nyerges-Süsmegi Zsófia	Nyerges-Süsmegi Zsófia
PALFI SZABOLCS	PALFI SZABOLCS
Wolfe Magdolna Zsuzsanna	Wolfe Magdolna Zsuzsanna
Wolfe Balázs	Wolfe Balázs
Wolfe Balázs	Wolfe Balázs
Tóth GERGELY	Tóth GERGELY
Winkler Róbert	Winkler Róbert
dr. Nagy Bernadett	dr. Nagy Bernadett
FEHÉRVÁRI PÉTER	FEHÉRVÁRI PÉTER
Tóth Lőrinc	Tóth Lőrinc
TÓTHBERTALAN	Tóth Bertalan
KRISTÓF TAMÁS	Kristóf, Tamás
MOLNÁR BALINT	Molnár Balint
KRISTÓF LIZA	Kristóf



„A madárbarát Magyarorszáért!”

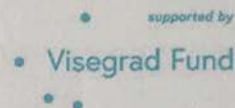
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„Wilderness on the border”

Visegrad project 21910254



List of participants

Event:

Date:

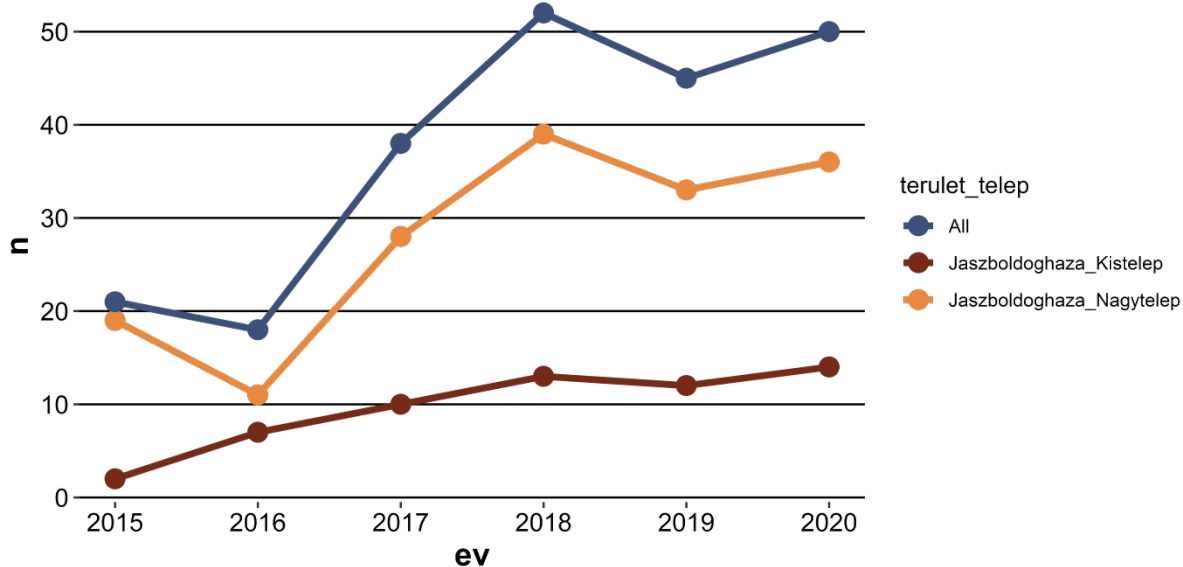
Jolanda Merrell	
UNVARI ANDREA	
CSÓKÁS ADRIENN	
TÓTH PÉTER	
KEISZT DÁNIEL	
R. BALOGH BRIGITTA	
NOVÁK DÓRA	
NOVÁK LŐRINC	
TEPLÁNSZKI DÓRA	
SOLT SÁBOCS	
HERVATH ÉVA	
SOLT ANNA	
PIROSS SÁNDOR	
SALIGA REBEKA	
NYERÉK BÁBOL	
NAGY TAMÁS	

47.	FERENC LUCA	Bp. 1929.07.08	3578 Mezőkemeny, Hagy J. út 3.
48.	FERENC ALMA	Eger, 2008.08.29	3578 Mezőkemeny, Hagy J. út 3.
49.	FERENC HUNOR	Eger, 2012.01.19.	3578 Mezőkemeny, Hagy J. út 3.
50	FERENC ATILIA ATILIA	Eger, 1980.05.12	3578 Mezőkemeny, Hagy J. út 3.
51	SCHALLY ÁLMOS	Kistarcsa, 2014.11.13	2100 GÖDÖLLŐ SZKI'TA Körút 30.

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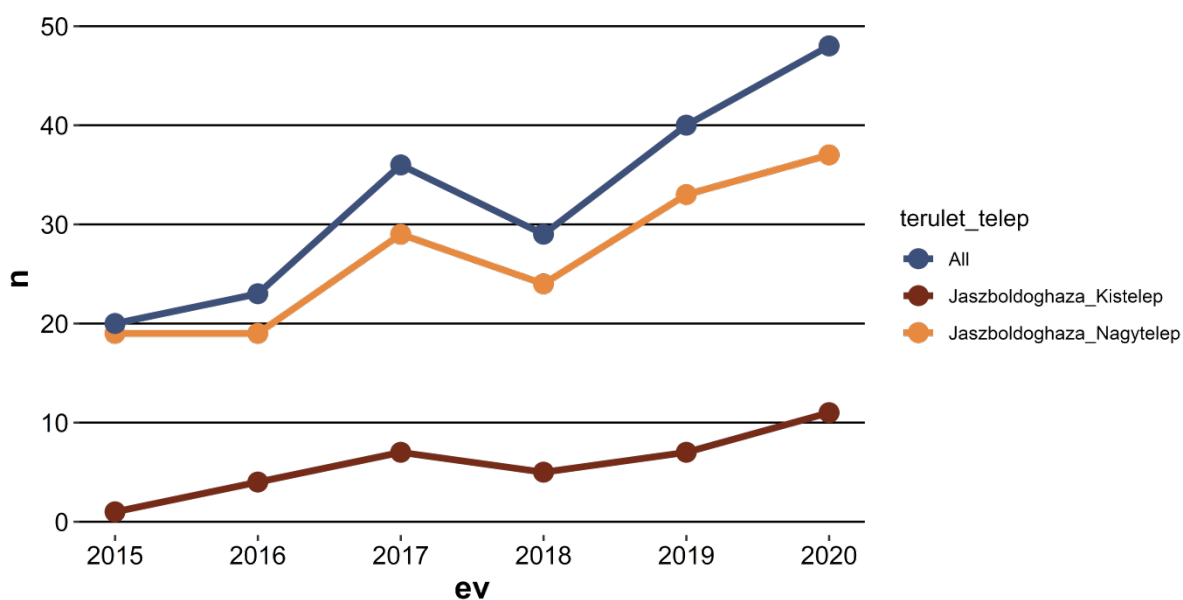
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Nr.	Name Staatsbürgerschaft Citizenship.	Geburtsort Birth-place Geburtsdatum Date of birth	Adresse Address
52	SCHALLY GERGELY	MOSONMAGYARÓR 1984.10.03.	2100 GÖDÖLLŐ SZKI'TA Körút 30.
53	CSÓKÁS ADRIENN	BALASSAGYARFAT 1982.03.08	5310 KESZTESZATI DEK F. U. 102
54.	TÓTH GERGELY	KARCA 1977.08.01.	—
55	Fehérvári Péter	Bp. XI 1982.07.12	Bp. 113 Pannónia u. 5/c
56.	Nyerjék-Sümegei Zsófia	Eger 1988.10.15	1148 Bp. Kerespi út 80/c
57.	Palaták Péter	Bp. 1975.03.09.	1135 János Tanya P.
58.	Blahutai Fajka János	Jászol 1985.08.24.	1121 Bp. Kecskés-Emlékt. 14
59	KISS ÁGNES	BUDAPEST 1969.11.18.	BUDAPEST 118 Bakos u. 20.
60	PA'LI SZABOLCS	BUDAPEST 1974.03.25.	BUDAPEST 118 Bakos u. 20.

Annex II. Monitoring database: overview of findings



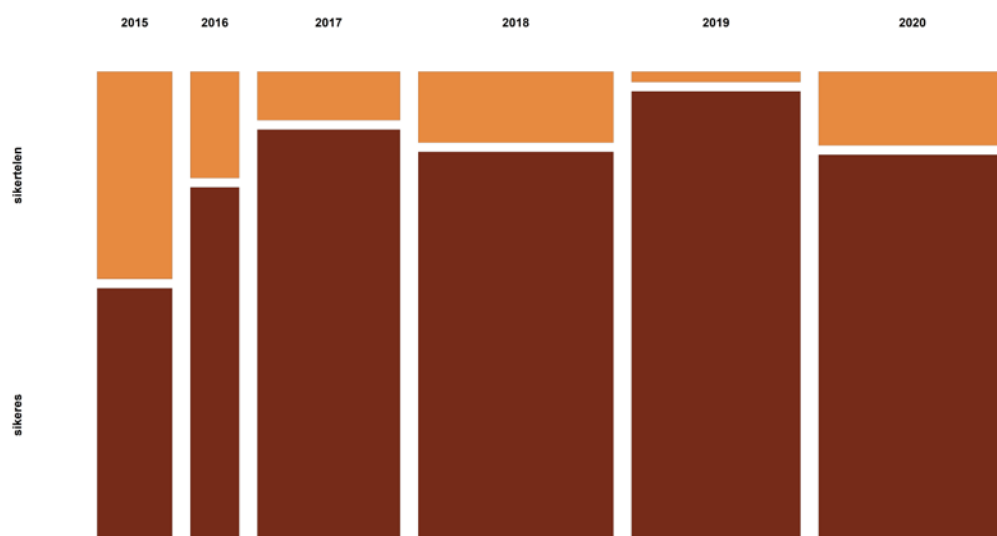
Number of Red-footed Falcon breeding pairs in the Jászság research area, 2015-2020

Note: The number of pairs increased from 21 pairs to 50 pairs in five years



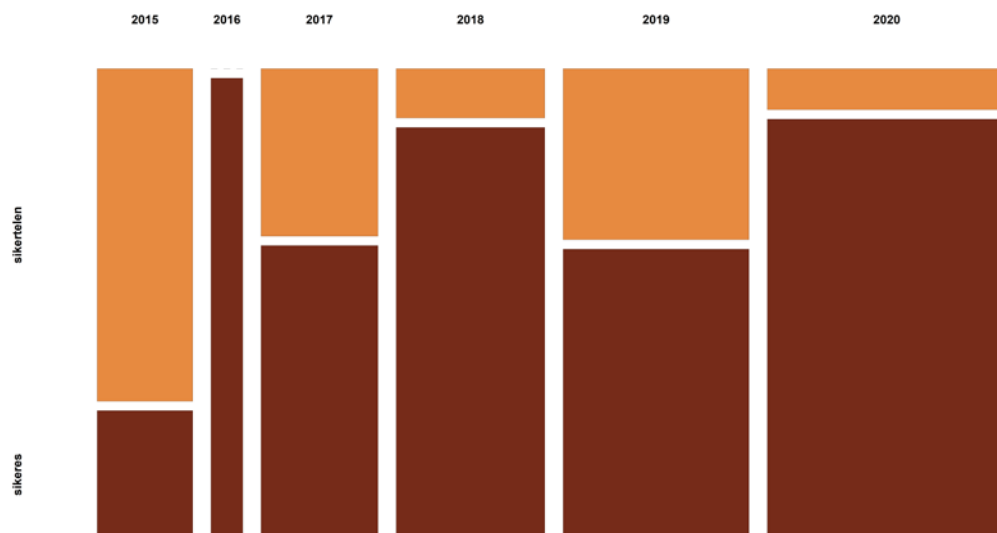
Number of Kestrel breeding pairs in the Jászság research area, 2015-2020

Note: The number of pairs increased from 20 pairs to 48 pairs in five years



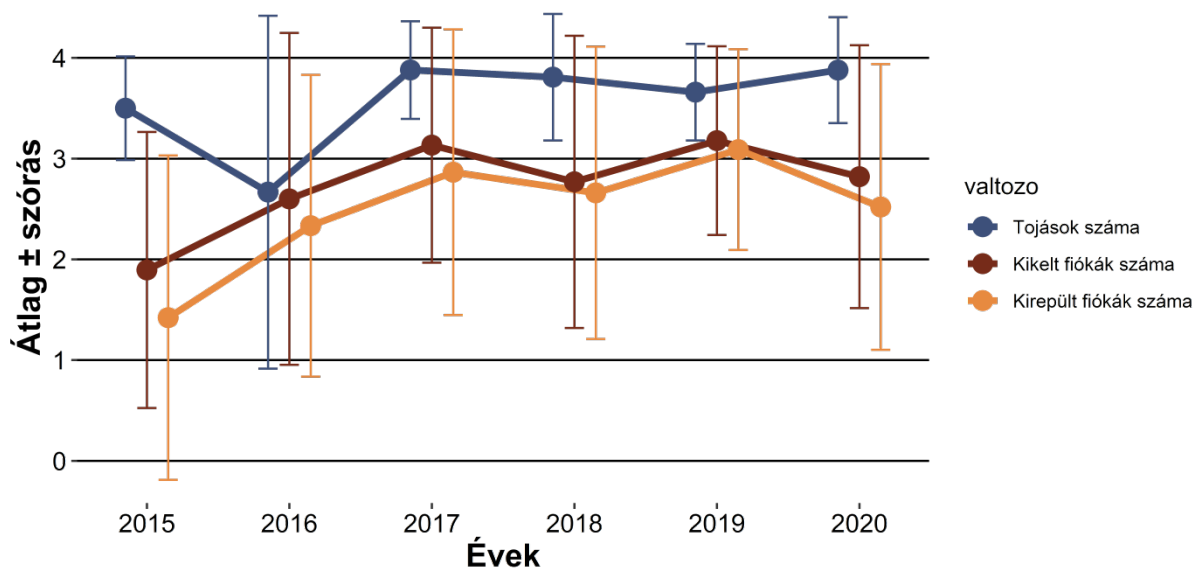
Success rate of Red-footed Falcon breeding pairs in the Jászszág research area, 2015-2020

Note: The success rate (ratio of nests with at least one fledged young) fluctuated according to the year from 55% to 98%. Last two years was above the long term average with 98% and 87% respectively



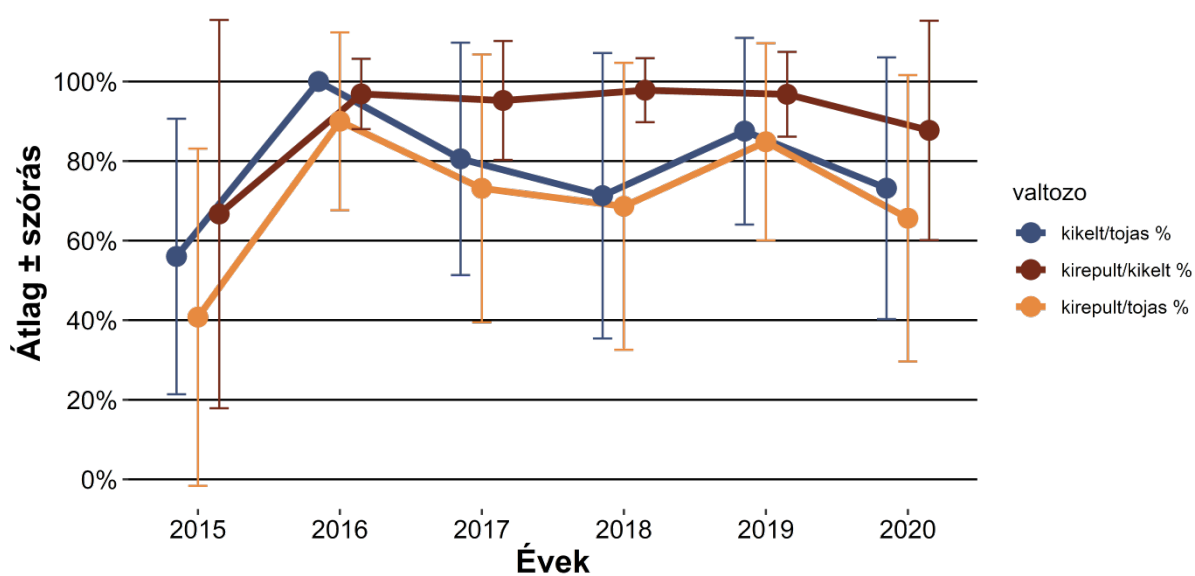
Success rate of Kestrel breeding pairs in the Jászszág research area, 2015-2020

Note: The success rate (ratio of nests with at least one fledged young) fluctuated according to the year from 27% to 91%. 2019 was an average year when 63% of nesting attempts was successful, however 2020 was an excellent year when 91% of pairs has successfully fledged at least one chick.



Breeding parameters of Red-footed Falcon breeding pairs in the Jászság research area, 2015-2020

Note: Blue dot: average number of laid eggs/nest, Red dot: average number of hatched chick/nest, yellow dot: Average number of fledged chick/nest, vertical sections indicate the standard deviation.



Breeding success parameters of Red-footed Falcon breeding pairs in the Jászság research area, 2015-2020

Note: Blue dot: average hatched chick/egg, Red dot: average fledged young/hatched chick, yellow dot: average fledged chick/egg, vertical sections indicate the standard deviation.

Acknowledgements:

Thanks to Tibor Juhász (Ranger at Hortobágy National Park Directorate, Jászság), who helps us to maintain this scientific work now for one decade.

Thanks to Péter Fehérvári and Péter Borbáth for finding the roosting site the first time in 2015 and special thanks to Imre Fatér (MME) for his help in the monitoring at the roosting site.

Thanks to the municipalities of Jászsós-szentgyörgy and Jászboldogháza for their kind support in the organization of the volunteer camps.

Thanks to DIÁDOR Center Service Station Jászsós-szentgyörgy for providing us fresh fruits and cooking equipment during the summer camp and kindly provide 24/24 hours service for our field cars.

Thanks to Szabolcs Pálfi, who kindly helped us with his 4x4 car free of charge.

Thanks to the volunteers, especially children for the good spirit and fun time despite the sometimes harsh conditions and sleepless days in the field (see their list in Annex I.).